NEW TECHNOLOGIES

AND SETTLEMENT PATTERNS IN RURAL AREAS:

THE HIGHLANDS AND ISLANDS OF SCOTLAND.

Master of Architecture thesis

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"We plant the seed; nature creates the rose."

Ernest Holmes, in 'Science of Mind'.

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This is a study that has been wide ranging, and it has had to rely heavily upon the specialisms of others over a wide range of disciplines. Every contribution has played a valuable part in formulating the final thesis, and a presentation of the acknowledgements avoiding the 'serial order' of writing would have been preferred. In the absence of a suitable technique to present all the names 'at once' the following is in chronological order:

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CHAPTER 1: INTRODUCTION:

THE SEARCH FOR A WAY FORWARD.

THE NEED FOR THE STUDY.

THE OBJECTIVES, ASSUMPTIONS, METHODOLOGY, AND OUTLINE.

A searchlight on life,

not a laser beam on fragmentation.

One small question leads to

the *"Ultimate Question"*

Douglas Adams, 'Hitchhikers' Guide to the Galaxy'.

1.1 The Highlands and Islands of Scotland, and the case for concern: The need for the study.

1. Blind progress could lose the assets.

This study evolved out of a personal concern for the social, economic and ecological future of the Scottish Highlands and Islands. The historic depopulation of the region over the past two centuries appears to be making a significant reversal, and rapid development is apparent throughout the region. Whilst it may seem that this reversal can only be beneficial, there is an inherent danger in the excitement of winning the struggle against depopulation and economic decline. The unfettered progress of development at any cost overlooks the possible side effects of inadvertently destroying the social, cultural and ecological assets indigenous to the region.

2. Preservation and a unique land opportunity.

Refer to appendix A2.3 Land.

A counter reaction to development could be equally detrimental. This could arise from the attitudes of land owners and environmentalists, or from a political policy to 'preserve' the region as an 'urban playground'. Visitors from all over the world admire the region as 'the last wilderness in Europe'. This situation is attributable to the clearance of the population and the history of land ownership in a region which is the last in Europe to be freely available for sale on the open market. The consequence is that the land tends to be 'preserved' for purposes that are prevented in other European countries, such as sporting estates. Under the present economic climate these estate owners are tending to split up the land to sell in small lots. Whilst the sale of estates presents a unique opportunity for the region, the splitting of the estates will lose the advantage.

3. The sadness of empty glens.

Comments of several Highlanders in conversations over the last twenty years.

These and many more glens have been visited during the last twenty years, and during the course of the study.

Highlanders speak about the sadness of the empty glens and the evidence of a previous population which show the glens of today to be 'anything but natural'. The full meaning of this sadness can only be felt by a visit to glens such as Strathnaver and the Strath of Kildonan. In terms of human life, there is very little for fifty miles. The sadness is not in the appearance of the landscape; it is in the realisation that the deserted churches and buildings represent communities that once inhabited the glens. These last vestiges of human life and activity are being overlaid by industrialised peat extraction and grant aided forest planting. This provides an analogy to other areas where the remaining local 'way of life' is being 'overlaid' by the incoming industrialised 'culture'.

4. 'Natural' and man made countryside.

Mary Beith, 'Open secrets of the ancients', The Scotsman, 20.10.90.

Mary Beith illustrates the character of the lost population: *"The past is all around us in the Scottish countryside. It's just a question of opening your eyes ... "*. The remains of Britain's highest hill-fort, on the 1905 ft Ben Griam Beg in Sutherland, overlooks *" ... one of the most desolate regions in modern Scotland."* Below the fort, domestic settlements, enclosures and field systems, stretch down the sides of the mountain. Standing stones were *" ... laid out with an eye for the surrounding country. ...* [by] *a reasoning, civilised people whose land and its horizons was the centre of their world."*

5. Environmental threats.

Auslan Crumb, 'Altered image of the Highlands', The Scotsman, 9.3.92.

TCD Dargie, DJ Briggs, 'State of the Scottish Environment', Scottish Wildlife and Countryside Link, Perth, 1991.

The bare heather hills, recognised world-wide as typically Highland, *" ... are largely our creations."* Just two centuries ago many of them would have been covered in birch and pine. 'State of the Scottish Environment' is a study that looks at the country's real resources, soils, forestry, freshwater and air: *"After 4,000 years of interference, ... environmental threats are at an unprecedented level, ... "*

6. Highlands and Islands Scotland's fastest-growing region.

Bryan Christie, 'Highland population bucks the trend', The Scotsman, 17.4.91.

Refer to paragraph 582. Population.

According to the Registrar General, Scotland, the population of the Highland region is expected to rise by just over 6,000 to 209,179 by 2001, representing a four per cent growth from 1989. Most of this rise will be in Inverness, and there will be a fall in Nairn and Caithness. For comparison, Strathclyde's population will fall by seven per cent from 2,310,000 to 2,190,000, and Glasgow will fall by 9 per cent from 695,000 to 631,000. The total population of Scotland will fall by 65,000 to 5,026,00. The total fall in population is ten times the increase in the Highland Region. The fall in Glasgow alone is seven times the rise in the Highlands. The Highland population is very small in comparison to these larger populations.

7. Increasing population in the Highlands and Islands.

Highland Region figures 1989.

The Highland Regional council also predicts an increase in population of 6,800 in the five years from 201,866 total in 1989 to 208,666 in 1993. They predict a similar increase of 6,077 in the five years from 1993 to a total of 214,743 in 1998. Significantly half of this increase is in the population of Inverness, 3,260 in the five years to 1993 and 2,782 in the five years to 1998. Both sets of statistics agree that Inverness is growing out of proportion to the rest of the Highlands. From 1988 to 1998 the estimated housing demand is 10,170 .

8. Relating the figures to town size.

A clearer picture of what is actually happening to the Highlands is shown by removing the figures, and relating the increases to the size of Highland towns. There is sufficient increase in population for a new town the size of Nairn, Wick and Thurso (the largest towns after Inverness and Fort William) every eight years; and the size of Tain, Dingwall, Alness or Invergordon (the next largest towns) every four years. To relate it to other parts of Scotland the annual loss in population from Glasgow alone would provide a town the size of Dingwall every year.

9. Low levels of population.

Highlands and Islands Development Board figures.

Highlands and Islands Enterprise (formerly Highlands and Islands Development Board) covers a slightly different area but an interesting figure is given for the highest population which occurred in 1851 of 447,000 compared with 368,000 for the same area in 1988. This implies that there is room for an increase in population of at least the loss of 79,000. In terms of town size, this would be two more towns the size of Inverness, or sixteen towns the size of the third largest towns: Tain, Dingwall, Alness, and Invergordon. Population density is 23 per square mile compared with 603 per square mile for Great Britain, that is 26 times less dense.

10. The comparison of population numbers.

At its peak in 1851, the Highlands and Islands had a population of 447,000. The Highlands and Islands now has the even lower population of 276,000 in a land area of 15,000 square miles. The Highlands and Islands has 23 people to the square mile compared with the UK of 603 people per square mile. The potential for the repopulation of the Highlands and Islands in terms of numbers is unquestionable.

11. Canada: similarities and interest in the Highlands and Islands.

Jim Hunter, 'A question of identity', The Scotsman, 16.2.91.

There are said to be 16,700,000 Scottish people around the world, and an emigrant population of Highlanders all over the world are said to dream of returning to the 'homelands': *"not all Scots-Americans have a romanticised view of the old country. ... many have a keen desire to keep in touch with Scottish culture ... "*. The native people of Idaho now occupy less than two per cent of *"more than four million acres,"* which they once lived on. Teachers are now anxious to hear the older people in the same classrooms in which they were punished for using the their own language. There are valuable links to be made between the lost populations of the Highlands and Islands, the people of similar experiences, and the people *" ... descended from the millions of Scots who have left Scotland over the last three centuries, ... "*

12. Repopulation by interested people.

Telecommunications could bring people together on a regular basis rather than an occasional visit by the few. It could provide an opportunity to understand different peoples, changing cultures and for new contacts to be made that may lead to a repopulation by people who have a genuine interest in the Highlands and Islands.

13. Justification for repopulation of the glens.

Refer to paragraph 594. A second Highland clearances.

Mary Beith, 'Open secrets of the ancients', The Scotsman, 20.10.90.

With today's technology it may be possible to once again live in the mountains and glens; to once again support a viable and vibrant lifestyle and economy that is in harmony with the natural environment. What we see today is due to the interaction of people and nature and therefore, contrary to the view of environmentalists and land owners, there is justification for re-populating the region from the environmental history point of view. The history of a once timbered landscape could justify a change in public expenditure from forests without people or jobs to an integrated approach of new settlements, based on a timber aesthetic, surrounded by 'community' woodland. There are many references to Vikings travelling to Caithness and Sutherland *"to obtain timber for their ships"*.

1.2 The factors to be considered in the study.

14. The 'way of life' brought alive.

The 'philosophy' of the local 'way of life' is an essential and integral part of achieving a human ecology. The term 'way of life' is used to indicate the character and everyday attitudes to life of the local people; the main characteristic being an integrated view, which is the very opposite of industrialised society. The word 'culture' has been avoided as the media have given this a new meaning related to the 'arts' of the fragmented industrialised society. 'Life style' is also a term that has been rendered obscure by the media. Neither is 'way of life' free of media interpretation, and its use in this thesis should not be associated with religious beliefs or groupings.

15. Rural 'way of life'.

The Highlands and Islands Region is a rural land mass of Europe characterised by its rugged mountains and many islands. It is a country noted for the hospitality and forbearance of its population, and one that has long suffered from a sparse population through the attempts of its neighbours to change the 'way of life' of its people. The effects of a history of inhospitable climate, absentee landlords, clearances, wars with England, and self inflicted 'wounds' are an important aspect of the social, economic and ecological situation of the region today. The region is increasingly affected by political, economic and technological change on a global scale, as are other rural areas in the world. Both the local historic circumstances of the region, and the global influences of today are therefore an integral part of any forward looking consideration of the region.

16. The significance of rural areas.

This study is based upon the belief that rural areas have much to offer to the diversity of the human race. This diversity is increasingly threatened by the domination of cities. Half of the world's population and half of Europe's population live in rural areas. Forces centralised in cities have resulted in this significant population being largely sidelined or ignored. Having replaced the countryside, cities seek to solve their difficulties by 'greening' themselves in an effort to re-establish the human need for communion with nature. The settlement patterns of the future will almost certainly seek to reconnect the human condition of life to the general ecological condition of existence, and a less overt distinction between the Urban and the Rural may, perforce, emerge. The paradoxical concept of the 'Rural City' may result.

17. The present difficulty of rural areas.

Marshall McLuhan.

Remote rural areas, and in particular the Western Isles of Scotland, are constantly suffering from the loss of their young adults. Whilst a flow of population occurs in all areas, this loss is particularly significant because of its effect on an already small population. This study investigates the potential of the new technologies to halt or even reverse these traditional trends. The recently installed digital telecommunications network is purely a tool, an *'extension of man'*, that has some choice in its use. The aim of this study is to draw attention to that choice and the urgent need to consider the positive and negative options.

1.3 The importance of history.

18. Burghs and the importance of trade.

From the fourteenth century, troubled times in Scotland led to a change in the building materials from timber to an exclusive use of stone, which continued to mark the characteristic architecture of Scotland to present times. Urban life continued during the long periods of instability when government was by rival self-seeking nobles. Forty to fifty burghs were erected in the fifteenth century, and seventy seven in the sixteenth, and grants were given to re-populate towns with depressed trade. Foreign trade continued with France, Burgundy, Rouen, Dieppe, Bordeaux, Rochelle, Norway, the Baltic ports, a colony in Danzig, Prussia, Poland, Middleburg, Bruges and Campvere. Foreign countries influenced the quality of town life and building related more to Dutch and Flemish towns than across the border with England. By the fifteenth century most Scottish burghs had grammar schools.

19. A unique rural architectural character.

Robert J Naismith, 'Buildings of the Scottish countryside', Victor Gollancz, London, 1985, p. 13.

Refer to paragraph 429. Ideas from the history of settlement.

The history of settlement patterns in the Highlands and Islands offers valuable examples of the effects of past decisions upon the 'way of life'. The publication of Robert Naismith's book in 1985 was an important influence along the road that eventually led to this study being undertaken. Its study of 2500 small buildings throughout rural areas of Scotland provides comprehensive evidence of the unique architectural character of the Highlands and islands of Scotland. Due to the vastness of the dominating natural environment, the diversity and individual identity of this bold and rich architecture only becomes evident after conscious observation. Most significant are the *"character zones"* of local variations that have been created by a long history, and have survived the more recent development that has lost such identity elsewhere.

20. A rich endowment.

Ibid pp. 13-14.

Robert Naismith's survey demonstrates *" ... the Scottish national character in buildings of the small towns and countryside through proportions, architectural details and constructional materials."* It has identified the architectural details that are so significant to these simple buildings; it illustrates the variety of detailed constructional materials within a predominance of stone and slate; and it has established *" ... the simple proportional rules observed by the designers in producing the elevations of their buildings."* This rich endowment is being changed by the dilution of new buildings that have no respect for local character, and have little or no identity of their own. It may be significant that the survey is until 1914 when local designers using local materials came to an end. After 1914 the technology of new building methods, governed by centralised controls, resulted in *"suburban rather than rural architecture."*

21. The experience of planned villages could be appropriate today.

Refer to paragraph 397. A review of the settlement pattern

Refer to paragraph 438. Thurso, Halkirk and Sarclet.

Planned villages built throughout Scotland in the eighteenth century were a response to an increasing population and a change in occupation. Today we have similar circumstances of an increasing population and a changing pattern of occupation to home and village working. The possible social problems and the need for a review of settlement patterns makes the ideas of planned villages particularly relevant. Perhaps the prizes and premiums that were used to encourage the planned villages could once again be considered. John Sinclair of Thurso realised that the allotment of land was the best way of encouraging populations. Planned villages came to an end when it was no longer profitable to provide them. A more sustainable solution than a purely profit making motive is therefore required. John Sinclair also realised the need for sustainability nearly 200 years ago.

22. People, not party politics.

Robert J Naismith, 'The story of Scotland's towns', John Donald, Edinburgh, 1989, pp. 154-155, 173.

Robert J Naismith suggests the freedom to choose *"The form of living"*, by providing a wide choice for everyone. *"... planning towns is in the end most of all about people"* and is equally relevant to rural areas that have an increasing population.

1.4 The World View.

23. A revolution in man's thinking may be essential for his future.

In the deliberation of a geographical region, it is necessary to consider the influences exerted by the rest of the world. This is particularly the case in today's world where the accelerating rate of social and economic change forms a dynamic complexity of interactions. Humans seems unable to comprehend their part in the effects of this accelerating change upon the world ecosystem, and their own human ecology. The advances in materialism and technology may need to be revised by a change in the awareness of mankind. A significant change to a world of non-materialism and 'benign technology' may be emerging.

24. The return of a population with changed values

Refer to paragraph 86. Leisure and facilities for oil workers.

Refer to paragraph 610. Redundant jobs.

In a period of great change the Industrial Revolution created the urban areas and attracted populations from the rural areas. The population that is now returning has changed from the one that left having undergone a hundred years of 'urbanisation' and turmoil. Are the rural areas ready for this influx of population? Is it sensible that a population that may hold the key to the way forward should be changed to the ways of a society that could now be redundant? Can rural areas meet these demands without destroying their own perceived characteristics, or will they be overwhelmed by the new pressures upon their resources?

25. A desirable life in rural areas.

With such an increasing attraction to rural areas change is inevitable, and is already very evident in rural areas within, typically, one hundred miles of cities. With the advent of telecommunications removing the ties of physical transportation for jobs, and with the rapidly increasing size of Inverness, the largest population centre, the Highlands and Islands has become a prime target for development. In the face of such development, and to maintain the desirability of the rural areas, it may be necessary to achieve a built environment that is equally desirable and complementary to the 'natural' environment. Such a delicate balance of harmony may require the highest quality of innovation, determination, and skill.

1.5 Change.

26. Global change.

This study is set in a period of global change; the collapse of the Russian 'system'; the spread of the capitalist 'system'; recession and unemployment. There is a possibility of a complete collapse of human 'systems' which invites the question: what are the alternatives?

27. A fundamental change.

Initially this study was founded upon a concern for the state of the built environment of the Highlands and Islands. It was soon realised that the installation of a digital telecommunications network, which could become available in the remotest of rural areas, threatened a fundamental change to the role of rural areas in Scotland and elsewhere.

28. Pressure from the European Megalopolis.

Refer to paragraph 93. Increasing dissatisfaction with increasing population.

Refer to paragraph 49. White settlers.

Refer to paragraph 600. Black Isle clearance.

Pressure on the Highlands and Islands from immigrants has previously been from those who were determined to move despite any disadvantages of poor services and jobs. Increased strain is now being experienced by the countryside near to urban areas which are lowering their housing density. Previously satisfied people will try to reinstate their lifestyle and desired environment, and those who previously only dreamt of a change will now experience an insistence to search out new desirable areas, and ultimately they will create an increased impact on the Highlands and Islands. Now that dreams become possibilities, with electricity, improved transportation, occupations from telecommunications and the attraction of exchanging a suburban semi for a Highland mini estate, the trickle could change into a torrent. A way is therefore needed to direct the benefits of telecommunications to local people in a way that aids the local 'way of life'.

29. Maximising the benefits from a change in the settlement pattern.

The self-selection of incomers, due to the careful thought required to make a move, is being eroded by telecommunications which make it easier for incomers to conduct their business from remote areas. Consequently there is an increasing number of incomers who are not interested in the local 'way of life', and it is jeopardising the benefits which it could have offered to alleviate the social isolation of occupations using the new telecommunications. The original concern for the built environment has evolved into a more fundamental question: what change is taking place in the settlement patterns of the Highlands and Islands, and how can the process of change use the dormant assets to maximise the benefits to the local population?

1.6 The questions to be answered.

1. Can the accelerating change of today be guided positively?

2. Can new telecommunications (that are fuelling change), be used for the benefit of local people in rural areas?

3. Can the ownership of land be turned into a positive asset?

4. Can the integration of land ownership and the new technologies (which are the outcome of the fragmented Industrial Revolution), with the way of life and the assets of rural areas produce a settlement pattern of beneficial human ecology?

'Eutopia' - good place. Refer to 347. What do we require of a future world? Eutopia?

Patrick Geddes, Cities in Evolution, 1968 edition, p 221.

5. Can human ecology achieve a world 'Eutopia' of understanding between the world's communities?

1.7 The Objectives.

1. To identify the social and economic fabric of the Highlands and Islands.

2. To identify new threats to the social and economic difficulties of the Highlands and Islands.

3. To survey relevant history, particularly of the settlement patterns, for possible clues which might lead to the improvement of life in the Highlands and Islands.

4. To identify any trends that indicate changes being made to the social and economic fabric of the Highlands and Islands.

5. To survey 'global change' that could affect the future of rural areas.

6. To survey technological change that could affect, or provide opportunities for rural areas.

7. To identify any changes in settlement patterns due to the new technologies.

8. To examine the decision making structures that affect settlement patterns.

9. To identify current settlement patterns in the Highlands and Islands.

10. In the light of 1. to 9. to produce a hypothesis for a constructive way forward based on certain assumptions.

1.8 The Assumptions.

Refer to section 5.11 Getting Involved.'

Refer to Section 5.14 Development Opportunities in the Natural Environment.'

These assumptions derive from Chapters Two and Three: 'The evidence for change' Some of the assumptions were found to be supported by recently commissioned studies and recent conferences.

1. The settlement pattern should take an integrated approach towards sustainability.

'Neighbourhood Initiatives Foundation.'

2. The population should be in control of their own community and livelihood, and should have access to appropriate information and support systems. 'The voiceless should have a voice'.

'Cities and Health', Patrick Geddes Summer Meeting 1992. Mr. Andrew Lyon, Glasgow City Council, World Health Organisation, Healthy Cities Movement. Dr. Manju Biswas, Sociologist, Varanasi University, Health at home, homelessness. Dr Rod Muir, Health Board, Lothian Regional Council, Health in the community. Mr. Roger Talbot, Lecturer, Department of Architecture, The Healthy House?. Dr Ulrich Loening, Director, Centre for Human Ecology, Environmental degradation and regeneration. Professor Slawomir Gzell, Urban Design and regeneration Planning, Warsaw Technical University, Health in City Planning. Dr Jeremy Raemakers, Centre for Environment and Human Settlements, Heriot Watt University, Urbanisation and its implications for Health. Miss Deborah Ritchie, Craigmillar Health Project, Grass-roots Community Health. Mr. Howard Liddell, Gaia Architects, A Planetary Village. Mrs Veronica Wallace, Historian, Edinburgh Old Town. Mrs Salamah Subbiotto, Regional Planner, Jedburgh, City parkland. Brian Smith, Health at Work: Fragmentation, stress, and ill-health.

3. The settlement pattern should provide an ecologically sound human environment, particularly in terms of the quality of life and environment, both natural and built.

4. The settlement pattern should offer an alternative to the ill-health and tensions of industrial cities.

5. Whilst respecting the history, geography, and natural environment of the region, the settlement pattern should be appropriate to the future age.

6. The settlement pattern should offer an alternative to a modification of the mechanical age. The evolutionary trend towards centralising cities, which has continued since the Industrial Revolution, should be reversed by re-energising the rural communities from which, paradoxically, the early impetus of the Industrial Revolution largely derived.

7. The settlement pattern should enable a flexibility and diversity of choice to its inhabitants.

8. The settlement pattern should be flexible, and capable of absorbing changing circumstances, particularly in terms of livelihood. I.e. it should be 'future proofed' as far as is practical.

'Industrial Strife' Open University', BBC television.

"Work will eventually go. ... Every kind of work will turn into leisure and freedom."

Joseph Beuys, in 'Art meets Science and Spirituality', Art and Design, Academy Editions, London, 1990. p. 7.

9. The work ethic of the industrial revolution led to exploitation, fragmentation, stress, and ill-health. The Post Industrial Era with its associated enforcement of unemployment and redundancy, both short and long term, and re-education and re-deployment of manual and intellectual skills, represents a formidable social and economic challenge at almost every level of society.

10. To protect the sustainability, the settlement pattern should offer an alternative to the work ethic of the industrial revolution as we know it.

11. Any advantage to be obtained from new technologies should be optimised. Disadvantages such as external control and social isolation should be minimised. Technology should be for the benefit of people in the widest sense.

12. The political systems of today, which are tied to a passing industrial age, are inappropriate to the present rate of change, and the coming age.

13. The local 'way of life' offers a diversity which could be important, even vital, to the future of humans on this earth.

14. The 'way of life' of the local population should be given a high degree of priority, and should be encouraged to flourish.

15. The settlement pattern should seek to reverse the emigration of the young by encouraging their local involvement and by offering them the opportunity to establish a sustainable future.

16. The principle of 'community', and a place for everyone within the community, should prevail.

1.9 The pattern of the study: The methodology.

30. The complexity, fragmentation and difficulties of the study.

The wide ranging, dynamic interactions implied in this study presented considerable difficulty in finding a procedure that had any possibility of producing a useful outcome. In the time available for a two year part time study it seemed that conventional research into a chosen specialism would have difficulty in covering the many complexities.

31. Holistic approach and changing technology.

'Patrick Geddes preferred this three dimensional [exhibitions], 'organic means of communication to the more conventional written mode. He admitted that he deliberately left his exhibits unfinished and confusing in order to convey the current status of the city itself."

Marshall Stalley, Patrick Geddes: spokesman for man and the environment, Rutgers University Press, New Brunswick, 1972, p105.

The first year of the study consisted of constructing many charts, and crossing the boundaries of many subjects in an attempt to identify a possible pathway that could lead to a meaningful outcome. The criticism of such writers as Marshall McLuhan and Patrick Geddes may have been due to the difficulties of presenting their essentially holistic subject matter. In an attempt to synthesize the wide ranging complexity of fragmented possibilities, the ideas of Patrick Geddes seemed to offer a useful methodology and philosophy. The study draws attention to connections which could be used to guide the 'way forward'. The result is a recommendation for political action based upon the knowledge gained rather than a conventional academic study.

32. A 'thin slice' of the study.

Ian Ballantyne.

The nature of the study and experimentation with the method of presentation tended to take over until a colleague suggested that the final thesis could be a 'thin slice' through all the areas needing to be considered. This presentation is therefore sliced from a state of flux which inevitably has inbuilt lose threads. The 'thin slice' has been divided into three parts. The three parts have the following generalised relationship:

Part 1: HIGHLANDS AND ISLANDS The difficulties of rural areas	+ + +	Part 2: WORLD CHANGE New technologies	= = =	Part 3: SETTLEMENT PATTERNS Opportunities for rural areas

Diagram 1: The three parts of the 'thin slice'.

1.10 Outline of the chapters.

Chapter 1: Introduction: The search for the way forward.

The need for the study, and its outline. The objectives, assumptions and methodology. In the discussion of a way forward, on the nature of which we can only speculate, one possible approach is to consider the experience of history. The origins of rural settlement patterns together with the rich history of Scottish town making and planned villages has been integrated into the text.

PART 1: THE HIGHLANDS AND ISLANDS:

Whilst part one provides some historical background it is not intended to be a history study, more a 'dipping into the pot' to illustrate the way in which history can provide ideas and guidance for the way forward. This 'method' will be used again in part two. The selected studies, newspaper cuttings, conferences that have been attended, and first hand observation over a period of twenty years, are also used in an attempt to convey a 'feeling' for the character and difficulties of the region. The 'wind of change' in the attitudes of councils and government agencies is identified along with the opportunities which new technologies are offering to accomplish this change, and reverse the long decline of rural areas.

Chapter 2: The social and economic changes in the Highlands and Islands: the evidence for change: migration, the young and social conditions: survey and discussion: Looking to history for experience and guidance.

Rosemary Lumb, 'Migration in the Highlands and Islands', Institute for the Study of Sparsely Populated Areas, University of Aberdeen, June 1980.

Diana Forsythe, Rosemary Lumb, Robert Turner and Anthony Jackson, in Anthony Jackson, editor, 'Way of life: integration and immigration', Social Science Research Council, 1980

Tourism and Recreation Research Unit, University of Edinburgh, Research report 22, 1977.

A surge of interest in the effects of the oil industry upon the Highlands and Islands of Scotland provided a fertile source of study for anthropologists and social researchers, and the consequent saturation has resulted in very few studies in more recent times. Whilst it could be argued that some of the research may now be outdated it seems sensible to begin a study, restricted by time and finance, by making use of some of the extant information. Research on migration offers insight into the possible effects in population distribution that could occur due to the new telecommunications network. In particular, the possibility of reversing the emigration of the young, and of encouraging the local 'way of life'. The effects of immigration reported in a major study on the oil industry became relevant when a current major immigration of urban population was identified.

The selection of important points from these works is set out under headings which have been identified as the main difficulties in the Highlands and Islands: Migration; The young; Social conditions; Way of life and human interactions (communications) in this chapter. The evidence from the migration studies highlight the difficulties of an urban population migrating into a rural area of very low population.

Chapter 3: The social and economic changes in the Highlands and Islands: the evidence for change: amenities, political policy and a survey of teleworkers: survey and discussion: Looking to history for experience and guidance.

This chapter continues with further social and economic difficulties under the following headings: Amenities: recreation, transport, housing, land, tourism and employment; and Political policy. Except possibly in Aberdeen, and to some extent Inverness, the oil industry, which was seen as a bright hope by the government, has not provided the expected benefits to the Highlands and Islands of Scotland. The result is that rural areas are seen as playgrounds for the more affluent city dwellers, and are degraded to a dependency upon the fickle trade of tourism.

A pilot survey of 'teleworkers' was carried out with British Telecom to begin identifying the effects of telecommunications. In the absence of the necessary resources to conduct a full survey, a collection of press cuttings was made during the research period. These give evidence of change, and also illustrate the general attitudes of the population and are a useful source of public and professional opinion on the subject.

Chapter 4. The British Fisheries Society, and the Hydro Board: survey and discussion.

The British Fisheries Society, and the Hydro Board provide two examples of socially oriented bodies which have attempted to improve the condition of the Highlands and Islands. They provide valuable insight for the way forward, and a possible parallel between the provision of electricity as a social necessity and a similar possibility for telecommunications. The difficulties of administering the British Fisheries Society from London, by people outside the communities demonstrates the need to devise a self-determining community structure.

Chapter 5. Trends which indicate the way forward: survey and discussion.

During the period of research, several new initiatives pointed to the way forward. Whilst these initiatives have the potential to improve the quality of life, many also have the potential to increase the control of rural areas and their population. Change depends in the end upon a political will, and it has been particularly encouraging to observe an atmosphere of change in the attitudes of councils and government agencies towards communities. Whilst mistakes are being made there remains a commitment to change. Some of the initiatives are reviewed in this chapter as support to the diagnosis and hypothesis in later chapters.

PART 2: THE WORLD VIEW:

The immediate past has provided little opportunity for improvement in the situation of remote areas. They have generally been excluded from taking part in world affairs, and their livelihood has simply been absorbed into the metropolitan regions. New technologies operate on a global scale, and are identified with the ethos of the cities. It is therefore necessary to investigate the nature of the interaction of these new technologies with human life to discover how they could help re-integrate the rural communities into the general global structure.

Chapter 6. Global change.

The importance of trade, the effects of Western civilisation and the position of world politics may become major influences on the Highlands and Islands. The ever increasing rate of change in global settlement patterns towards a 'knowledge based globe', 'global power', and a 'global war of finance' between 'global cities' and 'global corporations' may point to the future. A concept for an alternative 'world village' is introduced. The idea that rural regions, like the Highlands and Islands of Scotland, could now play a major role in shaping the future is an exciting proposition.

Chapter 7 Technological change: The opportunities for cities and rural communities

Significant changes affecting a whole 'way of life' have been identified as revolutions, and those of the past have been 'driven' by inventions affecting transport communications: water, rail, road, and air. The 'advanced telecommunications' of today are non-physical in terms of transportation; they are instant and have the potential to affect the lives of people all over the world. Occupations and human contact via telecommunications, contrary to some expectations, may result in a richer human lifestyle.

The indications are that there is a change in emphasis from industrial production of goods to the importance of information and 'knowledge'. Knowledge can be 'transported' via telecommunications with far greater ease than manufactured goods. A 'knowledge future' provides a link between appropriate occupations for the educated young in rural areas, and a possible solution to their emigration from remote areas. The 'distance reducing' and 'global' nature, of digital telecommunications could offer the communities of the Highlands and Islands a new opportunity to be involved at fundamental levels and in a diversity of ways.

Chapter 8 Settlement change: survey.

Settlement patterns of the future may no longer depend upon a river crossing, a junction of road or rail transport, or coal resources. With telecommunications, settlements can be wherever it is desirable for humans to live. The increasing pressure from city dwellers for less stressful life styles, the increasing population, and the constant battle to make cities healthier has already turned attention in the direction of rural areas. The diversity of potential of the new technologies to rapidly change settlement patterns is illustrated by contrasting their effects on the Japanese 'technocities' with the Scandinavian 'telecottages'.

Chapter 9. Change in the decision making structure: diagnosis and hypothesis.

The evolution from the mechanical age to a technological age is part of a complex web of changes in life-styles and town planning. More paradoxically these changes which could involve the rejection of contemporary town planning orthodoxes have the potential to create a new role for planning that is more appropriate to a population closely involved in its own future. After a diagnosis of the dilemma of the processes of decision making, a hypothesis is offered for avoiding the difficult relation of decision making and the determination of the future. This hypothesis is an essential part of the model for settlement patterns to be outlined in Part Three.

PART 3: The Settlement Patterns: diagnosis, hypotheses, model and thesis.

To demonstrate a possible way forward from Part Two, a return is made to the specific case of the Highlands and Islands introduced in part one. A diagnosis is made of the varied trends in settlement patterns, none of which appear to satisfactorily meet the requirements for the way forward. This leaves the way open to suggest a hypothesis for an alternative settlement pattern based upon the objectives, assumptions, survey, discussion and diagnosis of parts one and two, and the hypothesis for a new decision making structure in part two. The establishment and testing of the model is also discussed.

Chapter 10. The current trends: diagnosis.

Refer to paragraph 1.8 The Assumptions.

Here is given an outline of the current trends in the settlement patterns with some of the disadvantages and advantages. All of the current trends appear to be based upon the settlement patterns of a previous mechanical age, and any one of them could grow to dominate. None of the identified trends appear to meet the objectives of the study.

Chapter 11. A model and hypotheses for a new settlement pattern.

In the absence of a suitable settlement trend that could avoid the social difficulties of the previous industrial revolution the previous chapters are brought together to propose a built environment that is complementary to, and as desirable as, the natural environment. A settlement pattern, based upon the way of life and diversity of small communities, that embraces the concept of respecting the architecture of the past while encouraging an architecture of the future.

Chapter 12. Establishing a new settlement pattern.

To establish the hypotheses of the proposed settlement pattern, a method of implementation is required. The need for a basic technological and knowledge framework is developed into a non-conventional 'University of the Highlands'. A network that is integral with the life of the new communities and supportive of the local 'way of life'.

An opportunity presented itself that could underpin the concept of the new settlement pattern. The Royal Society for Arts and Manufactures, who organised the Festival of Britain, had advertised for an idea that would celebrate 2001 in a way that was 'different', and would point to the future especially for the youth. The Festival of Britain also had links with new communities and the changes in approach in the intervening years makes a useful connection to this study.

Chapter 13. Conclusions

The conclusions to Section 1.6 'The questions to be answered' are summarised by reference to the chapters of the text and the knowledge that has been gained in each.

Appendix A2. Testing the hypothesis for a new settlement pattern.

Help from Ian Ballantyne in concluding that the principles could be lost in architectural style.

Testing the hypothesis presents a dilemma. The model could be compared with the needs identified in Chapters Two and Three: 'Evidence for social and economic change in the Highlands and Islands'. In the dynamic complexity of a real situation the circumstances may be different. It had been the intension to apply the model to a particular case in the Highlands and Islands, until it was realised that such a theoretical paper study would endanger the principles being lost in an exercise of architectural style. There can be no true test of the model until an opportunity presents itself to carry out the hypotheses. An evolutionary process is built into the model so that experience can guide the way forward. The best test may lie in the inbuilt nature of the model with its major components deliberately designed for diversity, and in particular change in that diversity.

After writing the draft thesis an alternative justification for the model presented itself. The identification of the accelerating rate of change in Chapters 6 'Global change' and 7 'Technological change' appeared to be making its mark with events that were overtaking parts of the study. Rather than altering the thesis at this stage, these changes are presented as a part justification for the hypotheses.

1.11. A note on the format of the presentation.

33. A window on the world.

Refer to paragraph 238. Fragmentation and mono-globalisation.

Technology, in the form of television, has been made use of as a 'window onto the world'. This is referenced in the following format: the three parts of the study are marked by red title sheets and the chapters by blue title sheets. The format of the pages consists of a main column of text and **section headings in larger bold type** with numbers that correspond to the chapter numbers. *References in small italic type* to television programmes, books, journals, papers, and newspapers appear without numbers in the left hand margin alongside the appropriate paragraph. This left hand margin is also used for the 'side notes' in small sized normal type which would more usually appear at the bottom of the page.

34. The left hand margin is also used for **paragraph identification in small sized bold type** sequentially numbered throughout the work. These have been placed in the margin so that they do not break up the text. They are intended for indexing and referencing rather than as part of the text to be read. One of the themes of the study is that fragmentation should be overcome by making links, and the sequentially numbered paragraphs are therefore interwoven with 'Refer to paragraph ... ' in small normal type, also in the left hand margin. The intention is to illustrate that links do exist, and not for the reader to execute the referral unless the reader so chooses. Paragraphs contained in a box are 'key' points to the thread of the argument, and they are intended to provide an outline of the study on their own.

A summary of references is given in a bibliography at the end of the work. An appendix contains information referred to in the left hand margins of the text.

PART 1

THE HIGHLANDS AND ISLANDS

" ... breaking all the usual rules of these trivial and media-manipulated days.
A Gaelic poet, modest, generous, ...
he ponders long and hard and answers slowly and carefully:
Sorley always answers slowly and carefully,
his thoughts picking their way through his beautiful elongated
Hebridean vowels.
'I think it must come out of one's own experience,'
he says, or sings. ...
Rooted in a rich and ancient [oral] culture,
he reaches out into the 20th century world."

Catherine Lockerbie: the genius of Sorley Maclean, The Scotsman, 1.2.91.

CHAPTER 2.

THE SOCIAL AND ECONOMIC CHANGES IN THE HIGHLANDS AND ISLANDS.

THE EVIDENCE FOR CHANGE.

MIGRATION, THE YOUNG AND SOCIAL CONDITIONS.

SURVEY AND DISCUSSION.

There is nothing new, revolutionary, or utopian; it has all been said before.

"All new ideas spring from old ones, and like children are small and inexperienced when young. Nor is it easier with ideas than it is with children to say how they will develop or which among them will become of great value to the world."

The task is to put together the wisdoms of others and apply them to today's situation.

"We have by no means found our culture. The last hundred years were full of trials and errors of which perhaps we have not yet properly tasted the fruit, which is to ripen in the hundred years to come."

Maxwell Fry, Fine Building, Faber and Faber, 1944, p. 47.

2.1 'Rural to Urban'.

35. The evolution from 'rural to urban'.

Experiences of living in Balloch for ten years, and then Kirkhill for five years.

The sequence of changes as the urban populations move into the rural areas can be observed. Orkney, Shetland, and the Western Isles are experiencing the earlier stages of change. The eastern areas of the Highlands within fifty miles of Inverness are experiencing a more advanced stage, exemplified by the village of Balloch five miles to the east of Inverness. The post office, the village shop, and the community centre have been taken over by incomers. Within ten years the village had been swamped by large housing estates with a population that often moved every two years. The elderly locals had no part in this process of change and many of them are now deceased.

36. A repeat of Wales.

Experience of living in North Wales in the 1960s.

Experience of Elizabeth Smith who has discussed these topics whilst working in different communities within thirty-five miles of Inverness.

Refer to paragraph 49. White settlers.

A repeat sequence of the changes is now observable in Kirkhill some seven miles to the north west of Inverness. In other villages, where the takeover is not so complete, there is a change in attitude by the locals who 'have had enough'. They have changed from being warmly welcoming to describing the incomers as 'white settlers'. This attitude may be similar to Wales, another Celtic country where the same process of change was observed some twenty or thirty years ago and where the locals are, justifiably, hostile to the incomers. Is it inevitable that rural areas become urbanised and lose their own rich identity in the process?

37. Increasing pressures from European Megalopolis.

David Hall, Director of the Town and Country Planning Association, 'Nudging the Pendulum', Town and Country Planning, March 1991. p 71.

The potential for immigration is demonstrated by the requirement in England for two million new homes before the end of the century. There is a demand from people currently living in high-rise *" ... for a dwelling with a front door at ground level and some private open space around it."*

2.2 Previous Studies.

38. Guidance from the repetition of previous events.

To search for the likely effects of new technology on the people of the Highlands and Islands of Scotland, and upon their settlement patterns, may appear to be 'star gazing'. In practice, most changes are repetitions of previous change in a new disguise. A review of some of the many studies of previous change can therefore provide a grounding upon which to base an understanding of new changes.

39. A data base of information.

Tourism and Recreation Research Unit, University of Edinburgh, Research report 22, 1977.

Referred to as the 'oil report' in this study.

The impact of the oil industry upon the population of sparsely populated areas is probably one of the most studied social subjects of recent times. The Tourism and Recreation Research Unit of Edinburgh University sponsored by the Highlands and Islands Development Board (now the Highlands and Islands Enterprise, HIE.) and the Commission of European Communities made a comprehensive study that provides a data base of information about the Highlands and Islands for future use. The scale of the survey is far beyond anything that could be contemplated by this small study and it provides a useful identification of the difficulties and needs of this rural population.

40. The oil study remit and conclusion.

Ibid. Preface.

The remit of the study was to provide information and ideas on the provision for recreation in the Highlands and Islands *" ... as a basis for urgent action in oil-affected areas."* The preface concludes that *" ... the Research Team has no doubt that the communities in these areas, facing problems not of their own making and suffering from generations of neglect, can justifiably be considered special, and argue that the areas be classified as Priority Areas for Leisure Provision."* The report set an objective for development to be *" ... compatible with existing cultural patterns and identities, though it must be recognised that some change is inevitable and may even be desirable."* Whilst there is no substitute for first hand experience, the many studies together with some newspaper cuttings may convey an idea of the importance of the local way of life.

2.3 Migration

41. Rural decline and migration change.

Huw Jones, 'The human resource' in P Selman, ed., Countryside planning in practice: the Scottish experience, Stirling University Press, 1988, p. 35, 40, 42,

Refer to paragraph 610. Redundant jobs.

Perhaps an impact far greater than the oil has been the effects of migration, particularly of the young. Hugh Jones refers to the *"downward spiral"* of employment, services and population, often accompanied by community debilitation and demoralisation. The statistics show that it is the variable rate of in-migration to the remoter rural areas that determines the migration trend. Despite the recent population increases the smallest settlements have continued to decline, due to their exclusion from the planning strategies. The reorganisation of local government in 1974 has also accelerated the growth of Inverness and Stornoway.

42. The fragility of concentrated population growth.

Ibid. pp. 42-44, 46.

Between 1966 and 1977 there has been a growth in manufacturing of seventeen per cent in outlying regions compared with a decline of thirty four per cent in Glasgow. This change is due to the new communication technologies, advantages of land, taxes, regional development incentives and the costs, turnover, *"flexibility and docility of labour"*. This continuing growth of population in rural areas is based upon a potentially unstable, externally controlled development exemplified by the often quoted closure of the aluminium smelter at Invergordon, the pulp mill at Fort William, the atomic energy in Caithness and the continuing vagaries of the oil industry.

43. The disruption of short lived boom industry.

Ibid. pp. 44, 46.

Only nineteen per cent of the workers at the Fort William pulp mill had been locally born. Fifty five per cent had moved to the area for work and twenty five per cent intended to remain after the closure. At the Nigg oil yard only one per cent of workers were born in Wester Ross. The three per cent from the Hebrides, five per cent from Caithness and eleven per cent from Sutherland has retained population at the expense of a further decline of the remoter areas and a disruption of family life for those who 'commute' enormous distances. *" ... oil developments cannot be expected to contribute to long-term growth or stability in rural Scotland."*

44. Anti-urban migration.

Ibid. pp. 44-46.

D A Dillman, 'Residential preferences, quality of life and the population turnaround', Journal of Agricultural Economics 61, 1979, pp. 960-966, in Ibid.

D E Forcythe, 'Urban incomers and rural change: the impact of migrants from the city on life in an Orkney community', Sociologia Ruralis 20, 1980, pp. 287-307, in Ibid.

H Jones, N Ford, J Caird, W Berry, 'Counter-urbanisation in societal context: long-distance migration to the Highlands and Islands of Scotland', Professional Geographer 36, 1984, pp. 437-444, in Ibid.

A growing preference for small community living that has increased commuting by the more affluent to the more accessible rural areas. Affecting more remote rural areas is migration due to " *... an anti-urban, pro-ruralist direction stemming from growing dissatisfaction with the work structures and normative lifestyles associated with metropolitan economies.*" People are prepared to exchange material advancement, job status, earnings and living standards for quality of life, and environment. They buy farms and housing vacated by the migrating local population; they take on jobs as postman, shopkeeper, joiner, and occupations that are not traditional to the locality. This revitalisation was welcomed by the local people until friction grew from the differing values of behaviour.

45. A National view is inappropriate.

Tony Vogt.

Rosemary Lumb, Migration in the Highlands and Islands, pp. 221-222.

Refer to paragraph 116. Political agenda are not solutions.

The reversal of migration trends is not unique to Scotland, in Northern Norway it is attributed to improved services, communications and employment rather than the rejection of urban values which is thought to be the reason in the United Kingdom. A tutor with experience of Norway suggests that the British government is uninterested in a few people when compared with a total population of 54 million. In Norway a few people is significant to a government with a total population of only 4 million. In the Highlands and Islands there is a desire to attract inward investment for hundreds of jobs whereas in Norway the local creation of 20 jobs would be of national interest.

46. Interpretation of statistics.

Huw Jones, 'op. cit. pp. 33, 35

H Jones, J Caird, W Berry, J Dewhurst, 'Peripheral counter-urbanisation: findings from an integration of census and survey data in northern Scotland', Regional Studies 20, 1986, p. 25.

Population change is used as a reflection of social and economic well-being for policy decisions, and Huw Jones summarises the methods of defining rural areas. There are significant demographic differences which makes a common planning policy inappropriate to economic and social difficulties. The statistics from 1984 indicate a selective migration of low proportions in the 16-24 age group and high proportions in the over 45 age group, and a high proportion of children.

2.4 Migration: settlers.

47. The lost population of the Strath of Kildonan.

IA Fenton, 'The traditional pastoral economy' in M L Parry, T R Slater, editors, 'The making of the Scottish Countryside', and Medieval settlement and colonisation', Croom Helm, London, 1980, pp. 102-103.

The now lifeless and empty valley of the Strath of Kildonan had until the early 19th century a long history of a high population dating from the last few centuries B C. After 1746 the more settled conditions and the spread of the potato crop resulted in a significant population increase, and the tenants were encouraged to improve the land so that the land owners could increase the rents. The limited potential of the land together with the failure of the cereal and potato crops in 1782 caused a major famine, and grain that was sold to the dying population put them in debt for many years. Communities were forcibly moved to scattered crofts on less favourable land often exposed to the sea. The population of Kildonan was reduced from 1574 in 1811 to 257 in 1831. There was little appreciation of the human attachment of the tenants to their homes and their reluctance to change to a life of crofting, fishing, and industrial employment in textiles.

48. Kilphedir clachan communities.

Visits to Caithness in 1992 and other areas in previous years.

Robert J Naismith, 'Buildings of the Scottish countryside', Victor Gollancz, London, 1985,

The replacement of the population by sheep farming had a revolutionary effect upon the long established settlement patterns. A direct comparison can be made with the scattered crofting of today by walking through innumerable deserted communities throughout the Highlands and Islands. The characteristic of people living in communities goes back to at least medieval, and further back in history between 500 BC and 130 BC Kilphedir shows the evidence of large groups of 'hut circles' on the valley sides.

The evidence exists on the ground of the more natural settlement pattern of clustered 'touns' rather than scattered crofting.

49. White settlers.

John Macleod, 'The selling of Paradise', The Scotsman, 24.4.91.

Refer to paragraph 57. Incomers improve the balance.

The lost population of the Highlands and Islands is now being replaced by incomers of a different culture, and there are many concerns and many contradictions to the benefits that are claimed. In the 'second home' crisis of the seventies, *" ... cottage after cottage in the Gaidhealtachd was bought up for occasional holiday use and left vacant for much of the year. ... many natives of Skye shivering in caravans amidst wintry ghost villages."* Eighteen per cent of housing in Sutherland is holiday homes, and in some north-west villages the ratio is one in three. In contrast to holiday homes white settlers are *"a collective takeover bid".* Local cynics have dubbed Glendale in Skye 'Little England' and Plockton in Wester Ross is a 'New Sussex'. Ullapool has changed beyond recognition *" ... and the tiny Gaelic community has retreated ... ".* The home made newspapers now proliferating in places like Gairloch *" ... are splattered with alien names leading alien activities. 'Les bourgeois nouveaux sont arrives', and in many communities they have taken charge."*

50. The media and white settlers.

Ibid.

The media have taken great delight in spreading the terminology applied to incomers: *"there are three main species of white settler",* the hippies and drop-outs, burnt-out yuppies who could sell houses in the south-east England to buy a *"wee Hielan' hame"* and entrepreneurs who are *" ... brimming with confidence and stimulating ideas, they can do a little good and a great deal of harm."* The increase of incomers is blamed on the Crofting Act of 1976 permitting the buying and selling of crofts, and the Highlands and Islands Development Board's advertising campaigns for the Highland Communications Initiative, *" ... virtual red carpets for the bonglie entrepreneurs."* and aimed directly at the *" ... one man and his Porsche."* The Highlands and Islands Development Board explain this as *" ... a strategy to make employers relocate."* The pressure on housing has also been greatly increased by the *" ... tourold-influx, but we had that in the first-phase holiday-home attack."*

51. The truth about white settlers.

Huw Jones, 'White settlers mark 2?', in Radical Scotland, 2/3.85, pp 27-28.

A paper by Huw Jones outlines some of the myths of the term 'white settler' used as a *"derogatory label for a colonial type of incomer stereotyped as English, affluent and arrogant. "* They retire to the Highlands and Islands, increase house prices and adopt patronising attitudes to *" 'the natives' "*. Between the 1971 and 1981 censuses the English-born proportion of the resident population increased from seven per cent to nine per cent of the total, and comprised of thirty per cent of the increase in population. This trend is concentrated in particular areas which have become noted as 'white settler camps'. The environmental motivation is illustrated by the thirteen per cent increase in population between 1971 and 1981 of Northern Mull, North West Skye, Gairloch, Lochinver, Dunnet and Rothiemurchus where eighty five per cent of the growth was English-born.

52. A survey of the English escaping society.

Ibid.

A social survey of 367 English families was made in six areas beyond normal commuting distance of urban centres and oil developments. No one was dependent upon the oil industry. One quarter had retired, most had no accompanying children of school age and whilst there was an under representation of the 15-24 age group, the age profile was younger due to the extension of retirement into the 45-60 age group. There were no communal types of household which may have been the case in the 60's and 70's. Whilst the majority had not moved from cities, *"There is no doubt that English incomers are consciously distancing themselves, socially and physically, from the work structures, consumption patterns and lifestyles of middle class metropolitan societies."* 38 per cent were from the south east of England and 37 per cent from the North. 57 per cent replied that they had moved for environmental reasons and 74 per cent had previously visited the area, usually on holiday.

53. Livelihood of the settler.

Ibid.

Before moving 81 per cent of those employed were employees and after moving this had changed to 54 per cent self employed for reasons of job satisfaction, self-fulfilment and the provision of employment opportunities for one's children. Self-renovation of housing is widely practiced. Livelihood was not dominated by *" 'good-lifers' heavily into goats, honey, organic methods and the like."* The peculiarities of large estate management and crofting restricted those involved in agriculture to fifteen per cent. The expected increase due to the 1976 Crofting Reform Act permitting the purchase of holdings at favourable terms had not occurred. This could be worth a review now that some crofts have been inherited by relatives who may not wish to use them. The more recent splitting up and sale of estates may also have allowed a change. Half of the working families were involved in tourism: hotels, restaurants, outdoor sports, and adventure schools.

54. The advantageous position of the settler.

Ibid.

Access to capital, often gained from differentials in housing costs in a move, and the common view among locals of *" ... an English accent and a crackpot scheme ... "* may be prerequisites for grant aid from the Highlands and Islands Development Board. As with Scottish people in other countries, the outsider is sometimes in an advantageous position" *... to see and exploit a development situation ... "* The new *"Green Wave settler"*, unlike the 'white settler', is not motivated by economic gain and exploitation, and the findings of the survey showed little sign of conflict.

55. Deep in the dark Highland days of winter.

Ian Richardson, 'Deep in the dark Highland days of winter', The Scotsman, 28.12.91.

A Highland practitioner on his winter rounds noted that *" ... the old-style ground-hugging crofts with their thick walls and tiny windows, kept their inhabitants in reasonable comfort."* There are many town dwellers who have never *"truly been alone with themselves"* They flee from deep personal problems, only to find that *"they are still there perched on their shoulders waiting."* The prescriptions for antidepressives is multiplying. Depression is ... *"a serious destroyer of attainment and quality of life."*

2.5 Migration: anthropological.

56. Anthropological survey of seven communities.

Rosemary Lumb, 'Migration in the Highlands and Islands', Institute for the Study of Sparsely Populated Areas, University of Aberdeen, June 1980, p. 185.

Referred to as the 'study areas' in this thesis.

Refer to paragraph 52. A survey of the English escaping society.
Refer to paragraph 46. Interpretation of statistics.

A contradiction of the numbers of incoming children.

Seven communities in the Highlands and Islands, Latheron, Glenfinnan, Kinlocheil, Ardgour, Scourie, Eday, and Berneray, have been studied by Rosemary Lumb. The study demonstrates the need to relate statistical data to the communities as an integrated way of life. The study uses the terms 'out-migration', 'in-migration', return of 'out-migrants', and the term 'incomer' for those who have been born outside the Highlands and Islands. Three quarters of the study population have migration experience. Migration is a normal process that occurs in most societies, and in the Highlands and Islands it is selective in producing a population that is aged, and consequently there is also a low birth rate.

57. Incomers improve the balance.

Ibid. p.197.

Incomers to the study areas have a significant proportion of young adults, and therefore improve the local age-sex structures of communities. Most families of incomers have migrated after *"considerable forethought and effort"*, and therefore may represent a continuing beneficial change. The greatest population increases are occurring in Inverness and there is a need for more localised schools to encourage incomers to the remoter areas.

58. Disillusioned incomers.

Diana Forsythe in Anthony Jackson, op cit. pp. 73-75, 39-43

Diana Forsythe in her study of mainly young, middle-class English families as city migrants into Orkney found that although the demographic balance was improved the incomers would eventually outnumber the (older) Stormay folk, and the native school children were speaking English rather than their own language. The escape from the 'rat-race' of the 1960s resulted in a *"6,000% increase"* in house and land prices, and the disillusioned incomer now finds it impossible to sell at the inflated prices and ends up remaining where he does not want to stay.

59. The significance of incomers.

Rosemary Lumb, op cit. pp.197, 201.

The completely different cultural background of the incomers *" ... poses a threat to the cultural homogeneity of Highlands and Island communities and to traditional modes of organisation."* In the most extreme case on Eday the largely English incomers, who arrived in a short space of time, remain separate from, and culturally different from the 'Eday folk'. In Ardgour the incomers have been absorbed since they arrived over a longer period of time and the local population has also experienced migration themselves. Incomers are recognised for reversing the decline, and as long as they come *"to participate in local life and not intentionally to change it ...* [they are] *received quite warmly."* Local residents are particularly pleased to see young people.

60. Wrongly perceived determinants of migration.

Ibid. pp. 213-218.

With the decreasing number of crofters the social aspects of mutual aid and co-operation no longer outweigh economic benefits. Lack of services affected migration only in extreme cases where *"even public transport is practically non-existent."* The study areas showed that the factors commonly believed to affect migration: crofting tenure, educational provision, the degree of isolation and the oil industry, were not important in determining migration.

61. Employment and returning migrants.

Ibid. p. 203, 194-195.

Personal experience agrees with the idea of the job enabling a choice of place to live.

Skills surveys have become very 'popular' by Highlands and Islands Enterprise, British Telecom, and Local Enterprise Companies.

The most important influence on migration is employment, and for many incomers the job is merely a means to move to a desired environment. The consequence of this is that many take on employment that does not use their qualifications or experience. Often it is only one partner that obtains employment, and the findings of recent 'skills surveys' have revealed a considerable under employment, particularly of women. Many areas could therefore absorb increased opportunities without a population increase. There are out-migrants who are *"positively seeking an opportunity to return"* Returned migrants have evaluated different ways of life and may have chosen to return *"thus putting a positive evaluation on the home community"*.

62. Loss of the elderly from the community.

Conversation with Islanders in 1991.

The changing community structure no longer looks after elderly people, and conversations with people from Orkney and Shetland revealed that the apparent choice to move into the larger towns is due to the unavailability of sheltered housing in their own community. This is creating unnecessary migration and change in the social structure. Centralisation is also occurring with young couples due to the availability of housing in the towns rather than the scattered communities.

63. Migration and integration.

'East: the fire next time', BBC2, 9.10.92.

It is difficult to reach a conclusion about the best way forward to minimise the negative effects of migration. A recent television programme about Blackburn, Lancashire, may offer some clues. the local people moved out of the area in which the incoming population from India and Pakistan tended to live together. As the immigrant population grew the differences between them became increasingly magnified, and they also split into distinctive identities related to the customs of their countries of origin. As it is the youth that make the moves towards integration, it may be several generations before this occurs. The difficulty appears to be in both the absolute and relative size of the different cultures.

64. Buffering the impact.

Refer to paragraph 83. Local identity and the awareness of different views.

Refer to paragraph 51. The truth about white settlers.

Refer to paragraph 36. A repeat of Wales.

There are parallels between Blackburn and the common usage of the term 'white settler camps' in the Highlands and Islands. It may therefore prove wise not to oppose the trend.

A positive approach to encouraging increases in population to settle in new settlements could reduce the distress in the relatively small local communities, and the rate of integration could then take a more normal course.

2.6 The young.

65. No escape for the young, security for the elderly.

Conversation with Western Isles minister, 12.91.

Rosemary Lumb, op cit. pp. 192-193, 218.

It was confirmed in a conversation with a Western Isles minister that for some young people out-migration may be motivated by the simple need to "get away". Young people are left little chance to escape from adult observation, and the constraints of traditional values, in small close knit communities. The elderly see their environment as preferable to the *"unfriendliness of urban life"*, they feel that for the young people 'there is nothing for them here' and that 'they have to go to find work'. The youngsters experience the lack of opportunities to meet with others of their own age and find it *"particularly stifling"*. The mass media and the network of relations provide constant reminders of alternatives. In particular, the media's representation of urban life is geared to appeal to youngsters, and is in sharp contrast to their rural life. *" ... rural children do not live in isolation and ignorance of the world beyond their home community, "*

66. Migration of the young, housing and employment.

Ibid. pp. 191, 193, 195, 208.

Young people genuinely want to help themselves, and very few live off social security. In most areas young couples are forced to move elsewhere to find homes of their own. As the demand by the young to remain in or return to rural areas increases, along with the demand from incomers, housing is likely to be an increasing difficulty. Despite the lack of facilities, and home difficulties:

> Many more youngsters would stay or return *" ... if employment or housing opportunities increased ... "*.

67. Tourism, crofting and a pressurising system.

Ibid. pp. 203., 215.

Refer to paragraph 601. Assynt crofters.

John Macleod, 'Dead drunk: the lost generation of Stornoway', Glasgow Herald, 18.12.90.

The employment of over qualified young people in the tourism industry may be undesirable as well as having an undeniable effect on migration. Currently youngsters who would normally have left the Islands can no longer find work on the mainland due to the recession. They now have no alternative to remaining at home with little prospect of work. They are attracted to Stornoway where *" ... 'social drinking' of the mainland variety is largely confined."* Youngsters with short-term cash from occasional work at the Arnish fabrication yard at Stornoway, along with ill-suited government employment schemes, results in teenagers from Barra and South Uist *" ... lonely and ill-paid in Stornoway, uprooted from the restraints of home."* Lewis teenagers are *" ... pressured into alcohol abuse by the system, ... "*

68. Cultural division and the media.

Ibid.

Since the building of the Eitshal television mast in 1976 the fluency of Gaelic, which was universally spoken by young Islanders, has fallen sharply. Linguistically alienated from their middle-aged parents with *"Anglo-American values"*, they are now 'Westernised' in a new need for external stimulus and entertainment. The social impact of Calvinist evangelicalism has created a double community of the *"converted and unconverted"*, in a *"conflict of two cultures"*. In practice, it is a three way split of language, television and the church over and above the difficulties of 'growing up' and unemployment. The Western Isles Council budget share for leisure and recreation spending is one of the lowest in Britain, and it is the community itself that has taken the initiative to start late night cafes and clubs where young teenagers can enjoy each other's company.

69. The alien media culture.

Marshall McLuhan, 'Understanding Media: The extensions of man', McGraw-Hill New York, 1964.

Observations:

Many visits to homes in the Western Isles.

Questioning of Urban life:

Patrick Geddes Summer Meetings, 1991 and 1992.

Marshall McLuhan has alluded to the effects of media on different cultures. The implications are difficult to interpret in the case of the Western Isles since the interactions are complex. According to Marshall McLuhan, media like television should be more acceptable to an oral culture, and this was confirmed by observation in the Western Isles. The evidence also suggests a change towards the fragmented urban culture which is alien to the rural areas. This is disturbing at a time when the values of urban life are being questioned.

70. Education suited to local social needs.

'Rosemary Lumb, op. cit. p.213.

Praise for the teachers', Stornoway Gazette, 12.12.91.

Refer to paragraph 225. Global labour force changed at the whim of economics.

Whilst the location of secondary schools is a source of unhappiness to families where their children have to stay away from home, there was no evidence to suggest it affected migration. The Sir E Scott School has been acclaimed by Her Majesty's Inspectors of Schools *" ... as a well administered and vigorous place for children to learn, and, as important, to learn to enjoy learning."* Educational thought is abandoning 'the big is best' policy which ignores the social consequences. Children can be properly taught in places not too big *" ... to destroy any chance of proper relationships between teacher and student ... "*. Telecommunications can aid these smaller schools and reduce the need for families to move about the country to suit the convenience of industry.

Education could be free to meet the local social needs instead of the 'standardisation' of children to compete for the same, often non-existent, jobs.

71. Emigration of the young and city life.

Douglas Fraser, 'Population of Scotland is showing a net return', The Scotsman, 1.14.91.

Oil report, forward, pp.. 14-15.

Rosemary Lumb, op cit. p. 208.

From interviews with school leavers, Stornoway, December 1991.

Despite an increase of thirty per cent in immigration to Scotland there is still an out-migration of the young which the oil industry report identified as the root difficulty of remote rural areas. The oil report recommended an adequate leisure environment for young people which could simply be the *"liveliness of human contact"* and *"other people their own age"*. The past fifteen years have failed to integrate the 'life cycle' and stabilise the rural areas. The young are educated for 'jobs' that do not presently exist in their home area.

Little short of the contradictory notion of establishing a 'city life' in remote rural areas would encourage the young to stay.

2.7 Social conditions: 'Way of life' and human interactions (communications).

72. Diverse character and identity, family kinship and community

Oil report, pp. 18, 14-15, 231.

The oil study observed the different character and identity of each area of the region within a deeply rooted historical context that has suffered from centralisation. The oil study acknowledges *"the persisting strength of family kinship and community"* in the face of rapid economic and social development. Interviews with the oil workers in Shetland, showed a polite relationship with few attempts by either group to mix. Shetlanders were seen by the oil men as being *" ... very old fashioned and uncultured"*, and the islands were seen as *" ... desolate, possessing the additional handicap of an appalling climate and a lack of facilities."*

73. The clash of local and national values.

Robert Turner in Anthony Jackson, editor, 'Way of life: integration and immigration', Social Science Research Council, 1980? p.72.

Family kinship was also a finding of Robert Turner in his study of incoming power-station workers. The council housing was run as a *"large kin-group"* owning communal property which they shared out amongst themselves. Once the power workers had obtained a council house, and their children attended the local primary school, they were accepted as members of the community. *" ... this automatic entry into the community ... "* is being lost by the abolition of the residence requirement and the bureaucratic (impartial) attitude of the new District Council. *"The real clash in values is between local and national values."*

74. The clash of class.

Anthony Jackson, op cit. pp.82-83.

Migration to the remoter rural areas is selective in class, education and employment status which is often different to the locals. In urban areas different class does not have the same significance since there is sufficient population for classes to 'stick together'. In small communities, any class differences are brought head on with each other and the friction of *"whose view shall prevail"* is the inevitable result.

75. The gossip chain.

Diana Forsythe in Ibid. pp.82-83.

In urban areas the presence of incomers is immaterial since the greater majority of people are unknown, and one's *"bounds"* are socially determined. In a small community where everyone is known the boundary is geographically determined. The important social communications between the inhabitants - *"the gossip chain"* - falls between the different values of the indirect Orcadian and the assertive and articulate incomers. This failure is most evident in clashes over the running of local organisations.

76. Informal collective decisions are overridden.

Ibid. pp. 38-39.

From personal experience this difference of values is very strong in villages near to Inverness.

Collective decision making in the Highlands and Islands is by *"non-leadership"* and *"informal consensus"* rather than by voting and public debate. The test of time has established their way of selecting the most suitable person. For example, Stormay folk do not draw attention to themselves, or exert authority over others in public. People who make a practice of public confrontation are considered *"very unpleasant."* Islanders rarely volunteer for positions on committees: *"suitable individuals reluctantly allow themselves to be persuaded to take them on, so that positions are filled without anyone 'pushing himself forward'."* Urban migrants, on the other hand, tend to seek out positions of public authority and consequently incomers dominate the leadership positions.

77. Fragmented incomers.

Ibid. pp. 38-39.

Incomers, with their fragmented culture, can not understand a system that is different to their own and claim the Orcadians are indecisive, *"fearful of criticism, ... inarticulate or even backward"*. These islanders have an oral tradition so it is difficult to see them as inarticulate. Typical of the incomers' mentality is to feel they are doing the community a favour, and the islanders respond to this with *"silent non-cooperation"*. Despite their claims to appreciate a rural life, few of them *"seem to know or care"* about the local way of life, and they are fixed in their own *"back to nature"* venture rather than the value of the rural way of life itself.

78. Lack of understanding.

Oil report, p. 238.

At Lochcarron the incomers hardly noticed the appearance and attractions of the area, and the locals had a non-committal acceptance of the situation. Oil-related workers knew little of the local life-style and may have seen them as *"an urban population with urban life-styles."* Many of those who found the local people friendly may have *" ... failed to distinguish between true friendliness and the common courtesy ... "* of Highlanders.

"Only one saw the local people as having a unique set of values and attitudes to life."

79. The insensitive imposition of urban immigrants.

Diana Forsythe in Anthony Jackson, op cit. pp. 43, 73-74.

For the domination of urban culture over rural culture see also:
Joan McAlpine, 'Gaels in a storm as incomer wins museum post', The Scotsman, 20.4.91.
Joan McAlpine, 'Islanders angered by 'insensitive' incomers', The Scotsman, 22.4.91.

For the boarding out of city children in the islands:
Roger Hutchinson, The Scotsman, 23.2.91.

Incomers remind each other of the life they think they are escaping and continue in the *"fantasies"* of their own *"private fulfilment"* that is characteristic of the *"holier-than-thou"* attitude of urban life. Strangers are seen to contribute little to local life, and they may not care about the effects of their behaviour on the island. If they do not realise that they *"ride roughshod over the interests and sensibilities of the islanders"*, the continuation for a decade is *"massive blindness indeed."* Diana Forsythe observes the *"underlying irony"* of insensitive incomers who impose a change on their perceived ideal community in their quest for a *"rural setting for their urban values."*

80. Human resources and change.

Oil report, pp. 107-8.

Human resources are critical in isolated areas of limited resources, and a strong tradition *"of self-help and interdependence within the community"* prevails. Such traditions have been *"weakened by the loss of natural leaders through emigration"*, and changes in work.

81. Community life?

Rosemary Lumb in Anthony Jackson, op cit. pp. 78-80.

An elderly lady in Balloch had a system of taking prescriptions into the town. It was done in a very quiet unassuming manner so that only those who needed the help new about it.

Rosemary Lumb found the greatest sense of community in Glenfinnan where there was a high proportion of incomers. The amount of activity in a community centre is a questionable way of judging *"community spirit"* since incomers have an attraction to seeing themselves leading voluntary activities, whereas locals tend to get on with voluntary services and neighbourly help in a quiet and practical way. *"By and large the provision of village halls throughout the Highlands was a waste of time and money for only the incomers bothered and the local majority spurned this provision and went its own way."*

82. Independence and dependence.

Diana Forsythe in Anthony Jackson, op cit. pp.40-41, 75-76.

A key to the local way of life is the *"network of domestic reciprocity"*, which unlike urban systems of dependency through exchange is based upon an independence of a *"free gift"*. The blunderings of incomers to *"improve"* the community is therefore an infringement of local independence, and the incomers can not understand their rejection: *"When they come here they think us delightfully old-fashioned and quaint, but no sooner are they established than they want everything that's part of the rat race."*

83. Local identity and the awareness of different views.

Rosemary Lumb, op cit. pp. 212-213.

Anthony Jackson, op cit. pp.82-83.

Anthony Jackson, ed., Way of Life series, The North Sea Panel, Social Science research Council, 1980.

In Orkney and Shetland there is a deep concern about the threat to local identity and the trend towards cultural uniformity. *" ... notions of cultural protection inevitably smack of Indian Reservations and suggest the probable degeneration of the protected culture."* The social development depends on far more than population stability and increased total numbers. There are no simple solutions and *"it is not possible to legislate a solution but people can be made aware of the different views that are held on both sides of the issue of integration".*

84. An inevitable urbanisation?

Refer to paragraph 50. White settlers.

Mr Andrew Lyon, Glasgow City Council, 'World Health Organisation Healthy Cities Movement: Patrick Geddes Summer Meeting, 1992.

Lisa Curtise, Institute for Behavioural Science, Edinburgh, Deboragh Ritchie, Craigmiller, Edinburgh, The re-investigation of the Peckham Experiment, London: Health in the Family Unit. Dr. Scott Williamson, Pearson and Barlow.

The change from holiday homes to permanent residence by the incoming culture is overriding the local values and way of life. Aided by the new telecommunications which, unlike the oil industry is not restricted geographically, the impact is likely to be more serious in affecting all of the Highlands and Islands. The family kinship and community life, so necessary in the support of rural areas, is suffering from economic and social change. This is particularly disappointing now that cities are realising the importance of the World Health Organisation's message that 'family' and 'community' are primary to health. Incomers may be dreaming of an estate and life of a *'country squire'*, or there could be a lack of available building sites in existing settlements.

The apparent choice of urban incomers to live in isolated locations in addition to the social isolation from the use of the new telecommunications, suggests the wisdom of the warmth of a Highland community settlement as the only way forward.

CHAPTER 3.

THE SOCIAL AND ECONOMIC CHANGES IN THE HIGHLANDS AND ISLANDS.

THE EVIDENCE FOR CHANGE:

AMENITIES, POLITICAL POLICY AND A SURVEY OF TELEWORKERS.

SURVEY AND DISCUSSION.

"The untold want by life and land ne'er granted,

Now voyager sail thou forth to seek and find."

Walt Whitman. (quoted by Ian Ballantyne)

3.1 Amenities: recreation.

85. Lochaber.

Oil report, Introduction Volume A, pp. 4, 267-269.

The oil report made a study of the pulp mill in Lochaber and its effects which became all too familiar in the oil-affected areas. The three large housing estates for incoming permanent workers were of little benefit to the local community and have no provision for recreation. A proposed community centre was subjected to many delays and failed to get finance. An intended joint project for a swimming pool failed to reach agreement and separate swimming pools were built by the education committee and the council.

86. Leisure and facilities for oil workers.

Ibid. pp. 219, 224, 228, table 33. p. 231.

The survey of oil workers showed a need for indoor swimming, canoeing/rowing, golf, salling/boating, squash, skiing, keep fit, sea angling and badminton. Important aspects were *"good fun"*, competition, escape from the day-by-day drudgery or stresses of work, personal development, educational, creative, and local culture. Three-fifths of the oil workers expressed an interest in active pursuits that almost three-fifths of the local residents had no desire to take up. Facilities identified as being needed, in order of requirement (percentage of respondents), are as follows: swimming pool(38), old people's facilities(35), squash courts(34), community centre(33), cinema(33), restaurant(29), youth club(29), children's play area(27), discotheque(25), library(25), play-schools and nurseries(25), theatre(23), playing field(21), cafe(19), dance hall(14), none(8), church hall(8), bingo hall(6), public house(6), village hall(3), other(2).

"In general, the workers were not impressed with the provision of social and leisure facilities on the camp ... or in the local area", and this may indicate that an incoming urban population would require more costly pursuits to be provided than the rural self-provision of activities. Swimming pools have since been opened by the Islay and Jura Community Enterprise, and in Barra after a long battle. There are also swimming pool groups in Mallaig, Lochalsh, and Ullapool.

87. Integration of work and leisure.

Oil report, pp. 18, 21, 261-267.

Refer to paragraph 119. 'Western' values destroy the local 'way of life'

Field evidence from the oil study emphasised the significant difference between the way of life of urban and rural areas. The local 'way of life' has an internal independence that is opposite to the urban dependence upon the provision of facilities and services.

> Traditional communities are characterised by a lack of distinction between work and leisure; leisure activities are intimately related to the patterns of economic life and social interaction predominates.

88. The self-help community hall.

Ibid. pp. 67, 70, 100.

Note comments from Rosemary Lumb on the provision of community centres being more for incomers. Refer to paragraph 79. The insensitive imposition of urban immigrants.

To take care of the changing needs and diversity of communities, a fundamental and sustainable foundation seems to be required from which the recreational facilities could emerge. The resourcefulness of the community is seen as a *"powerful cohesive element"* which is capable of meeting its own needs. The oil report observes that the present contains the legacies of the past as well as the seeds of the future, and concludes that the *"plethora"* of voluntary and community organisations and ownership is of paramount importance. Community ownership generally works well, reflects the nature of social organisation locally and *"commands the respect and support of the community at large."*

89. Integration and the local way of life.

Refer to section 5.7 Community service radio.

Refer to section 7.6 Computer conferencing.

The integration of the traditional self-help community hall with schools, opticians, doctors. community teleservice centres, 'electronic conferencing', 'voice mail', and community radio, could establish a hub of activity. This could cultivate the local traditional links; strengthen the community structure; improve the understanding between cultures; reduce the impact of urbanised incomers; and be appropriate to the young and the local 'oral culture'. This may not be simple to establish, control by the dominant group may work against the *'gossip chain"* that should be cherished.

The integration of new and traditional resources within a community could build upon the local way of life to revitalise the community as a centre within a rural network.

3.2 Amenities: housing.

90. Homelessness and the need to be with others.

Second-home owner hits out over tax rise, Inverness Courier, 28.1.92.

Rosemary Lumb, op cit. p. 208.

Refer to paragraph 66. Migration of the young, housing and employment.

Councillor Jimmy MacDonald said there were 2700 homeless people in Inverness alone. *'They have no home at all ... '* Councillor Roger Winter said it was *"nothing less than wicked that in parts of the Highlands up to 90 per cent of homes lay empty for most of the year. 'It is a modern form of clearances ... ' "* Depopulation of the remotest areas is due to the attraction of other people rather than the lack of amenities. Increases in housing in Latheron, Ardgour and Scourie which enables people to meet the need to be with others, has been accompanied by an in-migration. If local buyers are not given precedence over higher bidders, holiday homes may well *"... become a source of bitter resentment, as is currently the case in Wales".*

91. Insensitive housing.

'Concern over land shortage for housing', Inverness Courier.

The Scottish Secretary Amended the Highland Regional Council's revised structure plan due to the lack of housing land, and the growing concern about the damage to the high-quality environment by poorly designed and insensitively-located houses. New houses in the countryside are to be sensitively located, sympathetic to local building styles and settlement patterns, and designed and constructed to appropriately high standards.

3.3 Amenities: facilities.

92. Location of facilities, bringing communities together for mutual benefit.

Rosemary Lumb, op cit. pp. 27-31, 35.

Oil report, pp.261-267.

The sparsely populated scattered settlement pattern, the weather conditions and long hours of darkness in winter, distance, travel costs and infrequent, or none existent public transport are severe deterrents to the use of facilities. Journeys, often on foot, made many of the facilities out of reach to a large proportion of the population. Inhabitants are prepared to travel ten to fourteen miles to restaurants, swimming pools, squash courts and bingo halls. Cafes and 'local' facilities must be within walking distance. Proximity to work place, home, and other services and the ability to make multi-purpose journeys including shopping, meeting friends, and a break for refreshment are essential. Improvements in social and economic life can be directly related to improvements in transport, and new forms of public transport are needed for contact between the communities.

93. Increasing dissatisfaction with increasing population.

Ibid. pp. 265, 219.

David Scott, Councillor seeks £20m boost for rural areas', The Scotsman, 4.3.92.

The oil survey found that those on low incomes, and those who had been living in the area for over 10 years, including areas characterised by immigration, were more likely to think the facilities adequate. Those with higher incomes were likely to be more critical, and those under 30 were much more likely to be dissatisfied, *" ... the workers in oil-related industries were much more critical of facilities than were the local residents, ..."* Rural authorities lost nearly £10 million in grant aided expenditure to their urban counterparts in recent years, and as people moved out of the cities into rural areas *" ... they were requiring increasingly high levels of service."*

3.4 Amenities: transport.

94. Physical communications, Inverness and roads.

Horizon: California Dreaming: Los Angeles 'car city', BBC2, 11.2.92.

Leopold Kohr, The Inner City, Y Lolfa, Cymru, 1989.

Physical communications are vital to the life of an area, particularly in remote areas where the distances can be very large. Rush hour in Inverness is rapidly becoming the undesirable reality that many other towns and cities have previously experienced. The tendency towards scattered housing in the countryside is now having significant effects on traffic, and single track roads have now disappeared on major routes. It has been the experience all over the world that roads are never big enough - more roads, more traffic, more roads and so on. Supermarkets built in the last few years can only increase the traffic travelling from all parts of the Highlands and Islands, which in population terms, can be seen as one geographically large city.

95. Home is for the human being not the motor car?

Refer to paragraph 405. Texas may help shape Grampian new town.

1.91. Andrew Warren, Director of the Association for the Conservation of Energy. 'Energy planning', p. 22. Harry de Loor, 'Right Business Right Place.' Town and Country Planning, January 1991.

Few would willingly give up their cars, and there is little encouragement for people to try alternatives for at least some of their journeys. In the fourth report on physical planning, the Dutch Government declared that *" ... new residential development must be served by adequate public transport."* The Highlands and Islands are in the enviable position of being relatively unencumbered by masses of outmoded road systems and there is an opportunity to leap ahead and to take advantage of new solutions. Progress is only being inhibited by the combustion engine hanging on for 'its last gasp'. An end to designing housing in relation to the motor car and a realisation that the home, and our environment, is intended for the human being and not the car could ensure the renowned environment continues to be the envy of the world. This in itself could bring significant prosperity, and despite the inevitable difficulties with new systems of transport and settlement, the alternatives do not bear consideration.

96. Trading aesthetics for roads.

Conversation with Highland Region Roads Department.

There are also plans for a network of 'super quarries' in the Highlands and Islands.

The traditional use of stone for buildings in the Highlands and Islands along with aesthetic values have been traded for crushed stone as 'infill' for roads. A conversation with the Highland Region roads department suggests that the preoccupation with roads is likely to be due to a fear of safety by local roads departments. Roads are a significant difficulty in the appearance and well being of the Highlands and Islands.

3.5 Amenities: land.

97. Ownership of the islands.

Brian Pendreigh., 'Owning up to an island mentality', The Scotsman., 19.11.91.

Potier no longer owns Gigha.

About 100 of the 500 Hebridean islands are inhabited. Many are owned by aristocratic families, wealthy incomers and public bodies. Islands like Barra, with a population of 1,500, are owned by one or two principle owners, often under obscure company names. The family who owned Coll have been selling parts of the estate since the sixties, and have now retired to the mainland. Gometra, off Mull, was advertised at offers over £650,000 in August, but bids failed to match the owner's valuation. Potier who bought Gigha (population 150) for £5.4 million in 1989 *"has real power"* owning the island's main businesses. Keith Schellenberg who bought Eigg, with 70 residents in the seventies, is now having to sell following the break-up of the marriage.

98. Estate sales.

Ian Richardson, 'Deep in the dark Highland days of winter', The Scotsman, 28.12.91.

Refer to appendix A2.3 Land.

At least ten estates are either for sale or in the process of being sold, throughout the Highlands and Islands. *"The new owners are likely to be foreigners or even businessmen who see a potential for asset stripping."*

"Points of view, The Housing problem', The Scotsman, 3.10.91.

"No other European country would permit such abuses of property and land ownership. It is time for radical solutions to the problems of rural housing and, indeed, the whole issue of land ownership Scotland."

Highland estate sold for £2m', Inverness Courier, 6.8.91.

10,000 acre Glen Affric estate, acquired by the family of Inverness solicitor Iain Wotherspoon in 1949, was sold to an undisclosed buyer for £2 million as *"a superb Highland sporting estate renowned for its spectacular location and exciting sport".* It is a site of Special Scientific Interest containing some of the last remnants of the Caledonian pine forest.

'Joint bid to buy Black Isle land', Inverness Courier, 6.8.91.

The 14,500 acre Rosehaugh Estate on the Black Isle bought by the Eagle Star Insurance Company in the late 1950's s being sold with an asking price of £7.5 million. Jamie Grant of Roskill House, Munlochy, who owns 800 acres and tenants 200 acres of the estate has offered to buy, and resell it to 50 farming tenants at previously agreed prices. He is suggesting nothing near the asking price, £500-£600 an acre.

99. The changing English countryside.

'The changing countryside', Open University, BBC television.

A series of Open University programmes about the changing countryside in England, provides insight into what could happen in the Highlands and Islands. Instead of the controlled ownership of large areas of land by a relatively few land owners there could be mass tourism and recreation for urban populations. The representatives of American corporations like the idea of doing business in the countryside, and many more companies are now free to set up almost anywhere. A barn is used for producing computer software for controlling international freight shipments around the world. Will this type of use revive the countryside or change it beyond recognition? Areas like the Lake District are dependent upon their permanent inhabitants for their life, and villages that have become second homes and weekend retreats have died.

100. A return to country peasantry.

Ibid.

Wealthy newcomers, who claim to revitalising local amenities, use cars to go shopping, the large supermarkets take the trade from the village shop, and buses and post offices necessary for the locals are withdrawn. Some villages are swamped by commuter housing developments: *"Land is up for grabs for development to house the well-healed incomers, they build on any land, three houses to a chunk of land."* Rich urban families and *'Horsey culture'* are escaping to relatively cheap country residences as *'country squires'*, and are *'killing off'* the normal life of rural areas. A return to the attitudes of *'country peasantry'* and servants with many more masters is a distinct possibility.

101. A free countryside?

Ibid.

There is a deliberate policy, by people who handle vast sums of money and government grants, to keep paths closed off or difficult to use. In Lincolnshire, obstruction is the rule with landowners dominating the council. It should be noted that it is some twenty years since English maps were marked with rights of way that no land owner was supposed to block. A Gallop pole in the Guardian claims that 90% see the countryside as under threat and want a free countryside to wander in.

The pressures on the countryside have become extreme and it is suggested that a change in the system of land ownership is needed. A settlement pattern is required that by its nature protects the use of the countryside for everyone.

102. The necessity of nature.

Fay Godwin, RIAS convention, Aberdeen, 8.5.92. Convention attended.

Richard Mabey, a conservationist, says that in the year 2000 there will be new developments surrounded by wilder countryside. A countryside more like the European wooded villages, more like the Netherlands or Switzerland. In England it has taken a long time to realise the therapeutic necessity of relatively wild places and it is requiring enormous effort and sums of money in an attempt to recreate what nature originally provided free. Whilst human settlement has also changed the landscape in the Highlands and Islands still retains some of the gifts of nature which could be lost in the process of urbanisation. In the evolutionary battle for the survival of the fittest the apparent winner can so easily become extinct.

103. Land ownership.

The control of the Highlands and Islands by a few land owners has generally restricted development, and consequently very little use has been made of the massive land area and resources. There is an anomaly that the demands for housing can not be met due to a lack of available land. Landed estates are now being split and sold for commercial gain, and a change in land use seems inevitable. The sparse population who live on the land have no say in the use of the land and their own future. A way is needed for the people living on the land to determine its future in a way that will encourage its proper use.

104. Change in land use.

There are several possibilities for the change in land use:

Refer to paragraph 97. Ownership of the Islands.

1. Land ownership continues with little change, local people have no say in their futures, and land can not be obtained for people to live on.

Refer to paragraph 98. Estate sales.

2. Land is split up, and sold, for commercial development. The value of the resources will disappear outside the Highlands and Islands, and the local people will not benefit from the change.

Refer to paragraph 99. The changing English countryside.

3. Land is protected for nature, tourism and urban recreation. The attempt to retain the land unchanged leads to an inevitable change as is shown by the pressures on the countryside in England.

Refer to paragraph 434. A return to involvement in the village life.

4. There are several projects awaiting planning permission to divide land into one acre plots. If this follows the pattern of the take-over by the urban rich in England the result will be a loss of rural life in a Highlands and Islands of privately owned 'mini estates'.

David Groome, 'Land Trusts - the conservation potential', ECOS 12(1) 1991.

5. Landed estates that are for sale are purchased complete by a 'land trust', and management is transferred to the local people.

3.6 Amenities: tourism and employment.

105. The Highlands and Islands as a playground.

Refer to paragraph 110. Tourism alternatives.

Employment in the Highlands and Islands is dependent upon tourism due to the insistent promotion by government agencies. Nearly a quarter (the largest proportion) of Highlands and Islands Development Board money went into tourism. The estimated figures for 1990 are 3.5 million visitors of 400 million pounds in value. In 1981 there was 140,500 holiday cottages and second homes in the Highlands; that is 7.8% of all household spaces. In 1981 there was still three per cent (377) of all dwellings without a WC.

106. Short-term short-season tourism.

Rosemary Lumb, op cit.. p. 203.

Ian Richardson, 'Deep in the dark Highland days of winter', The Scotsman, 28.12.91.

Mary Beith, Stretch the legs, exercise the mind', The Scotsman, 12.10. 90 '

Glenfinnan and Scourie are dependent upon tourism. *"This is a Notoriously fickle source of income ... some in a desperate attempt to extend the season, offer B&B, hot bath and colour TV for a ruinous £9.50."* The smaller communities feel the worst effects of the decline. The Highlands now have to compete with the Alps and Scandinavia. David Richardson, Sutherland's tourist officer, is keen to promote crofting holidays in Sutherland, *" ... peat cutting, sheep shearing or real home-grown ceilidhs of the spontaneous kind."*

107. Human museums.

Lifetime experience of Scottish Bed and Breakfast. Discussions with owners.

Marker Museum, Marken, Netherlands, visited in 1985.

Patrick Geddes summer meeting 1991: Edinburgh old town, Howarth the birthplace of the Bronte sisters, loss of cities to tourism in Portugal.

Brugge, Brussels, is covered in a later chapter.

Commercialisation and 'officialisation' have changed the Scottish bed and breakfast beyond recognition and there is no reason to suppose that the same would not happen with crofting holidays. Edinburgh old town is suffering from the 'Howarth' syndrome of a mass marketed attraction which overpowers the local life. Many European cities have experienced this loss to the local population. In the Netherlands at Marken the village and its people have been made into exhibits for tourism, a 'living' museum of a dead 'way of life'.

108. The dilemma of tourism.

Richard Jaques, 'Colin McWilliam Lecture', The Scotsman., 16.12.91.

Tourism is fashionable, and to keep the visitors it has to continually dream up new attractions as more and more countries enter the tourism market. The desperation of marketing men and government agencies will sacrifice the region and its population in the vein attempt to avoid change. Sir John Smith, former chairman of the landmark Trust, is concerned over the growth of the heritage industry which threatened to turn the country into *" ... a massive theme park, with that theme being the past."*

109. Crafts and commercialisation.

Pennie Taylor, 'Pulling the rug from beneath Scotland's crafts', The Scotsman, 28.12.90.

Craftpoint has been a successful promoter of local crafts in the Highlands and Islands. Government policy has now changed it to 'Scotland By Design', and it now exists *" ... for commercial enterprise and must be showing profit within five years."* It has a remit to assist only the *" ... commercial crafts producers who cater for the department store and tourist markets."* Dr. Helen Bennett, SDA crafts division with 2,300 craft businesses: *'The small craftsman who makes individual pieces is often the one with the ideas, generating design innovation that filters down and feeds industry.'* The English Crafts Council stages educational exhibitions, keeping both craftsmen and the public abreast of creative and artistic trends.

110. Tourism alternatives.

Aberfeldy visited in 1992.

Information from Howard Liddel.

'The renaissance of Gaelic Culture', Highland News, 25.5.91. '

Refer to section 12.2. A University of the Highlands and Islands.

The local population in Aberfeldy, Perthshire, have controlled the tourism themselves so that it is limited to the support to the local way of life. Sabhal Mor Ostaig, a Gaelic medium college in Skye, offers the opportunity to learn Gaelic language, music and verse whilst also learning business and computer studies. There are students from Holland. France, Canada, Germany and the United States. Telecommunications could provide alternative occupations to tourism: aid the established non-tourist crafts which are now threatened by government policy; use the human resources in a world centre for the richness of oral cultures; and establish a network of small colleges throughout the Highlands and Islands offering a rich human experience.

3.7 Political policy.

111. Transition to a redundant society.

Oil report.

Refer to paragraph 86. Leisure and facilities for oil workers.

The Oil report concluded that the proper provision of leisure and recreation could protect the traditional ways of life from violent disruption, improve the quality of life for all those living in a beautiful remote area and ease the transition to an industrial society *" ... in their most significant industrial experience ever."*

112. Interference by external policy.

Rosemary Lumb, op. cit. pp. 209-213.

There are many bodies which *"subsidise, protect, improve or interfere with life in small communities."* Policy is seen by local people as something which *" 'they', the external, faceless bureaucrats, impose on 'us', the familiar, subject group."* The important issues of petrol prices, travelling shops and the loneliness of old people remain *"beyond anyone's sphere of responsibility."* Changes in policy greatly affects migration, and makes small fragile communities unusually susceptible to many changing policies formulated elsewhere.

113. Highlands and Islands Enterprise, 'inward investment' and the wrong use of telecommunications.

Frank Frazer, 'Clearer signals for Highland success', The Scotsman, 6.8.91.

Oil report, pp. 15, 148.

Refer to paragraph 85. Lochaber.
Refer to paragraph 45. A National view is inappropriate.
Refer to paragraph 177. 'Juicy' investment.
Refer to paragraph 225. Global labour force changed at the whim of economics.
Refer to paragraph 400. Data processing is short term.

Highlands and Islands Enterprise have identified data processing and account handling operations to take advantage of their telecommunications initiative. *" ... it would not require more than one or two small units being transferred north to represent significant economic expansion. ... 'a small section of just one operation and locate it in the Highlands. ... we are likely to assist them to move there.' "* The government agencies have admitted that *"The mega projects "* attracted to the Highlands have tended to be transient. Telecommunications can be even more transient.

114. Inappropriate 'global' policies biased to the incoming culture.

Anthony Jackson, op cit. pp. 70-71.

Conferences attended, see appendix.

Locally based institutions are essential in *"... ameliorating the adverse effects of national policy at the local level."* In some areas the government agencies are seen to *"aid incomers more than local people."* due to policies biased towards a government 800 to 1000 miles distant rooted in the culture of the incomers. Anthony Jackson suggests that the creation of problems and their resolution by local government departments is not new since *"all bureaucracies need a self-justifying rationale."* Policy planners and makers fail to involve the public and there is never any discussion of the basic values underlying the plans produced. The public enquiry system also fails local issues by involving national policy issues and Planning tends to develop *"global ambitions"* to settle all land issues within their area.

115. Small pots of money for local schemes, threatened schools and farms.

'The changing countryside', Open University, BBC television.

John Prince is a planner in the Peak District National Park where they have Integrated Rural Development to arrest decline in rural communities. *"Small pots of money for small schemes"* from outside agencies is used by the local people in the best possible way for the locality. National schemes do not meet local needs, and these schemes are flourishing in the remote areas of Europe. A threatened local school, which plays an important roll in any community, was helped against the Staffordshire council who wanted to close it.

116. Political agenda are not solutions.

Grant Jordan, 'The limits of planning: The Moray Firth working party and multi-organisational co-ordination', Economic and Social Research Council, 1984, pp. 1, 13, 14, 17, 18, 22, 39.

The Moray Firth Planning report investigates the attempts by government to co-ordinate the many parties involved in housing for the oil industry in the early 1970's. The Scottish Office became involved because the Conservative and Labour Governments wanted to counter the claim from the Scottish National Party *'Its Scotland's Oil'.* The Scottish Office wanted to bring in a national contractor with his own labour at a time when *'Ten jobs was a front page story'.* Industrialisation, seen as a necessity for the area, would produce a dependency relationship in which the profit would return to the central company headquarters and would remain only as long as it was profitable without further investment. Industrialisation would also endanger the viability of existing employment. Ross and Cromarty County Council preferred a *'policy of self help'* in which it could promote local advantages, use local builders, and avoid the difficulties of inter-authority negotiations.

117. Political interest and distortions.

Ibid pp. 47, 3.

There was an attempt by the Scottish office to bring in outside consultants to *"axe building programmes"* which would have otherwise been *"politically difficult".* It suited the interests of all the participants that a *"myth took root"* of the success of joint programming. *"Gustafsson and Richardson have argued that increasingly policies are not to solve real problems at all, but as part of an attempt to manage the political agenda."* The report notes the common finding in research that there is a gap between *"policy intentions and policy accomplishments".*

118. Sparsity of population, council spending and school closures.

Arthur Midwinter and Claire Monaghan, 'All the same, it just won't add up', and 'Ian Lang, The sparsity of coherent answers', The Scotsman, 24. 8. 90 and 9.10.90.

The incompatibility of national politics and local affairs are further illustrated in two newspaper articles. In the first, by Arthur Midwinter and Claire Monaghan, a case is made for extra spending in Scotland due to a greater 'sparsity of population'. Ian Lang in the following article claims that they have *"... fallen foul of the very 'pitfalls involved in the interpreting financial statistics' against which they themselves warned."* The mixture of statistics and 'political debate' results in an obsession for 'point scoring' and a loss of the true picture of the subject. The first article concludes that savings implied by the Scottish Office would require further rationalisation of secondary schools and the closure of more rural primary schools.

119. 'Western' values destroy the local 'way of life'

Scottish Council for Voluntary Organisations, Conference, 'Setting Our Agenda for the 1990's'. - attended.

Refer to paragraph 87. Integration of work and leisure.

The latest additions of accounts, business plans, contracts and competition, are unnecessary extra burdens which strike at the very roots of the local 'way of life' to consider others. History could see this as the worst attack on rural life, greater than the abolition of the Gaelic language, the burning of Highland fiddles, the banning of the pipes, and the clearances.

120. Urban trained officials are inappropriate.

Robert Turner and Anthony Jackson, op cit. pp. 72-73, 80.

It is claimed that the present regions and districts give the benefit of scale to distribute the services more equitably. This *"national homogenization of values"* is questionable as *"fair-mindedness"* in decision making is not value-free and in particular could work against rural areas administered by officials trained for an urban environment.

The old Scottish burghs were independent and this gave the inhabitants a measure of security.

121. Council Policy. Integration, urbanisation, or containment?

Oil report, pp. 20, 38, 97.

The planning policies of the Regional Councils have a profound social effect on the nature of development. The Highland Regional Council is committed to industrial growth and in the Moray Firth area the general policy of urbanisation and growth has been furthered. The Shetland Islands Council have a policy to conserve the indigenous occupations. A policy of dispersal in Lewis has conserved the present economic and social life of the island and has minimised the impact of oil and immigration. Only Orkney has followed a policy of strict containment of the oil development, and even then the effects on neighbouring areas have been large.

Special Acts for Orkney and Shetland allow the local authority to acquire land and develop it so that the cost of land, the type of development, the design standards, and the financial return can be controlled.

122. More say for Community Councils.

'Councils want more say', Inverness Courier, 24.9.91.

At a Highland Regional Council conference vice-convener Peter Peacock said that interest in community council affairs would considerably increase if the relationship with regional and district councils moved from one based on dependency, to a partnership involving powers at local level. Experiences of a greater devolution of decision-making in France and Norway was given in a presentation by Jan Sorlie, from Norway, and Yves Paris from Savoie, France.

123. Self determination for local communities, planning and consultation.

Conferences attended, see appendix.

Inverness Courier, 4.10.91.

Refer to paragraph 583. The Black Isle Community Planning Initiative.

Conferences in 1991 and 1992 indicate a change of attitude in the Highland Regional Council and the planners are making genuine efforts to involve the public. Local communities are far better at resolving their own difficulties, and outside intervention serves only to aggravate the difficulties and create new ones. Highland Regional Council's planning department has drawn up a consultative draft of the 'Kirkhill Village plan' setting out ideas about how the community might develop over the next 20 years. These proposals for regulating the future expansion of Kirkhill are to be discussed with the local community.

3.8 Survey of teleworkers.

A preliminary survey was conducted jointly with British Telecom to gain experience for a larger survey. The application for finance to support a more comprehensive survey was unsuccessful. Whilst the sample in the pilot survey is not large there is some useful information.

Table 1. Teleworking survey. # YES. - Question not answered. F Female, M Male.

	No.	Male Female	Home Worker	Age	Nature of work	Time Years
RURAL SCOTLAND:	1	F		40+	Training	1
ISLANDS.	2	M	#	30+	Consultant	4
	3	M		40+	Financial consultant	1
	4	F	#	30+	Engineering consultant	1
	5	M	#	30+	Technical consultant	4
	8	M	#	40+	Information consultant	4
	6	2F	4		TOTAL ISLANDS	
RURAL SCOTLAND:	7	F	#	20+	Tele Marketing	0.5
MAINLAND.	8	M	#	40+	Research consultant	8
	9	F		50+	Managerial	5
	10	F	#	40+	Consultant	4
	11	M		30+	General consultant	5
	12	F	#	30+	Distributor/Wholesaler	1.5
	13	F	#	50+	Engineering manager/author	20
	14	M	#	40+	Journalism/Consultant	10+
	15	M	#	30+	Managerial consultant	10+
	16	M	#	30+	Engineering sales	2
	10	5F			TOTAL MAINLAND	
	16	7F			TOTALS RURAL SCOTLAND	
RURAL (?) ENGLAND.	17	M	#	30+	Property developer	4
	18	M	#	30+	Management consultant	3
	19	F	#	30+	Management consultant	0.5
	3	1F	3		TOTAL RURAL ENGLAND	
	19	8F			TOTALS RURAL	
URBAN SCOTLAND.	20	M	#	30+	EngineerManagement	2
	21	F	#	40+	Information Consultant	0.5
	22	F	#	40+	Technical manager	6
	23	F	#	40+	Technical manager	9
	24	F	#	30+	Technical management	7
	25	F	#	30+	1day week management	4
	6	5F	6		TOTAL URBAN SCOTLAND	
	25	13F	9		TOTALS (running)	
URBAN ENGLAND.	26*	F	#	30+	Tech research editor consultant	1
	27	M	#	50+	Specialist journalism	18
	28	M	#	50+	Consultant	0.5
	29	M	#	40+	Public relations	2.5
	30	F	#	30+	Engineering management	1
	31	F	#	40+	Translator/Consultant	3
	32	M		30+	Journalism graphics	0.5
	33	F	#	30+	Computer programme analyst	2.5
	34	F	#	30+	Consultant Architecture	1
	9	5F	8		TOTAL URBAN ENGLAND	
	15	10F	14		TOTAL URBAN	
	34	18F	17		TOTAL ALL	

Out of 34 replies, 25 were form teleworkers in rural areas and 15 from urban areas. 29 were home workers.

The majority were in the 30+ to 40+ age group. 18 female, 16 male.

Rural areas: 6 lived in the Islands, 10 the Scottish mainland and 3 in England. Urban areas: 6 lived in Scotland and 15 in England.

The most common occupation was consultancy with 16, management came next with 7. Only two occupations could be identified as being related to new technology, information consultant, and computer programme analyst.

14 had been teleworking for two years or less. 4 for ten years or more.

Table 2. Migration information.

	Time living in area. Place moved from. House type.							
	No.	Always	Returned	New	Time Years	From	House type	Age
RURAL SCOTLAND: ISLANDS.	1	#			15	Aberdeen shire	Converted stone	-
	2	#			30+			
	3		#		30+	Wester Ross 8years	Bungalow	1930
	4			#	3	London	Detached 2 storey	1920s
	5			#	4	Stoke on trent	Orkney farmhouse	1900s
	6			#	4	London	Flat	1900
	6	2	1	3	TOTAL RURAL SCOTLAND ISLANDS			
RURAL SCOTLAND: MAINLAND.	7			#	1.5	Durham	Bungalow	1974
	8							
	9			#	9	London/Paris	2 storey stone	1900
	10				8	S.E. England	Stone	1950
	11			#	6	Sweden (rural)	Bungalow	
	12							
	13				8	London/California	Mountain Top Cottage	1850
	14							
	15			#	2	East Sussex	Flat	1840
	16			#	7	Port Lethen	Bungalow	1981
	10	0	0	5	TOTAL RURAL SCOTLAND MAINLAND			
	16	2	1	8	TOTAL RURAL SCOTLAND			
RURAL (?) ENGLAND.	17			#	0.5	Hampshire	Cottage + studio	1900
	18	#					Cottage	1900
	19			#	2	Urban Surrey	House kit	1945
	3	1	0	2	TOTAL RURAL ENGLAND			
	19	3	1	10	TOTAL RURAL			

Of the 19 in rural areas only 3 had always lived in the same place, one had returned, and 10 were new to the area within the last nine years.

Only 2 lived in new bungalows. As the majority were incomers it would be interesting to know if the majority of incomers live in the older houses and the locals have given them up for new homes.

Table 3. Urban people willing to move to rural areas.

	Would you move to a rural area?						
	No.	Remote	Village	Town	earest	Yes\No or require:	Would require:
URBAN SCOTLAND.	20		#	#	10mile	Food Shops Education	Detached separate garage
	21			#		Golf Hills Theatre etc.	Farmhouse
	22	-	-	-	-	Yes	
	23					No because of children	(Contact office clients)
	24	-	-	-	-	Yes but husbands work	Area not house
	25	-	-	-		No	-
	6	0	1	2		4 yes. 2 no	TOTAL URBAN SCOTLAND
URBAN ENGLAND.	26			#		PO. Photocopier	Any+garage+office
	27					No	-
	28		#			Church , Hall, Shops	Cottage
	29	#	#		5	Fax Shops	Cottage
	30	-	-	-	-	-	-
	31					If retired. Digital line	Share big house
	32		#		10	Station.Computer supplier.	Cottage small house
	33	-	-	-	-	No	-
	34	-	-	-	-	Love to but husband's work	-
	9	1	3	1		8 yes. 2 no	TOTAL URBAN ENGLAND
	15	1	4	3		10 yes. 4 no	TOTAL URBAN

Of the 15 living in urban areas only one would definitely move to a rural area.
1 would move to a remote rural area if it had shops within 5 miles.
2 would like to move to a rural area but couldn't.
7 would consider a rural town or village with various other conditions.
4 would definitely not move.

3 would look for a 'cottage', 1 a farmhouse, 1 a detached house, and 1 to share a big house.

Table 4. Satisfactory facilities in rural areas.

	Facilities that are satisfactory:						
	No.	Food	Clothes	Education	Health	Services	Other'
RURAL	1	#	#	#	#	#	Local/Mail order/Benbecula
SCOTLAND:	2						
ISLANDs.	3	#	#	#	#	#	Mail order/local
	4	#	#	#	#	#	Kirkwall/Aberdeen
	5	#	#	-	#	#	Transport. Kirkwall/Mail
	6	#	#	#	#	#	Port Ellen/London/Glasgow
	6	5	5	4	5	5	TOTAL ISLANDS
RURAL	7	#	#	#	#	#	Thurso/Newcastle
SCOTLAND:	8						Travel Essential
MAINLAND.	9	#	#	-	#	#	Tourist/Sports Facilities
	10		#	#	#	#	Swimming Pool
	11			#	#	#	Entertainment-London
	12						
	13	#	#	-	#		TheatreLondon,Edinburgh,Glasgow.
	14						
	15	#	#	#	#	#	Huntly/Keith/Elgin 10miles
	16	#	#	#	#	#	Port Lethen/Aberdeen
	10	5	6	5	7	6	TOTAL MAINLAND
	16	10	11	9	12	11	TOTAL RURAL SCOTLAND
RURAL (?)	17	#	#	-	#	#	Delivered/Leadbury/Hereford
ENGLAND.	18	#	#	#	#	#	Local/Southampton/Bournemouth
	19	#	#	-		#	Local/London.Entertainment.Library
	3	3	3	1	2	3	TOTAL RURAL ENGLAND
	19	13	14	10	14	14	TOTAL RURAL

Of those living in rural areas there was a more than average satisfaction with the facilities. There was some comments about the necessity for transportation, and most seemed to travel large distances or use mail order for specialist requirements. The Islands are noted for mail order catalogues, and teleshopping could be a useful asset in these areas.

Table 5. Reasons for urban people to move to rural areas.

	Would you move to a rural area for any of the following reasons?					
		Cost	Peace	Environment	Pollution	Other
URBAN SCOTLAND.	20	#		#	#	
	21	-	#	#	-	
	22	-	-	-	-	
	23					
	24	-	-	-	-	
	25	-	-	-	-	
	6	1	1	2	1	TOTAL URBAN SCOTLAND
URBAN ENGLAND.	26*			#	#	Low population density
	27	-	-	-	-	
	28			#	#	
	29		#	#	#	Pollution
	30	-	-	-	-	
	31	#	#	#	#	
	32	#	#	#	#	Prefer London at present
	33	-	-	-	-	
	34	-	-	-	-	
	9	2	3	5	5	TOTAL URBAN ENGLAND
	15	3	4	7	6	TOTAL URBAN

Of those living in urban areas there was an interest by 7 in peacefulness, environment, and lack of pollution, 3 thought it would be cheaper, and 8 did not answer these questions.

This could suggest that even in urban areas there is a desire for some of the assets of rural areas when compared with urban areas.

There is therefore a need for choice and diversity in living patterns, and the loss of rural areas to urbanism would be a loss to this diversity.

Table 6. The Difficulties of teleworking.

	Difficulties of teleworking:			
	Social	Professional	Information	Other
RURAL SCOTLAND: ISLANDS.			#	-
		#	#	-
				Regular staff meetings
				Enjoys life style
	?	#	#	E-mail works. Different social life
				Travel off island
	0	2	3	TOTAL ISLANDS
RURAL SCOTLAND: MAINLAND.				Where there's a will....
		#		Cost of Telephoning
		#	#	Faults. Face to Face
	#	#	#	
				Loves Lifestyle
		#		No delivery, on line work.
		#	#	
				Travels to clients daily
	1	5	3	TOTAL MAINLAND
	1	7	6	TOTAL RURAL SCOTLAND
RURAL (?) ENGLAND.	#			But wife. Bank in city
	#	#	#	(0-10 scale)
		#	#	Links to databases
	2	2	2	TOTAL RURAL ENGLAND
	3	9	8	TOTAL RURAL
URBAN SCOTLAND			#	1st class 3 days.
				Technical
			#	Social life
				Good working at home
	#	#	?	Library by post takes time
	-	-	-	
	1	1	2	TOTAL URBAN SCOTLAND
	4	10	10	TOTALS (running)
URBAN ENGLAND.	#		#	Moved, takes time
		#		
	#			
				No problems
	#			
	#	#	#	Use E mail more but ?
	#	#		Time finding information
	#			Telephone is only contact.
	#			Hostility. Worst year of life
	7	3	2	TOTAL URBAN ENGLAND
	8	4	4	TOTAL URBAN
	11	13	12	TOTAL ALL

From the total surveyed 11 were having difficulties socially, 13 professionally, and 12 in accessing information.

There were more people having social difficulties in urban England, 8, than in rural areas, 3, and 2 of those in England, only 1 in Scotland.

There was more professional difficulties in rural areas, 9, compared with urban areas 4.

Access to information was also more difficult in rural areas, 8, compared with urban 4.

From the other comments there was clearly difficulties with teleworking, one female suffered from hostility from her previous work friends and it had been *"the worst year of her life"*. One said that the telephone was her only contact, and only 3 appeared to like the life style.

CHAPTER 4.

THE BRITISH FISHERIES SOCIETY,

AND

THE HYDRO BOARD.

TWO SOCIALLY ORIENTED ORGANISATIONS.

SURVEY AND DISCUSSION.

" ... instead of Norway forming cities like ours

upon these unending streams of energy, ...

long chains of townlets, indeed of country villages, ... "

Patrick Geddes, 'Cities in Evolution', 1968 edition, p. 53.

4.1 The British Fisheries Society 1786-1893.

124. Using the resources.

In the long history of attempts to revive the fortunes of the Highlands and Islands the British Fisheries Society was one of the first to use the resources of the area to try and benefit the people. Significant to this study is its creation of new communities in remote areas, possibly the implications of trying to impose a different way of life on a society.

125. Potential for investment.

Jean Dunlop, 'The British Fisheries Society, 1786-1893', John Donald, Edinburgh, 1978, p. 3.

The British Fisheries Society received its incorporation in 1786 at a time when attention had been drawn to the Highlands and Islands for development. In the seven years war from 1757 and the American Wars, 1776 to 1783, the Highland regiments had made a particular impression and there was a fear of losing these fighting men to Canada or America. The men were regarded as *"hardy and industrious, and potentially worthy of encouragement in agriculture and industry at home."* The loss of the American colonies also turned attention for investment nearer home were recent reports were replacing previous ignorance with the prospect of *"excellent natural resources"* and without *"fear of its claiming independence."* The Commissioners for the Annexed Estates resulting from the Jacobite rebellion of 1745 along with the Board of Trustees for Manufactures and Fisheries had already begun the process of change administered by the south.

126. Changing society from independence to dependence.

The theories of the time believed that an increased wealth was created by increased population and the intention was to make a complete change in the Highland Society from one of independence to one of productive employment. It was not until the population had been increased that it was realised that the Highland soil could not be improved to produce heavy crops, with the result that too many people had to rely on too little land. The Commissioners failed with the introduction of the linen industry due partly to the lack of, and cost of, transportation. Fishing offered itself as a more suitable industry to develop.

127. New small towns.

Ibid. pp. 23-24.

In May 1778 twenty five gentlemen of Scotland met in a London coffee house *" 'In order to form a Society that might prove beneficial to the Highlands' "*. John Knox proposed about forty villages between Dornoch and Arran each with thirty to forty houses, several storehouses, curing sheds, an inn, a schoolhouse and a church. Copies were sent to the King and the Parliamentary Committee on the Fisheries of the House of Commons who swiftly recommended support for the building of the new villages.

128. Capable and inclined inhabitants.

Ibid. pp. 24, 33-34.

A Bill of incorporation enabled the Society to *"purchase land and build thereon free towns and fishing villages, ... "* The prospectus of 1787 stated that *" 'It has often been observed with wonder and regret that a very considerable part of the Coast of Great Britain continues destitute of the blessings of Art, Industry and Independence though inhabited by a numerous tribe of British subjects not less capable nor less inclined than their fellow citizens to become useful members of the Community' "*

129. Villages are essential but not sufficient.

Ibid p. 28.

Considerable encouragement would be required to attract people to fishing from their preference to rely on the land for their basic needs. A committee made a two month tour of the West coast and Islands and purchased 2300 English acres of land offered by the Duke of Argyll at Tobermory to serve the southern area. The northern area was a more difficult choice and eventually 1,300 English acres of farm and 300 acres on the Island of Ristol were purchased from the Cromarty estate at Ullapool. A third site was noted at Lochbay in Skye for a later third development.

130. Ullapool 1788.

Ibid. pp. 40-41, 43, 46, 49-50.

At Ullapool the Directors were able to develop the village to their own plans. The Society decided not to offer houses, equipment or money to encourage West Highland fishermen, *"for these tended to produce idleness rather than effort."* Successful curing station had been set up near to Ullapool on the Isle of Martin in 1775 and Tanera in 1784: *"Our great object was to purchase the herrings from the natives, ... ".*

131. Attracting settlers.

Ibid pp. 51, 52.

The Societies greatest difficulty as " *'a society of noblemen and gentlemen meeting in London' ",* was to supervise building six hundred miles away. By 1789 settlers needed to be attracted and there was concern that " *' the common people imagine the settlement is intended for the introduction and accommodation of Lowlanders, and the discouragement of the Natives - this would be a fatal mistake if suffered to prevail.' "*

The Society received many opinions about the attitudes of the people from estate owners. They were advised that villages would remain uninhabited, and wharfs for fishing would remain inactive. *"This plan has been formed by the reasoning, by the thinking, and by the commercial part of the community ... But ... these are not the people who are to carry it on ... ' "*

132. Alien occupations.

"The Highlander had always been self-supporting, growing his own oats, catching his own fish and supplying his own clothing and household goods, and his economy was in his nature rather than the Lowland one of earning money at a single trade to pay for other necessities. Thus, to move a family into a village involved a complete change in the way of life."

The difficulties are more likely to have been due to the material values and the type of occupation, rather than the community life. The way forward may be a diversity of self-controlled settlements with a choice in the way of life.

133. The independence and wisdom of the Highlander.

The Directors of the Society decided to provide the harbour, market for fish, supply of equipment, and materials, and to provide for the crofter's independence in growing his own food. Crofts were provided because they may not have attracted settlers otherwise and also in case the intended livelihood was lost through the known shifting of the herring shoals.

Perhaps this illustrates the wisdom of the Highlander that may be hidden to others. Without exception all the development occupations that have been offered to the Highlands and Islands have been transitory and of more value to others who bring the development and who are also transitory. The necessities of life are food to keep alive, shelter and clothing to keep warm and a reason for life. The Highlander has the wisdom to ensure all these things without making gains that could be detrimental to others.

134. The lots, agents and everybody his own master.

Ibid p. 57.

Small lots just large enough for a house and kailyard or garden were offered on a 99 year lease with the entitlement to a further half acre of arable land on a five year lease and five acres of uncultivated land on a ten year lease. A right to dig peat, quarry stone, limestone and shelly sand gratis for his own house together with common grazing for two cows was also included. The Directors preferred settlers to build their own houses. The Society experienced continuing difficulties in finding suitable agents to look after their on-site interests, and also with Robert Melville who assumed *"sole master"* as *"the little Emperor of Ullapool."* The Society was concerned that its aims were being completely misunderstood, the aims were not *" 'to set up new Masters in addition to the old ones over the people of the Country but to find an Asylum for them where everybody might be his own Master, providing he worked honestly for his daily bread.' "*

135. A self supporting village.

The Society wished the village to be as self-supporting as possible, and they advised the population on growing their own food. They also wanted to plant trees and introduce some crafts and industry which would provide income as well as avoiding heavy transport costs for local needs.

136. Difficulties.

Ibid. pp. 147-148, 150.

War in 1793 made fishing difficult, false reports by agents to encourage emigration, and the declining number of West Indian slaves eating British red herring presented further difficulties to the settlements. Difficulties with the agents put the Society in a position of being regarded as landlords. The Directors of the Society in discussing the first rent rise after 20 years argued that: *"the Highlanders were inclined to work as little as possible and that if rents were raised they would work hard enough to pay the higher rate and thus increase the improvement of the land."* However they decided to leave the rise until fishing improved.

137. Decline, Stornoway, 'inward investment' and mixed seasonal employment.

Robert J Naismith, 'Buildings of the Scottish countryside', Victor Gollancz, London, 1985,

Ilan and Kathleen Whyte, 'Exploring Scotland's historic landscapes', John Donald, Edinburgh, 1987. pp. 257, 278.

Todays ideas of 'inward investment' developed Stornoway in 1607 around the best harbour in the area with the intention of settling Fife traders to develop commerce and *'civilise the barbarous natives'*. The slump in fishing and textiles, and the inability to plan realistically *"something which has been characteristic of the Highlands in more resent times"* lead to massive emigration after a *"fruitless struggle"* to survive on the coast in new settlements such as Helmsdale. *"The Highlands are littered with places like Helmsdale representing well-intentioned but impractical attempts to diversify the local economy by providing industrial jobs."* Again it was intended to attract incoming investment in woollen, cotton and leather manufacturing.

There was no consideration to the 2000 rural inhabitants that had to adapt to the industrial conditions. Most ended up emigrating or returning to a dependence upon small crofts, casual labour, and seasonal activities. The history of the Highlands and Islands is a continual story of failed 'inward investment'. The casual and seasonal labour forced upon the population by the commercialisation of sheep farming has continued to be a characteristic of Highland employment in the much promoted tourist industry.

The withdrawal of the Ullapool customs house diverted trade to Stornoway along with Deep sea fishing. Fishing was very variable, the speculators had been attracted to a new settlement at Wick, and in 1825 20 or 30 boats went to Caithness for fish. However, Ullapool grew from 669 in 1808 to 900 in 1829. In 1832 thirty seven had a regular trade: eight carpenters, six shoemakers, and four masons; of the others: five licensed retailers of spirits, and nearly 100 connected with fishing.

138. Apathy and ignorance.

Ibid. p. 175.

In 1825 *" the 'utter apathy and indolence of the inhabitants' caused the Directors to adopt a scheme for payment of rents in labour".* The inhabitants were dependent upon their small crofts, and the harvest of 1817, 1826 and 1847 were failures so that the debts of the tenants could never be cleared. After 1810 this innovative Society, had nothing to offer and simply followed the more moderate landlords who refrained from eviction. The Directors were too *"ignorant of the conditions in Ullapool"* and of the Highlands to change their policy. Ullapool was sold in 1847.

139. Tobermory, a settlement of wealthy trade and commerce.

Ibid. p. 182.

Tobermory was developed in 1787 with a fine harbour and customs house. With the opening of the Caledonian Canal it became successful from merchants, and was not dependent upon crofting or the intended fishing. The Duke of Argyll, who was the original Governor of the Society and who had sold the land, kept control of Tobermory through his factor who was also the Societies agent. *"The settlement maintained itself on the rents collected."* Improvements to the harbour in 1813, increased the permanent population to 900 in 1821, and by 1839 there were several hundred who had moved from starvation on adjacent estates. Tobermory was sold in 1844.

140. Pulteneytown 1803-1830

By 1790 fishing was rapidly increasing on the north-east coast and Thomas Telford recommended an improvement of the harbour at Wick where herring was mainly caught by local tradesmen: weavers, taylors, shoemakers, house and boat carpenters, blacksmiths, masons, ... In 1803 the Society made a contract for 390 acres on the south bank of the river that already had seven families. Unlike the previous completely new settlements they would be providing facilities for an existing prosperous parish with a population of 5,000, with a market, church and several schools.

141. Thomas Telford's design.

Ibid. p. 160.

Pultneytown represents the only complete design for a new settlement by Thomas Telford. Built over a period of twenty years it followed the natural shape of the landscape, and began with seventy two 50 by 100 foot lots with 99 year leases. The more expensive lots were two story with slates or tiles, the rest single storey. Tenants were to build their houses within two years and *"agreeable to Mr Telford's elevations."* Twenty-one plots 60 by 120 foot plots for curing houses, and a grass area for repairing and drying nets, and as a *"healthy walk".*

142. Division of labour and unemployment.

Ibid. p. 161.

There was no common pasture and the land was enclosed into five acre fields with twenty-one year lets. Farmers were encouraged to own larger units to grow food for others. No fisherman or cooper was allowed more than his one lot, and to encourage such settlers they were given town lots rent free for three years. Thus settlers had to decide on a profession and crofting was excluded. Despite considerable doubt about attempting to change *"the habits of the lower ranks"* in two years from 1808 sixty town lots and several curing-house lots had been taken, all by locals including ten fishermen, seven coopers and four farmers. By 1811 the stone quarry was described as *" 'like a rabbit warren, all alive' ".* In todays climate of unemployment Pultneytown shows what could be achieved if people were enabled to use their own labour instead of requiring finance.

143. Prosperity, trade and independence.

Ibid p. 165.

The fishing industry continued to prosper until after 1830 when their was over 2,000 residents and 7,000 strangers in the fishing season including crews from Norway, Holland, France, Cornwall and Ireland. A customs office from 1819 opened the way for general trade, a rope and sail manufacturer, timber trade with America, shipbuilders, a brewery and distillery; all of which continued to increase the population to its peak of 2,200 living in 240 houses in 1830. This success was partly due to the harbour being the first on this coast. The Society had no need to issue instructions for agriculture or manufactures or give loans or erect public buildings, and no action was necessary other than to provide land. They commented: *"the inhabitants are treading in the road to independence".*

144. A change in the Society. Powers to the community.

In 1834 the Duke of Sutherland was elected Governor and James Loch, the commissioner for his estate, the Deputy Governor. A law agent was engaged now that concentration of the Society was on landed property. After 1844 nearly all of the directors were connected with Caithness, and for the first time powers were delegated to the community. An elected body, Pultneytown Improvement Commission, gave self-government for the collection of rents, provision of street lighting, street cleaning, drains and the police force.

145. Political conflict.

Ibid. p. 193.

The close relationship between the Society and politicians, which had previously been of great advantage, and a growing split in the Houses of Parliament caused conflict with local politicians. *" 'The Society, in fact, looks like a relic of the middle ages. If we had the thing to begin a-new no man in his senses would think of constituting a Society of this kind of noblemen and gentlemen of high standing sitting in London."* The Society was neither a commercial company looking for dividends or a body of publicly elected Commissioners.

In 1857 the Society with its political contacts was still able to make arrangements that others could not. It proposed asking Parliament for a loan to improve the harbour. The Society was criticised for not encouraging further building in Pultneytown; the population in 1851 was 3,800 and the influx during the fishing season could be 8,000. By 1884 more streets had been laid out to relieve the overcrowding. Pultneytown was eventually sold, together with the pier at Tobermory, in 1892.

146. A history of difficulties. Throughout the history of the Society there had been difficulties due to its location in London, although this brought many benefits in its connections with Parliament. The system of local agents was generally unsuccessful, and there was a continual clash of interests between the shareholders, the fishing, the tenants, and later the politicians. Little now remains of the imposed livelihood through fishing. Repeated attempts, to control the lives of people in the Highlands and Islands, continue to fail more due to the fickleness of industry than the population.

147. Imposed change. The population has been left stranded between two totally different standards of life, and the wisdom of attempting to force the ways of an alien way of life needs to be questioned. The values of the traditional highland way of life may be increasingly important today, and there may now be ways of strengthening the standards of community and self reliance. There seems to be a major failing of Western civilisation, that is characterised by its religion, not to understand the point of view of others. Perhaps the question should always be asked: would the ways of the people who are being expecting to change be accepted by those who try to impose the change?

148. The lasting benefits. The village of Ullapool was recently commended *"as an example for modern times"*, and made a conservation area in 1972. Tobermory is pictured on almost every tourist guide to Scotland, and the lasting benefit today of the vision of the Society is the buildings and well laid out plans of the settlements which were far beyond the needs at the time they were built. It could have been this aspect that attracted investment in Tobermory and the establishment of Pultneytown as Scotland's leading fishing port. It would seem that local conditions, lack of fishing and communications were not suitable for the same investment at Lochbay and Ullapool.

Jean Dunlop, op. cit. p. 205.

149. The remaining needs. The Society's example has been followed by many subsequent projects such as the Crofters Commission in 1884, and it was acknowledged in the setting up of the Highlands and Islands Development Board in 1967. However the Societies aims of 1786, still remained a need in the Government White paper of 1950: *" 'to encourage people to live in the Highlands by making it possible to secure there, in return for reasonable efforts, proper standards of life and the means of paying for them.' "*

Ibid. p. 205.

4.2. The Hydro Board.

150. A fiercely opposed vision.

*Peter L Payne, (Professor), The Hydro: A study of the development of the major Hydro-electric schemes undertaken by the North of Scotland Hydro-electric Board: Aberdeen University Press 1988. HIE library 621.311.21 (411*HI)*

Flyleaf.

The means of production of Hydro-electricity are part of the Scottish scenery, and its development has benefited the economy of Scotland as well as enriching the lifestyle of its people. Its development in the 1940's and 1950's was fiercely resisted at local and national levels. Many people contributed to the realisation of the vision of one man, Tom Johnson, in one of Scotland's greatest post-war achievements and assets.

Forward. p. v.

"This struggle of man over nature to tame the powerful natural water resources of the Highlands culminated in man and nature working together. It gave us electric power and very often enhanced scenery."

Ibid. p. xv.

The Hydro Board encouraged the economic and social welfare of the Highlands and Islands: *"... it will be found that a public-spirited group of men had interpreted their duties on wide canvases."*

151. Telecommunications as a social vision.

Visions that are rejected by many can turn out to be the most beneficial. A similar social service provision for telecommunications could have a parallel with the social provision of hydro electricity.

152. Pioneering ventures in public supply before 1943.

Ibid. p.3. R B Anderson, 'The development of electricity supplies in the north of Scotland', typescript address to Scottish centre of the IEE, 1960.

Among many small scale generating schemes the following are some examples:

1885: Greenock, Renfrewshire, by Police Board, first in Scotland, 2nd in Britain, technically successful, experiment for two years.

1890: Fort Augustus, monks of St Benedict's Abbey for Abbey and 800 inhabitants. Inchnacardoch forest stream until 1951.

1896: Fort William, electric light company, Blarmachfoldach, 2x60 Kw for 3,000 inhabitants.

1903: Ravens, Ben Wyvis, 80Kw for 5,000 people in Strathpeffer and Dingwall.

1910: Blair Athol, 130Kw for 1,580 people.

1914: Several successful schemes had been completed and continued until after the second world war. Poor finance, the inability to transmit electricity beyond the small communities and an inability or lack of desire of the rural communities to pay for the light fitting installations ended most of the schemes.

153. A pioneering approach.

Several new small scale electricity schemes are in operation in the Highlands and Islands.

Twidell, John. et all eds, Energy for Rural and Island Communities Volumes I II III. University of StrathClyde.

A similar pioneering approach may be required for new technologies in rural areas. Also the time may have arrived for a return to small scale community electricity generation.

154. Hydro-electric and the 'social clause'.

Ibid. pp.1-2, 190.

What happened to the social clause when the Hydro-board was privatised?

"Scotland has been seen as pouring her natural wealth into the sea." Hydro schemes involve the rights of land owners and therefore require the total support of government. The Hydro-electric development (Scotland) Bill 1943 was presented as a partial remedy for *"the illness that afflicted the Highlands."* Its principle object was *"staunching the haemorrhage of outward migration by the regeneration of the region's economy."* The profit was to be used to subsidise uneconomic distribution schemes, and the famous social clause, (subsection 3 of section 2), set out measures for the economic development and social improvement of the North of Scotland *"It was the Instrument to assist in the rehabilitation of the Highlands".*

155. Big industry.

The Cooper Committee report recognised that the *"Highlander could not and should not be separated from his croft or his boat", cheap electricity, summer visitors, light home industries and crafts should"* ameliorate his lot". Improvements in agriculture, fishing, forestry, quarrying, and crushed stone could be made but the committee was aware that it was *" ... insufficient to retain the young and more enterprising elements among Highland society, far less 'attract a growing and prosperous population' "*. They believed that sufficiently low cost electricity was required to attract big electrochemical and electro-metallurgical industry, then prosperity would gradually diffuse throughout the crofting areas. It is perhaps the saviour of the Highlands and Islands that the Board had sufficient wisdom not to encourage such industrialisation.

156. Below cost units. Remote customers.

Ibid. pp. 193-196.

There were long arguments with 'high current' users who wanted below cost electricity to move to the Highlands, *"For the national interest."* The Board replied, *" ... do not expect us to acquiesce to the scrapping of our Act of Parliament, or evade our social obligations to the Highland population, or connive at placing a Highland consumer alone, burdens which ought to be carried by the nation as a whole."* Below cost units would have prevented supply to the remoter consumer. Sir Steven Bilsard extolled the benefits of meeting the power requirements of British Oxygen, Lever Brothers, ICI, and others. Edwin MacColl quietly *"pointed out that one of the best means of raising the standard of living for crofters in the Board's area would be to introduce crop drying ... the loss of crops after curing due to wet weather is at present enormous."*

157. Development deeply rooted in the Highlands and Islands.

Edwin MacColl wanted to encourage the use of electricity in industries deeply rooted in the Board's area of operations, and to obtain a large proportion of the Board's requirements of raw materials from local sources. He wanted refrigeration at fishing ports and an improved timber industry. Building in stone revived the local stone quarries, and the stone mason's craft, and following the Board's example a number of local authorities began once again to build in stone. In some cases it proved to be economical to use stone instead of steel and concrete buildings. The Highlands and Islands may have been in a better situation if other government agencies had followed the ways of the Board. The Board had established that there was not a future in aluminium smelting and yet a government agency later financed the Invergordon smelter which almost immediately closed due to a glut in world aluminium.

158. Alternative energy.

Ibid. p. 198.

Edward MacColl was interested in alternative sources of energy to serve the remoter areas and suggested 50Kw wind in parallel with diesel. In 1949 a contract was placed with John Browns of Clydebank to build a prototype 100Kw wind generator at Costa Head, mainland Orkney. Experiment for six years but the wind was unpredictable, there was steel stress difficulties, and a complete diesel solution was more economical. These alternative forms of energy source are now technically feasible and proving to be successful in many areas of the Highlands. The future could lie in further such application to enable communities to be self-sufficient in energy.

159. Everything for local benefit.

Ibid. pp. 200- 201.

By 1960 400miles of road had been built and 100 miles given to the local authorities. The Board's radio communications were available to the police, fire, ambulance, and mountain rescue. The MacKenzie Committee sought to determine the exact significance of 'the social clause' of the 1943 Act. The attraction of large and small industry had been disappointing and the electrical engineering benefits had mainly gone to the south of Scotland. They were inundated with letters of support *'there is no doubt that the Highlands have been immensely helped by the Board. In fact, there does not seem to have been anything else worthwhile done in the Highlands for generations.'* There was many tributes from newspapers, speeches, and public meetings. *"... the Board has 'always endeavoured to have itself identified closely with the hopes and aspirations of those Highlanders whose homes and work are in the North. ... particularly the sparsely populated and remote areas. "* Edwin MacColl said *" ... a great social non-profit adventure, which seeks to make available the resources of an area ... for the benefit of the people."*

160. Customers supplied, economy not transformed.

Ibid. p. 202.

Edwin MacColl described the scene: *"The houses, squat and solid, are well suited for the climatic conditions which they have to withstand, but are notoriously deficient in amenities ...".* By the mid 1950's over half the farms and crofts had been connected, and by the next decade over 80%. In less than two decades the Board had far exceeded the hopes of the Cooper Committee by 1961over 210,00 new customers had been added to the 188,000 in 1948; over 91% of potential consumers. Half of the rest did not want electricity. By the early 1960's the Highland economy had not been transformed, industry had not been attracted, unemployment was twice the Scottish average, and the standard of living was below national average.

161. A form of energy by itself is not enough.

Ibid. pp. 205, 208.

Sir Edward MacColl at his death bed said, *" 'Hydro-electricity is not enough' ... By itself hydro-electricity which is, after all, only a form of energy capable of manifold uses - can not, and should not, have been expected to carry the enormous responsibilities that Tom Johnson had thrust upon it.".* Professor Payne suggests the necessary factors are, large and buoyant internal and external markets, vigorous entrepreneurship, comprehensive range of favourable institutional arrangements; *"they made the lives of those who remained in the Highlands more comfortable, more enjoyable, ".* The Board was *"part of the social fabric of the North of Scotland."*

162. The end of plausible aims, economics takes over.

Ibid. pp. 211, 248.

In the late 1950's the long standing criticism and attacks were increasing from politicians, civil servants, economists, conservationists, fishing interests, coal lobby, and they were accused of using Scottish power, and desecrating lochs to keep Londoners warm. Denys Munby an economist from Aberdeen University exaggerated the cost of Hydro and said that after the enormous capital expenditure it would be as obsolete as the horse and carriage due to atomic energy of which he underestimated the cost. In 1975, *"The days when a plausible plan was given approval because it would save coal, would provide employment, would lend a proper balance to the system, were gone."* The secretary of state rejected further schemes.

163. Norway: a different approach.

Tony Vogt, tutor.

In some ways northern Norway can be thought of as being similar to the Highlands and Islands. Many small remote rural communities, mountainous landscape, and the use of Hydro power. However their political approach seems to have avoided some of the centralisation of the United Kingdom. This is particularly so in their approach to Hydro power; instead of the expensive centralising national grid, hydro power is owned by individual local authorities who can sell electricity at a rate chosen by themselves. Any economic gain is therefore of benefit locally. Companies have the benefit of a local work force who have an effective investment in the success of the company. The work force can be properly trained without the risk of being lost to competing companies, however from the employees point of view they are effectively tied to that one company.

164. Self sufficient electricity for the Highlands and Islands.

The cost of electricity in Norway is claimed to be one tenth of that in the United Kingdom. In the Highlands and Islands there are now several areas with very small scale electricity generation under the control of local communities. The Highlands and Islands is particularly rich in suitable sites for small scale sustainable energy generation. Current technological developments and public opinion provides a unique opportunity to be self-sufficient in energy with many advantages. One of the disadvantages of the area that telecommunications is unlikely to reduce is the cost and pollution of transportation. With locally produced electricity this disadvantage could be turned into an advantage with electric vehicles. Cities are desperate to reduce their pollution by introducing electric vehicles, ironically their generating systems also cause pollution. In the Highlands and Islands the environment could be protected before urbanisation takes over with its attendant pollution.

CHAPTER 5.

TRENDS WHICH INDICATE

THE WAY FORWARD.

SURVEY AND DISCUSSION

"Jobs are one of the most extreme forms of specialism and fragmentation in human history. there were no 'jobs' in the Middle Ages. There were no 'jobs' in the ancient world. There were only roles."

Marshall McLuhan in GE Stearn, editor, McLuhan Hot and Cold, Penguin, Middlesex, 1968, p72.

Shakespeare's forest of Arden in 'As you like it' is *"a golden world of translated benefits and joblessness as we are now entering via the gate of electric automation."*

Marshall McLuhan, Understanding Media, Ark, London, 1987, (1964), p 58.

Today it is virtual reality, 'the cage' in the first episode of Star Trek, and perhaps our whole lives.

5.1 Community Enterprise.

165. A cooperative society.

Refer to paragraph 432. Dispersed or community settlement?

The historic evidence of settlement patterns illustrates the communal aspect before changes were forced upon the population after 1750. Even after this date there is a unique history of 'planned villages'. The Association of Community Enterprise in the Highlands and Islands provides ample evidence of a co-operative society that still remains today.

166. Keeping small communities alive.

Maggie Symonds, Papa Westray, Ace-Hi Annual Review, 1991.

Community Enterprises are often trying to run a failed conventional business. Ten years ago, when the population of Papa Westray fell below seventy, the local shopkeeper decided that he could not continue his business. A community co-operative raised £9,000 to create a multi-functional retail shop, agricultural store, fuel pumps, youth hostel, guest house, fresh water trout farm, mini bus, green tourism and eleven part time jobs. The hostel and hotel generates a summertime income that subsidises the shop in the winter months. Members of the community buy shares, which entitles them to one vote regardless of how many they own. A voluntary management committee, elected by the shareholders, employs local people to run the business with the aim of providing employment and a sustainable service rather than maximising the return to the shareholders. Unfortunately the worlds shortest scheduled air route of one minute ten seconds is now under economic threat of being discontinued.

167. Community Co-operatives and remote training by computer.

6.10.91. 'Petrol pump politics unites islanders.' Observer.

Tiree Community Enterprise Steering Group is to run the islands only petrol station and crofters' shop which is to close. Appin Village Community Co-op, near Oban, set up in 1982 bought the only shop in the village and doubled its turnover, opened a craft shop and a mobile fish and chip shop and plans to build a 16 unit sheltered housing scheme for the elderly partly funded by the profits. Training of the management committee by the Association of Community Enterprises (Ace-Hi) is an ongoing commitment because the committee can change regularly. Computers have been part funded by the European Social Fund to provide remote training using modems and 'Carbon Copy' software. The software allows the trainer and trainee to 'speak' to each other and transfer files via the computers.

168. Remote Computer training.

A three year European Social Fund training project ended in October 1991. Ace-Hi had training groups in the Northern Isles Community Enterprises (NICE), Fetlar, Papay, Eday, Hoy, Poolewe, Kinlochleven, Harris, Barra and Vatersay. Subjects covered in the monthly on-site training visits were: communication skills, committee meeting skills, retailing, stock control, cash flow forecasting and marketing. The European Special Fund also jointly funded a 'Women Returners Training Project' with Ross and Cromarty Enterprise Company. Over 100 women applied for four available places on the new technology training scheme. A similar project is now being run in the Western Isles.

5.2 Community Teleservice Centres.

169. The Isles Telecroft.

Conversation with Laura Baisley.

Laura Baisley, Ace-HI annual review 1991, and Viewpoint North, Fetlar Community Magazine.

Community Teleservice Centres (CTC's), supported by the Association of Community Enterprises (ACE-HI), were introduced into the Highlands and Islands in 1991. The most northerly centre is the Isles Telecroft, a subsidiary of North Isles Community Enterprises, and employs four people. Laura Baisley, the Telecroft manager, has found that people with no related knowledge can quickly, and enjoyably, learn to use computers. The telecroft is aiming to become an accredited training centre beginning with book keeping, word processing and spreadsheets. Their ideal is to use telecommunications to send information *"from a shopping list to a garden book with colour photographs"* from a computer in Unst, Yell or Fetlar, to a computer in Tokyo or Lerwick. The sharing of skills and information, co-operation rather than competition, is an important part of telecottages and they have so far *"met electronically"* with the Isle of Man, Oxfordshire, Wiltshire, Islay, and Orkney. Kirkwall, Unst, Hoy, Islay, Lochgilphead, and Uist also have a teleservice centres, Fetlar and Yell have mini-telecottages. Foula, which has a cooperative wind and hydro power scheme is planning a teleworking centre.

170. Teleservice centre, Unst.

6.5.91. 'Islanders with the world at their fingertips', Tom morton, The Scotsman.

Jean Ritch of Northern Islands Community Enterprise (NICE). Anne Inkster, Joan Thomson using the teleservice centre.

Unst telecottage, part of the Highlands and Islands Enterprise, and British Telecom £230,000 joint initiative, provides computers, electronic mail and fax to everyone in Unst. Operated by the enterprise group it employs Laura Balsley from Fetlar full time. Salmon farmer, Jim Mouatt it helps with marketing and stock control. Josie MacMillan says that the telecottage provides *"the social contact of the old-fashioned rural post office'.* Salmon farmer Sandy MacAuley realised:

> *" ... if ordinary folk did not exploit this technology it would allow big companies simply to centralise, cut down on staff and use cheap, remote labour for the mundane tasks."*

His pressure brought Northern Islands Community Enterprise, Highlands and Islands Enterprise and British Telecom together to organise the telecottages. *"The simple beauty of Unst: but information-age technology is bringing opportunities to its once-remote community."*

171. Hoy, Lochgilphead, Crossaig.

10.3.92. 'Highland home workers set high-technology trend', Frank Frazer, The Scotsman.

Ken Grant, chief executive of Orkney Enterprise: *'A lot of small businesses cannot afford to buy computers or fax machines and yet information technology and business efficiency go hand in hand today ... the potential for Orkney and elsewhere in our region is enormous if it can be made to work."* Insufficient is being done to realise the potential, particularly in the links by telecommunications to a world market.

The telecottage at Lochgilphead is the sixth in the Highlands and Islands and will be used for local people to learn information technology skills and by Crossaig with its headquarters in Helensburgh whose home-based workers abstract, edit and compile a medical database for doctors, pharmacists, researchers and drug companies published by a Dutch company.

172. Telematic organisations.

Refer to section 5.2 Community Teleservice Centres.

Colin Craig, Director, Association of Community Enterprises, Highlands and Islands, (ACE HI).

Refer to paragraph 335. The World Organisation of Telecottages.

The Highlands and Islands of Scotland had no telecottages until the establishment of six experimental teleservice centres in 1991. ACE HI who provide services for these teleservice centres have found that the various national and international organisations have little to offer that is appropriate to these teleservice centres. In England 'Action for Communities in Rural Areas' have given funds to teleworkers, and teleworking advisers, rather than directly to teleservice centres. RAID, the Council for the protection of rural England, and Rural Community Councils have also been interested.

5.3 Teleworking.

173. Highland Business extension.

6.8.91. 'Clearer signals for Highland success.' Frank Frazer, The Scotsman.

Beverly Sanstedt runs the Highland Business Extension mail order operation from her home in Castletown, Caithness Digital telecommunications makes possible " ... *the means of making the international business world ... Stornoway to Sydney ... the Oyster of the suitably equipped worker in a remote Highland croft [with] the benefits of a more attractive environment which their location provides.*"

174. Teleworking reporter in Shetland.

1.11.90. 'A dream so near yet so far away', Tom Morton, The Scotsman.

Tom Morton, spent two and a half years as a freelance journalist at Hillswick, a tiny hamlet in Northmavine, the western tip of the Shetland mainland. Britain's most northerly *"technopeasant"* sent stories from his computer down telephone lines to the world. " ... *stories from Shetland could just appear on computer screens in the offices of the world's mediacrats, exactly as I had written them.*" Unfortunately newspapers did not know how to use their computers or they had a different system, radio stations still used typewriters and telex, and the telecommunications links were unreliable. *"In the cottage itself, surrounded by rural bliss, working on a Pulitzer Prize-winning piece of prose, having to feed the hens, dig the peats, clean out the cat's litter tray or baby sit ('you're not really working - you can do that any time you like') can be annoyingly distracting. ... little does the editor know - this article was actually written on a Tandy and transmitted to 'The Scotsman' from northern Alaska. Here, they call it teleiglooing. I may not return."*

5.4 Integrated Services Digital Network.

175. Intentions as advanced as any in Europe.

Refer to paragraph 268. ISDN-2.

Peter MacCauley, 'Alarm bells ringing on BT's Highland lines', West Highland Free Press, 14.8.91.

The Integrated Services Digital Network. (ISDN-2) is a telecommunications network installed by British Telecom with financial aid from the Highlands and Islands Development Board as part of the 'Highlands and Islands Initiative'. The intention was to give rural areas an advantage by installing the network before it was available in the cities. The Integrated services Digital Network (ISDN-2) is intended to be *"the flag-ship with which to beckon companies from outside"*, giving them facilities to send and receive any combination of high speed, high quality voice, image or text over public telephone lines on a telecommunications network as advanced as any in Europe. There are fears that the £16 million telecommunications revolution is *"falling far short of expectations."* Colin Pavey of British Telecom says that *"there are 20 odd lines in the Highlands and Islands, ... "*

176. Why the public investment?

Ibid.

It is apparent that Integrated services Digital Network (ISDN) *"really stands for 'I Still Don't Know' "*, and the public expenditure has been questioned. *"Why should the Treasury have approved the Highlands and Islands Initiative, towards which Highlands and Islands Enterprise would pay £5 million?"* [of the £16 million total] The Scottish Office asked for only 500 jobs over ten years. The Highlands and Islands Development Board made the largest single investment in its twenty five year existence. and its chairman Sir Robert Cowan at the time said, *'this is the most important investment the Board has made in the economic future of the Highlands and Islands.'*

177. 'Juicy' investment.

Ibid.

Refer to paragraph 113. Highlands and Islands Enterprise

"In spite of the change in emphasis for the Initiative, Highlands and Islands Enterprise makes no secret of its desire to attract inward investment. 'We need fat juicy inward investment to wave the flag,' says its spokesman."

178. Users of ISDN

Conversation with John Lough, Highlands and Islands Enterprise telecommunications consultant.

John Lough, consultant to Highlands and Islands Enterprise, has supplied the following list of users of the Integrated Services Digital Network. (ISDN-2):
Crossaig, Helensburgh and Lochgilped.
Born Venture Capital.
Q data Ardgy uses 40-50 terminals.
British Telecom Helpline, Calthness
Highland Distillers.
The Oil Industry.
The Meteorological Office.
British Airways
Pegasus, Black Isle.
Mari computers.

Also:

ACE HI have four lines for 'development work'.
Moray Firth Radio used one line for relaying the Oban National Mod programmes from Oban to Inverness.

PBS France uses ISDN and work leaders with no group bigger than twenty. This has been found to be beneficial for attracting industry who do not like the idea of individuals working at home.

179. Magazine publication via ISDN.

14.12.91. 'High-tech magazine in long-distance breakthrough', Stornoway Gazette.

A sixty eight page specialist magazine, XYZ, was recently prepared for publication in Lerwick, and sent complete to the Middlesex company for printing. The Integrated Services Digital Network (ISDN) successfully transmitted page layout, typesetting, design, colour pictures and other information between the two locations. *"cheaper office space and savings on postal and courier costs were only some of the advantages of long-distance magazine production."*

180. Crossaig.

Peter MacCauley, 'Alarm bells ringing on BT's Highland lines', West Highland Free Press, 14.8.91.

Crossaig Ltd, Helensburgh and Lochgilphead, is an abstracting and indexing service to medical publishers. Forty five editors throughout Scotland will be on the Integrated services Digital Network (ISDN). Apart from the quality of the images that could not be otherwise transmitted, ISDN takes eight seconds, compared to thirteen plus minutes on standard equipment.

181. QDATA.

6.11.91. 'Ardgay and Ardross in computer link' Highland Journal.

A new company marketing new data base software that has full access to data on hard disc in Australia, France or anywhere, ..." *It's superb - there is no other network in Europe quite like it. ... our major market will be well outwith the Highlands*"

182. British Telecom directory enquiries.

Conversation with Bill Robertson, British Telecom Manager, Inverness.

Refer to paragraph 625. Teleworking, control of home workers..

A British Telecom one year experiment is to begin in. May 1992 with eleven operators working from home. Bill Robertson says there are plenty of staff available so he feels no pressure to change, home working would only be worthwhile in places were there is a shortage of staff.

183. Unavailability.

Conversations with teleworkers.

Ibid.

Despite the network being advertised as available throughout the Highlands and Islands, it is only available near to certain telephone exchanges. Several people have been told that the service is not available to them. It would appear that unless the demand in the area of a particular exchange is significant, British Telecom are not prepared to equip the exchange with the necessary equipment. Presumably the public money was given to compensate for the small demand, particularly at the start when there was no other users. John Bryden, "*... is conscious of the danger of a two-tier service ...* ". Many rural areas would find it difficult to get sufficient users.

184. Rumours.

Rumours and adverse comments abound. The trunk routes for the network imply that the government may have used public money so that oil and military installations could be served. Another conversation came from 'high up' that the initiative was 'a con', and that the Highlands and Islands were being used as a testing ground before it was used in England were complaints from customers would be difficult for British Telecom.

185. Vision and determination required.

Refer to paragraph 151. Telecommunications as a social vision.

Whatever the history, the important consideration now seems to be that the network is installed, and it could benefit the population of the Highlands and Islands. To date, it is very little used and it seems more likely that it will be used to the disadvantage of the people of the Highlands and Islands. To change this situation it requires the vision and determination of the early pioneers of the Hydro Board.

5.5 Network Services Agency.

186. An essential part of the 'Initiative'

Conversation with Richard Ritty, managing director of Network Services Agency.

The Network Services Agency was established in 1991, as part of the Highlands and Islands Initiative, to create a communications facility for business, institutional or domestic computer users predominantly in the United Kingdom and Europe. The network allows anyone with a an IBM compatible or Apple Macintosh personal computer to exchange messages and computer files via the public telephone and data networks at the cost of a local telephone call. An electronic letter can be sent in seconds for the cost of a first class stamp. Facilities offered include electronic mail, electronic conferencing, faxes direct from a computer, and access to other computer services. The network is totally independent of the location of the computers that operate the system. There location in Inverness demonstrates the independence of telecommunications from geography.

5.6 Telecommunications in Education.

187. The Highland Project.

Conversation with John Bruce, Curriculum Development Officer, Schools' Computer Network, Highland Region.

The twenty seven Highland Region secondary schools are linked by computer. Some of the schools link to the European Space Agency in Rome for scientific and technological information. Children will become skilled in electronic communications so that they can conduct business from their homes, or teleservice centres, in the Highlands and Islands.

5.7 Community service radio.

Refer to paragraph 591. Community and BBC Radio.

A project is currently being funded by the Highlands and Islands Enterprise to help rural communities establish their own small community radio stations using volunteers.

189. Stornoway

For a transmission cost of about £2,000, one third of the population of the Western Isles could have their own community service radio station. Test transmissions have been made for the local population to hear the signal on their own radio sets. Meetings with the Local Enterprise company, and with a community radio group have shown a very positive interest in establishing a new radio station. The community service radio station could provide an invaluable asset to a community that is going through a difficult period after the loss of council finance.

190. Gairloch.

Gairloch is a widely scattered population separated by mountains and presents a difficult area to cover. The building of a new school and community centre, together with the interest of the Headmaster, provides an obvious place for the radio studio which will involve the children and adults of the community. With these small voluntary run stations it is important to keep the running costs as low as possible. As in many areas of the Highlands and Islands the geography and dispersed population requires innovative solutions to provide adequate transmitter signal coverage area. Existing radio masts are expensive to rent and a practical solution may be to use a telegraph pole with a small box fastened to it to contain the transmitter.

191. Kinlochleven.

Kinlochleven has a small compact population at the end of a long narrow glen with high mountains. Covering the road to Kinlochleven would be very important for such a community reliant upon attracting visitors some twenty miles, round trip from the main road. A community station from Kinlochleven serving the whole of loch Leven would also help reverse the vision of it being at the 'end of the world' to being the 'centre of the world', with a corresponding uplift of the community's spirits. Community service radio could provide an invaluable aid to the future sustainability of this small community. High above the community, near to a television transmitter site, is Mamore Lodge Hotel which provides an ideal location for the transmitter without incurring the high cost of mast rentals.

192. Interest generated by demonstration.

An overview of the communities visited to carry out tests would suggest that there are no insurmountable technical difficulties. All of the communities could achieve their desired population coverage without incurring expensive mast rentals which no community of small size could sustain. The greatest value of the tests was soon realised to not be in the measurements, but to be in the confidence it gave to the organisers in each community. The value of hearing for themselves the likely coverage on a domestic receiver; the interest generated within the community by those who heard the signal on their own radio sets; and the realisation that it was from their own community instead of a totally unrelated culture in Glasgow or London.

5.8 Olympus satellite for the Highlands and Islands

193. Multiusers justifies the cost.

Remote rural community service radio stations could provide a useful public information service by using the European Olympus satellite to link them together. The satellite service could also fulfil an identified need for a vision link which would then justify the capital and running costs, and would be an invaluable asset to the Highlands and Islands. France is establishing multimedia centres which have the facilities of teleservice centres with the addition of satellite links, conference and exhibition facilities.

194. Education and training.

Refer to paragraph 11. Canada: similarities and interest in the Highlands and Islands.

Telecommunications provides the means of solving the expense of travelling for training courses. A reluctance to use technology is due to the failure of schemes introduced before the technology was capable of providing a fully interactive system. The teaching of Gaelic throughout Scotland is increasing and telecommunications could provide contact with the Gaelic speaking areas. Satellite provision could widen this to other areas of the world, such as Canada, were there is an interest. This could provide valuable links with people that have a genuine interest in the Highlands and Islands, and may wish to be involved in its future well being.

195. Existing interest.

The Scottish Council for Educational Technology (SCET) with Heriot Watt and Sheffield Universities, Portugal, Highlands and Islands Enterprise, and British Telecom intend to provide business training for Community Co-operatives. They are interested in the use of the Olympus satellite which they have previously used for relaying programmes to eight secondary schools. Also a cross community technology project involving HIE, is to link up children between secondary schools on common projects, for example, a rail link between the two communities involving different subjects, engineering, livery design, catering.

Dundee University community care department is running a large distance training course throughout Scotland which could be better done and possibly cheaper with a live vision link than by sending out video tapes. Aberdeen University, Northern studies centre run distance learning and they would like to use live vision. Robert Gordon, Aberdeen, has developed a satellite interactive link for off-shore training. Orkney Council are looking into vision links between the islands to try and reduce the high costs of councillors and officials visiting the many small islands. A University of the Highlands could provide 'extension studies' . The recently formed Local Enterprise Companies with a remit for training could also make use of vision links.

5.9 Barbara project.

196. European information services.

Conversation with Douglas Maclean, Director of technical services, Highland Regional Council.

HRC Barbara project is to use their own megastream network rented from British Telecom.

As part of the Barbara project £394,000 from the European RACE/ORA research programme is to be paid to the Highland Regional Council to install and operate a number of advanced information facilities in selected rural areas to a total value of £500,000. 14 work packages are being undertaken by 5 participating countries. The Highland regional Council is leading two of the five projects lasting for 3 years commencing on the 1st January 1992.

Emphasis is on the needs of rural areas, and unlike the technical developments of other RACE projects the aim is to evaluate the real benefit to remote rural communities of information services using advanced telecommunications:

Work package 1: Development of a multimedia user interface: The development of special terminals for telelibrary and telecounter systems by British Telecom.

Work package 5: Telelibrary: Specially designed terminals installed in a small number of remote rural sites that can display text, full colour high resolution images, sound, and the ability to print copies of the display. These will use the Regional Council's new data network, to provide a wide range of information including a library catalogue, visual access to museum artifacts, views of archaeological sites.

Work package 6: Telecounter: This may use the same equipment as the telelibrary, and will provide a public enquiry and transaction point for Regional Council services by means of two way voice and video communication, printing, scanning, and possibly a smart card reader. The post office want a similar system for the distribution of forms and therefore the two systems might work together by siting the terminals at post offices.

Work package 7: Teletwinning of schools: Video conferencing facilities installed in one or more schools to connect with schools in Holland, Ireland, Portugal, and Greece. The system could be expanded to share scarce specialist teaching resources. This could also link up with other projects noted in section 5.5.5.

5.10 European LEADER project.

197. LEADER for Western Isles.

'£1.4 Euro boost for businesses', Stornoway Gazette, 14.12.91.

A successful application by Iomairt nan Eilean Siar (Western Isles Enterprise), Skye and Lochalsh Enterprise, Highland Regional Council, Comhairle nan Eilean, Scottish Crofters Union and Comunn na Gaidhlig. £1.4 million for a two year European LEADER programme to encourage business growth, inward investment, training and social development, and aimed at diversification of activity in crofting and farming areas. Tourism, vocational training, improved marketing of goods and services from the area, agriculture and forestry. LEADER *"demands an integrated approach to development and, specifically, strong links between training and development projects to form an innovative grass roots approach towards integrating the work of existing development bodies with new and complementary schemes"* Many of the development and training projects are to come from the community and part-time community workers work alongside the LEADER project team and the staff of existing agencies.

198. A life and energy of its own.

'How culture can be put to work', Stornoway Gazette, 12.12.91.

Highlands and Islands Enterprise says that the basis of renewed economic and social development is in broadcasting, teaching and the arts. Many incomers in Wales who have *"sought to escape the limits of English culture,"* have taken every opportunity for their children to learn Welsh. However *"... the culture must avoid becoming a mere tourist attraction. ... it will do no good in the long run if thousands of Gaelic educated youngsters are left with a career choice of simply teaching other youngsters or leaving their homes to find work."* EC programmes like LEADER are aimed at helping areas which are far away from the main centres of population.

5.11 Getting Involved.

199. Changing role for voluntary organisations.

Community Conference, 'Getting Involved', Highlands and Islands Forum, Inverness, 1991.

A conference organised to discuss the way ahead for communities. Changes taking place allow communities to participate in decision making. There is a danger that agencies and local government will use any difficulties to say that community involvement does not work. The role of voluntary organisations is being questioned by the funding bodies and they are having to meet demands to run themselves as businesses. Whilst there may be too many support bodies an enforced rationalisation may damage the enthusiasm that has made them work so far. The most innovative and successful local projects are those that have most difficulty in raising financial support.

200. Changing policies.

The vice-convener Highland Regional Council, Peter Peacock, compared our community councils with European equivalent that had considerable local decision making powers, often including the ownership of land. There is a growing change in the attitudes amongst agencies and local authorities about the relationship with communities.

5.12 Neighbourhood initiative and local planning.

201. Neighbourhood Initiatives Foundation.

Conversation with Dr Tony Gibson, Director, Neighbourhood Initiatives Foundation.

Community Conference, 'Getting Involved', Highlands and Islands Forum, Inverness, 1991.

Refer to paragraph 583. The Black Isle Community Planning Initiative.

The Neighbourhood Initiatives Foundation was established in 1988 by the Town and Country Planning Association and the Housing Associations Charitable Trust to build upon the Lightmoor New Community Project of self-built homes and workshops. The Education for Neighbourhood Change packs for decision making and community involvement helped such projects to succeed. Their aim is to work with communities that have set out to help themselves by improving housing, livelihoods and community facilities.

5.13 The Highlands and Islands Information plan.

202. The need for information.

Highlands and Islands Information Plan, Apt Partnership, December 1990.

The geography and settlement pattern of the Highlands and Islands, and its distance from the main Scottish centres of information, Glasgow and Edinburgh, indicates that a more self-sufficient information resource is required than for other parts of Scotland. A significant proportion of the population does not have access to towns. Conventional information services cannot meet the needs of up to fifty percent of the population. An effective service in one community is ineffective in neighbouring communities which are often a considerable distance and have poor or nonexistent transport facilities between them. For every community with an imaginative and effective service there are many communities with no service at all.

203. Lack of co-ordination.

Almost 200 agencies who provide information in the region were surveyed, and there was significant geographical areas without any coverage. Only the public library aimed to offer a comprehensive service: personal and family information, tourist information, information for community organisations, health information, information for local studies, and business information. There is very little formal inter-agency communication, co-operation and understanding. The report recommends a 'Highlands and Islands Information' to co-ordinate the whole area of information. The report emphasises the need for information workers who can converse with many people whose natural language is Gaelic.

5.14 Development Opportunities in the Natural Environment.

204. A region dependent upon its natural resources.

'Development Opportunities in the Natural Environment', A report to Highland Regional Council, Nature Conservancy Council for Scotland, Highlands and Islands Enterprise, Countryside Commission for Scotland, Scottish Office Environment Department, The ASH Partnership and Cousins Stephens in association with Institute of Terrestrial Ecology, Centre for Environmental Interpretation, July 1991.

'Development Opportunities in the Natural Environment', is a study of employment and business opportunities based on the conservation and interpretation of the natural environment of Highland Region. The report estimates that 35-40% of total employment in the region is directly accountable to the utilisation of its natural resources. An audit of resources categorises the region into nine biogeographic zones each reflecting differences in geology, climate, vegetation and land use; and each with natural resources of habitats, scenery, landform and wildlife. This physical environment influences the economic social and political structure of the region. A key feature is the great diversity of resources and their vulnerability as a consequence of economic activity, high volume tourism, intensive agriculture and forestry.

205. Environmental quality. As a region of outstanding natural beauty, the impact of human activity has not been recognised. Environmental quality has been taken for granted, and the study highlights the impoverishment of the environment due to negative impacts. The urgent need for measures to secure a future for those dependent upon the environment for their livelihoods is constrained by the forces which determine land management practices, the extent of co-operation between conservation and development organisations, the lack of a strategic approach, and human resource factors.

206. Strategic policies for sustainable development. Five main principle that underlie the concept of sustainable development for the region are stated:

1. The need to take a long rather than short-term perspective of development.
2. The management and maintenance of resources is equally important as their utilisation.
3. There is a strong interdependence between economic activity and the natural environment.
4. Individuals and communities have the right and a duty to influence the way in which natural resources are utilised, developed and managed.
5. Awareness and understanding of environmental issues should be promoted.

Nine strategic policies are derived from these principles.

1. Development must be sustainable, with long-term views prevailing over short-term ones.
2. The ecological well being of the Highlands must be given priority and the ecology, landscape and productivity of the area enhanced.
3. The natural resources of the Highlands and Islands are of national and international significance. National and international recognition, influence and funding should be sought, therefore, to ensure that they are developed and managed in ways consistent with this status.
4. A positive and creative stance should be taken to conservation of the environment, thereby increasing associated job opportunities and economic benefits.
5. Economic development must take full account of environmental impacts, while environmental quality should be a primary goal in all aspects of economic and community development.
6. There should be maximum co-operation between sectoral agencies in the Highlands and the stronger links should be forged between these agencies and local interests.
7. Local involvement in planning, decision making and the development and management of projects should be a key goal.
8. More extensive environmental interpretation should be undertaken in order to increase understanding of the Highland environment among both visitors and residents.
9. Support for conservation should be encouraged among all sectors of the community.

207. Demonstration projects.

Conversation with Tom Gillan, Highland Regional Council, planning.

Eleven demonstration projects have been developed in the study to demonstrate practical application of the policies. An International Centre for Environment is proposed. [This could be a component of the University of the Highlands, refer to chapter 15: 'A proposal for a new settlement pattern: establishing the model']. Community involvement is emphasised, and the Highland Region Council are now helping communities to accomplish some of the projects.

5.15 Highlands and Islands Enterprise.

208. The new enterprise.

Highlands and Islands Enterprise was created in April 1991 from the Highlands and Islands Development Board to deliver economic and social development, training and environmental renewal through ten private sector led Local Enterprise Companies. The Local Enterprise Companies must have at least two thirds of their board members drawn from the private sector. By April 1993 the Local Enterprise Companies will have 150 staff and the Highlands and Islands Enterprise 145 staff. The Local Enterprise Companies are allocated 80 per cent of the total £77 million budget for 1992-1993. In line with the government's Citizen's Charter a booklet sets out the standard of service to be delivered.

209. Strategies.

'The Community and Economy - A Social Development Strategy for the HIE and LEC network'.

Most departments in Highlands and Islands Enterprise have produced development strategies. The Community and Economy - A Social Development Strategy for the HIE and LEC network is to be overseen by two members of the HIE staff with 2 per cent of the total budget. The inclusion of a social remit *" ... acknowledges the importance of an integrated approach to rural development ... "*. Its aims are to create lasting development and long-term economic growth with an increased commitment from individuals to shape their own future in *"a period of rapid change"*. To develop the social, community and cultural values through communities nurturing their own *"distinctive identities"*. It suggests that social and community development *"complements work"*. This is in a region where work is traditionally not a separate entity, except in the eyes of incoming administrators.

210. Enterprise medicine.

Ibid.

The strategy intends to encourage individuals to be involved and avoid adverse factors to enterprise. The history of these communities is one of self reliance demoralised by outside interference. A new wave of external influence now wants to encourage that involvement with a new external slant. 'Enterprise' is the new magic medicine that will cure all ills, produce a self-sustaining enterprise, and bring back a culture that has now gone. This is the English trying to bring back the green to their cities; it is the Americans trying to recreate the Indians. Control is to be through democratic representation in a society that has its own values social organisation. Management, accountability and organisation building are the tools of an industrialised society designed for the convenience of administrators and not for Highland communities. This is the *"Culture driven development"* of urban communities. It is now acknowledged that the *"rich set of cultures"* are not a handicap and that they can now be *"used as a development tool"*. Social development is to be integrated with inward investment, economic benefit and training in enterprise.

211. Rationalisation.

Ibid.

Highlands and Islands Enterprise report 1991 to 1992.

There are now some 2000 voluntary organisations and over 30 community enterprises. There has been 2451 grant aided projects totalling £6,354,000 from 1983 to 1990. In 1991 to 1992 only £833,739 was spent on 342 projects compared with £28,364,000 spent on 1118 industrial, tourism, fishing and land projects. The number of intermediary agencies is now causing concern and *"rationalisation"* to create *"efficient and cost-effective delivery"* is being demanded as a priority by the Social Development Strategy. The stimulation of demoralised communities by agency funding can not be denied: Papay Co-op, Islay and Jura Swimming Pool, Kinlochleven Limited, *"Cultural Industries"* creating 700 to 800 arts - related jobs generating £1.4 million tourism income. These projects are the most appropriate and lasting of any that are aided by government agencies.

5.16 Energy.

212. Wind, wave, and hydro power.

'Scotland is loosing out in the race for clean power', Inverness Courier, 8.10.91.

The sixth international conference on Energy for Rural and Island Communities: 'clean energy for sustainable economies', was held in Inverness. Scotland, particularly the Highlands and Islands, has the greatest unrealized potential in Europe for providing clean, renewable energy. In England and Wales, independent electricity producers may receive between eight and ten pence per kilowatt hour for selling electricity to the grid, yet no equivalent opportunity exists in Scotland.

There are plans for a wind farm power development near Thurso, and smaller scale hydro power and new wind farms could provide many hundreds of megawatts of power while bringing extra income to rural areas. 55 per cent of Britain's wind power potential is in Scotland, as well as 90 per cent of its wave power and hydro power. Hydro plant, providing the cheapest electricity in the UK, could be expanded by at least 50 per cent. Scotland's first passive solar housing development at Stile Park, Stornoway, has revealed a solar fuel saving of around 30 per cent. *"... a solar house as far north as Lerwick can save 50 per cent more than the same house sited in London."*

5.17 The hidden machinery of industry.

Evidence from Mr. W H Smith, retired industrial manager, specialist in packaging.

213. Competition And Secrecy.

The continuation of present day business depends upon 'being in the know'; contacts with 'the right people'. A hidden process of business associations, dinners and 'the club' in which the directors are 'wheeling and dealing' with each other. Business needs competition and secrecy; competition is the driving force to develop products. Secrecy from competitors of the techniques in manufacture are necessary for the process of competition and to ensure a return on the development costs. Some liaison between industry does occur when it is necessary for the provision of a proper service to the customer. Standardisation of components becomes necessary for established products which may have more than one supplier to a the same customer. Even then the door has to be left for new developments and the details of manufacture have to be protected. Patents only meet this need for very large mass production for general public consumption.

Teleservice centres are intended to be in contrast with these concepts of business competition, so that they can supply a variety of expertise that is not in competition. A rural area is probably unlikely to support two suppliers of the same expertise.

214. The evolution of packaging.

The packaging industry has undergone an evolutionary process in which the large factories producing the containers have moved to smaller factories co-sited with the customer who fills them with his product. This eliminates the transportation of empty containers. The packaging industry is now showing an interest in small single production lines sited in communities that produce and consume the product thus eliminating the transportation of the raw materials. It seems likely that the improvement of telecommunications for technical and managerial support will further encourage this process.

215. Capitalist or public service?

Basic service needs which all of the community require as a part of life may be better served under a non-competition system. For services such as water, where only the best can be allowed, it would seem more sensible to use the best knowledge available from the universities. It does not make sense to use capitalists who are more suited to a competition way of working in contrast to a public service.

PART 2

THE WORLD VIEW.

"The Industrial Revolution introduced into human consciousness one of our most insidious beliefs - the idea that most of our waking hours must be devoted to 'making' a living, and actual living is confined to the few remaining hours thereby 'made' livable."

Noel and Rita McInnis, The perception of wholeness: livelihood and life as one, Science of Mind, March 1991, p.111.

"In the nineteenth century Great Britain led the world in the development of industry and where factories were built there were rows of mean houses erected for the 'hands' "

Robert Owen, JS Buckingham, Charles Dickens, William Morris, Sir Titus Salt, Lord Leverhulme, William Blake, CR Ashbee, Ebenezer Howard, Patrick Geddes, Cadbury, and Joseph Rowntree were some of the

"unheeded voices against this monstrosity."

GL Pepler 1948, in Patrick Geddes, Cities in Evolution.

CHAPTER 6

GLOBAL CHANGE.

Sorley Maclean's 80th birthday.

"a renewed interest in the local traditional cultural heritage."

Malcolm Maclean:

"Television, and its tendency to destroy distance, to conjoin communities across the world in a globular, sticky, homogenised mass, is one of the reasons for Gaelic's renaissance, Maclean believes. 'The death of the distance factor has meant that the whole world has become more the same. You buy the same consumer commodities from the same big stores in Paris or London. It's the internationalism of commodity culture.' "

Tom Morton, 'A cause for celebration, in anyone's language', Scotsman, 8.10.91.

6.1 The Global view.

216. The 'global village' and the 'world village'.

Marshall McLuhan, Understanding media: the extensions of man, Ark, London, 1987, (1964)

Marshall McLuhan's concept of a 'global village' has arrived. There are several interpretations:

1. In every aspect of human life on the globe there is a tendency toward internationalisation: in material goods, customs, architecture, cuisine and entertainment. this is being accelerated by global advanced telecommunications and satellite television.

2. All cities, towns and villages increasingly use products and adopt customs from other parts of the world. Again global telecommunications and television is influencing this change.

3. With telecommunications and air travel there are people whose home and work is everywhere. Their life is not centralised on one particular country and in effect they belong to no particular country. National boundaries no longer have meaning for these people.

Roads enabled the Romans to control a larger part of the globe than previously. The telegraph enabled Imperial Britain to control its empire throughout the globe.

4. **'Global village'**: the effective close proximity in terms of control of cities, towns or villages on the globe. The reduction of time to convey messages and therefore control remote places gives rise to the 'global shrinking' phenomenon. An internationalisation of cultures; a loss of individual identity, an imposed conformity. The term is synonymous with 'global corporations', and 'global cities'.This interpretation will be used in this study.

5. This study also offers an alternative interpretation which will be used as an essential part of this study:

'World village': the effective close proximity in terms of 'neighbourly' understanding and co-operation of all cities, towns and villages in the world. The reduction of time to convey messages of understanding and cooperation reinforces the 'world shrinking' phenomenon. An understanding of the diversity of cultures and their individual part in the universality of the world; a recognition of every other village in the world as a neighbour; a realisation of self determining villages each with its own character and identity.

'World village' is in contrast to 'global village' The revolutionary change due to telecommunications is accelerating at a rate never previously experienced, and is within a sphere of influence from 'global' to 'village': this is a 'global village' system. This change is paralleled by an apparently new phase in human thinking which could provide an opportunity for a reverse process of influence from 'village' to 'world': this is a 'world village' system.

217. Globalisation.

Michael Wood, 'Travellers Tales: Disappearing India', Channel 4, 31.8.92.

This study supports local community identity and not national identity and sovereignty which are politically self-seeking systems of control and domination that are outmoded in a world of common consciousness and well being.

'Global' has become a fashionable word for the media. For example, Michael Wood notes the cultural equivalent of the loss of entire species in rain forests: *"whole dimensions and ways of seeing are disappearing with the arrival of global culture."* It is the *"removal of a nations individuality."* The Highlands and Islands of Scotland, as a part of the world, will experience a combination of these global influences that are increasing as the world effectively shrinks.

218. Trade, the 'global village' and ISDN.

Conversation with British Telecom, 1991.

Refer to paragraph 18. Burghs and the importance of trade.

The desire to trade, unique to man among the other animals, has led the human species to the 'global village'.

The new technologies which are changing the nature of trade from goods to 'knowledge', could re-establish neglected commercial routes between Scotland, Scandinavia, the Low Countries and elsewhere.

Refer to paragraph 254. Integrated Services Digital Network (ISDN)

This new 'trade' has been made possible by the Integrated Services Digital Network, ISDN2.

219. Trade and the reversal of the Industrial Revolution.

The demands of trade produced the Industrial Revolution which began in rural areas with serfs working from their homes under adverse conditions. The 'industrialist' would deliver the raw materials and collect them after they had been processed in return for a small payment. The early industrial revolution of textiles brought benefits to the rural areas of the Highlands and Islands. It was only when the demand for manufactured articles grew, and first water and then steam power were harnessed to meet this demand, that the move to the factories and centralising cities was necessary. The power of the cities has remained since that time.

Today's telecommunications provides the first real opportunity for the Highlands and Islands to overcome the domination of cities.

220. Urban-rural shift, research, living attractions, the London glue, revolutionary change.

David Keeble, ibid. pp. 14-16.

John B Goddard, Alfred Thwaites, 'Technological change' in Ibid. pp. 96-97: C Freeman, 1984, Keynes , Kandratiev, in P Marstrand, ed., 'New technology and the future of work and skills. Frances Pinter.

There is a growing internationalization of investment, production, and control by multinational corporations. Technological change is global, and is dependent upon research, invention, development, and more dramatically, innovation. It is the diffusion of innovations that creates a revolution. Steam power was the innovation of the industrial revolution. The internal combustion engine, electric power, and basic chemicals are quoted as other examples. Information technology *"has the capability of bringing about a similar radical transformation in the future."* The prosperity of the south east has been produced by the government: the location of research facilities; defence contracts; modernisation of communications; and strict planning controls to ensure the quality of the environment. The forces of power and wealth and of London have so far dominated.

221. Global auto-suggestion.

Maxwell Fry, Fine Building, Faber and Faber, 1944. p 76.

For the use of satellite television in India see: *Open University, 'An introduction to information technology: INSAT: implications for a Nation', BBC2, 29.8.92.*

Maxwell Fry wrote, in 1944, about ideas of commercial auto-suggestion: *"Still the great streams of youths and girls flow from early school, to the factory and the shop, and from there to marriage, unawakened, unaware of the rich world they inhabit, of their opportunities for service and their place in a corporate life. ... they are no more than the reflex answer to commercial auto-suggestion."* Today we have the autosuggestion of advertising, the media, and in particular 'global' television made possible by satellite telecommunications.

6.2 Global power.

222. The change from manufacturing.

Change in the British manufacturing industry, the pioneer of the industrial revolution, is amply illustrated by the loss of 3.14 million workers by 1983, a loss of 37 per cent since the peak of manufacturing in 1966. 1977 marked *"the worst global capitalist recession since the 1930's."* William Lever suggests that there is a difficulty in the acceptance of this rapid change, and since 1979 *" ... the rate of change has accelerated; manufacturing industry in Britain and in much of the developed world has declined in output ... "*

David Keeble in William Lever, Ed., 'Industrial change in the United Kingdom', Longman 1987, introduction and p. 2.

William Lever, ibid.

For Industrial Revolution, see Open University, Industrial Strife, BBC2, 30.8.92.

The preoccupation with creating more industrial jobs seems to only perpetuate the industrial system and feed more redundancy. The world's population will continue to be under stress until the concepts of change are accepted, and an alternative is found to the industrial system.

The difficulty is in the acceptance of the end of the Industrial Revolution and all its associated systems of jobs, unemployment, social security, control of people, dependency, fragmented society, and unhealthy cities.

223. Knowledge based global exploitation.

The settlement pattern of cities has been changed from the industriallsed factory to factory and offices, and now to research and development centres. Knowledge has become one of the strongest forces in the creation of wealth and the new technologies allow a closely refined control over the whole wealth creation process as it disperses itself around the globe. By separating the production activities from their knowledge base, the industrial exploitation of Western populations has now enveloped the developing countries. The 'global village' that has brought the peoples of the globe closer together has also exploited cheap labour and increased the economic gap between them.

Richard V Knight, University of Amsterdam. 'Knowledge-based development, the role of cities, regional knowledge resources and tele-power assets', at Planning in the Age of the Information City: More Humane, More Harmonious, More Sustainable. September 6-8th 1990. Japanese-German Centre Berlin.

224. Correcting the exploitation.

The whole globe has taken on the characteristics of the American city in which the economically poor are side by side with the rich. Under specific conditions, Leopald Kohr suggests that an economic gap can achieve a general uplift of the human situation:

Leopald Kohr,The Inner City, 1989. p. 36.

"A community becomes a slum when it is undifferentiatingly populated by the lowest income class. It makes no difference at what level this one class society exists ... what makes a slum is the absence not of plumbing but of differentiation ... discover not what the slum residents want but what persons of affluence ... want if they are to be induced to settle in the slum ... the rest of the community can raise itself ... by following an example."

Aristotle in Leopald Kohr, The Inner City, 1989. p. 134.

"... a state is not made up only of so many men, but of different kinds of men, for similars do not constitute a state. It is not like a military alliance."

225. Global labour force changed at the whim of economics.

In this 'global village' the power of economics can change the conditions overnight so that production facilities can suddenly be moved from one country to another.

Alistair Kelly, director of manufacturing at ICL, 'Feedback: Building a better product - by half', Electronics Times, 5.9.91.

ICL the UK computer business, now Japanese owned, has found that it can now improve response time, and reduce shipping costs by moving its production from developing countries back to the UK. Elonex, a large personal computer distributor, has also moved its assembly from the East to Scotland. The current movement of production into Scotland from developing countries could disappear again just as quickly.

Keith Aitken, Geared up for shut-down', The Scotsman, 8.10.91.

Refer to paragraph 330. 'Cities of tomorrow', Japan.

American Unisys who arrived in Scotland in 1980 is moving from 'Silicon Glen' due to its 'Global restructuring'. Unisys has relieved the Scottish Office of £8million, and another company, Wang, of £3.4 million. *"A penalty clause on Unisys ran out earlier this year. "* Unisys gave the research and development focus of other plants, as a reason for choosing Livingston to close. These production facilities are located to exploit government grants and cheap labour, and one lesson learned from the Japanese is the advantage of integrating production with the higher corporate functions.

Ruminator 'Spare the rod and spoil the UK', Electronics Weekly, 4.9.91, p. 13:

The computer industry's world market demands eight million of a particular component every year. The inventor and manufacturer of this component (3.5" disk drives) was Rodime in Scotland. Even with such a massive world market the company has failed due to an inability to change production to a new size. Production is on a global basis and this same change in a single component affected at least three other factories in other parts of the world.

People's livelihoods are continually under threat from rapid global changes in the location of production facilities.

226. The power of global cities and global corporations.

Only the global companies, government institutions, and more recently cities, have been able to afford the costly experiments of the new technologies. They have vast communications networks of voice, image and data to control their suppliers, production sites, and distribution so that physical movement is no longer required for them to function. Physical distance has dematerialised to give a 'global force' of profit and finance unequalled power of control. The ruling nations of the world have now been replaced by an invisible network of key 'global cities' that are more associated with other 'global cities' than with their own geographical country.

The new technologies are firmly rooted in the future of 'global cities' and 'global corporations', and the expected decentralisation has been overshadowed by their power.

227. The power of a 'global city network' leaving rural areas behind.

See also: Michael Wegener, Institute of Spatial Planning, University of Dortmund. 'Information and urban development in Japan and West Germany.' at Planning in the Age of the Information City, Berlin, op cit.

'Invisible Enemies, BBC2, 26.7.91.

To compete with the 'global force', national governments have realised that they need cities of innovation with highly qualified labour, opportunities for entrepreneurs, and access to information. Major cities already control information, and in Britain, Docklands, Manchester, Sheffield, and Edinburgh have plans for 'teleport' centres which provide a complete network of telecommunications integrated with other world cities.

The lead taken by large corporations and 'global network cities' has already begun. Public concern for the potential of increasing control by administrators has continued throughout political history from Plato to Huxley, Orwell, and Popper; telecommunications could add a new chapter to such writings.

Cities and governments, caught in the circle of competition and fragmentation, will stop at nothing to ensure that they are ahead in the race to use new technologies to be part of the 'global city network'.

Rural areas have been left behind, and the fragmentation and stress of the industrial system has infected the whole globe. An analogy can be seen with a recent television series 'Invisible enemies' which illustrated the real threat of bacteria and viruses to 'mono-globalisation' by humans.

6.3 People power.

228. A war of telecommunications and technology over energy resources.

Another significant global change is typified by the Gulf War: a new type of 'military' war replacing the political 'cold war'; relatively small wars of dwindling world resources, currently oil and in the future water. The significance is in the rapid change in the technology of the weapons to a war of laser guided weapons, satellite global positioning systems, and satellite television systems. Wars of a communications revolution in which leaders confront each other via television whilst the world views the spectacle, as it happens, from their armchairs.

'Global positioning in peace time', Electronics Weekly, 4.9.91, p.26.

The same global positioning system used in the Gulf War and which enabled soldiers to throw their maps away, are now used to monitor the exact position of buses in streets to improve the efficiency of the system. Rockwell Communications claim that every new Japanese car produced in 1983 will have a low cost satellite navigation system, and personal position finders are now available. The United States government have spent ten billion dollars on the first fifteen satellites of the system with nine more still to be paid for. The benefit of the equipment market, estimated at four billion dollars in 1995 will inevitably subsidise Japanese industry. Such 'global industry' could be forcing politicians to work together and eventually could evolve into a world government.

229. A return to the Greeks?.

Tony Vogt.

The truth may lie in the animal instincts of men and their fantasies of killing games. A legalised murder. This would suggest that women, with natural instincts of life-preservation rather than self-preservation, should be in control of the world.

Ironically, the solution to increasing wars may lie in the network of global cities and corporations. A diminishing role for nations could reduce international tension and the disputes over land and resources. A pathway that forces politicians to work together towards world government and peace. Against this view there is today an emphasis of the old arguments over territory and cultures, and a tutor suggests that it could be a return to the intercity wars of the Greeks. When national barriers are finally demolished these wars would be shown to be even more meaningless than they presently appear.

230. People power.

'Comment: Technology the unsung hero of democracy', Electronics Weekly, 4.9.91. p. 12.

As with the old style of printing presses, the power of television and radio stations have been recognised by modern revolutions; they are centralised and very easy to capture and control. Electronics weekly, in referring to the fall of Soviet Communism, insists that it was *"people power"* encouraged by a new breed of leader: *"People armed, not so much with guns and tanks, but with phones and faxes and photocopiers and transistor radios and, yes, television."* The proliferation of telephone ownership, and more importantly the fax, the photocopier and networked computers has made it very difficult to control the use of new technologies.

231. People democracy with free telecommunications.

Needs an alternative word to democracy.

Ibid.

"If we in the West are serious about spreading democracy around the world, we should be setting up phone networks for free, and giving away personal computers, faxes and photocopiers by the ship load. We should be arming the world not with weapons of destruction, but with the technology of democracy."

With new technologies there is an opportunity to accomplish a true and equal democracy controlled by real 'power of all the people'.

It is ironic that the emblem of capitalist democracy, the dictatorship of the industrial system, is the antipathy of democracy.

6.4 'Western' fragmentation.

232. Industrialisation, communications, concentration of power.

Robert J Naismith, 'The story of Scotland's towns', John Donald, Edinburgh, 1989, pp. 111, 114.

Whereas the linen and wool industry enabled landowners to build villages and small towns to attract mill owners and labour all over Scotland, by the second half of the eighteenth century the growth produced by the technologies demanded a drastic improvement in communications. The new roads and railways were allowed to dictate the changes, rural towns and villages were rapidly enclosed by the expanding industrial towns, and the countryside was divided by a network of canals, roads and railways. James Watt's steam engines encouraged centralisation near to the coalfields, and the geographical spread of the early textile industry soon weakened the rural areas. The concentration of power changed to the central Scotland coalfields, then to London, New York and Tokyo. The centralising force of the industrialised cities created large populations that, unlike previous burghs, became disconnected from the countryside.

233. The social cost of industrialisation - fragmentation.

Ibid. pp. 148-152, 156.

At the same time as the *"intellectual privileged were being dazzled by the brilliance of the Enlightenment"*, industrialisation was taken over by the few for the creation of vast wealths at the expense of the majority working in inhuman conditions. Industrial enterprise had no respect for the human labour it was dependent upon, and populations grew to 1,000 per acre with no sinks or sanitation. Only the danger to the superior residential areas of continuing epidemics of cholera and fever encouraged experiments with accommodation.

None of the new towns achieved any *"sympathy with the characteristic life of the place it was established in."* The new 'culture' was stored in museums, art galleries and opera houses, and the loss of town amenity created a desire to escape by travelling to spas and holiday resorts. The twentieth century lost a *"sense of scale and architectural propriety, ... stone quarries suddenly ceased to exist"* There was a total fragmentation of the western way of thought and life.

234. Popolucan Indians.

Open University.

An example may illustrate the wide ranging global influences of the Western system. An Open University programme on the Popolucan Indians of Mexico draws attention to the destruction of forest for cattle to benefit the west. The Indians have also been persuaded to burn the tropical rainforest and grow crops which their government can sell on the global market. The crops produce low yields, they require intensive care, they erode the soil and require ever increasing quantities of western fertilisers and insecticides; the Indians are on *"a treadmill of high costs and low returns"*. They now have to use western machinery which puts them out of work, and they no longer have the forest which once supplied their livelihood.

235. Self perpetuating plant ecology.

Ibid.

Refer to paragraph 489. Self sufficient in food.

The native Indians had evolved a plant ecology that was self perpetuating to such an extent that the most sophisticated of western automated technology would pale into insignificance. With very little labour and no input of resources, impossible in western thinking, half a hectare produced 35 species that supplied all the food, medicines, and materials that the Indians required for an easy life. The yield was far higher than any mono-culture. In all there was 244 species supported in the area. The Popolucan Indians probably hold the key to managing the area in a far more productive way than the imposed western 'we know best' system, and without destroying the forest. This example of western influence, has been repeated throughout the globe.

236. Discarded children.

Elizabeth Smith, teacher.

This same 'blind view' extends to our own education system which discards children that do not fit the 'academic' ideals of our society. If, instead of the 'mono-system' of industrialisation, we had the richness of a diverse society there would be a place in our society for these children. Take for instance food production, if the system of factory produced food that is transported around the globe failed, who would produce food locally? Might this be a talent that some of these discarded children could have? Might this also be related to the Popolucan Indians who could have shown us how to run a more secure permaculture system?

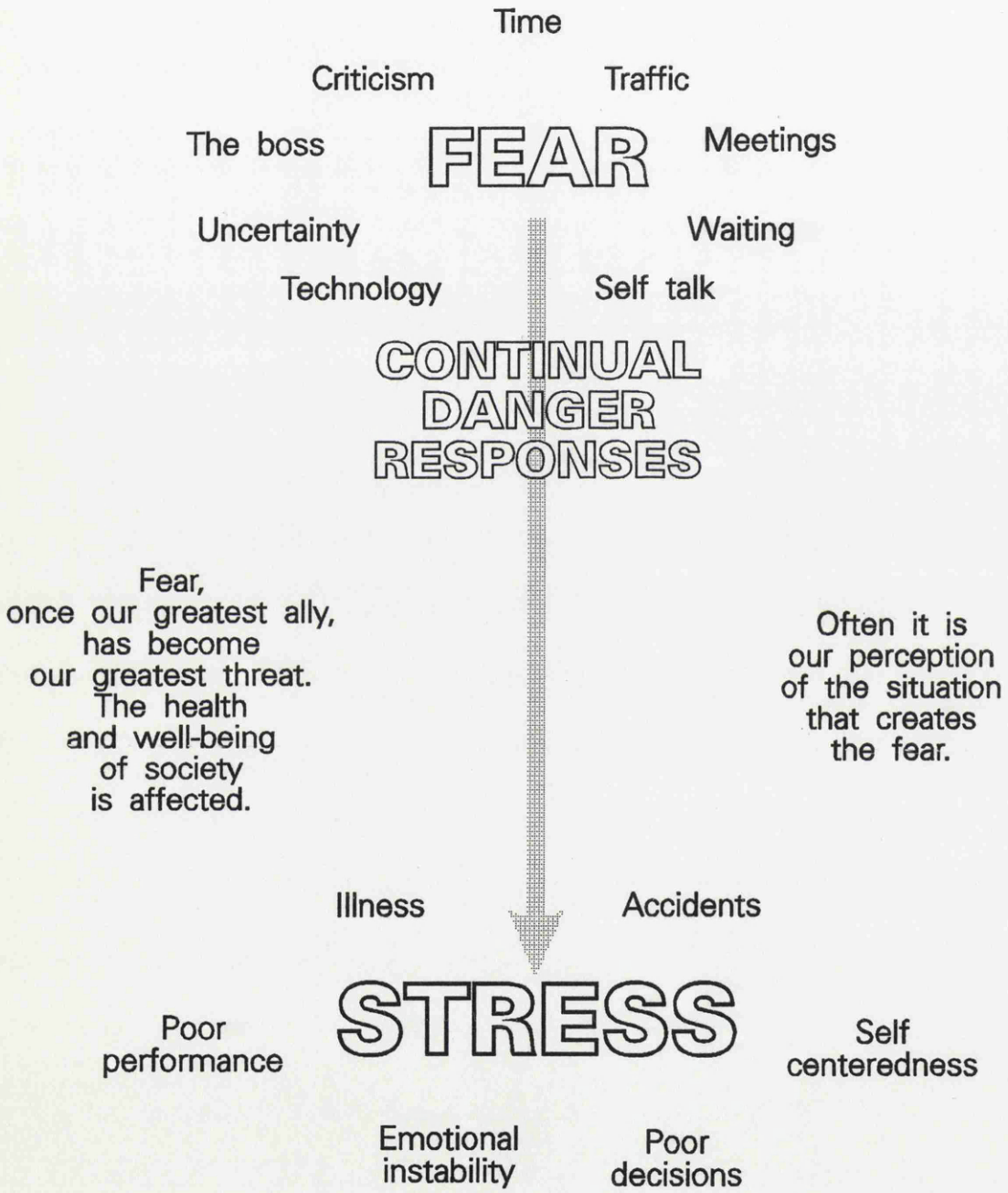
237. The fragility of the industrialised system.

Open University, 'Introduction to information technology: computing and the DHSS', BBC2, 12.9.92

How fragile is our industrialised system? Assuming that there is no interference from an outside force, is it as robust as the food system of the Popolucan Indians? In an Open University programme the DHSS is given as an example of a 43 billion pound business so complex that it is having to depend upon information technology. Information technology is a creation of the industry that has made the DHSS necessary. Effectively the DHSS could be considered as a 43 billion pound 'palliative' prescribed as a medicine to the negative effects of the industrialised system.

Diagram 2. The stress of an industrialised society.

**Fear is a natural response to danger found in all animals.
The threat of wild animals has been replaced
by danger that we perceive in our minds.**



**Unlike an attack from wild animals
our bodies do not have time to recover from continual threats.
We are in a permanent state of tension.**

To survive ever-accelerating change
the cycle of ever-increasing tension needs to be broken.

238. Fragmentation and mono-globalisation.

The Outlook Tower, Edinburgh.

The legacy of our industrial system is a total fragmentation of our view. When industry finally shuts down, where will the supplies of 'palliative' come from? There is a dilemma that to change the system is unthinkable and to continue will result in a catastrophic collapse of the system. A system that depends upon itself has evolved, it is therefore fragile, and it is presently engulfing the whole globe in 'fragmented mono-globalisation'. Television, a product of industrialisation, provides a window onto this world just as the Camera Obscurer gave Patrick Geddes a window onto the region one hundred years ago.

239. The stress of an industrialised society.

Peter Russell, The White Hole in Time, Aquarian, London, 1992 p. 92.

Open University, 'Biology: brain and behaviour: stress' BBC2, 8.8.92.

Diagram 2. 'The stress of an industrialised society' shows how the natural animal instinct of fear has produced a continual danger response to real and imagined threats in the industrial working environment. It is shown in an Open University biology programme how fear, which protects us in a situation of real danger, has become stress.

Stress is the sickness of our industrialised society which has created and taken over the 'global village'.

6.5 Eutopia today.

240. Positive eco-economics.

3.3.92, 'The advances to be gained from industry's retreat', Christopher Harvie, The Scotsman.

Adapted from Professor Christopher Harvie, 'Cultural Weapons: Scotland and Survival in a New Europe', Polygon, 1992.

Professor Christopher Harvie recognises the positive aspects of the redundancy of industry. It has been realised that the ability of multinational manufacturing to attract high value-added sectors is false. Together with the falling cost of telecommunications the *"clustering"* of financial centres can be broken and Scotland linked directly with the markets. A *'general staff'* is required to research technical possibilities, maintain international relationships, plan education and training, and apply information technology to development and economic strategy. Patrick Geddes would also have said that resources are available within our current technology to fulfil human lives in society as a whole.

241. A real community.

Ibid.

Refer to paragraph 70. Education suited to local social needs.

A doubling of the 15 per cent of the world's population access to the motor car would be environmentally fatal. *"Scotland's renunciation of the car would be sensible and release huge economic resources".* Scotland can provide the new *'eco-hi-tec'* power generation, recycling and waste disposal. World telecommunications opens up the international market and the present crises provides a business to repair our planet. Repetitive jobs in manufacturing or services in which people replicate machines until such time as machines can replace them is a narrow view. Being in work conveys status in a society which has always been selective against the housewife, caring for a handicapped child and voluntary work. Local identity and diversity may be more important with 'globalisation', and the way forward may suggest a place and 'role' in the community rather than 'jobs' as understood by the present day work ethic.

Education is not just *"an input into the labour market"* it is a first-line element in our social structure, it is about information and self-expression: *"these are the bases of a real community."*

CHAPTER 7

TECHNOLOGICAL CHANGE.

THE OPPORTUNITIES FOR CITIES AND RURAL COMMUNITIES.

"Confronted by computers and word processors by day, and television and videotape by night or even 'til dawn, imprisoned in such round-the-clock solitary confinement, folk are hungry for human contact and are ready to explode from the cabbage couch back to a world in which they can participate.

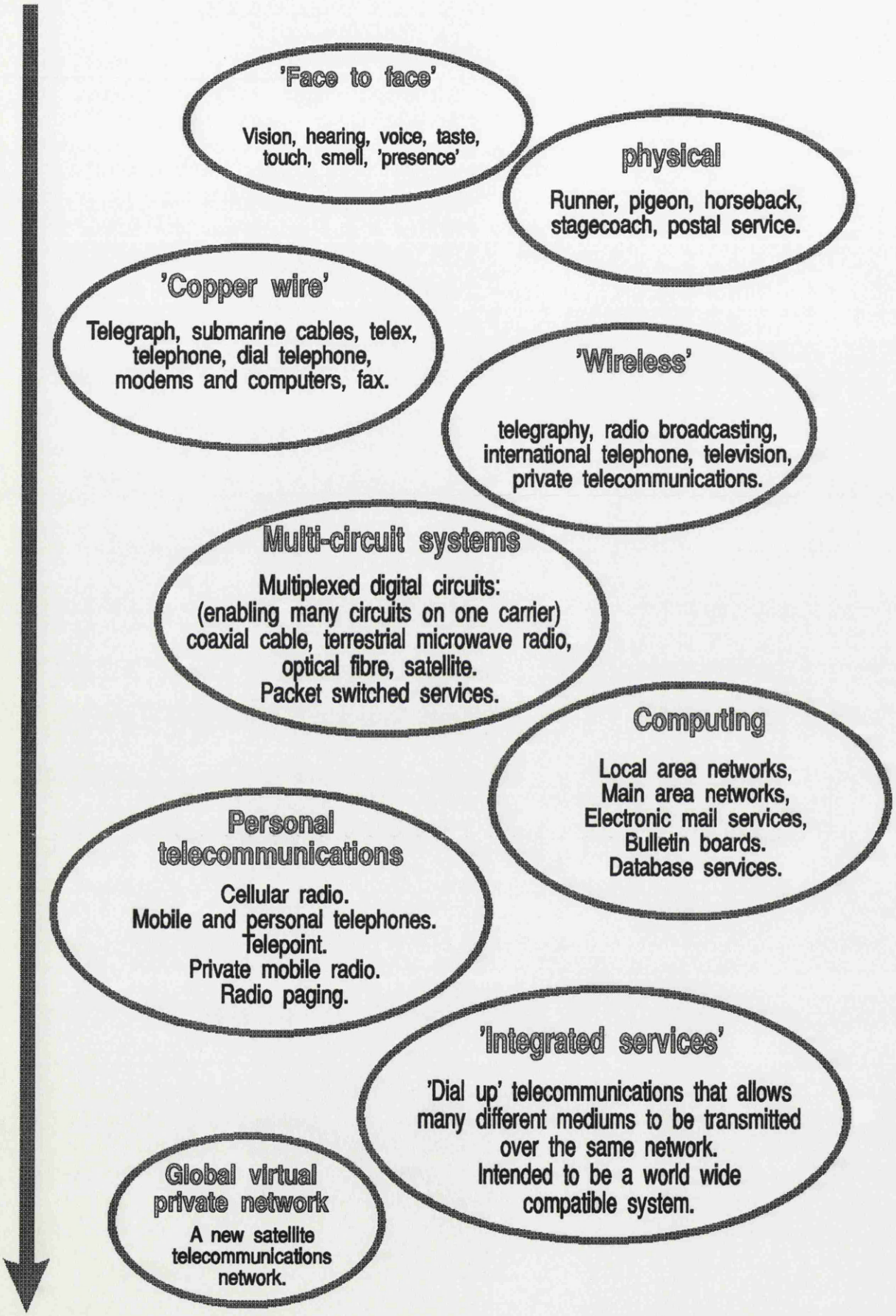
Elizabeth Marshall, curator of Rosemarkie Museum, expressed the reaction of a mixed audience when she recently heard stories told by Duncan Williamson.

'They enjoy stories today as much as ever they did (and I don't mean books, wonderful though they are). I mean the contact, the energy and flame that is generated between teller and listener whether he be child, adult or sage.' "

David Campell, 'It costs nothing, but pass it on and the interest grows', The Scotsman, 17.10.91.

The human race appears to be at a new turning point,
and just as art and architecture
reflects the culture within which it is created,
so with the use of technology.

Diagram 3. The evolution of telecommunications



Increasing speed, quality, and quantity of information.

European telecommunications market is worth:
£53 bn in annual service revenue,
£16 bn in equipment.

7.1 The evolution of telecommunications.

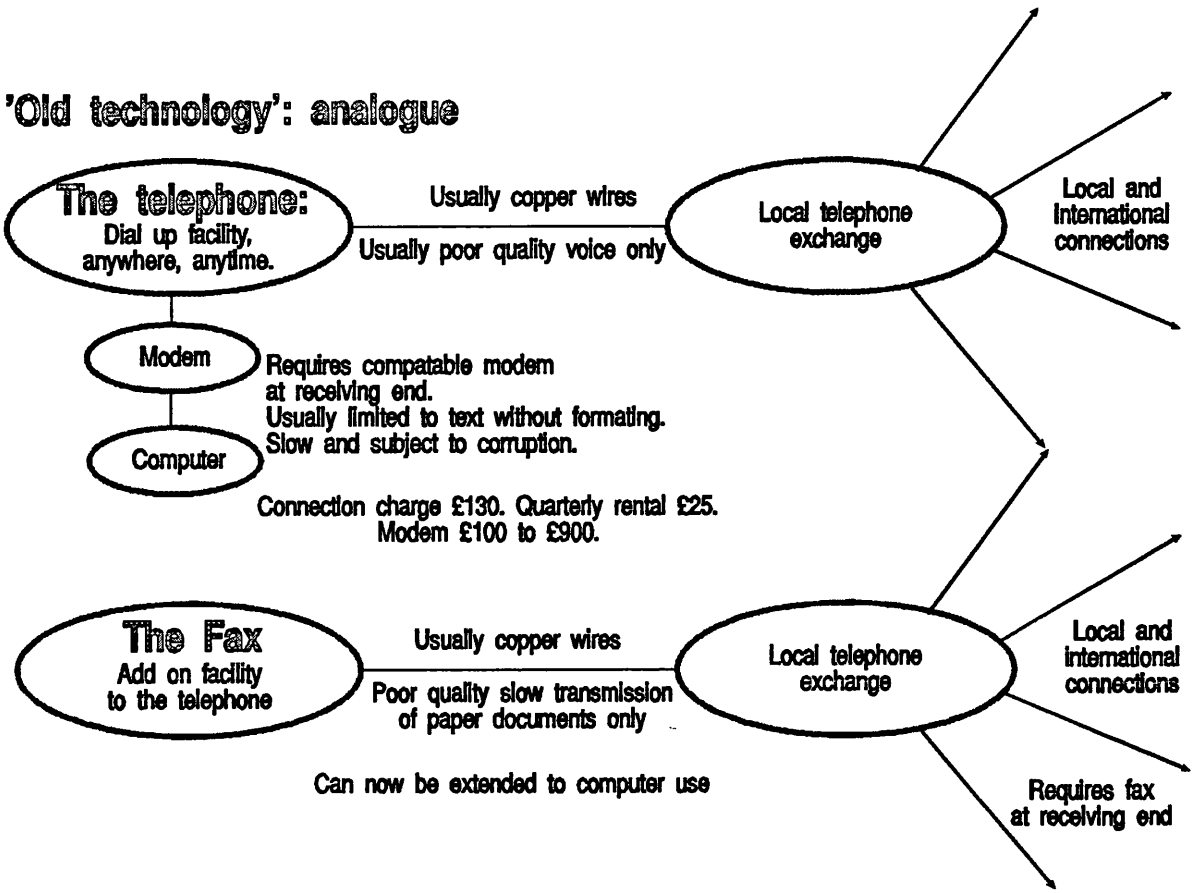
242. The human system. Diagram 3 'The evolution of telecommunications', shows the progress of increasing speed, quality and quantity of information transmitted in communication systems. Humans originally had to rely upon 'face to face' contact which probably represents the maximum transfer of information between humans. The amount of information that can be transferred in a system is called the bandwidth, and the human system would have a 'wide bandwidth'. The distance between the person 'transmitting' the information and the person 'receiving' the information was progressively increased by means of a 'carrier': runner, pigeon, horseback, stage-coach and the postal system. Whilst the distance or speed was increased the quantity and quality of the information was decreased. Each one of these 'narrow bandwidth systems' could be described as 'analogue' since the verbal or written message is continuous rather than 'coded'.

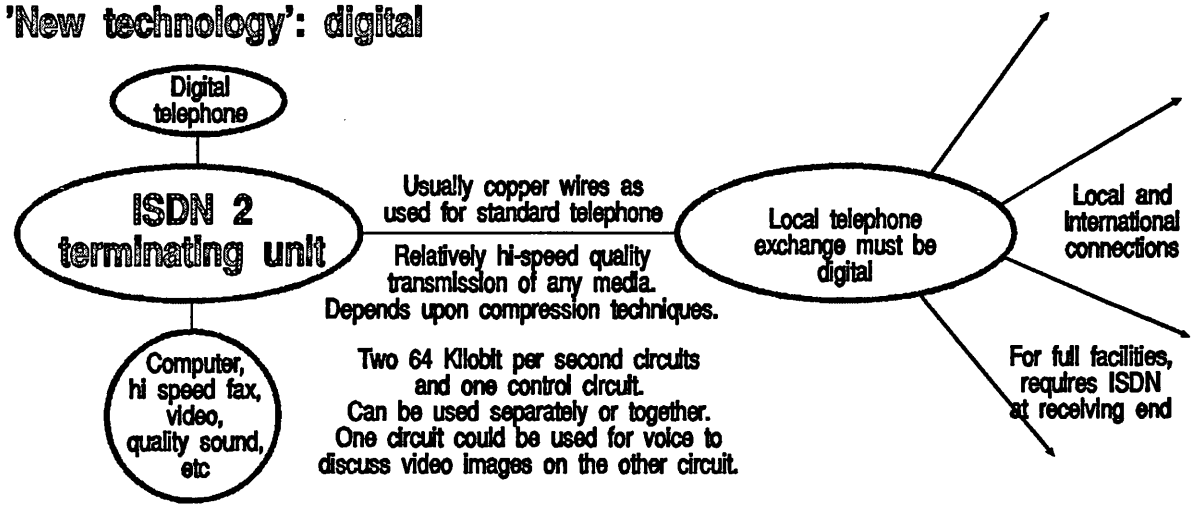
243. The telegraph. A great leap in speed and distance was made with the invention of the telegraph. This was an electric current that passed along a pair of copper wires. It relied upon the message being 'coded' into a series of electrical pulses before it could be carried on the system. A pulse is created by switching the electric current on and off, this can then be detected at the other end. It was therefore an early 'digital' system since it was not a continuous signal, and had a 'very narrow bandwidth'. A major disadvantage was that it required experienced operators to code and decode the messages. Many versions of the telegraph were tried, the most well known being the Morse code, and its use for specific purposes has continued since the invention of the telephone.

244. The telephone. The telephone overcame the need for specialist operators since it transmitted the voice directly as a continuously varying electric signal, along a similar pair of copper wires as the telegraph. The variations in the air pressure from the human voice are converted into electrical signals 'carried' on the pair of wires as an electrical signal, and converted back to air pressure signals at the receiving end for the human ear. It was therefore a return to an 'analogue' system. The bandwidth was still very narrow since it only transmitted the voice in relatively poor quality.

245. The 'wireless'. The next major development was the 'wireless' which overcame the restrictions of copper wires connecting the transmitting and receiving ends. The first systems used the same coded signal as telegraphy, it was in fact 'radio telegraphy'. The transmitted radio signal was switched on and off as a series of coded pulses, that were detected at the receiver. Later, the voice was added by leaving the radio signal permanently on and using it as a 'carrier' for the message by varying the amplitude of the radio signal in sympathy with the signal from the human voice. This required the same conversion from the human voice to electrical signals as the telephone. These radio telecommunications developed into radio and television 'broadcasting' where the radio signal is 'broad - cast' to many people each with a receiver.

Diagram 4. Telephone, FAX and ISDN-2





ISDN 2: Integrated Services Digital Network.

Connection charge £400. Quarterly rental £84. Inland calls as normal telephone charges.
Terminal adapter £1,400.

The difference between ISDN and the standard telephone is like the difference between a digital video disc and the cylinder phonograph.

ISDN provides videoconferencing, video surveillance and remote control, high quality stereo audio, videotex, access to photograph, picture and text libraries, high quality colour fax of text, plans, graphics, handwriting, charts, ...

Computer aided design and manufacture, computer modelling, transfer of printing, high speed data transmission, sales and stock control, ...

246. A return to digital. Further developments enabled more than one signal to be carried on the same 'carrier' and eventually with the development of 'microcircuits' for digital computers a return was made to the digital systems that were used in the first telegraph systems. The coding and decoding is done by the electronics rather than an operator at a speed that has no comparison with the early telegraph systems. This has opened a totally new dimension so that different types of signal, sound, vision and data, can be transmitted. The 'bandwidth' is considerably wider although still significantly narrower than direct human 'transmission'. As a comparison the latest public digital system can transmit 64,000 'bits of information' every second. The human voice transmits 20,000 bits every second, the human ear can detect 200,000 bits every second, and the human eye 100,000,000 bits every second. So there is a long way to go before we are near to direct human transfer of information, and this may explain why people are so insistent that 'face to face' meeting is essential.

247. The telephone. Diagram 4. 'Telephone, FAX and ISDN2', shows the essential differences between these types of telecommunication. The telephone is the basic method of telecommunication which is little changed since its invention. It offers poor quality speech communication via a public 'dial up' network. The basic system has been adapted by using additional pieces of equipment. A 'modem' enables a computer to be attached that can communicate with another 'compatible' modem and computer. The equipment is continually being improved in an attempt to overcome the limitations of the telephone network. These developments are driven by a competitive market which is endlessly making the previous 'model' out of date. The result is that such equipment is not 'user friendly'.

248. The fax. A more 'user friendly' adaptation of the public telephone network is the Fax. This additional equipment allows any document to be transmitted and reproduced at the receiving machine. The acceptability of the fax has established its use in all business almost 'overnight', and it has delayed the establishment of the 'paperless office'. It has considerable limitations of quality, and it requires a paper version of the document which sometimes involves printing out from a computer at the sending end and then re-keying in to another computer at the receiving end. A further development to overcome some of these limitations is the addition of fax facilities to computers. This avoids the need for a paper copy, improves the quality, and adds the convenience and flexibility of a computerised system.

249. ISDN-2. Integrated Services Digital Network. (ISDN-2) replaces the plethora of complex, constantly changing, incompatible systems for a single 'integrated' 'network' that is capable of providing all the 'services' in a compatible and 'user friendly' system. As well as significantly improving the information that can be transmitted over a telephone circuit it also enables any type of information, voice, music, images, video, and data to be transmitted over the same 'integrated' system. It has the capability of making the 'paperless office' a reality. Significantly, an attempt has been made to make it a global system, that avoids many of the incompatibility difficulties of most computer systems. In practice there are variations which are still creating difficulties.

Refer to section 5.4 Integrated Services Digital Network..

250. The difficulties of ISDN.

The application of ISDN has not been made comprehensible, or easily available at an acceptable cost, to the general businessman. ISDN has the capacity to be innovatory beyond any previous system, and it could offer a way forward from the chaos of proprietary systems that exist today. It can not be a revolution until it diffuses throughout all businesses, and unless it is made acceptable, like the fax, the lack of users will make it difficult to establish. ISDN has been available to large companies for some time in a form which required the installation of an optical fibre and the supply of thirty circuits, ISDN-30. The advantage of ISDN-2 is that it makes it available to the small business with the provision of two circuits provided over the normal copper cables used for conventional telephone circuits.

251. The costing of ISDN.

Analysys Ltd., 'Study of the cost savings arising from the Highlands and Islands initiative in telecommunications', a report for the Highlands and Islands Development Board, 20.11.89.

The report by Analysys compares the costs of changing to ISDN for five model businesses. This report includes the use of circuits that are privately rented on an annual basis as well as the public telephone network.

A small electronics design contractor with a low use of fax and data communications, and 5 staff saved only 19% of £7,083 in rental and calls, and with the installation costs and increased rentals it took three years to show any saving.

A computer consultancy with a staff of 11 people saved 26% of £12,096 in rentals and calls, and also saved 2.8% on installation.

A printer and publisher employing 18 staff used telecommunications to obtain new business and saved 33% of £49,936 in rental and calls which covered the increased installation costs in the first year.

A technical research company employing 90 people provides a rental and calls saving of 25% on an annual bill of £78,250. Increased installation costs were covered in the first year.

The relocation of some office functions employing 50 staff in an insurance company saved 31% of £41,312 in rental and calls, and the increased installation cost was saved in the first year.

252. Reliability and speed of ISDN.

These figures do not show the major benefit of ISDN with savings in staff time and frustration due to its reliability and increased speed. Developments in modems for conventional telephone circuits is narrowing this benefit, although it is unlikely to reduce it significantly as developments with the methods of transmitting data using ISDN-2 can also be made. ISDN-2 offers the use of an improved fax standard which improves quality and reliability, and offers an 80-90% cost saving due to the reduction in time for an A4 sheet from 45-60 seconds to 1-10 seconds. Similar savings can be made with Electronic Data Exchange (EDI), Computer Aided Design (CAD), and Electronic Funds Transfer at Point of Sale (EFTPOS). The cost savings are heavily dependent upon the quantity of data being transmitted, and appear to be generally more beneficial in terms of cost savings to the larger organisations.

253. New facilities and applications of ISDN.

Many new facilities not possible with conventional telephone circuits are also offered such as immediate connection of calls, call identification and automatic call distribution. The Analysys report considers highly specialised new applications to not be relevant for two or three years (from 1989). As this was a report to the Highlands and Islands Development Board it could be a reason for its lack of success. In those three years there has been minimal use of ISDN of any type of application.

It is more likely that the specialised new applications that are not possible with conventional telephone circuits, together with a world wide market, will provide the greatest potential for remote rural areas. It is also the new telecommunications in a combination of ISDN and satellite that provide the greatest potential for enabling rural areas to re-assert their position along-side the current domination of cities.

An integrated culture such as the Western Isles of Scotland, may adapt to such an integrated system more readily, and it would be interesting to consider if the integration of telecommunications will enable the western way of thinking to overcome its fragmentation.

7.2 Europe and Technology: survey.

This section contains by necessity an extremely brief view of new technology in Europe. Appendix A1.1 gives a list of Research and technology development on telematic systems for rural areas, ORA.

254. Integrated Services Digital Network (ISDN)

The definition for European success could well apply to the Highlands and Islands.

Refer to section 5.4 Integrated Services Digital Network.

Refer to paragraph 249. ISDN-2.

The success of the European market depends on removing barriers to trade, travel and communication, physical, fiscal and technical. Trade has become dependent upon telecommunication networks which were only designed for national use. These have to be altered to deal with a free flow of information throughout Europe and to the rest of the world. The European Commission requires a network that will carry all forms of information: voice, data, and image. This can be provided by the Integrated Services Digital Network (ISDN) which 26 public telecommunications operators from 20 countries in Europe (including EFTA countries) have agreed to introduce by 1992-3.

Filippo Pandolfi, Commission vice-president, quoted by Paul Gannon, 'Getting the message: Pan-European ISDN', XIII magazine 7.91, p. 24.

"ISDN has the potential to develop as the backbone of the new nervous system which the 1993 market so urgently needs". The council of ministers is ordering 2000 Integrated Services Digital Network (ISDN) terminals for its own use. The network is also connected to Japan, the US, Australia, Hong Kong and Singapore. The system in France, Numeris, has been available since 1990. The Highlands and Islands was also intended to have a system in 1990 although it is only now in 1992 becoming operational.

255. Uses of Integrated Services Digital Network (ISDN)

One of the difficulties of ISDN is in its comprehension since its applications leave no human endeavour unchanged. If it only had one application it would be relatively easy to focus on its implications. The 'out of focus' mass of possibilities will be difficult to focus upon until there is a practical involvement with an application. Like many technologies, it will then be difficult to comprehend how we managed without! Some examples are: estate agents can access multimedia databanks that show clients photographs as well as printed details. Travel agents can use photographic databases for customers to see visual images of their destination. Medical consultants can simultaneously look at medical records and at images such as x-rays or electronic scans. Doctors can receive up to date information about pharmaceuticals with text and diagrams. Philips have developed a support system for electronic engineers with text, images and circuit diagrams for fault finding. Video surveillance systems for building security and remote sited industrial plant.

256. Broadband Telecommunications.

'Narrowband' ISDN whilst handling far more than the original voice telecommunication systems is still limited in the speed of the data being transmitted. This presents considerable difficulty in transmitting high quality live video, and the development of 'compression' systems to 'squeeze' the information down the circuits is currently one of the 'hottest' development projects for telecommunications and 'multimedia' computer systems. 'Broadband' allows the transfer of high quality video without these compression techniques, or by using the compression one circuit can carry many more services simultaneously. The Research and development in advanced communications technology in Europe (RACE) programme is developing and implementing Integrated Broadband Communications (IBC) in Europe. The programme has an initial funding of 550 million ecus for 90 research projects, typically run by multinational consortiums. (1 ecu is approximately £1.40).

257. The application of broadband.

Roland Huber, Race programme director, 'Communications technology: Designing Europe's broadband future', Xiii magazine, 7.91.

This size of town considered necessary for broadband communications, 500,000 is significant to the future of rural areas. Refer to paragraph 525. The way forward.

The first application of broadband is in a Metropolitan Area Network (MAN) for the London Universities. This will allow computers to fully interact with each other and replace the need to transport computer discs of information from one site to another. The linking of major cities is expected by 1995. Future applications could be for two way video and digital high definition television to residential customers. By 1996-97, the offer to business locations in towns of more than half a million inhabitants of a range of basic broadband services, allowing fast inter - Local Area Network (LAN) data transmission. Desktop video conferencing, sophisticated Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM) facilities, is likely to become reality. Application pilots are to be run in manufacturing, finance, transportation, health-care media and publishing. These require high transmission rates and large volumes of complex multimedia interaction. Fifty per cent penetration is targeted for 2005-2010. Another 484 million ecus has been earmarked for the third stage of projects in 1990-1994.

258. UK nationwide fibre network ready by 1994.

Richard Wilson, Electronics Weekly, 12.6.91.

Britain's first nationwide broadband fibre network linking universities and research establishments across the country is to be called Super Janet. It will be a wide area broadband network using the asynchronous transfer mode (ATM) switching architecture which is expected to be the basis of future telecommunications networks throughout Europe.

259. Optical: Fibre optic to every house.

16.2.92. 'Britain's laser scientists follow the jobs trail to US', Robin McKie, Sunday Observer.

"At the same time as British companies are turning their backs on opto-electronics, Japan has decided to wire every house in the country with fibre optic cables by 1995." Opto-electronics has provided the communications revolution and will play a far greater role than electronics in the future in both communications and computers. Britain has again lost the lead to Japan and the US were it is the major growth industry. 55 PhD students out of 126 from Heriot-Watt University have gone to the US

260. Networks of Excellence.

George Metakides, head of basic research, Esprit, 'Esprit basic research: networks of excellence', XII magazine, 7.91.

This network in referred to in the proposals for the Highlands and Islands.

The European rail network also ends at Edinburgh.

The European road network ends at Glasgow.

see 'Drive', XIII magazine, European Commission, 3.92, p.6.

"Technological innovation is essential for the competitiveness of the information technology industry and, because of the pervasive nature of information technology itself, for society's overall well-being." Modern needs require the traditional partition of academic disciplines to be brought together. A 'network of excellence' to coordinate technology transfer, research and human resources is being set up linking major centres of research throughout Europe. Local industry also has the opportunity to access the most advanced research through the network. The nearest proposed 'node' for this network to the Highlands and Islands is Edinburgh.

261. Electronic Data Interchange.

Robert Wakeling, 'Electronic Trading', XIII Magazine, European Commission, 7.91, p. 22-23.

Commercial transactions have relied upon a slow interchange of paper documents. A precondition for the free circulation of goods and services is the rapid and reliable transfer of information and data, and the Trade Electronic Data Interchange Systems (TEDIS) programme coordinates the introduction of Electronic Data Interchange (EDI) directly between the computers of different organisations. An integrated infrastructure across all sectors of commerce, trade, administration and information is as important as road and rail networks.

262. Satellites.

Fibre optic cables provide higher capacity and more reliable links. Submarine cables threaten the high profit traffic of satellites which are already in excess of requirements. Thus there is a possibility of using satellites at more realistic costs. New satellite systems that consist of a group of none stationary satellites are being proposed for areas such as Scandinavia, Iceland, and Northern Scotland. These provide interesting possibilities for the Highlands and Islands, in re-establishing historical links with the Scandinavian countries, particularly with the joining of EFTA with the European Community.

263. Global village communications.

'Telecoms talks bring global village nearer', The Scotsman, 10.3.92.

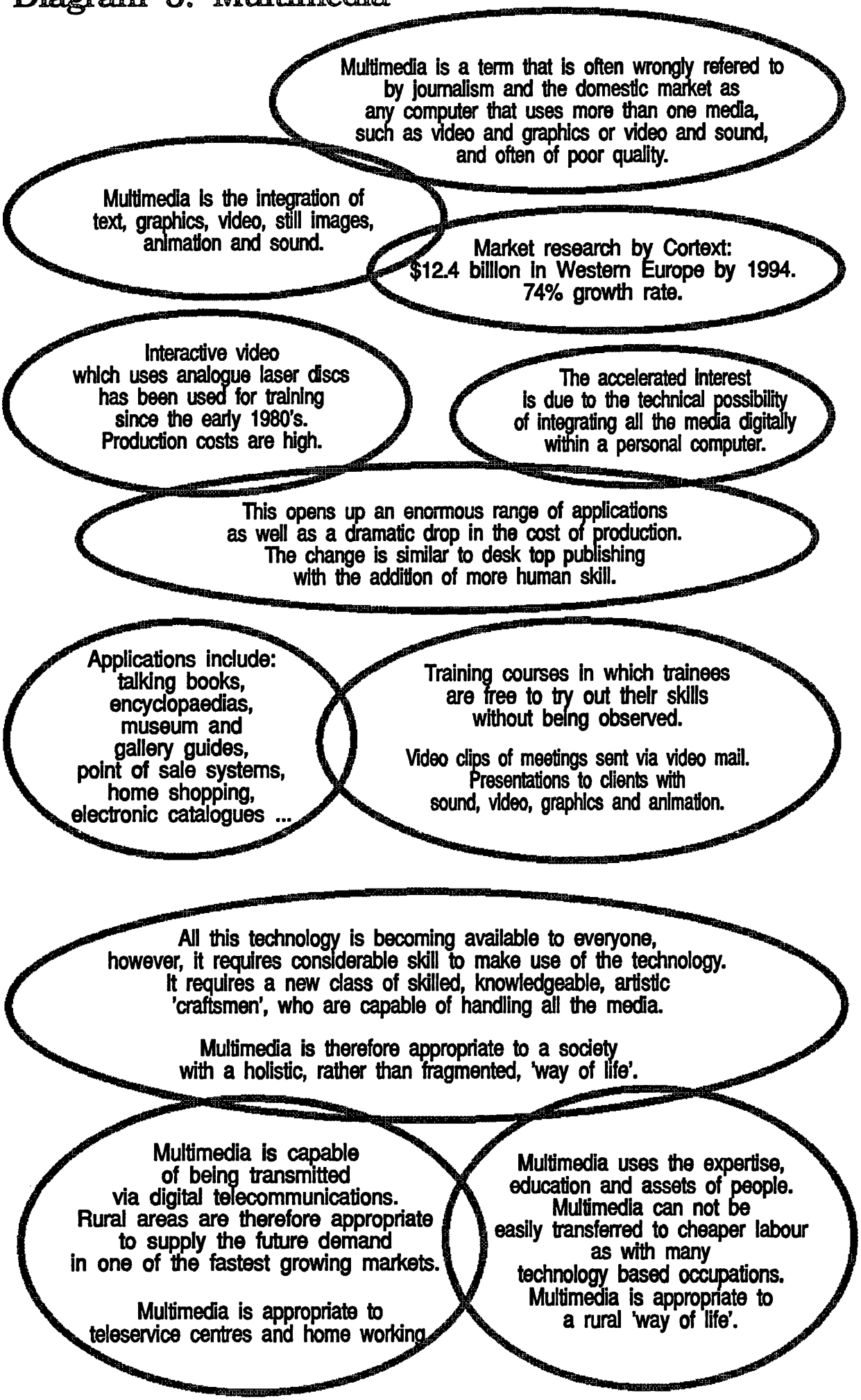
"The day is approaching when a caller driving the back-roads of Nigeria will be able to talk by telephone to an associate on a fishing trip in Canada." The World Administrative Radio Conference, which governs global use of radio frequencies was attended by 1,300 delegates from 120 countries. The 50 member United States delegation, who said that decisions could lead to $1,000 billion in business, obtained allocations for new global telephone technology that would use 77 satellites in low earth orbit enabling mobile phone users, laptop computers and pagers to communicate with each other anywhere in the world. The US won strong backing from developing countries which see the technology as a relatively inexpensive way to solve their own telephone network problems. Japan and Europe would have preferred more land-based development.

264. Mobile and personal communications.

Pieter Welteveden, Director of telecommunications policy, DG XIII, 'Mobile Communications, XIII magazine, European Community, 10.91, p4-7.

A common European mobile telecommunications standard (GSM) has been developed to enable subscribers to use their cellular radio telephone in different countries. *"With growing public expectation for communications on the move, some 100 million radio handsets are likely to be in use in Europe by the end of this century."* A radio paging system (ERMES) is to provide subscribers with use throughout Europe as well as a volume market for manufacturers. A Digital European Cordless Telecommunications standard (DECT) provides connections to the public telephone network and to ISDN. It can provide the final connection into user premises, high capacity communications to low cost handportable units, wireless connection between personal computers (PC) and Local Area Networks (LAN). Digital Short range radio (DSRR) provides personalised telephone services not connected to the public telephone network or ISDN. The incompatibility of the fragmented systems throughout Europe requires this standardisation to maximise the finite resource of radio frequency spectrum and to provide an integrated European network.

Diagram 5. Multimedia



265. Multimedia.

Alan Huyton, Delta team, 'Distributed learning systems', XIII magazine, European Community, 10.91, p20-21.

The Development of European Learning Through Technological Advance (DELTA) is aimed at flexible and distance learning to enable people to learn when they want, how they want, what they want and where they want. Research includes how to present, organize and manipulate course material, and how to use advanced telecommunications and satellites to deliver the courses at a distance. ISDN and satellite have been used for the production of training courses by geographically isolated organisations. Multimedia training courses using a combination of personal computer, video and audio techniques *"could transform the effectiveness and attractiveness of distance learning."* Interactive compact disc (CD-I) has considerable potential as a multimedia medium for training and information. Diagram 5. 'Multimedia' offers some of the potential of multimedia which is likely to make the success of the audio compact disc appear insignificant.

266. High Definition Television.

Ruminator 'Spare the rod and spoil the UK', Electronics Weekly, 4.9.91, p. 13.

The cost and implications of new technology are beyond comprehension. A battle is raging between Japan, USA and Europe over standards for a new high definition television system. The investment in research, and the returns that are possible in production, make it vital to succeed. The Japanese have launched a £120 million satellite to use their system; the first receivers will cost £8,700, and by investing in the production of specialised components the cost will be reduced to £2,200 in twelve months. More recently, the whole prospect of high definition television, and the costly research into analogue transmissions, has been altered by developments in digital transmission techniques by Scandinavian countries. The development of high definition goes far beyond broadcast television in its use for industry and computer graphics.

267. Microelectronics.

Pasquale Pistorio, Chief Executive Officer SGS-Thomso Microelectronics Group, 'JESSI, Microelectronics, the strategic resource', XIII Magazine, 7.91. p. 16.

The manufacture of microelectronics is *"worth 750 billion ecus, providing some eight million jobs world wide. A 2000 billion ecu market by the turn of the decade. ... an advanced industrial society cannot exist without controlled access to an advanced electronics industry."* Every sector of industry and commerce is now dependent upon microelectronics. In particular the advanced telecommunication systems would not be possible without this industry. The Joint European Submicron Silicon programme (JESSI) has a budget of 3.5 billion ecu aims to recover 45 per cent of microelectronics manufacture within Europe by 1996. *"The competition have already set up their base camps and are all ready to make their coordinated attacks on the mountain top."* Are these the wars of the future?

7.3 Telecommunications and change: discussion.

268. The nature of the new telecommunications.

J Brotchie, et al., eds., 'The future of urban form: The impact of new technology', Croom Helm, Ln.,Sydney, 1985. p. 1.

L Gertler in John Brotchie, op cit. p. 235.

A brief look at the 'nature' of the new technologies may help to explore the opportunities, and the ways in which they are influencing our life styles just as the older technologies have done in the past. There is considerable debate over the changes that are taking place, and change is at such a rate (1985 to 1991) that answers to questions posed by L Gertler in 1985, about the 'wired city', are starting to emerge.

269. Decentralisation, teleworking, teleshopping and travel.

Michael Wegner, Berlin, op cit.

The social difficulties of change from the present social and working patterns to working from home, are more likely to favour the establishment of teleservice centres where people in communities can work together. Teleworking may not fully materialise until the settlement patterns begin to provide the social contact that communities lost through industrialisation. An approach is needed that will coordinate all the necessary changes of occupations, 'way of life', social, cultural, and settlement character. Only then is it likely that regular daily commuting would be reduced, to be replaced by irregular, varied, and perhaps longer distance travelling. Teleshopping may then also be added to conventional shopping. It is already evident that the concern over electronic mail and computer conferencing is unfounded as they have become 'personalised', and more introductions are made between people, both locally and globally.

270. 'Information society'.

Peter Drucker, 'Business matters', BBC2, 5.9.91.

The German general public is uninterested in 'information society', which the Japanese have greeted with unanimous enthusiasm. Peter Drucker observes that the west tends to be prisoners of preconceived answers whilst the Japanese look for the use of new technology. For the past twenty years the Japanese have set a national target in which the entire land will be transformed into the *"random-access information sphere"*, providing freely accessible information, and communications between people. In France a teletext information service, 'Minitel,' has replaced telephone directories, and the system is also used extensively for many other different services. It may be the next generation before new technology is acceptable in some cultures.

271. Cultural and social selectiveness.

Batty, M, 'The Intelligent Plaza is only the Beginning' The Guardian, 17.9.1987, p.19.

The lack of 'user friendliness' of new technologies leads to an inbuilt hostility from many cultures, and more seriously, adds to the dangers of social selectiveness of technology; not only between cultures but also within cultures. With the advent of a 'one world', accelerated by the new technologies, these increasing contrasts between cultures are particularly significant.

272. Confusion over time scales.

Marshall McLuhan, Alvin Toffler, Alan Turing, Christopher Evans

Michael Wegner, Ibid. p. 5.

Karl Popper.

Refer to paragraph 581. Testing the hypothesis.

There is a confusion that makes the prediction of the time of introduction of change very difficult. The human mind has ideas long before the technology is produced (Marshall McLuhan, Alvin Toffler, Alan Turing, Christopher Evans.). The technology is changing far beyond what the human soul can quickly adapt to, and in contradiction there are some who are impatient for change. Their is an anxiety and fear of technology to prove the predictions wrong, and politics can often introduce the unexpected by pushing in the opposite direction to the technologies. It may therefore be too soon to judge the prophesies of dispersion, teleworking or teleshopping. In the end, the Highlands and Islands may be assured that whatever the human consciousness has thought of, *"it is not only possible, it is inevitable"*.

273. Best suited life-styles, new technology and choice.

'High-tech' production systems have enabled mass production systems to progress from the limitations of 'one model'. The production line can now respond to the individual wishes of the customer. In the same way, new technologies may provide a choice of 'life-style'. There are many factors that must all fit together into a complete jigsaw; some of the factors are: income, class, language, ethnic origins, education in self-determination and self-expression, a human consciousness for all, and a changing infrastructure to meet the new needs. Failure could be due to the omission of any small piece in the complex system.

274. Change and quality of relationships.

Refer to section 3.8 Survey of teleworkers.

The changes in working patterns can replace impersonal commuting, and leave more time for a richer community and family fellowship. Unfortunately, as with industrialisation, the greater efficiency is often a more interesting life for a few at the expense of others. Already the new technologies provide more freedom for the higher occupations and less freedom for the lower key-board data processing type of employment. Whilst new technologies force change to occur, they also provide a human choice of change. The opportunity for a 'quality' of human interaction and a return to a society in which there is a place for everyone is dependent upon humans and not the technology.

275. Transforming settlement patterns.

The individual technologies of computers and other hardware that are required for the change in telecommunications have been available for some time, and the reducing cost, rapid development, increasing availability, and the integration of systems are creating an explosion in their use. An analogy can be made with the linking of the individual railway, telephone and electricity companies into a working network to produce an explosion in their use. To take the analogy further, the railway network linked locations over a wide geographical area to produce the mass transport of goods. The significance of the telecommunications revolution is the total removal of 'distance' and location dependence so that the capacity of the hardware to store, and process, vast quantities of information in separate locations can be integrated. The significance of this will be returned to in a discussion of a University of the Highlands and Islands in chapter 12. 'Establishing a new settlement pattern'. In practice, the locational independence is not totally true due to the power of the cities, the benefits that are more favourable to larger organisations and the cost of provision.

276. Social implications of linking information.

The new technologies are now significantly changing urban management and information systems, and the linking of information stores in different locations for comparisons to be made has social implications. Information can now be used for purposes unknown to the original givers of the information; hence the data protection Acts. Often it is unknown that information is given, for example, information on the products purchased at the cash desk in the supermarket can be linked with information from a customer's 'plastic card', information from other supermarkets, information on a person's income and credit worthiness. They can then be classified into particular 'class of consumer', and the information sold to advertisers for targeting particular advertising. 'Class' structure may take on a new meaning.

277. Cottage industry and telecottaging, 'keyboard slaves'.

Michael Wegener, at Berlin, op.cit.

Refer to paragraph 625. Teleworking, control of home workers.

The 'gadgets' of technology will inevitably become available to all and, if as Michael Wegener suggests, their *"value as status symbols is likely to fade away"* the real privilege will be to get away from these gadgets *"to one's second home or yacht, a mountain resort or a monastery where there is no television, no fax and no phone ...".*

The new technologies will become the tools of monotonous occupation with a return to the 'cottage industry' of the early days of the industrial revolution. The name 'telecottaging' seems not to be a coincidence since the future could well be one of 'keyboard slaves' processing data, whilst the rich entrepreneur sits in his mini estate.

278. 'Informationists', 'cottars', 'info-serfs' and 'information cottage'.

The new breed of 'informationist' is able to deliver his 'raw materials' without moving from his arm chair, the 'cottars' process his data for him in their own homes, and deliver it back to the 'informationist'. No buildings are required, and even the equipment may be provided by the new 'info-serfs'. In the Highlands it could be the revival of the country estate with the 'info-serfs' processing data in the estate cottages. The Highlands and Islands will continue to be a playground for the rich. Sixteen million pounds has already been spent on the technology to make this possible.

279. Technological change and rural opportunity?

The new technology provides unique opportunities to rural areas; the question is, who will use the opportunity and benefit from it? There are often two sides to technology, and what can be used by the entrepreneur could equally be used by those enslaved in the technology.

Co-operatives, a principle well established in the Highlands and Islands, could use the same technology used by entrepreneurs with all the profit benefiting the local community.

7.4 Revolutions: discussion.

280. Innovation and prosperity.

David Keeble, ibid. pp. 14-16.

John B Goddard, Alfred Thwaites, 'Technological change' in Ibid. pp. 96-97: C Freeman, 1984, Keynes , Kandratiev, in P Marstrand, ed., 'New technology and the future of work and skills. Frances Pinter.

The prosperity of the south east has been produced by the government: research facilities, defence contracts, modernised communications, and strict planning controls to ensure the quality of the environment. The forces of power, wealth, and of London have so far dominated; the docklands development has taken vast sums of money. There is a growing internationalization of investment, production, and control by multinational corporations. Technological change is global, and is dependent upon research, invention, development, and more dramatically, innovation. Steam power was the innovation of the Industrial Revolution. The internal combustion engine, electric power, and basic chemicals are quoted as other examples. It is the diffusion of these innovations that creates a revolution. Information technology *"has the capability of bringing about a similar radical transformation in the future."*

281. A telecommunications revolution?

J Brotchie, et al., eds., 'The future of urban form: The impact of new technology', Croom Helm, Ln.,Sydney, 1985. p. 1.

Michael Wegener, at Berlin, op cit.

The new technologies are often referred to as being revolutionary. The introduction to *'The future of urban form'* (1984) refers to an information revolution in its very early stages, a revolution that will change living and working at a far greater rate than the Industrial Revolution. Michael Wegener in 1990 suggests that we have already experienced a *"technological revolution of amazing proportions"*. It seems that either there is a contradiction or the revolution was very short lasting.

282. A state of chaos.

Henryk M Broder, Karonig Telephon, (King Telephone). DIE ZEIT 30, 1990. p.38.

Consider the case of an art gallery owner who has two telephones and a fax at both his home and his office, a car phone, and a portable cellular phone. In theory he can be contacted anywhere:

"Wherever he calls there is an answering machine asking him to leave a message, while at home in the meantime the messages arrive from the people he tried to reach. So everybody is asking everybody to call back, but in fact only the answering machines communicate with each other. ... he is altogether occupied with calling his two answering machines from his car or from his cellular phone only to later call the answering machines of his friends. At the end of the day he is frustrated and exhausted and feels like an idiot permanently running in circles."

283. A chaos period of revolution?

Refer to paragraph 153. A pioneering approach.

Open University, 'An introduction to Information Technology: the telephone: birth of a technology', BBC2 7.3.92.

The chaos of rapidly changing technology could be a preliminary to an integration of the inventions to produce innovation, and the peak of activity of a revolution. During the short period of this study there have been signs of technology becoming more compatible: integrated communication systems, open computing systems, multimedia systems, standardisation committees, and attempted alliances between manufacturers. This is analogous to the railways which had a 'chaos' of standards until they were forced into standardisation of the track gauge to form a single network. On a social level, the living conditions of cities were in 'chaos' until standards were introduced in an attempt to rectify the effects of the revolutionary change. Both the electricity and telephone industry required the drive of entrepreneurs to make the initial use of the technology; as the technological inventions became innovations, chaos ensued as the individual developments attempted to link together into a useful network. In all of these examples it is the inconvenience to users that has demanded standardisation.

Diagram 6. A revolutionary period

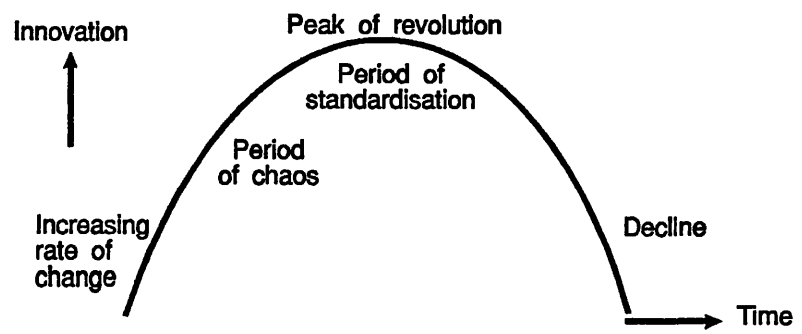
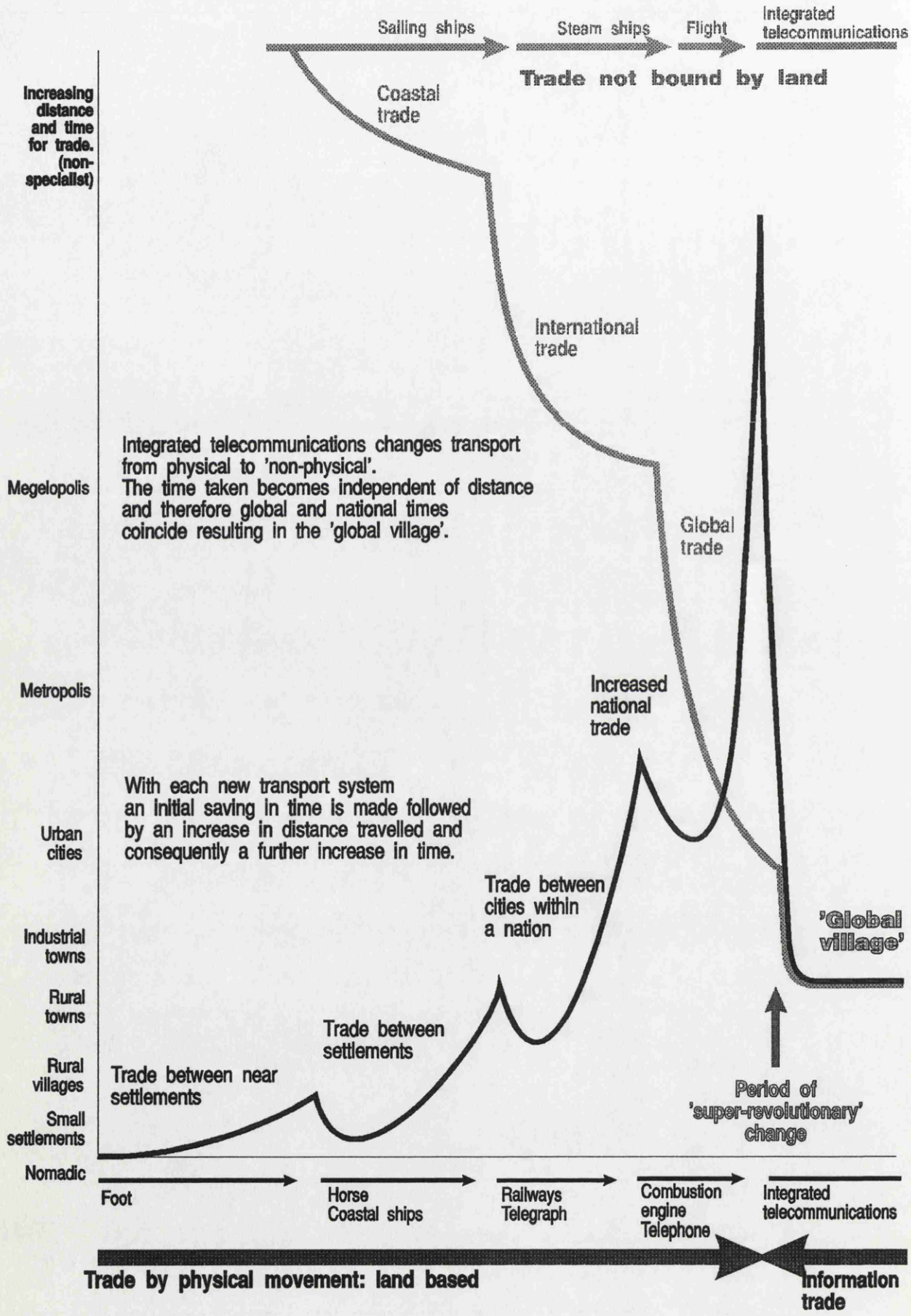


Diagram 8. The evolution of trade.



284. Innovation from the interface of specialisms.

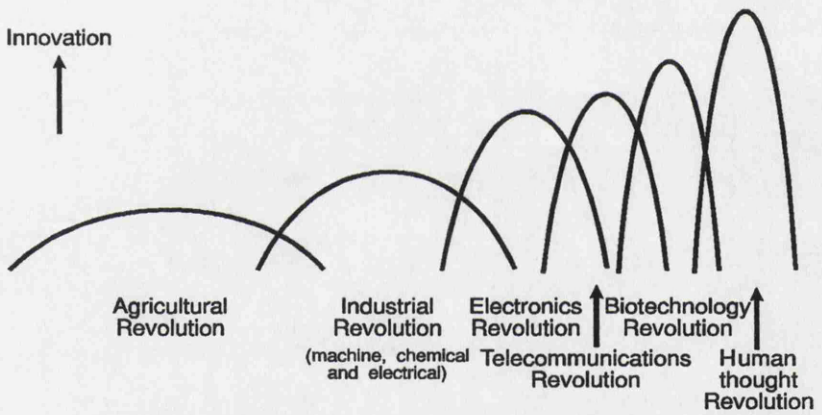
The domination of electronics could be taken over by biology which is making such advances that it is being referred to as 'Biotechnology'. Many innovatory developments are now ready to give birth from the increasing discoveries of science. Science has split into many different specialisms, each requiring the total dedication of individual human thought. Some of the most significant innovations are now occurring at the 'interface' between these specialisms. For example, bacteria have been found that could be used for computer memories of far greater capacity than todays electronic memories. Neural 'learning' computers would not have happened without the human brain as a model for the computer electronics engineers to work from.

285. Many overlapping revolutions?

Patrick Geddes, Cities in Evolution, London, 1968.

One hundred years after Patrick Geddes drew attention to the fragmentation of academic study, there is only now a significant influence across disciplines. The result could be a rate of change so rapid that a technological revolution is immediately followed by a telecommunications, information, biotechnology, and many more 'revolutions'. In terms of diffused innovation each one may be definable as a revolution. Will history see these rapidly occurring overlapping innovations as individual revolutions?

Diagram 7. Concept of 'Multi-revolutions': (actual and potential).



286. Trade and a 'Super Revolution'?

Diagram 8. 'The evolution of trade' illustrates the relatively small evolutionary steps taken in physical trade every time the technology of transportation has improved. As the transport system has been developed the settlement pattern has increased its population concentration. Trade by physical movement takes place between two points over a period of time. The escalating effects of population concentration due to physical communication systems could produce a catastrophic breakdown of the system. The new trade of information by telecommunications does not require population concentration; trade of information can take place instantaneously between all points on the globe. Once again the 'knife edge' of discovery may save the catastrophic breakdown. Each relatively small change in transport communication has been accompanied by a revolution, and it may be expected that the change in communications and trade from physical goods to knowledge and information will be accompanied by a 'Super Revolution' in human society and settlement pattern.

Diagram 10. The evolution of fragmentation and the way forward

Man as part of Nature

Rural/agricultural **Physical tools as extensions of the body**

(Religions fill the gap of the lack of understanding.)
(Logically they initially follow the sun, earth, water and birth.)

Change from nomadic to settlements

The Greeks

(Religions used for control by rulers)

Western alphabet
Printing press
Accelerating fragmentation

Holistic

East

Urban/industrial
Mechanical tools begin to separate tools from the body

(Control by empires and religion)

(Control by landowners)

Machine age
Technological age

The split of each industrial city into one of poverty and one of affluence is partially overcome

(Control by the media)

The age of industrial cities

Global change
Total fragmentation

(Loss of moral and aesthetic value)

Urban/technological/biotechnological
Tools as extensions of the human brain

Widening gulf between tools and the human soul

(Science brakes from Newtonian fragmentation: man the observer to man the interacter)
(Social change from fragmentation lags behind the acceptance by science)

System crash
Culture change

Eastern mysticism integrated with Western physics.

Tools of understanding. Rejection of fragmentation.

(Philosophy replaces religion?)

Language of the future not yet defined

Collapse of contemporary politics and economics

A new relation with Nature

?

?

Rejection of technology.

A 'human' future.

Unable to correct the legacy of the previous events.

Unable to realise 'reality'.

(Do nothing)

Technology changes man to enable him to keep up with the increasing rate of change.

Closed loop resulting in a spiraling increase in the rate of change.

'Reality' may be realised at a heavy 'human' cost.

Technology used to achieve a 'human understanding'.

The harmonization of man and nature by a change in the settlement pattern. (The 'ecocity')

Global split of developed and developing worlds overcome.

Realisation of 'reality'.

287. A revolution in human thought?

Marshall McLuhan, Understanding media: the extensions of man, Ark, London, 1987, (1964)

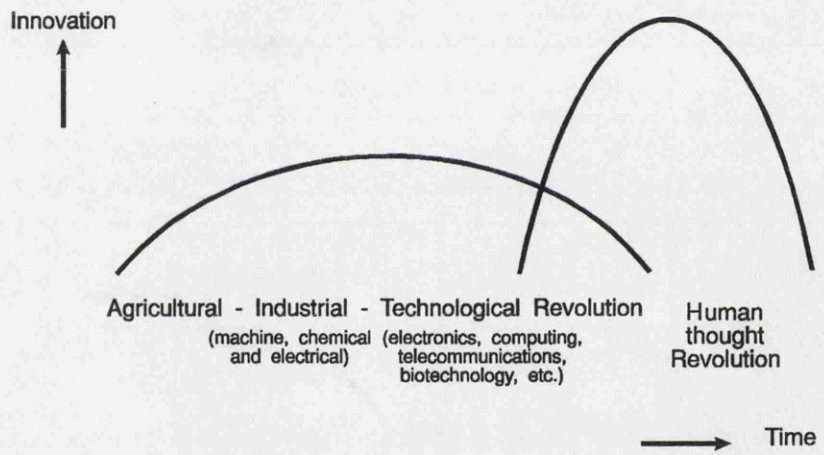
Peter Russel, The awakening earth: the global brain, Ark, London, 1984, (1982).

Peter Russel, The white hole in time: our future evolution and the meaning of now, Aquarian, London, 1992.

Graham King, at the Patrick Geddes Summer Meeting, 1991.

History may eventually view the technological revolutions as a single larger revolution with the technological development being a necessary lead into the telecommunications and information revolutions, which could then stimulate a change in human thought. The previous agricultural, industrial and technological revolutions, as developments of technology, have been physical extensions of the human body. An 'extension' in human thought would be an innovation in itself - as with the changes due to communications and trade it could be viewed as a 'Super Revolution'. The outcome may be a return to environmental and aesthetic values, and an overshadowing of technology. Alternatively it could be reactionary and reject technological progress. Perhaps the last 2,000 years will be seen by history as an interlude to enable the human race to acquire the technological skills to continue the thinking of the Greeks. A new plane of consciousness may be entered that is so far beyond our thoughts. Only history will be able to confirm a true picture.

Diagram 9. Concept of a single technological revolution.



288. The evolution of fragmentation.

Marshall McLuhan, Understanding Media: the extensions of man, Ark, London, 1987, (1964), pp. 81-88.

Fritjof Capra, The Tao of Physics, Flamingo, London, 1988, (1975).

Diagram 10. 'The evolution of fragmentation' shows the stages of change of western society from agriculture closely linked to nature; to the 'serial thinking' of the alphabet reading words one after another; the widespread increase due to the printing press; the rapid acceleration of this serial 'fragmented' thought due to serial machine production in which processes and products are broken into small easily manageable parts to be assembled one after another; and in particular the breaking down of tasks into specialisms. After the decline of the industrial and political systems of today, the diagram suggests that through the changes in scientific thinking, which according to Frijof Capra has many links with Eastern Mysticism, there could be a significant change in human thought. This could have several outcomes, and three possibilities are offered: a rejection of technology, control by technology, and technology used to achieve a new 'human understanding'.

289. Chaos in society.

A specific example of the difficulties in schools is with school holiday trips. Teachers spend the night time trying to keep the boys and girls apart. With no moral guidance for the 'ghost in the machine', is it not to be expected that the children will follow animal instincts.

Arthur Koestler, The Ghost in the Machine, Hutchinson, London, 1976.

It may already be possible to begin to see the implications of the last 2000 years considered as an 'interlude' by taking a particular example of children in schools. Children are now being treated as humans with some freedom to think, instead of being 'trained' with a particular set of information. Not coincidentally, there is also a rejection of some contemporary religions and the morals that go with them. Whether the religions or the rejection of the religions is right or wrong, is not being questioned, the result is a vacuum in the guidance for the meaning and conduct of life. Along with the negative effects of the social upheaval of the industrial revolution on the minds of the population, this complexity of circumstances is producing an unfortunate chaos in our schools, and society in general.

290. Wide ranging change.

Refer to paragraph 70. Education suited to local social needs.

It would be unfortunate if political forces came to the wrong conclusions and retraced previous steps rather than moving forward from the vacuum created by the change. The intention of these 'thoughts' is to draw attention to the difficulties of the wide ranging implications of this study, and the changes presently taking place across all human endeavour and thought. A totally new social, settlement, and decision structure may be required, and this topic will be returned to in chapter 9: 'Change in the Decision Structure'.

There is a potential for a complete change in settlement patterns, the 'way of life', and the whole network of mankind. It may no longer be necessary to move whole populations of workers for the convenience of industrialists; and the destructive nature of industrialisation on community and social structures could now be redundant.

7.5 Telematics

291. Made for remote rural areas.

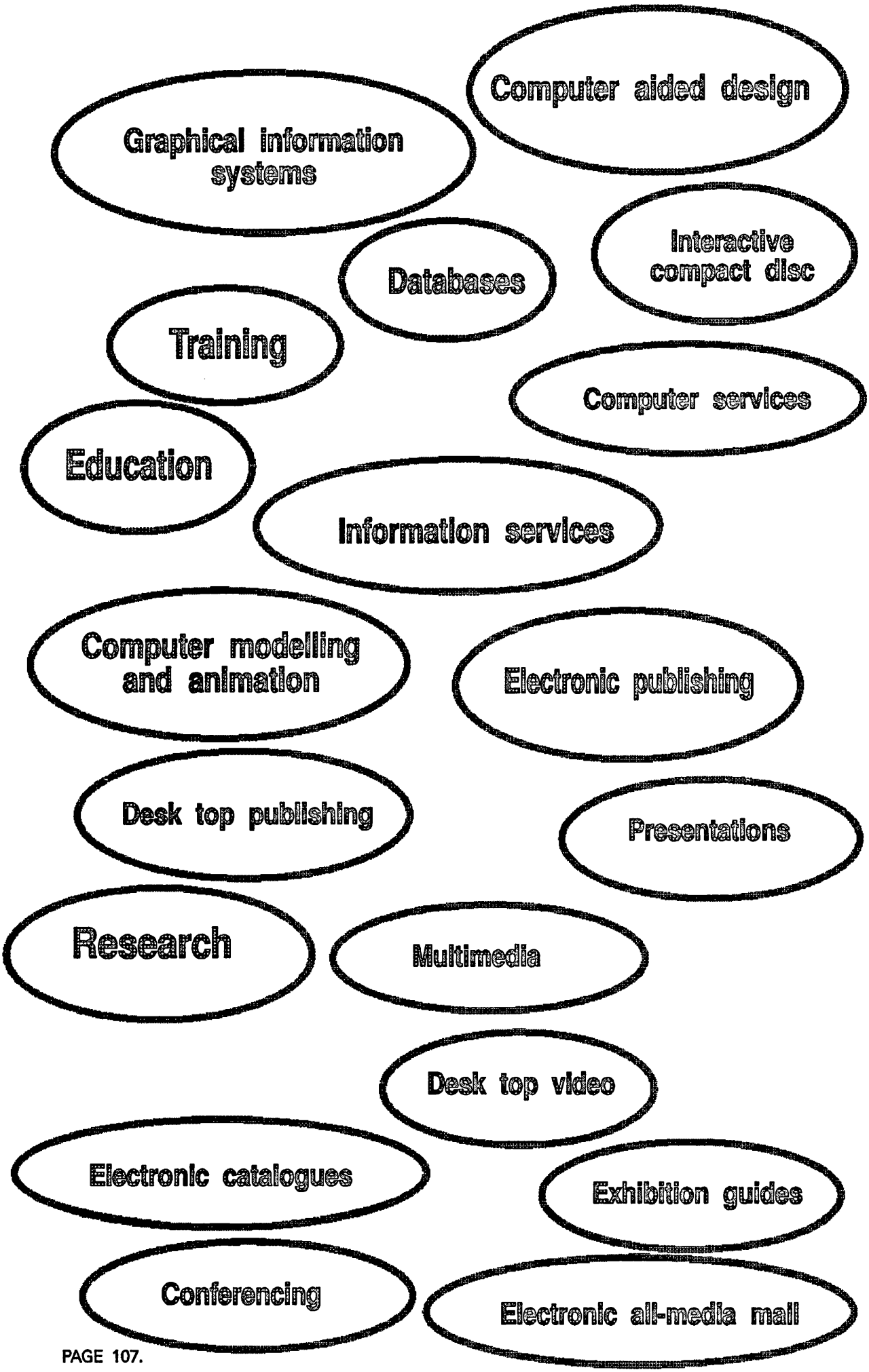
Refer to 624. Teleworking, efficiency of home workers.

According to British Telecom and the CBI a home worker is four times more productive than conventional workers who commute to an office or factory. 'Home working' was the normal way of life before the industrial Revolution, since when our social structures, particularly in the cities, have changed. City dwellers used to the 9 to 5 routine and the social aspects of work may find the reversal difficult. Remote rural populations, who already work between more than one occupation from home, would seem to be the most able to adapt to the new telecommunications. So far it is only the city areas that have significantly developed the new telecommunications.

292. Home working.

Home working is long established by many women who take on low value work between family responsibilities. Modern telecommunications provides the opportunity to increase the value of home working whilst maintaining its flexibility. In its simplest form 'teleworking', 'telecottaging' or 'telecommuting' requires a telephone and a fax machine. Professionals working from home include consultants, graphic designers, software programmers, accountants and translators. The addition of a computer begins to widen the possibilities, and it is this form of teleworking that is of particular interest to this study. From a sample quoted by British Telecom 87 per cent use an answering machine, 81 per cent a fax machine, 87 per cent a personal computer and 70 percent of those with computers use a modem to connect it to the telephone circuit.

Diagram 11. Occupations for teleworking



293. Office teleworking.

The relocation of part of an organisation to obtain better and lower cost directly employed staff is referred to as 'back office' teleworking. The 'satellite office' has professional employees working in a combination of office and home. The 'business exchange' is a contractor undertaking work for other companies, and has experienced difficulty in establishing sufficient credibility to satisfy managers and personnel departments. The 'telecottage' or 'teleservice centre' supports small communities and in its original Scandinavian concept is an integral part of the life of that community. Those in the United Kingdom tend to be more 'business' oriented.

294. Teleworking national survey.

10.3.92. 'Highland home workers set high-technology trend', Frank Frazer, The Scotsman.

A survey of 500 firms by the National Computing Centre and the Which Computer Show revealed that one in eight already used some form of teleworking, and nearly three quarters reported increased productivity. The larger firms of more than 1,000 employees in the south east of England use it extensively for sales. It removes the stress and inconvenience of commuting, and allows the recruitment of specialist staff who want to work from home. Advances in technology and telecoms makes teleworking easier and more cost-effective. Many of the 48 per cent who saw the lack of face-to-face contact, organisation, motivation, and assessment of staff as drawbacks had no teleworking experience.

295. Teleworking occupation.

6.8.91. 'Clearer signals for Highland success.' Frank Frazer, The Scotsman.

Refer to 5.2 Community Teleservice Centres.

Refer to diagram 11. 'Occupations for teleworking'.

Research by the Henley Centre claims that about two million people work from home at present. British Telecom says that the annual savings on travel costs would be enough to equip a small office with fax, phone and a basic computer. British Telecom and Highlands and Islands Enterprise are jointly looking at ways of linking skills in remote areas with firms looking for workers. Working from home can create problems of isolation from an office environment, and local bases in rural areas which could accommodate groups of teleworkers are being considered.

296. Teleworking, DSS and secretarial services.

21.11.91. 'DSS sets staff IT homework.' Computing.

IT staff at the Department of Social Security are being invited to work from home as telecommuters and have been given advise on *"how to manage their lives outside the office."*

17.12.91. 'Long distance secretaries of Belfast's Crumlin Road', Bob Rodwell, The Guardian.

Letters for the chief executives at the Prudential City headquarters may be unaware that they are not produced in a typing pool *"down the corridor"*. Instead of using office accommodation rented for £50 a square foot in a city that suffers frequent traffic gridlock or the endless poaching and turnover of literate office personnel they are processed in a converted linen mill on Belfast's Crumlin Road rented for £3.50 a square foot. By using telecommunications 'Dataprep Secretarial Service' becomes part of the client's office with four levels of service from a few minutes to a premium 'executive' service *"which means any hour, any time"*. The company, set up in April 1991 with a staff of six, expects to employ fifty within five years. The Industrial Development Board has an office in Mayfair and is actively negotiating with six other potential clients. The time differential provides one of the biggest potentials in this way of working; processing of work from the US can be done effectively overnight as far as the Americans are concerned, in reality it will be done during normal working hours in Ireland.

297. Telecommuting in the United States of America.

David E Markby, 'Commercial Reality: experience from the United states', Teleworking - real business benefits, A seminar by the British Computer Society and the Institution of Electrical Engineers, 9.10.91.

Whereas telecommuting in the United Kingdom has made little impact, the USA is experiencing a dramatic growth which began with the Telecommuting Research Institute in 1973. Estimates indicate 5.5 million corporate teleworkers, and growth to the end of the decade is expected at 20-25 per cent. The Federal Agencies are actively promoting telecommuting. The Telecommuting Advisory Council has 450 members who can participate in meetings via audio links every two months. Environmental issues of air quality, pollution, congestion of freeways and energy conservation have been the primary motivation. Air quality regulations require organisations with more than 100 employees to reduce commuting journeys. The benefits are: reduced staff costs, increased productivity, recruitment and retention of staff, and the enhanced quality of family life.

298. Reducing traffic.

Ibid.

Pacific Bell began its telecommuting programme in 1984 to reduce traffic for the Los Angeles Olympics, and now has 1000 telecommuters. The State of California began telecommuting in 1987 to reduce the demand for office space and now has 1000 telecommuters. The set up cost was recovered in the first year of operation and the benefit to cost ratio is expected to reach 20:1. There are high levels of staff satisfaction and the difficulty is in controlling growth to ensure adequate training. Los Angeles County concluded that telecommuting works and implemented telecommuting without any pilot programmes and now has 1700 telecommuters. 60 per cent gains in the productivity of clerical staff have been achieved.

299. Reducing air pollutants.

Ibid.

The San Diego County Department of Public Works in a pilot study found a 40 per cent increase in productivity, increased employee morale and motivation, reductions in working and commuting stress, enjoyment of work flexibility, significant cost savings in office space, 3,300 vehicle miles saved for 14 staff over a four month period. AT and T and the State of Arizona ran a joint pilot programme in 1990 to reduce travelling. 134 telecommuters saved 97,000 miles, 1.9 tons of air pollutant, $10,000 in travel costs, 3,700 hours of stressful driving. Productivity, efficiency, morale and job attitudes, absenteeism, and staff turnover were all improved. It was estimated that if one per cent of employees in organisations of more than 100 staff within Maricopa County telecommuted one day each week they would save every year, 9.4 million miles, 185 tons of pollutants, half a million gallons of petrol, 360,000 hours of stressful commuter traffic.

300. Flexibility.

Ibid.

The Washington State Energy Office Puget Sound Telecommuting Project involves a variety of private and Governmental organisations, with one of the first telework centres in early 1991. 15 work stations and a conference room will accommodate 30-40 people on the basis that one individual will use the centre on average 2-3 days per week. The President is urging every organisation and individual to consider these alternative ways of working. 400-500 Government employees in seven Federal Agency organisations are taking part in the FLEXIPLACE project sponsored by the President's Council on Management Improvement in 1990. The emphasis is on 'flexibility'. Growth in the United Kingdom *" ... will continue to be impeded by management unless the commercial reality is demonstrated."*

301. ICL.

Jane Smewing, Teleworking Consultant, ICL, 'Managing home based staff: the benefits and the management issues', Teleworking - real business benefits, A seminar by the British Computer Society and the Institution of Electrical Engineers, 9.10.91.

Cross-Industry Products and Services is a systems and publications house providing services to ICL and its clients. The 230 staff including programmers, system analysts and designers, technical authors and consultants are all home based apart from six administrative and technical support staff. ICL has been employing home based staff for twenty years and the estimated office accommodation saving is £5-10,000 per head per year. A personal computer, modem, printer telephone line and anserphone costs £2,500 - £5,000 and furniture £200 - £1000. Travelling expenses, post and telephone charges are about £2,000 per annum.

302. The benefits.

Ibid.

Flexibility and satisfaction makes staff reluctant to return to office based work. The rate of loss of staff is less than half that of their site-based colleagues. Relocation need have no effect on the employment of a home-based worker. ICL receive 600 unsolicited applications every year from well-qualified IT professionals who want to work from home. Re-organisation is relatively easy without offices to be moved. The obvious drawback of isolation must be counteracted by the benefit of flexibility of when to work, and the control this gives the home worker over their own time. Managers need to understand the motivation of their staff which can be easily destroyed by imposing unnecessary controls. Expectations of company 'culture' or 'cultural norms' must not expect attendance on site. The 'work package' must be well defined, measurable, and must give autonomy to the individual. Occupations that require 'thinking time', report writing, analysis, auditors, researchers, planners, inspectors and information technology staff are all suitable for home based working. Adequate training and a help desk are essential.

7.6 Computer conferencing.

303. Electronic distance learning: The Thurso initiative.

Students in the Northern Highlands have direct access to their tutor and other students through a telephone conferencing facility which incorporates an electronic display which allows a piece of work that is being discussed to be viewed and altered. The system, organised by Peter Smith at Thurso College, has two outstations at Kinlochbervie and Dornoch. The system avoids having to wait for work to be sent and returned through the post as well as alleviating the *"great sense of isolation"* of distance learning.

304. Better human communication.

Computer conferencing offers a particular opportunity to rural populations. Conventional conferences require participants to be selected and to be in the same place at the same time along with language translation. Telephone or video conferencing, whilst removing the necessity for physical presence in the same location still requires a coincidence of the time domain. Computer conferencing removes the time and place restrictions and allows for a much freer participation. All of the contributions in the discussion are stored, and as each person contacts the conferencing system they are presented with any new material that has been added. They can add comments or new thoughts which are stored for other participants in the discussion. The main 'store' becomes an instant transcript of this 'virtual meeting' which is taking place electronically.

305. 'Electronic news letter', 'voice mailing'.

Refer to paragraph 634. Voice mailing.

A suggestion to encourage community involvement is to change the name to 'computer participation' and to use it as a new type of community news letter. Everyone in the community can become a potential editor in the friendly environment of their own home; an 'electronic community news letter' with everyone an editor: true democracy. The technological functioning of such a system is simple, and promises an innovatory form of human communication. To be more acceptable by the community the computer needs to use the more usual form of human vocal communication, to produce a system of 'electronic voice mailing'.

306. Story-telling.

David Campell, 'It costs nothing, but pass it on and the interest grows', The Scotsman, 17.10.91.

A novel use of telecommunications to encourage the local 'way of life' came from a newspaper story. *" ... story-telling can reveal a great deal about the history of a nation ... A story from the guideman, then tales from the guests 'til dawn - so ran the tradition in ceilidh houses throughout the Highlands and Islands in bygone times."* The Scottish Story-telling Festival is held in the ceilidh house in Edinburgh's Netherbow Theatre. It welcomes thirty story-tellers from all over the world. In the Hebrides *'longer romantic tales took seven to nine hours to narrate'*. Calum MacLean's book, 'The Highlands', illustrates the power of stories for the Gael. *"They had survived the rigours of a religion that burned fiddles and bagpipes, they survived depopulation, migration to cities and the invasion of industry."*

307. Television.

Television has taken the place where the story-teller once wove words, *"a space-invading guest with whom there was no conversation, who drank no tea or drams and who acknowledged neither your language, your world nor existence."* Calum MacLean and Hamish Henderson would endorse the words of the Peruvian writer mario Vargas Llosa, in 'The Story-teller' *" 'Story-telling can be something more than mere entertainment. Something primordial, something that the very existence of a people may depend upon.' Without the language and those arts of story and song which carry it, the culture itself is lost."* The fascination of children is surely proof of the natural power of stories that is prised from us as we get older.

308. Story-telling festival.

At the same time as Jonesborough in Tennessee celebrated its 20th story-telling festival. Work began there with a handful of story-tellers, and in two decades has become an event attended by 15-20,000 people. *"There too, the once-despised native American Indians suddenly find when they've nearly been obliterated, that people throng to the voice inside their story and the wisdom of which it is the custodian."*

" ... the age distiled wisdom of story with its inbuilt and implosive knowledge that breaks subcutaneously upon us and carries invisibly the values of our cultures. ... 'You can get it for nothing - It can last forever - The more you give it away the better it gets.' "

309. Using technology to aid the revival of story telling

Marshall McLuhan, Understanding media: the extensions of man, Ark, London, 1987, (1964)

The technology that has eroded the riches of an oral culture could be used to encourage its revival. Most technology from the first days of the printed word have taken us to a non-oral society. Peoples like the Gaels, the North American Indians, the Aborigines of Australia, and many more so called 'primitive societies' have been able to retain much of their oral traditions. They have a richness of life that the 'Western society of images' seems to have lost all notion of any existence. The new telecommunications, which are still short of the 'bandwidth' of humans, could be used to introduce the richness and values of oral cultures and increase the desire for the full human interaction.

310. The Highlands and Islands, the change from fragmentation.

Howie Firth, 'Mapping out the key to survival.' Aberdeen University Lecture, 19.2.91.

In his lecture 'Towards 2000' Howie Firth claimed that *"Knowledge will be the key to survival in the Highlands and Islands in the 1990's".* Iceland is already using knowledge to get higher value from industry, and is using bio-technological methods. The strength of the Highlands and Islands is in the ability of its people *"to mix practicality with intellectual depth".* The 21st century will be a time in which seemingly disparate disciplines will come together in a *"sweeping new syntheses of ideas."*

7.7 The reality of telecommunications: conclusions.

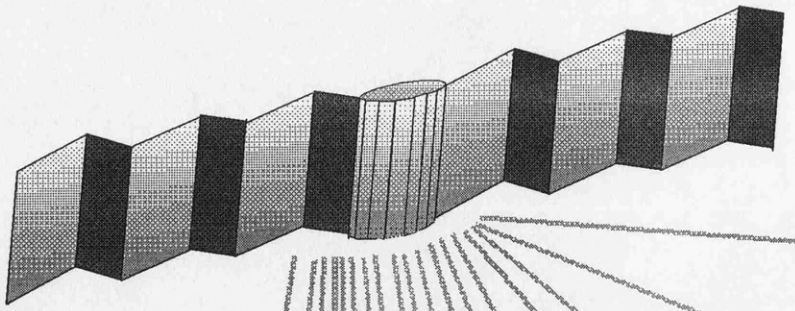
311. Oil and telecommunications.

The imposition of the oil industry on rural areas threatened a dramatic change, and the affected areas became a honeypot for research studies. Now that the media worthiness of the development, and a significant part of the oil industry has departed the communities are still left with significant change, and with a threat to their culture and social life. Advanced telecommunications in rural areas has not got the same interest to government as the oil industry, the oil industry could be dumped only into the these remote rural areas, Telecommunications is of more interest to government in cities. Nevertheless, if government agencies are successful in the continuing single-mindedness to attract 'inward investment' the threat to these rural communities could far outweigh anything the oil industry was capable of. The advantage of telecommunications, over the oil industry, is that it could equally be of great benefit to rural areas.

312. The limitations of telecommunications.

The inference of the notion that telecommunications, unlike previous communication systems, is not geographically limited needs to be carefully considered. It was only whilst reaching the conclusions of this study that it was realised that this is not necessarily good news for areas that have a geography that is difficult for physical communications, such as the Highlands and Islands. The demise of the Highlands and Islands Initiative is confirmation of this. In theory telecommunications has no boundaries and therefore new settlements need no longer be geographically determined. In practice they are dependent upon the provision of suitably equipped telephone exchanges in the case of ISDN, and transmitter sites in the case of radio telecommunications.

Diagram 12.
The need for a Highlands and Islands satellite provision



The Highlands and Islands can be 'one community' of communities.

Individuals

Community Teleservice Centres.

Community Radio Network.

Thurso College distance training.

Local Enterprise Company training.

University of the Highlands and Islands.

Community co-operatives

Voluntary orgainisations

Robert Gordons College satellite interactive link for off-shore training.

European Commission and Highland Regional Council Barbara project.

Orkney Council to improve access between the population and the council, and reduce the high costs of visiting many islands.

Dundee University community care distance training.

The Highlands and Islands has the opportunity of a satellite channel free.

The Scottish Council for Educational Technology have used the satellite for secondary schools.

The Scottish Council for Educational Technology cross community technology project.

All these organisations, and many more, need high quality video communications.

313. Increasing the social divide.

The cost of telecommunications in large geographical areas with sparse populations limits the willingness of private enterprise to provide a service. Some providers have realised that people in rural areas are heavily dependent upon telecommunications and therefore make intensive use of the provision. Such a case is with the vodaphone radio telephone system were provision has been made for fishermen to telephone home. Further restrictions on those who can access the network is made by the cost of equipment for access to the network and the cost of using the network. This further widens the social divide.

The geographical limitations of physical communications has been replaced by provision limitations on telecommunications that are more onerously determined by those in control and is therefore biased towards cities.

314. Overcoming the limitations of telecommunications, satellites.

Refer to paragraph 498. The Wisconsin idea.

Refer to paragraph 501. Distance learning in British Columbia.

Refer to section 5.8 Olympus satellite for the Highlands and Islands

'An Introduction to information technology: INSAT: implications for a nation', Open University, BBC 2, 31.8.91. Satellite provision for India.

Refer to Diagram 12. The need for a Highlands and Islands satellite provision.

Rural areas in several countries have benefited from the use of satellites. There is no doubt that there is sufficient need in the Highlands and Islands; the vision required to integrate and establish such a provision makes it very difficult to achieve in countries that are fragmented. Its major restriction is that it is a one way service, it is not interactive, although mobile uplinks to satellites are available and this restriction could easily change. Also the present cost of the uplink would tend to favour centralisation and control over rural communities.

315. Overcoming the limitations of telecommunications, terrestrial networks.

The irony of the situation in the Highlands and Islands is that the region is already provided with many telecommunications networks. Fragmentation has ensured that similar networks are duplicated at vast expense by different organisations, many using public money, and access is restricted both individually and separately. By necessity there is some sharing of transmitter masts. Whilst the logistics are very difficult, if integration had been applied to the telecommunication networks the Highlands and Islands could have had a very comprehensive system. Separate networks are owned by: Police, Scottish Office, Highland Regional Council Roads Department, the Water Department, Ambulance Service, Forestry Commission, BBC, National Transcom Limited, Coastguard Service, UK military, USA military, Atomic Energy Commission, Hydro Electric, Gas, British Rail, Water Board, Private telecommunications, and British Telecom.

316. A fear of technology.

Refer to Diagram 2. The stress of an industrialised society.

Every available device possible seems to be mobilised rather than putting technology into action; feasibility studies, research reports, seminars, conferences, experimental projects, pilot projects, more reports, more debate. There is a fear of technology that is rooted in a lack of understanding and also prevents an understanding. These fears may be well founded in the past experience of technology being 'hi-jacked' by the few who realise its potential and use it at the expense of others. Thus it is fear itself and not technology which leads to a lack of commitment to use technology. The one technology that has been attempted, the Highlands and Islands Initiative, has fallen into the trap of ignoring this human dimension. It is this human dimension that causes all the delaying tactics to avoid deploying technology.

317. An unfinished network with no demand.

Refer to paragraph 629. Personalisation of technology.

Failure of the Highlands and Islands Initiative will be attributed to the technology and it will be abandoned. The £16 million technology will be hi-jacked to the detriment of the Highlands and Islands. The £4 million plus of public money has been spent on a large organisation to install an unfinished infrastructure. It should have been used to create a demand and consequently another £4 million is required to enable the people of the Highlands and Islands to make use of the technology. A railway has been installed that stops short of many of the stations, the stations are unfinished, there is no access to any of the stations and consequently there are no trains. How can it expect to have passengers?

318. A reluctance to change from centralisation.

Final report by the Rapporteur General, 'What is the impact of the communication technologies and the increased mobility on the urban forms and structures', in Communications technology, mobility, and their impact on urban structures and form: final report, 25th World Congress of the City and Regional Planners, ISoCaRP, Basel, 1989, ISOCARP, The Hague, Netherlands, 1990, p. 126.

A World Congress concluded that *"There are those who think that telecommunication and information systems would encourage integration - being sufficient unto themselves in any location in town. Others, who seem to be more numerous, feel the opposite way, basing their opinion on the leading function of the centre or centres of a city because of prestige, practicality and the job market."*

319. Great human effort to avoid chaos.

Refer to paragraph 374. The settlement pattern, a desirable way forward.

As with any revolutionary process, the force of technological change will have enormous social effects. The preoccupation with the question of centralisation and decentralisation leads to inconclusive answers since the direction of change is determined by the attitude of humanity and not the technology. History is currently being repeated in the same way that the old ways of steam power were clung onto long after electricity had been available. Instead of repeating history humanity needs to minimise the negative effects by make an equally revolutionary step to learn from history.There is an urgent need to understand the new technologies and how to benefit from them.

There seems little doubt that left to itself the way forward will continue to centralise on cities. To avoid the chaos, and to secure a proper place for rural areas, a great human effort will be required.

320. Acceptance in oral cultures.

Community teleservice centres: training and education in rural areas, Athens, Greece, 20-21.4.92, CTSC International in cooperation with Commission of the European Communities, Greek Telecom Organisation, Odense University, Denmark. Interview with Caroline Hay who attended the symposium.

The conference had contributions from Norway, Denmark, Finland, Greece, Sweden, Brazil, Australia, Asia, South America, Pacific Region Portugal, Spain, Thailand, Switzerland, Austria, France, Hungary, Poland, Ireland, Scotland, and England.

Marshall McLuhan, Understanding Media, Ark, London, 1987, (1964).

321. Application to developing countries.

The recent conference in Athens gave evidence of the ready acceptance of Community Teleservice Centres in developing countries without preconceived ideas or fixed infrastructure. This also reflects on the ideas of Marshall McLuhan who maintained that the new technologies are more acceptable to oral cultures Whilst Marshall McLuhan was referring to the implications of electricity and early television it is more significant with the new integrated technology and therefore also confirms the likely acceptability to rural communities such as the Western Isles, that is if an appropriate introduction was to be made.

Whilst this study has concentrated on the Highlands and Islands the investigation of the appropriate integration of teleworking into the rural life of other areas of the world, and in particular developing countries, could provide an alternative to the mass migration from rural areas to the city. Countries such as Tiwan have already learnt to manufacture the latest technology rather than the old industrial technologies. The appropriate use of that technology within the rural areas of developing countries could provide a diversity and flexibility to sustain themselves in the challenge of global change.

CHAPTER 8

SETTLEMENT CHANGE.

SURVEY AND DISCUSSION.

"You cannot have a peaceful world

without having a peaceful mind."

Dalai Lama

in 'Art meets Science and Spirituality', Art and Design, Academy Editions, London, 1990. p. 11.

This chapter identifies three possible settlement patterns derived from the technological change of the previous chapter. Some observations are made of the demands on architecture to meet the human needs in the face of technological global change.

8.1 Ecopolis, Ecological Life-style, Utopia: survey.

322. Oita, connecting isolated people to the world.

One of the most remote prefectures of Japan, Oita, has compensated for its physical isolation by encouraging each community to develop their complementary aspects rather than to compete, and by connecting them with the rest of the world. Information networks, in economic, cultural, and educational fields have been developed for the ordinary people as well as for specialists.

323. Japan, ecopolis, natural ecosystems.

Tsuneyuki Morita, Head of Global warming response project, National Institute for environmental studies. 'Japan's new concepts for sustainable development in urban and regional planning.' pp. 1-4. at Berlin, op cit.

The Japanese Environmental White Paper of 1989 proposed the *"Ecopolis"* (Okopolis) as an urban system harmonious with natural ecosystems with origins in the *"architectural biology", "ecology architecture"* and the *"integral urban house"* of Germany and the USA in the 1970's, and opposite to *"technopolis"* or *"metropolis"*. Instead of a dependence upon technological innovation Japan is looking at social and Urban structures as a whole to solve the complexities of environmental issues.

8.2 A way forward from cities: survey.

324. The changing city.

The modern city changes in a chameleon like way to the whim of industry, politics, tourism, office accommodation, and now the latest technologies. We live in a world of rapidly changing mass images in which the media dominated 'information age' does not automatically create freedom of choice or a sustainable future. A lifestyle of choice in a clean, sustainable, and ecologically feasible urban environment can only be cultivated in cities of knowledge and innovation.

325. Brugge destroyed by its own attractions.

Jacqueline Miller. 'New life styles, regional dynamics and planning: The risk of overdose' at Berlin, pp. 1, 4, op cit.

At the entrance of a museum in Florence: *"everything is forbidden, except queuing."*

There is a relationship between information, life styles, regional dynamics, planning implementation and public participation. Jacqueline Miller uses Brugge, Belgium, to illustrate some of the changes that are taking place. The profits of the great expenditure by the community of Brugge on its historic city have been taken by the hotelkeepers, traders, restaurant owners, and foreign investors looking for *"easy and quick gains"*. The tourists are in danger of destroying what they come to see in this *"sick and stressed city"*. The local population is being thrust out of their city by the tourist pressure of pedestrian traffic jams, overcrowded museums and the *'merchants of the temple'. ... 'Brugge is no longer Brugge', say my Flemish friends, who no longer know how to put a brake on the process they themselves set in motion."* This could so easily be the future of the Scottish Highlands and Islands.

326. 'Winning towns'.

Ibid.

European metropolises are dominated by multinational offices and decision making centres which can suddenly destroy the quality of life. There are now examples of towns to be found in Munich, Vienna, Belgium, and the Netherlands that have reorganised their centres in such a way that the specific needs of all walks of life can socially take place in their streets, squares and cafe terraces. The new collective requirements for urban facilities, leisure areas and amenities have been met with high quality residential areas for *"togetherness and roots."* These *"winning towns"* are those that have preserved their built heritage, their bustling and cultural quality of life.

327. Adelaide, a multifunction polis, diversified life styles.

For more information refer to :

Annie Austin, Chief Executive, Multifunction Polis Joint Secretariat Australia.. Peter Droege, City designer and educator, lecturer, Massachusetts Institute of Technology, Cambridge, USA. 'Australia's Multifunction Polis.'

Adelaide, South Australia, hopes to nurture eight future-oriented industries in a setting that would accommodate new lifestyles. An information-rich, human environment of new technologies, new forms of transport, efficient big-city concentration without overcrowding of people, loss of amenity and nature. It is hoped that industry and commerce can operate at levels above critical mass without losing the scale that is required for high quality urban life.

328. Japanese depopulation, a repeat of history, vacuum garbage systems.

Tatsuro Sakano, Lecturer of Systems Science and Planning, Japan College of Social Work, Muneharu Kokura, Associate Professor, Department of Social Engineering, Tokyo Institute of Technology, 'Makuhari International Business City Development', at Berlin, op cit.

Port Sunlight soap factory workers village, England, 1888. A recent Japanese visit insisted on seeing the village.

In Japan the depopulation of certain areas is being discouraged by twenty first century cities equipped with a high level of information and natural environment. Information communications provides the necessary hidden veins for a new living structure necessary to achieve the visions of the future. A description of Makuhari International Business City sounds like the English workers village of Port Sunlight, with a huge increase in scale. Only the concepts are recognisable in a repeat of history which continues to play its part in the development of the future. A design guide specified twenty per cent of the land for parks, an artificial beach, a marine sports centre, a water recycling system, an area heating system, and a vacuum garbage system. Do we now have the technology and the need to successfully resurrect these ideas from history ?

329. Transportation, high demand and urban environment.

Ibid.

Transportation is considered to be the most important infrastructure in the attraction of population and the decentralisation of headquarters. The image, culture, and quality of the environment and its buildings are considered to be more important than the business and telecommunications infrastructure. Land speculation is also very important to attract business. As a result of the high demand the local government was able to choose the most desirable companies and activities and set out a design guide for construction to ensure urban amenity.

330. 'Cities of tomorrow', Japan.

Yoshinobu Kumata, Yasuko Obara, Minoru Takahashi, Shigeru Uchida, 'The Akihabara project', at Berlin, op cit.

The Japanese are aiming for an inter-cultural and international co-operation of academics, businesses, citizens, and council members to re-shape city planning on a world wide scale. Harmonization of living, business, information, shopping, amusement, and cultural activities produce an urban life that is more humane, harmonious, and sustainable. A close proximity of working and housing areas for the active use of the facilities so that Japan's development complexes are places to meet people.

331. A 'Computer city'.

Denis Crompton, 'Computer city', Ron Herron, Bryan Harvey, 'A walking city', in Metropolis Archigram 5, London, Autumn 1964.

Archigram noted in 1964 that the necessity of cities had come into question, and suggests that so long as actual physical contact of people remains the city idea will remain important. Could technology result in the continuous network of change as illustrated by Archigram in the 'Computer City: a synthesized metropolis with electronic changeability'? Perhaps such a suggestion is not so absurd as it may first appear. The present control systems through politics are far to slow to deal with the present day rate of change. Computer city has a system that enables a reaction to follow the natural causes at the optimum rate. Such a system that would enable a human reaction to take place is today practical with the aid of technology. 'Walking City', a large population of *"world traveller-workers"*, is perhaps more relevant today. Global business expects people to physically move to wherever jobs are made available. Today the reverse is also possible with jobs moving to the people via telecommunications.

8.3 A way forward from rural areas: Teleservice centres and telecottages: survey.

332. Opportunity for rural areas?

Refer to appendix A1.3 A future based on rural areas: teleservice centres and telecottages.

In contrast to the 'cities of tomorrow' Teleservice Centres provide shared technology facilities to communities in rural areas. The main concept is a holistic approach, and the provision of the infrastructure is only a small part. Scandinavian countries, who have been introducing telecommunications to rural areas since 1985, provide some experience of this alternative to the conventional concentrated cities.

333. The Nordic telecottages:

Henning Albrechtsen. 'Revitalization of Rural Areas through Telecottages in High Tech Countries: Practical experiences', at Berlin, op cit.

There is a confusion over terminology: telecottage is often applied to a teleservice centre.

Telecottages are based on an idea from Jan Michel and the citizens of Fjaltring, a rural village in Western Jutland, Denmark. The first telecottage was set up in 1985 above the local general store in Vemdalen, between Trondheim and Ostersund, Sweden. A village of 900 inhabitants in a forested rural area of less than one inhabitant per square kilometre, and where previous attempts to prevent depopulation with implanted industry had failed. The youngsters immediately realised the potential.

Community teleservice centres teach inhabitants to use information technology, and to show them the possibilities through practical demonstration. They provide access to future oriented jobs without having to move or commute to the densely over-population urban areas.

334. The first telecottages, national and international.

Lars Qvortrup: Associate Professor at Telematics Project, Odense University, Denmark, Butterworth, 1989, pp. 59-68.

In Denmark, Norway, Sweden and Finland twenty five telecottages existed in 1988 and twenty more were planned. They provide isolated village communities with access to telecommunications and information services and they integrate a number of different business and community activities. The economic involvement of the daily users is important for the quality of the services and for the integration of the telecottages into the social life of the community. Teleservice centres need to be integrated with other such rural centres as well as playing their part in the whole structure of society on national and international levels. The Nordic Association of Telecottages, supported with funds from the Nordic Council of Ministers, have achieved a network to provide a 24 hour translation service in more than 10 different languages. A database is being established to unite the Scandinavian telecottages.

335. The World Organisation of Telecottages.

Dr. Gunter Kroes, Telecottages International. The international union of local information centres. 'Planning of local information centres - Telecottages - in developing countries.' at Berlin, op cit.

There is now a World Organisation of Telecottages which can advise and assist local people to plan and organise, a profit making telecottage open to everyone. The EEC recommended telecottages to be *"introduced without delay,"* and examples show a reduction of migration to the urban centres in most European countries. Telecottages are part of a world network of knowledge and competence, each having a specialism within that world market. Telecottages can provide local teaching, distant teaching, locally demanded seminars, and regular school or university courses via the network.

8.4 The way forward: discussion.

336. New technology and industrial settlement patterns.

Refer to paragraph 327. Adelaide, a multifunction polis, diversified life styles.

Refer to paragraph 329. Transportation, high demand and urban environment.

Is the multifunction polis of Adelaide merely the application of new technologies to the outdated settlement patterns of the industrial mechanical age? Can this work to create the next wave of diversified life styles? The interesting question of Makuhari International Business City is whether an assurance of urban amenity, and selected companies, would have provided an equal attraction to companies.

337. Catching votes, public concern, and ecological life-style.

There is a 'blossoming' of environmental vote catching words and documents from the politicians throughout the developed world. Whilst deliberate changes in life style can be very difficult to achieve, particularly if a reduction in consumerism is involved, the current public interest in 'ecological life-style' could be encouraged by adequately demonstrating the possible environmental gains. To allow such gains to be made there needs to be a restructuring of legislation, administration, regulations, information, education, financial systems, communication between people, government, and business.

338. A lack of vision.

Refer to section This chapter identifies three possible settlement patterns derived from the technological change of the previous chapter. Some observations are made of the demands on architecture to meet the human needs in the face of technological global change.

Refer to section 8.1 Ecopolis, Ecological Lifestyle, Utopia.

Refer to section 8.2 A way forward from cities.

Refer to section 8.3 A way forward from rural areas: Teleservice centres and telecottages:

In the examples given, the Japanese 'Ecopolis' is the only attempt to look for an alternative to the mere modification of existing settlement patterns, either based upon the redundant industrial age or a preservation of earlier ages for tourism. The conclusion may be that the existing settlement patterns and the forces of power, aided by the new technologies, are determining our future, and not the general population. There is a failure to offer an integrated vision of new technologies used for the improvement of the human race and its relationship with the environment.

339. Reducing resources, the developing world.

Refer to paragraph 322. Oita, connecting isolated people to the world.

Refer to paragraph 287. A revolution in human thought?

The new technologies provide an opportunity to reduce the waste of resources and the consequent wars over these ever reducing resources. Universal public networks, like the Oita city computer network, will remove secrecy between nations and will encourage a better understanding between the peoples of the world. Developing countries could be offered technology that could help them circumnavigate the traumas of a Western style industrial Revolution.

8.5 Patrick Geddes, technology and settlement.

340. The end of paleotechnic industry?

Refer to paragraph 237. The fragility of the industrialised system.

Patrick Geddes, Cities in Evolution, London, 1968 edition, p. 77.

Patrick Geddes may not have expected it to take so long for what he described as 'Paleotechnic Industry' to come to an end: *" ... diffused and habitual fear...[caused by] the inefficiency and wastefulness of paleotechnic industry, with corresponding instability and irregularity of employment, ... the corresponding instability of the financial system, with its pecuniary and credit illusions, ... the growing physical slackness or deterioration - unfitness anyhow."*

341. Adaptability or extinction.

Open University, 'Themes in British and American History: Industrial strife', BBC2, 1.9.91.

Refer to paragraph 407. Disneyland escaped to 'normality'.

Refer to paragraph 222. The change from manufacturing.

'The Velvet Claw', BBC 1, 9.92.

The ill-health of industrial cities, the violence between workers and employers that was required to reach a truce in the system, the closing down of industry, and continual unemployment indicates that its end is near. Industry specialises and the television series, 'The Velvet Claw', illustrates a parallel in the extinction of species that specialise and lack adaptability. This is particularly true of the new technologies when, as in the Highlands and Islands, their is no research and development to help adapt to the characteristic rapid change of technological products.

The age of the Industrial Revolution along with its associated society, and concept of 'jobs' and 'redundancy' is now itself redundant. Its continuation would result in a globe of one continuous urbanisation with no diversity, no choice and ultimately an evolutionary extinction.

342. Power and control.

Refer to paragraph 221. Global auto-suggestion.

Patrick Geddes, op cit. p. 93.

Education has also taken a long time to see the changes envisaged by Patrick Geddes: *"In the day, when education had withered down into memorisings for senile examining boards, for torpid bureaucracies, neither party could foresee the rebound which is now beginning towards the reassertion of the freedom and uniqueness of the individual mind, forwards the guidance of its unfolding ..."* Today, it is difficult to justify that the individual mind is not controlled by a network of land, industrial and political power through education and the media. New technologies provide new tools of control.

343. Negative effects of telematics.

The force of change and progress gives rural areas little choice in accepting the new technologies. External interests will have easier access and a more competitive advantage over local interests, and there is a danger that the infrastructure will enable further control of rural areas from outside with little real benefit to the rural area. The power of a few in a rural community could use the technology to increase their control over the inhabitants.

The use of telecommunications in rural areas is not a simple one since telecommunications are a global phenomena and it will be very difficult to claim any advantages for rural settlement.

344. A two edged sword.

M. Wegener 'Urban information systems and society' in J Brotchie, op. cit. p.220. R Meier, 'Telecommunications and urban development', in J Brotchie, op. cit. p. 111.

Although the new technologies may appear to be 'all clean' and 'environmentally friendly' the disadvantages of the potential use of technology are not always obvious: *"Another time-bomb, not as conspicuous but hardly less frightening, may be unharnessed with information technology."*

345. A lack of interest in telecommunications?

Ibid.

Colin Chant, Sources for the study of science technology and everyday life, volume 2, Hodder and Stoughton, London, 1988.

'An introduction to information technology: the telephone: birth of a technology', Open University, BBC2, 9.3.91.

The impact of the telephone is the least documented and most familiar of urban investments. Is communications taken for granted, *"much as a fish might regard the water in which it swims?"* There is a lack of interest despite the economic, social, and cultural importance of person-to-person communications. Imagine the impact on an earlier age if people had been given the ability to communicate with anyone in the world instantaneously. This lack of interest, or more likely understanding, continues with advanced technologies which are vital to any change in the place of rural areas in the economic global framework.

346. Change, quality of life, knowledge and the civilising force.

op cit Richard V Knight,

Refer to paragraph 326. 'Winning towns'.

Refer to paragraph 323. Japan, ecopolis, natural ecosystems.

Refer to paragraph 227. The power of a 'global city network' leaving rural areas behind.

The powerful forces underlying change have forced industrial cities to encompass knowledge-based development, to create a well rooted *"knowledge infrastructure"*, to re-shape the *"personality"* and *"sense of place"* of the city, to improve the environment, the quality of life and social justice. For cities to progress to the *"global society"*, they must change from a culture of *"goods production"* to one of *"ideas production"*.

It is this idea of the city as the *"the primary civilising force;"* that may provide the key to the pathway forward in the shape of some form of 'rural city'.

347. What do we require of a future world? Eutopia?

Patrick Geddes, Cities in Evolution, 1968 edition, p 221.

'Eutopia' - good place.

'Change' is a basic law of nature that could be left to technology to dictate our future life. An alternative may be to investigate the needs of mankind, and then look for appropriate technology to help achieve those needs. A hundred years ago, Patrick Geddes suggested that 'Eutopia' was achievable now. It is surely no different today. Perhaps we already have Eutopia if we could only remove the blinkers of fragmentation.

There may now be the experience and necessary tools to get closer to the 'Eutopia' that was once dreamed of and, in the form of 'Utopia' was impatiently discarded. Without a pathway forward the way will surely be lost.

8.6 Towards an electronic architecture?

348. The needs of man

Eugene Viollet-Le-Duc.'The Habitations of Man in all ages'. Sampson Low, Marston, Searle,Rivington. Ln.1876 tr.Benjamin Bucknall.cards V17.1.91GSA 728.03

Beveridge and Turnbull. 'The Eclipse of Scottish Culture' Polygon. 1989 Ed. p. cards 16.12.90Paper 2.1.91GSA 941.1

Extracts from a paper by Brian Smith, 'Towards an electronic architecture?'

In the *'Habitations of Man'* it is shown that man tends to live in settlements, he needs to have shelter from the elements, he needs to have a means to a livelihood, and he needs to be able to develop his own aesthetic based upon his origins and linked to his surroundings. Some of these factors are particularly difficult to determine in the Highlands and Islands of Scotland. Livelihoods have been hard and there has been a significant distortion of natural development as is shown in *'The Eclipse of Scottish Culture'* Telecommunications provides an opportunity for man's rehabilitation of the remote Highlands. Telecommunications could be used to play a similar role in the Highlands and Islands as canals, railways and roads have done in the history of the towns and urban areas.

349. An original idea of Corbusier.

Refer to paragraph 330. 'Cities of tomorrow', Japan.

An 'architecture' is required that will provide the needs of humans under the new conditions of telecommunications. At the same time, it will have to meet the climatic and environmental conditions of the Highlands. The Japanese Akihabara project sounds very familiar as a new vision of the *'Cities of tomorrow'* of Corbusier and his contemporaries; the *'machine age'* is replaced by an age of information technology, consumerism, high tech goods and services. A competition run by The Japan Architect, 'The House is an Electronics Device for Living in' offers a starting point for some thoughts, and some links, based upon an idea by Corbusier:

Hiroshi Hara, 'The House is an Electronics Device for Living in: Competition Winners', The Japan Architect, Nov-Dec 1990 p9-38

"Eventually with the passing of time, the guiding concept of our epoch will become clear. ... At present, we are in such a state of gloom that no concept leads us to a perfect solution ... Le Corbusier's attainments still remain far ahead of our present achievements. We strive to set new goals and make some discoveries but cannot reach the stage of lucid discovery that was the conclusion proposed by Modern Architecture."

Hiroshi Hara, the judge of the competition, was disappointed in the entries and disillusioned with the Architecture of today.

350. A giant liner, a box of electronics, and the electronic house.

An alternative view may be that today is as exciting as Corbusier's day when he wrote 'Towards a New Architecture' in 1923.

Le Corbusier Tr.Frederick Etchells, Towards a New Architecture. Architectural Press 1982 (from 1923 13th ed Paris) p7.op cit p36

"The Engineer's Aesthetic, and architecture, are two things that march together and follow one from the other: the one being now at its full height, the other in an unhappy state of retrogression."

Exactly the same situation as we have today with the booming electronics industry. The attempt, by the competition, to make similar links with architecture is thus an obvious one. Can we equate motor cars, aircraft and giant liners with boxes of electronics? There appears to be something very amiss with the comparison. Where is the romanticism and grandeur of the giant liner in a small box of electronics? Corbusier seems to have had much the better stimulus for his imagination. There seems to be some difficulty in making useful associations. It seems to be a 'non starter'.

351. Architecture of the time.

Corbusier was using the ideas of the mechanical age to provide him with a 'brief' for his architecture. In using a machine aesthetic, rather than any other, he was endeavouring to produce an architecture of the time. More significantly, the intention was to find an architecture that would benefit the masses. Is it possible to find an equivalent process in the 'electronic house'? First of all the title is misleading, whilst Corbusier specified the house as a machine for living in, the important aspect is the overall implications of the machine age in producing an architecture. This is not the same as applying the machine, or electronics, to individual houses.

352. Communications as a brief for architecture.

Ibid pp 81-138

The real revolution, in the machine age, was the ocean liners, automobiles, and airplanes, and not the machines that made them. The revolution was the change in world communications that these methods of transport produced when they 'diffused' around the world. Corbusier's fascination with these products is very clearly seen in his book 'Towards a New Architecture'. The equivalent determinant of architecture today would therefore be telecommunications which is a product of electronics. Telecommunications do not seem to have the same impact and glamour as the visions that where provided to Corbusier with automobiles, ocean liners and aircraft. Whilst electrons flowing in wires, and radio waves through the 'aether' may have stirred the Victorian scientific and romantic imagination, it is necessary to consider the effects on our lives to find an appropriate 'architecture'.

353. Work at home.

'Doing More Homework', Planahome Spring Guide, p. 13.

In a recent magazine it was stated that in the United Kingdom at least a quarter (5.5 million) of the working population will be based at their home before the end of the century. The article continues to illustrate the significance of the vision of working at home.

"An unhurried breakfast and a stroll across the lawn to work, pausing to dead head a couple of rose bushes - that for most long suffering commuters must be a vision of perfection."

Some people find a corner to work in their own home, some convert a room or add an extension to their homes. Some are finding social difficulties and look for a nearby office to work from. Ian Appleton who runs an architectural practice in Edinburgh has already experienced these difficulties.

Telecommunications is changing our way of life as dramatically as the Industrial Revolution did and therefore the built environment will need to change to meet the new requirements.

354. Cottage industry

The workers of the early industrial Revolution produced products in their own homes, the materials where distributed and the products collected by the industrialist; this was cottage industry. As the machines became unmanageable for the ordinary home sheds where erected in the back yards or additions made to the house. As the quest for greater efficiency using power systems of water and steam progressed a central factory system became necessary. We are now in a reverse trend which could help us to solve some of the transportation, energy, and resultant environmental difficulties. Architecture can play its part in this change to extract the maximum advantage to this opportunity, and minimise the effects of social upheaval.

355. Stability, security, individuality.

reprinted in Benton, Charlotte. ed. 'Documents - a collection of source material on the Modern Movement'. OU. Milton Keynes, 1975, pp. 71-6.

Wells Coates observed that: *"... clothes were essentially transitory but housing was an expensive investment that would last;'The right thing [is] the feeling of stability, security and individuality."* This could have been the key that the modernists needed, spoken by a modernist. Instead he had a vision of smaller less permanent houses justified by smaller families, costs, less time spent at home, and a servantless society. *"... the next step in the design of dwelling units must be the block or group of dwellings with every centralised service which the sharing of costs makes economically possible".* Even though some of his ideas are now becoming acceptable, there is no reason to suppose that it would be the choice of many.

356. Flexible choice. Chameleon houses.

Ideally we need a house that gives stability, security, individuality, and the modern comforts of life. As modern clothes and technology appear to be acceptable, modern houses could also be acceptable if, and only if, we can overcome the temporary image of modern objects. It seems ironic that the public have tried to keep tradition but ended up with 'low tech' house kits attempting to imitate that tradition. Can we design a permanent modern climatic shell with a changeable skin? A Chameleon house, if you like, but it must be flexible enough to satisfy people today and, as we slowly catch up with change, to satisfy people tomorrow. And, unlike the chameleon, this must be possible both inside and outside. The Victorian house has proved capable of this kind of change, perhaps more so internally than externally.

357. M H Baillie Scott.

Baillie Scott, MH. 'An Ideal Suburban House'. The Studio Vol iv 1894-5, pp. 127-32. ibid p. 29.

M.H. Baillie Scott devised simple, three bedroomed cottages ... *'We should spend more thought on our homes ... people pride themselves not a little on their love of home, ... how can we dignify with such a title the cheerless dwellings in which so many of us live.' "*

358. The suburbs.

J M Richards, 'A Miniature History of the English House', Architectural Press, 1938. p. 65. p. 53.

According to JM Richards real originality was shown by Ernest Newton, Dunbar Smith, Baillie Scott and Guy Dawber, and the influence of these was seen at its worst in the *"caricature Tudor styles of the ordinary speculative suburban villa, which persists today as the legacy of the romantic movement".*

Paul Oliver, Ian Davies. Ian Bently. 'The Suburban Semi and its Enemies' Barrie and Jenkins London 1981 p9 p16)

About half of the population of Britain live in the suburbs comprising of a complex of roads, shopping centres, arterial roads and avenues, They add up to a substantial proportion of the entire built environment of Britain.

359. The media influence.

A matter of taste, BBC2.

David Summerville, Architect with Ross and Cromarty District Council.

Suburbia is now a housing estate; the speculative builders are still there, the mock styles are now plastic columns, DIY doors, imitation Victorian stained glass panels and period interiors added to brick boxes. This is all mixed up with televisions, videos, computers, kitchen gadgets and the latest registration car. The question is not weather this mixture is acceptable but whether these people are happy with their homes. Maybe these people are not being introduced to, and offered, a choice of alternatives, and if they do exercise any choice it is the choice of the media and therefore no choice at all. David Summerville suggested that if we want to influence the public's 'taste' we must first of all influence television programmes like Brookside and Dallas. The pleas of the early Modern Movement to look for appropriate architecture for today appear to have been forgotten, unless we are getting what we deserve; a reflection of our fragmented society.

360. Architects and housing.

Christopher Day, Places of the Soul, Aquarian pres, Wellingborough, 1990.

Christopher Day, Building with Heart, Green Books, Devon, 1990.

David Pearson, The Natural House Book, Gaia Books, London, 1989.

James Lovelock, Gaia: the practical science of planetary medicine, Gaia books, London, 1991.

Alan Ereira, The heart of the world, Jonathan Cape, London, 1990.

Conversations with architects, refer to acknowledgements.

We can not expect to change people over night as the Modern Movement attempted to do, and sufficient time may only now have passed to slowly introduce some of their ideas. Are there any architects prepared to give up lucrative offices for the far more urgent question of our homes? Telecommunications is making our homes and surroundings increasingly important as we spend more of our lives at home. The home has new demands. The home affects our soul, our attitudes to life, and to Gaia. Many architects appear to be content to do no more than copy the methods of the speculative builder; to use the timber panel system, just because it is the accepted method of the developers.

361. A vision.

Without a vision of the way forward there is no direction to our progress; there will be no beauty from the chaos. Architects are needed who are prepared to offer a genuine alternative choice, homes to fit the new demands of today.

A vision needs to be in place even if its only purpose is to be changed. John Gloag gives a useful reminder of our purpose:

Gloag, John. 'The Englishman's Castle'. Eyre and Spottiswoode 1945. p. 163. Ibid. p. 53.

'The Modern Movement does not yet speak English. It has so far been regarded, though not acknowledged, as a fashion. Those who have practised, have sometimes forgotten they are architects and have become social reformers, intent on telling their countrymen how they should live, instead of providing them with the best background for living in their own way'

CHAPTER 9

CHANGE IN THE DECISION STRUCTURE

DIAGNOSIS AND HYPOTHESIS.

"Life is like childhood - it can not be still."

Patrick Geddes, 'The World without and the World within', Sunday Talks with my children, in Cities in Evolution', London, 1949 edition, p. 205.

"Town Planning is the product of Town Thinking, Town Feeling, and is no mere material resultant of geographical situation and occupation, of government or defence."

Patrick Geddes, 'Cities in Evolution', London, 1949 edition, p180.

A return to community:

"National identity is a recent thing which replaced the identity of communities."

'Personal details: national identity', Open University, BBC2, 5.9.92.

9.1 The plague: diagnosis.

362. Continued domination of cities?

Refer to paragraph 222. The change from manufacturing.

Refer to paragraph 288. The evolution of fragmentation.

Refer to paragraph 290. Wide ranging change.

Chapter 8: 'settlement change' suggested three emergent possibilities for the way forward based on the 'ecopolis', 'tomorrow's techno-cities', and 'teleservice centres' in rural areas. History suggests a continuing evolution of the domination of the cities, forced into a modified form by the change from an industrial society to a technological society. Cities are still struggling from the early negative effects of the Industrial Revolution, and its legacy could ensure that the next period of 'modification' is more chaotic and more difficult to correct: massive unemployment, decline of compensating social services, the final collapse of industry as a major employer, and ultimately the collapse of financial and political systems. Whatever the changes, they are likely to demand a complementary change in the decision making structure, and the same technology that is creating change may also enable a more appropriate decision making structure to evolve.

363. A change in decision making.

Nearly every news broadcast has more redundancies.

The agricultural and industrial revolutions significantly changed the lives of many, and the Victorian period increased the interface of public servants councillors and politicians between the general public and the landowners, some of whom had become the new industrialists. The underlying system of decision making has effectively changed very little since feudal times; it is still the landowners, and the landowners changed to industrialists, that are in control with the claim that they provide the work and livelihood of people. Massive redundancies and global change would suggest that this system is no longer appropriate.

364. The global threat.

Refer to paragraph 401. The force of urbanisation wins.

The global changes that are taking place threaten to devour the globe in a 'plague of urbanisation' in which rural areas are swallowed up into the control of cities. Patrick Geddes, in referring to population maps, described the spread of urbanisation more beautifully in his 'Cities in Evolution':

Patrick Geddes, Cities in Evolution, 1968 edition, p 27-28.

Royal Geographical Society's atlas of England and Wales, Bartholomew, Edinburgh, 1902.

" ... a vast irregular growth without previous parallel in the world of life - perhaps likest to the spreadings of a great coral reef. ... a 'man - reef' ... Onward it grows thinly at first ... further and faster than ... the thicker population ... steadily following on. Within lies a dark and crowded area ... the daily pulsating centre ... a vast new unity ... ' a province covered with houses' ... "

Open University, 'An introduction to information technology: the telephone: birth of a technology', BBC 2, 7.3.82.

"Instead of the old lines of division [boundaries] we have new lines of union [railways] ... the throbbing arteries, the roaring pulses of the intensely living whole ... the telegraph wires ... so many nerves, each carrying impulses of idea and action either way."

" ... its innumerable absorbed old villages and hamlets, its ever new and ever spreading dormitory areas - loosely built and distant for the rich, nearer and more crowded for the middle class, and where shall we seek or put the worker or the poor. ... "

"Do we not see, and more and more clearly as we study it, the need of a thorough revision of our traditional ideas and boundaries of country and town ?"

Refer to paragraph 340. The end of paleotechnic industry?

Refer to paragraph 318. A reluctance to change from centralisation.

Today, with new technologies and the redundancy of traditional industry, growth from a centre is no longer the only driving force. The settlement pattern could become more disordered and scattered.

Whilst human thought can move far ahead, the population has great difficulty accepting change. There is a long delay and the influence of centralisation is likely to remain long after the driving force has been replaced.

365. Ecological growth.

Patrick Geddes offered an ordered vision of an 'ecological' growth:

Ibid. p. 97.

"Towns must now cease to spread like expanding ink-stains and grease-spots: once in true development, they will repeat the star-like opening of the flower, with green leaves set in alternation with its golden rays."

The population of the Highlands and Islands has now begun to increase, and together with its natural resources it could provide an ideal model for such an 'ecological growth:

Ibid. p. 41.

The white patch on the population map, *"... represents the heights of the Pennines, and consequently the water supply of these vast and growing populations on either side. ... In synoptic vision, is their 'parish pump'. ... the ultimate and determinant condition of population."*

Refer to paragraph 372. Fragile cities, small beginnings and diversity.

The Highlands and Islands has no shortage of water distributed throughout the region. This availability could aid a secure localised 'ecological' settlement pattern.

366. The questions.

Invisible enemies, Channel 4.

Refer to paragraph 216. The 'global village' and the 'world village'.

Refer to paragraph

Refer to paragraph 283. A chaos period of revolution?

There is currently a realisation that massive industrialisation and urbanisation has an effect on the earth's resources and consequently the ecology of humans. There seems to be a knife edged balance between impending disaster and the advancement of human knowledge to deal with those disasters. At a time of increasing change from the 'global village' it would seem to be wise not to abandon the safeguards of Town Planning that was devised to overcome the chaos of the Industrial revolution. Perhaps it is the form and political methods that we wish to abandon rather than Town Planning itself. The rejection of Town Planning may be because of the forces of the new revolutionary change and chaos may therefore be inevitable.

Should Town Planning, that was formulated by Patrick Geddes a century ago, change to be acceptable to the new challenges, or should it save us from the new challenges? If the present era is to collapse what should it be replaced with?

367. A time for the majority.

The scale and greed of the Industrial Revolution: Medieval serfs were given land in return for 42 days work a year. The rest of the time was their own. They were not allowed to work on Sundays and on 50 compulsory holidays. A leisurely life style compared with the early Industrial Revolution when one factory worker was equivalent to 3000 handworkers but was no better off. The Arts and Crafts movement and the pre-raphelites looked from the period of the Industrial Revolution to the medieval period.

Open University, 'Victorian ways of death,' BBC2, 28.9.91.

One possible way forward could be to develop the values of a self-determining freedom of the individual to control his own livelihood within a caring community life. To develop the 'world village' rather than the 'global village'. The majority of the population could then begin to reap the benefits of the agricultural, industrial and communications revolutions that have so far been controlled by the 'rulers of the lands'. Rural areas may be the best starting point in a search for this pathway forward. A hypothesis is therefore required that will support rural areas, and this requires a change in the decision making structure.

368. Encouragement to interactive participation.

For a view of the decline of the working class refer to:

Tony Parsons, 'Without Walls: the tattooed jungle', CH4, 6.10.92.

Patrick Geddes summer meeting 1991. Discussion of games.

Refer to paragraph 201. Neighbourhood Initiatives Foundation.

There would be a need to reverse the effects of the past system of decision making by 'rulers'; to encourage people to participate in the outcome of their own lives; to reverse the apathy to involvement; to be involved as they would in a sports event or on holiday; to be as interested as going to the pub, the football match, or the Bingo. This can only be achieved if it is a game in which the outcome is not predetermined or controlled by others so that they can experience the results of their own actions.

Without real participation there is a danger that in the chaos of revolution the voice of many will be lost.

369. A new system?

Far reaching changes will need to be made to the present day understanding of town planning which attempts to make precise decisions about specific development sites. Town planners and politicians may be opposed to any perceived loss of control in the flexibility of the proposed changes in the system of decision making. In practice, town planning is already loosing control of the actions of land owners and industrialists, and a diversification of decision making may paradoxically lead to an improvement in the system.

9.2 A change in lifestyle.

370. Home working.

Ibid. pp. 353-354.

J F Coates, 'New technologies and their urban impact' in G Gappert, R V Knight, eds., 'Cities in the 21st century', vol. 23, Urban affairs annual review, Sage, 1982.

Refer to paragraph 353. Work at home.

Refer to paragraph 356. Flexible choice. Chameleon houses.

J F Coates estimates that, by the year 2000, *"the average household will have an investment in telematics roughly equivalent to its present investment in the automobile"* and many work routines will be integrated with home working. Higher levels of continuing education will promote increased expectations, upgrading of taste, desire for greater diversity in decor, design, furnishings, and innovative dwelling arrangements. An improved quality-of-life awareness, with priority to pedestrians and cyclists, the use of informal labour, and a larger 'do-it-yourself' movement.

371. Urbanised countryside.

Ibid. pp. 351, 360.

H Blumenfeld, 'Have the secular trends of population distribution been reversed?', research paper 137, Centre for urban and community studies, University of Toronto, 1982.
M M Webber, 'Urban growth: what are its sources?' in 'Cities-The forces that shape them', Cooper-Hewitt museum, Rizzoli, New York, 1982.

Refer to paragraph 407. Disneyland escaped to 'normality'.

According to M M Webber, growth is where natural environments and *"opportunities for leisure-time activities are plentiful"*. In the USA, the 1970 to 1980 period showed rural areas growing as fast as urban areas, *"sufficiently for them to be classified as urban"*. H Blumenfeld sums up the result as

a *"universal 'urbanisation' of the countryside"* with a corresponding 'ruralisation' of the urban population.

372. Fragile cities, small beginnings and diversity.

A descendant of cimolestes, the carnivorous creodonts, which had slicing teeth for eating meat and nothing else; they became extinct. Miacids also descended from cimolestes had slicing teeth for meat, and grinding teeth for nuts and fruit; its versatility allowed it to survive.

All our modern carnivores have evolved from an insignificant cimolestes ancestor, a small shrew like tree creature with a 'secret weapon'.

The Velvet Claw: the Carnassial Connection, BBC 1, 7.9.92.

Nature is full of examples of extinctions in evolution and the history of settlements also has many 'extinctions'. It may be tendentious to suggest that the evolutionary trend towards dense cities, to the exclusion of other settlement patterns, could lead to extinctions. Settlements with a fragile existence, such as the new cities in the desert regions of the USA which are dependent upon water supplies diverted from other regions, may be particularly liable to extinction. Evolution in nature also shows that the small can evolve into the most successful and it may be wise not to rule out the possibility of a rural alternative providing a way forward as well as diversity.

373. Preservation. Who decides?

Grant Jordan, op. cit.

Refer to paragraph 83. Local identity and the awareness of different views.

Refer to paragraph 116. Political agenda are not solutions.

Refer to paragraph 2. Preservation and a unique land opportunity.

There is a reactionary approach to rural areas which aims at preservation. Against the forces of change this would seem doomed to failure. Such preservation requires government policy and in practice the results do not represent the intentions of the policy. Apart from the political reasons for the failure of policy, by attempting to prevent change, the process is falsely distorted and the results are far from those intended. A more desirable result may be obtained by accepting the inevitability of change and deciding how to guide that change. The question is: who should make those decisions, and how?

9.3 The influence of new technologies.

374. The settlement pattern, a desirable way forward.

Refer to paragraph 242. The human system.

H A Simon, 'The consequences of computers for centralisation and decentralisation', in M L Dertouzos J Moses, eds., 'The computer age: a twenty year view', MIT Press, Massachusetts, 1980.

J R Beaumont, P L Keys, 'Future cities: spatial analysis of energy issues', John Wiley, New York, 1982. In John Brotchie, et al ed., 'The future of urban form', Croom Helm, 1985. Ibid. p. 326.

Refer to paragraph 226. The power of global cities and global corporations.

Historically the need and desire for face to face communication has resulted in relatively compact forms of settlement. Whilst early technologies in the form of transport systems were necessary to enlarge this settlement pattern, they could not determine change on their own. Technology can enable both centralisation and decentralisation, and it is other factors such as the *" ... inertia of the built environment as well as existing organisational structures"* that are likely to prevent radical changes in settlement patterns. Simon, Beaumont and Keys suggest that *"the challenge is to devise a desirable future."*

The effects of new technologies are not questions of centralisation or decentralisation, they are more likely to cause a change of emphasis to the historic settlement patterns; a trend from commuting to longer distance, non regular travel; an increase in teleshopping; and an increase in distance learning.

It is the difference between analogue and digital; analogue provides all permutations whereas digital is one or the other.

375. A global interactive dynamic network.

Michael Wegener, Institute of Spatial Planning, University of Dortmund. 'Information and urban development in Japan and West Germany.' At Berlin, op cit.

Refer to paragraph 283. A chaos period of revolution?

Manufacturing in the early period of the Industrial Revolution was confined to a single country, Great Britain, and its implications in complex urban development resulted in the necessary birth of Town Planning as we know it today. That revolution spread throughout the globe and led ultimately to the telecommunications revolution of today. The telecommunications revolution is irreversible, and the development and outcome of this revolution will have far reaching implications on planning and the life style of populations throughout the world. The chaotic rate of change may be the planners greatest challenge to embrace the needs of the single human being as the *"final target"* within the changing global network.

The characteristic of the telecommunications revolution is that it intertwines the whole world into an interactive dynamic network.

376. Europe 2000, new freedoms?

P Hall, ed., 'Europe 2000', Duckworth, London, 1977. In John Brotchie, et al. p. 364.

The international forecasting study, 'Europe 2000', produced a short term *"gloomy scenario"* and in the longer term from the year 2000: *"a new assertion of the values of conviviality and community, coupled with the creative exploitation of new technologies by small-scale groups."* These technologies would make possible an ever-widening freedom to locate economic activities almost anywhere, including remote rural locations. Exploitation by the more affluent, may isolate and trap the under-class more than before.

377. A structural network or for private competition.

Refer to paragraph 283. A chaos period of revolution?

Refer to section 7.2 Europe and Technology.

The new technologies could have a very similar effect to the private car which has accelerated progress and has created enormous difficulties. There is a political and financial dilemma in the use of the new technologies; they can be used purely for economic competition and personal gain which will result in a society of 'haves and have nots' or they can be provided for the benefit of all as a cultural and social service as with roads, pavements, drainage, street light, electric and water supplies. Electricity, telephone and public transport as structural elements allow an organised development. De Sola Pool speculates that:

de Sola Pool, Communications technology and land use, 1980.

In a knowledge-based economy it will be advantageous to invest the increasing cost of transport systems into the reducing cost of telecommunications.

Open University, 'An introduction to information technology: the telephone: birth of a technology', BBC 2, 7.3.92.

Whilst the development of new technologies may require promotion by individuals, the history of the telephone demonstrates the chaos that results, and the resultant need for a demand by the users to achieve the harmonization of networks. Town Planning could be seen as the equivalent demand by users of settlements for 'order out of chaos'.

9.4 A changing role for town planning.

378. Basic needs of man. International town planning: humane, harmonious and sustainable future.

J P Eberhard, 'Advanced urban systems: a world wide opportunity', Habitat 2, 9-10, 1977.

Information-communication systems: face to face, telephones, radio, television, electronic mail, video and computer conferencing.

Planning in the Age of the Information City: More Humane, More Harmonious, More Sustainable.' September 6-8th 1990. Japanese-German Centre Berlin.

Michael Wegener, op. cit.

J B Eberhard sets out the basic needs of man: Shelter, movement between shelter, information-communication systems, and management systems to meet the needs of human settlements and society. Television, telephone, the answering machine, electronic mail, videotext, the fax machine and computers have become indispensable parts of our lives. The theme of a Berlin conference was to take advantage of the inevitable change, to make our lives *"more humane, more harmonious, more sustainable"*. Michael Wegener points out that our daily lives have become dependent upon electronic transactions and *" ... we are the final targets of 'logistic chains' of ever increasing complexity and diversity."*

379. Town planning and change, international mobile elite, urban underclass.

Dr. Derek Lyddon, Chairman of rehabilitation committee for historic Edinburgh. 'How can plan production and decision promotion be made more humane, harmonious and sustainable?' ISOCARP experience: 'The international manual of planning practice' and the debate of 25 congresses. at Berlin., op. cit., pp.4-7

Refer to paragraph 568. Changes in town planning.

Dr. Derek Lyddon suggests that *"In an age of major social changes that are now occurring throughout the world, planning style must appropriately adapt"*. Most town planning systems were designed at a time of economic and population growth. Recession, falling birthrates, unemployment, and an aging population led to universal changes in town planning legislation between 1980 and 1985. The reasons for change were lost in environmental concerns, city renewal, private enterprise and ideological preoccupations. Many countries are experiencing a north-south divide in which an international mobile elite are divided from an urban underclass.

380. Helping communities to help themselves, an adviser who clarifies.

Ibid.

Town planning has changed to helping communities to adjust to economic and social changes brought about by international trade, information services, and the search for high quality living spaces: *" ...the role of the planner is changing from an expert who drafted plans to an adviser who clarifies political choices in the use of land, anticipates conflict and identifies opportunities."* Town planning has become a vision of politically accepted ideas to enable change in small steps. Development is more flexible and open to negotiation. There is a desire for partnerships and a realisation of the time and cost of participation that makes approved plans out of date.

There are dangers in the fast rates of change, and constructive feedback of the effects of change is needed.

381. A self-determined choice and people in control.

P Newton, M Taylor, 'Probable urban futures' in John Brotchie, et al ed., 'The future of urban form', Croom Helm, 1985. pp.313, 314-315.

N Pressman, 'Forces for spatial change' in John Brotchie, op cit. p. 349.

Newton and Taylor observe that: *" ... images of the future are real and deserve examination in that they tend to orient human behaviour and social action ..."* Technological society has a rapidly increasing capacity of choice to self-determine its *"livelihood and environment"*. Technology could be used to advantage by defining a desirable view of the world that benefits everyone: *" ... people must remain in control and ... technological progress must be channelled in the best interests of society."*

Refer to paragraph 7.6 Computer conferencing.

Refer to paragraph 331. A 'Computer city'.

By making use of the technology being offered today it could be possible to formulate a significant change in the decision structure that could provide the needed feedback of the effects of decisions and change as well as meeting the challenges of today.

9.5 Mediation.

382. Rejection of planning when it is needed most.

L Gertler, after Bernal 1969, 'Planning and technological change', in John Brotchie, et al ed., 'The future of urban form', Croom Helm, 1985. pp. 231-237.

Refer to paragraph 366. The questions.

In Canada, public sector planning has given way to a *"highly centralised private corporate structure."* In the United Kingdom there is a tendency to remove controls and, if an alternative is not found, the gap will be filled by a similar corporate structure that is already in possession of the new technologies. L. Gertler refers to the rejection of public sector town planning, as being *"a species of cosmic madness"* and he suggests that the challenge *" ... is to evolve planning systems which are democratic rather than bureaucratic."* The challenge is particularly important during this time of rapid technological change and has *" ... far reaching social, economic and environmental consequences as well as opportunities."*

383. Technology and democratic values.

Sachihiko Harashina, Department of Social Engineering, Tokyo Institute of Technology. 'Environmental dispute resolution as a learning process by citizens'. At Berlin, pp. 1-3, op cit.

L Gertler, op. cit. pp. 231-237.

Pier Luigi Crosta, University Institute of Architecture, Venice, Italy. 'Planning interaction and informatization', At Berlin, op cit.

"... keeping good harmony between man and the environment is a major goal of human progress", and such a sustainable future is of most interest to those who it will affect, the local residents. Bureaucracy, which L Gertler observes to be a *"power instrument"* of the elite against the freedom of people to decide their own affairs, produces a population disinclined to participate in social development. He suggests that this time of *"turbulent change"* may provide *"one of those rare moments of opportunity"* to link technology and democratic values. Pier Luigi Crosta also suggests that:

Refer to paragraph 366. The questions.

> Information technology provides an opportunity to formulate a new system to overcome the failings of the present political and town planning systems. By providing an outline of the requirements without considering the possibilities of technology the manipulation of the future by the technology could be avoided.

384. Consensus building.

Professor Lawrence E Susskind, Department of Urban Studies and Planning, Massachusetts Institute of Technology. 'A new planning paradigm for negotiating environment-development trade-offs'. At Berlin, op cit.

Under the present decision making structure, constant confrontation creates winners and losers, and the losers seek revenge; 'majority rule' sets the stage for more hostile interactions later on. Professor Lawrence E Susskind proposes a *"consensus-building process"* that seeks to improve relationships and leave them in a better position to deal with differences in the future. All the interests must be represented from the outset, otherwise they will block agreements made by others and prevent creative thinking that would allow everyone to meet their needs.

385. Mediators of collective action.

In his discussion of the *" 'globalisation' of the world economy"*, he suggests that the growing *'underclass'*, are producing conflicts that are deeply rooted in institutional structures. They are suffering from poor education, drugs, the breakup of family structure, racial and class divisions. *"Only if the groups in conflict pull together will they be able to accomplish anything."* A new role for planners is suggested.

> Planners could fill the need for ***"mediators"*** to help facilitate collective action, and to encourage the participation of the population in an *"interactive process"*.

386. Consensus-building, creative problem solving.

Professor Lawrence E Susskind, 'Breaking the impasse: Consensual approaches to resolving public disputes' Basic Books, New York, 1987.

A mediator can generate *"creative problem-solving"* and *"options for mutual gain"*. Rather than one *"objectively best"* solution a mediator assists in getting the facts in the search for *"objective criteria"* to make the technically best judgements about *"meeting their needs"* from the various options.

Refer to paragraph 231. People democracy with free telecommunications.

Refer to paragraph 367. A time for the majority.

Direct democracy, as opposed to democracy through representation, now seems within reach through the concept of mediators aided by the tools of the new technologies.

9.6 New technology, Patrick Geddes and mediation.

387. The tools of the new technologies.

Refer to paragraph 87. Integration of work and leisure.

Refer to paragraph 88. The self-help community hall.

Refer to paragraph 305. 'Electronic news letter', 'voice mailing'.

The new technologies that are fuelling the communications revolution have the capacity to help in the process of change. In the need to reconsider the parameters of town planning, they are capable of keeping the town planners better informed, and of providing them with better tools to advise and meet the needs and desires of the population as a whole. Todays system of town planning has diverted considerably from that originally conceived by Patrick Geddes and there may be considerable value in reviewing the original philosophy to determine a strategy for the future whilst, at the same time, keeping in mind the possibilities of the new tools of technology.

New technologies provide an opportunity to enhance the quality of life and can help to alleviate the difficulties of keeping all groups informed and involved, to gain experience from similar groups of residents elsewhere in the world and to gain access to information.

388. Modelling the future, complexity of variables, unknowns.

Refer to paragraph 375. A global interactive dynamic network.

Refer to paragraph 281. A telecommunications revolution?

The bewildering rate of change, particularly on such a revolutionary scale, may require some form of modelling to help us see a way amongst the complexities and uncertainties. The greatest difficulty is in the increasing rate of application and interaction of the new technologies rather than the complexity of variables. The only certainties are that the cost of technology will be reduced, the availability will be increased, and change will take place. The timing of change, the applications, the impact on human behaviour, and the related political decisions, can only be guessed at.

389. A small change, chaos, advantage of rural systems.

P Newton, M Taylor, 'op. cit. p 334.

J R Beaumont, P L Keys, op.cit.

In the absence of the facts about the future, P Newton and M Taylor used an urban model that *" ... anticipated changes (tendencies) across a wide range of factors associated with ... development."* In the resultant complexity it would seem that one small change of assumption or decision could throw such a dynamic system into a completely different direction, and could therefore be a case for chaos theory. The relative simplicity of rural areas could have a considerable advantage over the complexity of cities and could enable them to take the lead with the new technologies. It may be preferable to restate the words of Simon, Beaumont and Keys, as 'the challenge is to use the advantages of relative simplicity of rural areas to enable a desirable future to take place'

390. The opportunity of new technologies requires a 'mediator'.

Refer to paragraph 233. The social cost of industrialisation - fragmentation.

The new technologies are only a tool; something to be used to advantage; to help the effectiveness of decision making; not something to be applied, followed or 'hi-jacked'.

The information acquired through real experience is essential for the learning process. A **mediator** is a necessary condition to avoid inappropriate application of the information and experiences.

9.7 The 'Mediator Hypothesis'

391. Using history to make decisions now.

Charles Lambert, French planner and architect. Director of Babylone Avenue French consultants. 'Planning the information city: The Geneva case study', at Berlin. pp. 7-8, op cit.

Refer to paragraph 38. Guidance from the repetition of previous events.

Refer to section 1.3 The importance of history.

A model of the future is required for decision making today. There are some very basic questions which need to be answered before the effects of telecommunications and a strategy for the pathway forward can be determined. Charles Lambert says that only after ten years of experimentation will *"we, as professionals be able to set recommendations"*. There is a revolution now, and in ten years time the conditions of any experimentation will inevitably be outdated. The time scale for long academic study and todays political system is far too long for today's apparent accelerating rate of change. The 'whim of today's politics can alter the course of events and invalidate any recommendations by academics or professionals. Examples of the experience to be gained from history is a theme running throughout this study.

Decisions can be made now on the basis of historical academic and professional experience.

392. Avoiding assumptions and predictions.

Refer to paragraph 570. Newton and Taylor model.

To form a strategy of influence for the way forward the answers to some fundamental questions are required. Models of the future, for example the use of many experts by Newton and Taylor, require considerable resources and assumptions are not avoided. The complexity of possibilities and unknowns seems to ensure that under the current fragmented and political systems such knowledge of the future will always remain elusive. A reverse approach to attempting to predict the future from today's viewpoint may offer a more reliable and beneficial way forward.

393. The 'operating system' and 'Mediator decision making'.

Instead of a view towards the future, a viewpoint from the future. A 'guidance system' - or in computer terms an 'operating system' - that provides the framework for decision making on the pathway forward towards that future viewpoint. A pathway guided by the 'answers' derived from such a 'guidance system' would have a greater probability of 'success' since such a model is based upon a sound framework. The actual decisions that are made may change depending upon the changing 'decision making environment' at the time of implementation; the viewpoint from the future will also change; this in no way invalidates the decision making process which is based upon a common framework. 'Mediator decision making' is evolutionary and has its own built in guidance and correction system.

394. The Mediator Hypothesis:

Patrick Geddes Summer School 1991.

Robert Sheldrake, William Irwin Thompson.

Graham King, 'The Darling Buds of May'. The Planner, 10.5.91. p. 6.

Rupert Sheldrake, 'Rebirth of Nature', Resurgence, September 1984.

William Irwin Thompson, Imaginary Landscape, St. Martin's Press 1989.

Lewis Thomas, The Lives of a Cell, Bantam, 1984, (1974).

Ernest Holmes, The Science of Mind, G P Putnam's Sons, New York, 1968, (1926, 1938)

Refer to paragraph 287. A revolution in human thought?

The **'Mediator Hypothesis'** proposes that:

> The difficulties of decision making for an unknown future can be overcome by using a philosophical approach to 'paint' a desirable future to guide a way forward. **'Mediator decision making'** provides an interface between an 'operating system' and the 'software' of people. The control of people becomes 'control by people'.

A philosophical approach offers a way of avoiding assumptions by identifying the 'underlying force' to making decisions for the pathway forward. Rather than look for what the future might be, which is anybody's guess, the search is for something more useful; a good objective for humanity; a glimpse of a vision for a settlement pattern that would aid the pathway to the underlying reality of humanity and Nature.

395. A proposal to determine the pathway forward.

Refer to section 6.5 Eutopia today.

The Wizard of Oz.

Maurice Maeterlink, The Blue Bird, Methuen, London, 1933, (1909).

Refer to chapter 13 'Conclusions' title page.

The desirable future is not fixed; it merely provides a 'Eutopia' to set forth on a pathway of experience - 'a yellow brick road' - 'the bluebird'.

> The **'Mediator hypothesis'** is a flexible, adaptable, diverse system that is capable of responding rapidly to constantly changing circumstances.

Refer to paragraph 331. A 'Computer city'.

A mystic, see acknowledgements.

The 'operating system' provides a working framework on which to use appropriate 'software'. This software must be sufficiently flexible to be continually 'updated' in the light of experience. It is a system that allows for 'miss-takes'; it can make corrections to a 'miss-guided' pathway to bring it back to the true way forward. It is a control system by people not of people. It embraces all the human control systems.

Patrick Geddes, Cities in Evolution, 1968 edition, p 221.

Refer to paragraph 347. What do we require of a future world? Eutopia?

It may turn out that, as Patrick Geddes suggests, we already have the possibility of Eutopia and the way forward is a pathway of realisation. The apparent rate of change may be an illusion of our present beliefs and living framework. The 'mediator hypothesis' designed to overcome the difficulties of accelerating change may turn out to remove the illusion and hence the original difficulty.

T S Elliot.

"We shall not cease from exploration and the end of our journey will be to return to the place from which we started and to know that place for the first time."

396. The Highlands and Islands to follow the footsteps of Patrick Geddes.

In conclusion, the legislative powers vested in town planners best equips them to guide the forces of change in a desirable direction. To meet future needs we can look forward to a new form of direct town planning by the people whom it concerns; a true democracy made possible by **mediators** (town planners with a new role) and new technology. The Highlands and Islands could provide a model for other parts of the world, and it would be a welcome thought that Scotland, the home of Patrick Geddes the 'father of town planning', could lead the world again into town planning enlightenment.

Part Three searches for the 'seeds' of a settlement pattern that is appropriate to the decision structure of the 'mediator hypothesis'.

PART 3

THE SETTLEMENT PATTERNS.

DIAGNOSIS, HYPOTHESIS, MODEL AND THESIS.

Adam Smith:

" ... his main life and apparantly his abstract work were primarily ... the amplification and sound digestion of his own observations ... "

Patrick Geddes, 'Cities in Evolution', 1968 edition, p. 15.

"Dramatic cultural and socio-economic changes require that we relinquish our anxiety-ridden mechanistic linearity. Competition, fragmentation and specialisation based on the alleged certitudes of the mechanistic world view have to be replaced by respect for others and a general awareness of universal responsibility."

Louwrien Wijers, 'From a Competitive to a Compassionate Society', in 'Art meets Science and Spirituality', Art and Design, Academy Editions, London, 1990. p. 7.

CHAPTER 10

THE CURRENT TRENDS.

DIAGNOSIS.

" ... the whole of Great Britain south of the Highlands seems destined to become an urban region."

H G Wells, 'Anticipations', 1901, in Graham King, 'Transport 2000', 20.4.91.

A FICTITIOUS ADVERTISEMENT WRITTEN BY GRAHAM KING GIVES A VIEW OF 'THE WAY IT COULD BE':

The district of Greystar is determined to protect the best of what it has and transform the remainder with a sense of place. A massive Community Forest programme is underway

Road improvements of artistic sensitivity for modest growth and a sustainable local economy, whilst minimising negative amenity impacts and providing net environmental gain.

Certain outstanding beautiful stretches of highway are listed for protection, and a number of former branch lines are being reopened as part of a light tramway system.

In specific towns and villages, cyclists and pedestrians have priority. Statutory footpaths are an important means of recreation in the countryside.

A commitment to the concept of sustainable development.

Abbreviated from: Graham King, 'Transport 2000: Transport and environment in Wales: No particular place to go.' 20.4.91.

10.1 Contemporary trends

397. A review of the settlement pattern?

Refer to paragraph 71. Emigration of the young and city life.
Refer to paragraph 84. An inevitable urbanisation?
Refer to paragraph 88. The self-help community hall.
Refer to paragraph 90. Homelessness and the need to be with others.
Refer to paragraph 93. Increasing dissatisfaction with increasing population.
Refer to paragraph 95. Home is for the human being not the motor car?
Refer to paragraph 104. Change in land use.
Refer to paragraph 110. Tourism alternatives.
Refer to paragraph 121. Council Policy. Integration, urbanisation, or containment?

Existing settlements do not meet the needs for employment, home and amenities to be within walking distance, and for new forms of public transport to be provided. Provision is required for homelessness, and the population requires increasingly sophisticated services which are difficult to provide in the current dispersed settlement pattern. One possible option could be to re-open the many disused railway stations on the Highland line, to make land available near to the stations, and operate a high quality regular service so that people would be encouraged to live near to the rail network. A comprehensive review of the settlement pattern would seem to be suggested. This chapter summarises the current trends in settlement patterns for the Highlands and Islands. This is a search for the seeds of possible settlement patterns that could meet the requirements for the 'mediator hypothesis' derived in chapter 9: 'Change in the decision structure', and the assumptions listed in the introduction.

10.2 "Software Sweat-shops"

Term used by Professor Bill Lever, Glasgow University.

398. Attracting large data processing employment

Government agencies would like to attract the data processing sections of large companies from the large cities. The Highlands and Islands provides a source of relatively stable and well educated labour. There is little competition from other businesses to attract a trained work force and thus an employer has a captive work force. The only advantage of such dependent employment may be that it is preferable to similar monotonous poorly paid employment in an urban environment.

399. Attracting the large company.

Ibex Consultants, Telecommunications in Island Communities' report to the Highlands and Islands Development Board, 1990. pp. 24-25.

Richard Myers, Highlands and Islands Enterprise, who was based in London. Interviewed.

Highlands and Islands Enterprise have tried to encourage large companies to move all or part of their 'back room' operation with the incentives of grants, cheaper labour and premises, more stable work force, and a higher 'quality' of life. The same two examples are often referred to, that of a US insurance company relocating its data processing in the West of Ireland and DELTA airlines relocating work to the Caribbean. Major organisational change *"is one of the strongest inhibitors to the take-up of such services."* Large television advertising campaigns in London by the Highlands and Islands Development Board (now Highlands and Islands Enterprise) has only produced some companies who may be 'interested'. A side effect of the television advertising may have been the migration of individuals.

400. Data processing is short term.

Conversation with John Lough, Telecommunications consultant to Highlands and Islands Enterprise.

Refer to paragraph 113. Highlands and Islands Enterprise

Refer to paragraph 225. Global labour force changed at the whim of economics.

Attempts to attract 'inward investment' of large office data processing have been unsuccessful since word processing can still be obtained cheaply in London. Any business that was attracted would be just as likely to move again for further labour cost savings or for more grants. The telecommunications, which has opened opportunities in the Highlands and Islands, can be used anywhere else in the world. The Japanese intend to install an Integrated Services Digital Network (ISDN) in Pakistan and the Philippines, where labour is cheaper than the Highlands and Islands as well as being suitably educated. It is even easier to switch telecommunications employment to another location than the similar process that has already occurred for computer manufacture.

10.3 Urbanisation.

401. The force of urbanisation wins.

Refer to paragraph 226. The power of global cities and global corporations.

Refer to paragraph 227. The power of a 'global city network' leaving rural areas behind.

Refer to paragraph 232. Industrialisation, communications, concentration of power.

Refer to paragraph 233. The social cost of industrialisation - fragmentation.

Refer to paragraph 384. The global threat.

The concentration of dense population and the accompanying chaotic growth of roads and buildings would appear to be the inevitable evolution of settlement patterns. The wealth creation property of an urban area is a force that is very difficult to counteract. There is already visual evidence of this in Inverness, and, even in remoter towns such as Stornoway. The most likely outcome is for the technology to remain with the cities, and for the digital network to be used by 'outside forces', encouraged by Highlands and Islands Enterprise, and Local Enterprise Companies.

402. Councillors and developers.

Inverness Courier, 20.3.90.

Highland Regional Council planning committee rejected the Planners recommendation for slate roofs on a development at Nairn, fearing that the developer would withdraw. *"The inference of the committee's decision would seem that any development is better than none ..."*

Editorial, Inverness Courier, 20.3.90.

"If we scatter banal buildings all over the landscape, so that there is nowhere for the eye to rest, who will wish to come here? ... the landscape cannot absorb unlimited numbers of houses willy-nilly."

403. Challenge to architects.

Andrew Jarvie, The Press and Journal, 3.5.90.

An East Ross farmer and developer has challenged architects throughout Scotland to improve design standards in the North. *"The large developers are simply adapting plans from all other parts of Britain and transferring them north, ... most houses are identical to those being built in Hampshire, or anywhere else in the country."*

404. Speculators.

G L Pepler, 1948, in Patrick Geddes Cities in evolution, Williams and Norgate Ltd., London, 1949, p.191.

Realising the trend towards suburbs, Raymond Unwin in partnership with Barry Parker illustrate the application of the garden city principle to the suburb. *"Unfortunately numerous speculators cashed in on the idea, but, alas with scant regard to its principles. "* It seems that developers are needed to get communities motivated, and therefore some means is required for the communities to control the developer. If the proposition is sufficiently rewarding to the developer it is likely that they will still be interested even with controls. If a project is not a good financial proposition it is better that they are not involved.

10.4 The American Dream.

405. Texas may help shape Grampian new town.

Frank Frazer, The Scotsman, 7.5.91.

Faced with housing demands created by oil wealth, architects and developers in Grampian Region have been encouraged to visit the Texas community of Woodlands about 30 miles north of Houston, and with a population of about 30,000. Woodlands has a tourist information centre for the large numbers of visitors who want to see the facilities. Nicol Stephen, the planning chairman has said that a lot of people would rather that 20,000 to 25,000 new houses over the next ten years go into a *"high quality new community rather than tacked on to over-stretched communities with limited facilities as we have seen over the last few years, ..."* Avoiding *'tacked on'* housing and providing high quality facilities, attractive even to tourists, could also be important to the Highlands and Islands. The qualities of natural growth could be gained by starting these new communities before the situation requires a controversial, pre-planned massive development.

406. Hyper-reality.

Open University, 'Understanding modern societies: futures', BBC2, 27.9.92. Professor Edward W Soja, University of California.

This could be the post modern equivalent of Plato's cave. The original pilot episode of Star Trek also conveyed the concepts of imprisonment in a cage of 'hyper-reality', and technology today offers the possibility of 'virtual reality', also portrayed in the recreation area of the Starship Enterprise.

Possibly a view of the future can be gained by the example of the *"global capital"* of Los Angeles which has become a sixty mile circle of cities. In post modern 'tradition' the centre has become the periphery and the periphery the centre. An Open University programme views the *"new post modern urban landscape"* as a *"hyper-reality factory"* in which the population is manipulated by authority and 'architecture'. This is exemplified by the Bonavicha Hotel in which the inside is the outside and the outside the inside; a highly fragmented space in which people are lost and helpless. Public space has become violent and has been replaced by the further fragmentation of private closed areas which people are afraid to leave: a self imposed imprisonment.

407. Disneyland escaped to 'normality'.

Ibid.

Management training courses could be a form of brain-washing.

Public Eye: the mind managers, BBC2, 30.10.92.

The face of the 'family' corporate image of the United States. A form of 'zomby-ism'. Is this now extended to 'The Company' controlled settlement? Is there no escape? Is Metropolis alive and well?

Patrick Geddes Summer Meeting 1991. Visit to IBM, Edinburgh.

Perhaps of more immediate relevance to the Highlands and Islands is a 'masterplan' development which covers an area of 100,000 acres. Its name 'Mission Viejo' is used as a theme derived from a Spanish Mission. The cigarette company developers claim a totally balanced community of 30,000 homes with shopping and employment in close proximity, parks, golf courses and Olympic swimming. The Spanish Mediterranean stucco white style of the first development phase has now been replaced by the new 'market demand' of *"little French eclectic"* and *"New English style"*. Household associations are used to maintain the *"collective image"* by means of an agreement to rules before entry: the colour of the house, the prohibition of large vehicles, the prohibition of car maintenance on the street, strict 'architectural' controls, a *"trimmed landscape"*, and a *"nice neighbourhood"*. It is contrived to attract only those prepared to fit into the *"Great Californian Promise" - "a post modern nightmare"*. Instead of visiting the *"real fake more real than reality"* of Disneyland, it has escaped into everyday life as a substitute for reality - *" a copy that may never have existed"*.

408. Developer 'mega-villages'.

'What's it called?', Project Scotland, 17.9.91.

'Planning applications', Project Scotland, 20.2.92.

'Village reaches halfway', Project Scotland, 20.2.92.

The sudden contrast with the life and bustle of the Grand Central Mexican Market, in another area of Los Angeles, seems to question the whole concept of 'reality'. The above certainly appears to exist as a television programme; could it happen in the Highlands and Islands? It is only a question of time since Grampian Region have already copied Texas. Encouraged by the government, England has experienced many applications for massive 'developer villages', and Scotland is not short of examples of the trend: a supermarket, shopping and leisure space, office and business space, light industrial development, and 100 houses at Drumchapel. 'Kingswells Village' project near Aberdeen of 1000 houses, *"an established self-contained community within its rural setting".*

409. Self contained village of the 21st century, Cumbernauld.

'Village project points the way ahead', The Scotsman, 5.9.91.

Craigmarloch, a *"small village"* of Cumbernauld with a supermarket of 18,000 square feet, 800 homes for 2,500 people in 400 acres: *" ... the realisation of everyone's dream village. ... It is the creation of a true community, with a heart, with a spirit and real sense of identity. It's a village of the 21st century, for those who want to live a full and active life in harmony with the environment and in a neighbourhood with a real and lasting sense of place."* An £8 million William Low supermarket, village pub, restaurant, petrol station, 38 sheltered housing units and 37 flats have already been built.

410. Up-market housing targets.

Brian Pendreigh, 'Rich pickings from green acres', The scotsman.

At Dirleton, Lothian, a development for 250 houses, 150 holiday apartments, golf courses, and hotel in a village of 456 total population. The district is in a difficult position between finding land for housing and articulate village groups determined to meet any threat to the character of their communities. Some villagers claim that the objections are from retired people and commuters, *" ... the first thing they do is get on to a committee and try and run the place.' "* Many other sites have been targeted for up-market housing, and some feel that housing is needed that is affordable to local people.

411. Decentralisation.

Sarah Wilson, 'High rents to drive companies out of Edinburgh and Glasgow', The Scotsman, 27.11.91.

High rents in Glasgow and Edinburgh is moving Scottish businesses out of the central belt, and developers are recognising the potential of the towns as thriving office centres. Dundee, Falkirk, Perth and Stirling have the highest potential to draw company headquarters. General Accident, Scottish Amicable and Arthur Bell Distillers have already relocated showing that multinational companies can successfully operate away from major cities. The provincial centres combine a high quality of life with relatively cheap housing and economic advantages for the firms. All four major Scottish clearing banks have a regional headquarters in Perth. Rents have risen enough to make speculative development worthwhile.

412. The developers move in.

Tim Bugler,' 'Gentle touch' seen as key to housing wrangle', The Scotsman, 23.4.92.

John Smith, 'Project seen as a threat to green belts', The Scotsman, 26.2.92.

'Battle for credibility on Drumossie Moor', Tom Morton, The Scotsman, 17.12.91.

The *"Gateway to the Highlands"* and a *"vibrant and growing university town as its administrative centre"* are given as the reasons for the demand in housing in Stirling District. Amendments to the regional council's structure plan are described by the regional council as *" 'a builders charter' "* for 2100 new houses by 2002. An increase of eleven per cent in the total private housing. Dunblane has an application for 220 houses, hotel, golf club, business park and petrol station in the £70 million Park of Keir development which has produced a *"power struggle"* between Cawder Estates and local residents. Inverness must be the next target after Stirling with the proposed Highland University. Trends have already begun with the Milton of Leys Development on the outskirts of Inverness for 1,200 houses, two golf courses, hotel, and a 'University College' of 1,800 students and 800 staff. In fact this development probably comes nearer the 'Californian Promise' than some of the others with its 'pseudo-pseudo-Baronial style' housing and elevated prices.

10.5 Isolated Telecottaging.

413. Suitable for certain occupations.

For example Norman MacCaig lives between Edinburgh and Assynt.

Telecottaging is already evident in the higher level occupations, and seems to work for occupations like journalism and sales which already involves a high degree of travelling and meeting people. 'Artistic' occupations like writers and poets have traditionally worked from home, some use the contrast between living partly in cities and partly in remote rural areas. Telecommunications could improve the available facilities particularly for those requiring some research.

414. Improved life style for the majority?

Whilst there may be a proportion of the population for whom this type of life style suits, in the long term, it seems unlikely to provide the social needs of a larger population, and most importantly the existing population. Working in isolation is unlikely to lead to a general improvement in living or economic conditions which the indigenous population seems to prefer, particularly if the emigration of the young is to be reversed. Isolated telecottaging is likely to lead to the scattered settlement pattern outlined in the next section.

415. Isolation of home working, increased centralisation.

Pilot telecommuting experiment by Rank Xerox.

Ibex Consultants, Telecommunications in Island Communities' report to the Highlands and Islands Development Board, 1990. p. 25.

Refer to paragraph 625. Teleworking, control of home workers.

Refer to section 3.8 Survey of teleworkers.

Refer to paragraph 182. British Telecom directory enquiries.

The results of the small survey carried out indicated some agreement with the findings of pilot telecommuting experiments that teleworking from home can lead to a feeling of isolation. *"When people are not working on the same site, they cannot share all the 'social' aspects of work, and can become very isolated."* This has been recognised in the British Telecom experiment which has provided video phones for contact with other staff. The result can be an increased centralising force of the employing organisation.

10.6 Scattered settlement.

416. 'rural sprawl'?

A scattered settlement pattern could be a result of the isolated telecottages in which inhabitants attempt to live in isolation. Much of the crofting areas have a scattered characteristic which could be thought of as suitable model. The difficulty arises as the population increases: the demand for building sites increases, the price increases, and the temptation to sell small plots increases. This pattern of in-filling the crofting pattern can already be seen in several areas. Crofting areas near Stornoway and Inverness exhibit this pattern. The result is a new form of urban sprawl - 'rural sprawl'?

417. A monotonous landscape?

Whilst people may have the home they desire, the longer term social and community needs do not seem to be very satisfactory. Services are difficult to provide and it is wasteful of resources. The eventual result is often a monotonous landscape with no contrast or choice between 'natural' landscape and inhabited areas. Already significant areas of the Highlands and Islands have lost the landscape qualities which originally attracted the settlement.

10.7 Preservation.

418. Natural wilderness?

Refer to paragraph 4. 'Natural' and man made countryside.

Refer to paragraph 83. Local identity and the awareness of different views.

Peter Smith, The Syntax of Cities, Hutchinson 1977, London.

There is an opinion that the Highland and Islands represent the last 'great natural wilderness' of Europe, and as such it should be preserved. Human settlement has played a considerable part in the landscape as it appears today, and there was once a much higher population. A preserved landscape with people gazed upon by tourists would not seem to be a justifiable, desirable or sustainable future. The population of the Highlands and Islands may ask why they should be 'preserved' for the benefit of cities that have lost their 'natural environment'. On the other hand it seems unlikely that they would want to follow the same path as the cities that are now desperate to 'green' their environment and their souls.

10.8 Tourism.

419. Seasonal servitude to the tourists.

Refer to section 3.6 Amenities: tourism and employment.

Tourism could be part of the preservation trend, although it is likely to be in conflict with its major exponents by encouraging large numbers of visitors. Tourism is one of the major investments of government agencies. Examples of the effects of tourism on the environment and the local 'way of life' have been given. The standard of local employment is poor, seasonal, and effectively a servitude to tourists replacing the servitude to the Highland estates.

420. Dependency.

Dr Emma Bird, 'The economic benefits of upgrading the telecommunications infrastructure in the Highlands and Islands of Scotland', report by Eosys Ltd, Slough, 1988.

In excess of twenty thousand people are already dependent upon tourism for their livelihoods. Tourism is dependent upon the attractive and unspoilt scenery, and *"nationally and internationally, tourism is becoming highly competitive."* This dependency upon tourism suggests that it is imperative to find alternative occupations, and a settlement pattern that enhances the attractions of the scenery.

10.9 The Highland Estates.

421. A return to working for the estate.

Large Highland estates are perhaps the most significant feature of the Highlands and Islands. Many have declined in resent years, sympathetic landowners are being replaced by new owners who could turn to preservation, tourism, 'software sweat-shops', and a reinstatement of the servant class. There is a sense of instability as communities nervously contemplate an unknown future that is totally outside their own influence. This is paralleled in the cities by stress from the fear and unknown of employment in industry. The growing tendency for estates to be split and sold could feed a large desire for 'mini-Highland Estates' in which local people have no part. There is an urgent need to find a positive side to these large landholdings. The next chapter outlines a possible option.

422. A modern Scottish vernacular village on Skye.

10.3.92. 'Landlord plans Skye's answer to 'Brigadoon', Tom Morton, The Scotsman.

The Skye landlord Sir Iain Noble plans to build *"his very own version of Brigadoon"*, an entire township of 40 houses in traditional crofting style. The £3 million development at A Phairc Dhubh (Black Park), near Broadford, would include shops, offices and a major visitor centre tracing the story of the Gael and Skye's maritime history. The township, which would be called Cabairfeidh (antlers), would be built on traditional West Highland lines with a central square. Architect Ian Begg is to create *'a modern Scottish vernacular'* covering 6.5 acres.

423. Crofting and the industrial revolution, not an ancient settlement pattern.

Refer to paragraph 601 Assynt crofters.

The landowners of the Western Isles did not have the resources for massive clearances and only some of the land was suitable for sheep. They tried to maximise their cash incomes by reorganising the tounships into more efficient portions of land. The allocation of land was deliberately made too small for a living so that the tenants were forced to make most of their income from kelp and fishing. Landowners took most of the profit from the kelp industry which provided chemicals for manufacturing soap and glass during the Napoleonic wars. After the wars there was no demand for kelp, and fishing failed to produce the expected profits. The small plots, the lack of resources, and the peaty soil prohibited the use of the plough. Huge areas of abandoned 'lazy beds' still indicate the difficult livelihood that was attempted by large populations of many townships before the large scale emigration. This introduced system of 'crofting' is relatively new, is not from 'natural' change, and is not unrelated to the industrial revolution both in the product and the exploitation of labour.

424. The legacy of history.

The Highlands and Islands could be suffering from the legacy of history and internal conflicts; the introduction of a feudal system by David I in 1124; the barbaric vengeance of Edward I's envy of Scotland's success in 1296 which has continued since the Union in 1707, and the effects of the system of control through estates established after the Jacobite Rebellion of 1745. Forfeited estates were returned in 1769 and the failure of the landowners to develop the land for the benefit of the population may suggest that it is time for all the estates to be forfeited.

10.10 'Energy villages'.

425. Region has hopes for energy conservation village.

6.5.91. John Smith, The Scotsman.

In reply to a European Commission invitation, Central Regional Council have made a proposal for a study on the feasibility of a village incorporating the latest techniques in the conservation and generation of energy. *'Natural factors'* such as afforestation and earth barriers, elevation and orientation will also be involved. The energy and environmental technologies division of Scottish Enterprise had been very supportive, and one developer has made an application involving construction of 500 homes on land near Forestmill, in Clackmannan.

10.11 Current trends: discussion.

426. Improving the human condition?

Refer to section 1.7 The Objectives.

Refer to section 1.8 The Assumptions.

The assumptions given in the introduction could be summarised into the following list of twenty requirements for a settlement pattern: integration, sustainability, 'voice to the voiceless', human ecology, rural health, respect for the local history, respect for the local built environment, respect for the local geography, natural ecology, rural re-energising, diversity and choice, flexibility to change, alternative work ethic, technology for people, maximisation of advantages to the local way of life, minimisation of control, minimisation of social isolation, appropriate politics, the young, a place and role for everyone.

The Highland estates, the American Dream and the Energy villages could offer four of the requirements. Scattered settlements, preservation and 'software sweat-shops' could be negative to fourteen of the requirements followed by the Highland estates, isolated telecottaging, urbanisation and tourism which could be negative to eleven requirements. The energy villages seem to be the least damaging to the requirements, and no single identified trend is significantly positive towards meeting the requirements and the majority are significantly detrimental. The only way forward from the complex cocktail of potential hazards may be a specifically selected combination of trends. On the basis of the assumptions offered in the introduction the settlement pattern for the Highlands and Islands would appear to be open for hypotheses to be formulated.

427. Rural communities.

Refer to paragraph 237. The fragility of the industrialised system.

Whilst rural communities may not be socially perfect, they do have an inbuilt system of self-help that has stood the test of time. Such systems have developed in city 'street communities' only to be lost again in the progress of change. Cities have grown to depend upon 'social services' which are being reduced under the current political scene, and may not be supportable as the industrial system continues to fail. If the relatively independent rural village life is the best we have in the face of change, it is imperative that such 'self sufficiency' is maintained.

428. Hope in honest error.

Refer to paragraph 395. A proposal to determine the pathway forward.

Charles Rennie Mackintosh had the genius to be able to return to the purity of origins and omit the intervening distortions to continue with an appropriate architecture of his time.

Current trends may have taken 'the wrong path' and it is necessary to find the pathway forward by integrating the assets of today and the lessons from the past.

Contemporary fashion attempts to copy history often with misunderstood reference to the words 'classical' and 'vernacular'. The results are doomed to failure since the 'environment' of the copy has totally changed making the relationships impossible to reinstate.

A way forward is required that is appropriate to today and tomorrow whilst respecting the past.

Charles Rennie Mackintosh, 1901.

"There is hope in honest error, none in the icy perfections of the mere stylist."

429. Ideas from the history of settlement.

Refer to paragraph 19. A unique rural architectural character.

Refer to paragraph 20. A rich endowment.

Refer to paragraph 21. The experience of planned villages could be appropriate today.

The investigation of current trends has not produced a promising way forward it may be worth a search for ideas in the history of settlements. Chapter 4 'The British Fishing Society and the Hydro Board' has offered some ideas and warnings for the way forward and the introduction has already indicated some fine examples of Royal burgh towns and planned villages in the history of Scottish settlements.

10.12 Rural settlement: history.

430. Clusters of 'touns' of acceptable size, communal life.

R A Dodgshon, 'The origins of the traditional field systems', in M L Parry, T R Slater, editors, 'The making of the Scottish Countryside', and Medieval settlement and colonisation', Croom Helm, London, 1980, pp. 51, 61-62, 69, 71.

For description: Thomas Slezer, *'Theatrum Scotiae'*

A Fenton, 'The traditional pastoral economy' in Robert J Naismith, 'Buildings of the Scottish countryside', Victor Gollancz, London, 1985, pp. 93, 96, 98.

The landscape of Scotland before 1750 was characterised by farming in an unenclosed, intermixed system known as 'runrig'. Clusters of dwellings and outbuildings known as a 'fermtoun' or 'clachan' varied in size from two to twenty tenants, and the name 'davach' referred to a cluster of touns which had developed over a period of time. Rural settlements were characterised by an 'infield' and an 'outfield' both of which were separated from the moorland by a head-dyke of stone and turf. Although each person had a scatter of strips of land, they were more like tenures. There was common cropping, grazing, ploughing and harvesting. A 'loan' was a strip of grass linking the dwellings, the common grazing land , a roadway, a milking place, and a common green used for social activities.

The probable *"key"* to rural development was a process of splitting into smaller sub touns to keep them to a modest size. Every person had a separately defined share and at the same time was jointly responsible for the entire toun. The physical structure, communal atmosphere and 'life' of the settlement with neighbourhood obligations and social activities was totally integrated.

431. Determinants of settlement pattern.

Refer to paragraph 126. Changing society from independence to dependence.

Refer to paragraph 133. The independence and wisdom of the Highlander.

Different settlement patterns tend to be a reaction to the prevailing circumstances rather than a good or bad arrangement. Agriculture requiring large areas of land may be expected to produce a dispersed settlement pattern. Fishing tends to require a concentrated settlement around a harbour. Highland people tended to integrate their livelihood from agriculture with their life in communities. It was the external forces of land owners that cleared the population from their communities to the dispersed settlement pattern of crofting and the concentrated settlements of fishing. The British Fisheries Society in chapter four has shown how settlement patterns may be influenced by external circumstances. A population who previously had an integrated way of life with several means of livelihood was persuaded to specialise and live in new towns designed for fishing.

432. Dispersed or community settlement?

Robert J Naismith, op cit. p. 15, W Brunskill, introduction.

Refer to paragraph 48. Kilphedir clachan communities.

Refer to paragraph 467. A community settlement pattern.

The survey of buildings in Robert Naismith's survey, 1750 to 1914, states that *"about one quarter were dispersed rather than gathered in villages and hamlets."* From this it could be concluded that the natural settlement pattern is one of dispersal, and indeed this has become characteristic of rural areas in the Highlands and Islands, due to the policy of the planning authorities rather than a desire of the inhabitants. The period considered is relatively short and the settlement pattern was affected by an external revolutionary change rather than by evolutionary choice. W Brunskill points to the *"building revolution"* of the eighteenth and nineteenth centuries. Is the increasing population of today creating a new building revolution and how will it compare with the quality of buildings from the eighteenth century?

433. Integrating way of life, technology and settlement pattern.

Thomas Morer: in P H Brown, 'Early travellers in Britain', Edinburgh, 1973 edition, p. 267, in Ibid. p. 49.

A Peterkin, 'Rentals of the ancient earldom and bishopric of Orkney', Edinburgh, 1820, section III, p. 72, in Ibid. p. 49.

Murray, 'The complaynt of Scotlande', p. lxiv, 1872, in Ibid. p. 48.

The estate plans and surveys of the 18th century shows that every pocket of soil was used by a large and growing population. Thomas Morer in 1689 notes the incredible amount of mountain land that was ploughed for productive use. A Peterkin notes the over-population in 1627. Murray notes the famine every third year and pestilence every sixth.

Can the integration of the Highland way of life with today's knowledge and technology sustain a new population that will enjoy the beauties of living in the Highlands and Islands?

434. A return to involvement in the village life.

An example of segregation is given by the villages of Balloch and Kirkhill near to Inverness in which the residents of the new estate houses commute for their occupations and leave the village desolate during the day only returning in the evenings to watch television and sleep. It is very difficult to integrate these people with the long established residents of the village.

Refer to paragraph 235. Self perpetuating plant ecology.

Refer to paragraph 236. Discarded children.

Refer to paragraph 489. Self sufficient in food.

Agriculture today has ceased to require local labour and the residents have become marooned on an island in an environment in which they have little or no association. To reverse the segregation of dormitory villages from their environment the re-introduction of local food production could help to provide a diversity of occupations as well as mixed population, a self sufficiency, and an improved quality of diet, whilst meeting an increasing demand for environmentally friendly and organic food production.

A re-introduction of village life with an integral responsibility for the surrounding environment.

10.13 Planned villages: history.

435. Insentives and trade communications.

Refer to paragraph 21. The experience of planned villages could be appropriate today.

Refer to section 4.1 The British Fisheries Society 1786-1893.

Planned Villages were built between 1735 and 1850 in response to an increasing population and a change in farming. They were set up as an outlet for farm produce, for local textile industries, mining and fishing, to attract labour from estates that were clearing their land for sheep, to discourage civil disturbance after the Jacobite Rebellion in 1745, for disbanded servicemen, as roadside and tradesmen villages with market functions, as railway villages and as cargo ports. In the Highlands and Islands the commissioners of the Forfeited Estates of 1752, and the British Fisheries Society of 1786, set up planned villages on their own land. The Highland and Agricultural Society of 1784, offered prizes for essays on the theme of planning a successful village, and premiums to landowners who founded planned villages. After 1850 the profitability to land owners was no longer attractive due to industrialisation, improved transport undermining locally produced goods, and fishing concentrated at railheads.

Planned villages had the 'new' communications of canals, roads and railways which enabled them to trade more efficiently and open up new markets. This has considerable parallels with the gains that could be achieved today with the 'new' telecommunications on a 'global' scale.

436. Land and diversity of population.

D G Lockhart, 'The planned villages', in n M L Parry, T R Slater, editors, 'The making of the Scottish Countryside', and Medieval settlement and colonisation', Croom Helm, London, 1980, pp. 255- 260.

In the exercise to increase estate rentals the profits from planned villages were maximised by choosing *"a barren heath moor"*, or by creating *"a great demand for lots of 'very worthless land' "*. Generally there was *"hardly a great sacrifice"* in the land used. A land surveyor measured and marked out the streets and building plots and regulations for the settlement were made: typically, the dimensions of each plot, the annual feu-duty, housing and boundary regulations, land for digging peat, divots and moss, and provision for heirs to the land. Large areas of land were reclaimed from moor and bog as 'lotted lands' for the necessary food for local consumption. Some villages were extensively advertised, 40 to 50 per cent were filled by accumulating surplus farm labour, and some were villages being moved to 'enhance' the appearance of an estate. It could be difficult to find settlers: *"The unknown environment, lack of social contacts and doubts about employment prospects were sufficient reasons to discourage long-distance migration."* A diversity of population moved into the planned villages, tradesmen, agricultural labourers and fishermen migrated up to 25 miles, merchants and manufacturers travelled greater distances. Some villages had as many as twenty three different occupations.

437. Building diversity and regulations.

Robert J Naismith, op. cit. pp. 260-267.

Many houses were self built although some were provided to enhance the appearance of the village and to attract occupations unlikely to construct there own. The church or inn was often built by the landowner. Regulations for building varied from *"two stone chimneys on each house"* to *" 'industrious tradesmen and honest labourers' were invited to build using any materials."* Often permanent title deeds were not granted until a satisfactory building had been erected. Before 1800 differing standards of living produced a considerable diversity although single storey predominated until 1850. Minimum house value ensured increasing standards and slate roofs became compulsory almost everywhere. Legal restrictions on development has generally maintained the original character and size of the original plans.

438. Thurso, Halkirk and Sarclet.

Rosalind Mitchison, Agricultural Sir John: the life of Sir John Sinclair of Ubster, 1754-1835, London 1962, p. 190.

John Sinclair envisaged Thurso and other planned villages for the rationalisation of Highland labour in a society in which the tenant farmer had to be totally self sufficient. A letter from John Sinclair to Lord Melville on the 4th August 1804: *" '... I find that nothing will satisfy the greater part of these people but allotments of land.' "* In 1789 the Highland Society offered one of its premiums for the lay-out of new villages of at least fifteen lots and with long leases.

439. Diversity, character and sustainability.

The planned villages were characterised by diversity of population, occupations, the construction of buildings, and the financing of buildings. The original size and character has been maintained. An important example of self sufficiency was the allocation of land for the local production of food.

10.14. Recovering from the Industrial Interlude.

440. Cities may be good for you.

Harley Sherlock, Cities are good for you, Paladin, 1990.

Refer to paragraph 238. Fragmentation and mono-globalisation.

The book by Harley Sherlock, 'Cities are good for you', may not be true under the conditions of the 'mechanical age'. The history is one of a continuous struggle for health and social conditions. Only with the end of the mechanical age, a change in cities to a more ecologically sound structure and a corresponding change in rural areas is there likely to be some truth in the title of the book.

441. A new priority to social and aesthetic values?

Refer to paragraph 233. The social cost of industrialisation - fragmentation.

Refer to paragraph 232. Industrialisation, communications, concentration of power.

The new telecommunications, that have emerged from industrialisation, could continue the centralising force of the cities that the roads and railways of the Industrial Revolution began. The resultant industrialised society requires aesthetics to be learned by specialists in universities and colleges. It is no longer a general ability.

The age of industry and railways has been short lived and there could be a case made for a re-awakening of the social and aesthetic values that were destroyed.

Since telecommunications are not geographically dependent, as steam engines were upon coal fields, it should be possible to overcome the effects of centralisation and re-establish the values of rural towns and villages. The prospects of such a change are limited since the 'Black Hole' effect that weakened rural areas is continued in the Highlands and Islands with Inverness soaking up most of the development.

442. New settlements and the oncoming tide.

David Hall, Director of the Town and Country Planning Association, 'Nudging the Pendulum', Town and Country Planning, 3.91, p. 71.

The quest for commercial and individual gain at all costs has left its mark in a loss of aesthetic value, and the Countryside Commission have seen the benefits of not adding further to the damage of villages and market towns. *"There is an on-going educational task to be undertaken before the pendulum gradually swings in favour of the new settlements option - as it surely will."* The need for new settlements is reinforced by the enormous scale of the nation's housing requirement. New settlements, which have been successfully built before, can minimise the impact of development on existing settlements and can create attractive new environments for future generations, *"what we need is the will."*

443. Tomorrow's new communities.

Gillian Darley, Peter Hall, David Lock, Tomorrow's new communities, Joseph Rowntree Foundation in association with the Town and Country Planning Association, pp. 3-4, 24.

This publication had been 'put to one side' during the study. It was not used for the study and therefore it is interesting to compare this list with section 11.3 The 'Seed' and section 12.4 Recommendations to begin the way forward.

The Tomorrow's New Communities competition, conference and exhibition showed that new settlements can be more acceptable than the 'spec-built' estate on the edge of town. The publication deals with some of the concerns of this study: *"The new community is an old idea."* ... *"The danger is that the mistakes of the past will be repeated: a lack of human scale; excessive density; unchecked sprawl; ...* "There is a rich history of accumulated wisdom and experience. It also reports on the competition organised to stimulate fresh thinking to provide *"a better quality of living environment"* Ten lessons from history to create *"a real new community"* are presented:

1. Begin with an unambiguous statement of sustainable aims.
2. Negotiate for the highest possible percentage of profits from the development of land to be passed back to the community and held and administered by a Trust.
3. Commission a master plan for a unified quality of architecture and landscape design, without possibility of unsatisfactory deviation or dilution. (This study suggests a more flexible approach.)
4. Include the widest possible variety of house types and the widest possible selection of tenures.
5. Incorporate communal buildings, amenities and facilities which match the scale of the settlement, as it is finally envisaged.
6. Ensure ample open ground - water, woodland, sports fields, playgrounds - with provision for continued maintenance.
7. Give environmental considerations high priority; energy conservation in house design, waste recycling, heat exchange, exploration of wind power etc.
8. Make sure transport serves, rather than dictates, the form of the settlement.
9. Provide the community with its own voice - ie an independent, representative committee of residents and directly concerned parties, which may be the Trust above or a separate residents' association. (This study suggests that it is now possible, with the aid of new technologies, to give everyone in the community a voice. Not mere representation.)
10. Seek to make every possible provision for those who wish to work in the community.

444. Psychiatric hospitals and Highland estates.

Ibid. pp. 30-36.

John Burrell.

A project begun in 1985 on the site of a former psychiatric hospital uses a 'hub' of high quality redundant buildings in mature landscaped gardens and gives an example of what could be achieved with Highland estates. The project was praised for its *"Innovative ideas in creating a mixed housing, working and leisure community".* A diffused, low density, suburban landscape is avoided by a diversity of landscaped courtyards. A community Development Trust is proposed for the management, with people involved at an early stage in the planning. In the Highlands and Islands an equivalent could be modelled upon the rich examples of estate farm buildings many of which have been left in a sad condition.

445. Dartington Village.

Ibid. pp. 56-58.

Andrew Page.

Refer to paragraph 394. The Mediator Hypothesis:

Dartington is described as a 'televillage' with health-care; self designed, energy-conserving, high density house forms, pedestrian only access; an aquaculture centre and telecottage exchange. A phased development to allow for experience in an intermix of offices, workshops and housing for residents in the local region: this is an essential prerequisite for planning permission. There would be a management body elected by the residents prior to new building. Life in the village would combine both *"the best of the city and the country"* in accordance with Ebenezer Howard. The existing Dartington Hall Trust, founded in 1925 by Dorothy and Leonard Elmhirst, foresaw many of our contemporary predicaments and set out to create the physical and spiritual fabric for a sustainable life with an emphasis on education. The recently opened Schumacher College is of particular interest to the philosophy behind this study.

446. Harewood village.

Ibid. pp. 53-61.

Acorn Restoration Ltd.

Refer to paragraph 5.2 Community Teleservice Centres.

Harewood village is also a 'televillage' *"with a wide range of employment opportunities"* that revive the village as a place of work and play, and provides a sociable environment for people who miss the office environment. It is set in a valley of 150 acres with decaying buildings and unkept woodland. Derelict cottages would be renovated for family living and a courtyard farm converted to eight offices and a village owned 'telecottage' (teleservice centre). A church would be converted to a multi-purpose hall for worship, day nursery and meeting place. Barns would become workshops and the farmhouse a country-house hotel and restaurant. The demolished Harewood House would be rebuilt as thirty 'compact apartments'. High design standards are intended to provide three hundred houses. A 'property ladder' would allow occupants to remain in the village as their income and family size fluctuate. A 'telehamlet' of eight houses has been built with offices detached from the main house in Herefordshire.

447. New well planned settlements.

1.91. Jim Grove, Town Planning Consultant, Town and Country Planning, p. 32.

Nimby: 'Not in my back yard'.

Jim Grove suggests that the pressures on local communities and the countryside are best met by allowing many new, well planned settlements to be built. *"... Nimby's that have screamed at me in public meetings are conspicuously those who recently moved into the area."* Some new building in every generation was always a feature of a healthy community. There is ample experience of planned villages, garden suburbs, new towns, and new settlements to draw upon.

448. Endless sprawl.

Lewis Mumford, 'The garden city idea and modern planning, in Ebenezer Howard, 'Garden cities of to-morrow' F J Osborn, editor, Faber and Faber, 1946. p. 38.

Peter Hall in Gillian Darley, Peter Hall and David Lock, Tomorrow's New Communities, Joseph Rowntree Foundation, York, pp. 81-83.

Refer to paragraph 416. 'rural sprawl'?

The exploration of the possibility of a new settlement pattern to solve the difficulties resulting from the emigration of population from rural areas has resulted in a pattern that has some similarities with a solution proposed for the overcrowding of cities a century ago. Lewis Mumford in 1945 observed that Ebenezer Howard's plan for diverting population to a rural matrix was *"technologically far more feasible today [1945] than it was forty or fifty years ago"*. The technologies of electricity and the internal combustion engine which created the preconditions for long-distance migration from the industrial cities were so liberating that they created the outcome Mumford feared most: *"endless potential sprawl"*.

449. The realisation of the vision of Ebenezer Howard.

Ibid.

Fifty years further on it is now the remote rural areas that need to divert population to themselves, and it is intriguing that with the latest telecommunications a settlement pattern with some similarities could provide a solution. There is none of the three mile long 240 feet wide grand avenues or crystal palaces of the Garden cities.

Success depends upon small evolutionary steps to achieve a long term harmony and well being.

New air control regulations in California mark the end of the internal combustion engine and there are schemes for high-speed trains to serve new communities in the distant Mojave Desert. They may prove to be *"the latter-day equivalent"* of Ebenezer Howard's Inter-municipal Railway.

CHAPTER 11

A MODEL AND HYPOTHESIS

FOR

A NEW SETTLEMENT PATTERN.

THE 'ECOVILLAGE' AND THE 'ECOCITY'.

" ... buildings are not imposed from above
nor constructed from without,
[they] arise from within."

Patrick Geddes Cities in Evolution', London, 1949 edition, p179.

Ebenezer Howard:
"whom the Stock Exchange would have dismissed as a negligible crank".
George Bernard Shaw.

Ebenezer Howard:
"building a life-centred civilization".
Lewis Mumford.

A sociological village:
"a place where a person is known by more than one role"
Trevor Garnham, Architects' Journal, 9.8.89.

The countryside of yesterday,
became the cities of today.
The countryside of today,
will become the cities of tomorrow.

11.1 Towns, outlook towers and a place in the countryside.

450. Natural growth and evolution.

Robert J Naismith, 'The story of Scotland's towns', John Donald, Edinburgh, 1989, p. 2.

Refer to paragraph 71. Emigration of the young and city life.

Refer to paragraph 371. Urbanised countryside.

It has been suggested that a rural 'city' would be required to reverse the emigration of the young. In the Highlands and Islands there is a rich history of towns that have been admired for their relationship with the natural environment. It may therefore be worthwhile searching their history for clues to a way forward for rural areas. In town-making *"natural growth and evolution"* is needed in the process of continual change to keep *"in tune"* with the needs of the inhabitants. Sir Frank Mears claimed that it is the proposers of alterations and rebuilding who are the real planners. Towns generally retain some of their original character that is inherited from the *"genes"* of their birth.

Patrick Geddes said that this character is achieved by *" ' ... active sympathy with the essential and characteristic life of the place concerned' "*.

451. Outlook Towers of Today.

Jacqueline Tyrwith quoted in Colin Ward Town and Country Planning, 12.90.

Patrick Geddes laid emphasis on the need for civic exhibition and permanent centres for civic studies in every town - an Outlook Tower. *"This is something that, with all our discussions on the need for 'citizen participation' in town planning, has yet to be given a trial."*

Selma Montford, Lewis Cohen Urban Studies Centre, Brighton Polytechnic, 68 Grand Parade, Brighton BN2 2JY. in Town and Country Planning, 1.91. p. 32.

Many Urban Studies Centres provide a permanent centre for civic studies in their own town. *"These 'Outlook Towers' would be better placed outside local authorities themselves, where they could too easily become vehicles for public relations exercises."* New settlements could prevent the damage that has been done to English towns and villages due to rapid change that has outpaced the machinery of the authorities.

452. Settlements in 1100, a network of planned towns, 160 years of prosperity.

Robert J Naismith, op. cit. 1989, pp. 4-7.

Successful new settlements can be found in Scottish history before 1100 when minor kingdoms had centres based on forts surrounded by small buildings of probably 2,000 inhabitants living close together in mutual co-operation. Later small settlements grew at the crossing of routes, river crossings, boat landing places, or early church foundations. From David I in 1124 to the death of Alexander III in 1286 Scotland underwent *" ... the most complete scheme of co-ordinated national, regional and town planning that Britain has ever seen. ... All of Scotland's oldest towns were 'new towns' of the twelfth and thirteenth centuries."*

453. Decentralisation of administration, characteristics of the planned towns.

The distribution of the network of towns was probably determined by the support that the countryside could provide with the sale of cattle, sheep and crops. The castle and its siting was essential to national defence, and provided bases for the Kings administration. The market centre was the primary consideration, a form of *"medieval supermarket"*. The market had the essential market cross, weigh house or tron, and tolbooth, and the burgh minstrel would bring colour to the market place. The towns showed the human response to the natural conditions of the site and the sympathetic shape in the countryside is admired by many today.

The characteristic layout of the town gave shelter and an enclosure of outdoor space, and the buildings were arranged to suit the natural landscape of the countryside in which they were implanted.

454. Scottish towns, self-determination and clarity of vision.

Robert J Naismith, 1988, op cit. Foreword by H A Rendel Govan.

It was Robert Naismith's book on buildings in the countryside which inspired the need for this study, and it is therefore appropriate that this companion book should also be useful in the concept of linking the countryside and cities harmoniously.

In Robert J Naismith's book the history of Scottish towns seems to show an element of self-determination by the inhabitants which the evolutionary process has diminished with the increasing rate of change and central control. The forward by H A Rendel Govan observes that the powerful influence of fashion can have an adverse effect when it is *"blindly followed"* by those with the power to say how we should build our towns and houses.

In past times self-determination and the clear thought of what the people wanted led to functional design and *"a modesty of spirit and clarity of vision"*.

11.2 The Highlands and Islands and a rural 'ecocity'.

455. Self sufficiency of information.

John B Goddard, Alfred Thwaites, ibid., pp. 103-107. A Sayer, K Morgan, 'The electronics industry and regional development in Britain in A Amin, J B Goddard, eds., Technological change, industrial restructuring and regional development, Allen and Unwin, 1985. David Keeble, ibid. p. 17. Steed and DeGenova 1963 and Kelly 1986.

For the Highlands and Islands to take part in product innovation and market demands the essential requirements are: *"social networks"*, the improvement of knowledge and skills, and a uniform, decentralised provision of telecommunications, infrastructure, and services. Centralisation characterised the first large and expensive computers; decentralisation occurred as soon as smaller, cheaper desk-top versions had been developed. If telecommunications follows the same path, rural areas could be interlinked via telecommunications and develop a self sufficiency of information resources to escape the domination of the global cities.

456. A university infrastructure.

The small speckles of government 'carrot seed' sown in infertile soil have simply blown away, and any small growth is soon eaten away by the carrot fly!

David Keeble points to North American research that shows that universities, research institutions and *"cultural amenity"* are vital in attracting the new engineers and scientists required by technological industry. The Highlands and Islands have failed to prepare the ground with this basic and vital 'research infrastructure'.

457. Building exhibitions, the Ruhr, the Highlands and Islands,

For more information on the Ruhr refer to appendix

The northern part of the Ruhr region, has set up a building exhibition run by a planning company, Emscher Park Ltd. The key to the projects success is seen to be in 'new thinking', innovation, public ownership of land and the use of telecommunications. The Highlands and Islands could combine the idea of a 'future city building exhibition' with its desirable landscape. With the aid of the established tourism and world awareness it could provide desirable occupations and a dignified way of life for its young adults.

The future of the Highlands and Islands lies in its ability to keep the existing population, and to attract a new population, by maximising its wealth of resources and complementing its natural environment with architecturally designed facilities of the highest quality.

458. Cities as a group of villages, 'telecommunication villages' and a rural 'ecocity'.

Refer to section 5.2 Community Teleservice Centres.

Many cities of today grew as an amalgam of small villages swallowed up into a dense urban matrix. With telecommunications small villages need not be adjacent to form a new type of 'city'; they can remain separated by the 'natural' environment and can cover far greater areas than conventional cities. By encouraging communities to develop teleservice centres, this could result in a human settlement pattern that is in sympathy with the environment whilst at the same time achieving some of the advantages of a city. The Greek word 'oikos' meaning household, the home of creatures, results in the word ecology and thus this rural 'city' could be thought of as an **'ecocity'.**

By using advanced telecommunications to link **'telecommunication villages'**, the entire population of the Highlands and Islands could be a single 'rural city' - an **'ecocity'.**

459. Berlin, organic growth equally applicable to urban and rural areas.

Refer to Appendix A1, paragraph 569, Berlin: recommendations for the future.

The list of recommendations (please refer to the appendix) for the future development of the city of Berlin could equally apply to the Highlands and Islands or any rural area. If these recommendations for Berlin are applicable to urbanised areas and rural areas, those rural areas that follow the recommendations, and in the course of time become urbanised, will automatically have the recommended conditions for urban areas. More importantly these recommendations will have been achieved in a natural organic growth rather than in a desperate attempt to rectify chaotic revolutionary growth.

460. The importance of rail or advanced transport systems.

Refer also to 'What picture show: transport', channel 4, 11.7.92.

Whilst the scale of the situation in the Highlands and Islands is very different to the example of Berlin, Inverness is experiencing expanding 'fingers' and the difficulties of road use. Railways which are being recommended for European cities already exist in three of the Inverness fingers, and therefore further population would be better encouraged adjacent to these, along with expanded rail facilities. The infrastructure of rail lines and many stations could be reopened, new ones added and a high quality service provided to encourage its use. New and existing population centres, away from Inverness, could be encouraged with adequate rail or advanced transport system throughout the Highlands and Islands.

For telecommunications to function successfully, its users will demand a network of long distance passenger travel. To avoid damage to the population attracting assets of the Highlands and Islands this must be 'advanced' passenger transport of the highest quality to complement the 'advanced' telecommunications.

461. Commitment to rural areas, land.

Ebenezer Howard, 'Garden Cities of To-Morrow', Faber and Faber, London 1946.Original text 1898, 'a Peaceful Path to Real Reform'

It is difficult to believe that the British government will make any real commitment to remote rural areas when it sees its own political interests lie in pouring more and more into the south east. At no cost to itself, a great step forward could be made by the removal of the regulations, bureaucracy, and impositions that restrict development by people in the Highlands and Islands, and instead make it possible for cooperatives to purchase land at its scrub value and develop it without outside intervention. This could be thought of as being similar to the ideas of Ebenezer Howard were the increased value of the land, on which the garden cities were built, was to the advantage of the community as a whole. These ideas have been admired and followed throughout the world but have fallen from favour in the country of origin. Perhaps it is timely to re-invent the wheel.

462. Garden cities.

Ebenezer Howard's *'To-morrow'* of 1898 influenced Patrick Geddes and Frank Mears. The few attempts to transplant the harmonious relationship of scale between house, roads and spaces with dropping eaves, dormer windows and low ceilings failed to transplant to the taller and solid simplicity of Scottish houses, wider roads and lack of garden integration. Professionals and builders often conspired to fell trees before building; a trend which seems to persist to 'level the site' today.

463. A fine heritage of buildings that is easily destroyed.

Refer to paragraph 326. 'Winning towns'.

The Scottish Highlands and Islands have a fine heritage of ordinary domestic and agricultural buildings contrasted with a few spectacular castles. The very sparseness of the number of buildings makes them that much more important. A single wrong building, alteration or addition in such a landscape affects the vast surrounding area. In the 'post-industrial towns' of declining regions there is a determination to 'clean things up' at any cost; destroying the rich culture which could have been the foundation of a new identity. A new settlement pattern of 'post rural towns and villages' in the Highlands and Islands could consider the example of the *"winning towns"*.

464. The way forward.

Refer to paragraph 492. The 'Golden Age'. Trade, immigrant merchants, network of abbeys and towns.

Refer to section 10.13 Planned villages:

Refer to paragraph 364. The global threat.

The characteristic of the dominant settlement pattern of today's cities is one of a geographical concentration of population. The new technologies which are not dependent upon geography could significantly change the driving force of this concentrated settlement pattern. The possibility of a settlement pattern that is not based upon the current trends is emerging, and it could retain the beauty of the environment whilst providing a socially compatible human environment. Scottish history has shown that a 'network of self-determining burghs' can be successful in trade. The new technologies of today can offer the opportunity of a world network of trade based upon rural settlements.

A settlement pattern could emerge that combines some of the attributes of cities with the desirable assets of environment; the natural and built resources; the human ecology and the way of life of rural areas.

465. Time for character growth.

Refer to paragraph 428. Hope in honest error.

The history of Scottish settlement is rich in examples of what can be achieved by starting out small and leaving time and space for character growth. Today the natural aesthetic values, the tradition of craftsmanship, and the constraints of natural materials to achieve the harmonious growth of a settlement have been lost. Rather than attempting to copy the past, our own innovation and vision provides the most promising possibilities for the future. Perhaps there is a case for re-educating the public in their lost skills of natural artistic self-determinism, and to return the development of towns to the natural evolution of their residents.

466. Guiding the way forward, localising the complexities.

Refer to paragraph 392, avoiding assumptions and predictions.

Chapter 9. 'Change in the decision making structure', suggested that the way forward can be guided by using the ideas of many experts and researchers.

By localising the complexities of settlements, the size and inertia of the dynamic system is reduced to enable it to respond effectively to unexpected change. The small localised nature of such a system enables the way forward to be guided by those whom it effects the most, the local residents.

The concept of '**mediators**' allows for a degree of overall compatibility between these local systems and keeps them in contact with the 'world system' of which they are a part. A regional network of links can evolve to interconnect these spatially separated autonomous rural towns and villages into an integrated, environmentally conscious, **rural 'ecocity'** structure of low overall density.

11.3 The Proposal.

467. A community settlement pattern, clusters of shielings, characteristic expansion.

Refer to paragraph 430. Clusters of 'touns' of acceptable size, communal life.

The Outer Hebrides have a culture whose character has been formed by the uniqueness of the landscape of peat, small lochans and rocky outcrops. Before the land was appropriated by landlords during the early 19th century for improvement, the settlement patterns were characterised by a traditional farming economy. The people lived together in communities, and even after the improvements the newly formed regular crofting plots still formed townships of 30 to 50 crofts grouped together. In the summer months the women and children grazed the animals at 'shielings' which were clusters of shelters often two to six miles from the original township. New settlements were formed by permanently colonising the shieling after the ground had been improved by the grazing of the animals; the shielings would be moved to a new location.

468. A network of small settlements.

Refer to paragraph 452. Settlements in 1100, a network of planned towns, 160 years of prosperity.
Refer to paragraph 453. Decentralisation of administration, characteristics of the planned towns.
Refer to paragraph 492. The 'Golden Age'.

Robert J Naismith, op. cit. 1989, pp. 63, 75-77.

The death of the Scottish King at the end of the thirteenth century revealed Edward I's *"grasping ambition towards Scotland"* to exploit Scotland for his own profit, and who said that *" ... the successor must acknowledge our superiority over Scotland"*. John Knox in 1559 brought an end to the already declining medieval religious orders. The mobs pillaged the monasteries, the landowners destroyed the buildings and annexed the lands, and 300 years of culture was lost. In 1603 James VI left for England and the close relationship with the royal burghs was also lost. This period in history seems to mark the end of decentralisation and from this time everything become more and more centralised to London.

The period from David I of Scotland gives an example of how a network of small settlements can be made successful. David I was successful by accepting the Celtic paternalistic clan system into his feudal system. The movement of the Kings administration between the towns is in contrast with the fixed centralisation of London today. The shelter and layout of the towns to fit the geography is in contrast to today when the landscape is modified to suit the buildings. Todays local and world trade in knowledge could gain from the experience of the thirteenth century by encouraging a similar network of settlements with decentralised administration, and a network of university colleges to take the place of the medieval abbeys and monasteries.

As a national policy the planned network of towns of David I was essential for the success of local and foreign trade.

469. New settlements without pre-planning.

A 'seed': nucleus, cell, kernel, hub, embryo, concept, thought, vision, (hypothesis), natural growth by self determination and a guiding pathway.

Refer to paragraph 604. Seeds in Norway and Holland.

The proposal is to encourage new settlements that are not rigidly pre-planned; the sowing of 'seeds' whose 'genetic code' has been defined. The basic 'seed' has to be defined to form a framework in which the basic philosophy can grow. The emphasis is to be natural growth by self determination so that the residents of the settlements have control of their own settlement and its growth. The growth of the 'seed' in a particular environment is not defined. It is therefore not a fixed 'master plan' by a developer or planner.

470. The process of example.

Refer to paragraph 63. Migration and integration.

Refer to paragraph 64. Buffering the impact.

There is ample evidence of the disastrous effects on existing settlements of rapid change rather than gradual change, and therefore the experience of new ideas is required in the more flexible situation of new settlements before existing settlements are considered. By the process of example, the ideas, and the experience gained from these new settlements may then be automatically taken up by the existing settlements.

11.4 The 'Seed'.

The concept of the new settlements is as follows:

471. A nucleus beginning.

1. Each new settlement is to be started from a nucleus.

472. The 'Outlook Tower'.

Patrick Geddes, 'Cities in Evolution', Ben, London 1968.

2. The nucleus is to be based on the ideas of Patrick Geddes, and in particular his 'Outlook Tower'.

473. 'The Tron', the first building.

Refer to paragraph 451. Outlook Towers of Today.

3. The first building is to be an 'Outlook Tower'. It is the principle that is important, and not the actual example in Edinburgh. To avoid confusion it is suggested that these buildings are called 'trons'. A 'tron' is a building for weights and measures and therefore the centre of trade, and was a common focal point in Scottish medieval towns.

474. A focal point, a welcoming symbol.

4. One purpose of the tron is to provide a focal point; the 'kernel' to the settlement. The tron is therefore observable from all approaches to the settlement as a welcoming symbol.

475. A sense of belonging and orientation.

5. The tron is observable from as much of the settlement as possible to provide orientation and a sense of belonging; a sense of identity, and a psychological replacement for the church.

476. 'The seed', the hub of the settlement.

Refer to paragraph 583. The Black Isle Community Planning Initiative.

Refer to paragraph 201. Neighbourhood Initiatives Foundation.

6. The most important function of the tron is to provide a 'hub' for the discussion of the settlement's development. It is the 'seed'. It is a place where everyone meets, and it provides an atmosphere of encouragement to all of the residents to take part in the discussion for the development of the settlement. A permanent 'neighbourhood initiative'.

477. A civic exhibition and a resident architect.

Patrick Geddes, Cities in Evolution, London, 1968.

7. An essential component is the 'civic exhibition' arranged as part of the tron. This is essentially the responsibility of a resident mediator (architect/planner) who is easily available to anyone in the settlement.

478. Expertise and experience.

Refer to paragraph 385. Mediators of collective action.

Refer to paragraph 390. The opportunity of new technologies requires a 'mediator'.

8. The 'mediator' provides the expertise and experience and support to enable the settlement to grow in accordance with the wishes of the residents. All design matters will be under the control of the residents. Some may also need guidance for their homes; self-build should be encouraged as a way towards establishing a sense of belonging to the residents; others may need a complete design and provide 'skilled craft occupations' for others within the community.

479. Public buildings, not palaces.

Refer to paragraph 148. The lasting benefits.

Refer to chapter 11 title page.

9. The architect would also be responsible for the design of the public buildings and landscaping.The public buildings are just that, and not palaces for officials, although this does not deny them proper design and place of identity within the settlement.

480. 'Officials' must be residents.

Refer to paragraph 224. Correcting the exploitation.

10. When the settlements are just beginning it may be more practical to share some of the required expertise. A planner/mediator residing in one settlement, an architect/mediator, a landscape architect/ mediator, a building inspector/mediator in others. The important part is that they are resident. A different name to 'officials' is required to emphasise their new role in guidance and mediation.

481. The genetic mediator provides the tree.

Refer to paragraph 361. A vision.

11. Overall it is anticipated that the architect/mediator could provide the 'genetic code' within the 'seed' to give the settlement some kind of structure. This is very much in the way a tree grows. The settlement is not pre-planned and the structure grows, as the branches of a tree under the guidance of the 'genetic code', that is, the architect/ mediator. The leaves on those branches, the residents, provide the life and the means by which the tree grows.

482. An 'on-going' key

Refer to paragraph 395. A proposal to determine the pathway forward.

Patrick Geddes exhibitions.

12. The tron is to be an 'on-going' function of the settlement to provide a key to the decision making system of the settlement; the essential 'mediation hypothesis'.

483. Telecommunications provides, the trade, the reason, the livelihood.

Refer to paragraph 295. Teleworking occupation.

13. The basis for the livelihood of the settlements is the use of telecommunications. Telecommunications, the revolution of today, will provide the reason for the settlement, a point of trade; as did river crossings, ports, road and rail junctions in the past. This is a different phenomenon to the past in that it is not directly dependent on place or distance. These factors make the new revolution an ideal opportunity for rural areas, and in particular the Highlands and Islands. Many physical goods, the 'trade' of the past, will be more conveniently produced locally.

484. Diversity of livelihood - 'roles'.

Refer to paragraph 10.13 Planned villages:

14. A diversity of 'livelihood' or 'roles' is possible both via the telecommunications and to enable the sustainable 'self sufficiency' of the community. One possibility which is also an example of a 'seed' is a 'community college' as outlined in the following chapter on a University of the Highlands and Islands.

485. Settlements for all.

Refer to paragraph 439. Diversity, character and sustainability.

Refer to paragraph 446. Harewood village.

15. For a workable settlement there is a 'place for everyone', and therefore all types of housing are required. A housing system that allows for a flexibility within the community for people to exchange as their circumstances, desires and needs change. Whilst this type of provision is essential to establish a stable community life, it may be difficult to achieve.

486. Self-build and sustainability in crafts.

From the experience of living in a cottages in the old village of Balloch near Inverness. The cottages are remembered by the elderly for the trade which used to be carried on by the occupants; the tailor, the blacksmith, the cobbler.

It will be beneficial to encourage self-build homes, particularly for those without livelihoods. This may then provide a skill they can offer to others. The old idea of crafts could provide a further diversity of worthwhile and rewarding livelihoods that would help to create a human ecology of well being. The aim is to establish as many crafts and trades 'in house' that are required for the sustainability of the community. The baker, the tailor, the carpenter, the cabinetmaker, the blacksmith, the gardener, the nurseryman, the transport mechanic, the energy engineer, the television repairer, the computer expert, the community college tutor, ...

487. Settlements that show the way forward.

16. As these are new settlements built as self contained communities there is no reason to copy 'vernacular' buildings. These are new settlements pointing the way forward, and whilst they respect the history and environment in which they reside, they also take every advantage of the opportunity to use modern techniques. In this way, a human architecture could be achieved that is appropriate to the local climatic conditions.

488. Self sufficient energy.

Refer to paragraph 212. Wind, wave, and hydro power.

Refer to paragraph 425. Region has hopes for energy conservation village.

17. From the abundance of natural sources of power in the Highlands and Islands there is an opportunity for a certain degree of self-sufficiency by using wind, water, solar, and wave power in small single community installations. This locally generated power could also be useful as a source of energy for a transportation system, (see 19). Technology should be used, where practical, and appropriate, to ensure the 'modern comforts of life'.

489. Self sufficient in food.

Refer to paragraph 439. Diversity, character and sustainability.

Refer to paragraph 236. Discarded children.

18. The Highlands and Islands are littered with walled gardens from which estates and farms were self-sufficient in fresh food. Perhaps the time has been reached to resurrect this idea. The self-sufficiency philosophy has the advantage of providing the necessary diversity of occupations and ensures that the community is not totally dependent upon the telecommunications. In the situation of a loss of income from telecommunications it should be in a position to survive. This provision also adds to the necessary diversity of occupations to achieve a 'place for everyone'.

Refer to paragraph 434. A return to involvement in the village life.

490. Transportation

Refer to paragraph 460. The importance of rail or advanced transport systems.
Refer to paragraph 377. A structural network or for private competition.
Refer to paragraph 329. Transportation, high demand and urban environment.

19. A solution needs be found for transportation; motorways and pollution in the Highlands and Islands are not acceptable. This probably depends upon a political will more than anything else in this study. As electric cars take over from the combustion engine the advantages to a community that generates its own electricity begin to grow. The possibility of guided systems between communities are also a realistic possibility to minimise the impact upon the environment.

491. 'A healthy life'.

20. It is likely that the residents of the 'ecovillage' will be attracted by the idea of a 'healthy way of life'. Such a 'background' philosophy of the residents may give them something in common to help them through the difficult early stages of the new settlement. It is therefore suggested that priority is given to easy access to all parts of the settlement by foot, pram, wheel chair, or cyclist.

Eco-clusters.

Refer to paragraph 467. Community settlement pattern.

21. As the ecovillage grows towards its maximum area - a percentage of the total land owned by the community - a new 'seed' should be sown. The effect could be likened to strawberry plant runners which root a new growths some distance away. The new ecovillage should be close enough to share in the resources of the original village until it can support itself. In time the original and the new ecovillage will spawn further ecovillages to form a 'cluster of ecovillages'.

CHAPTER 12

ESTABLISHING

A NEW SETTLEMENT PATTERN

THE 'ECOVILLAGE' AND THE 'ECOCITY'.

"We are skilled in analytical thinking
which has allowed for a tremendous expansion.
Expansion without integration is disintegration"

John Turner and WP Keating Clay in 'Cities in Evolution', London, 1949 edition, p.205.

The 'Evolution of Cities' is a framework
that has a beginning and end,
but never begins and never ends.
I have a high respect for Patrick Geddes
but nobody understood him.
He was trying to point to a non specialised future.

Ian Ballantyne.

We must listen to the innermost universal consciousness;
it needs no great scientific theories,
specialisms, or knowledge;
for specialisation, like religion,
will dampen the resonances to a mere echo;
that Golden Universe is there for all who listen.

12.1 A 'Golden Age'.

492. The 'Golden Age'. Trade, immigrant merchants, network of abbeys and towns.

Robert J Naismith, 1989, op cit., Foreword by H A Rendel Govan, pp. 37, 57.

Edward I ordered the wisest and ablest to plan his new towns *" ... to the greatest profit to Ourselves and of Merchants"*. Urban life was likely to have been socially and economically rewarding.

Early planned new towns produced an *"urban evolution of the country"*, and the *"Golden Age of Scottish History"*. The network of abbeys and monasteries brought foreign trade, intellectual knowledge, education, the best buildings in the medieval world, improved agriculture, husbandry, horticulture, gardening, orchards and mineral extraction.

493. The second age of town building 1700-1830, craftsmen, artistic imagination.

Ibid pp. 89-90, 96.

Intellect flourished in the first burghs of the twelfth century and was repeated in the seventeenth century renaissance of science and rationalism. By 1750 the demand for expansion created another impressive age and enthusiasm for Scottish town making that continued the medieval traditions of individual freedom and a diversity of buildings and society. By the middle of the eighteenth century the education and *"native practical approach to life"* combined the ingenuity of engineers and chemists transformed into a *"new age"* of economics, finance, insurance, transport, manufacturing and engineering. Some promoters had no artistic imagination and their plans degenerated into a grid iron feuing plan and the purity of reasoning of earlier burghs was lost. The underlying reality of the physical features of the site gave the twelfth century burghs their individual identity, character, and beauty.

Wealth, population and intellect grew *"in a chain reaction"* through the network of towns.

494. The 'Golden Age of learning'.

Ibid. p. 73.

Travel became part of Scottish life and there were student colonies and professors in the French universities: Padua, Paris, Orleans and Avignon; Cambridge and Oxford needed a guarantee of safe conduct. St Andrews University was established in 1411, Glasgow university in 1450, two universities in Aberdeen between 1495 and 1505, and Edinburgh in 1582. The subjects of logic, Aristotle, rhetoric, analytical study, dialectics, philosophy, physics, astronomy, ethics, metaphysics and the mind, meteorology, perspective, arithmetic and geometry led to the Scottish *"Golden Age of learning"*, and the most cultured court in Europe. Average townspeople in a burgh like Inverness, remote from the centre of the country, could write when it was not a common accomplishment in Scotland or England.

495. A new 'Golden Age of Scottish towns'.

Refer to paragraph 22. People, not party politics.
Refer to paragraph 218. Trade, the 'global village' and ISDN.
Refer to paragraph 310. The Highlands and Islands, the change from fragmentation.

A suitable chain reaction of the new age of knowledge could repeat the 'Golden Age' of Scottish towns and learning. The combination of the advanced technologies, the renewed interest in the University of the Highlands and Islands, today's revolutionary change to a knowledge base, and the way of life provides a unique opportunity to leap-frog industrialisation and the fragmentation of city life.

12.2. A University of the Highlands and Islands.

496. Universities stimulate cities.

Universities have provided a stimulus to cities throughout the ages, and no great city is without its university. More recently there have been universities set up on isolated sites, and these have a different character. Providing an educational and industrial service they presumably have difficulty in contributing to, and taking part in, a more general cultural benefit of the local population.

497. Trigger the future of the Highlands and Islands.

The conventional perception of a university may not be practical, or even desirable, and there may be ways of achieving more benefit from a different form of university, one that takes advantage of current changes in the world, social desires and technology; a way of not just setting up a university **in the** Highlands but a University **of the** Highlands and Islands; a university that is part of the whole social structure may be all that is required to trigger the way forward for the Highlands and Islands.

498. The Wisconsin idea.

'Education for adults: the Wisconsin idea', Open University, BBC 2, 23.3.91.

The Open University programme 'The Wisconsin idea' provides a possible model for developing the Highlands and Islands. The university boundary is not dictated by buildings but by the boundary of the state. It is a 'land university' that originally derived its finance from a grant of land. Perhaps estate owners in the Highlands and Islands may be encouraged to bequeath land to community colleges in a similar way to the National Trust. Educated people bring more money and it is *"a good investment"* for the state which now provides half of its funds. Students provide some of the funds and a large proportion comes from research. The 'University Extension' belongings to the community and 'Extension agents' visit farms, small businesses, and community groups to help them with information and to provide continuing education; help with information is always at the end of a telephone.

499. Business and education.

There is no separation between business and education, and continuing education for business people through a system of continuing education credits is provided for all professions. Most professional institutes in this country are now finding it necessary to start such schemes and the University of the Highlands and Islands could provide a useful service.

500. Community development, education, and technology.

The University of Wisconsin will study the needs of a village, and provide assistance to motivate and involve the community themselves. Community development is seen as community education, and this could aid the introduction of new technology to the Highlands and Islands. The University uses an interactive telecommunications network to provide still video pictures, to learning centres all over the state. The Extension emphasises the importance of local tutors who organise small instructional groups. They provide a valuable opportunity for people to reflect on changes in the way of life, an aspect that is often missing in conventional teaching.

501. Distance learning in British Columbia.

'Educational studies: open skies: grass roots', Open University, BBC1, 14, 22.9.91.

The network of supporting tutors could be likened to the proposed network of mediators supporting the ecovillages.

The sparsely populated mountainous regions of British Columbia have been served by 'The knowledge network' via satellite since 1981 to provide education and inter-community links. People in urban areas have also found education easier in their own living room. The North Isles College, with no central campus, serves a population of 30,000 and has more adult students than any other college. No matter how small the community there is a local tutor and everyone, no matter how remote, has an equal right to education. Student learning is emphasised and the tutors are an essential part of the network in providing support beyond that of traditional teaching. The difficulty of introducing an alternative to the established education system was emphasised in the second programme.

502. The Open University.

The Open University has been innovative in bringing University benefits to everyone by removing the restrictions of distance through the use of telecommunications. The Open University in Scotland employs written material, visual material (television broadcasting), audio (radio and tape) and telephone conferencing techniques to bring University education to rural areas. The costs of a degree course are substantially lower, illustrating that with new technology even sophisticated services can be provided at low cost in remote and sparsely populated areas. Wherever you are, whoever you are, you can follow a course. The Open University is a concept and not a building.

503. The Highlands and Islands.

The population of the Highlands and Islands could be seen in a similar situation as the students of the Open University; that is, separated by large distances and often in relative isolation. The expense of a single University complex is both in-appropriate and unnecessary.

A university network could provide the necessary infrastructure throughout the Highlands and Islands to sustain a knowledge based future.

504. A collection of buildings or a place for human thought?

In this new light, there is a wealth of opportunities to benefit the whole of the Highlands and Islands. There are many who already come to the Highlands and Islands for an environment that stimulates human thought.

Instead of a university as a collection of buildings a more human concept, made possible by advanced telecommunications, now makes a University of the Highlands and Islands a practical possibility.

505. Aiding the local way of life.

Refer to paragraph 239. The stress of an industrialised society.

The 'way of life' of the Highlands and Islands has hibernated whilst the fragmented interlude of industrialisation has taken place. This is the re-awakening of the way of life of rural areas and the dawn of a new 'Golden Age'.

It is important that the conceptualization of the University of the Highlands and Islands aids the integrated 'way of life'.

506. A vision requires determination and dedication.

Refer to paragraph 226. The power of global cities and global corporations.

Many, lost in material symbolism, see the idea of one campus in Inverness as the only way. There argument that everything happens in Inverness, and that it is too difficult to get anywhere else, only serves to perpetrate the forces of centralisation and shows their fragmented selfish outlook that now characterises 'western society'. It now threatens to take over the world through the medium of television, finance, 'global corporations' and 'global cities'. Ironically the same telecommunications technology that fuels this process, just as coal began the demise of rural areas in the Industrial Revolution, also offers an opportunity to alter the trend. It is not easy, and will require the determination and dedication of those who followed the 'social clause' of Hydro Electric in the Highlands and Islands.

507. An analogy with Hydro Electric.

A University of the Highlands and Islands for the benefit of all would eventually be viewed as we now view the Hydro Electric network and which provides an analogy for the University of the Highlands and Islands. It is a part of every school, business, community centre, teleservice centre, shop, every home and most importantly part of the local 'way of life'. Wherever there exists electricity to power a terminal the University of the Highlands and Islands also exists.

Marshall McLuhan.

> The message of telecommunications, as with Hydro electricity, is not in the electric light or the images on the computer screen, it is in the medium itself which has the capacity to alter the settlement pattern.

Refer to paragraph 150. A fiercely opposed vision.

It can happen, Hydro electric defied all the critics. Can we even imagine being without electricity now? The same can happen with advanced telecommunications and the University of the Highlands and Islands.

508. A human resource.

All the population of the Highlands and Islands as part of the university will provide a unique human 'data bank', source of ideas, and testing ground for ideas. Only the human brain has the unique capacity to analyse information and every person in the Highlands and Islands would be a part of that unique facility. Instead of access to brain dead electronic data bases (although realistically they will also have a place) the University will have access to every brain cell in the Highlands and Islands, and conversely every person in the Highlands and Islands will have access to that facility. The facility of the University of the Highlands and Islands, in its unique way, will be ahead of the most complex of parallel super computer, albeit for very different types of 'computation'.

509. Buildings.

From the experience of lecturing at Inverness College.

In the University of the Highlands and Islands concept the building needs are far simpler than for traditional teaching classrooms that tend to be redundant for other purposes. It could almost be said that the best use of the existing college buildings will be as storehouses of the past; it is their staff that have the skills that are needed, and not the buildings. Taken to the extreme this is unrealistic buildings have their place for special guest lectures and for practical work that can not be conducted in the communities. Telecommunications can not replace 'face to face' help which, ironically, often lacks in a class room. Tutors are an essential part of the concept and the building need can be easily met by the local community centre, school, teleservice centre, home, or converted cottage.

510. Transport needs.

As well as the telecommunications network the Highlands and Islands needs an advanced public transport system, not roads and buses which will destroy the assets of the Highlands and Islands. Students can then travel to the 'nearest specialist' in their subject to back up the limitations of studying via the technology. They would always have nearby access within the community they reside or lodge for general help and advice. The bed and breakfast concept allows the students to move to another community as they study different subjects. An automatic intermixing and 'transport' of knowledge and experience will thus result.

511. Redundant accommodation for students.

Refer to section 3.6 Amenities: tourism and employment.

The heavily promoted tourist industry which provides inappropriate work, particularly for the educated young, is likely to be unsustainable. If the increasing student population is integrated with the loss of tourism it will be valuable progress. Throughout the Highlands and Islands there is ample accommodation. The warmth of the Highland Bed and Breakfast, if the tourist authorities leave any intact, will provide a perfect introduction to students of a valuable 'way of life' which they can carry with them through life's experiences. The student accommodation does not have the difficulty of nearness to college buildings, since the University of the Highlands and Islands is not a particular set of buildings. There are also numerous estate buildings without a useful life. Sabhal Mor Ostaig provides a good example of what could be done.

512. The way forward.

The way forward for the Highlands and Islands lies in the University of the Highlands and Islands as an integral part of the 'way of life'. It need not be tempted by place or by buildings. Instead of expensive buildings, provide advanced telecommunications via satellite and ISDN in every building in the Highlands and Islands as a necessary public service; it is not a big step from Hydro electricity. Everyone in the Highlands and Islands then becomes the University of the Highlands and Islands. It is a University of people from all walks of life, a vast treasure trove of experience. Ensure that every community throughout the Highlands and Islands has at least one adviser, councillor, or tutor. Organise all the material and access to other Universities throughout the world. All that remains is to fill the Bed and Breakfasts throughout the land with students. The vast resources of the Highlands and Islands will become the most necessary, and envied, for life on this planet.

The most important asset for the University of the Highlands and Islands is the local people. Their wisdom can guide the way forward.

12.3 The rural 'ecocity' and the University of the Highlands and Islands.

513. The 'ecocity'.

With the concept of the University of the Highlands and Islands it becomes possible to expand the idea of the rural 'ecovillage'; to envisage the whole of the Highlands and Islands as one huge knowledge based **'ecocity'**, with a university integrated throughout. A polycentred 'ecocity', huge in total area and conventional in size of population. Each 'ecovillage' would have its own specialism and cultural activity to contribute to the whole system. The poly-centred open university of the Highlands and Islands could provide the stimulation and support needed for the future in the same way as conventional cities are stimulated by traditional universities.

514. Cities as a group of villages.

See also: Michael Wegner, op.cit. p. 2.

Many cities of today are a group of 'villages' that have been swallowed up into one urban mass, and the names of the original villages and estates are only reflected in the names of the districts of the city. Cities of today are struggling to reinstate 'green between the buildings'; 'green' that once existed between the villages. The new technologies make it possible to envisage a 'green' city of human scale and with a human soul. A city with its original constituent villages, moved apart, and the intervening space filled by nature; each village having its 'self', its identity, restored; each village still playing its part in, and having the support of, the whole city.

515. The Highlands and Islands rural 'ecocity'.

A many centred city diverse in character, and not a sprawling city; a beautiful place in which to live and meet, and not a city as a dense centre of buildings exclusive to commerce; a place with all the amenities of a city; a place for human progress in hand with nature; a self determined future using the existing assets and technology to the advantage of its people, its culture, and its environment. The new technologies can provide simple conferencing facilities in every home, more comprehensive information, training, and occupation facilities in all community centres, and a co-operative marketing system linking to the rest of the world. There is no need for vast sums to be paid to incoming industries which are here today and gone tomorrow.

516. Buildings 'between the green', networks of knowledge.

In the past, poor communications made face to face contact necessary for the functioning of a city, and the city as a meeting place for trade had to be a dense concentration. Dense concentrated cities are no longer necessary for the functioning of trade. Trade of the future will depend upon a network of knowledge. In the Highlands and Islands there is the green that the cities long for; the difficulty will be in achieving the trade of a city without destroying the effect of the 'green' that contemporary cities are struggling to recreate.

A forward looking approach would be to add sympathetic buildings 'between the green' rather than trying to reinstate 'green' between the buildings.

517. Community colleges, a proper root for growth, and Highland estates.

Refer to paragraph 444. Psychiatric hospitals and Highland estates.

The proposal is to set up 'community colleges' of an unprecedented smallness; the size of Sabhal Mor Ostaig on Skye is suggested for a model which also provides a good example by using a redundant home farm from an estate. This has the added advantage of providing a proper root for a new settlement that a virgin site would not otherwise do. The concept of using redundant Highland estates provides an ideal ready made setting for such developments, many with buildings ready for occupation by the community colleges. Such an environment would cost unthinkable amounts to achieve from a fresh start and would take generations to reach the maturity that has been gifted. An Open University programme on the London Docklands comments on how this run down area suddenly changed when it was viewed in a new light as an opportunity rather than a problem.

518. A nucleus and natural growth, 18th and 19th century planned villages.

The key to the success of this vision is for the 'community college' to provide a nucleus from which the settlement can develop naturally and at its own pace rather than specifying a specific population to be achieved in a certain number of years. The present population of the Highlands and Islands is increasing sufficiently to create a settlement the size of Tain or Dingwall every four years. The majority are trying to move into Inverness making its growth more difficult, and at the same time restricting the development of other areas of the region. If the emphasis was placed on making the new settlements attractive to the increasing population the demand for Inverness may be reduced and a more distributed and harmonious development produced. The planned villages of the eighteenth and nineteenth centuries achieved this harmony and are now so much a part of the Highlands and Islands that it is doubtful that many realise their origins.

519. Change and the need for flexibility.

Change is happening at such a pace that flexibility needs to be an essential ingredient of any new development, and the concept of the settlements growing from a nucleus provides an inherent flexibility. Similarly the nature of the college, un-weighted by administration and buildings, has the advantages of flexibility to respond quickly to changing requirements as well as a low administration cost.

520. The links to make a University, satellite links, healthy growth.

The final essential link in the vision to make the separate community colleges into a university is the interchange of knowledge, ideas and facilities by means of telecommunications. Here, the Highlands and Islands has more opportunities in a sixteen million pound investment in digital communications, so far little used except by the military and the oil industry. The possibility of the free use of a satellite, already used by other universities, is presently being investigated, and such innovative concepts also have the advantage of attracting European grants. It is envisaged that these communication systems could also provide occupations for others, separate from the college, and thus provide a basis for the healthy growth of the settlement.

12.4 Recommendations to begin the way forward.

521. ISDN as a service provision.

Refer to paragraph 251. The costing of ISDN.

Refer to paragraph 151. Telecommunications as a social vision..

In terms of cost savings ISDN-2 is more likely to be beneficial to the larger organisation, and conversely it is more likely to be the smaller organisation that is beneficial to rural areas. It is the smaller organisation and individuals that could make beneficial use of the new technologies in rural areas. This key to the way forward has not been made comprehensible or acceptable to potential users. Therefore rural areas depend upon a political decision to make ISDN a necessary public service similar to the Hydro Board with its social clause. This is not a fashionable idea in today's political climate.

Telecommunications has the potential to reinstate the position of rural areas alongside the cities.

522. Grants and support.

Refer to paragraph 333. The Nordic telecottages:

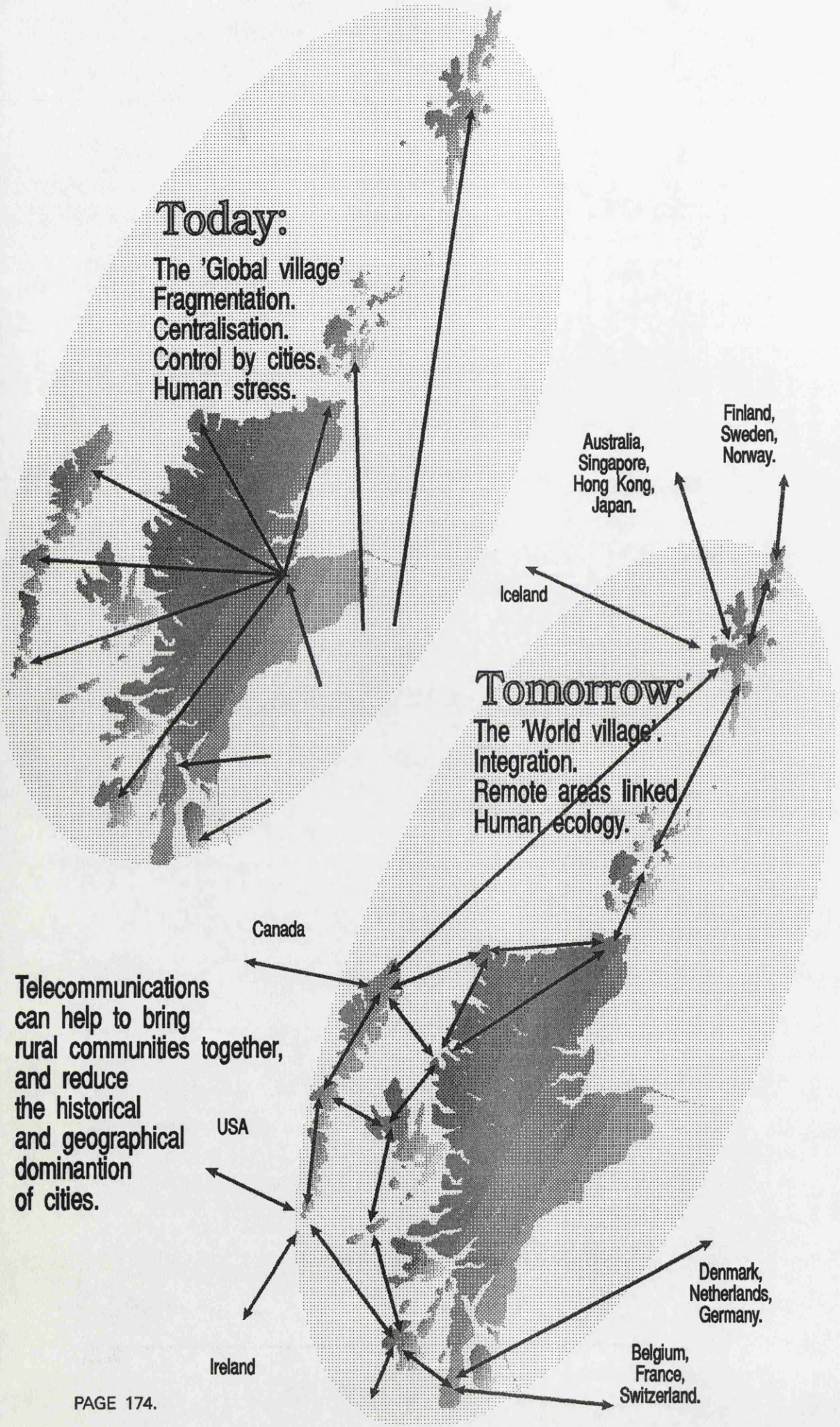
Refer to paragraph 71. Emigration of the young and city life.

Refer to section 12.2. A University of the Highlands and Islands.

A more politically acceptable approach would be for Local Enterprise Companies to offer all school leavers a grant to cover the extra cost of ISDN-2 above a normal domestic telephone. This would be particularly beneficial to encourage the young to stay in the remoter areas. This could be expanded to community teleservice centres and individuals and eventually to all buildings in areas of particular employment difficulty. Integrated with this provision, and a necessary part of any success, would be training and support through the start of the University of the Highlands and Islands. Telecommunications does not remove the need for a high quality physical transport network.

An integrated approach is required; advanced telecommunications, demonstration, training and support in its use; a university network; and a physical transport network. Fragmentation will not work in rural areas.

Diagram 13. The way forward.



523. World trade and 'citizenship'.

Patrick Geddes in Cities in Evolution in Marshall Stalley, Patrick Geddes: spokesman for man and the environment, Rutgers University Press, New Brunswick, 1972, pp.192-193.

Patrick Geddes refers to the 'wander-year' of the young craftsman, *"For here was a great process of education; in fact one of the very greatest of democratic movements in the history of education, ..."* It was not a search for employment as in today's 'mobility of labour'. It was a system of education organised and supervised by the craft-guilds with considerable correspondence and co-operation. The world nature of telecommunications could prescribe to a network of world teleservice centres that could organise such travels for the youth of their local areas. Such experience would expand the knowledge and understanding of the 'world village' and re-open trade between the rural world. To gain these advantages teleservice centres must be available in every community throughout the Highlands and Islands.

524. A wealth of experience and diversity.

Community teleservice centres: training and education in rural areas, Athens, Greece, 20-21.4.92, CTSC International in cooperation with Commission of the European Communities, Greek Telecom Organisation, Odense University, Denmark. Interview with Caroline Hay who attended the symposium.

Norway has conducted more than fifty community based technology experiments; Finland has 70 Community Teleservice Centres; Denmark has made a much larger investment and by taking a flexible approach to meet changing market needs have established self supporting business that still offer some community facilities; the United States has fully accepted the many advantages and the necessity for teleworking. There is now an abundance of knowledge and technology available to solve the difficulties of rural areas. The difficulty is in assembling the most appropriate combination from the diversity of examples throughout the world. It is this diversity which is the significant feature of Community Teleservice Centres and which makes the appropriate choice critical to success.

525. The way forward.

Refer to Diagram 13. The way forward.

JB Priestly, 'An introduction to information technology: the telephone: birth of a technology', BBC2, 9.3.91.

The low density of rural populations requires a full scale integrated network of all the facilities to all of the population. The provision of an incomplete network is unlikely to provide significant benefits and, as with the incompleted £16 million ISDN-2 network, is a waste of resources. Further small scale pilot or experimental programs are unlikely to provide the answers to remaining difficulties since they are unlikely to be completed before the present conditions have changed and the opportunities now available have been lost.

The theoretical removal of geographical limitations are not being realised due to the limited availability of the network and the failure to equalise the provision to all.

JB Priestly remarked upon the bewilderment of the two worlds which the telephone introduced, its ability to circle the globe in spite of frontiers, passports, customs, armies and political disagreement. That bewilderment has not been overcome and the new opportunities to trade without bounds is not being realised.

12.5 The Action Plan.

The following action plan for rural areas is recommended:

1.0 Seminar/workshop of decision makers.

'The Problems in Rural Areas', a report of recommendations arising from an inquiry chaired by His Grace the Duke of Westminster DL, Business in the Community, 9.92.

An action seminar/workshop between the decision makers of the businessmen of the Duke of Westminster's rural report, The Scottish Office, The European Commission, Highlands and Islands Enterprise, Highland Regional Council, Western Isles Council, Northern Isles Council and Strathclyde Regional Council with the following aims:

1.1 To finance a Community Teleservice Centre Trust.

1.2 To finance a Community Land Trust.

Refer to land trusts in USA:

David Groome, Land Trusts: the conservation potential, ECOS 12(1) 1991.

1.3 To animate British Telecom, Mercury Telecommunications and the European Commission to replace the inadequate ISDN-2 provision with a full ISDN-2 network that is guaranteed to be immediately available to everyone in the Highlands and Islands. The European Commission to make available a full time satellite channel. If British Telecom are not prepared to complete the network within twelve months a third trust should be set up with the necessary legislation and finance to provide the telecommunications that are necessary, and conditional, for the future of the region. It may also be worth investigating the massive duplication of telecommunications already installed in the Highlands and Islands.

2.0 Reutel Conference. A Reutel Conference to be held with the following aims:

2.1 A campaign to encourage new users of Reutel with the aim of involving as many non-decision makers to be involved as possible.

2.2 To set up a Community Teleservice Centre Trust financed by 1.1 above.

2.3 To set up a Community Land Trust financed by 1.2 above.

3.0 Community Teleservice Centre Trust. The Community Teleservice Centre Trust is to have the following general aims together with those that may be determined and defined by the conference in 2.0 above:

3.1 To progress the provision, training and support of a network of Community Teleservice Centres covering all of the communities in the Highlands and Islands.

3.2 To encourage, and link up with, a world network of Community Teleservice Centres.

3.3 A teleworking marketing network that will match clients to available skills. Also identify and build appropriate new markets and liaise with the provision of the necessary skills and resources to service those markets.

3.4 The integration of the resources of continuing education and training, as two distinct and separate requirements, across the whole range of life from infant to the elderly.

Refer to section 12.2. A University of the Highlands and Islands.

3.5 As an integral part of 3.4 the establishment of a 'University of the Highlands and Islands'; a network of all the population of the Highlands and Islands, an integral part of the local way of life and not 'buildings' at particular 'college' centres.

3.6 In conjunction with 3.5 to link into the European network of excellence and thus ensure involvement in the latest research.

Refer to paragraph 260. Networks of Excellence.

3.7 To ensure that the Highlands and Islands are part of the first European Broadband applications and a full network established as an urgent priority.

Refer to paragraph 256. Broadband Telecommunications.

Refer to paragraph 257. The application of broadband.

3.8 The establishment of the Community Teleservice Centre Network as a community information provision.

3.9 The establishment of the Community Teleservice Centre Network as a conferencing facility between rural areas to enable the 'force' of rural areas match the 'force' of conventional cities.

3.10 The establishment of Community Radio as an integral part of the Community Teleservice Centre Network, and the University of the Highlands and Islands Network.

The researcher is already involved in the establishment of Community Radio.

3.11 The investigation of community television as an integral part of the Community Teleservice Centre Network.

'Community TV wins channel six' in Australia, International Broadcasting, 10.92, p. 11.

3.12 As a priority over all other factors to encourage the local 'way of life'.

3.13 To integrate resources with the Community Land Trust.

4.0 Community Land Trust. The Community Land Trust is to have the following general aims together with those that may be determined and defined by the conference in 2.0 above:

4.1 To function in a similar way to the National Trust for Scotland, or land trusts in the USA, although with different aims.

4.2 To secure all Highlands and Islands estates that become available in their entirety.

4.3 To animate individual communities both new and existing into controlling and managing the land for the benefit of all the population of the Highlands and Islands.

4.4 To sow the seeds of 'ecovillages'.

Refer to section 11.3 The 'Seed'.

4.5 To animate the effectiveness of the 'ecocity' formed from the network of 'ecovillages' enabled by the 'mediators' and the Community Teleservice Centre network.

Refer to paragraph 458. Cities as a group of villages, 'telecommunication villages' and a rural 'ecocity'.

4.6 To establish a high quality transport network to complement the telecommunications and 'ecovillage' network.

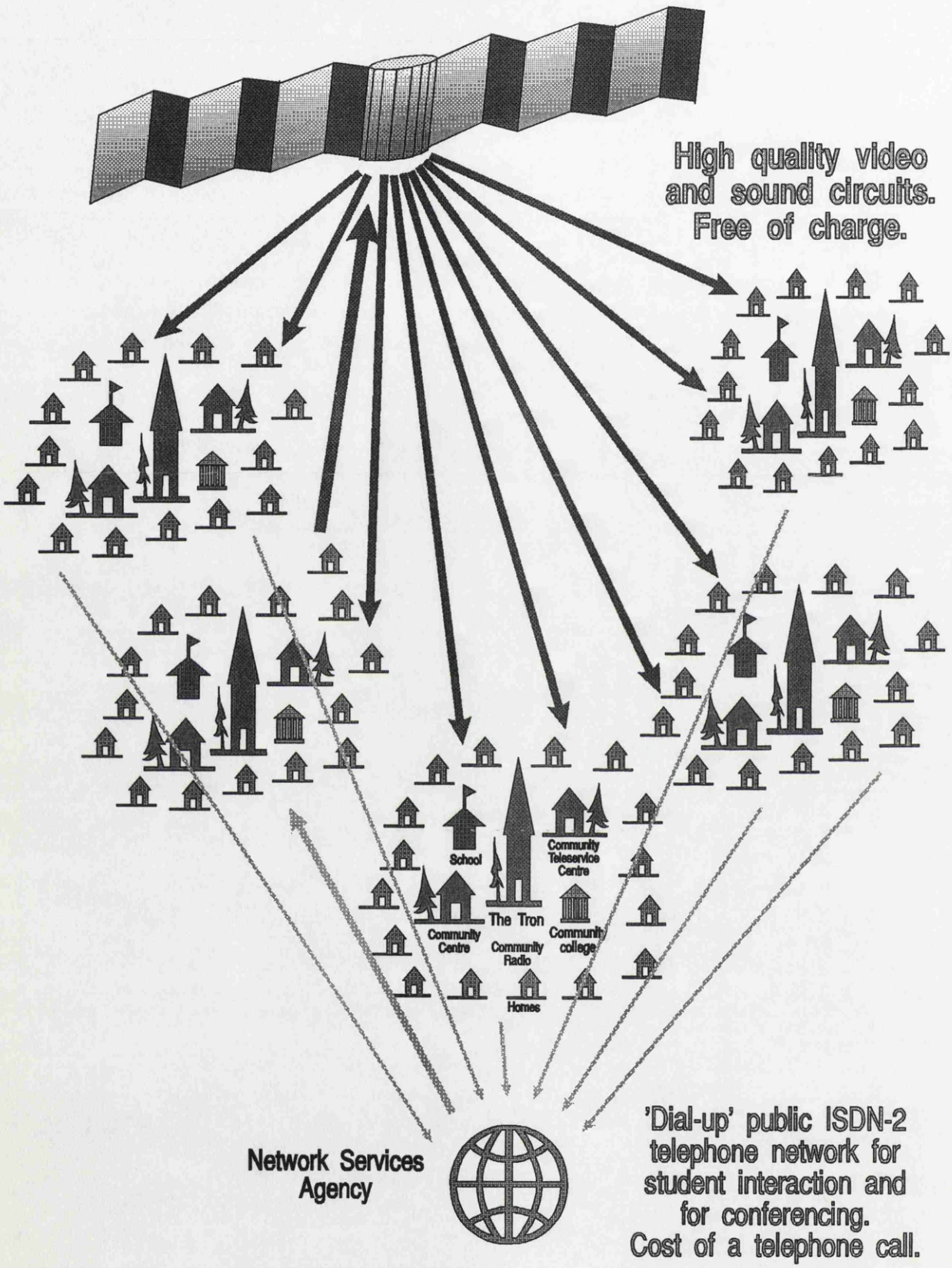
Refer to paragraph 460. The importance of rail or advanced transport systems.

4.7 To integrate resources with the Community Teleservice Centre Trust.

5.0 Integration. The total population of the Highlands and Islands is smaller than a conventional city and therefore the size of rural communities are too small to follow the fragmented provisions of conventional cities.

Refer to paragraph 87. Integration of work and leisure.

Diagram 14. The integration of resources.



5.1 The administration of rural areas under conditions dictated by cities are possibly the single most important reason for the demise of rural areas. It is therefore conditional for the way forward of rural areas that all resources are integrated.

5.2 School, community centre, recreation facilities, teleservice centre, shop, post office, cafe, local clubs, transport, the 'tron' and any other community facility should be one provision to maximise the 'social life' of these small communities.

5.3 Integration will also maximise the benefit from the resources that are available.

5.4 Integration should guard against top heavy administration that finds integration impossible. It is an integration of the use of the resources and the 'liaison' of the administration aided by the telecommunications that is required.

6.0 Urgency.

Wars of sovereignty, nationality, religion and resources which provide the excuse for men to indulge in their animal instincts could annihilate us first.

If rural areas are to regain a place in the way forward of humanity, such an action plan is of the utmost urgency. It is a war of time before the power of the fragmented cities finally annihilate all diversity which must inevitably result in the rejection of humanity by Gaia.

12.6. A change of view.

526. The Highlands and Islands as a playground.

Refer to paragraph 6.4 'Western' fragmentation.

Refer to Diagram 14. The integration of resources.

Ironically the Integrated Services Digital Network has been fragmented by poor implementation.

Whilst the Highlands and Islands avoided the pollution and evils of the Industrial Revolution it suffered the side effects of depopulation and clearances, and has failed to find an economic base for its future. This view of the Highlands and Islands tends to emphasise its negative aspects, and reduce it to the level of tourism as a playground for the urbanised areas of the world. The Highlander often uses the phrase 'no problem'. The Highlands and Islands, can now build upon its attractive position by making good use of the communications revolution. Wisely used, it can bring benefits without the destructive elements of the past Industrial Revolution. To achieve any benefit from the new technologies, and the limited resources in a region of sparse population, it is essential to overcome fragmentation by integrating the provision.

Integration in small communities can provide additional social benefits as well as a maximisation of the use of the resources.

527. A new perspective, opportunities already exist, an unstoppable vision.

This study has attempted to change the negative view to a new perspective, to use the opportunities that already exist, to realise an often talked about dream of a University of the Highlands and Islands in such a way that it will also produce a Renaissance; a Renaissance in which the Highlands and Islands could suddenly become the envy of the world.

All that is required is a small step and the rest will be unstoppable.

There is a way for that small step to be taken .....

A Festival 2001 to be organised by the Royal Society for Arts provides an opportunity to 'sow the seeds' of the 'ecocity'.

The 'ecocity' telecommunications network enables the organisation of a massive 'youth exchange' between the communities of the world in which they become part of the way of life of the host community.

A celebration to mark a change from the fragmentation of materialism to the integration of 'world understanding'.

A celebration of the continuing use of the network for the 'trade' of human knowledge in the maturing of the neighbourhood relationships of the 'world village'.

Refer to paragraph 216. The 'global village' and the 'world village'.

Refer to paragraph 87. Integration of work and leisure.

CHAPTER 13

CONCLUSIONS

NETWORKS, COMMUNITY TELESERVICE CENTRES,

THE 'ECOVILLAGE' AND THE 'ECOCITY'.

Scene II. The Awakening.

"The same setting as in Act I, but the objects, the walls and the atmosphere all appear incomparably and magically fresher, happier, more smiling. The daylight penetrates gaily through the chinks of the closed shutters."

Maurice Maeterlink, The Blue Bird, Methuen, London, 1933, (1909) p.114.

The Highlands and Islands: continuing from the beginning:

"They naturally helped one another and at certain times - say, at the peat-cutting - they voluntarily joined forces and worked in squads, and these were usually the happiest times of all. In short, you had a true balance between the maximum freedom of the individual and the common welfare of all, and at the same time ... they had no bosses, no tyrants, no bureaucrats, no profit-drivers among themselves ... "

"Our minds quite naturally take the next step and say; if we could get our society today, with the machine, working after the old pattern ... then once more the life of the folk would be warm and rich and thick ..."

Neil M Gunn, The words of Tom in 'The Serpent'.

13.1 Change

528. Change and cities.

Refer to paragraph 348. Change, quality of life, knowledge and the civilising force.

The most significant aspect of the world today is 'change', and this change can often be related to a revolution in telecommunications. The history of the world is a history of cities, and cities are considered to be a civilising force. The traditional city is a large dense population, necessary to achieve the interaction of human knowledge. It is now possible to have this interaction through advanced telecommunications without the social difficulties of dense cities. The new technologies that are the product of the industrialised metropolis could offer a new social and environmental way forward that, in some ways, picks up where the Industrial Revolution began.

13.2 Answering the questions.

Refer to Section 1.6 'The questions to be answered'

1. Can the accelerating change of today be guided positively?

Chapters two and three 'The social and economic changes in the Highlands and Islands' illustrated some of the changes taking place. Chapter four 'The British Fisheries Society and the Hydro Board' illustrated that guiding the way forward positively is possible and requires a single minded determination against opposition, fragmented views and the fear of change. These chapters along with other historical examples throughout the text have shown the valuable role of history in making decisions now.

2. Can new technologies (that are fuelling change), be used for the benefit of local people in rural areas?

Chapters 7 'Technological change' and 10 'The current trends' have illustrated how the new technologies can both benefit and disadvantage rural areas. Teleworking can be appropriate to the rural way of life, it needs to be encouraged at the same time as addressing the possible negative social impact. In the absence of a suitable current trend Chapter 12 'Establishing a new settlement pattern' offers one possible way forward.

3. Can the ownership of land be turned into a positive asset?

Chapter 11 'A model and hypothesis for a new settlement pattern' has illustrated one possible way of using land to benefit rural areas. A 'political will' is required which, with the current fragmented view and the power invested in the present landowners, may be difficult to achieve. A land trust is suggested as one way of approaching the increasing demand for change.

4. Can the integration of land ownership and the new technologies (which are the outcome of the fragmented Industrial Revolution), with the way of life and the assets of rural areas produce a settlement pattern of beneficial human ecology?

Chapter 6 'Global change' noted the dangers of fragmentation to human well being. Chapter 10 'The current trends' was unable to identify a settlement pattern that was likely to evolve an improvement in human ecology. Chapters 11 'A model and hypothesis for a new settlement pattern' and 12 'Establishing a new settlement pattern' have offered one possible way forward to evolve an improved human ecology.

5. Can human ecology achieve a world 'Eutopia' of understanding between the world's communities?

Refer to paragraph 216. The 'global village' and the 'world village'.

Chapters 6 'Global change', and 7 'Technological change' have shown that there is a 'global force' of cities and corporations which have a dominating power of their own. These two chapters have also shown that this new 'global power' has no concern for national boundaries and has forced politicians into accepting the 'Global Village'. Chapter 8 'Settlement change' has illustrated some possible trends which along with the hypothesis in chapter 9 'Change in the decision making structure' guide the way forward to a 'World Village'.

13.3 A self determined way forward.

529. The way forward.

Refer to paragraph 394. The Mediator Hypothesis:

Whilst an idea has been germinating throughout the period of the study it is only during the last stages that the true nature of the hypotheses have appeared. There is therefore a need for a continuation of the study on a larger scale, and in particular the philosophical issues required for the 'mediator hypothesis'. For the decision makers the study will have achieved its original intention if their attention is drawn towards section 12.4 'Recommendations to begin the way forward' and 12.5 'Action Plan'.

530. An integrated social and economic structure.

Refer to paragraph 218. Trade, the 'global village' and ISDN.
Refer to paragraph 279. Technological change and rural opportunity?
Refer to paragraph 161. A form of energy by itself is not enough.
Refer to paragraph 452. Settlements in 1100, a network of planned towns, 160 years of prosperity.
Refer to paragraph 453. Decentralisation of administration, characteristics of the planned towns.
Refer to paragraph 468. A network of small settlements.

Telecommunications could enable an advanced trading network to exist in rural areas that could achieve an integrated social and economic structure that is appropriate to the local way of life. Telecommunications could bring remote rural communities together for mutual benefit, and this could provide the communities with a future centred on themselves rather than a distant administrative city. Teleworking like the installation of the ISDN-2 network is insufficient on its own. A complementary advanced transport network, and a University support network are also necessary components of an integrated way forward.

531. Power of the cities, telecommunications as a service provision.

Refer to paragraph 227. The power of a 'global city network' leaving rural areas behind.

Refer to paragraph 313. Increasing the social divide.

Refer to paragraph 154. Hydro-electric and the 'social clause'.

The power of the cities is so strong that nothing short of advanced telecommunications as a service provision is likely to be effective; similar to the Hydro Board's provision of electricity on a social basis to every rural home. The aim should be similar to the French mintel system to provide a terminal in every home and comprehensive facilities in every community centre.The improvement of the rural perspective can only come from within the communities, for which every means of support will be required to combat the force of the cities.

532. Potential for the future.

Refer to Diagram 15. The integration of resources.

Refer to paragraph 87. Integration of work and leisure.

Refer to paragraph 290. Wide ranging change.

Refer to section 12.2. A University of the Highlands and Islands.

With the aid of telecommunications, the fostering of the way of life of the Highlands and Islands, provision for the young, and the resources of energy, water and desirable environment, there is a future with great potential. A 'knowledge base', integrated with a new settlement pattern, may provide the information and research resource that has been lacking for so long. The apparently enormous rate of change of the present age could provide the opportunity for a visionary approach, and the combination of the Highlands and Islands and new technologies could enable the visions of Patrick Geddes to once again lead the world. Let the rural areas show the cities a human way forward.

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is the consciousness of healing"

Ernest Holmes, Science of Mind in March 1991.

" ... the Science of Mind,
which is what we are beginning to peep into,
is trying to find out something about the very best mind,
that of genius, and, behold,
it turns out to be the most childlike of all."

Patrick Geddes, 'Sunday Talks with my children', in Patrick Geddes, 'Cities in Evolution', 1949 edition, p. 213

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Crofter Housing
Department of Economic Development and Planning. (NESDA)
Edinburgh University
Fine Arts Commission
Glasgow University

Highland Regional Council.
Highlands and Islands Development Board. now
Highlands Enterprise Company.
Institute of Housing
Inverness Architectural Association
National Federation of Housing Association
National Monuments Record
National Trust
Northern Studies Centre, Caithness and Orkney.
Royal Incorporation of Architects in Scotland
Rural and Islands Housing Association
Rural Forum
Sabhal Mor Ostaig
School of Scottish Studies
Scottish Community Education Council
Scottish Council Development and Industry.
Scottish Crofters Union
Scottish Federation of Housing Association
Scottish Homes
Scottish Landowners Association
Scottish Society for Northern Studies
Shelter
Strathclyde University
Traditional Thatched Society of Tiree

APPENDIX 1

"There are two ways
nowadays
to find your livelihood;
The conventional way is to look at all the slots
designed by those who have worked out their life before
and choosing one of these,
to endure the maze of expectations
designed to shape you into it as well.
This is the way of those who are content
to have their livelihood sustain
what little else of their life remains.
The unconventional way is to look into yourself,
to nurture what you find most worthy there,
and to grow it into some of the unfilled space
that others have not pre-destined.
This is the way of those who are not content
'til their livelihood and life are one."

Robert Frost in Science of Mind, March 1991, p111.

A1.1. EC Initiatives:

Around 40% of the EEC's research and development effort is directly related to telecommunications and information technology.

533. EURONET: Mid 1980's. PSPDN, Packet Switched Public Data Network, completed throughout Europe, with distance independent tariffs.

534. RACE: Research and Development on Advanced Information Technologies in Europe. 100 million ecus pa. Work on the Broadband network.

AGORA: A Great Opportunity for Rural Areas

BARBARA: Broad Range of Community-based Telematics Applications in Rural Areas.

APTITUDE: Advanced Platform Technologies in Teleworking for Underpining a Decentralised Economy.

VERA: Video Environment for Rural Areas.

535. ESPRIT: 1984 European Strategic Programme for Research and development in Information Technologies. A ten year programme. 360 million ecus pa.

536. ESPRIT II: Total budget 1.6 billion ecus. Investment in harmonisation, deregulation and new protocols such as X-400. Also videotex standardisation of the four different systems.

537. STAR: 1986. Improving access to advanced telecommunications services in certain less favoured regions of the EEC.

538. STAR II: Under preparation.

539. DELTA: 1988. Developing European Learning Through Technological Advance. 20 million ecus in1991.

SMILE: Small and Medium-sized enterprises Infrastructure for distance Learning Experiments.

FARMERS: Multimedia Distance-Learning for Farmers and Rural Development.

540. COMETT: 1987. Community action programme for Education and Training for Technology. 60 million ecus.

541. COMMET II: 200 million ecus. To encourage European cooperation between industry and education/training.

542. DRIVE: 1988. Advanced technologies in road transport. 58 million ecus for 4 years.

543. AIM: 1988. Advanced Informatics in Medicine. 20 million ecus for 3 years.

544. IMPACT: 1984 Community Projects in the field of information. 21 million ecus in 1990 including use of the Euronet-Diane system. Development of expert systems to link different, normally incompatible, IT systems in ways transparent to the user. Also, friendly end user terminals and software development.

545. INSIS: 1982 Inter institutional Information System. 7 million ecus in 1990.

546. CADDIA: 1985 Use of telematics for Community information systems concerned with imports/exports and management and control of agricultural marketing organisations.

547. TEDIS: 1987 Electronic transfer of commercial and trade data. 4 million ecus for 3 years.

548. ORA: 1989 Opportunities for applications of information and communications technologies in Rural Areas. R & D with pilot actions in tourism, agriculture, rural business studies, distribution and transport scheduling, and in Public and Community services. Not yet approved. The first real attempt for rural areas. *"Given the sums of money being spent in this area by the EEC, and the importance of the telecommunications-IT issue for the future of rural areas, this must be seen as a very serious set back."*

RADIO: Rural Delivery of Information and Organisation.

BIRD: Better Infrastructure for Rural Development.

MITRE: Market Implementation of Teleworking in Rural Environments.

PATRA: Psychological Aspects of Teleworking in Rural Areas.

RUTOTEL: Telematics Applications for Tourism and Leisure in Rural Areas.

MEDORA: Typological Mapping of Mediterranean Rural Areas.

DIAMMS: Distributed inter-regional Agritourism Multimedia Management Systems.

RUDA: Rural Telematics Systems Database and Management.

ANA-GO: Analysis of Ongoing Rural Development Projects involving Telematic Systems Use.

CORD: Project Coordination.

ARTISAN: Evaluation of ORA and other Rural Telematic Applications.

Another twenty six projects awaiting resources.

549. EUROTRA: Machine Translation systems.

550. DOSES: Expert Systems for Statistics

551. ECHO: Commission's Database host.

Green Videotex systems: Irish videotex system for farmers.

552. AGRILINE: German agricultural system.

553. TELE-AGRA: Includes videotex service in Spain.

554. STAR:

A1.2 A future based on cities

555. Japanese information networks. 'Fourth Comprehensive National Development Plan'

Since 1979 a programme called 'one village, one product', has encouraged each community to develop their complementary aspects rather than to compete. Information networks, in economic, cultural, and educational fields have been developed for the ordinary people as well as for specialists:

Tsukaba Science City 1970's.
Ministry of Posts and Telecommunication, videotext, CATV, VAN, 1982.
Teletopia project, 1982, Ministry of Construction.
Technopolis Information Network System (INS) based on the New Media Community Concept, developed by the MITI since 1984.
Advanced Information Metropolis Project 1986.
Intelligent City Plan, hardwiring of Kawasaki.
Greentopia project, Ministry of Agriculture, Forestry and Fisheries.

556. COARA, Oita Communication and Information network. COARA, Oita Prefecture personal computer and word-processor telecommunication network, initiated by the 'Compu-nication of the Oita Amateur Research Association', established in 1985 at the Local Economy Information Centre. Communications with debates and online conferences. More than 50% of its members are outside the local network, 20% in Tokyo. Overseas members are increasing constantly. Many other similar networks in Japan now follow this innovation.

557. Toyonokuni Information Network (TIN) TOYONOKUNI INFORMATION NETWORK (TIN): Government provided, installed in March 1990 allows rural areas to use the system at the same cost as the inner city. (200 yen per hour, 10 to 50 times cheaper)

558. Global Toyonokuni program GLOBAL TOYONOKUNI PROGRAM ('The fertile and abundant country') includes an information network launched by the Oita Prefecture, cheap access to Japanese and foreign data bases, and a new type of communication community through computer networks. Supported by a 'Soft Park' in Oita City of technological support facilities and information base with the Technoiopolis located beside the airport, as a nucleus. The region to region ties being created by Oita can also create international bonds within countries, even those that are in international dispute. This is well illustrated by links made with Russia who are in dispute over ownership of islands.

A1.3 A future based on rural areas: teleservice centres and telecottages.

559. Bruetel. BRUETEL: A local school project in the bilingual Outer Hebrides of Scotland, a remote, rural, crofting community.

Contact: Kenneth A. Matheson, Computer Resources Coordinator for Schools, Western Isles Council Education Department, Council Buildings, Stornoway, Isle of Lewis, Scotland.

560. Rurtel. RURTEL: A project run by the Arkleton trust in the Highlands and Islands offers computer conferencing facilities at low cost for voluntary, educational and representative groups scattered throughout Scotland, as well as for the Trusts own research Group in Europe.

561. Pirate. PIRATE: 'locally relevant' databases that can be used at local libraries for searching by un-trained users on a visual display screen, without the need for a key board.

Contact: Mrs Marilyn Dover, PIRATE, Devon Library Services, Barley House, Iselworth Road, Exeter, Devon EX4 1RQ.

562. Grassroots GRASSROOTS: A videotext service to the rural areas of Manitoba:

- electronic mail
- electronic banking
- teleshopping
- news
- weather
- crop data
- consumer information
- education materials
- transportation schedules (airlines, trains etc)
- special interest groups

In Canada there are just under two thousand households accessing this commercial information database for farmers. The total number of paying subscribers is 1700.

563. Telehouse. TELEHOUSE: In Sweden and Denmark 'Information and Community Service Centres' have been established to provide isolated village communities with commercial and private access to telecommunications services, satellite television, teleshopping, and interactive citizens advice services.

Lars Qvortrup: Associate Professor at Telematics Project, Odense University, Denmark. Butterworth, 1989, pp. 59-68.
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'Tele-cottages for less developed countries -IT services for rural communities', Honolulu, Hawaii, 2.1988.
'Tele-cottages: Scandinavian information and community service centres for rural communities', Dublin, 4.1988.
'The Nordic tele-cottages: superficial versus real decentralisation', Madrid, 5.1988.
'Det levende eller det dode samfund' The living or the dead society: New ways in the organization of information technology. Copenhagen, 1988
Qvortrup, L.'Community Teleservice Centres and the Future of Rural Society'. Paper CPF Conference 'Community Development in Europe: Towards 1992' Swansea 9.1989.

'Harjedalens telestuga',Vemdalen, a small rural village with 800 inhabitants, which is 125 Km from the nearest town Ostersund with 50,00 inhabitants and 400 Km north-west of Stockholm. Six basic services are provided:

Information retrieval
Consultancy service
Distance working
Training and education
National and international communications
An electronic village hall.
'Telestuga's' living room:
Centre for local community's cultural and political life.
Interactive videotext from local municipality and municipal library.
Watch television, discuss local politics, online access to relevant information, long-distance video, meetings with interest groups in the community of Harjedalen, of elsewhere in Sweden.

564. Teledev. TELEDEV has chosen to be accessible to the general public: minitel; not to become a data bank; let the quality of its members count for more than the mass of data in its memory.

565. Eurocom. EUROCOM: A development of the The Swedish COM system, now used by the EEC, and other commercial systems are available as well.

566. Teleservice centres in 1988.

'FILINFO' the news letter of FILIN the association of Nordic Telecottages.

Anders Larson, Olaf Rieper, Regis Blais. 'Brug af informationsteknologi', Copenhagen 1988.

Lise Busk Kofoed and Gitte Marling 'Ting ta'r tid',Aalborg 1988. Per Hetland, 'The use of new communication technologies as a strategy for rural development' VIIth World congress for Rural Sociology Bologna 1988.

Denmark: 3 in Lemvig district, 4 in Egvad district, 1 in Ravnsborg on Fejo Island of 700 inhabitants. A government grant of 11m Dkr was made towards the costs. Run as public institutions, free or low priced.

Norway: at Vardo, Vadso, Dyroy, Hamaroy, Dovre, Gjesdal, Forsand and Jevnaker more in 1988-89. Run as profit making bureaux.

Sweden: Vemdalen, Ammarnas, Umnas, Overtornea, Venjan, Ockelbo, Burgsvick and 20 more to open in 1988-89. Run as consultancy firms or within folk high schools or part of a municipal undertaking.

Finland: Pello, Kuusamo, Ruvaslahti, Kontiolahti and 2 more planned.

567. Services Provided by the Nordic teleservice centres:

Information Services,
Data-processing,
Information technology consultancy,
Distance working facilities,
Training and education;
Open University type on line tutorials,
Telecommunication facilities,
Village Hall facilities.

A1.4 Change in the decision structure:

568. Changes in town planning.

Dr. Derek Lyddon summarises some of the changes in 25 years of towns and cities:

Conservation and renewal
Stability, changes in social structure and our understanding of the future of work
The understanding of the city as a social and economic system [and environmental]
Accepting diversity and the 'happy accident'
Flexible policy plan
Encouraging self-help initiatives
Planning process as a result of participation
A mixture of uses for social diversity
Mistrust of model based planning
Qualitative concerns (as opposed to Quantitive methods)
Corporate view and product from a wide range of disciplines
The discovery of order in existing diversity
Electronic technology
Expensive energy
Quest for decentralisation
Roles of experts questioned
Municipality acts as civic entrepreneur
Municipal marketing: invest in success.

569. Berlin: Recommendations for the future.

Dr. Michaele Schreyer, Senator for Urban Planning and Speech. 'Valid is the spoken word: Ecological perspectives of the development of Berlin

The identity should develop out of the overall structures of the built and natural environment. Their typical features and qualities should be maintained and safeguarded.

In the further development of settlement structures, efforts should be made to achieve a balance between the spatial allocation of all basic functions and ecological acceptability.

As the demand for building sites increases, a more effective utilization and qualitative improvement must be given priority over development beyond its present limits; any harmful development in the surrounding area must be avoided. A conscious area management.

The functioning of the ecological balance, leisuretime and recreation potential must be safeguarded and improved. This requires the development of a system of free spaces along the lines of a network.

Traffic must be adapted to the needs of the environment and of the city. Thus, priority must be given to the development of local and long-distance rail transport.

The identification of the population with future development will depend on whether the population is involved in the decision-making process.

Preference to intensive use of space and infrastructures rather than using additional space,

Preference to the establishment of larger services and office buildings close to good public transport facilities,

Examination of environmental viability, no building on ecological compensation areas,

Preferential promotion of projects requiring little space, using little energy and water and producing low quantities of waste and harmful substances.

Protection of valuable ecosystems. and the protected areas for soil, water, nature and landscape.

A major German periodical August 1990.

"It will be decided now what the German Metropolis now growing together will be one day: a stone moloch or the serene heart of Europe."

570. Newton and Taylor model.

Some of the results of a specific testing of the Newton and Taylor model on Melbourne:

P Newton, M Taylor, 'Probable urban futures' in John Brotchie, et al ed., 'The future of urban form', Croom Helm, 1985. pp. 329-333

Employment is shown to change in a ten year period to:
a loss in secondary of 67%,
a loss in tertiary employment of 46%,
an increase in quaternary of 250% from a small base,
an increase in quinary of 13%.

An increase in income differentials and the polarisation and spatial segregation of the population.

Increased availability of television and videotext information technology tends to suppress living space requirements.

Living space is dominated by the cost of oil.

Telecommunications technology tends to increase living space requirements for particular groups of home based telecommuters who can move to cheaper land and build larger houses.

Computer technology appears to exert no influence but probably because of the definition.

Telecommunications reduces business-related trips and work space rather than shopping and leisure trips.

Transport is related to the cost of oil rather than telecommunications.

Leisure space in residential areas is reduced by the increasing leisure time with new technologies within the house, resulting in:

Denser less-dispersed development and increased centralisation at metropolitan level, even with reduced oil prices.

571. Change in human thinking?

Patrick Geddes Summer School 1991.

Robert Sheldrake, William Irwin Thompson.

Graham King, 'The Darling Buds of May'. The Planner, 10.5.91. p. 6.

Rupert Sheldrake, 'Rebirth of Nature', Resurgence, September 1984.

WI Thompson, Imaginary Landscape, St. Martin's Press 1989.

Graham King at the Patrick Geddes summer meeting noted that he had observed a remarkable coincidence in the way of thinking of about eight new books that had appeared on his desk in recent months. This thinking also related to a common occurrence in the theme of many speakers at recent conferences. This could be simply the effects of the mass media or it could be a significant change in human thinking; either way, it points to a change. This thinking is not new; both Patrick Geddes and Lewis Mumford, amongst several others, had similar views that were overshadowed in the rush for western 'progress'. Perhaps these people were before their time and the world was not ready for such thinkers. It is interesting to consider that these 'thinkers' emerged at the last turn of the century and there was a similar renaissance in thinking at the end of the eighteenth century.

572. The information nervous system of the 'whole earth' being, handyman for the earth.

Lewis Thomas.

There is a revolution in human thought that we are part of the nervous system of the whole earth, and consequently, our own lives depend upon the ecosystem of the 'whole earth' in which we live. We are now *"in charge, running the place, for better or worse."* Lewis Thomas offers a view of ourselves as *"Handyman for the earth,"* indispensable elements of nature. Cities and Nations are like committees. Nations are solitary, self centred and withdrawn into themselves. Man has not learned how to stay human when assembled into masses.

573. Western society in the 1880's, 'Hunger' was the driver.

Edward Bellamy, 'Looking Backward'. W.Foulsham and Co. Ltd, Ln. pp. 9 - 11.

"I cannot do better than compare society as it then was to a prodigious coach to which the masses of humanity were harnessed and dragged toilsomely along a very hilly and sandy road. The driver was Hunger, and permitted no lagging, though the pace was necessarily very slow. Despite the difficulty of drawing the coach at all along so hard a road, the top was covered with passengers who never got down, even at the steepest ascents. The seats on top were very breezy and comfortable. Well up out of the dust, their occupants could enjoy the scenery at their leisure, or critically discuss the merit of the straining team.

574. Competition, and insecurity.

Naturally such places were in great demand and the competition for them was keen, every one seeking as the first end in life to secure a seat on the coach for himself and to leave it to his child after him. By the rule of the coach a man could leave his seat to whom he wished, but on the other hand there were many accidents by which it might at any time be lost. For all that they were so easy, the seats were very insecure, and at every sudden jolt of the coach persons were slipping out of them and falling to the ground, where they were instantly compelled to take hold of the rope and help to drag the coach, on which they had before ridden so pleasantly. It was naturally regarded as a terrible misfortune to lose one's seat, and the apprehension that this might happen to them or their friends was a constant cloud upon the happiness of those who rode.

575. Pitiless Hunger. A very distressing spectacle,

... commiseration was frequently expressed by those who rode for those who had to pull the coach, especially when the vehicle came to a bad place in the road, as it was constantly doing, or to a particularly steep hill. At such times, the desperate straining of the team, their agonised leaping and plunging under the pitiless lashing of Hunger, the many who fainted at the rope and were trampled in the mire, made a very distressing spectacle, which often called forth highly creditable displays of feeling on the top of the coach.

576. Exhortations of patience. Hopes of compensation.

At such times the passengers would call down encouragingly to the toilers of the rope, exhorting them to patience, and holding out hopes of possible compensation in another world for the hardness of their lot, while others contributed to buy salves and liniments for the crippled and injured. It was agreed that it was a great pity that the coach should be so hard to pull, and there was a sense of general relief when the specially bad piece of road was over. This relief was not, indeed, wholly on account of the team, for there was always some danger at these bad places of a general overturn in which all would lose their seats.

577. Holding on more desperately than ever. A pity but no other way.

It must in truth be admitted that the main effect of the spectacle of the misery of the toilers at the rope was to enhance the passengers' sense of the value of their seats upon the coach, and to cause them to hold on to them more desperately than before.

... it was firmly and sincerely believed that there was no other way in which Society could get along, except the many pulled at the rope and the few rode, and not only this, but that no very radical improvement even was possible, either in the harness, the coach, the roadway, or the distribution of the toil. It had always been as it was, and it would always be so. It was a pity, but it could not be helped, and philosophy forbade wasting compassion on what was beyond remedy.

578. An absolute hallucination of a finer clay.

The other fact is yet more curious, consisting in a singular hallucination which those on the top of the coach generally shared, that they were not exactly like their brothers and sisters who pulled at the rope, but of finer clay, in some way belonging to a higher order of beings who might justly expect to be drawn. ... The strangest thing about the hallucination was that those who had but just climbed up from the ground, before they had outgrown the marks of the rope upon their hands, began to fall under its influence. As for those parents and grandfathers before them had been so fortunate as to keep their seats on the top, the conviction they cherished of the essential difference between their sort of humanity and the common article, was absolute."

579. A way to the source.

'Future world' is considered to be a more positive term than 'third world'

An interesting way of understanding the deeper needs of man in his settlements was revealed in a seminar given by the Intermediate Technology Group on 'Appropriate Technology'. The future world has settlements at the embryo stage, and it is therefore possible to observe the difficulties and human desires in the most basic of cases. The question remains as to whether we are in a position to be able to understand those origins. Some conclusions from considering the experiences of the 'Intermediate Technology Group ' are:

There must be an understanding of what is needed.
Regulations must be appropriate to local circumstances.
Consultation can provide solutions.
Technology must be maintainable locally.
A local solution is better than an incomplete imposed solution.
By giving local control, anything that is of concern, will be dealt with locally.
Alternatives need proof or example.
Provision must be what people want.
Local design and consultation on equal terms brings long term solutions.
The required priorities should not be assumed.
Negotiation is possible, it is a question of working together.
No humans can operate under conditions of control and imposition.
Self determination seems to be the only way of ensuring success in the development of new communities.

A1.5. List of planned villages of the Highlands and Islands.

From Robert J Naismith, 'Buildings of the Scottish countryside', Victor Gollancz, London, 1985 p. 39.

List excludes most 19th century railway villages, industrial villages, consumer towns, and planned extensions to larger towns or villages later absorbed into large towns.

* Not listed in above: D G Lockhart, 'The planned villages', in M L Parry, T R Slater, editors, 'The making of the Scottish Countryside', and Medieval settlement and colonisation', Croom Helm, London, 1980, pp. 249-255.
+ Not listed in above: Joanna Close-Brooks, 'Exploring Scotland's Heritage: the Highlands', HMSO, Edinburgh, 1986, pp. 17-18.
# Not listed above Jean Dunlop, 'The British Fisheries Society, John Donald, Edinburgh, 1978.

	Caithness:	
ND 379513	Broadhaven +	
	Castletown	1824
ND 1359	Halkirk	c. 1790
	Latheron	18th C
ND 2435	Louisburgh +	
	Lybster	1802
ND 3650	Pulteneytown +	
	Sarclet *	
ND 384524	Staxigoe +	
	Sutherland:	
	Bettyhill	pre 1815
ND 9003	Brora	1811
	Golspie *	
ND 0215	Helmsdale	1814
	ND 0013	
	Portgower *	
	Spinningdale	1790
	Ross and Cromarty:	
	Avoch	pre 1750
	Balintraid *	
	Near Dingwall: *	Roadside and tradesmen settlements.

NH 7887	Cromarty.		
	Dornie #	c1794?	
	Evanton	1810	
NG 8033	Jeantown #	c 1794?	
	Kyleakin #	c 1794?	
	Plockton	late 18th C	
	Rockfield *		
NH 4858	Strathpeffer		
NH 1294	Ullapool	1788	
	Inverness.		
	Beauly	c. 1760	
	Fort Augustus	1754	
	Kingussie	c. 1780	
	Kyleakin	1811	
	Lewiston		
	Lochbay *	1780's ?	
	Stornoway *		
	Bute:		
	Brodick	18th C	Arran,
	Kerrycroy		
	Millport	late 18th C	
	Argyll:		
	Bowmore	1768	Islay,
	Port Charlotte	1828	Islay,
	Port Ellen	1821	Islay,
	Easdale	early 19th C	
	Ardrishaig	early 18th C	
	Inveraray	1743	
	Kilmartin		
	Lochgilphead	early 19th C	
	Salen	late 18th C	
	Tobermory	1788	
	Also of interest:		
	Perthshire:		
	Blair Atholl		
	Kenmore	1760	
	Kinloch Rannoch	1763	
	Moray:		
	Archelstown	1761	
	Branderburgh *		
	Burghead	1808	
	Covesea *		
	Cummingstown	1808	
	Dallas	1811	
	Fochabers	1776	
	Garmouth(Kingston)	1784	
	Grantown-on-Spey	1766	

Hopeman	1806	
New Duffus *		
Rothes	1765	
Urquhart	c1783	

Banff:

Aberchirder	1764	
Charlestown of Aberlouc.	1812r	
Crovie		
Deskford	after 1760	3 combined villages
Lintmill	after 1760	"
Tochieneal	after 1760	"
Dufftown	1817	
Findochty	1716	
Gordonstown	1720, 1750	
Longmanshill	late 18th C	
Macduff *		
New Buckie *		
New Keith *	1750	
New Mill *	1755	
Rathven *		
Tomintoul	1776	

Ibid. p. 251

No planned villages in the Northern Isles: A meeting of landowners discussed proposals in Lerwick and building plots were briefly offered for sale at Longhope in Orkney.

APPENDIX 2

TESTING THE HYPOTHESES FOR

A NEW SETTLEMENT PATTERN:

RECENT DEVELOPMENTS THAT AGREE WITH THE HYPOTHESIS.

THE 'ECOVILLAGE' AND THE 'ECOCITY'.

"Cities, in fact, together with the mentality that sustains them, are being rendered obsolete by networks of electronic communications."

"What a shame it would be to commit, in reverse, the individualistic follies of the Industrial Revolution. The countryside still will need to be given form - new form. I do not think, however, the new communities will just happen - or not so happily as if they are given thought."

Maurice Ash, New Renaissance, Green Books, Devon, 1987, pp. 10, 143.

A2.1 The test of history.

580. The way forward.

Refer to paragraph 216. The 'global village' and the 'world village'. for the definitions of these terms.

Part 1: 'The Highlands and Islands' concluded with changes that have a potential to reverse the long debilitating trend of rural areas. Part 2: 'The world view', outlined the strong forces towards a 'global village', the negative effects, and a possible alternative 'world village'. The concept of a 'world village' is a 'cure' of the 'root causes of the plague' of effects due to the Industrial Revolution. It is a 'mixture' of new technology, the 'advice of history', and human philosophy. Part 2 has also shown that the power of the cities and corporations makes this vision of a 'world village' 'no easy task'.

581. Testing the hypothesis.

Refer to paragraph 272. Confusion over time scales.

As this thesis is a hypothesis for the way forward only history can provide a true test to its validity. This study has become a victim of its own conclusions; some of the ideas are already being taken over by events and the conclusion that change is rapidly accelerating is by implication verified. This chapter is an attempt to review some of the most recent events which also provides an opportunity to test some parts of the hypothesis to see if it is in agreement with those events.

A2.2 The Highlands and Islands.

582. Population.

Fordyce Maxwell, 'Minister misses the third rural revolution', The Scotsman, 3.7.92.

Lord James Douglas Hamilton, minister for Highlands and tourism has recognised the increasing population: *"There are signs that we are on the brink of a third revolution, an exciting opportunity to establish thriving rural economies ... people now recognised they had a choice of where to live and many were choosing to move from the cities to the countryside."*

The Problems in Rural Areas', a report of recommendations arising from an inquiry chaired by His Grace the Duke of Westminster DL, Business in the Community, 9.92, p.16.

'Population booming!', Highland news, 18.9.92, and Inverness Courier, 18.9.92.

The 1991 Census shows that the remote rural areas are the fastest growing regions and the main cities have a decreasing population. The view is that the movement of an older and retired population is larger than the young moving out of the rural areas. The population of the Highland region has increased, principally due to migration, by 6.2 per cent to 204,004, of which 60,557 live in Inverness district. Skye and Lochalsh has an increase of 14.9 per cent. The average density is 0.08 persons per hectare compared with 0.64 for Scotland. Sutherland is the least densely populated with 0.02 persons per hectare.

583. The Black Isle Community Planning Initiative.

Refer to paragraph 201. Neighbourhood Initiatives Foundation.

The Bridge, Highlands and Islands Forum Newsletter, winter 1991-2.

In February 1992, a one day workshop was organised by Highlands and Islands Forum, on behalf of the Black Isle Community Councils, and in conjunction with Highland Regional Planning Department. Local people, who have a detailed understanding of their own communities, the broad range of local interests, and the decision-makers, were given an insight into the planning required for a revised draft of the Black Isle Local Plan. The planners pointed out the requirement for 250 new houses in the next ten years for the existing families, accommodation for single-parent families, and sheltered accommodation for the elderly and disabled close to existing services or as part of new purpose-built housing development.

584. The results.

The seven Black Isle Community Councils, school boards, hall committees, women's institutes, churches, playgroups, local health centres, the Local Health Council, local farmers and conservation and amenity groups, Highland Regional Council departments including Planning, Development, Water and Sewerage, Roads and Transport, Ross and Cromarty District Council, Forestry Commission, Nature Conservancy Council for Scotland, the Agriculture and Fisheries Department, Scottish Homes, National Farmers Union for Scotland, Scottish Landowners Federation, Inverness Architectural Association, and the construction industry.

Over 80 people and 20 agency representatives took part. The seven community council areas worked in separate groups, with ordnance survey maps of their area, to site housing. There was access to the experts and the ensured that the rules were obeyed. The result was clear and consistent ideas: the need for affordable, special needs, and sheltered housing for local people; the wish to maintain a controlled level of population increase and to take account of existing centres of population; to focus most new development on the existing centres of population and to prevent the spread of randomly scattered single houses in the countryside, to protect wild areas and local heritage; new housing to be in keeping and sensitive to the existing environment; the provision of sufficient amenities to satisfy the full spectrum of inhabitants; more local shops, adequate bus services, and more school provision. There was a strong concern over developments of inappropriate location and design, sewage disposal and drainage, and the loss of good farm land for housing. Large scale developments were totally absent from the seven community groups.

585. Views of the workshop.

One view of the workshop was that the underlying overall assumption for continued development might have been more deeply questioned. The material and process used for the workshops created some controversy, and there was insufficient time to reach a consensus. The officials were found to be enthusiastic, helpful and informative, and the workshop provided an excellent opportunity for local input and was better than a public consultation meeting. " *... even the quieter members were encouraged and could express their opinions more freely.*" Another view pointed to the population of the Black Isle in 1971 of 7,200 that was estimated to have grown to 8,000 in 1991, and one hundred years ago had been 15,000. There was opposition by all the groups to the Regional Policy of random building in the countryside. The Highland Region Convener, Duncan MacPherson and the Local Regional Councillor, Hamish Fraser pledged wider application of this type of workshop in the Highland Region.

586. Missing the point.

This workshop seems to have missed one of the main aims of the Neighbourhood Initiatives Foundation to involve the more practically minded non-articulate people in the community. Its main component was the community councils who are by definition the articulate people in the community. One day to reach a consensus is not representative of the importance of the workshop. The opportunity could be better used if it was integrated with the exhibition concepts of Patrick Geddes and with ample arrangements for continuing contributions from all of the community. A local plan workshop is to be held in Kirkhill with all of the community invited.

587. New village plan.

'Bid to block Black Isle 'village' plan', Inverness Courier, 25.8.92.

Plans for fifty houses by a landowner at Newhall on the Black Isle were rejected by 150 residents at a Resolis Community Council meeting. A vote indicated 80 per cent against and 20 per cent abstainers.

588. Strathnairn local plan.

'Strathnairn blueprint under fire', Inverness Courier, 21.8.92.

Local plan proposals for 72 houses at Croachy and Farr have been rejected at a public meeting of over 150 people. Residents Lord Gray of Contin and Sir Robert Cowan claimed that they would soon be living in a *"Wimpy estate like Culloden,"*. Entrepreneur Terry Furness of Strathnairn electronics company Furness Controls pointed out that single plot, high priced housing prevented people who needed low priced housing from living and working in the Strath. The planners said that the increasing number of single plots would destroy the rural amenity and the Government preferred expanding existing housing groups.

589. Community group.

'Group seek funds for development', West Highland Free Press, 31.7.92.

Refer to paragraph 454. Scottish towns, self-determination and clarity of vision.

A community group has been set up in Harris to identify *" ... realistic, long-term development opportunities ... "*. they believe that *"appropriate scale"* industries, providing non-seasonal permanent employment is essential.

590. Highland Community Foundation.

'New Highlands trust sets £3 million target', Inverness Courier, 21.7.92.

Refer to paragraph 124. Using the resources.

Refer to section 4.1 The British Fisheries Society 1786-1893.

Refer to paragraph 438. Thurso, Halkirk and Sarclet.

The new Highland Community Foundation plans to raise an endowment fund of £3 million to provide £200,000 in annual grants. It hopes to raise the money from expatriate Highlanders who occupy senior positions in the city and other parts of the world. This would appear to be a repeat of the British Fisheries Society and the Highland Society.

591. Community and BBC Radio.

Refer to section 5.7 Community service radio.

BBC local radio in the Highlands and Islands is being severely cut. Since its inception it has suffered from the bureaucratic control of the BBC. The minimal service it has provided will be a great loss in a region that has very little provision. This does provide an opportunity for the government to help the people of the Highlands and Islands control their own radio service. A combination of the staff who provide the BBC news service together with selected parts of Moray Firth Radio could provide a 'sustaining service' delivered by satellite to the community stations. The community stations could provide a network of source material for redistribution throughout the Highlands and Islands. Experimental stations in Fort William and Oban have overweeningly demonstrated the demand from the community for such a service. Applications are currently being made to the Radio Authority for full broadcasting licences, and these initiatives could spread to cover all of the Highlands and Islands with locally controlled community stations.

592. Gaelic and Ullapool.

Morning report, BBC Radio Highland, 4.11.92.

Ullapool, which today is not noted for its Gaelic speakers, is to have a Gaelic learning unit for its school as a result of five years pressure from parents.

A2.3 Land.

593. Loss of opportunity.

Refer to paragraph 2. Preservation and a unique land opportunity.

Refer to paragraph 98. Estate sales.

Refer to paragraph 103. Land ownership.

Refer to paragraph 104. Change in land use.

The selling of land for commercial gain is continuing to be the most marked change. The unique opportunity of the large estates to benefit to the Highlands and Islands and its people for the first time is rapidly eroding away, whilst money is being made in Highland land deals elsewhere.

594. A second Highland clearances.

David Ross, 'Historian warns over clearance in the Highlands', The Herald, 22.6.92.

Dr James Hunter claims that a grant for £2 million to plant treas on 5,000 acres of the Sutherland glen of Strath Culleannach will force the remaining people from the Strath and will not create any permanent jobs. Five jobs have already been lost by the investment, a similar development agency expenditure would be expected to create 300 jobs, and the £2 million is greater than the total land-based budget for the Local Enterprise Companies.

595. Eigg.

Gillian Harris, 'Eigg is sold for £1 million to last owner', The Scotsman, 2.7.92.

A trust of residents on the 7,500 acre Isle of Eigg lost the opportunity to return the land to the inhabitants when it was sold to its previous owner Keith Schellenberg of Cleveland and Highland Holdings, Middlesborough.

596. Lochcarron Estate split and sold.

'Wester Ross estate sale set for completion', West Highland Free Press, 31.7.92.

The last lot of a Lochcarron Estate that has been split into three by Cheshire based estate owner Alexander C Greig has been sold for £300,000 as a 7,300 acre stalking estate.

597. Kinlochewe Estate.

'Estate for sale at £2 million', Inverness Courier, 22.9.92.

The Kinlochewe sporting estate in Wester Ross of 32,750 acres has been advertised for £2 million.

598. Highlands and Islands Enterprise sells land.

'Rahoy sale boosts Highland economy by £300,000' West Highland Free press, 31.7.92.

Highlands and Islands enterprise has sold Rahoy Deer estate of 1,850 acres to Scottish Woodlands Ltd for £300,000 for them to use it principally as a sporting estate.

599. Site of Special scientific interest.

'Review demand after landowner claims £3 million', Inverness Courier, 28.11.91.

In a period of ten years the Nature Conservancy Council for Scotland has paid £50 million in compensation to landowners who have threatened to damage SSSIs. Lord Kimball is expected to claim £3.2 million to not plant trees in the flow country of Caithness.

600. Black Isle clearance.

'Question over Black Isle 'clearance' numbers', and Editorial 'Harsh approach', Inverness Courier, 18.9.92.

Conversations with with crofter and solicitor.

Broadlands Properties of Scarborough, the new owners of the 14,500 acre Rosehagh and Kilcoy estate, purchased at a reputed cost of £7 million, have made assurances that it is only eight households that face eviction and not 30 families as previously reported. The previous owners had allowed empty homes to be let to people needing a roof by ignoring a 'workers only' clause in farm leases. A consortium of tenant farmers had made a failed bid to purchase the farms.

'Boom puts pressure on Black Isle', Inverness Courier, 31.7.92.

Refer to paragraph 37. Increasing pressures from European Megalopolis.

There are plans for a *"millionaires' row"* on land sold by the new owners of Rosehaugh Estate for villas with up to 12 acres per house.

601. Assynt crofters.

Refer to paragraph 98. Estate sales.

'Assynt Estate 'land for the people' fund is launched', West Highland Free Press,31.7.92. Editorial 'Determined Crofters', Inverness Courier, 15.9.92.

Crofters in Assynt, Sutherland have made an appeal for support to purchase the 21,000 acre North Lochinver Estate which is for sale split into seven lots at an asking price of £500,000 by a bankrupt foreign property company. *" ... we believe that to give our crofting communities the best chance of surviving and prospering in the future, control of our resources - especially the land - will be our best chance."* The increase in the sale of estates to unknown owners with dubious interests has driven crofters to a change of policy. Previously they would not have considered purchasing land in the belief that they had more advantages as crofters. It is claimed that crofting legislation entitles crofters to force the purchase of the land for no more than fifteen times the annual rental if agreement with the selling agents is not reached. Wednesday, 16th September, 1992 could turn out to be very significant in *"the chequered history of land tenure in the Highlands".*

'£20,000 boost for crofters' estate land bid', Inverness Courier, 15.9.92.

Refer to paragraph 599. Site of Special scientific interest.

The North Assynt Crofters Trust have secured financial backing from Caithness and Sutherland Enterprise and Highland Regional Council. Scottish Natural Heritage has pledged support for the North Crofters trust with a grant of £20,000. The North Lochinver Estate lies within the Assynt-Colgach National Scenic Area and has a site of Special Scientific Interest at Ardvar. Three National Nature Reserves are near neighbours, and the area has high conservation value with significant bird and plant communities. The area is of outstanding natural heritage interest and Scottish Natural Heritage say they will want to advise on its management. [Refer to paragraph 555. Site of Special scientific interest.] The Ramblers' Association also gave their support in the Crofters important contribution to encourage genuine harmonious land use practices.

Bill Ritchie, Morning Report, BBC Highland, 30.10.92.

Bill Ritchie of the Assynt Crofters Trust said that the new offer by the selling agents was not acceptable because split up the estate. They have been given public money to show that crofters can manage an estate, and this would require a complete estate. The crofters want to know why the quarter of a million pounds is not acceptable to the liquidators since it has now been verified three times as a fair price and there has been no other offers to equal it. They believe that there may be other reasons other than the amount offered. Spinsters on the estate have been persuaded to sign away their right to the land and their homes upon their death.

602. Colonsay and the land court.

Morning Report, BBC Highland, 4.11.92.

In a test case the land court has found that Lord Strathcona of the Isle of Colonsay has acted as a *"feudal superior"* in his control of the access to a croft. Title deeds have been granted to the owner of the croft giving free access to the public road. Other crofters who have suffered the imposition of controls may now be encouraged to use the land courts.

603. Rural Forum Conference.

Barbara Kelly, Morning Report, BBC Highland, 30.10.92.

The Rural Forum Conference is discussing the European links that are essential for people in rural areas to take control of their own decisions as with the Assynt Crofters. Whilst the LEADER programme is designed for this purpose, the bureaucracy is far too difficult.

A2.4 Settlements Patterns.

604. Seeds in Norway and Holland.

Noted by Tony Vogt.

Refer to paragraph 469. New settlements without pre-planning.

In Norway a new settlement has been seeded with an isolated tower block. The housing and commerce are growing from this central tower of administration. In Holland the reclamation of a polder is followed by a town administration which encourages commerce and facilities by means of tax insentives for the first ten years. This is the reverse of new towns in the UK were residents are expected to exist on construction sites with no facilities.

605. Holiday village.

'Planners expected to approve £60 million holiday village', The Scotsman, 19.6.92.

Belgium based developers, Sun Parks International intends to convert 440 acres of scenic Annandale near Lockerbie, into 690 villas, two golf courses, a four star hotel and a conference centre, an aqua park, a museum and a sports arena at a cost of £60 million. A local regional councillor that the 500 jobs that have been promised would be of the *"menial variety and seasonal."*

606. Skiing.

'£3 million road ready for Aonach Mor skiers', Inverness Courier, 10.12.91.

With aid from the European Community, the council has invested a total of £4.4 million in one of Scotland's biggest infrastructure and development schemes.

607. Edinburgh urban village.

Ian Appleton, Appleton partnership, and Isabel Willshaw, Edinburgh Vision.

As part of the Edinburgh Festival Fringe an exhibition integrated with debates addressed a vision for high density urban villages in Edinburgh. A site close to Waverly Station was considered which could well be developed as land prices increase. Topics for consideration covered: how it relates to Edinburgh and Scotland, the good place (Eutopia), effects on the architecture, a redesigned transport system, car free, energy conscious forms, interpretation, the economics.

608. A need for vision.

Isabel Willshaw.

Refer to paragraph 216. The 'global village' and the 'world village'.

Discussions gave an insight into the *"perplexing world of politicians and planners"*, and *"democracy and the need to get things done"*. New systems of *"decision making, of sharing wealth, of education, of information, of participating"* are required in an *"interconnected and interdependent"* world to replace the inadequate insistence on *"hierarchy, facts, competition and confrontation,"* There is a need to see *"the bigger picture", to see connections, to overcome fragmentation and isolation of human beings."* There is a need to make better use of limited resources, *"underused buildings, people, spaces"* and land, in order that others may have some. To make the world a better place is not *"someone else's job. We have to ... examine our own attitudes."* There is a need for vision to see and understand fragmentation and to see the way forward. Most of all there is a need to recognise that it is the women who carry the key to the 'human' 'world village. They must be allowed to use that key before the 'global village' of the men goes beyond the point of return..

609. Bringing cities and rural areas together.

'Vision at the fringe' has demonstrated that many of the same questions arise in both city and rural areas, and the way forward for both regions could usefully come closer together. This study has attempted to introduce some possible answers which could provide appropriate links.

610. Redundant jobs.

120 redundancies at Marine Harvests' two factories in Fort William.

'Fish jobs to go', Inverness Courier, 18.9.92.

'Yard lay-offs could put 600 jobs at risk', Inverness Courier, 21.7.92.

Highlands and Islands Enterprise has estimated that the 1300 redundancies at McDermott oil fabrication yard at Ardersier would loose a further 600 jobs in the area. The income lost to the area is £27.5 million a year. 1450 are still employed at McDermotts.

Joy Copley, 'No relief for Lamont as 2,000 jobs go', The Scotsman, 29.6.92.

700 redundancies at Coventry car plant. 1,400 redundancies at Tyneside shipyard. The Confederation of British Industry predicts a continuation of redundancies. Its growth forecast of 2.9 per cent for 1993 has been changed to 0.7 per cent. Gordon Brown, the shadow Chancellor, published a survey which showed an increase in business failures of 20 per cent over the last year and a forecast of 50,000 lost businesses in 1992. He claimed that 200 people were applying for every vacancy in many areas.

A2.5 University of the Highlands and Islands.

611. University links.

Napier College have offered to help establish an institution of higher education in Inverness. Thurso and Inverness Colleges have been seeking to develop their structure and to establish an annexe in Fort William.

'Region determined to see Highland university established', Inverness Courier, 18.6.92.

'University's distance learning courses expansion', Inverness Courier, 24.1.92.

A two year old distance learning system used by 100 students, based on telephone lines and visual displays that can be called up by centres in Inverness, Dornoch and Thurso each costing £8,500. New courses costing £10,000 each to establish are to be added.

'Duncraig's future', Inverness Courier, 9.6.92.

The Highland Christian Music Centre Trust is to revitalise the Highland Regional Council's disused Duncraig Castle college for media and arts training with the latest technology for recording, video, telecommunications and radio. In time it could be part of the University of the Highlands and Islands.

'£300,000 study centre for remote Highland glen', Inverness Courier, 7.2.92.

A £320,000 Highland Field centre is to be based in a 200 year old former droving inn at Strathconon, East Ross. Ross and Cromarty Enterprise is to invest £112,000 and six jobs will be created.

612. The University of the Highlands and Islands report.

The report by Sir Graham Hills is very important for the way forward, and as the University of the Highlands and Islands is an integral part of the proposals in this study, some extracts and comments are given below.

Sir Graham Hills, report to the advisory steering group co-ordinated by Highland Regional Council and Highlands and Islands Enterprise, June 1992

p. 2.

"a distributed network of independent colleges linked to a small administrative hub. ... 5000 full-time equivalent students, at least half being part-time mature students,"

Nine separate colleges are suggested that *"might"* exist, and five of these already exist, therefore initially it may appear that nothing particularly different to the existing situation is being suggested This could be the strength of the proposals in establishing a university quickly and with limited resources.

p. 2. *"Knowledge transfer will be the new Integrated Services Digital Network (ISDN)"*

This can only be a welcome approach. As this study has shown telecommunications provides a promising way forward for remote areas. If it is used appropriately as outlined in section 15.1 'A University of the Highlands'. it could overcome the real possibility of the technology being used in detrimental way. ISDN is now not so new and is still very little used, mainly due to the lack of availability and difficulties with standardisation.

p. 2. *"blur the present distinction between education and training"*

This could be taken a lot further; in the Highlands and Islands it is traditional to integrate 'work' and leisure.

p. 3. *"not too far out of step with that experienced world-wide, for example, as seen on television"*

Having been able to observe 'the media' first hand for a long time the apparent implications of this quote from the report are of great concern. Television is a global medium, and its power does not seem to be officially recognised. To follow can only mean the same fragmented and doomed way of life that television generally portrays. Ironically, the same medium is capable of providing a window on to the world, similar to the way Patrick Geddes used the Camera Obscurer to observe the region. The difficulty is in making sense of the observations through our blind and fragmented view. A way forward is needed that reverses the downward spiral that television amplifies; following may increase the rate of change into the abyss.

p. 3. *"Economic regeneration is ... particularly dependent on the ready understanding and easy assimilation of new technologies, ... education in its wider sense. ... needs to be offered in a range of settings and in a range of communities from which students can acquire life-long attitudes and understandings. ... The Highlands and Islands have a special contribution to make ... "*

This wonderfully illustrates ideas which this study has tried to convey, although the technology and education with require extreme caution since its implications can be immense if they are not fully understood.

p. 3. *"the new university should not be a replica of an existing traditional university ... a dispersed network of near-autonomous satellites each reflecting local needs and local interests ...* [a] *heroic view ... focussed towards the people and interests of the Highlands and Islands"*

Again this reflects the intentions of this study; the technology is now ready for such a step to be taken, the University of Southern California, University of Wisconsin extension studies, and the Open University already testify to its viability. This indicates that the proposals may not be totally new or heroic and this study would suggest that there is much, much more to be done.

p. 3.

"several colleges ... already have formal links"

Interview with Jim Hedley, Principal of Inverness College.

Editorial, 'On the Varsity Trail', Inverness Courier., 15.11.91.

Inverness College announces a link with Stirling University. *"but we cannot help wondering how their initiative will fit into the great and on-going Highland University debate."* Highland Regional council and Highlands and Islands Enterprise jointly announced the appointment of Sir Graham Hills to carry out a six month study. *"... foundations being laid before the architect ... has completed his preliminary drawing."*

In the view of this study these links have been rushed through and can only be seen as a protection of 'empire building'; the greatest danger to the success of the University of the Highlands and Islands.

'Shennachie's diary', Inverness Courier, 18.9.92.

The secretary to the Government's education department in Scotland, Gerald Wilson, has said that a new university would not be welcomed because the North already had *"well established links"* with other universities.

p 5.

"European outlook"

Universite Nouvelle, Brussels.

Helen meller, Patrick geddes: social evolutionist and city planner, Routledge, London, 1990, p. 104.

Scots College, University of Montpellier, Scots College, France.
Marshall Stalley, Patrick Geddes: spokesman for man and the environment,Rutgers University Press, New Brunswick, 1972, pp. xii, 73, 97-98, 100.
Refer to paragraph 260. Networks of Excellence.

This study believes that this is appropriate, particularly if it is with the one university that has a non-fragmented outlook. With telecommunications the Scottish tradition to make links throughout the world could be followed.

"The model of the university will be that of hub and spokes"

p. 5.

This study believes this to be an unfortunate analogy which may not be intended. A hub and spokes is only a modification of the centralisation of the mechanical age. With the nine colleges suggested, imagine a nine spoke wheel with the colleges on the rim at the junctions with the spokes. One centralised campus has been traded for nine centralising campuses. The colleges that already exist can be seen as part of a centralising force in their own area sapping the life blood from the remoter areas. It is a big improvement on the idea of one campus in Inverness which many, lost in material symbolism, still see as the only way.

p. 7.

" 'filling up' the student, 'chalk-and talk' "

Refer to paragraph 501. Distance learning in British Columbia.

To this could be added 'copying out a text book', 'lots of notes for the employer to see', and non-existent practical work for practically minded students. A change long overdue that like the experience in British Columbia is likely to receive considerable opposition. This change is well suited to telecommunications and rural areas.

p. 8.

"the older Scottish M A degree."

Ironically this study believes this to be the way forward! Change is accelerating at such a rate that broad based studies seem to be the best preparation that will not be invalid at the end of the studies. With this integrated approach the specialist information and skills required for occupations will be more available than before. The limit is the world and not the university campus. The University of the Highlands and Islands can cover a life time. Scottish philosophy could also be re-introduced as the most important subject in a time of rejected religions, and loss of 'the meaning of life'.

p. 8. *"no significant research except by individual scholarship"*

Refer to paragraph 220. Urban-rural shift, research, living attractions, the London glue, revolutionary change.

This seems to miss the important reasons that the Highlands and Islands needs a university system for a research base. As well as the conducive environment for research, the telecommunications could provide better access to information and knowledge throughout the world than any other university. Such facilities would have been invaluable during the period of this study rather than British Rail's toy trains every week. Even after travelling to the 'big city' the access was very limited. With determination to make it work, the Highlands and Islands could provide far superior facilities.

p. 8. *"There is certainly scope for sustained scholarship and research in the fields of human endeavour already prized in the Highlands and Islands."*

This is a good reason for making the University part of the 'way of life', there can be no better way than direct experience. To this should be added human ecology, human-technology interaction which the university will be making use of, and philosophy.

p. 9. *"permanent computer conferencing ... face to face tutorial and mentoring, ... community based residential accommodation"*

This could be more likened to the 'hub' of the University of the Highlands and Islands, only the 'hub' is not of a wheel, it exists everywhere throughout the Highlands and Islands.

613. University of the Highlands and Islands.

In conclusion, the report is very encouraging and has gone a long way towards being appropriate to the Highlands and Islands. This study believes that having gone so far it should have the confidence to make the final steps. Half a job never worked, particularly in the face of such strong forces. The nature of technology and the 'knowledge' base, that this study found to be in the future two years ago, is no longer the future.

614. A unique opportunity.

There is now a unique opportunity for rural areas; to overcome the very strong centralising force that is the remains of a past age. This will be very difficult to accomplish, and it can not be done by half measures. Simply modifying the mechanical age will inevitably be overcome by its forces and will remain firmly in a past age. Whilst good architecture is to be highly recommended, such an approach for centralised university campuses are likely to succumb to the forces of the past.

Editorial, 'The Hills report', Inverness Courier, 3.7.92.

This editorial highlights some of the fragmented thinking that will be difficult to overcome: *" ... teaching sites would be administered from an unspecified central hub, but it seems fair to suppose that Inverness has to be a prime candidate for the headquarters location."*

615. Opposition.

Editorial, 'Orchestrated campaign?

Professor John Forty, Principal of Stirling University *" ... delivered a stinging attack"* on the plans for a University of the Highlands and Islands as *"neither academically sound nor practical."* Stirling University has already made links with Inverness College and is now holding talks with Thurso and Stornoway. Professor John Forty has implied that the Scottish Office will most likely want to give funding to a link with Stirling University.

616. University of California.

Andy Bradshaw, 'US offer of help for Highland university', Inverness Courier, 3.7.92.

The advisory committee of the University of the Highlands and Islands has been invited to the University of California, Los Angeles, to see a similar structure to that proposed for the Highlands and Islands. It has 16,000 students in nine centres over a 500 mile area.

617. Community University of the Valleys

Matthew d'Ancona, 'Courses at home for ex-miners', The Times, 26.8.92.

A community university is planned to enable jobless miners in South Wales to take degree courses while living at home. The new Community University of the Valleys is modelled on American community colleges. There are now only 370 employed miners from a total of 100,000.

618. Centre for continuing education, Aberdeen.

Clare Trodden, 'Distance is no object for the plugged-in learners', The Scotsman, 28. 10. 92.

Meeting the commitment to distance learning has required the University of Aberdeen to send out lecturers to different areas. This has only been practical were there has been sufficient students for a class. With telecommunications this restriction has been removed and classes, workshops and tutorials can be made up of students from different areas. There are classes in law, philosophy, Gaelic, maths, German, Scottish Studies. Christian Studies are run jointly with Glasgow University and the Scottish Churches Open College in Edinburgh. There is also co-operation with the Open University which has 3,000 students in the Highland Region.

A2.6 Telematics in the Highlands and Islands.

620. Community Teleservice Centres.

Interview with Colin Craig and Caroline Hay of the Association of Community Enterprises, Highlands and Islands, (ACE HI).

The six experimental Community Teleservice Centres in the Highlands and Islands were set up on community lines with business aims and a resident manager. They are experiencing considerable difficulty with the business/community relationship, and in identifying and benefiting from the opportunities. There is a lack of an integrated approach which would seem to be essential for such a small scale experiment using a relatively new concept in a totally new unidentified market. The government is more used to setting up agencies that are appropriate to cities than rural areas and their remit to the Highlands and Islands Development Board which set up the Community Teleservice Centres and the replacement Highlands and Islands Enterprise both suffer from fragmentation. It is therefore inevitable that their projects also suffer from the same fragmentation.

621. No ISDN. All of the Community Teleservice Centres are situation on remote islands, and there are none on the mainland to give a diversity of experience from the experiment. It is difficult to understand that ISDN, which could have brought the necessary specialist markets, is not programmed to be available except for Lochgilphead. Crosaig, one of the few private business using ISDN use the facilities of this Community Teleservice Centre. The conclusions of the experiment are difficult to obtain, and there seems to have been an almost preconceived expectation that it would fail. There is an implication that financial support will be abandoned far too soon for such a project. The whole Community Teleservice Centre and Integrated Services Digital Network, (ISDN-2) affair seems to be surrounded in secrecy and further projects may not be supported for the wrong reasons.

622. New Community Teleservice Centres. Bettyhill on the mainland is due to start a Community Teleservice Centre and one is planned for Gairloch. Local Enterprise Companies are continuing the fragmentation of the Highlands and Islands Enterprise by setting up separate distance learning centres as though they were a new project. Only the Ross and Cromarty Enterprise Company has realised that these are related to Community Teleservice Centres and have had the wisdom to liaise with the Association of Community Enterprises, Highlands and Islands, (ACE HI).

623. Vulnerability. Colin Craig highlighted the great difficulties in setting up community projects and seemed to suggest that the best run community that he had recently visited was by a strict albeit benevolent landowner. This probably highlights the greatest difficulty of communities today. After generations of control they are now being given some freedom of choice, often without the resources that were previously available to administrators. It is understandable that it may take an equal length of time for them to adjust and they will need every ounce of understanding, patience and support to achieve a very important change. It is no different to the Russian Revolution or the Industrial Revolution; the sudden change leaves society very vulnerable and open to exploitation.

624. Teleworking, efficiency of home workers.

John Lough, Highlands and Islands Enterprise.

Refer to paragraph 291. Made for remote rural areas.

Monitoring of teleworkers working 'nine to five' in the Lochgilped community teleservice centre and teleworkers working at home has confirmed the fears management that those at home without controls keep taking breaks from their work. In contradiction to the fears of management these home workers are considerably more efficient than those working under supervision.

625. Teleworking, control of home workers.

Refer to paragraph 182. British Telecom directory enquiries.

Refer to paragraph 277. Cottage industry and telecottaging, 'keyboard slaves'.

Refer to paragraph 302. The benefits.

British Telecom have now begun a one year experiment for directory enquiry operators to work from home. This seems to be in answer to the failure to attract large companies into teleworking due to the fears of management and personnel departments that they will loose control of the workers. The experiment has been set up to show that workers can be controlled in their own homes. They have to dedicate a room for the work, hang a notice on their house door to say they can not answer calls, they are not allowed to take private calls, they have to clock on and off with their supervisor in the telephone exchange and the work is controlled and monitored through a computer. Whilst British Telecom appear to be treating their operators very fairly this type of operation is open to abuse and removes all of the advantages of teleworking, apart from commuting, to the home worker. They have lost the flexibility and dignity of self control of teleworking and they have lost the social contact of office working.

626. Teleworking, encouraging its use.

The British Telecom experiment is type specific and is unlikely to reverse the lack of understanding or interest in applications of ISDN-2. A better approach would be for every community teleservice centre and every Local Enterprise Company to have a practical demonstration of the application of ISDN-2. This would preferably be a working business with an arrangement by the Local Enterprise Company for people within the community to experience the application.

627. Teleworking and Enterprise Companies.

Interviews with Local Enterprise Company, and accountants.

Public money has been forthcoming for the large corporation to install the network and not for the small business or individual to make use of it. This could be due to a different part of the Enterprise Company dealing with large investment to the one dealing with small investments where there may be a lack of understanding of the technology and a tendency to support the known factory units and tourism. It could be that only large investments in large companies makes sufficient political or news 'splash', and what is needed is the media to make more of small investment which on a large scale could have far more impact, and be far more secure, than a single large investment.

628. Acceptance of computers.

Interview with Local Enterprise Company.

According to the Inverness and Nairn Enterprise Company they are inundated with applications for computers, and they have been instructed by the Scottish Office that no more financial aid should go into ISDN, it is up to private investment to make use of it. The only private investment that is likely, since many individuals are denied access to the network, is large business and this returns to the difficulty of attracting such business and the negative effects of past experience with large inward investment. This is unfortunate, since the acceptance of computers in rural areas can only be good news; they provide the most appropriate way forward and are essential in the use of ISDN-2.

629. Personalisation of technology.

Interview with Colin Craig and Caroline Hay of the Association of Community Enterprises, Highlands and Islands, (ACE HI).

Interview with participants in the training program.

Refer to paragraph 269. Decentralisation, teleworking, teleshopping and travel.

There is a fear by those who have not experienced the use of new technologies that it is unfriendly and inhuman. Many women tied to their homes with young children, live in isolated situations with no transport, miles from any other house and even further from facilities. A project to train women to use computers in their own homes has shown how the technology can be used to relieve isolation; they have adopted the technology for a friendly 'blether' (chat).

This computer distance training run by the Association of Community Enterprises, Highlands and Islands, (ACE HI) has not only demonstrated the feasibility of learning to use technology by those who have a fear of anything technical, it has also unquestionably demonstrated the personalisation of technology and its ability to relieve isolation.

630. Multimedia.

'Fish farming gives food for thought', Inverness Courier, 12.10.92.

Schools can now run their own fish farms using a multimedia computer simulation produced by the Scottish Council for Educational Technology and Highlands and Islands Enterprise.

631. Animation.

'Lesley is keen to animate hi-tech cottage industry at Inverness forum', Inverness Courier, 13.10.92.

Glasgow university has awarded a research fellowship to Lesley Keen who is developing new animation systems that could enable trained operators to work on animation via the Integrated Services Digital Network. (ISDN-2). Her company is producing animation for Philips new Interactive Compact Disc. The European Community is to hold their fourth International Cartoon Forum in Inverness in September 1993 where she will demonstrate the new system.

632. Electronic auction.

Nancy Nicolson, 'Electronic auction breaks down the distance barriers', Inverness Courier, 25.8.92.

The Highlands and Islands Sheep health Association and the Rural Enterprise Programme have held two electronic auctions of stock in which around 300 potential buyers could view the sale at 27 local bidding stations. 200 farmers from Caithness watched the proceedings on a giant screen. Its success has shown that stock can be sold by this method to the advantage of farmers in the Highlands and Islands who had previously been disadvantaged by their distance from the markets.

633. BBC Radio Scotland interview.

Jackie O'Brian, Reporting Scotland and Morning Report, BBC Scotland and Highland, 24.9.92.

Refer to paragraph

In an interview with BBC Radio Scotland I was asked if ISDN was too 'Hi Tech' for the Highlands and Islands. The answer from this study was that ISDN was entirely appropriate to the Highlands and Islands. The lack of completion of the network and 'integration' with the local population had resulted in any intended gain to rural areas being lost to the power of the cities. The idea of a service provision similar to the social clause of the Hydro-board seemed to be particularly appealing to the reporter. The interview was instigated by a concern in Caithness for the temporary nature of the employment by British Telecom for their new computer help service.

A2.7 Technology

634. Voice mailing.

Refer to paragraph 305. 'Electronic news letter', 'voice mailing'.

During the time of this study the proposition to use 'voice mailing' has been made practical by the introduction of voice in 'multimedia' systems for personal computers. 'Multimedia' will play an important role in the future. The major software producers have now included voice additions to their software, this opens up voice mailing to the mass marketing of these organisations to make it universally available. It is now an innovation rather than an invention. This study has had to restrict itself to the smallest impression of the changes taking place in technology and its software. The last twelve months have seen an unprecedented price war in personal computers; the cost is continually falling whilst the computer power is rising. This is creating a revolution in there use, in particular making multimedia a practical reality, whilst also having a revolutionary effect on human business and social interaction.

635. Equalising society.

Now that the major software houses have started to market electronic mailing and networking between personal computers the implications that have so far only occurred in some major businesses could spread throughout human life. In large corporations the change from centralised Mainframe computers, with restricted access via layers of hierarchy, to a personal computer on everyone's desk has broken down the obstacles of access to people within the organisation. Given an equalised access electronic mail and networks could be equalisers of society.

636. Group working.

Refer to paragraph 508. A human resource.

One of the many 'buzz words' in computer software is currently group working. The idea is that a team of people have a working access to the same project through their individual computers. By extrapolating this concept from a corporation it is very easy to arrive at the human resource of the University of the Highlands and Islands previously outlined. The possibility for everyone in the Highlands and Islands to be working on the same problem no matter were they are geographically; a mega-super-computer of human brains; the computing power of the super computers now being worked upon using Silicon may be outdone by an underused resource that we all possess, and is readily available. In practice the appropriate applications for the two types of 'super computer' would be quite different.

637. Trade Wars.

Reporting Scotland, BBC Radio Scotland, 4.11.92.

Refer to paragraph 228. A war of telecommunications and technology over energy resources.

Talks have broken down and the United States is threatening a trade war over the production of oil seed in Europe. Another type of war over energy resources.