

**An Investigation of Ecclesiastic Architecture as an
Historic Source for the Christianisation of
Northumbria, c. 500-800 AD: an Interdisciplinary
Study**

Vol. 1 of 2

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Abstract

An Investigation of Ecclesiastic Architecture as an Historic Source for the Christianisation of Northumbria, c. 500-800 AD: an Interdisciplinary Study.

This thesis is an investigation of architecture which uses the ‘problem’ of the analysis and reconstruction of the architectural remains, existent and archaeological, of the church of St. Andrew’s Hexham, founded c. 673 as a framework for a wider contextualisation of architecture as part of human praxis with pragmatic, symbolic and socio-cultural dimensions. The context for the building of Hexham covers the traditions and concerns of Christianity developing over several centuries in Rome, Gaul, Ireland and Anglo-Saxon England. Architecture here is seen as more than a collection of stones serving a simple purpose but as a transformation of a nexus of intersecting activities and practice.

The crypt at Hexham served as the focus for an assessment of what type of themes can be investigated in an architectural analysis. Specifically, the cult of relics is seen to have spatial implications not only through the need for access to *virtus*, but also through the practice of informal canonisation from the initial burial in a porticus or near the church to the process of translation of the ‘saintly’ remains into a shrine on the floor of the main body of the church, the disinclination of the Anglo-Saxons to dismember and distribute primary relics as well as the significance of relics for the resonance with the Gregorian ideal of unity-in-diversity. These attitudes and practices which effect the creation of architecture such as the crypt at Hexham are similar in some respects to Gaulish and Roman practice but are combined uniquely and differently in Anglo-Saxon England. Similarly, while there is no direct unequivocal evidence for liturgical procession in mid-7th century Northumbria, a combination of manuscript evidence, physical evidence and historical events such as Wilfrid’s sojourn to Rome where he would have participated in the Roman station liturgy all seem to indicate that the crypt’s primary function would have been as part of the liturgical performance of the offices and therefore casts a different view upon the paths of movement and the spatial organisation of the crypt.

An assessment of previous analyses and reconstructions of the superstructure of Hexham concentrates upon the distortion and biasing of the archaeological and historical interpretations derived from a reading of the description of Hexham in the *Vita Wilfridi*. An analysis of the evidence for basilican form churches in Anglo-Saxon England, the definitions and textual uses of the term basilica and modern misconception of the development of the 'basilica' in general, lead to the conclusion that there is no significant evidence for basilican churches in the repertoire of form for early Anglo-Saxon churches and therefore should not be allowed to bias analyses and interpretations of fragmentary remains.

Following from this deconstruction of the normative typological models, I turn to the application of a methodology for the analysis of plans derived from an understanding of the process of design and the application of proportion grounded in surveying and building practice rather than in aesthetic or mathematical reasoning. My comparative analysis of the churches at Jarrow, Wearmouth, Escomb and the crypts of Ripon and Hexham lead to the conclusion that a proportioning system based upon the geometry of the equilateral triangle was used to design and set out these particular sites. Applying this system to Hexham worked very well with the remains (including the problem of the interpretation of those remains only recorded at the turn of the century) and I put forth a reconstruction of the church.

A contextualised discussion of this particular system of design leads to an investigation of the transmission of geometrical skills as practical knowledge both handed down and through texts and through the needs and education of the Church. The conclusions this lead to are that there is a strong possibility that there was a Vitruvian manuscript available in 7th century Northumbria, or if not that, there is evidence for the inconclusion of Vitruvian knowledge in manuscripts and texts available in the 7th century, such as in Pliny, Isidore, and the *agrimensores*. Therefore, church construction is placed within the context of a literate sub-culture espoused by the ecclesiastics and nobility.

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I Introduction

An Investigation of Ecclesiastic Architecture as an Historic Source for the Christianisation of Northumbria, c500-800 AD: an Interdisciplinary Study

The study of architecture in the past is all too often a study of materials, styles and construction techniques in isolation, indeed, modern architectural practice encourages this attitude by representing architecture in drawings as isolated elevations where the urban scape disappears and the vantage point of the small human is placed in an imaginary and untenable space of floating above the horizon a mile distant with no obstructions to vision. Rarely, if ever, does one get presented with the perspective of the average person standing on the pavement in front of a building looking skywards, where sheer distances and distortions make the top of a skyscraper invisible or the detritus of modern living such as air conditioning units block the view of the architect's clean lines. This study aims to avoid these isolationist tendency by placing architecture within its context as part of the social fabric of life. The imaginary perspective is the challenge for any historical analysis of architecture, since the distance of time is unavoidable.

In order to present the aims and goals of this study, I will begin by a discussion of the title of this dissertation: *An Investigation of Ecclesiastic Architecture as an Historic Source for the Christianisation of Northumbria, c500-800 AD: an Interdisciplinary Study*, and its relation to the topics covered. The first point to make is to define what this investigation is *not*. It is not a survey or overview of the physical evidence of Anglo-Saxon Ecclesiastic Architecture in Northumbria, in fact, it focuses upon one particular piece of architecture at one particular point in time: St Andrew's church, Hexham, founded c.673 by Wilfrid, bishop of York. I am also not trying to prove or disprove an hypothesis about a particular historical event or a particular historical fact. Rather my hypothesis is to argue that an architectural investigation of an interdisciplinary nature has value as a way of furthering our perception of the history of Christianisation.

An architectural investigation is an approach to the analysis of a building or buildings which recognises that the built environment is a social practice and product which facilitates human interaction in an uniquely spatial manner. Building is an activity which arises from within specific social, political and cultural contexts. It therefore contains within it levels of knowledge which refer (consciously or unconsciously) to traditional practices, ideological presuppositions and symbolic expression. Architecture, as the activity and practice of building, is the product of knowledgeable social agents with particular goals and ambitions for audiences with particular goals and ambitions. Furthermore, since the space of architecture is the spatial envelope within which humans act out the dynamics of their lives, it has special resonance towards the reproduction and transformation of society - all human actions, relations and negotiations occur within and around the built environment. If architecture is defined in the manner just outlined, it has implications for what will be analysed. This paper, therefore, investigates architectural themes such as the necessary skills required to consciously create a building, the implications of the expression of spatial arrangement, the transmission of knowledge and skills which affect architecture, and the audience of architecture as both the producers and receptors.

The title refers to this paper as 'an interdisciplinary study'. The three disciplines that this investigation operates within are architectural history, archaeology and history. I do not view an investigation as interdisciplinary if it is simply collating different types of evidence in support of the central disciplinary concern. An interdisciplinary study does not pre-suppose that the methodologies of the separate disciplines of architectural history, archaeology and history are inherently the same and therefore there is one method with which to perform an analysis upon the seemingly separate categories of evidence between buildings, artefacts and documents. The tools and techniques developed through the various specialisms to investigate their chosen evidence each have valid ways of interrogating data - it would be arrogant if I were to assume that I could learn, for instance, the palaeographer's skills within the brief space of this investigation. I

can, however, analyse the arguments they present from their data and the paradigms with which they view their object of study.

By investigating the Christianisation of Northumbria, as opposed to the 'Conversion', I am investigating Christianisation as a structural phenomenon which facilitates, as a resource to draw upon, changing social relations of a particular group within society. An investigation of the conversion of Northumbria would be an investigation of the process of changing belief systems. In this case it is the aristocratic elite who, consciously or unconsciously, draw upon all the facets of Christianity - its power relations, traditions, symbolic resources, practices and social structures - in their actions to negotiate their own relations between this particular group and within their society as a whole. It is the 'unintended consequences' of these actions which we, at our chronological distance, perceive as historical events and physical remains.

Finally, I will turn to the last part of my title: 'c. 500 - 800'. Although as I mentioned, I am examining a particular place in space and time, any investigation must be set within its historical context. A general survey of architecture would necessitate a generalised context. A tightly focused investigation allows for a closer examination of the particular historical contexts for the moment which are suggested by the investigation itself. The nature of our history for this period and time requires a wider context which addresses very specific questions. Thus, in order to illuminate the specific, this investigation must cover classes of data whose time scale cannot be focused more precisely than a few centuries, such as the archaeological data, as well as the historical developments leading to this moment which requires evidence from either side of this moment. The time span stated is from the nominative category of 'post-Roman - pre-Viking' a span understood by the various disciplines although referred to in different ways, for example 'Early Medieval', 'Early Christian' 'Mid-Saxon', although the evidence I cover occasionally ranges over a wider time span than this. Furthermore, although the specific geographic region is within Northumbria, the contexts and

evidence range geographically through Anglo-Saxon England, Rome, Gaul and Ireland.

This investigation is a two-fold analysis divided into four parts. The two-fold concerns are the nature of the investigation: a re-evaluation of our own modern paradigms which are applied at an unconscious level of definitions employed within analyses and interpretation and, secondly, an acknowledgement that historical events and objects are the result of practice and activity and therefore need to be firmly contextualised within the available evidence for the practices they arose out of. Chapter 2 outlines the disciplinary suppositions and paradigms of the three fields of architecture history, archaeology and history, first at the level of how architecture is analysed within these fields then at the paradigmatic level which defines the view towards the object of study which informs the analysis at a, normally, unconscious level. Here, I also outline my paradigmatic orientation towards the object of study. This chapter is kept to a minimum as an overview rather than a detailed analysis in its own right in order to orient the reader, yet let him/her move on to the substantive analysis. Theoretical positions are best proven through results, not through continual, extended argumentation. The argument, *per se*, lies not in a long-winded theoretical discussion about hows and ifs and whys, the argument is in the results of the investigation: whether this perspective has provided a means of interrogating and viewing my data in a fruitful way.

Chapters 3 and 4 cover the core of my analysis. These have been divided into two parts: assessment and methodology. Chapter 3 centres on an exploration of the crypt at Hexham and analyses of the superstructure in order to examine how the potential un-reflexive use of terms and concepts can distort our interpretations of the past. Thus, a variety of architectural topics such as the assumption that the function of crypts is for burials and the housing of relics, the use of the concept and term 'basilica' in both the modern sense and in the past, and the reading of textual descriptions of architecture are covered. Chapter 4 is a methodological exploration for the analysis and reconstruction of churches centred on the superstructure of the church at Hexham. I discuss the

development of the particular analytical tools I employ, geometric analysis of the plan, in relation to the concept of design and in relation to other analyses. After proceeding with my analysis and the reconstruction of the church at Hexham, I then discuss the context for the particular results of my analysis.

In Chapter 5, I review the various results of my investigation and analysis with a view towards evaluating whether I have shown that an architectural investigation of this type and within these particular paradigms can possibly further our perception of the past practices of those who were involved in and affected by church building in the early Medieval period of Anglo-Saxon Northumbria. I feel the answer to that question is yes.

II. Anatomy of a church: Approaches to the analysis of the ecclesiastic architecture of the Anglo-Saxons

The nature of ecclesiastic architecture ensures a multi-disciplinary approach has been applied to the study of Anglo-Saxon churches, however this is not normally an integrated line of inquiry by the various disciplines. A necessary step towards an integrative investigation is to understand how the differing paradigms and methodologies of architectural history, archaeology and history have influenced and constructed current understandings of Anglo-Saxon churches. Generally, the difference between these positions is seen as difference in the nature of the evidence: the architectural historian uses the fabric of a building as primary evidence, the historian uses contemporary written documents and the archaeologist excavates below ground for material residues to reconstruct the history of a building (e.g. Taylor 1976. 3). Whilst this is not a particularly contentious position, I am interested to move 'behind the scenes', so to speak, to view the particular attitudes that frame the questions asked of the evidence.

Most studies of Anglo-Saxon churches have their roots in either ecclesiology or the history of the Anglo-Saxons. Ecclesiology focuses on the material manifestations, especially the architecture and art, of the spread and development of the Christian Church. The archaeological study of churches derived from ecclesiological studies, as opposed to the science of archaeology which developed from the antiquarian traditions (cf. Rodwell 1989). Today, 'church archaeology' is still seen as a specialisation defined by the object of study, a sub-discipline of history and archaeology. The separation has been enforced since the exclusion of churches and cathedrals from the 1913 Ancient Monuments Act (Addyman 1976,1). Ecclesiological studies, with their emphasis upon restoration where possible and determining the historical heritage of individual churches, was, and is, heavily influenced by the methods of architectural history. Indeed, Baldwin Brown and Clapham, in their monumental works early this century, emphasised the 'scientific' rigours of the architectural study of style in order to

produce reliable chronologies (Brown, B. 1925 & Clapham 1930). It is to the dominant architectural history of the church I will turn to first.

II.1 Architectural History of Churches

Architectural history, especially the paradigm employed by the ecclesiologists when developing their histories of the forms of the church, has not been simply the study of all types of built form, but of specific types of building usually referred to as 'pedigree' architecture. The study of 'pedigree' architecture belongs to a tradition of art historical studies and the history of architecture that specifically chart the development of form in a chronological continuum tied into the development of Western European civilisation. This is a mechanism for tracking stylistic changes associated with important individuals (architects or patrons), artistic movements (periods, epochs) linked to significant events (e.g. the colonisation of America), or technological innovations (e.g. steel frame construction). Many of the major monographs and other analyses of Anglo-Saxon churches fall into these categories, but before looking at particulars, an understanding of the significance of this framework for these studies should be put forth.

'Pedigree' architecture, or 'high-style', is that which is defined in opposition to 'traditional' or 'vernacular' architecture. The assumption behind this distinction is one of intentionality: purposely built public edifices ordered to be raised by an institutional power. These structures are those which are considered to be imposed, aesthetic, formal, symbolic, essential ('essence'), ahistorical (timeless), stylised, contrived, elite, professional, unified, sophisticated, self-conscious and innovative; "eminent edifices and monuments that are urban and aesthetically pleasing" (Bourdier 1990, 40). Each of these adjectives contains an implicit valuation that marks them off from other buildings and constructed spaces as somehow a privileged representation of what is best and most noble of humankind. Materials used are not merely those which come to hand and spatial arrangements have more than just a functional utility. The 'more than' is a deliberate ordering of form and materials to appeal to an aesthetic sensibility. This understanding of pedigree architecture is enhanced by the typical (self-) definition of Architecture as the first of the Arts, containing aesthetic and social

superiority and it is only recently that traditional or vernacular, (non-authorial) structures could even be labelled 'architecture'.

From here it can be seen that pedigree architecture is not studied for historical explanation, rather it is illustrative of the above types of authorship (individuality; zeitgeist - the pervading moral, religious and intellectual ideas; invention). Because there is the assumption that the specific individual author (the architect or patron) is the Church and the zeitgeist is primarily Christianity and secondarily epochical influences, Anglo-Saxon church studies within the tradition of architecture history focus upon the formal attributes analysing either the evolution of a typeⁱ of style, or the morphology of church building, or the iconographic imagery.

stylistic evolution:

Stylistic evolution attempts to create a sequential development of a typology based upon formal arrangement, description and decoration. These attach a temporal dimension to a series of changes from one style into another or from one form into another; in other words, divisions between Early Christian to Romanesque to Gothic or from cemetery to martyrion to church (e.g. Biddle 1986). Colquhoun calls this "diachronic relativism" (1981, 12) which is predicated on the assumption of the continuous evolution of architecture, from simpler structures to the apex of complexity to derivations from there. Change occurs as ideas are imitated, diffused, and improved, and studies concentrate on the sequencing of styles and the source of their derivatives.

Stylistic typologies for Anglo-Saxon churches are subordinate to typologies which had been developed for continental Europe by the turn of the century. Pevsner's *Outline of European Architecture* (1973) is a standard comparative study that situates Anglo-Saxon ecclesiastic architecture within these European categories. In an overview of this kind, the implication is that the religious architecture of frontier or fringe areas is not as sophisticated or evolved as the

more 'civilised' areas such as Rome or Byzantine. Therefore the chronological correlations are set aside in favour of placing Anglo-Saxon churches together with the earliest non-standardised and undeveloped Christian architecture, a subset of Early Christian Architecture at best or an uncouth, crude deviant at the worst. Most overviews of the development of the architecture of the Christian Church move from Early Christian Constantinian around Rome, circa 4th century, to Byzantine architecture, returning only to Western Europe with the development of full-fledged Romanesque architecture in Gaul of the 8th century and later.

The earliest attempts at a thorough stylistic study of Anglo-Saxon churches I have already mentioned above in the work of Baldwin Brown (1925) and Clapham (1930). Brown's meticulous studies collected all the then available structural and stylistic evidence for pre-Conquest Anglo-Saxon churches. His initial determination of what was 'pre-Conquest' employed negative stylistic comparison: not-Gothic or not-Norman, since more historical analysis had been carried out on these categories of architecture. After collating all the evidence, he was able to determine the evolution of these early churches in order to place them in a rough chronological order and also to be able to define characteristics for the model of early Anglo-Saxon architecture. For example, the average width of an arch and a 'Roman' curve as opposed to the more pointed Gothic or Norman; the quality and technique of wall construction; variations of quoining from earlier to later manner; the off-centre location of porticus' entrances, etc. (B.Brown 1925) can all be seen as indicators of this style.

Clapham began with Brown's work, and others, and combined the architectural evidence with sculptural and other types of plastic arts in order to trace stylistic influences upon the Anglo-Saxon Romanesque churches: "The surviving details of each building will first be considered, after which some attempt will be made to explain their peculiarities and to indicate the sources from which these peculiarities were drawn." (Clapham 1930, 17). His use of the term *peculiarities* emphasises the disposition towards the presupposition of deviations from a

model determining derivations of a style. Clapham's knowledge of the documentary evidence enabled him to put forth the influence of specific individuals on the development of the Northumbrian style and the Kentish style. Theodore and Adrian's Mediterranean background is seen to be the connection between elements such as the 'Byzantine' triple arcade found in the Kentish group and evidence is presented of parallels in North Africa and Europe (*ibid.*, 30-31), whereas Wilfrid and Biscop's employment of Gaulish masons is consequential to the more 'barbaric' Northumbrian churches, paralleled with the Hypogeum at Poitiers (*ibid.*, 42-43).

morphological typologies

Morphological studies seek to collate the accumulated evidence of buildings of a certain nomenclature-function, e.g. Anglo-Saxon ecclesiastic architecture or 18th century libraries, into classifications that can then be formed into various typologies illustrative of a model form outwith, or not primarily determined by, specific stylistic categories. Chronological typologies determine a sequence of dates equated with the evolution of form, functional typologies seek to ascertain which building forms contained which facet of human activity (e.g. church, monastery, mausoleum, baptistery, etc.). Forms can then be compared, deviations noted, and diffusion charted. Morphological studies tend to concentrate on the plan of a building, and less on the fabric (i.e. decorative features).

The most influential and comprehensive work to date on creating a typology for Anglo-Saxon churches has been undertaken by Taylor. Taylor's three volumes (1965, 1978) provide very thorough and detailed descriptions of individual church structures, this inventory is then analysed and collated into models exhibiting characteristics recognisable as Anglo-Saxon churches. The churches are categorised by formal qualities: the arrangement of plans, proportions, and spatial relationships as well as the details of construction. According to Taylor

the Anglo-Saxon church can be recognised by reference to two types of plan, the cellular and the integrated plan (1978, 970), which are further demarcated as cellular linear, cellular transverse, cellular areal, cellular areal-transverse or unitary integrated, integrated linear, integrated transverse, integrated areal and integrated areal-transverse. All these categories refer to the level of open or restricted movement between the base units of architectural space (rooms, or cells). He further investigates the proportions of these churches as ratios of length to width in the attempt to define rules of thumb, such as "In many churches the chancel is narrower than the nave by about twice the thickness of the side walls, so that the outer faces of the walls of the chancel are aligned with the inner faces of the walls of the nave." (1978, 1032).

Cherry (1976) offers a more simplified developmental sequence than Taylor. In ascending order of complexity, plans range from single-celled buildings through double cell through basilican plans to centrally planned buildings. As in Brown and Clapham, the Kentish plan is opposed to the Northumbrian plan. The whole is dispersed according to whether 'early', 'middle', and 'late' churches, and within each category of form the churches are listed according to date, determined by style and occasionally by excavation. This gives the impression that there is a straight forward sequence of replacement of one type by another since difference in form is classified as a unique type. Fernie (1983) provides a similar typology of single-celled, two-celled, and nave flanked by porticus, then continues, as Clapham did, to determine the continental sources of architectural form which they are derived from. Hence, Northumbrian churches are divided according to derivations of plan types: single-celled churches, such as Jarrow's eastern church are derived either from Gaul if narrow proportioned or Ireland if wide; two-celled churches, e.g. Jarrow, Wearmouth, and Escomb, are combinations of the Germanic layout of wooden halls (e.g. Yeavering) and Roman masonry techniques; the nave flanked by porticus came through Mercia from Gaul and Rome. Infrequently detected details such as galleries and crypts are viewed as direct importation, imitation intended to evoke glamour and admiration (*ibid*, 46-

63). Again, the overall temporal sequence is from simple to complex through imitation and diffusion.

iconography

Iconographic studies relate the decoration of churches and the demarcation of space to the deliberate expression of an ideal. This typically equates elements of a church with Christian symbolism; semiotic and metaphoric investigations into the conveyance of canonical meaning. For example, Heitz (1986) connects the schematic depiction of the Church of the Holy Sepulchre and the rotunda on the Mount of Olives to the architectural organisation of the facades of 8th to 12th century churches as expressions of concepts of heaven and hell. Some iconic studies, through concentrating on the known meaning of the symbolic reference, can illustrate how representation is articulated in architectural configuration. Even though it is Gothic and not Anglo-Saxon, Eco's analysis of the spiritual experience of the religious ideal realised in the physical unity of the cathedral shows how, for instance, the geometrical ordering of space through numerical relations which signify spiritual numbers from the Bible unified in cosmic harmony and the use of light were intended to elicit metaphysical emotions grounded in the identity of God as a conjunction of the manifest and the sublime (1986).

Iconic studies are particularist semiotic analyses that belong to the study of architectural form as an expression of *zeitgeist*; "the human mind craves, even in its architecture, some reflection of human imperfection, and the latent historical sense requires an art which mirrors the life and thought of its creators... its expression, while both rich and varied, is marked by all those frailties and imperfections which are the proper symptoms of a progressive art, and illustrate so vividly the mind of its authors and the age which gave it birth." (Clapham 1925, vi).

Fernie characterises this approach as the "visual or architectural analysis of the design" (1989, 19) and it pervades all of his work on Anglo-Saxon architecture whether a specific case study such as Repton (1989) or an overview (1983). In either case, the iconographic devolution of ideas from an original Early Christian theological and formal source emphasises a typology of symbolism. For example, the spiral columns at Repton are employed to frame sanctuary space in the manner of St. Peter's tomb in Rome (1989) and an Anglo-Saxon church which is arranged as a nave flanked by porticus and galleries is deliberately reminiscent of the Hagia Sophia and Golgotha (1983).

II.2 Archaeology of churches

Once the typologies of form and style have been constructed, then a good portion of study and analysis is devoted to identification of a building or part of a building with a pre-defined model. Which moves us into the archaeology of churches.

Primarily, the aims of the archaeological investigation of Anglo-Saxon churches are to provide more precise dates for the historical evolution of church architecture and to determine diagnostic features for the recognition of 'church' as a class of objects. Since the mid-seventies the Council for British Archaeology has instigated research reports intending to explicitly set out the parameters and goals of the archaeology of churches (CBA 13, 47, 60). Overwhelmingly, the emphasis in these, and in other literature, is upon the contribution of archaeology as one of securing dates: "The problem of dating remains central..." (Biddle & Kjolbye-Biddle 1985b, 316); "It is a paramount task of archaeology to provide dates,..." (Morris 1987, 190). This is predicated upon the archaeologist as scientific supplementor to architectural history and documentary history. As archaeological methods for the systematic recording and analysis of both standing and excavated remains become more technologically advanced, techniques such as radio-carbon dating, dendrochronology, and mortar analysis can enable more precise temporal bands (*tpq* and *taq*) for specific churches. This can further refine the typological sequences first constructed by Brown and Clapham. Here, the typologies are treated as the hypotheses against which the archaeological data can be tested either to reinforce or shift a specific church into another band which modifies the existing hypothesis. For example, recent work carried out at St. Paul-in-the-Bail produced, through a combination of stratigraphic, coin, and radio-carbon evidence, a *tpq* of 402 and a *taq* of pre-7th century, with the most likely date to be the 5th/6th c. (Jones, 1994; Steane & Vince 1993, 73-74). Previously, because of the similarity in plan and dimension to Kentish churches and the literary evidence for Paulinus building a church in Lincoln 628/629, this structure was felt to be almost certainly 7th century (Gilmour 1979).

The corollary to the archaeological provision of dates for stylistic horizons is the construction of models in order to establish diagnostic features, "...architectural features which can with reasonable certainty be said to occur frequently within well developed periods of time and hardly outside those periods." (Taylor 1976, 7). These diagnostic features include fabric composition, construction details, distinguishable morphology, measurement and proportion as well as stylistic details (e.g. Rodwell 1986 analysis of wood framing in stone construction). Taylor's work (1965, 1978), especially, has collated architectural, historical and archaeological primary evidence that can then be used to formulate models of Anglo-Saxon churches. Biddle and Kjolbye-Biddle demonstrate the potential of using Taylor's work in this manner with the example of analysing proportional scatters to define characteristics such as: in the Northumbrian churches, long proportions were predominate only in the early period of Anglo-Saxon church construction, or that all four of the Kentish examples of churches have the lowest external ratios from this early horizon (1985b, 308). This type of work combined with structural analysis of the fabric and excavation allows for continuous reevaluation and refinements of the chronological framework. A further development arising from morphological studies is the analysis and comparison of measurements of plans, as can be attested in the recent publications of the ongoing obsession with the 'northern rod' in Anglo-Saxon construction (*cf. Medieval Archaeology* 35, 1991: Fernie, Huggins, Marshall & Marshall, Bettes; Kjolbye-Biddle 1986). Here, the difference between the 4.65m and 5.03m Anglo-Saxon 'rods' are not differences between surveying and construction aids, but standardisations that are linked in an historical continuum from late Antiquity, Anglo-Saxon and Medieval England, through 19th century Germany, to modern cricket pitches and acres (Fernie, Huggins, Bettes 1991). The historical weight of this argument implies an inability to deviate in form or structure, and if deviation does happen to occur it is tied into the limitations of certain construction materials when spanning certain lengths, i.e. Anglo-Saxon structures have greater variance in length than width because, restricted by the strict linear measurement of *n*-rods, of the inability of timber beams to span twice

the rod and the ability to extend indefinitely in rod segments along the lengths (Marshall & Marshall 1991).

A third aspect of the archaeological emphasis upon constructing chronological frameworks is what Mytum (1989: 339) refers to as 'historical particularism'. Historical particularism is the trend towards archaeological investigation of a site in isolation from other sites or without consideration of the historical context. These detailed investigations contain a wealth of minutiae concerning individual site histories, but are divorced from the contiguous area as well as larger historical contexts. Historical particularism such as this upholds the ecclesiological position discussed earlier and, at its most extreme, isolates and focuses on only the structure of the church without the minimum of the immediate context of cemeteries or monastic buildings, halting after excavation and recording (Biddle 1976 65).

The emphasis upon dating, constructing a typology, determining diagnostic features, and the particular history of individual sites is deemed critical to the history of Anglo-Saxon churches because of the lack of historical documentation in general, and specifically the lack of documentation giving descriptive details of architectural trends and individual church construction, with rare exception (Taylor 1976, Butler 1976). This attitude has been constructed within the architectural history paradigm of belief in the continuous development of style and evolution of form, which I have discussed above, combined with the archaeological emphasis upon scientific techniques of analysis, thereby producing the archaeological role as one of refining the history of the architecture of the Anglo-Saxon Church. The published report for the excavations at Brixworth (Audouy 1984/5) exemplifies this attitude. It contains detailed procedures for recording and excavation carried out at the site; the meticulous phasing of the evidence from the trenches; descriptions of the architectural remains uncovered, their material of construction, dimensions, and stratigraphic relationships; mortar reports analysed by 'aggregate-size distribution of sands', colour, peculiar mix employed (e.g. percentage of charcoal to

percentage of lime) and distribution of samples over architectural features; petrological analysis; pottery analysis by fabric, source, inclusions and surface finish; radio-carbon determinations from wood and bone; and inhumations. All this (forty-three pages worth) produce a simple statement that the church was possibly built in the mid-eighth century, based on the radio-carbon and pottery evidence (*ibid.*, 37), along with the confirmation of the contemporaneity of the foundations of the north wall of the nave, porticus and narthex implying that the plan reflects the original design of the church (*ibid.*, 33). So it appears that there is scientific evidence to support the previous stylistic and morphological analyses, although this is not discussed in this publication.

A manner of analysis more oriented within archaeology itself is to investigate churches as a class of object which can be placed in relational contexts (with other classes of objects) to generate patterns; an ability to "...go beyond the consideration of sites as individual entities to the examination and comparison of patterns and regional groups." (Morris 1983, 47). This is a way of treating buildings similar to portable artefacts as distribution between assemblages and comparison within assemblages. Churches are thus a class of building type to be compared with mausoleums, shrines or baptisteries, or a type of object that is evidence of the extent of Christianisation such as churches, cemeteries, metalwork, manuscripts or sculptures. Quantifiable evidence is emphasised: how many are extended over what area? Regional variation of the morphology of Anglo-Saxon churches has had considerable attention (cf. B. Brown 1925, Clapham 1930, Taylor 1978, Cherry 1976, Fernie 1983). More recently, pattern recognition has extended beyond consideration of only the form to include such geographic relationships as between mother houses and possible daughter houses (Cambridge 1984/5), Christian sculpture centres and monastic institutions, (Cramp, cited in Cambridge) and religious establishments to settlement patterns (cf. Rodwell 1984 & Morris 1987).

Even though these studies do move beyond the historical particularist approach, the tendency is to limit the nature of the inquiry and the integration of sources to

more archaeologically circumscribed material: "...archaeological and historical sources are complementary, the archaeological evidence should be considered first within its own framework before it is compared and possibly (though not necessarily) integrated with hypothesis generated from documentary evidence." (Schofield 1987, 5). Also noted by Schofield (*ibid*, 4) are the extremities of positions taken in historical archaeology from the complete divorce of archaeology and history, as propounded by some archaeologists (cf. Reece 1984, Rahtz 1984), to the total dependency upon the historical record (e.g. Alcock 1988, 22), to somewhere in the middle where the majority lie.ⁱⁱ

II.3 The Anglo-Saxon Church and History

Unlike ecclesiological history, which delimits the sphere of study to the evolution of the Christian Church (especially, Catholicism), an historical approach is to analyse the Anglo-Saxon Church as part of the history of the Anglo-Saxons, specifically the conversion of the people to Christianity as an element of the chronological development of the society and polity which from the separate kingdoms of the Anglo-Saxons became the unified historical nation of the English. The Church in itself becomes part of the social and economic structures which shape the historical developments chronicled in documentary sources. Especially in times of relatively sparse documentary evidence, as in the sub-Roman early history of the Anglo-Saxons (Myers 1989), the ecclesiastic sources provide an overwhelming majority of the sources available which can combine with and supplement other sources of evidence, such as inscriptions and place name evidence.

Literacy is traditionally seen to have arrived for the Anglo-Saxons with the (official) advent of Christianity in the 6th century and the Latin and Greek scholarship of the ecclesiastics. The religious community not only recorded ecumenical affairs, its own histories (e.g. the *Vitae*) and liturgy, but eventually took over the position of scribes for the secular community, especially that which involved kings and kingships: producing genealogies, annals, charters, and law codes. These have provided invaluable sources for the historians of the Anglo-Saxons. The biasing towards these documents has been problematic for reconstructing detailed histories because of the differential survival of the archives of specific religious communities, for instance, or the tendency for embellishment to enhance a certain lineage (Yorke 1990, 20-24). Yet whilst recognising these internal problems, historians for the most part overwhelmingly rely on these documents over any other form of evidence, and the influence of Bede's *Historia Ecclesiastica* (*Ecclesiastic History*) has at times seemed to make all other documentary sources for the early Anglo-Saxons to be entirely redundant. At this juncture I do not intend to engage in the continuous debate

between medieval historians and medieval archaeologists as to the validity of one type of source over the other, beyond noting that disagreement exists (*cf.* Driscoll & Nieke 1988a for one recent discussion amongst many), nor am I going to provide an overview of the history of the History of the Anglo-Saxons, rather I would like to move straight into the role of church architecture as a source for historical investigation.

The general employment of analyses of church building has been to aid and enhance the specific history of the Church. It is unusual for the architecture of a church to be studied in isolation, rather it is more common that the buildings are seen as manifestations of the Christian Church as a whole. Studies of the development of liturgical practice seen in the changing layout and embellishment of the churches focus on such details as ablution drains, relic pits, squints and galleries for their liturgical implications or multiple altars and porticus as places of veneration for the development of processions of feast days (Parsons 1986, 1987, 1989). The evolution of religious belief is expressed through the iconography of the church: "... belief is the only obvious intrinsic quality of a church in archaeology; and, correspondingly, that artistic creativity, as it is considered within the whole cultural context, is of the utmost importance to the archaeologist who wishes to interpret such a church's influence and character." (Mytum 1987, 435, and see above discussion of iconography). Above all, the detailed recording of the remains of the churches can help historians to chart the evolution of the Church from the first missionary activity to the development of the highly complex administration of the diocesan system already in existence by the time of Domesday (*cf.* Keynes 1986, Morris 1989, Owen 1976).

In an historical analysis the architectural evidence becomes subordinate to the documentary evidence, however, even in supplemental form it can be seen to aid in the understanding of specified aspects of economic or political relations, or whichever hypothesis is being explored. At the most superficial level, the architecture is used as cultural detail to flesh out the history presented in the documents, especially when there is a lack of descriptive detail provided by the

documents for fabric and furnishings. With the notable exception of Stephanus' description of Hexham in the *Vitae Wilfridi*, most references to architectural form in the early Anglo-Saxon period are sparse and tend to be vague. Beyond this level, when a study of church building is linked to a wider historical perspective, it can be employed to aid in understanding political, societal, and economic evolution (Driscoll & Nieke 1988a, 2).

As a result of the close ties between the Church and the patronage of various kings, the political relationships are the most common historical questions the study of churches is applied to. The patronage by royal lineages was not confined to gifts, but extended to foundations, endowments, and extensions; monasteries and other foundations tended to be headed by a relative of the king in power at the moment, and frequently were involved in competing claims to power. Blair (1989) explores the building of minsters in relation to large endowments granted by charter, combined with the relationship between minsters set up by relatives within a lineage and the establishment of royal villas to determine the extent of the kingdom of Frithuwold in Surrey. He also attempts to establish in this manner the relationship between Frithuwold, (saint and king) Frithuric, and the female 'cousins' (sisters/daughters) who headed monasteries established along the edges of Mercia.

Besides the topographic relationships of foundations, the material culture of different churches can help to establish the degree of the power relations between royal patrons and possibly indicate hierarchies in stature and prestige. Depending upon whether the fabric and furnishings are seen as straight reflections of cultural influences (Keynes 1986) or whether self-consciously employed for purposes of legitimacy (Hodges & Moreland 1988), these stylistic influences can indicate links between different social groups, societies, or political alliances. Much has been made, for example, of the relationship between Francia and Kent fostered at least since the time of Aethelbert's marriage to the Frankish princess Bertha, if not before. The distinctive 'Kentish' church form and the material culture associated with the churches as well as other types

of Christian artefacts (metalwork, jewellery, etc.) and burial practices are seen to be highly influenced by Frankish work, thus evidence for religious influence, cultural imitation for prestige reasons, political alliances or trade, depending upon which aspect of the relationship between Kent and Francia is being analysed.

The heavy emphasis on kingship evolution and the power relations between royal lineages and the ecclesiastics when looking at the role of the Church is mainly the result of the context for the production of the documentary sources. It must be remembered, for these reasons (patronage, politics, kinship structures), that a very close relationship existed between the Church and the various kings, who were very influential on the fate and fortunes of the many foundations. Many of the documents being used were initiated at the request of a secular power or dedicated to one, and the interests and focus tend to be on the elite strata of society. This emphasis notwithstanding, churches have been employed in the study of other facets of secular society. Trade has already been mentioned, and most historical investigations feel that the church fabric and furnishings can establish trade connections (Butler 1976, 18), both within the British Isles (e.g. between Irish and Anglo-Saxon evidenced in the metalwork), and between Anglo-Saxon England and the Continent (e.g. as above with Francia and also between Merovingian Gaul and Northumbria). Industry is another aspect of the economic sphere that can come to be illuminated through the study of the subsidiary buildings and landholdings of the churches, such as the excavations at Wearmouth and Jarrow providing evidence of manufacture (craft production) and agricultural processing (Cramp 1969, 1976), or the absence of wheel-thrown pottery upholding the documentary indications of the breakdown of a coherent Romano-British structure and thus industry.

The impact of church endowments and subsequent landholdings upon the topography and development of Anglo-Saxon settlement has recently become the focus of historical investigations. Book land, which remained in the control of the Church instead of returning to the granting lineage, caused a shift from the

previous method of land tenure with repercussions for the evolution of private property as well as husbandry (*cf.* Wormald 1984; Blair 1989; Saunders 1990). Churches and their landholdings can also provide information regarding the associated settlements: "The pervasive role of the church through the ages has ensured constant modification as the aspirations and fortunes to the community were given material expression." (Addyman 1976, 1). It is also recognised that churches can be studied in relation to continuity, the re-establishment or formation of towns, especially from Roman-Britain times to Anglo-Saxon (Rodwell 1984). For instance, the question of continuity from Roman Lincoln has been explored in the placement and evolution of St. Paul-in-the-Bail, Lincoln (Steane & Vince 1993), and the location of settlements in relation to the provision of other religious foundations throughout the kingdom of Lindsey during the power struggles between Mercia and Northumbria (Stocker 1993).

In summary, I have attempted to set out the relationship between the various approaches to church architecture and their relationship to the aims of architectural history, archaeology and history. The architectural historian aims to elucidate the evolution of church form, the archaeologist provides empirical, scientific evidence for the chronology of church development and for identifying the physical extent of Christianity, and the historian turns to the evidence of churches in an attempt to aid in problem-solving exercises from questions posed by the documentation about the political, social, and economic history of the Anglo-Saxons.

II.4. The Object Gaze

So far I have presented a composite of approaches loosely gathered as disciplinary oriented paradigms for approaching the study of 'church' as an architectural manifestation. In order to enhance an understanding of these approaches I would like to shift the emphasis away from the aims of study or analysis to exploring the underlying attitudes towards the object itself. The immediacy of the empirical material often belies the assumptions inherent in the stance taken towards the object of study as an object in itself. I have looked at the conceptual paradigms the architectural historian, the archaeologist and the historian situate themselves within, nominally this does contain methodological implications for operations of analysis, however, far more influential to the resultant histories is the gaze adopted which presupposes a relation between the subjecthood of humans and the world of objects within which they coexist. In other words, what does this object tell about our subjective condition? and how does this particular stance in relation to the object create the object of study? In order to answer these questions, I will have to consider not only the paradigms of the architectural historian, the church archaeologist, and the Anglo-Saxon historian, but also what I will refer to as 'the aesthetic gaze', 'the archaeological gaze' and 'the historical gaze'.

the aesthetic gaze

The gaze of the architectural historian is the gaze of the modern, post-Hegelian, aesthetician, creating an object of study that is purviewed outwith the contingencies of social and material conditions. This object, the artefact, is an art object with its own trajectory and evolutionary path, moving according to its own internalised mechanisms of logic. An artefact which is perceived as self-referential, containing within itself the entirety of meaning and purpose, transcending the merely expedient and capturing the sublimity of the human spirit, the *Geist*. Yet this object is not valueless, its immersion and formation inside the miasma of the subjectivity of human condition allows the object to

express the essential Spirit: "the determinate objectivity of the artefact is no more than the self-generative process by which subjectivity emerges into being." (Eagleton 1990, 128). Thus to reveal the internal mechanisms of the artefact is to realise the *Geist*. In Bourdieu's more familiar terms, this artefact is the symbolic object as 'structured structure' which can be analysed to reveal and communicate social ordering (Bourdieu 1979). For Hegel, "[M]an's perfection comes to be only in his perfecting of himself, and that is a process demanding external instrumentalities. No mind comes to know itself except through a medium of self-expression, and in God's case that medium is the world, and history is the development of his self-knowledge in the world." (Cohen 1978, 9) For humans this self-knowledge can only be developed through art, religion, and philosophy, yet the art object (here, as stated above Architecture is Art) as a sensuous (sensate, material) representation must be secondary to the non-material manifestations of religion and philosophy. This proceeds to elevate the art object as *the* sublime physical manifestation of *Geist*, constituted as the medium of self-awareness (as in the neo-Platonist interpretation, cf. C. Taylor 1989, 201). Therefore, if the primary purpose of theory is the retrospective unveiling of the propulsive force of *Geist* through time, then the autonomous and self-referential aesthetic artefact is the exemplary object of study: "Geist is the essence of everything that exists, and so an account of its adventures through time would appear purely descriptive; but it is the *essence* of all that exists in the sense of its significant inner structure or trajectory, such that an account of it provides us with norms relevant to ethical and political behaviour" (Eagleton 1990, 149). *Zeitgeist* framing does not require explanations of the mechanisms of historical change, rather they explicate the relationship between formal arrangements and the pervading moral, religious and intellectual ideas.

Jay (1988) illustrates how what I am referring to as the aesthetic gaze informs architectural analysis. He cites the opening passage in Pevsner's *Outline of European Architecture* (1973), worth repeating here:

"Architecture is not the product of materials and purposes - nor by the way of social conditions - but of the changing spirits of

changing ages. It is the spirit of an age that pervades its social life, its religion, its scholarship and its arts. The Gothic style was not created because somebody invented rib-vaulting; ...they were worked out because a new spirit required them." (*ibid*: 17; Jay 1988, 30).

Whilst Jay criticises the phrase 'spirit of the age' as a rhetorical device meaningful only in relation to that particular work (1988, 31), it can be pushed further as an illustration of a metaphysical attitude towards the object which does not require an analysis that explains architectural change other than the assumption of reflecting change in the *Geist*. As Cohen states:

"...study would show in the characters of temporally successive dominant nations or civilisations a progress of values, cultures and politics, an empirically visible line of improvement which would require explanation. Yet no empirical explanation of the fact, in Hegel's view, can be forthcoming: it was not as though the civilisation which had once been the centre of progress bequeathed its achievements by an observable route to the civilisation which took that progress further. Often the superior successor civilisation would be spatially removed from its immediate significant predecessor, which might have flourished and decayed long before the successor arose, so that the 'transition which we have to make is only in the sphere of the idea, not in the external historical connection'..." (1978, 5; subquote: Hegel, *Philosophy of History*)

The resultant text, the history presented, is that which meets the criteria of traditional art histories: those that treat the art-object as "independent form structured according to its own laws and systems of relationships", as "a form belonging to a history of similar forms", or as a "form belonging to the intellectual history of a given period" (Lombardo 1988, 80). These three treatments I have traced above in relation to church architecture, they can now be understood as variations derived from a particular *a priori* relation to the object: the aesthetic gaze.

the archaeological gaze

Whereas the aesthetic gaze elevates the object from any utilitarian or functional relation to the subject into an art object which espouses the transcendental and the sublime, the archaeological gaze denobles the object of any such pretensions of privileged relation to subject. The archaeological gaze is the gaze of the impassive technician, entailing the erasure of all subjectivities. The object contains no interiority, but only external reference to processes with no moral value. The object is the result of the expedient colonisation of material existence. Here, the object only exists in relation to modes of cognition: language, art, myth, science, are the symbolic forms to explain the phenomenological object (Bourdieu 1979). Kant divorced the cognitive, moral and aesthetic realm by uniting the object to the subject in the act of judgement (Eagleton 1990, 125), thus the object becomes a by-product of rational agency and cognition is constituted within the empirical existence of the object.

The Kantian move is away from the *art* object to an equalisation of all objects in relation to the subject, all objects are effects of reason, of "some deep spontaneous consensus built into our faculties" (*ibid.*, 405). Procedural reason, unlike the intuitive, guiding Geist, emphasises correct style or methodology addressed to the empirical existence of the object, but non-qualitative as a thing-in-itself. This is in opposition to the aesthetic view of the artefact as the subjective object, and instead presents the objectified subject:

"This is the ideal of the disengaged self, capable of objectifying not only the surrounding world but also his own emotions and inclinations, fears and compulsions, and achieving thereby a kind of distance and self-possession which allows him to act 'rationally' ... Reason is no longer defined in terms of a vision of order in the cosmos, but rather is defined procedurally in terms of instrumental efficacy, or maximisation of the value sought, or self-consistency." (C. Taylor 1989, 21)

Paradoxically, by collapsing the universal (civil society) into the particular (individual reason) (Seligman 1990, 125), the focus shifts onto a synechdotic

articulation, the part (the object) represents the whole (which is the subject). Practical reason turns to empiricism as a means of providing normative standards for judgement requiring the removal of qualitative distinctions from language in order to describe and understand humans, their actions, and their world at an equilibrrious and consensual level: "the rationality of an agent or his thought is judged by *how* he thinks, not in the *first instance* by whether the outcome is substantively correct" (C. Taylor 1989, 86, emphasis added). In order for analytical description to become the basis for judgement, two assumptions about the object must form the base for an agreement. Firstly, that there is a normative standard residing in each separate sphere, and secondly, "the idea of the world as a *causal* mechanism whose phenomenon are reducible to the laws which govern them" (C. Turner 1990, 111).

The archaeological gaze is therefore one of technique where all objects are judged according to their empirical viability. As Eagleton notes, this is a projection onto the object of human practical reason (1990, 88). This produces works which would typically be categorised as normative, functionalist, or processual, where the object of study, whether it is an architectural structure, a painting, or a tool, is the detritus of human rationalistic behaviour. A tautological relationship exists between the mechanisms and forces of action and the facticity of the object and thus objective universal laws of human activity are derivative through the logical apparatus of procedural reason applied to the object.

the historical gaze

Under the historical gaze, the subject does not exist outside of the events of the past. This is the gaze of the chronicler, the temporal rhetorician establishing sequences and exposing structural relations and rendering transparent that which was opaque to the participant of the moment. Marx established a new history devoted to the forces of collective history rather than the struggle of the individual intellect. The operation of eliding Hegel's historical impetus with

Kant's empiricism combined with Marx's subsumption of the subject (individual, particular) by the object (society, universal) results in a history that is no longer a conjoined series of contingent actions shaping the destinies of nations, but a temporal unfolding of *societal* developments. Hegel's historical consciousness, Geist, is replaced by the propulsion of each form of society (as the manifestation of forces/relations of production) evolving along its trajectory of material growth:

"No social order ever perishes before all the productive forces for which there is room in it have developed, and new, higher relations of production never appear before the material conditions of their existence have matured in the womb of society itself" (Marx, *Critique of Political Economy*, in Cohen 1978, 27).

History itself is above issues of morality, becoming the durable structures of society transforming over time to attain the realisation of the creative potentials of 'social intercourse' (now subject *and* object), thus historiography is necessary to map the previous developments in order to fulfil present and future developments. History has "no presupposition other than previous historical development, which makes this totality, i.e. the development of all human powers as such, the end in itself." (Marx, *Grundrisse*, in Eagleton 1990, 212).

The influence of the Annales school most strongly illustrates the deanthropocentric change from 'traditional history' to 'social history' with its emphasis upon structures and collectivities. The social history as espoused by Febvre, Bloch, and Braudel proffered a substantive focus of historiography on aspects of the social such as politics, demography, economics, classes, kinship structures, and cultural phenomena (as expressions of collective mentalities), indebted to a materialist conception of existence (McLennan 1980, 128-151). Braudel, especially, removes the subject entirely from the scene, where history, as time, is the agent and the individual is acted upon and shaped by large structural forces (Braudel 1980, 10-12). By introducing the *longue duree*, the conjuncture, and the event as the temporal spans for analysis and model construction the individual becomes 'transcended' in favour of the 'depth' of 'anonymous history' revealed through careful reconstruction of social realities:

the "major forms of collective life, economies, institutions, social structures, ... civilisations" (*ibid.*, 11).

The historical gaze is governed by time, 'impervious', 'irreversible' and 'axial', against which all social phenomena can be measured to reveal the recurrent cycles and structures of history (*ibid.*, 25-54). Here, subjectivity, except as personal distortion, is denied, history is the relations of forces in conjunctures, and society is the object of study. thus it is the relationships between objects (as manifestations of social institutions and historical structures) and not the objects themselves that can reveal the underlying logics to be reconstructed by the disinterested observer.

II.5 The Theoretical Orientation of this Investigation

My approach is a syncretic approach designed to unite these different positions into an integrated study. A truly interdisciplinary approach should not deny the differences between the disciplines and their paradigmatic orientations, it should recognise that the tools, methods and orientations are able, through this difference, to contribute different forms of knowledge to a greater understanding of the object of study. In the case of this investigation, the tools, methodological paradigms, and theoretical stances underpinning these approaches will be combined and funnelled through an object gaze which presupposes that all material culture is deeply embedded within agency and praxis.

All material objects arise from human activity. Activity is the multi-leveled behaviour of agency which concern the everyday and the traditional, the symbolic and the functional, the aesthetic and the structural because whether consciously or unconsciously, all human agents are exposed, understand and interact with the world around them on all these levels. This nexus is the source of transformations of pre-understanding which arise and then inform the social, political, cultural and intellectual context of action. All material culture therefore embodies the aesthetic, the technological and the structural.

Whether this understanding of material objects as products of praxis is referred to as recursivity (Hofstadter 1980), selective transfer (Krautheimer 1969), structuration theory (Bourdieu 1979, 1977; Giddens 1984, 1991) or performance, the basis for viewing the object is essentially the same: pre-understandings the agent brings with him/herself which inform and change at the same time - existing structures of knowledge which make sense of the local environment and also create change. This presupposes that human knowledge arises between the recursive interaction between action, knowledge, memory, symbol systems and material culture. Recursive enumeration is the concept of new things arising from the old by fixed rules - rules which modify and adapt and are modified and adapted in turn - creating complexity and allowing for change.

Essentially, this view does not allow for architecture to be seen as a passive vessel awaiting to be filled with meaning but insists on architecture to be seen in a context of transformative action. To quote Soja: "...Spatiality [the spatial relationships which are the preunderstandings and actions of living in and creating a built environment] is a substantiated and recognised social product, part of 'second nature' which incorporates as it socialises and transforms both physical and psychological spaces. ...As a social product, spatiality is simultaneously the medium and the outcome, presupposition and embodiment of social action and relationships" (1989, 129). Architecture, the object of this study, is therefore an organised manifestation of pragmatic and ideational pre-understandings and considerations and a transformative materialisation of social norms and attitudes. Following from this, an analysis of architecture cannot simply be a study of the physical presence of a building, it must be a wider contextualised investigation of the nexus which informs the agents organisational dispositions and spatial understandings at all levels of praxis which include the ideological, the every-day and the socio-politicalⁱⁱⁱ.

III. Hexham Abbey - A Review of the Pre-Conquest Foundation

III.1 Introduction

The pre-conquest monastery at Hexham is an enigma to historians and archaeologists alike, as frustrating as it is tantalising. Thanks to Bede's **Historia Ecclesiastica gentis Anglorum** (*HE*) and to Stephanus' **Vita Wilfridi** (*VW*) we know more detail about Hexham than most 7th century foundations in Britain. The land upon which Hexham Abbey was founded was an endowment given to Wilfrid by Queen Aethelthryth from her dowry estates (Roper 1974, 73) during the height of his popularity as bishop of York, 669 -678. In all probability, this endowment was in return for his support in obtaining her divorce from Ecgrith which enabled her to join the nunnery at Coldingham and then found the monastery of Ely (*HE*, IV.xix). The foundation of Hexham Abbey in 673 (Roper 1974, *App.*I, 169) was the occasion for the building of a new church, according to the enthusiastic biographer of *VW* in a style hitherto 'unknown this side of the Alps' (see below). That Hexham was well constructed and lavishly furnished does not need to be doubted as both the *VW* and *HE* let us know that Wilfrid, in accordance with the pomp that he learned from his time spent in Merovingian Gaul, did not stint when it came to his foundations or his personal styles. The lavish descriptions in *HE* and in *VW* of his consecration in Gaul (*HE*, I.xx; *VW*, XII), his care in restoring the church at York (*VW*, XVI) and the elaborate furnishings of Ripon (*VW*, XVII) attest to this. Indeed, one of the complaints against Wilfrid by Ecgrith's second wife, Iurminburh was "all the temporal glories of St Wilfrid, his riches, the number of his monasteries, the greatness of his buildings, his countless army of followers arrayed in royal vestments and arms" (*VW*, XXIV)^{iv}. Wilfrid's turbulent career placed Hexham in and out of his control over the next thirty years until just before his death, when Ripon and Hexham were finally fully restored to him; these two, the first of his foundations being all that remained under his control of all his estates and foundations in Northumbria (*VW*, LX). After Wilfrid's death we are further told of Acca

continuing the work on the church at Hexham while he was abbot (710 - 731): Bede states that Acca 'enriched the fabric of his church' (*HE*, V.xx) and the *VW* states he 'provided for this manifold building splendid ornaments' and 'decorated the altars' of the church (*VW*, XXII).^v

Thereafter the history of Hexham is glimpsed in the documents but the specifics of any rebuilding or enlargement become confusing. Two key descriptions of the church at Hexham have guided all subsequent historical and archaeological interpretations of Hexham because of their attention to architectural and stylistic detail at a level uncommon in most textual sources. Because of their influence both are worth quoting in full. The earliest of these is the description in the *VW*:

"For in Hexham, having obtained an estate from the queen, St Aethelthryth the dedicated to God, he founded and built a house to the Lord in honour of St Andrew the Apostle. My feeble tongue will not permit me to enlarge here upon the depth of the foundations in the earth, and its crypts of wonderfully dressed stone, and the manifold building above ground, supported by various columns and many side aisles, and adorned with walls of notable length and height, surrounded by various winding passages with spiral stairs leading up and down; for our holy bishop, being taught by the Spirit of God, thought out how to construct these buildings; nor have we heard of any other house this side of the Alps built on such a scale."

(*VW*, XXII) ^{vi}

The exact date and author of the *VW* has long been debated. I would support the arguments for the author being 'Stephanus', not 'Eddius'. Following Kirby (1983) and Goffart (1988a), the traditional equation of the author of the *VW* with the cantor Eddius brought from Kent does not hold up under scrutiny. The reference to 'Eddius' was first inserted into the Cottonian MS in a 16th century hand; however the oldest manuscript, the Fell MS, merely states 'Stephanus, a priest' in the preamble (Colgrave 1927). Additionally, the first personal

references to 'I' rather than the collective 'we' generally referring to the followers of Wilfrid's religious establishments do not occur until 703 (the cantor was brought from Kent around 669) and there is a notable lack of intimate knowledge of Wilfrid's time in Sussex when 'Aeddi', Bede's cantor, is said to have remained there (cf also Mayr-Harting 1981). The date of the *VW* is usually placed between 710-720. If, following Kirby, the Abbess Aefflaed was still alive (d. 715) and, following Goffart, it was probably not written during the years 716-718 (when the collateral branch of Coenred was ruling) because of the favourable tone of the text towards Oswy's descendants, then it might further be narrowed down to having been written between 711 (the 1 year anniversary of Wilfrid's death is mentioned in the text) and 715.

The other influential text was written by Prior Richard of Hexham in the 12th century (this account published in Savage & Hodges 1907, 37):

"It was begun by making, with great labour, crypts and subterranean oratories, which had passages with many branches beneath the floor. The Church above was built with stones squared and of various sizes, and supported by well polished columns. It had three distinct stories or levels, which were carried out to an immense length and height. He also decorated the walls and the capitals of the columns by which they were supported, and the arch of the sanctuary, with figure subjects and statues and many carved decorations, in relief upon the stone; as well as pictures and paintings in great variety and wonderful beauty. The body of the Church was surrounded with aisles and porches on every side, which, with surprising and inexplicable skill communicated with each other by winding stairs and stone towers. In these tower stairs, and above them, were different ways leading to long galleries formed in the stone walls, with many turnings and branches, some leading up and some leading down, so ingeniously and artfully contrived that a great multitude of men might be there surrounding the whole Church, and yet not be seen

by those on the floor below. Both above and below were oratories as private as they were beautiful. In the porticus before-mentioned, which were arranged with great painstaking and care, altars were placed in honour of the Blessed Mother of God, Mary Ever Virgin, and S Michael the Archangel, and S John the Baptist and of the Holy Apostles, Martyrs, Confessors, and Virgins with all their furnishings provided in a conscientious and unstinting manner. Some of these works have remained even to this day, the most conspicuous of which are the turrets and towers for defence {...} The atrium also of the temple he surrounded by a wall of great thickness and strength, and moreover, an aqueduct in a stone channel ran through the midst of the town for the use of the offices. We pass over the multifarious and most abundant structures and buildings which waste and devastation have overthrown, and we have met with the foundations of many more thereabouts. For as the ancient historians and chroniclers testify, that among nine monasteries, in which the aforesaid bishop, father, and patron presided, and among all others throughout England, this one excelled them in the ingenuity of its construction and its surpassing beauty. In fact, in those days such an one could not be found on this side of the Alps" ^{vii}

Baldwin Brown made a detailed comparison of the passages referring to the building and furnishing of Hexham and came to the conclusion, generally accepted, that Prior Richard was basing his account upon that of the *VW* as a whole. (B. Brown 1925, 151-154).

Unfortunately for us, the remains, standing and excavated, do not mirror the descriptions of *VW* and Richard of Hexham. With the scanty evidence available, there have been a wide range of interpretations for both the appearance of the church and the significance of this appearance for an historical understanding of the 7th century Church. In the following sections, I would like to review the historical and archaeological evidence in some detail, and offer a discussion of

the various interpretations which have been brought forth for Hexham Abbey, as well as the historical significance of these interpretations.

III.2 The Crypt

Archaeological interpretations of St Andrew's, Hexham are based upon a series of unsystematic excavations conducted by CC Hodges between 1888 and 1907 while the present nave was being built: excavations within the nave by Bailey, 1978; a few fragmentary remains in the fabric of the church itself; and the extant crypt. Convention has it to begin an analysis of Hexham with the crypt since it appears intact, unlike the rest of the superstructure. This assumption has recently been confirmed through modern excavation and analysis of construction sequences and stratigraphy (Bailey 1979).

the structure

The crypt consists of a barrel vaulted main chamber about 14' x 8' with its longitudinal axis running east - west, an antechamber to the west and three passages to the west, north, and south. The western passage is a straight flight of stair leading out into the nave, the north and south passages each turn ninety degrees to the east, then ninety degrees again, then east again to the point where their respective exits are blocked (Fig. 1). The fabric of the crypt consists entirely of reused Roman stone for the walls and partially for the ceiling. The masonry is assumed to originate from the nearby Roman fort at Corbridge, (*Corstopitum*) (Bailey 1991, 4) which is supported by the identification of sculpture found at Hexham with that found at *Corstopitum* (Cramp 1974, 120). The mortar was used by Hodges for the comparative dating of the rest of the fabric (Savage & Hodges 1907, 4). This is now seen as unreliable following the demonstration of the circularity in Hodges' arguments for his dating sequences (Cambridge 1979, 162-64). A modern evaluation of the mortar from the crypt has not been used for comparisons in the superstructure other than a superficial comparison of the mortar in the apse as 'similar' to that in the crypt (Hall 1993, 42), although a forthcoming publication of mortar analysis has been promised (Bailey 1979, 155). Although the dating of the crypt to the 7th century has not been questioned, further evidence lies in the pre-Viking Anglo-Saxon construction details. Here I am following B.Brown (1925) and Taylor and Taylor (1965) for 'pre-Viking' Anglo-Saxon construction techniques and characteristics.

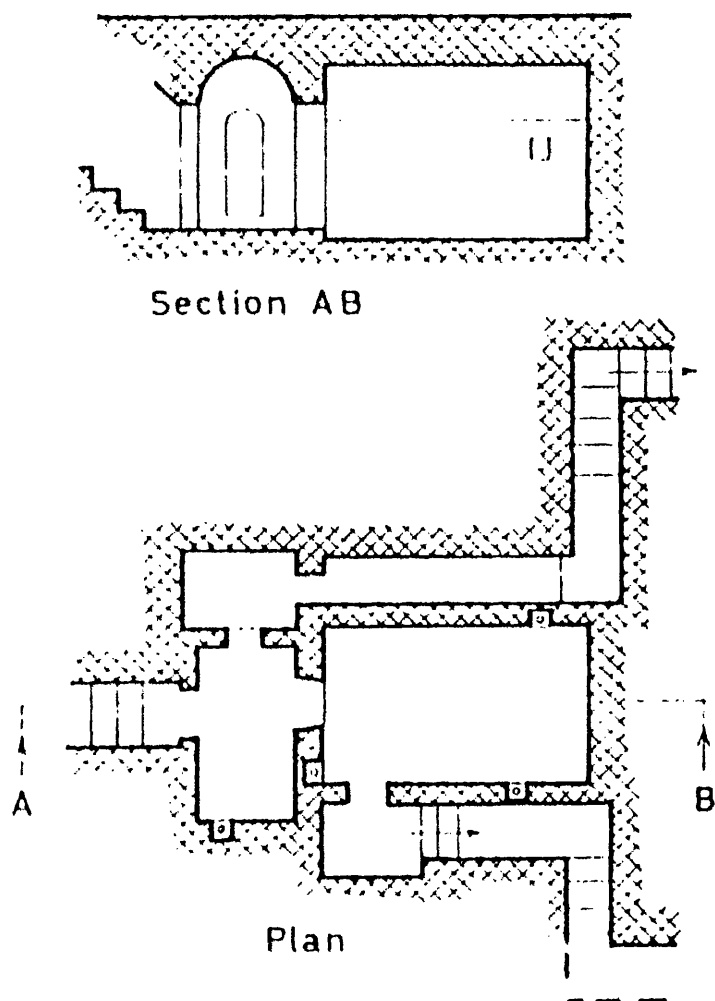


Fig. 1. *The crypt at St Andrew's, Hexham, following Hodges 1899 (from Taylor 1978).*

The reused Roman stone has been worked in Anglo-Saxon fashion: all the doorways have round-headed lintels cut from a single stone and the jambs are cut straight through the walls; the vault of the small chamber in the north passage is created from a pair of stone slabs to form a triangular vault (Taylor & Taylor 1965, 301). The two most well known examples of reused Roman stone, both in the north passage, are the Roman inscription stone used as a roof slab, and the Roman inscription stone which has been worked into a round-headed lintel. In light of this, and combined with further confirmation from Bailey's excavation that the crypt seems to be a primary construction (Bailey 1979, 150-54, fig. 148), the crypt can reasonably be identified with the one described in the *VW* (see above) and thus datable to c670.

In an attempt to correlate the rest of the description in *VW* with the available evidence, the remains of what would appear to be the underside of turning stone stairs where the south passage is blocked have been equated with the references to 'winding passages' and 'spiral stairs' (Gilbert 1974, 85). A closer examination of Hodges' drawings and reports, however, show the access to the crypt via a ladder in the south entrance with no sign or mention of the stairs so clearly visible today (Hodges 1919, Savage & Hodges 1907). This observation, the lack of stairs, is also the case with the John Carter sketches of 1761-1789 (Hodges 1888, cf Carter, BM MS 29.933, 29.943). The stairs could possibly have been added after the nave renovations, later to be blocked in favour of public access via the west entrance (Fernie 1983b), alternatively, what is visible may not represent stairs at all but structural undershoring (Bailey 1976, 62), reflecting Baldwin Brown's mention of both the north and south entrances being blocked as a result of underpinning for the piers of the current nave (B.Brown 1925, 33). There is no reference to the former in connection with the 20th century rebuilding, but either way it is probably correct to assume that what is visible now did not exist earlier owing to the strong concern that was especially prevalent earlier this century (when Hodges was working) to substantiate historical documents by making archaeological evidence fit the text. For Hodges to omit the stairs would seem highly improbable in light of this impetus.

previous analyses

If we return to the outline of approaches to the analysis of ecclesiastic architecture I proposed (cf above, Ch 2), where are analyses of Hexham aligned? The archaeological investigations of the crypt have given a reasonably firm date for the construction and therefore a corresponding parallel to events described in the historical texts. The formal qualities of the crypt, stylistically, morphologically and symbolically, still hold great interest because of the potential of providing hypothesis about influences upon the layout and form of the superstructure. Most previous investigations have concentrated on constructing stylistic, morphological or symbolic (iconographic) typographies to situate the crypt at Hexham within. I will turn to these first.

Earlier in this century, before modern excavation techniques were employed in archaeology, Baldwin Brown carried out a comprehensive survey of pre-Conquest art and architecture based upon formal considerations (which is still a valuable resource). I have already discussed B. Brown's work within the context of the traditional architectural historian's approach towards charting the evolution of an 'Anglo-Saxon' pre-Conquest (non-Norman) style which fits in with the continental models of development (above, p. 18). Even though his work has been categorised amongst those who advocated Romanising tendencies (Gilbert 1974, 81), he actually decried those tendencies and emphasised the differences between the laws and administration of the Roman Empire, and the not demonstrably identical forms and institutions derived directly from Rome (B. Brown 1903, 13-18). In his analysis of crypts he places Hexham as part of an early developmental sequence that derived initially from Early Christian cemeteries situated outside the city gates, with their typical burial tomb constructed as barrel vaulted chambers, which subsequently developed churches in association with them as at St Matthias, Trier (*ibid*, 33), and St Martin's, Tours (B. Brown, 1925). More recently, Biddle reviews this type of stylistic development from cemetery to martyrion to church by the 6th century in Gaul, and finds evidence for it in England (1986): e.g. a 5th c church over the tomb of Alban which was within a Romano-British cemetery; a mausoleum at Repton dated between the 7th and 9th century in an existing royal (apparently) cemetery which was transformed into Wystan's confessio crypt below the chancel of a

corresponding church - the church itself possibly starting out as a baptistery in the early 8th century in line with the main church to the west, and then becoming incorporated into the main body by mid-9th c at the latest.

Other analyses of crypts have placed an emphasis upon the location and number of passages and the number and orientation of the chambers in an attempt to literally transpose a form and style from elsewhere. Gilbert postulates three phases of development at Hexham in order to correspond with other known types. His first phase was Wilfrid's Early Christian crypt which was then converted into a Merovingian-type crypt by the addition of the west stair, and then into a type more akin to Carolingian example by the addition of the north and south passages as a response to an increase in the number of pilgrims requiring access (Gilbert 1974, 82-87). This study conforms to the tradition of creating morphological typologies of an idealised form which develop evolution towards an idealised model and then deviations away from this model (cf above, p. 19-20). Unfortunately the modern excavation does not seem to find any evidence for this type of sequential phasing with the building of the crypt, instead it appears to be substantially single-phased (Bailey 1979).

From the perspective of the iconographic art historian, Fernie, using the descriptions in Gregory of Tours, places Hexham's crypt in direct sequential development with the two crypts at St Etienne, first the north crypt, then the south crypt, then Ripon and finally Hexham (1983b, 62) regardless of any other Merovingian examples or English examples that might occur in between, even allowing for consideration that the argument rests specifically on the development of entrances, as Bailey notes (1991, 17). Even though none of these attempts at placing the Hexham crypt within a typology have found identical crypts of specific prototypes, the authors seem to feel, but are not necessarily convinced, that the closest parallels and therefore possible inspiration seems to be found in Merovingian Gaul.

Repton

These analyses discussed so far have relied upon the traditional technique of explaining architectural form and arrangement through the copying of a

prototype. In order to illuminate some of the problems with this type of approach, I will turn aside from the specific question of the crypt at Hexham to a discussion of two different analyses which were performed upon the crypt at Repton. The crypt at Repton has recently been subjected to a detailed archaeological excavation and it is a comparison of the approach of the excavator Biddle (1986) with the analysis of the crypt by Fernie (1989) which I will review. This therefore is a comparison between an archaeological investigation with an investigation from a more traditional perspective within architectural history.

I would completely agree with Fernie's insistence upon a blending of the three 'tools: documentary or written evidence, archaeological or physical investigation or the fabric, and the visual or architectural analysis of the design' (Fernie 1989, 19). The crux of the matter is that whereas many historians, archaeologists or architectural historians feel they are doing exactly this, most, and I think this includes Fernie himself, fall short of a blend of investigative analysis employing all three aspects, instead using superficially gathered evidence other than their main focus as almost incidental support for their argument.

Fernie's cursory perusal of the archaeological analysis for the dating for the crypt at Repton illustrates this point. His discussion of the relevance of the columns to the framing of a place of sanctuary, especially that of a martyr, could be quite revealing in terms of the layout of a martyr's crypt or reliquary crypt and he backs this up with eight examples of spiral columns directly associated with the burial of a saint or the demarcation of sanctuary (which in terms of evidence for early Christian monuments relating to the British Isles, is not a small number to be scoffed at). The examples Fernie uses are, with the exception of the Constantinian tomb of St Peter in Rome, mid-eleventh to mid-twelfth century - a gap of at least two centuries after the ninth century martyrdom of Wystan (849), and the possible terminus of Repton as a focus in monastic terms because of Viking activity. The problem with this kind of stylistic connection is that the crypt or structure becomes decontextualised from the immediate historic circumstances. What would be more interesting would be to look at the flow of

information and ideas between St Peter's tomb in Rome (with its spiral columns repositioned by Gregory previous to the 9th c *terminus* under discussion) and the church of Repton. The relationship between the overlordship of Mercia and the authority of Canterbury is one area for a probable flow of information (cf Cubitt 1995, 205-238), the explicit connection made by Eadmer between the early crypt at Christ Church, Canterbury and the tomb of St Peter^{viii} (Biddle 1989, 7) or the general symbolic influence of St Peter's upon the Anglo-Saxon church (O Carragain 1994). To further the symbolic implications, attention given to this scriptural origin of the idea of martyrs being placed beneath the altar (Ferne 1989, 24) and an exploration of the concept of the demarcation of sanctity through architectural expression (of any kind) in more detail, could also have led to some more fruitful avenues for understanding.

Biddle and Taylor's analyses might, in the first instance, appear to be too rigid in terms of sequencing tied into the historical framework (Ferne's complaint), however, Biddle's postulation for a series of alteration and expansion (Biddle 1986) is not actually that rigid. What Biddle is discussing is the development of the cult of relics in relation to archaeological evidence, a thoroughly architectural discussion of form and iconography of the kind Ferne seems to be calling for, which also takes into account historical circumstances and textual evidence. Moreover, Biddle candidly states that his reconstruction sequence is probable, not definite: "These [considerations of the *passio*'s statement about Wystan being buried within his grandfather's mausoleum] do not help in deciding the function or the exact date of the original structure" (*ibid*, 22). Biddle combines the archaeological evidence for the mausoleum (built between the early eighth and the early ninth century, with minimal phases involving first the insertion of the windows, the construction of the vaults and the columns, the incorporation of the above-ground structure into the church, then the addition of the passages; then the construction of the defensive structures and finally the termination of activity at the monastery at the time of the Viking occupation of 873-4, if not earlier), with an exploration of the textual evidence and a lucid consideration of the development of *confessio* and relic crypts on the continent and in Britain.

With all these considerations, Biddle produces a very logical argument for a possible reconstruction sequence.

I feel that the Biddle analysis, whilst admittedly not considering in detail the specificity of the columns used in Wystan's crypt other than an earlier reference to their derivation from the columns of St Peter's as a symbolic representation of Peter (*ibid.*, 5), is a better example of the attempt to blend archaeology, historical documentation and architectural ideas than is Fernie's own analysis. The claim that Biddle is guilty of a one-to-one rigid correspondence with the documents is overstated. Rather, Fernie does not fully explore the documents or the archaeology himself. He begins with a discussion of the ideational which may have impact upon the use of certain forms. Fernie then continues with an oblique comment about Biddle not discussing the implications of the burial of a secular person under a chancel which seems to indicate that he feels this is so obviously erroneous on Biddle's part that it does not need comment. Fernie, however, does not discuss the implication himself except to cite Revelations in support of the placing of martyrs beneath an altar (1989, 24). In the same article as the discussion of Repton, Biddle does discuss the evidence for the burial of royal and high status ecclesiastics on the axis to the east of the church, such as at St Augustine's and St John's (1989, 11-13). The implications of this evidence is that there is always the possibility that when the mausoleum was converted into a crypt, the eastern addition to the superstructure did not actually function as the sanctuary, but was considered to be an eastern chapel (such as the Old Minster, Winchester). Regarding the placement of altars in chancels, textual analysis and archaeological evidence has shown that generally altars were originally placed before the chancel arch and the movement eastwards into the sanctuary was a later development (Taylor 1961, Parsons 1989)). Biddle's attempt to understand the development of the crypt in the light of the historical evidence also points out an important factor: Wystan was probably buried as a 'royal' rather than as a 'saint' along with the members of his line from which he was descended.

The next area of discussion is Fernie's specific discussion of the columns, which he uses as important indicators of the date of the crypt. He gives no actual

evidence for his supposition of a ninth century date for the columns, however, other than their relation to the Anglo-Saxon columns of Durham, which is a circular argument in that his evidence for the Durham columns being of Anglo-Saxon design seems to reside solely on their stylistic similarity to the columns at Repton. In addition, he makes no attempt to connect historically the Constantinian/Gregorian tomb of St Peter's or the mid-tenth to mid-eleventh century examples he cites to Repton. On the other side (in the sense of time-scale), whether considering the construction of Durham or of Repton, there is one important example of spiral columns that Fernie neglected to mention: this is St Magnus Cathedral, Kirkwall, Orkney - a Norse period cathedral which seems to have a definite connection and a possible overlap in construction date with Durham Cathedral. Whilst I am not going to engage in an argument for the dating and or connection between Durham and Kirkwall, there is stronger possible evidence for a connection between these two, through their Norse connection, than between Durham and pre-Viking Repton. Whether this, or the idea of 'travelling masons' between Orkney and Durham, is spurious or not remains to be seen, but Fernie seems not to have made any attempt to correlate his evidence.

The point of this digression into a discussion of Repton has been to illustrate some of the problems with decontextulised arguments based upon stylistic prototypes. Analyses of style and form can be strong indications of possible links or connections, however, they are meaningless outside of an historic framework.

Selective transfer

Bailey's most current analysis (1991) of the crypt retains Baldwin Brown's admonition to not be so literal about Roman typological influences. He puts forth several alternative arguments assessing the crypt from the perspective of stylistic, formal, conceptual, and liturgical parallels of the continental examples. Whilst Bailey does not find exact parallels he brings forth a relevant concept following Krautheimer concerning the selective transfer of form (*ibid.*, 17) The importance of this concept is the possibility of merging influences and ideas.

Simply, selective transfer is concerned with the migration of ideas by their division into component parts and selectively retaining the most important aspects. Krautheimer's (1969) authoritative studies of the development of church architecture employs the diffusion of ideas not through the direct imitation of style but rather the re-configuration of parts intended to elicit a conceptual whole. He avoids the usual catacomb-basilica-cruciform church tautology by denying the direct typological nomenclature-function paradigm, even though he does remain within the stylistic categories of 'Romanesque', 'Byzantine', or 'Gothic'. Thus the earliest churches are not connected through their worship function (the masses putatively held in the catacombs), instead they have their antecedents in a wide range of types from private homes to law courts to market halls, with Constantine's basilica, the usual primary model, standing outside of the network of ideas as a specialised anomaly. The derivation of round baptisteries from the round, vaulted rooms of Roman baths is also disputed, functionally united in the normative diffusionary view, but connected by Krautheimer to sepulchre architecture formally and conceptually through symbolic death and burial, baptism as resurrection (*ibid.*: 131-41). These examples illustrate Krautheimer's innovative stance towards diffusion of form. Simple, straight-forward copies, direct imitation, the paradigm within which other art historians such as Clapham work so hard to find the prototype-copy relationship, are not to be found in Early Medieval ecclesiastic architecture according to Krautheimer. A 'selective transfer' of parts occurs, a metonymic association with the model: "the parts which have been selected in these "copies" stand in relation to one another which in no way recalls their former association in the model. Their original coherence has been discarded. The original unity has been disintegrated and the elements have been reshuffled" (*ibid.*: 125). It should be remembered that the time period under discussion is lacking in such things as pattern books: ideas were transmitted by memory, or even if written down an architectural description is very subjective and interpretive and often inaccurate (or else we would be able to rely wholly on the *VW*). Essentially, a trade was taught by apprenticeship down through the generations with skills being lost as well as gained.

Bailey illustrates possible selective transfer occurring between the crypt at Hexham and the Church of the Holy Sepulchre in two manners: firstly, the constituent components of the Church of the Holy Sepulchre list as "a rectangular grave-chamber prefaced by a rectangular ante-chamber; a central area arched overhead, surrounded by walls and passages; an entrance to the east" (Bailey 1991, 21). There are definite similarities to the character of Hexham described in these terms: a rectangular chamber prefaced by an ante-chamber, a central area arched overhead (barrel-vault), surrounded by walls and passages, an entrance passage to the west. The discrepancy in orientation could simply have to do with the difference between early western chancels and later eastern chancels, in other words 'an entrance from the main body of the church'. The second manner of selective transfer in Bailey's example refers to the Holy Sepulchre in terms of orientation and measurement: Christ's tomb located in the north and described as 7 "feet" wide. That term is ambiguous and Bailey notes that in Drusian (Germanic northern "foot") terms the width of the chamber of Hexham is 7 "feet" (*ibid.*, 22). The emphasis to the north also appears in the crypt at Ripon, which shares many similarities with Hexham, in the layout and measurements (which I will return to later), and in construction details (*ibid.*, 6).

Selective transfer would shift the emphasis from direct stylistic prototypes (even though Bailey does continue on in his own paper to attempt to find continental analogies for western corridor types and annular types) to a consideration of ideas. The reconfiguration of form would therefore rely more upon the intended use of the structure and the effect which was being sought. I will turn to the function and layout of the crypt in order to elucidate this. The traditional assumption for the function of Hexham's crypt was to contain relics. There is some textual evidence for Wilfrid being an avid relic collector. Stephanus' repeatedly tells us of Wilfrid's acquisitions on his visits to Rome: "So the servant of God, with the aid of the holy relics he found there, setting out in the peace of Christ, returned safely to his father, the Archbishop of Lyons..." (*VW V*); "he also obtained from chosen men a great many holy relics, for the edification of the churches of Britain, writing down what each of the relics was and to which saint it belonged" (*VW XXXIII*); and again, "but our holy bishop, in all obedience,

visited with his friends the shrines of the saints, and according to his habit, collected from elect men holy relics authenticated by the names of saints..." (VW LV). What Stephanus does not explicitly state is the deposition of any of these relics within the crypt at Hexham. The tradition of the crypt containing relics is derived from a later source. Ailred of Rievaulx relates that Eilaf transferred the relics at Hexham because he felt it unworthy that they should be hidden away underground (B.Brown 1925; Hinds 1896, 122)

the cult of relics

Furthermore, the attempts at equating the crypt with continental *confessio* crypts and *martyrium* has rested upon the tenet that the main functions of a crypt were to contain relics. I would like to investigate further the development of the cult of relics, specifically what was understood to qualify as a relic, as it pertains to seventh century Anglo-Saxon Christianity and the physical implications which might be understood from this. Recent studies have concentrated on the early cult of saints, from its origins in Rome (and earlier in pre-Christian times) through the ninth century and beyond. Specifically I will be referring to the work of Rollason (1989) and his investigations of the cult of saints in Anglo-Saxon England, P. Brown's (1981 & 1982) study of the development of the cult of saints, Biddle (1986) and Thomas' (1973) work on an archaeological perspective of the cult of relics.

It has been recognised that saint's cults were a transformation of the hero cults of pre-Christian society into a model of heavenly intercession on earth which the converting populaces were able to adopt (Rollason 1989, 4-5). The power of saints to perform miracles and intercede also extended into their physical associations. The saint was viewed as "patron (*patronus*) who exercises his ideal power (*potentia*) through his physical presence (*praesentia*)" (Biddle 1986, 1; cf. P.Brown 1981, 86-127). This power (*virtus*) remained in the physical remains of the saint after death, and, by extension, with any object associated with that saint in life. The tomb of a saint became "a locus where earth and heaven meet in the person of the dead, made plain by some manifestation of supernatural power - some "*virtus*" - of some "*miraculum*", some wonderful happening" (P.Brown

1982, 225) This very early association of a saint's tomb being revered and venerated because of the duality of the saint's presence in his/her physical remains as well as in heaven became extended over time to this *virtus* residing in clothing, jewellery, and possessions of the saint. Eventually anything touched by a saint in life or after death (for example, the water the corpse was washed in) became imbued with *virtus* and had miracle working powers. The body of a saint, flesh and bones, would be the primary or major relics venerated. The secondary or minor relics were those objects physically associated with the person of the saint. Part of the proliferation of secondary relics was due to the official stance of Rome which looked askance at the dismemberment of a saint's body for distribution of relics, to the point of death possibly being visited upon those who disturbed the remains (Rollason 1989, 25-27). Rome actively encouraged the development and distribution of secondary relics throughout the Western churches. Secondary relics therefore could be as insubstantial as fragments of cloth, slivers of wood, a bit of soil, or a few drops of water. As much as secondary relics were empowered through their previous physical association with the saint's person, the efficaciousness of this *virtus* was only activated through physical contact. Repeatedly in Bede, in Gregory of Tours and in other writings and *vitae*, we are told of miracles occurring after *contact* with a saint's relics. Prevention of contact, as part of controlling the relics, could have traumatic results (P.Brown 1981, 87-88). Therefore a variety of artefacts to house these secondary relics were developed. These could range from a simple pouch or an ornament with a cavity to the 7th-9th century 'house' reliquaries provenanced to England, throughout the Continent and to Ireland, (Thomas 1973; Rollason 1981, 29-33). As Thomas has demonstrated (1973) these reliquaries were designed for access to their relics.

By the seventh century in Anglo-Saxon England, a complex understanding of the nature of saints' relics, their associative powers and the housing of both primary and secondary relics existed. Since prior to the twelfth century there was no formalisation of the canonisation of a saint, the transformation of a person into a saint derived from different traditions, almost localised, based around the attitude of the living towards the corporeal remains of the deceased (Rollason 1989).

These traditions became an almost formulaic ritual for converting a corpse into a relic with discernible regional variation in practice. Roman practice inevitably begins with the location of a martyr's body and the veneration of the tomb or grave. These *martyria* were extramural places of devotion which almost inevitably developed a church around the martyr's resting place. The evolution of the Roman *martyrium* (burial tomb) into *confessio* crypt-shrines was well developed by the 8th century and appears to refer back to the elaborate enshrinement and renovation of St Peter's tomb by Gregory the Great. Importantly, the Roman practice of transformation of a person's corpse into a saint's primary relics retains the crypt/tomb as the focus for veneration: "enshrinement was always in the crypt, not on the floor of the church" (Rollason 1989, 54).

The distaste and prohibition felt in Rome towards the disturbance of the remains of a saint did not have as lingering an effect in the provinces. As early as the 4th century, Ambrose is said to have translated the relics of two saints from their original burial places (and the associated churches) into his new basilica for veneration (Biddle 1986, 3). Here we see the beginning of an important difference between the Roman attitude towards the primary relics and the practices which were firmly entrenched in Gaul by the 7th century, that of *translation* of a saint's remains (Rollason 1989, 49-51). Additionally, the Gaulish evidence for the development of crypts for this period seems entirely to be based upon the grave of a martyr, there is no evidence until the ninth century for the building of a crypt specifically to hold the translated primary relics of a saint (*ibid.*, 55). It is clear from Bede (e.g. Earcongota and Ethelberga, *HE*, III.viii; Oswald, III.xi; Aidan, III.xvii; Cedd, III.xxiii; Cuthbert, IV.xxviii; etc.) as well as other *Vitae* that translation of the body of a venerated person was a part of the Anglo-Saxon ritual of transformation into a saint: exhumation and cleansing or re-dressing of the corpse (which conveniently created secondary relics), translation into a new coffin, then elevation to a shrine within the main body of the church, on the floor of the church. Whilst this practice differed from Rome, the prescription towards damaging the corporeal remains stayed in effect throughout this time. There is no evidence for the dismemberment and

distribution of parts of the saint's body in Anglo-Saxon practice, the exceptional cases, such as Oswald's head and arm, were situations where the circumstances of the death of the person had caused the dismemberment of the body.

The original burial places prior to translation might also inform us about the development of the cult of relics by the Anglo-Saxons. Bede's mentions of the burial of important persons in the porticus of the church are too numerous to cite, but the tradition of burial in the porticus or near the church seems to have been well established. Power and politics were both heavily tied up in the canonisation of saints and in the creation of a particular saints' cults, as in the use of the promotion of the cults of Edwin, Oswald and Cuthbert by the competing Deiran and Bernician lineages in the 7th and 8th centuries (cf Kirby 1974). Additionally, the background of the pool of persons eligible for sainthood comes from the nobility and aristocracy who were the patrons, founders, and members of the Anglo-Saxon ecclesiastic communities. Only persons of high standing and esteemed to be worthy of reverence could be buried within or near the church walls. This custom appears to be as important for the nomination of a saint, burial within the sanctity of the church, as the translation and enshrinement of the corpse. Cuthbert's deathbed concession to be buried within the church of Lindisfarne for ease of visitation and control of access to his remains overtly recognises the need to control the relics: "in short, the reason given was that burial in the church enabled the religious community to control the saint's cult or, looked at another way, to gain undisputed possession of the relics and their miraculous power" (Rollason 1989, 42). Biddle's consideration of saints' resting places from the later saints' lists finds structural evidence for 24 of the 85 locations named (1986, 6). Of those which can be considered as dating up to through 7th century and which have evidence for the type of resting place (twelve), eight of the known resting places were either in porticus or the body of the church.

The remaining four from Biddle's list, St Alban's, Canterbury, Glastonbury and Repton all mention burial in a crypt. I should like to consider the evidence for these 'burials' along with the evidence for the other known crypts, Hexham,

Ripon, Brixworth and Wing. St Alban's is without a doubt, early. The early church is 4th/5th century and was built directly over Alban's *martyrium*. This is a classic example of the Roman extramural cemetery - *martyrium* - church development (Biddle 1986, 13). Alban was a 3rd century martyr living in a Roman province which continued as Roman through at least the 4th century and the development of this site therefore parallels Roman practice and custom. Canterbury as always is presented as the best of the examples for every aspect of church architecture. We have a textual description of a *confessio* crypt explicitly mirroring Gregory's St Peter's in Rome (cf. above and *intra.*, n.viii), unfortunately we have no physical evidence with which to compare it and the date of this crypt has never been decisively determined (Cherry 1976, 175). Canterbury having a *confessio* crypt modelled on St Peter's would not be surprising since it was the main seat of authority in Anglo-Saxon England for Rome as well as the strong links between Gregory the Great and Canterbury. These considerations aside, the only mention of an actual burial there is of the 11th century St Dunstan (Biddle 1986, 7). Glastonbury is problematic (cf also Cramp 1976c, 241-46). Two *hypogeum* (stoned lined sunken chambers) existed as part of the early phase (5th-8th century) of the site in a cemetery which also contained a wooden structure usually identified as 'the old church' from the textual sources (Radford 1981). These *hypogeum* are not 'crypts', rather they are a way of marking out graves for veneration, either a founders' grave or someone else of importance in the cemetery. These two graves were incorporated into the body of the stone church built around the 2nd quarter of the eighth century, which possibly had two phases (Radford 1981). The first building, c720, was a simple structure where a shrine near the altar would have marked the position of the saints' graves. The second building, c760, is seen as a much more elaborate structure with a raised platform to allow access via a small stairs to the relics below (Radford 1981). This interpretation of the evidence for the later eighth century church rests solely on Radford, who has been known to overemphasise the Christian and historical interpretations of a site to fit the textual evidence (for example Tintagel's previous interpretation as a monastery and its current understanding as a royal site after the recent excavations). Nevertheless, the first phase for Glastonbury, up to the eighth century, did not have a crypt, as such,

although the treatment of the *hypogeum* fits well into the *martyria* tradition. Repton has been discussed previously (cf above), however I would like to looking at the phasing within the context of burial practices. The first phase appears to have been a free-standing mausoleum built no earlier than c715. This was converted into a *confessio* crypt, in several stages, and incorporated into the main church between the early (c.839) and mid-ninth (prior to 873/4) (Biddle 1986, 17-19). However, the significance of the earlier mausoleum seems to lie with a local tradition for royal tombs associated with the earlier cemetery: a second, apparently royal, mausoleum was discovered recently (*ibid.* 22). By the ninth century, the mausoleum was viewed and treated as a *martyrium* and converted into a *confessio*, probably in a deliberate attempt to promote Wystan as a saint and develop his cult as part of the power struggle which had resulted in his death, previous to that it was a royal tomb for a particular lineage of the Mercians. Hexham and Ripon have no crypt burials associated with them (Bailey 1991) nor is there any mention of their crypt used to house the translated primary relics of any saint, as opposed to specific mention of burials or enshrinement within the main body and porticus of the church (Biddle 1986, 8-9). Brixworth and Wing, which excavations have shown to probably be mid-late 8th century (or later, cf. below), do not have burials (Audouy 1984; Taylor & Taylor 1965; Cherry 1976).

summary

I feel that there is enough evidence to support Rollason's bald statement, "it is a striking fact that in none of the cases mentioned above [Hexham, Ripon, Brixworth, Wing, and Christ Church Canterbury] do we have evidence that major relics were actually enshrined in the crypt" (1989, 54). To summarise, the general notion of 'crypts house burials and relics' needs be closely examined with regard to three related practices, the process of canonisation, the treatment of relics, and burial practices. In 7th century Anglo-Saxon Christianity, as we have seen, burial practices of high status people (those with the potential to become saints) occurs normally within the porticus of the church and secondarily near the walls of the church, not in crypts. Canonisation requires the translation, elevation and enshrinement of a saint in the main body of the church, usually near the altar. There is no textual or physical evidence of primary relics in a crypt, only above in the main church. Dismemberment and distribution of primary relics was not normal practice. Secondary relics could be housed in a variety of ways but physical access is required. If we have textual evidence that Hexham housed relics in the crypt (cf above) we must assume, therefore, that they were secondary relics, probably some of which were brought back by Wilfrid from his trips to Rome.

So what would be the purpose of the crypts at Ripon and Hexham? Why deposit secondary relics in a crypt? The crypt at Hexham is neither a *confessio* from a *martyrium*, nor a burial place. Sheer imitation is unlikely - architecturally it does not fit with the morphological typologies from the continent. I will now turn to a consideration of the layout and arrangement of the crypt.

the layout of the crypt

It has been supposed that the south passage at Hexham was for use by the clergy and that the public entered the west passage where they could view the main chamber with its relics through a grille in the opening between the ante-chamber and the main chamber, and then exit by the north passage (Taylor & Taylor 1965, 301, 311). This supposition is based on the belief that the south entrance exited into the sanctuary. Bailey's 1978 excavations, however, have determined that the

south wall of the nave crossed over the passage, therefore the exit would have been outside of the nave (Bailey 1978 & 1991). Bailey postulates the movement through the crypt as starting in the north passage, proceeding through the ante-chamber into the main chamber, then exiting via the west passage, the southern passage being reserved for clergy. This path of movement provides "a contrast of dark, disorientating restriction and sudden luminous revelation which would be dramatically appropriate for veneration" (*ibid.* 1991, 5), which Bailey feels exactly corresponds with Wulfstan's 10th century description of a crypt at Winchester (*ibid.*). Furthermore, in view of the cult of relics, Bailey relates this path to the concept of pilgrimage outlined by P. Brown: "a sharpening of the "sense of distance and yearning by playing out the long delays of pilgrimage in miniature" (*ibid.*, P.Brown 1981, 87), an experience heightened by the 'opacity' of the shrines and the rituals of control and access to the relics (P.Brown 1981, 87-88). Wilfrid's visits to the shrines to collect relics whilst he was in Rome 'according to his habit', has already been noted (cf above), therefore it is not unreasonable to view the path of movement through the crypt at Hexham as outlined by Bailey as having a special resonance with pilgrimage.

But were Wilfrid's trips to Rome significant only as pilgrimage? Although two primitive guide books to the shrines and relics of Rome were in existence (O Carragain 1994, 8), in mid-7th century Anglo-Saxon England pilgrimages to Rome on a regular basis were uncommon and there appears to be a tension between the monastic regular life and the wandering life of a pilgrim, essentially a spiritual tourist: "To go to Rome, /Much labour, little profit" (*Teicht doroim*, in O Carragain 1994, 36), or as Bede said: "As often as he crossed the sea, he never returned, as is the custom with some people, empty-handed and without profit" (*Opera homiletic* 1:13, *ibid.*). Wilfrid's trips, however, were more than simple pilgrimages. Wilfrid's first visit to Rome was spent learning the Gospels and rules of ecclesiastic life from Boniface the archdeacon (*VW*, V). In addition to reflecting conceptualisations of reverence for relics and pilgrimage, could there be a liturgical aspect which would involve access to the relics?

Later sources show an explicit relationship between relics, altars and processions. Rabe presents a very thorough analysis of the theological, liturgical, symbolic and spatial relationships of the Carolingian Abbey of Saint Riquier (1995, and for the following). This ambitious project, of building anew an entire monastic complex, was begun by Angilbert in the late 8th century. From Angilbert's writings, *De perfectione et dedicatione centulensis ecclesia* and *Institutio de diversitate officiorum*, commonly known as Angilbert's *ordo*, we have evidence of a direct relationship between spatial and liturgical practice. The *De perfectione* describes the buildings, dedications, physical arrangements of the cloister, its altars, relics and treasures. The *Institutio* prescribes, in detail, the order of the offices on a daily basis and on special festivals and feast days. An eleventh century axonometric, Hariulf's drawing, of the monastic complex exists as part of one of the surviving manuscripts. This, together with extensive excavations by Bernard have provided us with a fairly complete understanding of the 8th century buildings. A rich and complex theological vision was daily enacted and reinforced through processions between the three churches on the site and between the many altars and shrines of the complex. These in turn were added to on the special feasts days which had special resonance with the theological debates of the day and which are noted by the church dedications themselves, the church of 'St Richarius and the Holy Saviour', the church of 'Holy Mary Mother of God and the Apostles', and the chapel of 'Saint Benedict and the Holy Regular Abbots'. The church of the Holy Saviour contained eleven altars, the Mary church contained one altar for Mary and twelve for the apostles, the Benedict chapel contained three altars. Each altar contained relics of its primary saint (or object, for the altar of the Cross), with liturgically or thematically associated relics :

"These having been collected... we have with great diligence prepared a principle reliquary decorated with gold and gems, in which we have placed part of the above-mentioned relics,... with those for the veneration of the holy saints whose relics were seen to be collected in it under the crypt of the Holy Saviour.

Moreover, we have taken care to divide the relics of the other saints, which are noted above, into thirteen other smaller

reliquaries. ... and we have placed them on the beam that we have established on the arch in front of the altar of Saint Richarius, so that in every corner of this holy place it will be fitting that the praise of God and the veneration of all of his saints always be adored, worshipped, and venerated”

(*De perfectione* 2, in Rabe 1995, 122)

As well as on the special feast days, the daily liturgy and offices prescribed activity at each of the churches by different sections of the clergy. A full discussion of the liturgical orders and the spatial and symbolic arrangement of the monastery are too complex and lengthy to go into here, one example will have to be sufficient to present the complex interwoven relationships of movement and liturgy enacted on a daily basis:

At all Vespers celebrated in the normal way, when everything has been completed at Saint Richarius, let the brothers proceed by singing psalms up to the holy Passion. When the prayer has been completed, let the choirs be divided into two, of which one proceeds to the holy Resurrection, the other to the holy Ascension. Then when the prayer has been done, let one choir come to (the altar of) Saint John, the other to Saint Martin. And then afterward (proceeding) through Saint Stephen and Saint Lawrence and the other altars by singing and praying, let them come together at (the altar of) the Holy Cross.

(*Instituio* 17, in Rabe 1995, 118)

Parsons (1989) compares Angilbert’s *ordo* and Hariulf’s drawing of Saint Riquier (though he feels these sources are problematic and do not necessarily reflect the 8th/9th century) to the *Regularis Concordia* of the second half of the 10th century in an attempt to sketch a more generalised picture of the relationship between liturgical practice and the spatial layout of the early church in Anglo-Saxon England. The *Regularis Concordia* offers direct Anglo-Saxon, albeit late, evidence for liturgical processions during the daily performances of the Offices and during the special festival celebrations. It indicates liturgical procession

between the multiple churches of a community during Easter Week and other major festivals and between the shrines and altars within a church during the regular offices and services (*ibid*, 6). The *Concordia* also provides textual evidence for the use of porticus, upper storey chapels and oratories during liturgical processions (*ibid* 13-14). Furthermore, there is an implication from the texts that the main altar would need to be free-standing in front of the chancel arch in order to allow for movement around it during the performance of the liturgy (*ibid* 18-21). Both Angilbert's *ordo* and the *Regularis Concordia* indicate a physically active liturgical participation by the clergy based upon regularised movement between the churches of a monastic community and, significantly for our purposes, between the altars and shrines placed throughout the body of the church. Unfortunately, this evidence is for later time periods than the time period under study. What evidence is available for any possible spatial/liturgical relationship in 7th c. Northumbria?

There is no direct, unequivocal evidence such as Angilbert's *ordo* or the *Regularis Concordia* for Northumbrian liturgical processions of such scale and regularity in the seventh century with which to answer this question. Therefore a survey of what evidence there is for the development of liturgical practices in Rome, Gaul and Anglo-Saxon England must be considered before continuing with the specific discussion of Hexham. The latter half of the seventh century, when Wilfrid and Benedict Biscop were making their visits to Rome, saw the beginning of the formalisation of liturgical practice; by the late 7th century the *Ordo Romanus I* had developed (Noble 1995, 82). The program initiated by Gregory the Great at the beginning of the seventh century was one of 'unity within diversity'. He actively encouraged the use of a variety of practices for liturgy and worship and to embrace local custom and turn it to Christian worship. (O Carragain 1994, 26-27;). Bede's quotation of the letter from Gregory to Augustine most aptly sums up this position:

"...it is my wish that if you have found any customs in the Roman or the Gaulish church or any other church which may be more pleasing to Almighty God, you should make a careful selection of them and sedulously teach the Church of the English, which is

still new in the faith, what you have been able to gather from other churches. For things are not to be loved for the sake of a place, but places are to be loved for the sake of their good things. Therefore choose from every individual church whatever things are devout, religious, and right. And when you have collected these as it were into one bundle, see that the minds of the English grow accustomed to it.”^{xix}

(*HE* I.xxvii)

The most common aid to liturgical practice were the *libellui*, eclectic collections of gospels, prayers, offices, calendars and various miscellany which were brought together by the individual basilicas or monasteries. The forms known from the seventh century include the Gelasian *libelli*, the Gallic *libelli* and the Gregorian. Each of these types is known from later formalised collections,^x introduced starting in the late 7th/early 8th century when a regularisation of liturgical practice was initiated. The Gallican *libelli* were predominantly based upon the 2nd revision of Jerome and were in use in Gaul, Ireland and North Africa. The Gelasian had a large Southern Italian influence combined with Spanish and Roman practices. The Gregorian sacramentary were based predominantly upon the practices of the basilica of St Peter’s and papal practices. (cf Cubbitt 1995, 128-52; O Carragain 1994; and also Dumville 1995; Hohler 1995; Lapidge 1985 & Gneuss 1985 for Anglo-Saxon booklists; for this and the following summary).

A considerable amount of scholarship has been spent on comparisons of surviving manuscript fragments to trace lineages, influences, stylistic developments and palaeography for the early Medieval church manuscripts. In the Anglo-Saxon church, and especially in Northumbria., eclecticism appears to be the only consistent influence. Much has been made about the Roman influences upon the scriptorium at Wearmouth/Jarrow (cf. Parks 1982, Higgitt 1966) as opposed to the ‘non-Roman’ influences upon Lindesfarne and other monastic centres (cf. Brown, 1971; Bruce-Mitford 1967; Nordhagen 1977, among others, for stylistic and paleographic influences upon Northumbrian mss.). The evidence is simply not that straight-forward. The only definitive statement which can be made is that there was no singular dominant influence

stylistically or textually. Textually (i.e. the content - which is what concerns us here), Gelasian influence has been found in two 'Anglo-Saxon' fragments of a collection which also has Gregorian and Gallican materials (Cubitt 1995, 133), in Bede's *Martyrology*, the calendar of Willibrord, and other sacramentaries and calendars which also contain Gregorian elements mixed with Byzantine and other non-Roman elements (Hohler 1995, 223-230). Gallican influence has also been found extensively. Textual evidence for the Gallican influence has been found in use at Lindesfarne, in the writings of Bede and other *vitae*, in the form of liturgical blessings, the rituals described for Wilfrid's consecration ceremony at Ripon, and two fragments of 7th c. insular gospel books whose pericope markings appear Gallican (*ibid.*, 127-32). Gregorian influence has been shown in Bede, on the Gelasian Sacramentary itself, on the Anglo-Saxon Psalters (*ibid.* 138-142) and through the transmission of Mediterranean manuscripts between the 5th and 8th century which influenced 7th and 8th century Anglo-Saxon manuscripts found on the Continent (Dumville 1995). It should be noted that in every instance where influence of one 'type' of liturgy is found, evidence is also found for influences of another 'type', and that each of the 'types' show mixed influences within them. Therefore I do not feel typological identification of insular liturgical traditions is very illuminating.

Rather than trying to identify a specific idealised localised model from which the manuscripts which have survived are derived from (as with the crypt typologies discussed earlier) I would like to look at the form of worship and practice which we have evidence for in the 7th century. It has been assumed that the form of liturgical practice employed by Angilbert, processional liturgy, was derived from a specific Roman stationary liturgy of St Peter's. This stationary liturgy was, presumably, brought back by Chrodegang in the form of the Gregorian Sacramentary and established at Metz in the 750's (Rabe 1995, 146; and *note vi*). It has also been assumed that this was a new form of liturgy introduced into areas where the Gallican liturgy was still the predominant form (*ibid.*, 144 for Gallican elements in Angilbert's *ordo*). The confusion of the manuscript evidence from the 7th and 8th century does not support this view of one predominant tradition, and it is therefore likely that the Roman stationary liturgy was known in Gaul and

Anglo-Saxon England prior to the introduction of the Gregorian Sacramentary in the mid-8th century.

The stationary liturgy of St. Peter's was an elaborate processional, enacted 160 days out of the year, especially during Lent, by the Pope, or his representative, which employed a processional visit from St Peter's to the scattered basilicas of Rome, and as has already been mentioned, appears to have been fully developed as an *ordo* by the late 7th century (O Carragain 1994, and for the following). The importance of this procession was to strengthen the concept of 'diversity within unity' of the Church, by including the different basilicas within the procession and by the knowledge that the Pope was celebrating mass at the same church on the same days each year. For instance, "the stations for Easter Week provided a summary of the major basilicas, and also of the major figures (including Christ and Mary) mentioned in the Roman Canon: Easter Sunday, Mass at Santa Maggiore; Easter Monday at St Peter's; Tuesday, at St Paul's outside the Walls; Wednesday, at St Lawrence's outside the Walls; Thursday, at SS Apostoli; Friday, at S Maria ad Martyres (the Pantheon); and Saturday, at the Lateran (the Basilica Salvatoris)." (*ibid.*, 9-10). As O Carragain has pointed out, Wilfrid would definitely have witnessed these processional rituals and probably participated in them whilst at Rome under Boniface.

There is manuscript evidence for the Roman stationary liturgy having been transmitted outside of Rome prior to the mid-8th century. The earliest English survival of a fairly comprehensive Roman stationary list is copied in an Anglo-Saxon hand of c. 700 into the Burchard Gospels from an archetype of the 650's (*ibid.*, 8; & n.40, 54). The liturgical practices of 7th century Rome are also reflected in another manuscript in an Anglo-Saxon hand of the early 8th century and contains the Roman gospel lections, epistle lections and stationary list (*ibid.* n.88, 63-64). The Gelasian Sacramentary is considered to be based upon a *libelli* collection from the early 7th century of the Roman stations and the masses at St Peter's (Cubbitt 1995, 132-33), and the 'Gelasian' character of Willibrord's calendar (copied between 703-721) has already been mentioned (see above). Other manuscripts show elements of the Roman stationary system: pericope notes

from the Roman system were added to an Italian manuscript (now at the Bodleian) in a 7th century Anglo-Saxon hand (*ibid.* 140); the 8th century manuscript at Wurzburg (see above) is a fairly comprehensive Roman lectionary (which includes stations and feasts, epistles and pericopes) and are viewed as ‘purely Roman and very ancient’ - the epistles date from c.550 and the Gospels c. 645. (*ibid.* 140).

Aside from the Gelasian and Gregorian direct parallels (quotations, saints lists, references) in Bede’s writing, in the other *vitae*, in calendars and martyrologies, psalters and antiphoners (Cubbitt 1995, 132-151; Hohler 1995, 223-30), descriptive passages in the documents can also point to the knowledge of the Roman stationary system. O Carragain presents three texts, two are the descriptions of Ceolfrith’s departure from Wearmouth/Jarrow (*HA* XVII; *HAAnon* XXV-XXVII) and the third is the Dream of the Rood (concerning which the author presents strong thematic and symbolic evidence for its having been composed in the 7th century) (1994, 12-18) Ceolfrith led a procession around Wearmouth, visiting the churches of St Peter, St Mary and St Lawrence, also the three patrons of Rome, singing psalms and antiphons, which ended in a worship of the cross. O Carragain suggests that Ceolfrith’s worship of the cross refers directly to the cult of the Holy Cross instigated by Pope Sergius (687-701) and to Roman Good Friday ceremonies (*ibid.* 14). He finds parallels for this reference to the cult of the Holy Cross in the Dream of the Rood (referred to in the text as ‘the Old English Crucifixion Poem’). In the poem, Christ’s followers gather together at the Holy Cross in Jerusalem, which is “strikingly reminiscent of the way that the Roman clergy, with the Pope at their head, came together at the basilica of Holy Cross in Jerusalem at the night hour on Good Friday” (*ibid.* 15).

The relevance of stationary liturgy to provincial churches was, like the celebration of relics, the way of uniting a far-flung community in communal actions. The stationary system would function on several levels outwith Rome. Firstly, it would enable those who had visited Rome to recall the shrines and basilicas there. It would also enable those who had not been to Rome, through the use of lectionaries and stationary lists which provided them with the names and relics of

the basilicas and saints of Rome, to feel they were participating in rituals enacted on the same day and using the same Mass as in Rome. “A station list helped Northern monks, whether they had been to Rome or not to deepen their sense that at Mass they were ‘communicantes et memoriam venerantes’ with the other members of the Church throughout the world and in heaven” (*ibid.* 9). It should also be recalled that the three churches built at Hexham were dedicated to three principle Roman saints, St Andrew, St Peter and St Mary.

Summary

In summary, returning to the layout of the crypt (cf. Fig. 1), from the preceding discussions it can be seen that whilst the crypt would have held secondary relics (it certainly was never intended as a burial crypt), access to these relics would have been required on a more fundamental level than simply as a place for veneration by pilgrims. The crypt with its relics would probably have functioned as an important part of the liturgical orders following parts of the Roman lectionary. Part of the clergy would probably access the crypt during processional prayers from the main body of the church, pausing in the western ante-chamber and then into the main chamber and then exiting on each side to continue to other altars and shrines within the church. As well as general archaeological and textual evidence for multiple altars within churches from this time, Bede specifically tells us that Acca, Wilfrid’s successor, collected relics and “... put up altars for their veneration, *establishing various chapels for this purpose within the walls of the church*” (*HE* V.xx, emphasis added)^{xi}. Special feasts, such as Easter week, would have involved the entire community in one form or another. Access to the relics during ‘normal time’, not during feast days or during performance of the liturgy, may still have plausibly started in the north passage, away from the main activity within the church. An important aspect of the *virtus* of relics, however, was physical proximity, therefore the pilgrims, visitors, or brethren wishing to pay a visit probably would have moved from the north passage into the ante-chamber, then into the main chamber itself, and exited through the less elaborate south passage. This path of movement retains the “microcosm of pilgrimage” effect, allows accessibility to the relics, and does not disturb any liturgical activity in the main body of the church.

My understanding of the crypt requires an eclectic application of selective transfer, both physically and conceptually, and an understanding of the crypt as not an architectural shell or an aside, but as an integral part of practice, both liturgical and cult. The use of selective transfer in this way combines aspects of analytical interpretation and creates the opportunity to flesh out the logic involved in the creation of a structure. The interpretation outlined above follows on from a contextualised discussion of the physical (architectural) influences, the functional requirements and the spatial requirements culturally and liturgically. Therefore, the crypt at Hexham can be seen to fulfil and represent a variety of needs, subtly interplaying with each other to produce the final form.

Iconographically, symbolic references are invited through the representation of Christ's tomb in the formal elements as well as in the (Drusian) measurements. A small altar, (there was evidence for an altar within the crypt at Ripon, (Bailey 1991, 20)) with its secondary relics, placed underneath the nave of St Andrew's, accessible through corridors, could simply represent an amalgamation of the *martyria* and *confessio* which Wilfrid was familiar with in Rome and Gaul. Certainly, the crypt bears little direct resemblance to the *confessio* of St Peter's with its elaborate columns and furnishings, however it does resemble the actual crypt underneath St Peter's, a central space accessed by long corridors entered into north and south of the main shrine above (cf Taylor's drawing, Rollason 1989, 55). Bailey notes the development of a larger central space in crypts to accommodate the liturgical requirements of the Benedictine orders in the 8th century (Bailey 1991, 20-21). The crypt at Hexham also fulfils liturgical needs in the practice of regular orders as well as stational processions on feast days. Finally, the experience of moving through the crypt recalls the experience of pilgrimage as well as recalling stational liturgy. The crypt at Hexham stands outside of easy typological classification, however it must be remembered the uniqueness of Hexham as a new foundation without either major relics or the grave of a saint for a crypt to develop around and a church to develop around that crypt. Whereas the continental and Roman crypts developed from tombs into shrines, places for veneration of the primary relics of a saint, the crypt at Hexham seems to have combined the experience of pilgrimage shrines with the liturgical

needs of the monastic community. This would be an ample opportunity to create something new which reflected the current (7th century) ideological culture within a Northumbrian context, as Angilbert was able to do at Saint Riquier.

III.3 Wilfrid of Northumbria - Historical Background

The preceding discussion of the crypt at Hexham was designed to bring out several promising strands of inquiry by considering the concept of ‘crypt’ within the 7th century cultural milieu. The crypt can now be seen as having been created from a convergence of Gaulish, Roman and Anglo-Saxon practice (not styles) as funnelled through a Northumbrian bishop, Wilfrid. Therefore, an exploration of the life and activities of Wilfrid, his career, travels and relationships, will provide historical information within which we can contextualise the foundation and building of Hexham. The textual information available for the life of Wilfrid is provided from a variety of sources. First and foremost are the *Vitae Wilfridi* and Bede’s *Historia Ecclesiastica*. These texts are further supplemented through Bede’s *Historia Abbatum*, and other saint’s *vitae* and Church documents such as council documents. Unless otherwise noted, the subsequent information is primarily following the *VW* and *HE*^{xii}.

Wilfrid’s life can conveniently be divided into two periods, of around 30 years each, centred on 678, the year of his first exile from Northumbria. Prior to 678 we see Wilfrid building up his career and becoming Bishop of York, which covered all of Northumbria. The years starting in 678 began what could be described as the ‘turbulent’ years, which lasted until 706. This was followed by four peaceful years until his death. The foundation and building of Hexham occurred in the first half of his adult life, prior to his expulsion in 678. I shall begin with an outline of Wilfrid's life and career up until this point.

Wilfrid was born in 634, the year of the death of Edwin, the first Christian king of Northumbria, and the succession of Oswald. It is plain that Wilfrid was of noble or wealthy birth, for at the age of 14 when he left his father's estates, he was able to provide for himself and his servants in a manner respectable enough to be presented at the royal court of Queen Eanfled (wife of Oswiu, 643 -671) on the recommendation of his father's companions. He then accompanied one of Oswiu's noblemen, Cudda, to Lindisfarne where he remained a year or two studying. He returned to Queen Eanfled, approximately aged 17, with a desire to journey to Rome. She extended her patronage to Wilfrid and sent him to King

Earconbert of Kent where he was detained whilst waiting for suitable travelling companions. He spent a year there occupying himself by studying, then travelled to Gaul with Benedict Biscop (Baducing), another Northumbrian nobleman, in 653. They parted in Lyons, when Wilfrid decided to remain there under the patronage of Archbishop Aunemundus, brother of the then ruling Dalfinus. He reached Rome in 654, obtained the patronage of Boniface, the Archdeacon of Rome, and was instructed in Roman canon law, the four gospels, the correct means of calculating Easter and other current Roman orthodoxy. He returned to Lyons and remained for a further three years, receiving the tonsure from Aunemundus. He was on the verge of being made his heir when Aunemundus was killed during a palace revolution. Wilfrid was spared and returned to England in 658 where he managed to befriend Coenwalh, king of the West Saxons who recommended him to Alhfrith, Oswiu's son and subking of Deira. Alhfrith extended Wilfrid his patronage, and apparently, his friendship. From Alhfrith, Wilfrid received land at *Eastanforda* and, in 660, the monastery of Ripon (which had, up until this point, been occupied by Irish monks, including Cuthbert (Bede's *Prose Life of Cuthbert*, VIII). In 663, Alhfrith persuaded Agilbert (bishop of Wessex, 648-660), in Northumbria at the time, to ordain Wilfrid priest. 664 was the year of the Synod of Whitby, hosted by Abbess Hild and attended by the kings, Bishop Colman of Lindisfarne, and Agilbert. Wilfrid was chosen as spokesman for Agilbert concerning the Roman calculation of Easter. Immediately after the Synod, Wilfrid was elected to the episcopacy of Northumbria and left to be ordained in Gaul, again by Agilbert (now bishop of Paris) assisted by twelve other bishops. Upon his return to Northumbria in 666 he discovered Chad had been consecrated in his absence, and his patron, Alhfrith, either exiled or killed^{xiii}. Between 666 and 669 he retired to Ripon, from where he was summoned to Kent to ordain priests during the absence of an archbishop. During this time he also performed episcopal duties and received land from Wulfhere and founded monasteries in Mercia. He returned to Ripon with cantors, masons, and artists, and introduced orders there. The new Archbishop of Canterbury, Theodore, reinstated Wilfrid as bishop of York in 669. From 669 - 678, as Bishop of York, Wilfrid restored and received endowments for the church at York, built and furnished a new church at Ripon, received extensive lands

‘deserted by the British’ around the Pennines, received Hexham from Aethelthryth, Ecgrith’s first wife, and built St Andrew’s. As well as his own endowments, he provided assistance to Benedict Biscop in the establishment of Wearmouth (*HAA*non V-VIII, cf. Goffart 1988, 279). At some point before 676, he also enabled Dagobert II to return to Gaul from his exile by providing him with arms and a retinue. Wilfrid was himself driven into exile in 678 after becoming embroiled in a controversy with Ecgrith (670-685), Oswiu’s successor.

What can be deduced about Wilfrid’s career and influences up to this stage of his life? On the face of it, there are three interplaying arenas: his ability to attract royal patronage, his building up of land grants, and his involvement with the higher end of ecclesiastic politics. His royal patrons in England read like a ‘who’s who’ compilation for the mid-seventh century: Eanfled, wife of Oswiu, king of Northumbria; Earconbert, king of Kent; Coenwalh, king of the West Saxons; Alhfrith, subking of Deira and son of Oswiu; Wulfhere, king of Mercia and Aethelthryth, first wife of Ecgrith, king of Northumbria, successor of Oswiu. He also had the ability to receive the patronage of (at the very least, the attention of) the higher levels of the ecclesiastic echelon: in Gaul, he had a very close relationship with Bishop Aunemundus, referred to as ‘his father’. Aunemundus offered him a bishopric, extensive lands, his daughter as wife, and intended to make Wilfrid his inheritor. No less a person than Archdeacon Boniface, the Pope’s ‘right-hand’ man, extended his patronage to Wilfrid during his sojourn in Rome (cf. O Carragain 1994 for discussion of Boniface). He was the spokesman for Agilbert at the Synod of Whitby and it was Agilbert who made him first a priest, whilst still in England, then hosted him and consecrated him in Gaul while bishop of Paris. The affairs of Theodore intertwined on many occasions with those of Wilfrid (cf Mayr-Harting 1991, 135-39 and Cubbitt 1995 for summaries of Wilfrid and Theodore). Even though his relationship with Theodore was fraught, at the time of the foundation of Hexham, Theodore had recently supported and reinstated Wilfrid as the Bishop of York, an enormous area covering all of Northumbria which grew with the good fortunes of the king: “the ecclesiastical kingdom of St Wilfrid of blessed memory increased to the

south among the Saxons and the north among the British, the Picts, and the Scots” (*VW XXI*). Wilfrid was not only on the receiving end of patronage. He appears to have significantly aided the return of Dagobert II to the throne in Gaul, and assisted Benedict Biscop’s foundation at Wearmouth.

Finally, the tangible results of these patronages are seen in the considerable landholdings accumulated by Wilfrid in this first half of his life (for a thorough discussion of Wilfrid’s landholdings, see Roper 1974). He received the monastery at Ripon, including its lands and endowments, endowments for York, extensive landholdings around the Pennines and the foundation and endowments for Hexham. He also received estates and landholdings in Mercia. The introduction of bookland, land granted through charter, was intimately bound up with church estates and was a growth industry in the latter half of the seventh century. Land and endowments granted to a church were held in perpetuity by the church and did not revert back to secular ownership (Wormald 1984, 633-35). Wilfrid considered himself, not the Church, as the owner of his estates (Roper 1974, 63) as did the founders of other monastic communities such as Benedict Biscop with Wearmouth and Jarrow. Besides endowments and grants from patrons, the members who joined his monastic communities also provided endowments: “almost all the abbots and abbesses of the monasteries dedicated their substance to him by vow, either keeping it themselves in his name or intending him to be their heir after their death” (*VW XXI*). By the standards of the seventh century, Wilfrid was a very powerful and wealthy man.

Wilfrid’s model for the relationship between ecclesiastic power and secular politics points to the influence of Merovingian Gaul. A full discussion of Merovingian ecclesiastic and secular power and politics is outwith the scope of this text (cf. Wood 1994, esp.192-272; Goffart 1988), however the episode with Wilfrid and Aunemundus in Gaul illustrates the level of ecclesiastic involvement in secular politics in Gaul. Aunemundus was Archbishop of Lyons and brother of count Dalfinus. Aunemundus was powerful enough to offer Wilfrid “a good part of Gaul over which you shall be permanent governor” (*VW IV*), and powerful enough to be executed in a bloody coup where Balthild, wife of Clovis

II and regent for Clothar III, probably acting in concert with Ebroin, mayor of the palace, ordered the death of 'nine bishops' (*VW* VI; Wood 1994, 198-201).

Wilfrid seems to have directly continued his involvement in Gaulish politics by aiding Dagobert II to return to the throne. Additionally, in the latter half of his life, Wilfrid was actively involved in 'king-making' both through his support of Caedwalla, king of the West Saxons (*VW* XLII), and the young Osred (*VW* LIX).

Extensive landholdings by the Church also seems to be modelled on the Merovingian Church. Previous to the Synod of Whitby, the Irish mission from Iona had the most pervasive hold in Northumbria, yet the landholdings by the monastic communities were comparatively insignificant, even though there were foundations outside of Iona established. There was a sudden growth in land grants after the Synod of Whitby when the 'Irish' church was replaced by the growing supporters of the 'Roman' church and its Anglo-Saxon establishments. Wilfrid's landholdings are not the only substantial landholdings by an ecclesiastic in the period after the Synod of Whitby, but his endowments previous to his first exile are by far the largest. It has been estimated that one third of land under cultivation in Gaul was owned by the church at this time (Roper 1974, 65; Wood 1994, 203-14). Support for Wilfrid's influence by the Gaulish church also comes not just in the pomp with which he was consecrated in Gaul, but in the considerable amount of time he spent there previously and at the time of his consecration as bishop. His elevation to episcopal status in Gaul is based upon his desire to find 'orthodox' bishops, which were not available at this time, however, what was he doing there for so long (other than his slight delay in Sussex on his return journey)? Unfortunately there are no details available other than about his consecration, but there is a strong sense of the partial feelings Wilfrid had towards the the Frankish church and their display of *das tremendum* (Mayr-Harting 1991, 132-34).

Finally, the question of the influence of Rome upon Wilfrid. It is obvious that the outward motivation for Wilfrid's rise to episcopal status was the implementation of Roman orthodoxy in Northumbria. He spent an intensive year of study in Rome under Archdeacon Boniface, learning the correct canons,

liturgies and orthodoxies. After his return from Rome he implemented all that he had learned there:

“Did I not change and convert the whole Northumbrian race to the true Easter and to the tonsure form of a crown, in accordance with the practice of the Apostolic See...? And did I not instruct them in accordance with the rite of the primitive Church to make use of a double choir singing in harmony, with reciprocal responsians and antiphons? And did I not arrange the life of the monks in accordance with the rule of the holy father Benedict which none had previously introduced there?”

(*VW XLVII*)

Furthermore, he was an avid collector of relics from Rome, as well as dedicating his own monasteries to the principal Roman saints, St Andrew (Hexham) and St Peter (Ripon).

This outline and brief discussion of Wilfrid's life and influences during the time of the foundation and building of Hexham has shed some light on the possible symbolic, pragmatic and religious orientations of Wilfrid. From this level of reading the text, it appears that Wilfrid modelled the style of his ecclesiastic affairs upon Gaul, his orthodoxy and authority were Roman and his lineage and politics aligned firmly within Northumbrian contexts. I will now return to Hexham for a detailed look at the superstructure and the previous reconstructions of the superstructure to see if, as in the investigation of the crypt, there are any further clues to understanding the building of St Andrew's in its context.

III.4 The Church of St Andrew's

the problem of the historical dating of the remains of St Andrew's

A straight forward list of the archaeological remains of the church at Hexham, followed by a reconstruction, is not actually possible. This is a result of the inconsistent accounts by Hodges of the archaeological evidence revealed in the late 19th century. It is no longer possible to investigate these remains first hand since most of the evidence was destroyed in the restorations of the church being witnessed and supervised by Hodges. Until 1978, Hodges' decisions regarding what was Saxon and what was not were fairly well accepted (and still is in the guide books). Fortunately Bailey's excavations (1979) in the nave have shed some light on the actual remains. At the same time Cambridge has shown just how unreliable Hodges' reports are (1979). I have included Hodges' drawing, first published by Taylor (1965) for reference, the system of annotation by letters being the same used by all authors subsequently (Fig 2). This drawing, along with a section, presented apparently under perjury to Brown (Bailey 1991, 14), is Hodges' final interpretation of the remains and the most complete information we have. It includes information never listed in the text, but also omits areas that Hodges had felt were Saxon in earlier publication.

Cambridge's argument is worth a detailed examination in order to understand the difficulties presented by the archaeology at Hexham (1978, 159-62). Cambridge begins his argument by explaining Hodges' biases towards the interpretation of Hexham based upon his translation of the *Chronicle of Lanercost* which led him to believe that Wilfrid's church had survived until 1296. The passage is as follows:

In ecclesia vero Augustaldensi, quam inclytus Domini
 archipraesul exstruxit Sanctus Wilfridus, reposita erant scrinia
 plura ab antiquo sanctorum patrum pignora reservantia, quorum
 dignitates et opera pertractat Sanctus Beda De Gestis Anglorum.
 Ipsa vero basilica Romano opera insignita, ad honorem mitissimi
 Apostolorum Sancti Andreae, ac spiritualis patroni Scotorum,
 Beati Wilfridi ministerio exstitit dedicata.

(*Chronicle of Lanercost*, in Cambridge 1978, 159)

Hodges translated the second sentence to read: “indeed, the church itself, celebrated for its Roman work, dedicated by the labours of the Blessed Wilfrid to the honour of the most gentle of the apostles, St Andrew, and the spiritual patron of the Scots, remained” (*ibid.*) Hodges further substantiated his translation with structural evidence and documentary evidence for the poverty of the monastery which was such as to prevent a new nave to be completed in the 15th century. Cambridge, however, feels that the *Chronicle* should be translated to reflect the *dedication* of St Andrew's by Wilfrid. His impression is that the syntactical structure and the usage of the Medieval Latin should relate *exstitit* with *dedicata* and therefore is equivalent to *esset dedicata*, ‘had been dedicated’. Furthermore, the emphasis of the first sentence indicates the survival of the *relics* through the 13th century (*ibid.*, 159-160).

Cambridge demonstrates that Hodges lack of evidence can be interpreted as other than incomplete work. The structural evidence put forth by Hodges consisted primarily of negative evidence. Differential weathering between the nave and aisles on the west side just proves a *different* subsequent history for the nave and aisles. That there is no evidence of fire-damage beneath this weathering of the nave could show that the nave roof survived unburnt. Non-differential weathering above and below the roofline reflects that the church lacked a roof on this side from the time of the dissolution until the construction of the western vestry 1869/70. Hodges’ ‘non-ragged’ edges of wall stumps is incorrect at least for the eastern stump which was deliberately dressed back to act as a buttress. Cambridge furthermore includes the 13th century jamb of the east window of the south clerestory arcade as (minimally) showing an intention to continue

westward, and shows the evidence for the 13th century stub against the west wall of the tower as being toothed for bonding when the 15th century wall was constructed. Historically, he brings forth Roger Thorton's will (1429) which leaves a very substantial sum of money for the building of the church, a 1470 rental, the construction of the five eastern chapels in the second quarter of the 14th century, and the 15th century Perpendicular window to repudiate Hodges' view of the impoverished nature of the community that would preclude the resources to be able to complete a nave rebuilding in post-conquest Medieval times.

The post-conquest history seems to allow for the possibility of several rebuilds and attempted rebuilds in addition to those presented by Cambridge, who concentrates on the 13th to 15th centuries *The History of Northumberland*, compiled in 1896 before the new nave was built, used all the textual evidence available to sketch a comprehensive history of Hexham Abbey (Hinds 1896). According to this, the last recorded bishop of Hexham departed in 821, fifty years before the alleged ravaging of the countryside by the Dane Healfdene, traditionally viewed as the cause for the destruction of Hexham. Ailred of Rievaulx, writing in the 12th century (cf. Raine 1863 for Ailred's account) seems to be the first to make this association. In the Anglo-Saxon Chronicles for the year 876, however, Healfdene is not explicitly connected with Hexham: "Healfdene went with part of his army into Northumbria and took up winter quarters by the River Tyne, and the army conquered the land and often ravaged among the Picts and Strathclyde Britons" (Whitelock 1961, 48). The reason for the abandonment of Hexham is not precisely known but it is clear that it was no longer functioning by the end of the 9th century.

The eleventh century saw a renewed interest, if not an actual complete reinstitution of function, in Hexham. In 995 Hexham was allocated to the jurisdiction of Durham and a provost assigned. The first priest, Alured, was appointed in the early 11th century. He did not personally attend to Hexham but his son Eilaf succeeded him as priest of Hexham around 1050, establishing hereditary proprietorship. During the northern wars of William the Conqueror,

the jurisdiction of Hexham transferred to York. This did not immediately affect Eilaf's position until 1080 when the bishop of Durham, Wm. of St Carrel, attempted to instigate reforms. In response, Eilaf obtained his appointment from Archbishop Thomas of York, including permission to rebuild the church at Hexham. This account and the details of building work which follow are mainly reliant upon Ailred of Rievaulx, the grandson of Eilaf I and son of Eilaf II (Raine 1863). Apparently, Eilaf found the church at Hexham a "dismantled ruin, roofless, and overgrown with grass, shrubs, and trees" (Hinds 1896, 122) and began rebuilding from the east end to make it suitable to provide for the immediate needs, however he died before restoration was completed. His son Eilaf II succeeded him sometime soon after 1085 and continued the restoration: "after clearing the site of the church of the luxurious overgrowth which encumbered it, he covered the building with a tiled roof, whitewashed its walls, and restored some of the paintings" (*ibid.*), and also laid pavement in the east end, erected an altar supported by columns, and translated the relics (see above) to the south porch of St Michael.

The twelfth century saw the advent of a series of reforms involving Hexham and a continuation of building work. In 1113, Archbishop Thomas of York sent two canons from the newly reformed houses of Beverley and York to administer and install secular canons at Hexham. Eilaf II continued as curate and retained possession of most of the endowments, but built two wooden conventual buildings to meet the needs of the canons. According to the *History of Northumberland*, the interpretation of Symeon of Durham implies that Hexham was virtually a ruin again. Symeon relates how one of the canons 'rediscovered' the relics of Acca (*ibid.* n.2, 4), yet the church was reconsecrated and provisions made for vestments, books and ornaments by Thomas, so some level of repair must have occurred. Archbishop Thurstan, Thomas' successor, installed regular canons of the order of St Augustine at Hexham: this included a prior, 26 canons, and an indeterminate number of *conversi* - candidates for canon, as well as the keepers of the granary, refectory and infirmary (*ibid.*, 126), implying a thriving community which would mean restoration of the church and conventual

buildings to some degree. Eilaf II finally turned over his endowments to the Augustinians in 1138 on his deathbed.

Further account of the welfare of Hexham in the remainder of the 12th century relies upon the priors, Robert, John, and Richard. Throughout the Scots Wars the priory maintained its independence and a degree of prosperity, even obtaining a charter of immunity and sanctuary from David, king of Scotland around 1137 (Hinds 1896, 133). Richard records the translation of the relics to a chest at the high altar in 1154, (*ibid*, 135) and the *History of Northumberland* also relates that the "church of Wilfrid and Eilaf" was replaced in the 13th century, and indeed, "with the exception of Wifrid's crypt and modern restorations the whole of the church as it now stands dates from this period" (*ibid*, 136). The *Chronicle of Lanercost* records that Hexham was burned by the Scots in 1296 and this returns us to the time period investigated by Cambridge.

The relevance of this sketch rests in the several indications of rebuilding and restoration that are implied. Besides the request of Eilaf I directly from the Archbishop, his initial attempt to rebuild and the completion of this by Eilaf II, and the installation of the canons indicate the possibility of further building. The account of Eilaf II's change of heart towards the canons before his death mentions that the original wooden conventual buildings had already been replaced by stone (Hinds 1896, 133), and if, as implied, the church was again in a dilapidated state when the Augustinians were installed, they would have made the church at least serviceable again. In all likelihood, by the time of Eilaf II's death or shortly thereafter, major building activity would have been required to accommodate a number of canons, the prior, and the noviciates. The church must have been completely restored under the Augustinians for them to properly observe the requirements of their order and a continual transformation of the original church is indicated by the translation of relics in 1154. Prior Richard's account, quoted at length at the beginning of this text (cf. above, III.1), does not actually state that Wilfrid's church remained intact, but rather "we pass over the multifarious and most abundant structures that waste and devastation have overthrown, and we have met with the foundations of many more thereabouts".

It is a matter of judgement as to whether this reference indicates all the ancient churches of Hexham and the surrounding area, or if it is more specifically referring to the remains that the canons came across of St Andrew's, which is possible in conjunction with the fact that the description of St Andrew's church is made in the past tense.

This is a cautionary tale for the interpretation of the remains of Hexham Abbey, with its extensive and conflicting accounts of builds, rebuilds, abandonment, and involvement in strife. Any exploration of the remains must take into account the entire history of the site and it is with this in mind that I will turn to the remains of Hexham as recorded by Hodges and excavated by Bailey.

standing and excavated remains

Taylor's compilation of Anglo-Saxon architecture provides a list of the remains of St. Andrew's at Hexham, those still possible to view and those only described in text, keyed into the letters of the plan. For consistency I will retain the same lettering and the basic list of structural remains are provided, abridged from Taylor's list and his original descriptions, as a reference for the various arguments (Taylor 1965, 300-301)

- (a) West Wall: south of the west doorway, earlier masonry eight courses high, with Roman tooling and lewis holes, above later plinth. Width 2'-8", lower four courses regular, upper four irregular.
- (b) North Wall: two earlier courses at base, running for the most part the entire length of the nave starting north-west corner to the west wall of the transept, Roman tooling.
- (c) Flooring: south-east inside of nave at step-crossing, irregularly laid in a bed of mortar on top of the crypt vault.
- (d) Apse: eastern curved section and straight side walls underneath present chancel (considerable east of nave), narrow walls, internal width 11'.
- (e) Crypt: see above.

The remainder of the list is no longer visible and was only recorded by Hodges.

- (f) North Intermediary Wall: 6' south of north wall running east-west, near western end of nave.
- (g) Piers: 23'-6" centre to centre, 11'-3" below floor, 11' square, located east-west in north arcade.
- (h) Internal South Wall: not recorded by Hodges in text, but indicated on his plan, east-west, about 7' north of south wall.
- (j) South Inner Foundation: north edge one yard from inner face of south nave, southern edge assumed by Hodges to end underneath nave wall, shown as continuous on plan.
- (k) South Intermediate Wall: exterior to south nave wall, remains shown at east end, not discussed in text by Hodges.
- (l) South Outer Wall: remains shown at east end parallel to (k), Hodges describes lower courses as in situ.
- (m) Transverse Internal Projections: (m1) described as part of 13th century stone screen, (m2) projecting south from north nave [sic] wall, (m3) projecting north connecting (k) and (l).
- (n) Transverse Walls, South: (n1) projecting south from (l), (n2) seemingly extending (m3) southwards, not mentioned by Hodges.
- (o) Southerly Lateral Walls: as of transepts of porticus [sic], not mentioned.
- (p) South-eastern Transverse Wall: as of transept [sic], running the length of the transept southward as far as chapter house, approximately 80' x 3'.
- (q) Transverse Wall at East of Nave: disturbed foundations, large stones with Roman broaching.
- (r) Transverse Wall by Present Choir Screen: in situ Saxon blocks (as described by Hodges).
- (s) Transverse Wall Projecting Outward on the North: not mentioned but shown in plan, seems to correspond with (n1).
- (t) Flooring at West of Nave: shown in plan, but removed during restoration, described as old squared stones.
- (u) Great Foundations: to west, exterior to current nave.

In addition to Taylor's list, Bailey's 1978 excavation discovered part of a Saxon wall, possibly the northern part of (j), which lay .55m from the inner face of the south wall of the nave, measuring .9m in width. Excavation exposed the wall starting about two metres west of the crossing step of the choir and continuing about one metre west, and proved it to be constructionally integral with the building of the crypt (Bailey 1979, *fig.2*, 8). This wall is the only primary evidence of Wilfrid's superstructure which has been investigated by modern archaeological techniques.

III.5 Reconstructions of the Superstructure

Rather than work through each structural element individually to determine categorically that it belongs to the 7th century church, I will investigate the various reconstructive approaches attempted for the church. As a result of the lack of primary evidence, the manner in which the pieces fit together relies more on a logical argument using knowledgeable hypotheses of what the overall form was most likely to be, an argument dependent upon external evidence. There is no scientific archaeological data available for the majority of St Andrew's and nor will there be until further excavation is carried out. This is highly unlikely as Hexham is still a functioning church and an illustrious landmark, and any archaeological investigation would disrupt the interior in a manner unacceptable to the present use of St Andrew's.

As mentioned above, early attempts to postulate a reconstruction of the 7th century church were mainly reliant upon comparing the textual descriptions of St Andrew's in the *Vitae Wilfridi* and from Prior Richard, both quoted above (III.1), for the potential resemblances to known typologies of Medieval continental churches. As Cambridge has demonstrated, and I hope to have supplemented, it seems doubtful that the description in Prior Richard's account of Hexham and the statement in the *Chronicle of Lanercost* which seem to imply that Wilfrid's church was completely intact and standing are accurate reflections of the situation. More likely, what was seen in the late 12th/early 13th century was a conglomeration of rebuilds and reconstructions, bearing some relationship to the original church, not original constructions built after razing the standing remains. This practice of addition and insertion into the existing fabric, rather than beginning anew, was standard practice throughout all of Anglo-Saxon church construction (Rodwell 1989, 71-77).

The standard methodology - assessing the superstructure in terms of the documentary evidence, the general history, the extant and excavated remains, and formulated within art historic categories - was pretty much abused by Hodges, whatever allowances are made for the lack of modern excavation techniques or misinterpretations of text. Hodges appears to have chosen his type of form and

cited evidence as being "Saxon" if it conformed to that form and discarded it if it did not, regardless of external evidence. He continually changed his mind in print about the specific details of the church, ranging from a nave 200' in length, to 100', to 165' (Hodges 1888 & 1919; Savage & Hodges 1907), however he was typologically consistent. Hodges always worked with the explicit assumption that the church at Hexham was a *basilica* - a large, oblong, apsidal structure with double colonnaded aisles. This assumption, a priori, of a basilican church is residual of a time when little was known about the archaeology of early Christian churches in Britain, and Mediterranean diffusion theories were still influential in determining that Roman basilicas were the model for all early churches. Basilican forms were surmised as reflections of either the glory of Imperial Rome projected forward in time or the power of the medieval papacy centred in Rome and the glory of the Carolingian empire projected back in time (cf. discussion above, II).

architectural descriptions in early Medieval texts

The descriptions in the *VW* and Prior Richard may well lead to an assumption of a basilica with their references to many side-aisles and walls supported by columns, but these are references to isolated details which might be reconfigured in a variety of ways. Parsons (1987) has compared the multiple architectural descriptions of the tomb of the Holy Sepulchre and the Church of the Ascension with each other which illustrates the inaccuracies of early architectural description. Three accounts of these were written around the same time as the description of Hexham in the *VW*. Adamnan's *De Locis Sanctis* transcribes an eyewitness account of the tomb which Bede summarises and adds to (*HE* V.xvii). Additionally there is a further description in the *Vita Willibaldi*. Passages of these can be compared to illustrate the differences in subjective descriptions of form. The selections compared below are from the descriptions of the Church of the Ascension. Adamnan's account is first, then Bede's, then Willibald (from Parsons 1987, 9-10)^{xiv}:

“A great round church stands there, which has within its circuit three arched porticoes roofed in over. Now of this round church the central area lies wide open to heaven under the clear air without roof or vaulting, and in its eastern portion an altar is erected which is sheltered by a narrow covering.... a huge bronze circular structure has been set up, levelled out on top, the height of which measures up to the chin. In the middle of it is quite a large perforation, ..also at the western side of the structure there is a sort of door always open, so that people entering by it can easily approach the place of the sacred dust, and take particles of it by stretching their hands through the open perforation in the circular structure... For these footprints of the Lord are illuminated by the light of a huge lamp which hangs above on the circular structure on pulleys, burning day and night.”

“At the summit, from which the Lord ascended to heaven, there is a great round church which has in its circumference three chapels with vaulted roofs. The interior of the church could not be vaulted or roofed because the Lord’s body passed up out of it. To the east it has an altar roofed in with a narrow canopy, and in the centre of the church are to be seen the last footprints of the Lord as He ascended, being open to the sky above... Around these footprints there is a circular enclosure of bronze, as high as a man’s neck, with a great lamp hanging above on pulleys, which shines day and night; it has an entrance from the west. At the west end of the church are eight windows, and opposite them, are as many lamps hanging from cords, whose light can be seen through the glass as far as Jerusalem...”

“In the centre of the church is a beautiful candlestick sculpted in bronze: it is square and stands in the middle of the church where our Lord ascended into heaven. In the middle of the bronze candlestick is a square vessel of glass, and in the glass is a small lamp, and round about the lamp, closed on all sides, is the glass. The reason why it is closed on all sides is that the lamp may burn both in good weather and bad. The church has no roof and is open to the sky, and two pillars stand there inside the church, one against the northern wall, the other against the southern wall.”

The differences are apparent. Bede, who is supposed to be abridging Adamnan, conveys a better sense of architectural detail, and adds further information, such as the eight windows and eight lamps hanging from cords at the west end of the church. Willibrord’s description leaves aside any mention of the circularity of the church itself, changes the circular bronze structure with a great lamp into a square bronze candlestick supporting a lamp surrounded by a square vessel of glass and mentions two columns not described by Adamnan. The similarities are enough that when compared, a sense of the place can be seen, however, without a

side-by-side comparison, a reading of any of the texts would create a mental image of different structures, with very different details. A 'squared candlestick' and 'surrounded by square vessel' can easily be envisioned as a description of circular objects with squared edges, *after* reading the other two texts.

Furthermore, as we have seen in the discussion of the crypt, a referential representation of symbolic form need not be an accurate reflection (or recreation) of the iconic intention. Selective transfer allows for a wide variety of formal compositions of form. Heitz (1986) discusses the Carolingian representation of architectural images as symbolic expressions of theological concepts. The variations between the architectural compositions found illustrating liturgical scenes from manuscripts, ivories and plaques, are as varied as the actual facades of the churches, yet they are coherent as formal compositions symbolically representating the tomb of the Sepulchre: an opening at the bottom, whether a simple porch or the full *Westwerk* arcade, with several levels rising above in reducing proportion. Many of the existing churches from the 8th century have a western ante-chamber dedicated for the celebration of the Passion and Resurrection of Christ. (*ibid.*, 93). Adamnan's drawing of the tomb of the Holy Sepulchre, reproduced in 9th century manuscripts, bears remarkable similarities to Carolingian representations of the Holy City of Heaven, which in turn are again referenced in the composition of later *Westwerk* architecture in the form of large arcades surmounted by rising levels of arcades (*ibid.*, 97-99). In these examples we see known round forms being translated into a very different type of architectural construction, yet retaining, in an obvious fashion to those who created them, the symbolic expression of the form.

Bede explicitly had a complex theological understanding of architectural form and how pastoral and symbolic meaning were conveyed in all sacred structure. *All* sacred architecture and the furnishings thereof, had an allegoric content (Holder 1994). He cites St Paul in explaining his motivation for writing his exegetical work, *De tabernaculo*: "For *all these things*, as the Apostle says, *happened to them in figure but were written down for us*. 'All these things' [includes] not only the deeds or words which are contained in the Sacred

Writings, but also the descriptions of the locations and hours and times and the things themselves, as well as the circumstances under which they were done or said” (*De tabernaculo*, 1, Prol., in Holder 1994, xvii). Bede would not have been the only early Christian author who thought this - the glory of architecture was the glorification of God.

A descriptive passage, especially in a 7th century *vita* or other text produced for a Christian audience, is more likely to indicate the overall stylistic effect rather than a structural (constructional) category or the formal layout of a specific plan type. Additionally, an architectural representation would be seen to contain a symbolic or allegorical meaning. An architectural description can also be used in an illustrative sense. Incidental architectural information abounds in Bede, however, these descriptions were in specific relation to an event and their significance understood only in relation to that event. There is nothing incidental in the writing of Bede or of Stephanus, every detail prefigures something or expresses a purpose. A good example is the story of Aidan and the post (*HE* II.xvii). In relating the miraculous survival of the wooden post which Aidan was leaning upon when he died we incidentally learn about a variety of architectural practices: the beam was a buttress for the church which had a temporary tent attached to it. Bede, however, is relating the event as proof of Aidan’s sanctity, where even a simple post he was in contact with became imbued with miraculous powers (cf. cult of relics discussion, above III.2). The *VW* glorifies the greatness of the Hexham/Ripon communities leader (whether in the eyes of God and history, or for more immediate purposes) (cf. Wood 1986 on the audience of church dedications). The two passages in the *VW* (XVII; XXII) which contain specific detail about the architecture and furnishings of Ripon and Hexham, expressed in almost identical terms (cf. below, p. 112), are purposeful expressions of the importance of his monasteries and Wilfrid’s primacy as being the ‘first’ to implement Roman orthodoxy (including the elaboration of churches to glorify God) in Northumbria, or as Stephanus overstates, ‘north of the Alps’.

St Andrew's - apse?

Based upon the readings of *VW* and Richard of Hexham, however, Baldwin Brown 1925, Taylor 1965, and Bailey (pre-excavation) 1976 each conjectured basilican churches for Hexham, although not identical. B. Brown reconstructed St Andrew's as having a transeptal apsidal east end connected to a nave with flanking colonnaded aisles (1925). "Apsidal", in Brown's view, reflects Prior Richard's reference to the sanctuary arch, however I find no conclusive evidence that sanctuary arches are only associated with apses, on the contrary, the most readily accessible example is the early Anglo-Saxon church at Escomb, with its (reused Roman) sanctuary arch and a rectilinear chancel (Taylor 1965, 236 for description). Even though Hodges felt that the remains of the small east apse (d) at Hexham was the apse of Wilfrid's church, Brown thought the quality of the work and the size too inferior for a work as monumental as the text implies for Wilfrid's church and thus possible evidence of Eilaf I's rebuild which was initiated in the east end. This attitude towards the size and quality conflicts with Brown's own corpus of Anglo-Saxon architecture, which reviews the physical remains of Anglo-Saxon churches and contains parallels for small chancels. In this corpus, he also reviews the tendency for the comparatively poor quality construction by the Anglo-Saxons (B.Brown 1903). Even when they were reusing Roman stone and attempting to imitate Roman construction there are many examples where builders just did not get it right, where edges are shaved to force a fit, or where the key stone of an arch wedged in off-kilter and all the stones misaligned. Poor quality and small scale is actually an argument used to identify Anglo-Saxon work as opposed to the tendency of Norman architecture to be of large scale, have thicker walls and to have much improved construction detail. This type of work is more akin to the remains of the larger apse lying outside the small apse.

Taylor's answer to the problem of the disparity between the remains at the east end and the assumed scale of Wilfrid's church was first put forth in his Jarrow lecture of 1961 and developed in his 1965 corpus. His resolution lay in multiple churches with the east apse actually being a small separate chapel laying to the east and in line with the main body of the church (Taylor 1961, 10-11; 1965, 306-07). The remains indicate a ninety degree turn (r) which could be the

respond for an arch, but as seen is more likely to be the end wall associated with the small apse. Bailey's most current work agrees with this view of multiple churches (1991, 14), and there is an apparent logic for a self-contained eastern chapel when viewing the plan. Furthermore, recent excavations, unavailable to either Brown or Hodges, have revealed several early Anglo-Saxon church sites with multiple churches, such as Jarrow (Cramp 1976c, 235-36), St Augustine's Canterbury (Taylor 1961, 9; Cherry 1976, 165) and Old Minster, Winchester (Biddle 1986, 20). The excavations at Wearmouth did not provide conclusive evidence for multiple aligned churches, however Bede does mention three churches at the monastery, the church of St Peter, the church of St Mary and the chapel of St Lawrence "which stood across the way from the church in front of the monk's dormitory^{xv}" (HA,17). Jarrow and Wearmouth are important examples because they were geographically contiguous and contemporary within a decade of Wilfrid's Hexham. The monastic complex of Hexham Abbey contained the churches of St Andrew, St Peter and St Mary. St Mary's, which was founded towards the end of Wilfrid's life, was to the south of St Andrew's, where fragments of the church still survive incorporated in the surrounding buildings, but the location of St Peter's was 'lost' a considerable time ago. The chapel to the east of the main body of St Andrew's could very well be the structure dedicated to St Peter.

the typology of 'basilica'

Another recurring aspect in the various reconstructions of Hexham is that of the double-aisled nave, either colonnaded or arcaded. There are several problems with this interpretation. To start with, as with the apse, they are based upon the typology of 'basilica' and therefore requiring double aisles. Continuing my earlier remarks about 'basilica', I would like to review the understanding and usage of this term. The standard, implied definition of this word is the one I employed earlier, *a large, oblong, apsidal structure with double colonnaded aisles*. The *OED* definition is:

1. Orig. a royal palace; thence an oblong building or hall with double colonnades and a semi-circular apse at the end, used for a court of justice and a place of public assembly. 2. A building of

the preceding type, used for Christian worship. Originally a hall of justice handed over by Roman emperors and consecrated for religious use; thence applied to other early churches built on the same plan, and improperly applied to churches generally. In Rome, applied spec. to the seven principal churches founded by Constantine..

This definition reflects the common, unquestioned image which most people would retain of a basilica. A certain grandness of character is also implied in the term, alluding to the great Constantinian edifices in Rome.. I will return to a discussion of the word later, first I would like to investigate the implied understanding of form associated with the term *basilica*.

The definition employed within architecture is:

A church divided into a nave and two or more aisles, the former higher and wider than the latter, lit by the windows of a clerestory, and with or without a gallery. In Roman architecture, a basilica was a large meeting-hall, as used in public administration. The term indicated function and not form, but Roman basilicas were often oblong buildings with aisles and galleries and with an apse opposite the entrance which might be through one of the longer or one of the shorter sides. Early Christian churches evolved from Roman basilicas of this type... By the C4 the Christian basilica had acquired its essential characteristics: oblong plan; longitudinal axis; a timber roof, either open or concealed by a flat ceiling; and a termination, either rectangular or in the form of an apse. (Fig. 3)

(Fleming, *et al*, 1980, 30)

The definition of *basilica* as used within architecture has a tighter typological definition than the standard definition, however the understanding of the term ‘basilica’ as a specific model of church from whence Western churches derived is seen as a given.

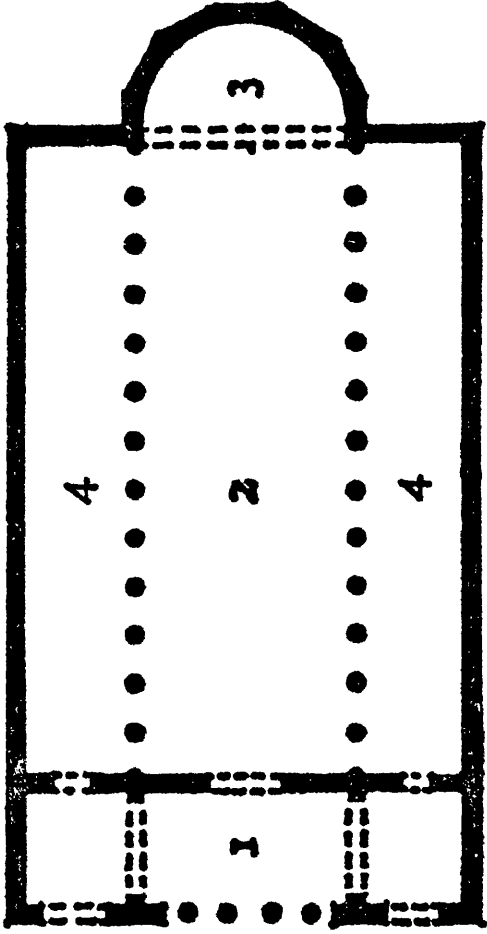


Fig. 10. Basilica

Key:

1. Narthex	3. Apse
2. Nave	4. Aisles

Fig. 3. The form of a basilica (from Fleming 1980).

Krautheimer (1969) addressed the issue of the origin and diffusion of ‘basilica’ as the key model for ecclesiastic architecture. He defines a basilica within architectural history, as

an edifice consisting of a nave, and two or four aisles separated from one another by rows of columns, a transept and an apse,

and he continues: “It is this form which dominates the imagination of the historian when he thinks back to the Early Christian period, and the assumption is that it is this form which from the very beginning dominated Early Christian architecture” (1969, 1). In his survey of possible early meeting places for Christian worship, he finds multiple models, rather than just one. Pre-Constantinian *tituli*, semi-private community houses, have been shown through both documentary and archaeological evidence to have been centres for worship. These *tituli* contained shop arcades and porticus on the ground floor. The second floor contained, on one side, small apartments whilst on the other side there was a large oblong hall which contained an altar to one side. The slightly later S. Crisogono, pre-fifth century, looks to the modern eye like a market hall: a long hall with three arched openings on the front and open porches the length of the sides (*ibid.* 6). Internal transverse partitions separated the main space from a smaller space presumably reserved for the clergy. This form is seen throughout the Mediterranean and Roman provinces in a variety of guises, for administrative buildings as well as early churches.

The secular assembly hall was simply the most common form of public meeting places for both administrative and royal gatherings, there was at least one basilica per town for official gatherings which was then transposed into the sensible style for a public house of Christian worship. The basic arrangement consisted of the oblong hall with aisles, usually surrounding it on *four* sides. Galleries were sometimes found above the aisles, apses were also only sometimes included. When apses did occur, there could be two or three and these were separated from the nave. It is worthwhile to note that there are as many variations of secular basilicas as there are of ecclesiastic arrangements.

The notable churches, such as Constantine's famous foundations, were ostentatious and glorified versions of the secular halls. The Lateran was a building of fairly simple form and plan. A long nave with double colonnaded aisles, which decreased in height out from the nave, with a small apse. The outer aisles ended in a north and south porticus, or 'shallowly projecting wings' and there were no galleries. Essentially this form is again closer in conception to a large market hall than what most modern readers would envision from the large architecturally complex and opulent later basilicas. The ostentatiousness of the Lateran evoked by the texts derives from the scale of the hall, the nave was around 300 feet long, and ornately decorated with silver and gold and coloured marbles. (Fletcher 1987, 273-4; *fig. B*, 275). Other basilicas developed based around a combination of different needs, such as the 'cemeterial basilicas' of Sant' Agnese, S. Sebastiano, and S. Ermete. These were basilicas which contained the tomb of a saint, *in situ*, in the lower level of the structure, while the main floor was raised above ground. They preserved the needs of the small martyria chapels while adding the features of a basilica: a long narrow hall with an apse and surrounded by chapels (Krautheimer 1969, 10). Constantine's other famous foundation in Rome, St Peter's basilica, is worth mentioning since it is often cited as a possible influence upon the building of St Andrew's, Hexham as well as a variety of Anglo-Saxon churches (cf. discussion of crypts above). St Peter's was not a church built for the liturgical purpose of daily services. It was actually a large covered cemetery which enclosed the tomb of St Peter as well as connecting the mausoleum of Honorius and the Rotunda of St. Andrew.

Originally there was no permanent altar and the 'nave' (the main hall) and the aisles retained funerary purposes as attested by references to funerary banquets held over the graves, which 'covered' the floor (Fletcher 1987, 274).

Krautheimer stresses the regional variations of non-Christian basilica (palace, funerary, religious, forum, *thermae*, etc.) as well as the variation of Christian basilicas: "I would stress that architects and church leaders had a pretty free hand in developing regionally different types for different functions: churches for the use of the court; for the regular services of a congregation; for the cult of a *martyrium*, ...and for the cult of a martyr and burial of the faithful - S. Croce, the Lateran, St Peter's" (Krautheimer 1969, 20). If there is a sense of one type of

basilican form then the retained features of the secular basilicas can thus be seen as the long oblong hall, with flanking features (porticus, porches, galleries or chapels) the length of the nave and an apse which is open to nave, and a clerestory (essentially the height of the nave is larger than the average single story of a building).

Cherry's survey of the archaeology of Anglo-Saxon churches appears to define *basilica* as 'buildings with aisles' (1976, 169). Even with so loose of a definition, there is a serious paucity of archaeological evidence for basilican churches in the early phases of Anglo-Saxon Christianity. The archaeological definition, notwithstanding Cherry's 'non-definition', appears to be the conventional form of nave flanked by aisles, preferably with columns, and apses. Removing Hexham from the place it usually occupies in the list of basilican churches leaves Lydd, Jarrow, Cirencester, Brixworth, Wing and a few others which are categorised thus entirely from interpretations of documentary evidence.

Lydd is a small stone building with regular arcades, north and south aisles and possibly a western porch or narthex and an apse. There is no conclusive dating evidence. Stylistically it has been thought to be Roman, because of the small scale (the nave is only around 10m. in length) and the regular north arcade (Cherry 1976, 157). Taylor's examination of the fabric postulated a 10th century date for the church (Taylor 1965, 407), which he later amended to an 8th century date (Jackson & Fletcher 1968, 24). There are some tenuous links to documentary evidence for an 8th century religious community: a charter reference in 740 gives 'plough-land' which had formerly been held by "Romanus the Presbyter" and refers to an oratory of St Martin's existing in the area (*ibid.* 25). The excavators give no clear evidence for their statement that Lydd is a basilican church of Roman or sub-Roman times.

The excavations at Cirencester indicate a plan with a very long narrow nave flanked by aisles divided into three sections and separated from the nave by a regular arcade, a two-chambered western structure and a narrow apse. The apse

was built over a ring-crypt and surrounded by an apsidal outer crypt. The date is again uncertain, however, Gem postulates a mid-ninth century date from the excavation evidence, the unusual scale, typological parallels and as part of the canonical and monastic reforms sweeping the Church at this time (1993, 41-42). Jarrow is an interesting illustration of a long-held reconstruction that does not exactly stand up to excavation. Following a plan of 1769, Jarrow has always been shown as being of a 'basilican plan' by having symmetrical aisles with regular arcaded bays to the north and south; excavation has shown that instead of a symmetrical regularised layout, the fragmentary remains indicate dissymmetry between the sizes of the north and south adjuncts (measured along north-south axis), with the first northern aisle or porticus being very narrow (Cramp 1976a; 1994). The drawings also show a regular four-arch arcade in the north wall of the nave and two porticus still existing on the south side with two further porticus sketched in on the south range which have not been disproven by excavation, but for which only small areas of foundation have been excavated so the exact form is not known (Cramp 1976a, 222; 1976b, *fig.* 11, 35).

This is cautionary in respect to the reconstructions of Lady St Mary, Wareham which Taylor reconstructed from a drawing of 1840 before the destruction of the church. Sketch impressions should be used as evidence only when artistic license is acknowledged, along with the tendency for plans to become more formalised and thus stylised rather than based upon actual measurements. This can also be seen in the different sketches of Hexham prior to its renovation where some of the drawings seem to have been interpreted differently, one without the east transept and one with (in Hodges 1888). However, based upon the plan of Lady St Mary's only, the delineations of the windows show a variety of types some of which do not display Anglo-Saxon characteristics (Cherry 1976, *fig.* 4.8; Taylor 1965, 634-636). This could indicate anything from insertion of windows into earlier fabric or different phasing for entire sections of the building. I would not, therefore, include Lady St Wareham as definitive evidence of an early basilica. The pre-conquest church at Canterbury is always cited as an example of a basilica (e.g. Taylor 1965, Cherry 1976, Fernie 1983), but this is entirely conjectural and derived from textual interpretations formalised in 1917/18 and

used ever since (cf. Society of Antiquaries 2:30, *The Plan and Arrangement of the First Cathedral Church of Canterbury*).

Brixworth and Wing are always a pair, since the one is always cited for evidence of the other. Brixworth had north and south adjuncts with regular arcades leading from the nave, a western porch, a polygonal apse and an ambulatory crypt. The north and south adjuncts are irregular and divided into five chambers. It is the regularity of the arcades which places Brixworth in the 'basilican' category (Cherry 1976, 171). The excavations have shown that the foundations for the ambulatory, nave, porticus and narthex are all continuous (Auduoy 1984, 12-13, 33-34). The excavator feels there is enough evidence to support a mid-eighth century date for construction, from the radio-carbon dating, a *terminus post quem* presented where the foundations overlay a mid-Saxon (6th/7th c.) ditch, and the pottery (*ibid.* 33-37), however not everyone agrees with this. The carbon date for the burials includes a span from c690 - c760 so it could be of the correct date. Both Cherry (1976, 170-171) and Gem (1993, 34) curiously provide arguments for mid-8th century dates, then dismiss their own arguments as conjecture, however 'plausible' or 'attractive' they might be, as though they really do not want to agree with the evidence from the excavations.

The layout of Wing is similar to Brixworth: a polygonal apse with an ambulatory crypt, regular arcaded bays leading to north and south aisles or adjuncts, a western porch. Wing is a possibility but dependent upon whether the superstructure is of the same date as the crypt which could place the dating of the church anywhere between the mid-7th century to the 10th century. The excavators argue for a seventh century date based on four postulates: 1. a basilican church might be expected in the seventh century in a district of Roman influence but not at any later date; 2. a crypt is explicable in the 7th century but not at a later date for any other type of church than a basilica; 3. the basilican plan and original crypt were built at the same time; 4. the original church contains none of the characteristics of late Anglo-Saxon architecture; 5. it does contain 7th c. features - the stepped imposts on the arcades and voussoirs similar to those at Brixworth in the nave aisle arches and the passage to the crypt

(Jackson & Fletcher 1962, 15). The first postulate is a bizarre statement unsupported by any evidence. The second statement is refuted by the evidence at Repton (cf. above, II.2). The third statement is not obvious from the excavation report and the evidence for the crypt is not given. As discussed above, Brixworth is most likely mid-late 8th century in date. Taylor and Cherry both are of the opinion that the fabric of the remains have not been investigated thoroughly due to the existing plaster of the walls. The chancel arch with its 19'-10" span is very unusual for Anglo-Saxon work (cf. below) and would seem to be an insertion or a rebuild (Taylor 1965 669-670; Cherry 1976, 172). Gem places the basilican plan of Wing in the ninth century, with the polygonal apse and the addition of the aisles being late additions to an earlier (8th c.?) structure (1993, 53-54).

To summarise: there is not a large percentage of known sites that could be categorised thus, even if they could be proved to be c7th, nor is there enough evidence for the view that the basilica was common in Kent. The development of the formal basilican type of church, long nave flanked by colonnaded aisles, with an apse and most probably a narthex or western porch does not seem to appear in Britain until later. The churches discussed above as having some similarities in form to a basilican plan are most probably 8th and 9th century foundations. The scale of Lydd is improbably small for a basilica of any date. Cirencester is probably ninth century, Jarrow does not fit the formal qualities of a basilica. Canterbury and Lady St Wareham are in reality unknown, since there is no evidence other than textual to determine form, date and construction sequences. Finally, Brixworth and Wing are 8th/9th century.

the textual occurrences of 'basilica'

If the evidence of the churches does not fit formally with an architectural description of a basilica, perhaps a consideration of the textual usage of the term *basilica* will clarify this issue somewhat. The modern definitions have already been discussed. How was this word defined in late Roman/early Medieval usage? A further consideration of the how the term has evolved over time into the specific connotation with which it is fixed in the modern mind might show us possible variants of the meaning of the word which may have been employed in

the past. The root of the word *basilica* is *basilikus* meaning royal. Downey, using literary evidence up to the 6th c. rather than purely epigraphical, showed a variety of connotations of the Greek *basilike* and *stoa* as used by classical writers (1937). Whereas there is evidence for the usages of the Greek in a substantive manner to refer to colonnaded, enclosed or unenclosed, structures, there is also evident for the use of *basilike* as an adjective indicative of the property of the emperor or associated with imperial functions (*ibid.*, 197), such as the law courts and public meeting places associated with the Roman forum (which appears to be part of the development of the Roman use of the term).

The note for definition 2 in the *OED* adds: 1563 *Basillicae, eyther for that the Greeks used to call all great and goodly places Basilicas or for the High and Everlasting King ... was served in them*. The specific labeling of Constantine's churches as *basilica*, the depiction of Christ as Emperor, addressed as *Basileus* and adorned in imperial robes and the construction of Constantine's churches in the form of the audience hall of an imperial palace (with all the associated connotations of the sacred space of the immortal emperor) all occurred at the same time in the mid-fourth century (Krautheimer 1969, 9; Ward-Perkins 1993, 456-7). Any direct application of the term *basilica* in Medieval texts could be therefore using it with the connotation of glorification, impressive enough to be worthy of God, rather than a direct reference to a form we have defined as 'basilican'.

Furthermore, whilst there are uses of the word *basilica* applied to churches with the formal qualities outlined above, there are also applications of the word to structures with different forms. Constantine and the Bordeaux Pilgrim both refer to the Anastasis rotunda over the Holy Sepulchre as *basilica* and there is a later foundation inscription for the sixth century octagonal church of San Vitale, Ravenna which refers to the church as *basilica* (Ward-Perkins 1993, 456). As late as the 19th century it appears there was a concern for the architecturally 'innappropriate' use of the term as can be seen in another entry in the *OED*: c) 1872 Parker's *Illustrated Gothic Architecture: the application of the name basilica to the small burial-chapels in the Catacombs is a mistake*.

A brief search through Bede's *HE* and the *VW* provides only a few instances of the use of the word *basilica* applied to churches. In the *HE*, out of 105 references to 'church', 6 were *basilica*, and the rest were *ecclesia*^{xvi}. Three of these usages occur in the same passage referring to Paulinus' mission (*HE* II.xiv). In reference to the building of York he says 'he set about building a greater and more magnificent church of stone...': "*curauit docente eodem Paulino maiorem ipso in loco et augustiorem de lapide fabricare basilicam*" and again, '... the foundations were laid and he began to build this square church surrounding the former chapel...': "*Praeparatis ergo fundamentis in gyro prioris oratorii per quadrum coepit aedificare basilicam*". Further in the passage, however, he refers to the church at York differently, "*et Eburai in ecclesia sepulti*". Unfortunately, even though there have been extensive excavations at York Minster which have revealed the original 1st-4th c. Roman basilica on the forum, there has been no traces found of the 6-8th c. church referred to by Bede and Alcuin (Phillips 1985 for Anglo-Saxon church; James 1995, Roman structures), therefore we cannot compare the actual form with Bede's reference. The third reference using *basilica* occurs in reference to the building of another church, '...Nevertheless, in *Campodonum*, where there was also a royal dwelling, he built a church which was afterwards burnt down...': "*attamen in Campodono, ubi tunc etiam villa regia erat, fecit basilicam*". The other usage of *basilica* applied to a specific church refers to the building of the church of St Peter's at Lindesfarne (*HE* III.xvii), "*At interiecto tempore aliquanto, cum fabricata esset ibi basilica maior atque in honorem beatissimi apostolorum principis dedicata,...*", but again further down the passage he refers to the same church as *ecclesia*. Two other usages of the word occur in Bede, the first referring not to a church itself, but to the tombs of the Patriarchs in Hebron shaped in the forms of a church (*HE* IV.xvi): '...each one of these tombs is covered by a single stone, hewn after the shape of a church...': "*et haec singula singulis tecta lapidibus instar basilicae dolatis*". Finally, *basilica* is used to describe the foundations of martyrs' shrines (*HE* I.xviii): 'They rebuilt the churches which had been razed to the ground; they endowed and built shrines to the martyrs...': "*renovant ecclesias ad solum usque destructas, basilicas sanctorum martyrum fundant construunt perficiunt*". Of

these six references, three of them definitely do not refer to churches with the formal arrangement of long nave, flanked by aisles, with an apse (the simplest of the formal definitions). One usage is applied to a square church, another to a rock tomb in the shape of a church (probably similar to the house shrine reliquaries discussed earlier), and the third refers to the building of shrines.^{xvii} Equally significant, the references in Bede to churches of known (or postulated) basilican form, such as Canterbury (I.xxxiii) and Hexham (V.xx) and Constantine's basilicas (II.i, IV.xviii, V.vii), use the word *ecclesia* consistently.

Wilfrid's biographer also seems to apply the term *basilica* sparingly, with *ecclesia* being the more common term. He refers to Constantine's church in Rome (VW XXIX) as "... *in basilicam salvtoris Domini nostri Iesu Christi quae appellatur Constantiniana*" and to York as "*basilicae oratorii Dei*" (VW XVI). His other uses of the term all apply to Ripon: 'For in Ripon he built and completed from the foundations in the earth up to the roof, a church of dressed stone, supported by various columns and side aisles': "*Nam Inhrypis basilicam polito lapide a fundamentis in terra usque ad sumum aedificatam, variis columnis et porticibus suffultam, in altum erexit et consummavit*" (VW XVII); '...placed [Wilfrid's body] in the church which our holy bishop had once built and dedicated in the honour of St Peter the Apostle': "*introduxerunt ad se et in basilicam, quam sanctus pontifex noster olim in honorem sancti Petri apostoli aedificavit et dedicavit,*" (VW LXVI); and also, '...starting from the gables of our church dedicated to St Peter...': "*incipiens a cornibus basilicae nostrae sancto Petro dedicatae,*" (VW LXVIII). However, he also refers to Ripon as *domus*, 'house' (VW XVII): '...when the [church] had been finished...': "*Iam postea, perfecta domu,*" and '...like Solomon the wise,... they consecrated the [church] and dedicated it to the Lord in honour of St Peter the chief of the Apostles' "*consecrantes secundum sapientissimum Salomenem domum, Domino in honorem sancti Petri apostolorum principis dicatam...*". The use of *domus* is consistently applied in reference to the foundations at Hexham. The famous passage describing the building of St Andrew's (VW XXII; cf above xx) is titled 'Of the building of the House of God at Hexham' "*De aedificatione domus Dei Inhaegustaldesei*" and describes that Wilfrid 'founded and built a house to the

Lord in honour of St Andrew the Apostle' "*Deo dicata, domum Domino in honorem sancti Andreae apostoli fabrefactam fundavit*". *Domus* is also used in the passage describing the angel's message to Wilfrid to found the church of St Mary's (*VW* LVI): 'Now remember that you have built churches in honour of the Apostles St Peter and St Andrew; but you have built nothing in honour of St Mary, ever Virgin, who is interceding for you. You have to put this right and dedicate a church in honour of her' "*Iam enim memento quod in honore sancti Petri et Andreae apostolis domos aedificasti, sanctae vero Mariae semper virgini intercedenti pro te nullam fecisti. Habes hoc emendare et in honorem eius domum dedicare*"

Whereas Bede does not appear to use *basilica* in reference to a formal architectural arrangement, Wilfrid's biographer could be using it in this sense. However, although he uses the term in reference to the building at Ripon, he never uses it in relation to Hexham, even in the architecturally significant passage. Here would be the ideal place to expect the use of the word *basilica* if it was being employed in an architectural sense. Additionally, the consistent use of *domus* applied to Hexham signifies that the terms applied to a church, other the simple noun *ecclesia*, are not used to denote a literal form as in the modern use of *basilica*, but are used in a connotative sense with the implied attributes of the term. In the *HE* and in the *VW* the term could be employed to signify the greatness of particular buildings or the high-status position of particular foundations or possibly a public function where *basilica* is opposed to a chapel or other small private churches.

Webster's dictionary supplies a further definition: *a Roman Catholic church or cathedral given ceremonial privileges*. Additionally, *The New Catholic Encyclopaedia* (1967) emphasises the liturgical and canonical functions of a *basilica* as well as its form. Churches of traditional historical importance are still referred to as *basilicas*, specifically the Roman stational churches. Canonical law is explicit in defining the use of *basilica*: "No church can be honoured with the title of *basilica* except by apostolic permission or immemorial custom; the privileges attached arise from one or the other reason" (*ibid.*, 158). There are

four major basilicas in Rome with special privileges and obligations. Amongst other things, in these churches only the pope or his archpriest can perform mass at the principal altar and they have a college of penitentiaries to hear confessions, forgive reserved sins and grant indulgences. Functionally, they are required to remain open all day long and retain ceremonial privileges such as wearing the insignia of *prothonotaries apostolic*. In sum, the major basilicas “enjoy spiritual favour, and their canons have a special Office with special lessons for the pope” (*ibid*, 159). The minor basilicas have been granted the title and privileges by the pope and are granted many of the same privileges as the major basilicas.

Although these are prescriptions and definitions of the liturgical and canonical meaning of *basilica* which came about in order to prevent ‘lesser’ churches from using the title, the need to tighten the definition and have it as a title only awarded by the pope is significant in itself. With the appellation of *basilica* there are privileges and responsibilities which can be claimed. We know from abundant charter evidence of false claims to papal privileges by medieval churches attempting to assert the legitimacy of their houses. Significantly, Hexham and Ripon were given papal privileges (the source of much argument and counter-claim which forms the basis of the *VW*). Furthermore, the dedication stone at Jarrow uses the term *basilica* (Higgitt 1966). A synod was held 679/80 attended by Ecgfrith and others which upholds Pope Agatho’s privilege extended to Biscop’s monastery at Wearmouth and another, early in the 8th century, Pope Sergius’ privileges to Jarrow and Wearmouth are confirmed (Cubitt 1995, 289-90). Therefore, one of the connotations of the term *basilica* in both the *HE* and the *VW* could be in this sense of ecclesiastic privileges.

In summary, the use of the term *basilica* could have been employed to emphasise significance in terms of papal privileges or to emphasise the importance of those particular foundations, in ecclesiastic or spiritual terms. It could have been used in a formal morphological sense, although, as we have seen, the late Roman/early Medieval *basilica* covers a wide variation of forms which could all be described as having ‘columnis et porticibus’ and furthermore the employment of selective transfer accentuates the spiritual, connotative and symbolic references of form rather than a literal transposition. Therefore, I do not feel it is appropriate to

employ the term *basilica* in a formal sense when referring to early Anglo-Saxon churches when there is neither the textual, archaeological or historical evidence to support this sense of the word.

‘columnis variis et porticibus suffultam’

Returning to the specific discussion of reconstructions of St Andrew’s Hexham based upon the formal conception of a basilica, the debate seems in the main (excepting Bailey 1991) to be between whether these side-aisles were colonnaded or arcaded: Clapham and Brown opted for columns; Taylor opts for the innermost being arcaded with the outer aisles possibly being the colonnaded (Clapham plan in Gilbert 1974, *fig.* 7, 90; B.Brown 1925, Taylor 1965, 308-10, *fig.* 131). Bailey in 1976 also put forth an argument for arcaded side aisles with possible intermediary colonnading (1976, 58-59, *fig.* 4). Again, there is a disparity with the evidence. Following Hodges’ statement that the massive piers (g) are Anglo-Saxon contrasts with (j), attributed to the same period, which is shown as a narrow continuous foundation, so, as in Brown and Clapham’s reconstructions, the piers are ignored in favour of columns, or (j) is turned into piers for arcades. The reference to columns in the sources has been substantiated by the architectural stone work found at Hexham, as catalogued by Rosemary Cramp, and their style appears to be ‘classical’ - either reused Roman or derived from Roman examples (Cramp 1974), however it is not conclusive as to whether such fragments were full columns or quarter/half-round decorative facings. In addition, Gilbert interprets *VW*’s Latin *suffultos* as meaning “propped up” rather than “supported by” which would be *sublatos* (1974, 102), which might indicate decorative columns rather than structural columns.

Since there is some evidence for columns, the opposing evidence for arcades relies upon Hodges’ piers. These are described (see above), and shown in plan and section, as massive 11’ square structures, more than eleven feet below the surface. This does not readily indicate Anglo-Saxon work, even at first glance the monumentality is at odds with what is known about Anglo-Saxon work. The structural indication would be for enormous arcades, 23’-6” centre to centre and probably more than two stories in order to match the width and depth relative to

load bearing capabilities. Early Saxon arches have an average width of only about 8', and even a reused Roman arch is not very large, eg. 8'-2" at Corbridge or 5'-3" at Escomb (B.Brown 1903). Cambridge has reviewed Hodges' accounts of the piers. He observed an omission in Hodges' plan of features discussed in the text following the 1881 excavations: the concrete cores of the bases of 15th century piers which were overlaying these larger piers, this is also shown in the photographic records. Stratigraphically these are pre-15th century, but stylistically the stepped out plinths of the piers (recorded by Hodges as indication of the floor level) are a common high medieval feature (Cambridge 1979, 160-3). This, combined with Bailey's discovery of a level between the 15th century screen and the Saxon floor/crypt level, probably of the 13th century, the dissimilarity with Bailey's wall (j) (Bailey 1979, *fig.* 4, 151), the potential of more intermediary phases, and the points made above, makes the possibility of the piers as Anglo-Saxon features, though not completely denied, highly unlikely. Comparisons to the arcade piers at Brixworth or Wing do not appear to take into account the scale, depth, and construction (as discernible) of the piers at Hexham.

Apart from the typological concept of 'basilica', side aisles and columns are sought for as a result of the description in *VW*. The phrase used is "*columnis variis et porticibus multis suffultam*" (*VW* XXII); the almost identical phrase is used in the description of Ripon: "*variis columnis et porticibus suffultam*" (*VW* XVI). *Porticus* is a word familiar from Bede which is normally translated as "porch" and refers to the adjuncts attached to the main body of the church as chapels, burial places, or entrances common during this time (Parsons 1987, 24-27, B.Brown 1903, 129). Bede's references, such as that describing King Edwin's head coming to rest in the porch dedicated to Gregory at St Peter's, York and the burial of the archbishops in the north porch of SS Peter and Paul, Canterbury (*HE* II:iii, II:xx), indicate the relationship of the porticus as separate entities connected to the main body of the church. *Porticus* have been excavated in Northumbria at sites such as Jarrow and Escomb, and tentatively identified at Bywell St Peter's and Ledsham (Cherry 1976, 167). These are commonly rectilinear in form, but at Old Minster Winchester there were two apsidal

porticus, though this is a later example (Biddle 1986). B. Brown's discussion of porticus in relation to the development of Anglo-Saxon church forms contains useful comparisons for the identification of specific aspects of Anglo-Saxon porticus. Where the entrance locations are identifiable they tend to be located off centre in order to leave the east side unobstructed (B.Brown 1903) possibly for altars or some other furnishings which enhances the idea of them being side chapels or places for veneration (Parsons 1989). Additionally, the increment of intervals of division are not identical which might imply that what seem to be ganged porticus were not constructed as an overall spatial entity, and where excavation information is available, seem to not be in bond with the main space (Audouy 1984). What differentiates porticus, of whatever form or position (north, south, east, or west) is that there is not the continuous passage available for access whereas aisles are distinctly continuous allowing for processions or separate movement around the nave. Of the previous examples of 'basilican' churches, the only example that possesses apparently continuous space, not subdivided with transverse partitions, is that of Wing (Cherry 1976, *fig.4.8*, 177), however Gem feels these 'aisles' are later additions to the original structure (Gem 1993, 43-54). Bailey's 1991 reconstruction of Hexham also notes the problem with the accepted translation of 'side aisles' and postulates porticus north and south of the nave, but he does not attempt to give them dimension or shape.

The possibility of porticus for St Andrew's raises the additional question of transepts. Again, the term transept carries with it certain implied concepts. Transepts are not the same as adjuncts, rather a transept is integral with the main body of the church, dividing the nave from the sanctuary area, and affects the interior by being an expressed continuum. The form of a transept is not subordinate to the main body of the church and although they are not equal in length to the nave, the width is substantial and the height is scaled in an appropriate relationship to the nave by not being subordinate or minor. The development of real transepts are usually associated with Carolingian ecclesiastic architecture (Gilbert 1974, 102) but Peterborough is cited as the example of transepts in early Anglo-Saxon church architecture. In plan, the proposed transept of Peterborough does look continuous and substantial, but there is no

evidence for the size of the nave and the sanctuary seems proportionately small; furthermore the identification of Peterborough with the 7th century foundation of *Medehamstede* is not conclusive and is usually seen as later (Taylor 1965, 660-70). If Peterborough is demonstrably transeptal and early, then it is the only known example of such for Anglo-Saxon 7th century architecture. Taylor postulated three different reconstructions of the form of the church described in Aethulwulf's *De Abbatibus*, which describe a church 'laid out in the shape of a cross' and 'supported all the way round by large and small *porticus*' (1974, 165). The first form, a nave surrounded by porticus on all sides, with the 'cross' form emphasised in elevation by the central north and south wings appearing equal in height to the nave, is, according to Taylor, the most typical arrangement that could be proposed by ninth century building practice. The third form, a true transeptal cross with cells nestled between the arms, is not a form which begins appearing before the 10th or 11th century (*ibid.* 173, *fig.* 9,10, 170-71, Cherry 1976, 187-88).

summary

The foregoing scrutiny of the concepts implicit in the reconstruction of early Anglo-Saxon churches has been focused on descriptive details and their relationship to what might seem fairly tight definitions when the terms can be meant to be applied in a looser manner as indicators for the recognition of a possible form. However, the effect of implicit concepts on the interpretation of evidence can manifest in two ways: *apriori* assumptions that can align the reconstruction of specific evidence into predetermined configurations, and historical interpretations based upon typological connections. Whilst historians and archaeologists working with fragments identify and construct knowledge by creating analogies to formulate models (pre-understandings) of a given subject ('specialities') (Edgeworth 1990, 243-52), it is the transformations of analogies into unquestioned assumptions which can lead to a paradigm being passed along as a given piece of knowledge - such as the implicit assumption of a 'basilican' type of ecclesiastic architecture in the early Anglo-Saxon repertoire of form. I do not decry the validity of constructing paradigms or conceptual models, this is how we learn to recognise patterns of evidence: if not, then basic categories such as 'church' or 'granary' would never be applicable. However, the recognition of the need to re-assess paradigms, as knowledge builds up over time, avoids the potential of historical interpretations becoming their own historiography.

Specifically, the interpretation of certain church-types as 'basilica' allows for the construction of a model of influence showing an intimate connection between Rome and early Anglo-Saxon Christianity via Kentish missionaries through the identification of the manifestation of Roman imitation by the adoption of a Roman (Mediterranean) form of building in Kent, which thereafter appeared in other parts of Anglo-Saxon England. The original application of this specific term may have been intended for identification and descriptive purposes but has been transformed into the basis of a long standing historical construct - for example, in the discussion above when Jackson and Fletcher list as their first corollary for the early date of Wing based upon 'a basilican church might be expected in the seventh century in a district of Roman influence but not at any later date' (1962, 15). I am certainly not going to deny a connection between

Papal Rome and Anglo-Saxon England, but I will question the strength of this connection based upon the typological identification of 'basilica' as evidence. Gem has examined the reasons for and the biases of the paradigms constructed for the interpretation of the architectural history of ecclesiastic building tradition in Anglo-Saxon England. He argues for a reevaluation of the 'non-existent' evidence for mid-late 8th century building activity based upon the 8th century monastic reforms which were occurring (Gem 1986). This 'non-existent' evidence is strictly based upon continental art historical models which Anglo-Saxon churches were then slotted into in chronological order as 'derivations thereof' (thus a formal model had to appear on the continent first). In addition to arguing for a paradigm constructed from more specific cultural circumstances, he identifies the derivation of the current paradigms based upon the hypothetico-deductive modes of reasoning. In this instance of 'basilica', an inductive method (combined with documentary interpretation) led to the formulation of an hypothesis which has turned into an a prioristic paradigm. Since the formulation of this model the data base for the original induction has continued in use without being reviewed in accordance with new information (for example, Nees 1993 refers to Hexham as a 'basilica with true aisles'; 826). Therefore I am reviewing the implicit conceptual assumptions and attempting a construct which is historically and materially specific and contextualised.

IV. A Methodological Exploration of Design

It is not only our own pre-conceptions with which we must be concerned.

Analyses which incorporate any notion of human agency should encompass a notion of how any apparent change or innovation relates to continually transforming pre-understandings of order as the human agent negotiates, and reproduces, an environment of symbols, languages, relations and politics (cf. Bourdieu 1977, Giddens 1984 for fuller discussion). An analysis of Hexham allows us, via the historical persona of Wilfrid, to look at how an act of intervention by an individual can be formulated by that person relative to their own relationships and experiences. By positioning human agency within the social and cultural context and the series of actions which shape their understanding of their environment, we can possibly begin to see how what we perceive as an 'event' is a transformation of this nexus of context and action. Reviewing the documentary evidence (cf. above III.3) for Wilfrid can allow us to highlight three main experiences which might have impinged upon the character of the individual named Wilfrid up to the time of the building of St Andrew's: his upbringing as a Northumbrian nobleman, his enthusiastic and orthodox Roman Christianity and the time spent in Merovingian Gaul. As a nobleman, Wilfrid was not only familiar with royalty, politics, and ambition, he also would have been exposed to symbolic expressions of these ideas and an understanding of the techniques and processes for the realisation and ordering of form. It is also a possibility that Wilfrid's religious ambitions began more in relation to secular ambitions and he chose a religious life as an alternative source to a secular power that he was not in a position to obtain. His *Vita* seems to indicate that his religious beginnings had more to do with unpopularity in the paternal home rather than an inspired calling, choosing to leave his father's estates because "his step-mother (his own mother being dead) was harsh and cruel; but he obtained arms and horses and garments for himself and his servants in which he could fitly stand before the royal presence" (*VW* II) . His religious training was very systematic and always under the influence of strong patronage; his ease and familiarity with nobility enabled him to pursue his study of Christianity closer

and closer to the centre. His time spent at the Merovingian court with Bishop Annemendus was probably very influential upon his understanding of the attainment and wielding of ecclesiastic power, as evidenced by his involvement in the ecclesiastic and court intrigue to a degree that almost made him heir and almost cost him his life. This fusion of secular power and politics with ecclesiastic power and politics creates in Northumbria an ecclesiastic who never made pretence to distance himself from worldly ways, in the manner of a Cuthbert or a Biscop (who, suprisingly to us, was never made a bishop). The year spent in Rome enabled him to learn the then most current Christian orthodoxy: which prayers and liturgy to use, studying the correct interpretations of the Gospels, and which version of theology was considered heresy and which was not. For Wilfrid, his ambitions, his foundations and buildings, even his ‘meddling’ in Northumbrian politics were always defined in terms of what he felt to be orthodox Christianity and the protection of his Christian family. His reply to the council at *Ouestraefelda* staunchly defends his personal actions in terms of his ambitions for the Church (*VW XLVII*). In trying to understand the physical forms of his orthodoxy and ambitions, it is important to remember that the outward manifestations of religious orthodoxy (excepting issues such as the Petrine tonsure) were not standardised (e.g.: iconography, vestments, adornment, furnishings) until the monastic reformations in the tenth century and that Wilfrid’s experiences exposed him to a variety of forms of symbolic expression.

IV.1 Design

style

Three elements combine in any act of creation (or instigation of something new): technique, function, and style. The technique is the realisation of the end product which includes materials and construction, function is purpose whether it is practical or symbolic, and style goes beyond fashion or decoration to encompass the manner in which the first two are joined together and can locate levels of power and political ambition as well as aesthetics. In Wilfrid's case, at the time of the foundation of Hexham, his church would need to be able to house his version of the current orthodoxy witnessed while in Rome in such a manner that combined political ambition with religious fervour. The Irish missionaries might have been known for their (purported) humility and asceticism, but Merovingian Bishops were very powerful people who imbued their religion with pomp and symbols of power and wealth. Wilfrid seems to have been a new model of ecclesiastic in Northumbria, more akin to his Merovingian counterparts (cf. Goffart 1988, Wood 1994). The preceding discussion has already shown, to a degree, a complex combination of influences and desires. The influence of Wilfrid's time in Gaul and in Rome upon the building of Hexham should not be sought in terms of a direct copy, but rather in terms of attitude towards the manifestation of ecclesiastic power.

The problem posed is that with all these potentialities abounding it is entirely possible that Hexham is unique in terms of form and style for 7th century Anglo-Saxon churches, so how do we look at the fragmentary remains? As with the crypt, there does not appear to be a single model, either Roman or Merovingian, which can be imposed upon the remains to give us an understanding of the form. Furthermore, if a building's remains are not sufficient to permit even a basic form to be deduced by which it can then be compared to others or the decorative details are too fragmentary to ascertain a specific model of form with which they belong, then a more elemental approach is required. For example, Cramp may be able to describe the characteristics of the stone fragments as 'classical' (Cramp 1974) but this is an imprecise indication of form - in the 7th century the classical

orders were not followed further than as decorative guidelines, certainly not to the level where the orders governed the form, size and elevations of a building. Stone fragments can (roughly) be divided into two categories: structural and furnishings. Structural elements can be indicators of building form and mass; furnishings might be an integral part of the space (e.g.. large, immobile altars). However, they might also be decorative, as in sculpture which might not bear any relationship to the building form (e.g.. Viking hogbacks which may be in an early Anglo-Saxon church), or decorative pieces which, whilst determining the overall atmosphere of a space do not necessarily determine form. At St Andrew's, the stone fragments relative to the form and structure of the building can not be specified beyond identification as pieces of columns, either full columns (structural) or half/quarter round facings (decorative), but not definitively as one or the other (*ibid.*). Similarly the implications of the two pieces of metalwork associated with Hexham is beleaguered by their imprecise connections to the church as a structure (Bailey 1974). Bailey can identify a metal style as typical "Trewiddle", and another as similar to 7th century Anglo-Saxon work that is paralleled with 6th - 8th century Gaulish work (*ibid.*) however, these pieces may be considered as adornment that could define a quality, such as 'richness', or, being small objects, could be portable pieces not intended as an integral part of the church, and so, again, do not help greatly in determining the layout of the building.

design

I have already mentioned the three elements which go into the design of a building: technique, function and style. Style is a very ambiguous term as usually employed by archaeologists^{xviii}. The unreflective use of 'style' is for categorisation and classification, such as 'Trewiddle', 'Classical' or even in the sense of 'basilica'. These expressions in Anglo-Saxon architecture consist of temporal bands or chronological horizons, categories of decorative embellishments or models of form. We have already seen how the employment of these models for Hexham is not very helpful in determining a reconstruction of St Andrew's. The *Art and Architecture Thesaurus (AAT)* defines style as the "configuration of artistic elements that together constitute a manner of expression peculiar to a certain epoch, people or individual" (1990, 778). A fuller

exploration of style, as the material expression of the symbolic or ideological mediations of localised power, politics and societal structures, is simply not possible with Hexham - a formless artefact where we can not see the material ordering of these expressions. In other words, it is not very illuminating to say that there is a combination of 7th century localised Northumbrian styles and Classical styles when the remains of the church leave us without a sense of how these styles were combined to be perceived and experienced.

I would therefore like to shift from a consideration of style to a consideration of the process of *design*. Simply, the design of a building is the guiding principles which come together to produce a sense of 'this is the correct way to put the parts together'; of 'rightness'. Vitruvius provided a canon for good design in the 1st c. BC, which still remains the best working definition of the practice of building, based on *order (ordinatio)*, *arrangement (dispositio)*, *proportion (eurythmia)*, *symmetry (symmetria)*, *decor (decor)* and *distribution (distributio)*:

Order is the balanced adjustment of the details of the work separately, and, as to the whole, the arrangement of the proportion with a view to a symmetrical result. This is made up of dimension (*quantitas*), ... [which is] the taking of modules from the parts of the work; and the suitable effect of the whole work arising from the several subdivisions of the parts.

Arrangement ... is the fit assemblage of details, and, arising from this assemblage, the elegant effect of the work and its dimensions, along with a certain quality or character. The kinds of the arrangement ... are these: ichnography (plan); orthography (elevation); scenography (perspective). Ichnography (plan) demands the competent use of compass and rule; by these plans are laid out upon the site provided...

Proportion implies a graceful semblance; the suitable display of details in their context. This is attained when the details of the work are of such a height suitable to their breadth, of a breadth suitable to their length; in a work, when everything has a symmetrical correspondence.

Symmetry also is the appropriate harmony arising out of the details of the work itself; the correspondence of each given detail among the separate details to the form of the design as a whole. ...the calculation of symmetries, as in the case of other works, is found from the details.

Decor demands the faultless ensemble of a work composed, in accordance with precedent, of approved details. It obeys convention, which in Greek is called *thematismos*, or custom or nature....

Distribution, or Economy is the suitable disposal of supplies and the site, and the thrifty and wise control of expense in the works. ... The second stage in Economy comes, when buildings are variously disposed for the use of owners or with a view to the display of wealth or lofty enough to suit the most dignified eloquence...”

(*Vitruvius*, Book I, ii^{xix})

Although Vitruvius’ treatise on architecture arose from within a formalised, professional practice, these definitions are applicable for an understanding of the process. For a building to be considered ‘designed’ it must contain a degree of self-consciousness about the overall order and form as well as a functional use of material which combine into a ‘harmonious’ composition. Vitruvius sums this up as strength (*firmitas*), utility (*utilitas*) and grace (*venustas*) (Vitruvius, Book I, iii). This sense of ‘rightness’, however, still leaves wide berth for individual interpretation and expression. Therefore, the process of design can be seen as governances for the understanding of the ordering of space and form derived from cultural and historical traditions; values of correctness implicitly understood by the whole community.

proportion

What is apparent from Vitruvius’ definition of design is the repeated emphasis upon the relationship of the parts to the whole. *Proportion* is defined as the “relation between respective parts or between parts and the whole, in a building or any work of art, whether considered purely visually or numerically” (*AAT*

1990, 947). An elemental understanding of proportion is the ability to discern the relations of the parts, such as the basic, and oft noted, recognition that the Northumbrian churches tend to be 'long and narrow' when compared to the Kentish or Anglo-Saxon churches elsewhere (Taylor 1978, 1032-33). This instinctive recognition of an overall sense of proportion, however, does not present us with an understanding of the relationship of the individual placing of the elements of a building to the overall form. Within the tradition of architecture, an understanding of proportion has been elaborated into a system of geometrical relationships which can be explained in terms of mathematical relationships; "the immediate consequence of any mathematical theory of proportion is the availability of a *system* of proportion, a rule, or set of rules, for the creation and combination of parts. The architect may now take some basic measure - or module - from which to derive all the lengths and forms exhibited in a building; the parts of the building will then of necessity stand to each other in a direct and intelligible mathematical relationship" (Scruton 1979, 60-61). The ideal of mathematical rules governing the overall design of a building as an overarching harmonious principle of beauty has carried through Western theory from Vitruvius and Pythagorus, to the Platonists and Neo-platonists and espoused within Christian theories of beauty by St Augustine, among others (*ibid.*). The ability to discern a proportioning system expressed consistently within mathematical terms relies upon precise linear measurements of a building's remains. The difficulty of this lies not only in determining the level of our precision of measurement and mathematical analysis, but also in requiring the comparison of like with like. The evidence of a building's remains ranges from poorly recorded antiquarian drawings and field notes, to excavated remains which frequently only reveal foundations or robbed out trenches, to standing remains which could be a few corners or coursed stones incorporated into a later structure or (rarely) complete walls. In order to illustrate the problems, I will turn to a consideration of previous analyses within the study of Anglo-Saxon architecture, namely, work on Anglo-Saxon building measurements and work on proportions of the length:breadth ratios of buildings.

IV.2 Review of Previous

The analytical work on the design of buildings (the plan, specifically) falls into two categories: metrological analyses to determine standardised measurements and proportional analyses which concentrate on the ratio of the length:breadth of the main rectilinear structure for purposes of categorisation and the possible distribution of types. In order to proceed to the analysis of the specific building we are concerned with, it is first necessary to understand the methodological undertakings which have come before which have attempted to describe the proportional relationships of a building.

metrological studies

Metrological studies have a long pedigree within both architectural history and archaeology. The standard study is, by various methodologies, to look for repeatable dimensions in any given building and to look for relations of dimensions expressed in simple ratios, such as 1:2, 1:3. The pitfalls of such a simplified goal is that by making the measure smaller and smaller, eventually a system of measurements divisible by simple ratios will be found for any building. A level of historical evidence is therefore usually required for the system to have some validity (Ferne 1991, 2; Huggins, *et al* 1982, 23). Consistency of measurement, comparison of disparate evidence, unit of accuracy employed and derivations of measurement (i.e. scaled from plan or field measurements) are some of the numerous problems which beset metrological analysis.

Historically there is no firm evidence for which particular system of measurement was employed by the Anglo-Saxons (Ferne 1985). Evidence for a standard measurement is therefore worked forward from Roman measurement systems or backward from later Anglo-Saxon and continental sources, as far forward as 20th century pre-metrification systems. The assumption here is that there is a tendency for conservatism in measurement systems and the much later metrification systems can therefore contain well-preserved archaic information (Ferne 1991, 2). Using a variety of documentary sources the lengths postulated for use in Anglo-Saxon architecture are the 5.03m Northern rod, the Drusian foot

of .333m and the Roman foot of .296m (Huggins 1991; Kidson 1990; Kjolbye-Biddle 1986; Fernie 1985; Huggins *et al* 1982). The Northern rod of 5.03m (or 5.029m which is normally rounded up) is primarily derived from the late 12th/early 13th century *Statutum de Admensuratione Terrae*, a list of standardised measures which stayed in use in England until 1961 (the English perch) (Kidson 1990, 74), which correlates with the Carolingian *pertica* of 5.032m, documented in a 9th c. text referred to as *Pauca de Mensuris* (*ibid.*, 75). The Roman foot of .296m is documented in many Roman sources as well as surviving into the Middle Ages and having pre-metrical vestiges (*ibid.*, 81). The Drusian foot is the *pes Drusianus* of 13.1 inches (.333m), the ‘long foot’ documented from the 1st century BC (Huggins *et al* 1982, 23) and the 2nd century (Kidson 1990, 82) as in use in *Germania Inferia* (lower Germany and modern Belgium). Finally, there also seems to have been a *virga regalis*, a ‘short rod’ in the Carolingian system which also had pre-metrical equivalencies. This length was deduced in the 19th c. to be 4.70m, although the mean of 19 measured rods came to 4.63m (*ibid.*, 85; Huggins *et al* 1982, 25), and a vestigial 19th c. northern German measurement existed of 4.65m (Huggins 1991, 26). The difficulties with the historical documents are the attempts to determine a coherent system of measurements which work relative to each other and to the archaeological evidence. One Northern rod of 5.03m was made up of 16.5 feet which results in the modern English foot of .3048m. The Carolingian *pertica* of 5.03m was made up of 17 feet resulting in the Roman .296 foot. These two cognate measurements, the Northern rod and the *pertica*, do not appear to be reconcilable as systems, neither do any of the other English measurements with the Roman system.

Kidson and Huggins have both used very different methodologies to arrive at different possibilities of reconciling the systems. Kidson, through a series of well-worked through mathematical ratios, has very neatly presented an argument for the relationship between the 17 ft rod (5.03m:.296m) and the derivation of the English acre (cf. summary, Fernie 1991, 4) as well as many other historically attested continental lengths. The arguments are too lengthy to repeat here, however, his results derive from the application of the ratios of $\sqrt{2}$, $\sqrt{3}$, the

Golden Section, and $\sqrt{5}$ (the four classic irrational numbers) to problems of measure encountered in different regions, whether it is land management and accounting or craftsmanship and architectural systems (Kidson 1990). These ratios are representations in mathematical terms of simple geometric constructions (cf. below IV.3) which can not be easily described numerically but which reconcile the relationships between the seemingly chaotic and disparate systems of measurement.

Kidson’s evidence and sources are purely from historical documentation, Huggins, on the other hand, combines historical and archaeological data from Anglo-Saxon buildings. He finds evidence in a large percentage of cases for the use of the 5.03m Northern rod in the design of both timber structures and stone churches (Huggins 1991, Huggins *et al*, 1982). He furthermore finds archaeological evidence to support the use of a shorter rod, which he determines to be 4.65m. In order to reconcile a system of measures from the physical evidence, Huggins believes that the rod was divided into 15 units. He also finds evidence for the division of rods into 1/3 and 1/6 of a rod in the layout of the buildings. The table below summarises his results. Figures in bold represent historically attested lengths.

	<u>‘Northern’ system</u>	<u>‘shorter’ rod</u>
<u>length (1 rod)</u>	5.03m	4.65m
<u>foot (1/15)</u>	.335m	.310m
<u>1/6</u>	.838m	.755m
<u>1/3</u>	1.68m	1.55m

Table 1. *Comparison of Huggins’ metrological systems*

The foot for each system is very close to historically attested measures. The .335m foot is within 2mm of the *pes Drusianus*, and the .310m foot is within 3mm of the ‘Rhenish foot’ of .313m. This foot remained in use in northern Europe (Holland, Prussia, Denmark) until metrification. Additionally it is known to have been in use in Scotland by the 14th century (Kidson 1991, 91). Huggins reconciles these measurements with the English system (16.5 feet/perch,

1 foot=.3048m) through the 5.5 yard/perch. Thus, the length of the Northern rod divided by the length of 3 times the smaller foot results in a figure close to the 5.5 yard/perch: $5.03 \div (3 \times .310) = 5.41$.

Kjolbye-Biddle determines that the *pes Drusianus* was the basis of measurement for the Old Minster at Winchester (1986). Her results derive from imposing a best-fit geometric system onto the excavated foundations of the church and afterwards comparing the resultant measurements to possible lengths of ‘foot’, e.g. the Roman foot, the English (Staufian) foot, the *pes Drusianus*. The following table presents a measurement system based on her work (*ibid.*, 209):

<u>Drusian foot</u>	.333m
<u>rod (16.5 feet)</u>	5.50m
<u>1/6 rod</u>	.917m
<u>1/3 rod</u>	1.84m

Table 2. *Kjolbye-Biddle’s metrological system*

The previous two studies combined archaeological data with historical documentations of lengths. Other metrological studies have concentrated solely on the archaeological evidence from each particular site, using Petrie’s first principle of looking for repeated dimensions in simple proportions. The reticence towards searching for historically attested lengths is because these studies are seen to lack mathematical rigour and therefore become very subjective (Bettes 1991, 45). Bettes developed a mathematical test run on a computer which takes a set of data and runs a search for divisions of a given unit (a range of units 1mm apart from 250-360) into whole, half and quarters. The results are then put to a least squares test to derive a variance, the smaller the variance the higher the likelihood of a match. Bettes’ results from Jarrow find the unit of measure with the least variance to be .280m. This, therefore, is the ‘foot’ measurement used in the building of Jarrow (*ibid.*, 50) The data requirements needed for the original input are quite stringent. Accurate measurements were taken by experienced surveyors using equipment in good condition. Eleven final measurements were chosen as being ‘independent’ - that

is, not influenced by any other factors other than being part of the original plan of a free-standing structure. Whilst the rigour of his method is commendable, the ability to reproduce this type of accuracy and stringency at other sites is near impossible. On far too many sites there is no free-standing, upright structure which could be measured with such precision as well as the impossibility of returning to sites already excavated and re-measure them.

One interesting note from Bettes' study is the similarity between his .280m foot at Jarrow and the 'Yeavinger unit' originally determined by Hope-Taylor at .281m. Although this unit has been dismissed as an anomaly by others performing metrological studies (Bettes 1991, 50; Huggins 1985, 23), there are a few interesting possibilities. The division of the English perch into 16.5 feet has never been satisfactorily explained. Although the correlation between the 17 ft Carolingian *pertica* and the English acre works mathematically, it does not explain the peculiar 16.5 division which results in the English foot of .3048m. Fernie has made several cases for the measure of .3048 being the older and needing to be integrated into the later standard of the Carolinian *pertica* (the roots of which appear sometime around the 4th c) (1985, 1991). There is another possibility. Huggins' archaeological work presents a strong case for the 4.65m rod, however his own historical work derives a mean measurement of 4.63m for this length, which in all probability would still work as a modular unit on the sites he has analysed. A rod of 4.63 divided by 16.5 obtains a measurement of .2806 feet, almost exactly between the Yeavinger .281m and the Jarrow .280m. The measured difference between .2806 and these two numbers is minute. Huggins further noted a tendency for divisions of the rod into 1/3 and 1/6 (also seemingly noted by Bailey at Hexham, 1991, 7) .280 is 1/6 of 1.68 which is 1/3 of 5.04m. 1.68 is 1/3 of the Northern rod as noted above. Therefore a site which has evidence of a .280 foot could either also have evidence for a 4.63 rod or a 5.03 rod, and a site which displays affinities with the 5.03 rod could also have evidence for a .280 foot or for divisions of 17 (.296), 16.5 (.3048) or 15 (.335)

This survey of some of the metrological studies highlighted the inherent problems - difficulties are inevitably going to arise when differences of opinions

are measured in millimetres (or less). Searching for a mathematically pure and consistent system of proportion attempts to enforce a rigorous system of modern measurement upon the past which ignores human error and the imprecision of the tools which were used. Typical surveying and building tools used in Roman Britain were the bronze *regula*, the *linea*, a cord divided into lengths, and the *circinus*, a compass (Evans 1994, 149-151) (although arcs scribed on the ground would be done with a fixed cord). The *regula* and the *linea* were calibrated into equal divisions, but not with any great accuracy, for example, on a *regula* from Caerleon the increments varied by more than 20 percent (*ibid.*, 149). The use of a chalked cord for laying out lines is still in practice, albeit not as commonly as it used to be. The measurement of a cord varies as the cord naturally stretches or when it becomes wet. As well as heat and moisture, ground slope and other factors of the landscape also profoundly effect the precision of these instruments, plus simple human error. Therefore the likelihood of metrological investigations for consistent lengths within a variance of millimetres agreeing with each other is low. Furthermore, aside from adding to our level of historical data, metrology for its own sake does not further our understanding of how sites and buildings were designed.

proportional ratios

Another method for investigating the proportions of a building is to analyse the length:breadth ratios of various structures, the second part of Petrie's definition: "to look for repeated dimensions in a series of buildings" and "to look for simple relations of the ratio length/width for a particular building" (Huggins 1991, 6). The purpose of this, outwith metrological studies, is to attempt to find distribution patterns which could then tell something about either the recognisable characteristics of a style of building, the evolution of a type of form or the transmission and diffusion of ideas.

In Volume III of *Anglo-Saxon Architecture* (1978) Taylor compiles the detailed surveys from the first two volumes in order to establish recognisable characteristics of Anglo-Saxon architecture. As well as the style of detail and construction techniques, the form and arrangement of the church plans are

considered (*ibid.*, 1028-34). He compares the ratios of the proportions of 82 church naves and groups them according to representative plans. My criticism of this study is not of the data collected, but the methodology for comparison and the manner of presenting the results. To begin with, he states for churches with monks' choirs (i.e. not an obvious demarcation of the nave) "rather arbitrary choices have been taken" (*ibid.*, 1032). That aside, the sizes of the naves have been rounded to the nearest 5 foot interval, a fairly large margin of error of ± 2.5 feet. If the smallest measurement is 9' (Heysham, PA), this is an error of $\pm 28\%$. Even if we take 28' (28.45=average) as the average measurement, this leaves us with a margin of error of $\pm 9\%$ (all measurements from list p. 1033). The results are presented in two manners, grouped by the proportion of length to breadth in decimal form (to the nearest 10th) and further subdivided by 'representative' plans to graphically show the size of the naves as a plan "approximating to the values for all the naves in that group" (*ibid.*, 1032). The resulting table is misleading in terms of variation of the shape and size of the naves. For example, the largest two clusters, of eight churches each, are those listed as having ratios of 2.0. Four other churches are listed singly (their representative plans being smaller or larger than the two main groups) with ratios of 2.0. Of these 20 churches, using the measurement to the nearest foot, not the measurements rounded to 5 foot intervals, only 6 of them actually have ratios of 2.0. The values of these 20 churches range from 1.7 (Thetford) to 2.2 (Clayton) (1.70 - 2.16). Another group, those represented by plans with ratios of 1.3, have variations from 1.18 (Much Wenlock) to 1.69 (Thetford Mi I), when calculated from the measurements to the foot. This variation in terms of form ranges from a shape which is almost square to a long and narrow rectangle, which becomes apparent when described as objects (rather than numerically), as I have shown in Fig. 4.

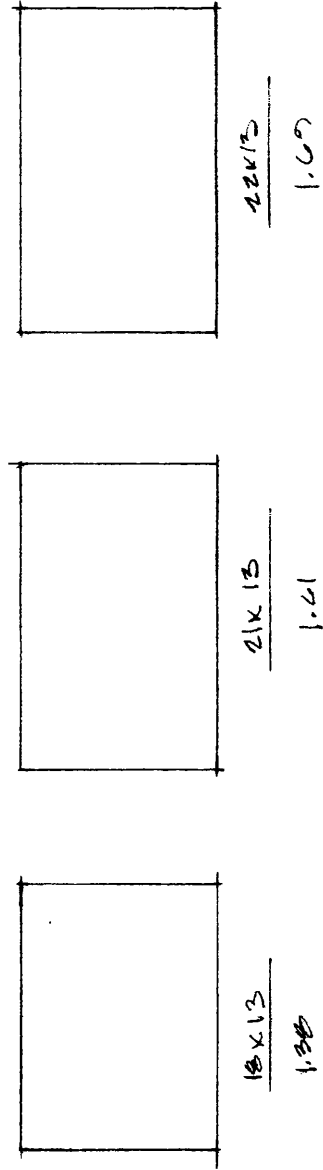
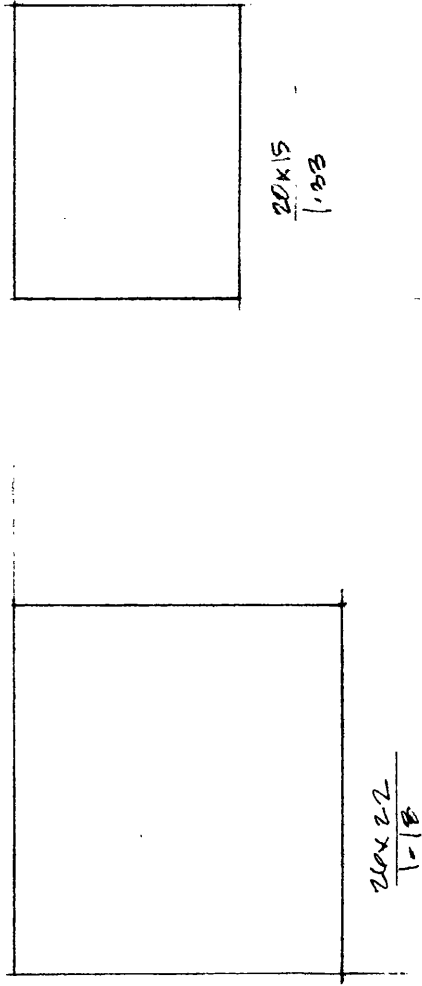


Fig. 4. Variation in form of proportions represented by Taylor's 1.3 group.

These differences are perceptually enormous. If the purpose of Taylor's correlation is to help determine the characteristics of Anglo-Saxon churches, the results presented do not actually define shape, size or proportion of naves because of this inexplicable representation of the plans to the nearest 5' interval. Furthermore, the statements of result, which have become the basis for our current understanding of Anglo-Saxon nave construction, do not stand up against the measurements.

When the ratios are tabulated based upon the measurements to the nearest foot, comparisons of the results with Taylor's tabulation show large inconsistencies, as I have done in Table 3 and 4 (also cf. Biddle *et. al*, 1985, 305-9 for work dividing the groups by time-period and geography which has also used the nearest foot measurement rather than the five-foot interval). Taylor lists seven churches clustered around 3.0 (ranging from 2.5 - 3.2) as having the largest ratios of length to breadth (*ibid.*, 1032). The compilation based upon the measurements to the foot show the largest group, five churches, belong to the 2.9 ratio, with a distribution between 2.5 and 3.1 containing 15 churches. Additionally, Taylor states the region from 1.4 - 1.8 as being "heavily populated", and "about the mean of the distribution" (*ibid.*), whereas the recompiled table shows the mean of the distribution to be between 1.6 - 2.2. Statistically the average of the new table is 2.03, however, the distribution shows 1.7 as containing 9 churches, 2.1 and 2.2 containing 8 each, and 1.6, 1.8, 1.9, and 2.0 each containing 6 churches. It would therefore be erroneous to attempt to reconstruct a church based upon the simplified understanding of one group of churches having a nave with a ratio of 2.0 as the average nave size, or 3.0 as the average nave size for the Northumbrian group.

In a manner similar to Taylor's, James, Marshall and Millet (1984) identify characteristics of Anglo-Saxon timber buildings through an analysis of the ratios and proportions (other aspects of their analyses, such as framing techniques, will not be discussed here) and then compare these characteristics to Romano-British

	<u>1.0</u>	<u>1.3</u>	<u>1.4</u>	<u>1.5</u>	<u>1.6</u>	<u>1.7</u>	<u>1.8</u>	<u>2.0</u>	<u>2.2</u>	<u>2.3</u>
1	Potterne Barton	Broughton K. Hammerton Thetford Mi i Wharrem Per. ii-ii M. Wenlock	Elmham Reculver	Chickney Holton Lusby Melton	Canterbury A M P	Bradford Cheddar i Chithurst Deerhurst O Selham Strethall Wareham M	Beechamwell	Stafford Bardsey Framingham Greensted Norwich J Quarley Stafford ii Thetford Mi ii Wiltling Boarhunt Bracebridge Cambridge Carlton Clayton Cringlford Headbourne Pentlow Rivenhall Brixworth Winchester	Bosham Stoughton	Wharrem Percy iv Dunham Corhampton Exeter Marton Missendon Winstone
2										
3										
4										
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	<u>2.4</u>	<u>2.5</u>	<u>2.7</u>	<u>2.8</u>	<u>3.0</u>	<u>3.3</u>	<u>3.5</u>	<u>4.0</u>
1	Dover	Hexham, east	Jarrow, east	Coln Rogers	Daglingworth	Lavendon	Thornage	Beechamwell
2	Worth	Heysham, PA		Kingston	Escomb	Stanley		
3		Bradwell		Lexham	Ledsham	Elmham N.		
4		Braemore			Seaham			
5		Corbrigde			Deerhurst			
6		Iver			Wing			

Table 3. Taylor’s groupings of nave by proportion of ratios based on the nearest 5’ intervals.

	1.0	1.2	1.3*	1.4**	1.5	1.6***	1.7****	1.8	1.9	2.0
1	Potterne	Much Wenlock	Wharrem Percy ii-iii	Broughton	Wareham M	K. Hammerton	Thetford Mi ii	Franningham	Bardsey	Stafford i
2	Barton			Lusby	Holton	Cheddar i	Thetford Mi i	Greensted	Quarley	Stafford ii
3				Elmham S.	Reculver	Deerhurst O	Selham	Norwich J	Wiltering	Carlton
4				Canterbury A		Avebury	Strethall	Bradford	Pentlow	Rivenhall
5						Canterbury M	Chickney	Chithurst	Kirkdale	Brixworth
6						Canterbury P	Melton	Barsham	Cheddar ii	Winchester
7							Bardfield			
8							Burghwallis			
9							Inworth			

	2.1	2.2*****	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
1	Cambridge	Boarhunt	Bradwell	Braemore	Jarrow, east	Daglingworth	Ledsham	Seaham	Heysham, PA	Lavendon
2	Headbourne	Bracebridge	Dover	Iver			Corbridge	Coln Rogers	Deerhurst	
3	Hexham, east	Clayton		Dunham				Kingston	Wing	
4	Corhampton	Cringelford							Stanley	
5	Marton	Exeter							Escomb	
6	Missendon	Bosham								
7	Winstone	Stoughton								
8	Wharrem Percy iv	Worth								

	3.1	3.8	4.1
1	Elmham N	Thornage	Beechhamwell
2	Lexham		

Table 4. *Recompiled groupings of nave by proportion based on measurements to the nearest 1’.*
Sacred Triangle **√2 *Golden Section ****√3 *****√5*

and continental examples in order to determine evolutionary origins and “cultural affinities” (*ibid.*, 182). Schematic plans are compared which contain plan characteristics whose “most common shape is the two-square module in which the groundplan consists of a square on either side of the central long-wall doors” (*ibid.*, 186-7). The favourable comparison of this module with Romano-British structures adds to the evidence which leads the authors to conclude that the Anglo-Saxon building tradition is a hybrid of traditions, either “Germanic immigrants adopting British buildings from their indigenous neighbours” or a “process of Germanisation of the sub-Romano-British” (*ibid.*, 206). This two-square module, however, has several variants: two-square plus door width and two-square minus door width (*ibid.*, 186, *fig.* 4). This produces a wide range of ratios, although the average ratio is 2.0.

Although the proportion of length:breadth is only one facet of that study, Marshall and Marshall have built upon the identification of two-square modules and 2.0 ratios for their extensive survey of Anglo-Saxon timber buildings (1991, 1993). The results are broken down into regional and chronological developments in order to “find patterns of evolution in space and time for the buildings and, by implication, for Anglo-Saxon culture” (1993, 367). Their data for each area, with measurements accurate to within half a metre (1991, 34) are represented in three manners. First as a scatter diagram showing the clusters of length:width, then as ‘boxes’ whose centres represent the average length:width and the outlines of the box represent twice the standard deviations, then as histograms representing the distribution of proportions. These methods show that there is a general ‘predominance’ of buildings with a 2:1 ratio (1991, 35, 39), and when broken down by region and chronology, is ‘most common’ in the 5th and 6th c., (1993, 367, 370-72, 375-76), and still common but not predominant in the 7th c (1993, 379). Variations occur which range from 1:1 to <3:1, these are interpreted as the variations between the ‘classic’ two-square module (2:1), the overlapping two-square module (<2:1) and the two-square plus corridor (>2:1). Their summary is stated in bald terms which, as we have seen in the discussion of Taylor’s work, hides the actual variation. For example, “The Anglo-Saxons arrived and settled in eastern Britain bringing with them a tradition of building

two-square structures (James *et al* 1984), a tradition adopted from the Romans on the Continent. Anglo-Saxon culture spread from the eastern part of Britain, to be assimilated into a Romano-British tradition of building which already included the two-square module inherited from the Romans...” (1993, 395).

In summary, the use of simplified mathematical ratios to describe and analyse buildings does not best represent the proportion and design of a structure. At best, this sort of work produces broad generalisations such as the observation that there appears to be a tendency for buildings to become longer over time in a given region (*ibid.*, 392) or that Northern churches do tend to be longer and more narrow than their southern counterparts. However, detailed statistical analysis of ratios is not really necessary to determine these trends. At worst, inexplicable choices in the representation of the data result in pre-biased data, especially if those representations are already based upon inconsistent measurements (rounding up to the nearest half-foot, foot or 5 foot increments; measurements along the interior, exterior or centreline). The resulting interpretations of the data thus can not hold up to the evidence.

geometrical proportions (successive proportioning)

Fernie provides a summary of points to be followed in order for metrological studies, or indeed any analysis involving measures, to be more responsible and more valid:

1. The study should only deal with actual measurements.
Dimensions scaled off plans or aerial photographs, unless they are of the largest scale and the very highest quality, will suffice for generalisations about differences in overall sizes... but they are never trustworthy enough for use in the study of lengths.
2. Measurement should be taken consistently between the same kinds of points; an analysis which allows itself to choose between the interior, exterior or centre of a wall for different measurements will always find an answer....
3. A study should not be restricted to a single building as the one selected might meet the criteria purely by coincidence.

4. An attempt should be made to establish the way in which the building was designed in order to extract the most important dimensions.
5. Subsidiary measurements, that is those which are derived from the main dimensions, should not be taken as corroborative evidence for the use of a length.
6. Reconstructions should never be used to help establish the use or frequency of a particular length.
7. Only documented lengths should be accepted, ... since allowing odd lengths again increases the chance that the investigation will always produce an answer.
8. ...a sharp distinction needs to be drawn between systems of length on the one hand and absolute lengths on the other.

(Ferne 1991, 2)

Whilst in general I would agree with these principals, the nature of the evidence makes it very difficult to uphold them. The first point, 'actual measurements not scaled from plans', can only be remedied if the person doing the analysis is the excavator. Most often, the results of excavation and survey are only presented as published plans. Archives are frequently lost or misplaced and even then, the original work might not contain dimensions, simply scaled site plans.

Unfortunately, it is true that dimensions scaled off of plans are not reliable; partly because of the potential distortion from reprographic techniques, partly because most published plans have been 'prettied' by the illustrator and their accuracy depends upon the individual and partly, because of publication costs, the plans have been reproduced at ridiculously small scales. Point 3 is worth emphasising, information from individual case studies should not be the entirety of an argument with generalised results. Individual case studies must be contextualised. Comparative studies, however, are usually not performed to the high level of detail which can be gleaned from individual studies. Points 7 and 8 have been addressed in the previous sections.

The remaining points are worth consideration as part of a single problem, which can be summarised as point 4: *an attempt should be made to establish the way in*

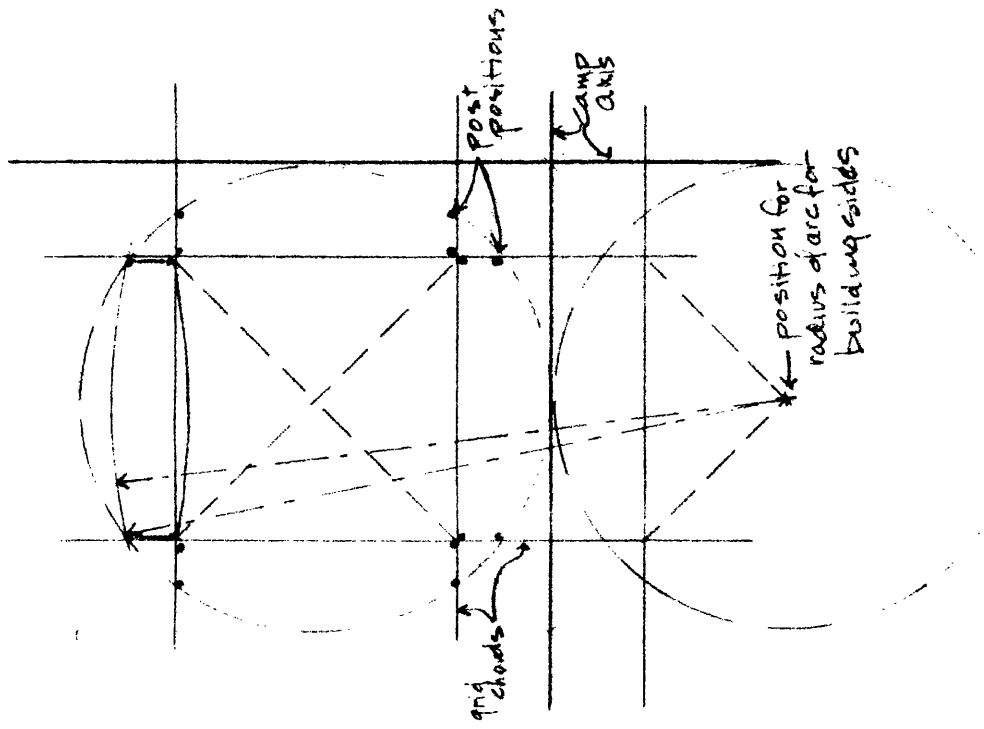
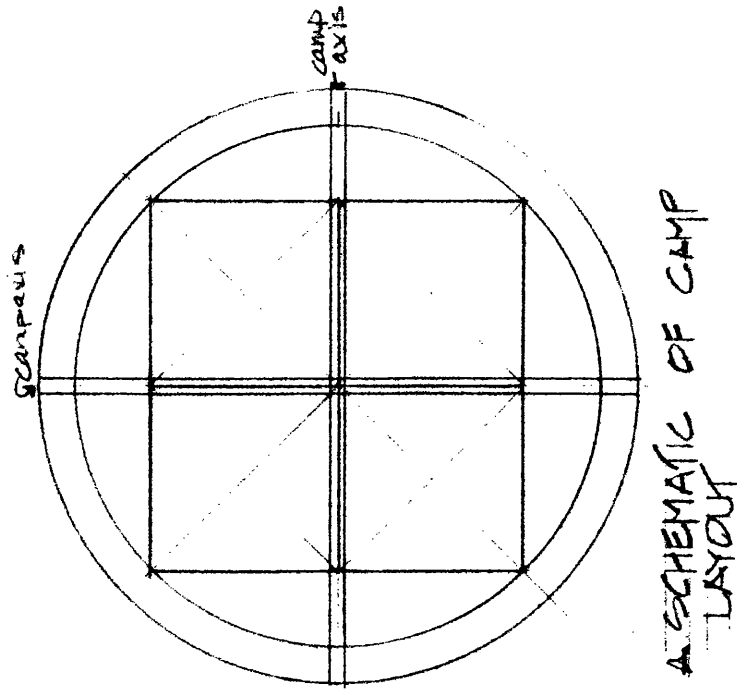
which a building was designed. Here, though, as stated above, *design* is seen as a process which has a degree of self-consciousness about the overall order and form of a building; self-consciousness derived from cultural and historical traditions. A major component of the design of a building is the ordering and arrangement of the parts relative to the whole, perceived in the proportions of the building. We have already seen the problems with mathematical analyses of proportions. An alternative form of investigation, geometric proportional analysis, can address some of these inherent problems. A geometric system relates the parts to the whole in terms of layout, which does not need to be expressed or comprehended as a precise mathematics systems of ratios.

Fernie's point 2 begs the question of what were these measurements *of* which are investigated by metrological and ratio studies. Buildings are normally discussed in terms of plans, layout, construction techniques and materials. These all imply activities. An architect (the planner) uses different tools and measures for constructing a scaled representation. The surveyor has to transfer an idea to the ground and addresses problems of site with different tools and measures. The builder and the craftsmen work in different scales to achieve their results, again requiring different tools and techniques. An architect works with set squares and compasses with small measurements. The surveyor requires rods and cords which cover great lengths. The builder works with modular units, whether it is stone or timbers, with relatively fixed sizes which must be put together to form greater wholes. The craftsman works in small detail, with fine tools and measures. Kidson's analysis of measurements (1991) is significant because he sees the disparity of measurement systems as differences in which types of measurement systems they were and thus the later standardisations were rational attempts to correlate the architect's measures with the craftsman's measures, with the land surveyor's, with the cloth merchant's, etc. through geometric relations.

These basic requirements of building tools are known from all time periods. Although there is a lack of evidence specifically from early Anglo-Saxon England, there must have been the employment of standard techniques in order to obtain results with any level of order and regularity. We can turn to Roman-

Britain for some evidence of what tools were probably employed by the Anglo-Saxons. The *linea*, the *regula*, and the *circinus* have already been mentioned. Additionally the *groma* (surveyor's cross for sightlines), the *norma* (set square - right angle triangle) and the *libellus* (an A-framed square with plumb bob for levelling) (Evans 1994, 149-152) were part of the standard repertoire. More sophisticated and complex tools were also known to the Romans, such as the *dioptra* (a complex levelling and sighting device), the *chorobates* (a spirit level), the astrolabe and the quadrant (Deumlich 1982, 3). These devices are not necessary for the planning and construction of a building, so they will be left out of this discussion. The use of the former simple tools and different measuring devices have implications for how a building was planned and how a site was marked out and, consequently, have implications for what the modern researcher should be investigating. For instance, if a building was developed on 'paper' by an architect and then transferred to the actual site, the standard measurements could relate to the centre of the walls or to the exterior of the walls; if a building was planned on site, the measurements could relate to the interior or exterior of the foundation walls, the footings or the walls.

The evidence prior to early Anglo-Saxon England and after (up to and including modern times) is for the reliance and use of geometrical constructions for planning and setting out. Although plans were in use, there was no method for accurately transferring plan measurements to a site (Evans 1994, 153), whereas relative positioning can easily be set out geometrically. The metrological investigation by Huggins, Rodwell and Rodwell (1982) discussed above might be beset by difficulties in terms of their metrological results, however the method undertaken to arrive at these results is worth consideration, especially the analysis of the Viking camp buildings (*ibid.*, 39-52) (Fig. 5 for the following). These regularised groups of boat shaped buildings were investigated because the site had previously been claimed to have employed the Roman foot. The buildings are normally grouped in fours in a square pattern, which are then aligned around the north-south, east-west axis within a circle. In other words, a



B. SCHEMATIC OF SITE GEOMETRY

Fig. 5. Analysis of layout of the Viking camp buildings, following Huggins.

four quadrant square inscribed within a circle (Fig. 5a, *ibid.*, fig. 2.6, 42). In determining which set of dimensions would be the significant dimensions to consider (referred to as the design dimensions), the authors discussed the differences in the relative positions of the post construction to cords used in setting out the site. If cords were used to mark a line and then removed (i.e. chalked lines inscribed), the centre-line of the posts would be significant. Cords which were left in position could generate actual dimensions (the actual placing of the posts) either directly touching the posts to one side, as the centre-line of posts staggered either side of the cord, or to one side but not touching the cords which would mean the design dimensions would have to be determined from the cord position and not the wall position. Additionally, for trench construction (based on evidence from Yeavinger) they suggest that the cord position (therefore the design dimension) would be just outside of the wall construction (just off of the centreline) if positioned after the trenches were dug and the first post erected (*ibid.*, 47). If the actual post-post dimensions do not reflect the design dimensions because of the construction techniques, then an alternative means for determining the relevant dimensions must be sought. This involves seeking for the design intention through the use of geometric proportions, where a best-fit of the geometrical relations would explain the determination of the positioning of the building(s), the form and size and the relationships of the parts within the whole scheme. In this particular study, it was determined that a grid of cords was initially positioned over the site and left in place. From this grid, circles were inscribed to determine the external corner post positioning for each building (Fig. 5b; figs. 2.9, 2.10, 2.11, 47-49). The design measurements, considered the primary measurements, were the cord grids. The secondary measurements (ones which were dependant upon the primary measurement and thus did not need to be measured) were measurements such as the circumference of the circle. Tertiary dimensions are those which are wholly determined by the overall scheme, such as the actual length of the buildings inscribed by the relationship of the circumference to the grid (*ibid.*, 41-52).

Since a proportional system is also a relative system of elements it does not need to rely upon linear measurements to identify and can be sought for in fragments

in the sense that the part does relate to the whole. Kjolbye-Biddle used simple geometric proportioning to analyse the excavated remains (mostly robber trenches) and offer a possible reconstruction for Old Minster, Winchester (1986, cf. above). The reconstruction works according to geometrical logic relative to the positioning of the foundations (regardless of whether the metrological results are consistent within any other postulated system). A square grid over the site produces a nave of 4:2 squares, a chancel $1 \frac{1}{3}$ squares long and north and south porticus of 1:1 squares, where the dimension north-south including the porticus is equal to the nave dimension east-west (4 squares). This system works to the external faces of the walls. The porticus are positioned one square east of the north-south centreline of the entire structure; the chancel is centred $\frac{2}{3}$ of a square either way north-south over the east-west centreline (Fig. 6; *ibid.*, fig. 136, 199).

These two examples illustrate two possible ways of designing and determining the layout of a building using geometrical relationships - successive proportioning and a modular system (a grid). These systems could work either separately or in conjunction with each other. Evans (1994) carefully considers a range of evidence for military building in Roman Britain. As well as demonstrating the use of both type systems, this analysis puts forth several salient points in reference to measurement analysis and metrological studies. A modular system will not necessarily produce modules of rational numbers expressible in round figures given that the standard practice would be to derive the module from a base line divided into a given number of points (*ibid.*, 154). In other words a baseline is measured out with a cord then simply divided into the requisite modules by folding into equal parts and marked with a tag. For example, a rod of 5.032m (*pertica*) $\times 5$ = a baseline of 25.16m, divided into 10 modules = 2.516m, which does not correspond to any known historical standard of measurement. Successive proportioning systems also do not rely on actual measurements for divisions and relationships (*ibid.*, 157), as can be seen in the examples from the Viking camps above. Finally, employing geometric constructions to plan a building on site requires very simple tools and skills; a sightline, a rod, cord and markers.

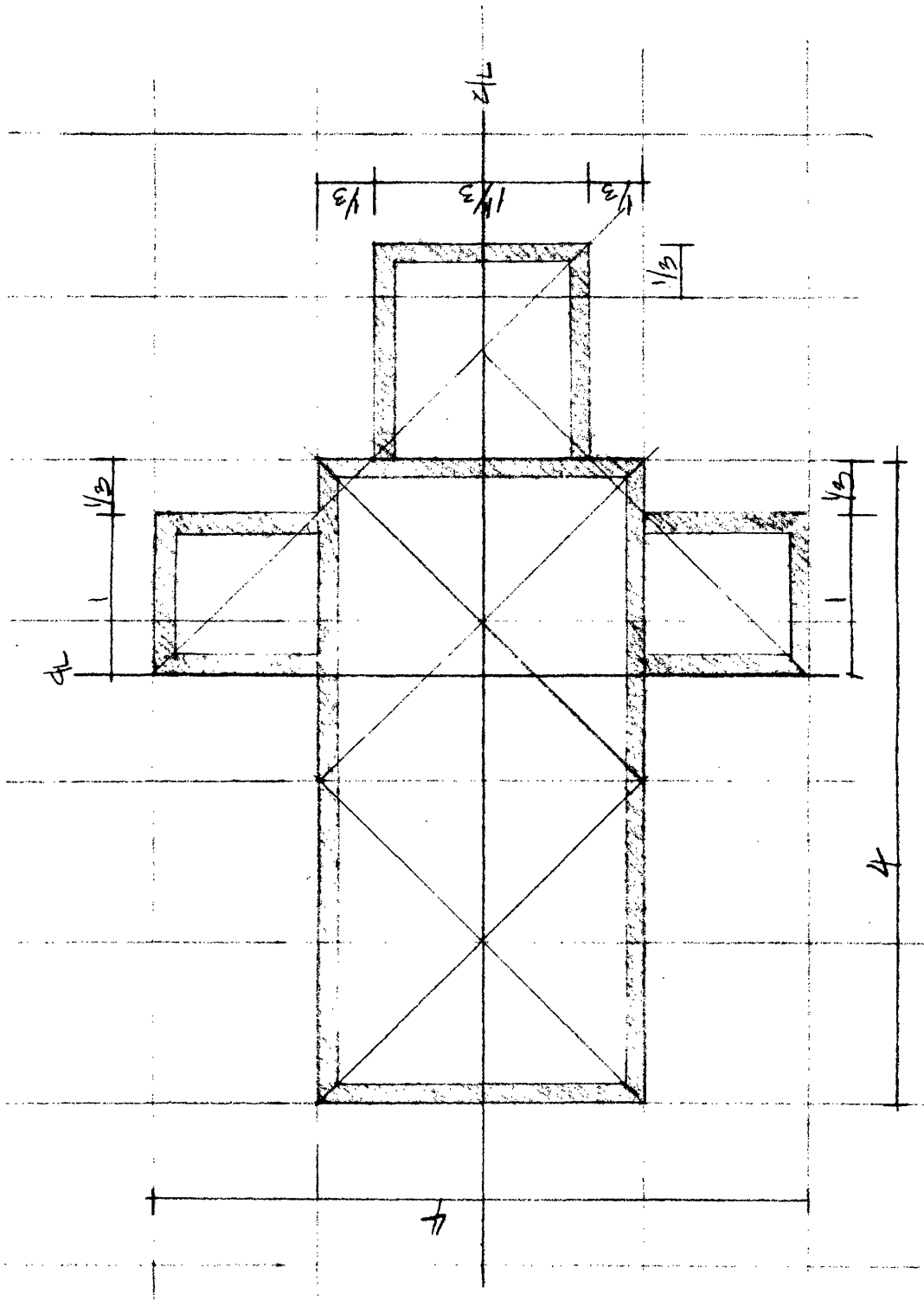


Fig. 6. Schematic reconstruction of Old Minster, Winchester, following Kjolbye-Biddle.

IV.3 Proposed Methodology

Before presenting the methodology employed in this analysis, I would like to reiterate the points outlined in the previous section. The most important point is the understanding of design as an activity. This implies an ability to arrange the parts of a building in an ordered fashion. This ability must rely upon traditional skills and tools with practical implications and limitations. The best way to create spatial arrangements on a site, to lay out a building, given the limitations of the tools and techniques, is through the use of geometric constructions, either through a modular grid or successive proportioning. Without an understanding of the design process, linear measurement analysis is bound to fail. Human practice would not imply a consistency which would be necessary for repeatable, accurate measurements to appear (in the eyes of the modern researcher) across the board. For example, the criteria for measurement analysis which requires the measurement between the same kind of points (Ferne's point 2, see above), does not allow for setting out cords on site where sometimes the guidelines would be placed to the outside of a wall, to the inside or centred on a trench. Geometric analysis, on the other hand, does not rely on linear measurements or mathematical rigour. It does require internal logic, an understanding of the design process and possible building techniques and the ability to make sense of the entire plan through the relationship of significant points rather than concentrating on one main space.

comparative approach

A geometric system, however, is only discernible in past constructions *a posteriori*. Whilst the internal logic of one system might appear to make sense for a structure, caution must be exercised since another system might equally show an internal logic. Kemp and Rose (1991) performed a series of comparative analyses upon the plan of the Small Aten Temple at Amarna using the 'sacred triangle' (3:4:5), a double-squared modular system based upon an 18 cubit module, the Golden Section, and a 20 cubit modular system. The Temple had previously been convincingly claimed to have been based upon the Golden

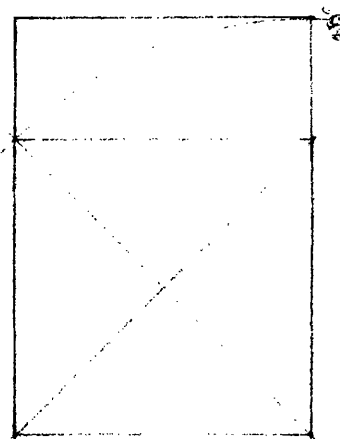
Section. Each of these systems, however, were found to relate to the plans to one degree or another, close enough to state with conviction that each was the 'correct' system employed by the architects of the Temple, if the plans had not been compared (*ibid.*, 112-119). This study is illustrative of the danger of overstating the significance of *our* analytic tools as tools applied self-consciously by builders of the past. Therefore, in the analysis of Hexham, a comparative approach was undertaken.

definitions

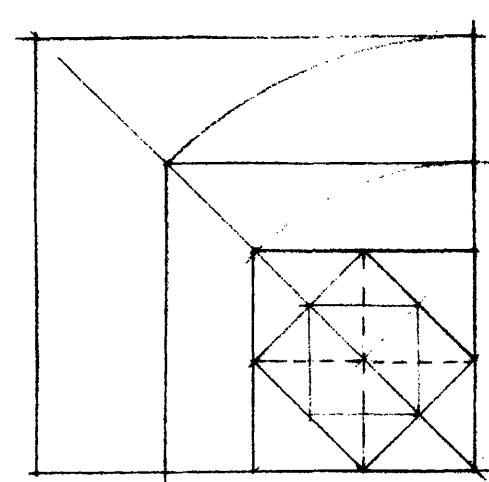
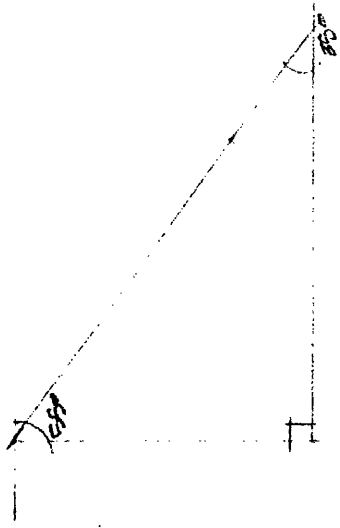
Rather than have it appear as if random systems were applied in my approach, I have used geometric systems which are historically known including $\sqrt{2}$, $\sqrt{3}$, the Golden Section, $\sqrt{5}$, and the 'Sacred Triangle'. As will be seen in the following discussions, although these terms are associated with complex mathematical descriptions of irrational numbers, they are in actuality the results of simple geometric constructions (i.e. can be constructed with a length and an arc) which have been understood and employed for millennia. With each definition I have also noted the historical evidence for the use of each system, chronologically nearest the 7th century.

Root 2 (Fig. 7)

$\sqrt{2}$ is the irrational number 1.4142165.... It is the ratio of the diagonal of a square to the side ($x:x\sqrt{2}$). It has already been referred to in its geometrical capacity for the doubling of areas. If the diagonal of a square is used to form the base of the next square, the resulting area will be double. A rectangle with sides having the ratio of $1:\sqrt{2}$ is constructed from the intersection of the diagonal (as radius of an arc) to the base line (the base line in the following discussion refers to the horizontal length). A $\sqrt{2}$ triangle will have internal angles of 90°, 55° and 35°. Approximations of this ratio are ($2x^2 - y^2 = \pm 1$): 5:7, 12:17, 29:41, etc. (Kidson 1990, 77). As well as being known from Roman times, Fernie demonstrates the



$1: \sqrt{2}$ ROOT-2
 hypotenuse of square = length
 of long side



Doubling the area
 of a square using $\sqrt{2}$

Fig. 7. Geometry of $\sqrt{2}$: doubling of the area of a square.

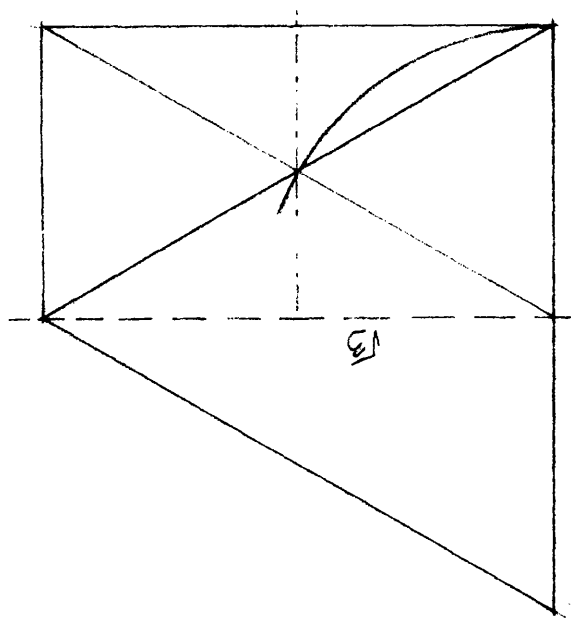
use of $\sqrt{2}$ in the construction of the early 12th century Romanesque Norwich Cathedral (1976).

Root 3 (Fig. 8)

$\sqrt{3}$ is the irrational number 1.73205.... It is the property of an equilateral triangle. An equilateral triangle has sides of equal length and internal angles all of 60°. A rectangle with the relationship of 1: $\sqrt{3}$ can be constructed where the short side is equal to the radius which intersects at the centreline. $\sqrt{3}$ approximations are 8:14, 4:7, 30:52, 15:26 etc. (Kidson 1990, 94). Vitruvius considered the use of equilateral triangles to design to be “in the Roman manner” (*latine paribus lateribus trigonorum*) (Book V.viii.2) and demonstrated the design of a theatre this way (Book V.vi). Although Vitruvius wrote in the 1st c. BC, his treatise on architecture was known through Roman times and the early Middle Ages. In fact, such evidence as we have points towards an English connection. Alcuin of York was familiar with Vitruvius (Reynolds 1983, 441; Krinsky 1967, 36). The earliest surviving MSS of Vitruvius, the British Library Harleian 2767, has been claimed to be c.700 Northumbrian because of the stylistic similarities with the Codex Amiatinus as well as a cross illustration in the text similar in style to the Lindesfarne Gospels (Granger 1928, xvi-xvii). Other scholars feel it to be later, c. 800 and Carolingian (Reynolds 1983, 441, following Bischoff), although “The whole tradition shows signs of a derivation from an archetype in Anglo-Saxon script, and it has been suggested that Alcuin had imported a text from England” (*ibid.*).

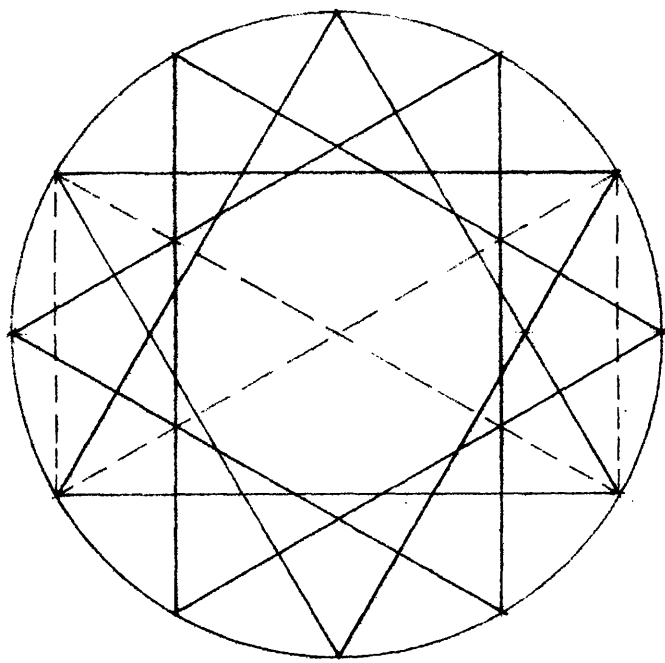
Golden Section (Fig 9)

The Golden Section is the section of mean and extreme ratio, numerically it is 1.6180399..... There are numerous ways to construct the Golden Section, additively using the centreline of the base of a square (a_1) to inscribe an arc through the far corner (b_1) which intersects the baseline at C. (Fig 9.I), the Golden Section is the relationship of AB- AC. It also can be created reductively from a 1:2 triangle using DC as the radius (Fig 9.II). A Golden Rectangle



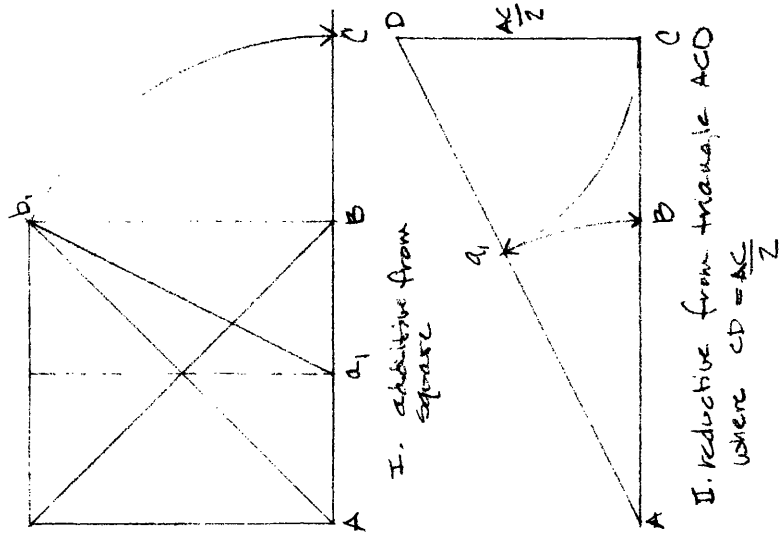
EQUILATERAL TRIANGLE

$\sqrt{3}$



VITRUVIAN THEATRE PLAN
 $1:\sqrt{3}$ RECTANGLE

Fig. 8. Geometry of $\sqrt{3}$: equilateral triangles and the Vitruvian theatre plan.



GOLDEN SECTION: GOLDEN RECTANGLE

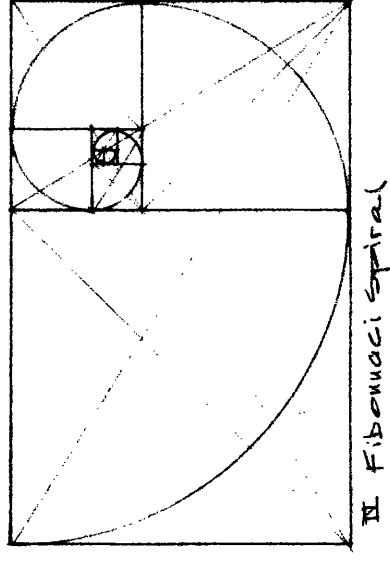
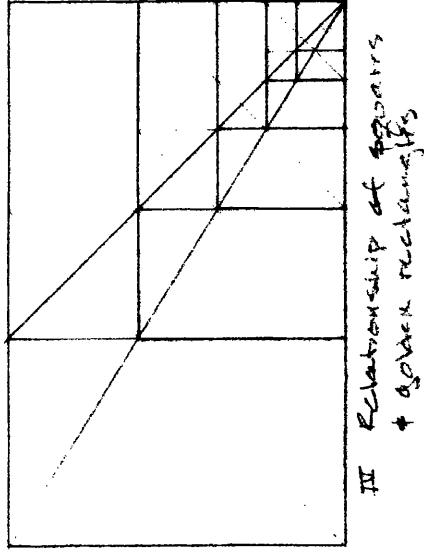
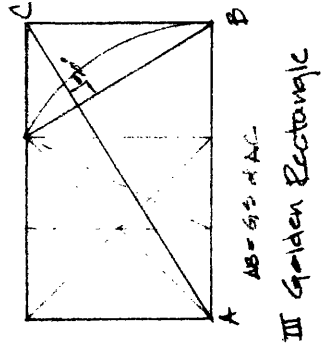


Fig. 9. Geometry of the Golden Section: division of a line, the relationship of square to rectangle, Fibonacci spiral.

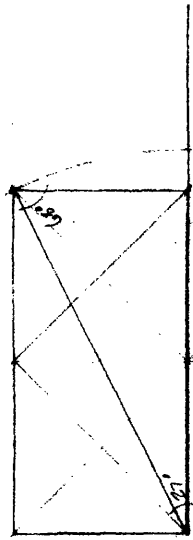
contains the relationship where a line perpendicular to AC through B results in a square (Fig. 9.III). Golden Section proportions are represented either as a relationship of rectangles to squares that reproduces the previous relationship (Fig. 9.IV) or as a reductive Fibonacci Spiral (Fig. 9.V). The Fibonacci series is a way of mathematically creating a series of numbers whose ratios are close to the Golden Section. This series is where each further term is the sum of the two previous: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55... The higher the numbers, the closer the ratios are to the Golden Section. Although this number was known to the Greeks and Romans, I have not found any reference to it within a reasonably close time frame to the early Anglo-Saxons. I have, however included it with my analysis because of the all pervasive tendency to attempt to find the Golden Section in just about every building ever designed (although cf. Kemp and Rose 1991, 105, for recent interesting psychological experiments on perceptions involving bipolar judgement and their tendency to select a mean near the Golden Section).

Root 5 (Fig 10)

$\sqrt{5}$ is 2.236068.... It is the hypotenuse of a 1:2 triangle. The ratio 4:9 commonly was used for $\sqrt{5}$ (Kidson 1991, 92). This is constructed geometrically by using the diagonal of a 1:2 rectangle as the radius for the long side. A 4:9 triangle contains internal angles of 90', 66' and 24'.

the Sacred Triangle (Fig. 11)

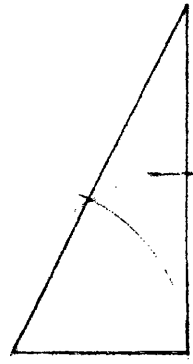
The Sacred Triangle is the Pythagorean right triangle, a 3-4-5 triangle. These lengths are those traditionally used to form set-squares (Vitruvius, Book IX. praef.6). The internal angles are 37', 53' and 90'. A rectangle with a ratio of 3:4 (1.3333....) is produced where the diagonal of a square used as the radius intersects the centreline of the square.



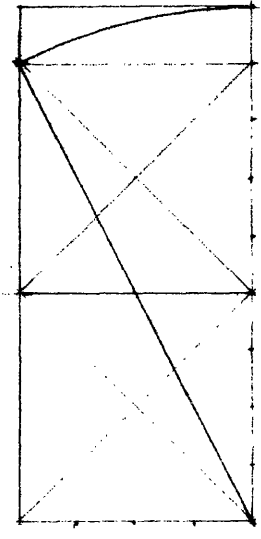
$\sqrt{5}$ = Hypotenuse of 1:2

↙
 arc of hypotenuse
 of 1:2 = $1:\sqrt{5}$ →
 approximately 41°

$\sqrt{5}$



$\sqrt{5}-68 = (15-1):2$



$1:\sqrt{5}$ (approx 41°)

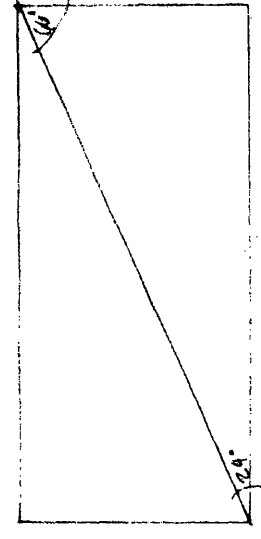
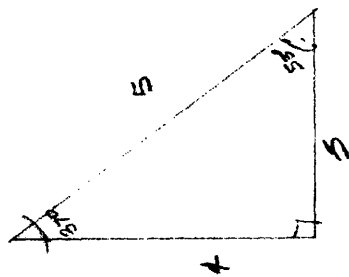
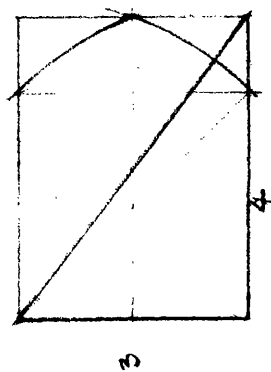


Fig. 10. Geometry of $\sqrt{5}$: the 4:9 rectangle.



"SACRED
TRIANGLE"



8416 →

arc of hypotenuse
intersect at centerline

Fig. 11. Geometry of the Sacred Triangle: the 3-4-5 triangle.

Modular systems

Two grid systems are compared, those with modular divisions of $1/3$, $1/6$ and those with modular divisions of $1/2$, $1/4$. The modules based on linear measurements are the 5.03m rod and the 4.65m rod. Other modules are based on significant sizes, e.g. the width of the chancel, the width of the nave, both internally constructed and externally.

transmission of skills

In the previous sections, the use of geometrical knowledge for planning sites and buildings has been discussed as a practical skill within a tradition of practical knowledge which would have been passed down from master to apprentice. There is additional evidence for these skills in the ability of the 7th century Anglo-Saxons to employ 'meticulously accurate geometric construction' (T. Brown 1971, 303) in creating the art of the illuminated manuscripts produced in Northumbria in the 7th and 8th centuries (cf., for example, Bailey 1978; T. Brown 1971; Bruce-Mitford 1967). The specific knowledge and use of the four surds and the sacred triangle as architectural and geometrical knowledge also passed from the Roman era into the Middle Ages through textual transmission. Euclidean geometry was superseded in the early Middle Ages by a more pragmatic application of geometry in land survey and building practice (Reynolds 1983. 4). I have already mentioned the earliest Mss. of Vitruvius. As well as imparting the use of equilateral triangles for the use in planning, Vitruvius is a font of information for other geometrical applications. The use of $\sqrt{2}$ in its geometrical formulation is described for both the doubling of land areas (Book IX. praef. 4-5) and for determining the proportion of an atrium (Book VI.iii.3). The Pythagorean 3-4-5 triangle is described for creating a set-square and land survey (Book IX.praef.6). A list of specific examples would be almost endless. Essentially, the entirety of *de Architectura* covers the use of geometry across the gamut of building and planning: the use of modular divisions for planning; successive proportioning for the layout of a room, the creation of elevations and determining the correct proportions and form of the details (the famous discussions of Classical columns); the correct orientation and planning of

sites through the determination of the winds and determining the solstice for any latitude.

Although evidence for the direct transmission of Vitruvius' Mss. is absent before the Harleian Ms, there is further evidence for the textual transmission of geometrical knowledge: through the *agrimensores* and through the abridgement and adaptation of Vitruvius in other sources. The *agrimensores* was essentially a text book for land survey and management from the 3rd century (Reynolds 1983, 1-6, for the following, unless otherwise noted). The earliest manuscript is from half a century later, after that, tracing the lineage of the multiple versions becomes very complex, so this discussion will be limited to those texts which are relevant for present purposes. At some point in the 5th century a compilation of sources appeared as the *agrimensores*. This compilation included "*Agenius Urbicus de controversiis agrorum, Higinus de limitibus agrorum et metatione castrorum, Balbus de nominibus mensurarum, Vitruvius de exagonis heptagonis et id genus, Froninus de qualitate agrorum, Caesarum leges agrariae et coloniarum iura*" (*ibid.*, 2) as well as the *lex Mamilia* and a *liber coloniarum*. Variations of this compilation with additions from Isidore and other authors appear in the 6th and 7th century and were copied at Fulda and Corbie in the 9th century. Additionally, sometime in the 8th/9th century a compilation of the *agrimensores* and Boethius was turned into the 5 books of the *Ars geometrica* and ascribed to Boethius. A different compilation, which combined Vitruvius, Boethius and parts of the *agrimensores* appears in the 9th century; 4 copies of which were made at Corbie. Also ascribed to Corbie is the 9th c. *Pauca de Mensuris*, derived from Isidore's adaptation of the *agrimensores* (cf. Kidson 1990). Again, the direct evidence for the *agrimensores* in the 7th century in Anglo-Saxon England is absent, although the German origins for copies of the manuscripts at monasteries with strong Anglo-Saxon links is striking (cf. Lapidge 1985, 41 for the transmission of texts to Carolingian monastic centres through importation from England by Anglo-Saxon missionaries).

Vitruvius was widespread, not only through copies of his manuscripts, but through the incorporation of his work into the texts of others, as in the

agrimensores already discussed. Faventinus, Pliny, and Isidore of Seville all adapted Vitruvius into their work (Krinsky 1967, 39; Granger 1928, xiv), and, as we have seen, a compilation which included Vitruvius was circulating under the name of Boethius in the 8th or 9th century. Alcuin's booklist for York (c. 778) includes Pliny and also refers to 'Boethius', which has been assumed to be Boethius' logical writings, but could refer to the compilation (Allott 1974, 165; Lapidge 1985, 47). There is an 8th century Northumbrian manuscript of Pliny which still survives (Lapidge 1985, 47). Bede drew extensively on Pliny and Isidore (cf. Laistner 1935; Mayr-Harting 1991, 191-219). Glosses from the school of Theodore and Hadrian contain Isidore verbatim as well as references which appear to have drawn upon him (Lapidge 1994, 204). An epitome of Isidore was produced by an early 8th c. Anglo-Saxon using another manuscript (and thus earlier) which had been glossed in Old English (*ibid.*). Finally, Isidore and Pliny both appear to be well known to Aldhelm writing in the late 7th century (cf. Lapidge 1979 & 1985; Mayr-Harting 1991, 191-219).

As well as references and quotations which appear to be derived from these sources, Bede displays a remarkable mathematical, geometrical and architectural knowledge. His architectural descriptions in the *HE* are always lucid and informative (e.g. cf. above III.5). His extensive commentary, *De tabernaculo*, is a lengthy exegetical work entirely devoted to the description of the construction and furnishing of the Tabernacle of Moses. This is an allegoric exposition which is based primarily upon the idea that a literal understanding of the text and the nature of things described are necessary before a full comprehension of the anagogical meaning can be obtained (cf. Lapidge, 1985 for a discussion of the 'Antiochene', literal, style of exegesis; and Irvine 1986 for the types of allegory used by Bede which include historical and typological allegory). It betrays a comprehensive understanding of construction and methodologies for putting built form together, such as in the passage on discussing the measurements for the coverings which Bede discusses in terms of lengths of cord multiplied and divided modularly across and throughout the building and related to each other throughout the building (i.e. proportional relationships) (*de Tabernaculo*, 2.3; trans. in Holder 1994). Stevens has pointed out Bede's many scientific

achievements in computation, numerology and cosmology (1985). I would like to emphasise a couple of passages from Bede noted by Stevens which seem to have a direct relation to areas covered by Vitruvius (Stevens cites Pliny as Bede’s source, whom it has already been mentioned adapted Vitruvius):

Bede (page references to Stevens 1985, with the Bede source following)	Vitruvius
all the stars reflect light from the sun, especially the moon whose phases and eclipses are described in detail (649; <i>De Natura Rerum Liber</i>)	Book IX . 2 - on the rising and waning of the moon: Berosus’ theory of light reflecting from the sun, the phases of the moon
The use of the gnomon and a right angle and observation of shadows at solstice and equinox to calculate latitudes (652-653; <i>De Natura Rerum Liber</i>)	Book IX.7 - on the nature of ‘dialling’ - using the gnomon, a right angle, observations of shadows, and geometrical calculations to determine the solstice, equinox and division of the day into twelve parts at different latitudes

Evidence for the transmission of geometrical knowledge through the mechanisms of the Church as well as the handing down of practical skills therefore allows as to assume the possibility that a level of geometrical sophistication was available in Northumbria in the 7th century to draw upon in building practice.

sites

The sites chosen for comparison are: Jarrow, Wearmouth, Escomb, the crypt at Hexham and the crypt at Ripon. These have been selected out of a database of early Anglo-Saxon Northumbrian churches. Jarrow and Wearmouth are both Class I structures (nearly complete plans have been recovered) which are geographically near Hexham. Most importantly, they are tightly historically linked through the relationship between Wilfrid and Biscop (cf. Goffart 1988, Wormald 1976). Ripon was re-built between 666-673, Hexham was founded in

673. St Peter's Wearmouth was built 'in a year' from 674-675 (Cramp 1994, 281); the building of St Paul's, Jarrow began *c.* 681/2 and continued over a few years: the dedication occurred in 685 (*ibid.*, 289). Escomb has been selected almost as a neutral test because it is the most complete standing Anglo-Saxon structure from this time, and the porticus have been completely recovered through excavation. It has been stylistically placed in the late 7th century although there are no historical references to it (Taylor 1965, 234-38; Pocock & Wheeler 1971, 11). It is also geographically near Hexham. Churches which were rejected for comparison were those which had incomplete chancels (Corbridge, Seaham and Staindrop); geographically distant (Heysham, St. Paul-in-the-Bail Lincoln, Whithorn and Kirk Hammerton), uncertain date (Kirk Hammerton, St. Paul-in-the-Bail) or timber construction which may entail different site methods (Yeavinger, Whithorn). The identification of the wooden building at Yeavinger is not conclusive. Cf. Appendix I for further details on these churches.

IV.4 Analysis

The analysis was undertaken through a series of drawings. A complete set of these drawings, reproduced at 1:1 is available in Appendix 2. Each church site was subjected to the minimum of 11 tests in two groups for the possible design system employed: successive proportioning systems^{xx} - $\sqrt{2}$, equilateral triangles ($\sqrt{3}$), $\sqrt{5}$, the Sacred Triangle, and the Golden Section; modular systems - 4.65m rod, 5.03m rod, nave to exterior, nave to interior, chancel to exterior, chancel to interior. The crypts were analysed using the same set of successive proportioning systems. The 4.65 module and 5.03 module were compared and a 'best fit' module was determined from one of the chambers. Each of the systems applied to the churches used the crucial position between the chancel and the nave as the base line. For the equilateral systems, a star plan (cf. Vitruvian theatre plan, Fig. 8, above) based upon the exterior width of the nave was used as the starting point.

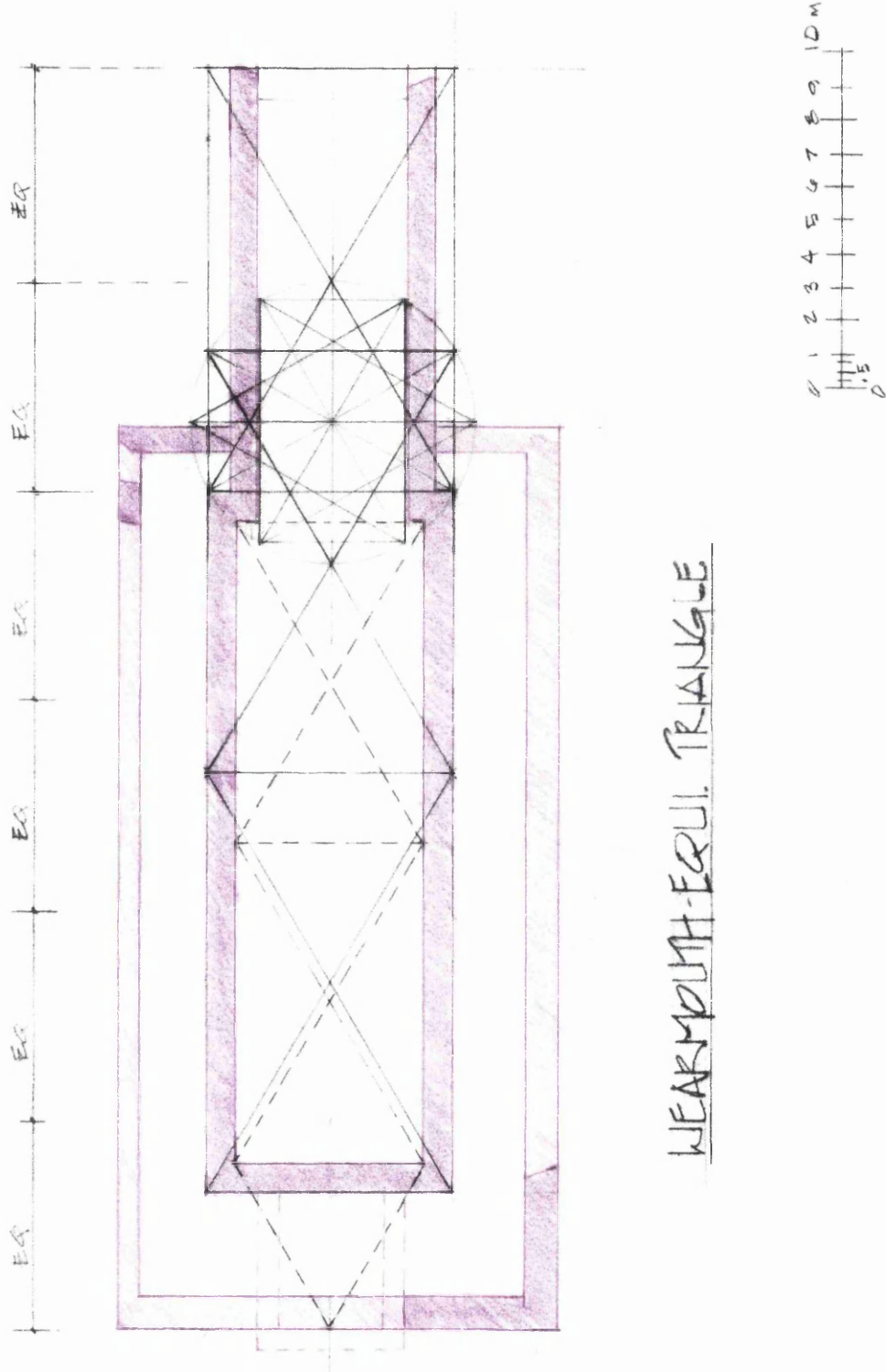
Each site will be discussed to determine which system is the best fit according to the evidence of the internal logic, discussed in descending order from best-fit to least-fit. Then the sites will be compared to each other. The criteria for 'best fit' is based upon how well the system could have been used to position significant points in relation to each other (the analyses of proportioning systems for Wearmouth will be discussed in full in order to illustrate the criteria for 'least fit'). For the churches these include:

- the relationship between the chancel and the nave
- the overall length
- the overall width
- the position of the porticus
- length:width of nave
- length:width of chancel

Wearmouth^{xxi}

Equilateral Triangles (Fig. 12, 13, 14)

This system works best for the layout of Wearmouth. The overall site length equals 6 of the large triangles (Fig. 12). The overall width of the site is slightly larger than two triangles positioned from the E-W centreline (Fig 14a), the bottom triangle hits inside the S. porticus wall. The position of the chancel to nave is determined from the resultant inscribed, overlapping $1:\sqrt{3}$ rectangles (Fig. 12), the chancel width (interior) to nave (exterior) width is thus very close to $1:\sqrt{3}$. The e/w rectangle is very slightly smaller than the actual width of the chancel. The length of the nave is +3 of the larger triangles west from the position of the east pointing triangle of the star plan. The length of the chancel is +1 of the larger triangles from the position of the west pointing triangle or 2 overall (one $1:\sqrt{3}$ rectangle). The interior size of the nave is 4 triangles long using a triangle based upon the width of the nave or $2 \times 1:\sqrt{3}$ rectangles. The interior size of the chancel is 3 triangles long, using a triangle based upon the interior width (Fig 14.e). The placement of the porticus work at several levels (Fig. 13, 14). Fig. 13.a uses the interior corner of the nave/chancel junction and the e-w centreline as the starting points. From here, the circle inscribes the width of the porticus and the n/s rectangle hits to the inside of the N. wall of the porticus. The east line of the n/s rectangle inscribes the position of the E. wall of the porticus (width from nave/chancel interior corner to interior of E. wall equals $1/2$ of the width of the $1:\sqrt{3}$ rectangle). Alternatively, Fig. 14.b is positioned on the n/s centreline of the star plan aligned on the exterior of the E. wall of the porticus and the circle to the interior of the S. chancel wall. The width from the exterior corner of chancel/nave to the exterior of the E. wall is $1/2$ of the width of the $1:\sqrt{3}$ rectangle. Fig. 13.b shows the star plan positioned on the SW corner of the nave and the exterior of the S. nave wall (aligned with overall position of triangles from Fig. W.1). The position of the S. porticus wall is $1/2$ of the width of the $1:\sqrt{3}$ rectangle. The circle inscribes the exterior of the W. porticus wall, the rectangle to the centre of the W. wall. Additionally, the dimension from the interior W. wall of the nave to the exterior W. wall of the porticus is equal to the smaller triangle of the nave interior (Fig. 12).



WORMMOUTH-EQUIL. TRIANGLE

Fig. 12. Wormmouth: equilateral triangles analysis.

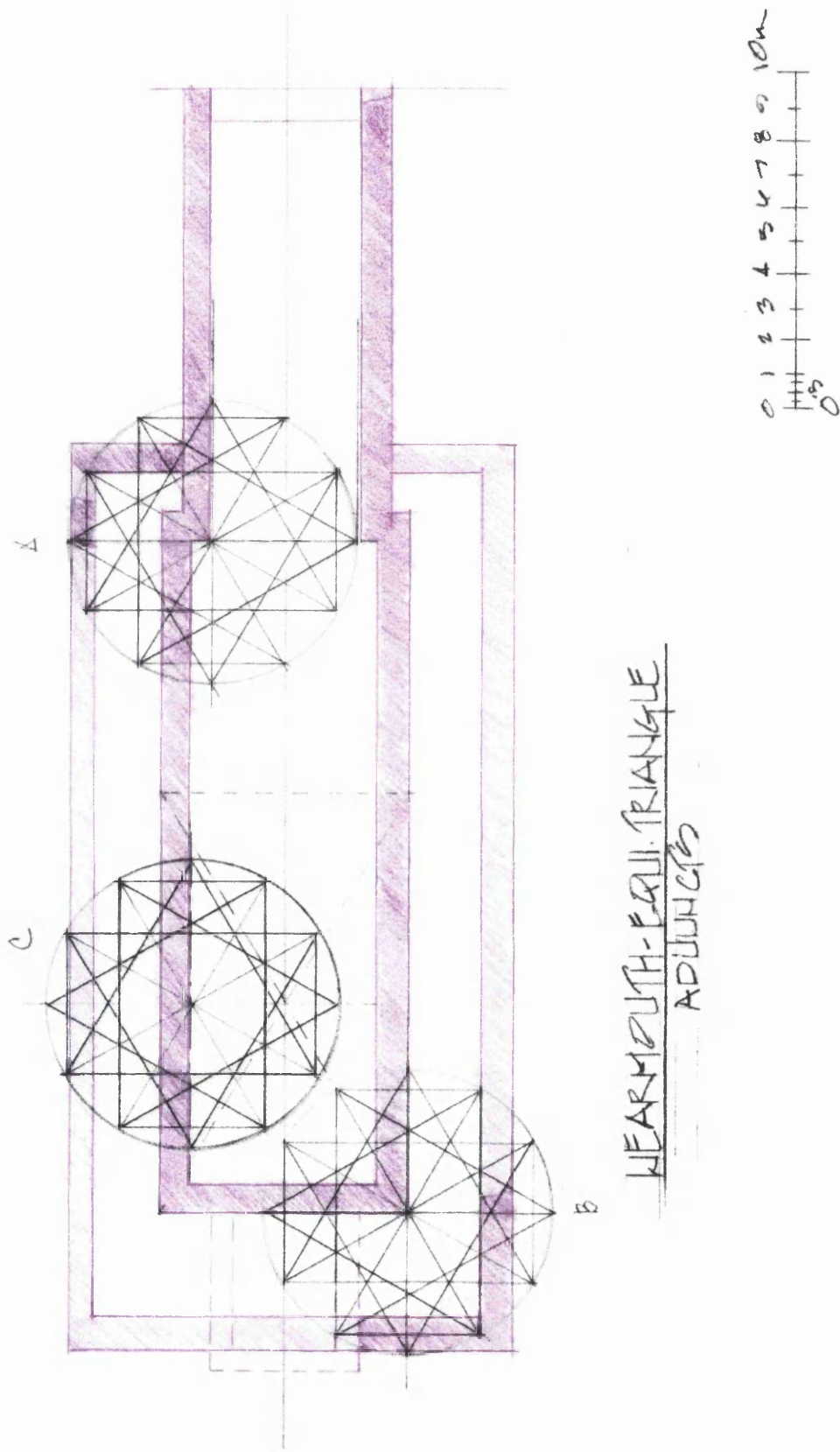
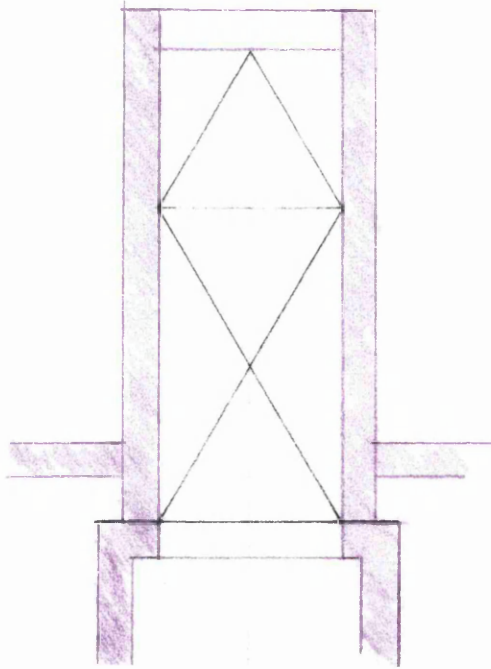
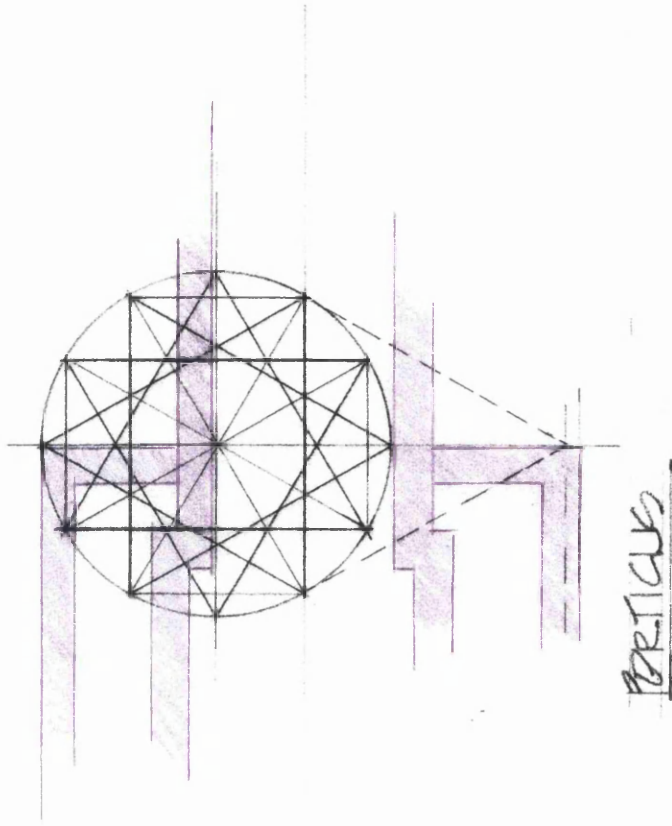


Fig. 13. Wearmouth: equilateral triangles - the adjuncts.



A. CHANCEL

WEARMOUTH - ADJUNCTS



PORTALS

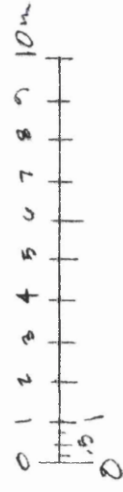


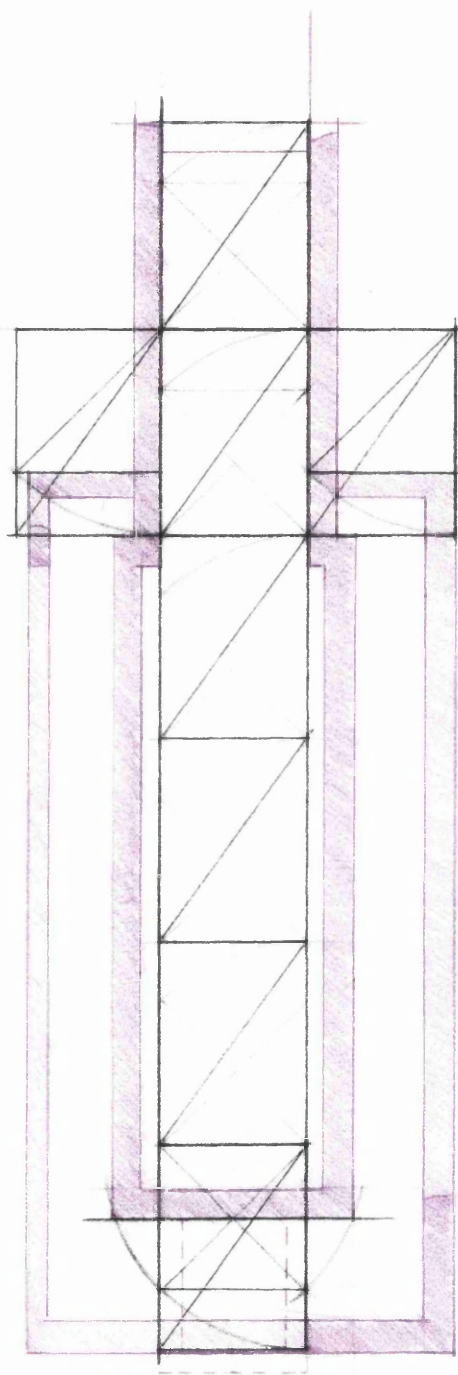
Fig. 14. Wearmouth: equilateral triangles - the adjuncts: chancel and overall width.

Root Two (Fig. 15)

The $\sqrt{2}$ base rectangle used in this analysis is derived from the interior width of the chancel. The overall length exterior-exterior is 6 lengths of the base rectangle. The overall width exterior-exterior is just under 3 x the width of the base rectangle. The interior width:length of the chancel is 1 x 2 rectangles (from west face of chancel/nave wall to exterior E. wall of chancel). The length of the nave exterior to exterior is $3 + 1/2$ of base square. The width of the nave exterior-exterior is the intersection of the radius of the diagonal of the base square with the centreline of the base square. This does not equal a rotated $1:\sqrt{2}$, instead it is the 'Sacred Triangle' proportion of the base square. There is no proportional relationship to determine the interior width of the nave. The position of the W. wall of the porticus is inscribed by the $1:\sqrt{2}$ rectangle from the overall length. The position of the E. wall of the porticus is inscribed by the arc of the diagonal of the base square. The chancel to nave relationship works as the intersection of the radius of the diagonal of the base square with the centreline of the base square, again, not a rotated $1:\sqrt{2}$. Although this system gives the appearance of working in a simple and straight forward manner, because of the relationship of the width of the nave to the base rectangle being the Sacred Triangle proportion instead of $\sqrt{2}$, it does not really work.

Golden Section (Fig. 16)

The Golden Section proportioning system is not very satisfactory as a system for the design of this church, however there are a few points to consider. The base rectangle is from the width of the nave interior. The interior overall length of the nave and chancel, from the exterior of the E. chancel wall to the interior W. nave wall, equals 3 rectangles plus the base square. The position of the chancel:nave wall aligns with the base square. The position of the N. and S. walls of the porticus equals a Golden Section rectangle proportional to the square of the original base rectangle, although to the exterior of the N. wall and the centre of the S. wall. From this rectangle, the square aligns with the position of the E. porticus wall. The overall length, the width of the chancel and the relationship



WEARMOUTH - $\sqrt{2}$ RECTANGLE

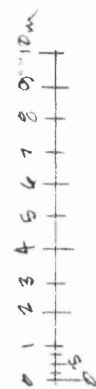
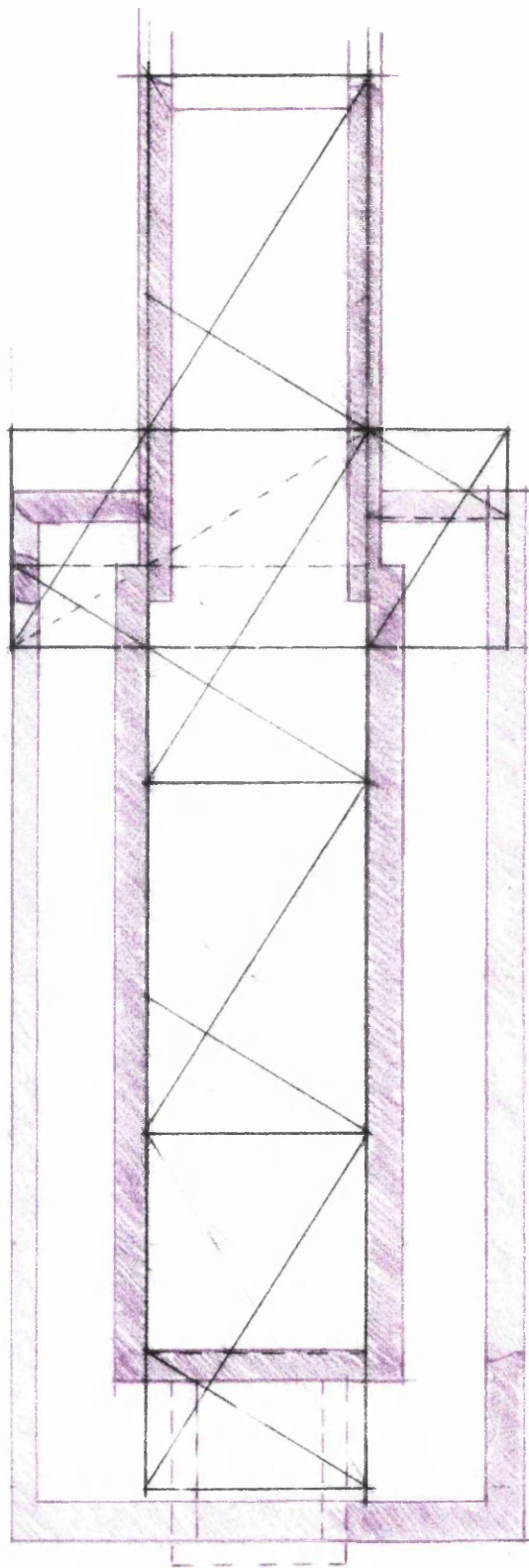


Fig. 15. Wearmouth: $\sqrt{2}$ analysis.



WEARMOUTH - GOLDEN SECTION RECTANGLES

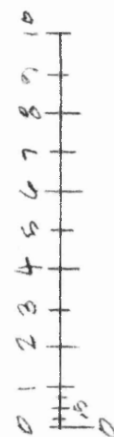


Fig. 16. Weymouth: Golden Section analysis.

between the width of the nave to the width of the chancel cannot be determined proportionally by this system.

The Sacred Triangle (Fig. 17)

The Sacred Triangle also does not provide a very satisfactory system for this church. The rectangle is based upon the exterior nave width. The overall length, E. exterior to W. interior, is $3 + 1$ base square. The interior W. wall of the nave is to $1/2$ the base square. The intersection of rotated and overlapping base rectangles positions the west face of the nave/chancel wall; the intersection of the diagonals positions the east face. A reductive proportional rectangle derived from the rotated base rectangle and the intersection of the diagonals positions the E. wall of the porticus.

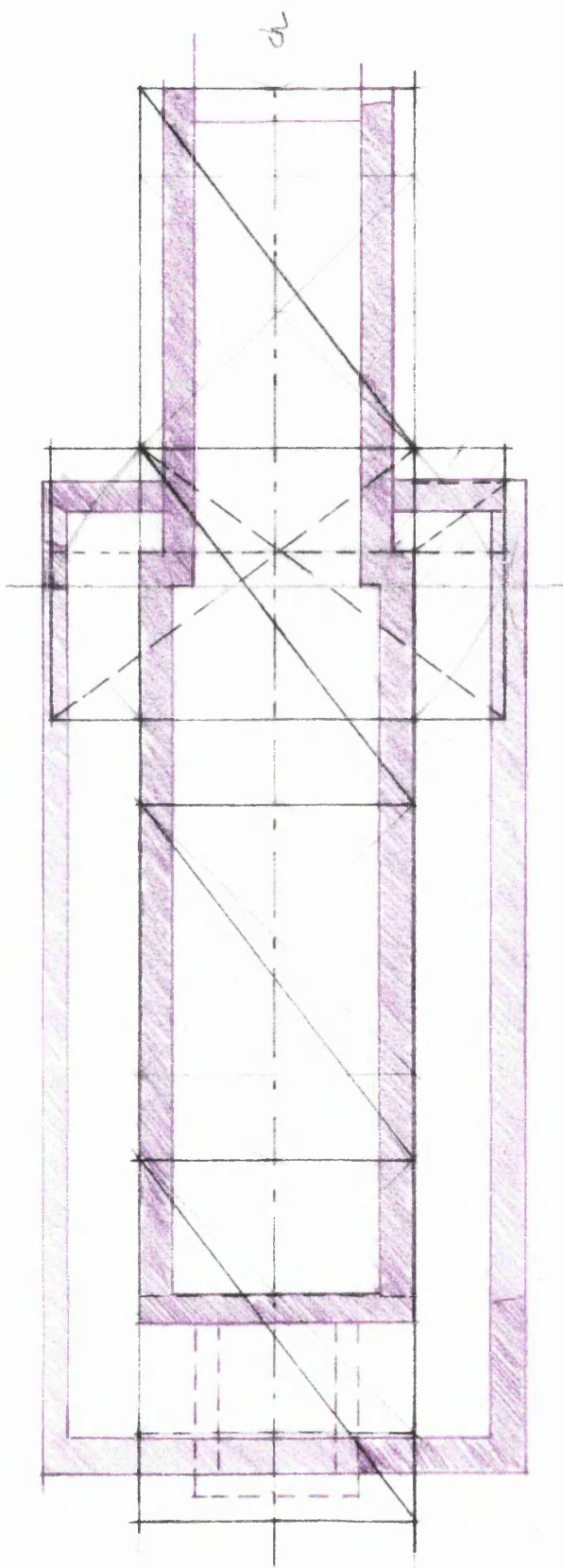
Root Five (Fig. 18)

The $\sqrt{5}$ system does not work. The nave rectangle results in a length equal to $1 + 1$ base square. A $\sqrt{5}$ rectangle inscribed on the chancel is too long. The porticus widths are less than 2 rectangles based on the centreline of the interior width.

Modules

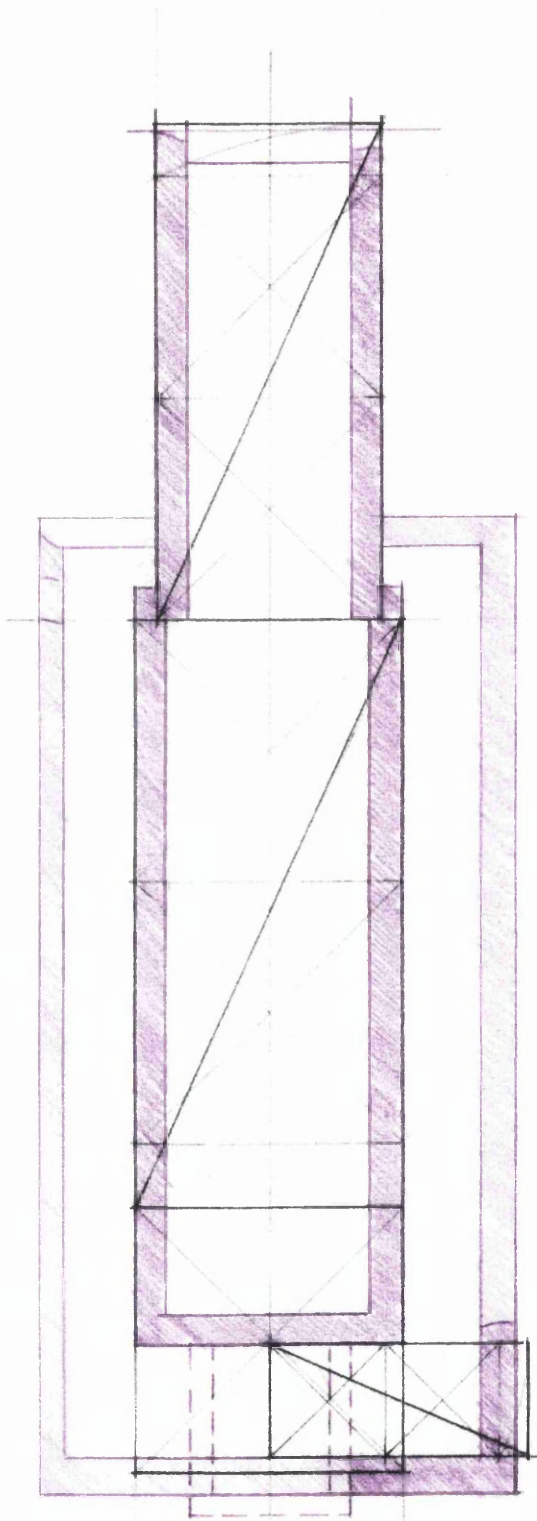
The best fit modular grid is the one based upon the exterior width of the chancel (Fig. 19). Overall the length is close to 6 base squares (E. exterior to W. interior) and the width is 2 base squares, where the grid is just to the inside of the N. porticus wall and almost centred on the S. porticus wall. The length of the chancel + nave is $5 \frac{1}{2}$ base squares, with the nave/chancel wall $2 \frac{1}{4}$ to the west face from the exterior of the E. chancel wall. The porticus position from the west face of the nave/chancel wall is close to $1/2$ of the base square for both the N. porticus wall and the E. porticus wall. From the exterior W. nave wall to the interior W. porticus wall is also $1/2$ of the base square. The relative measurements^{xxii} for this module ($\pm .10\text{m}$) are 7.24:3.62:1.81m ($1:1/2:1/4$).

Of the 'historical' lengths, the 4.65m rod, divided into thirds and sixths, works best at Wearmouth (Fig. 20) as a modular grid, although not as well as a



WEARMOUTH 'SACRED TRIANGLE' (3-4-5)

Fig. 17. Wearmouth: Sacred Triangle analysis.



WEARMOUTH - $\sqrt{5}$ RECTANGLE

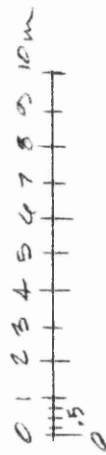


Fig. 18. Wearmouth: $\sqrt{5}$ analysis.

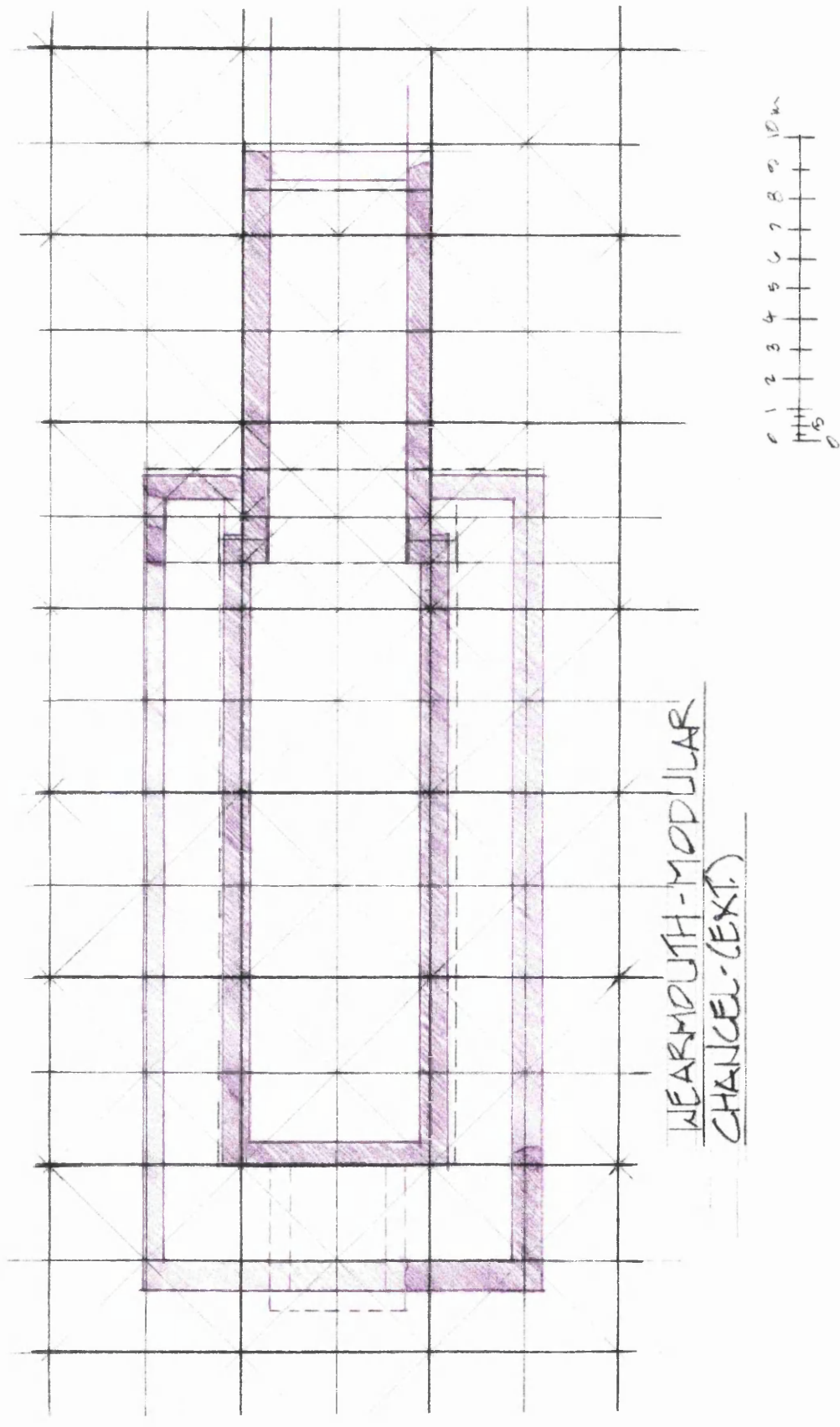


Fig. 19. *Wearmouth: modular analysis - channel exterior.*

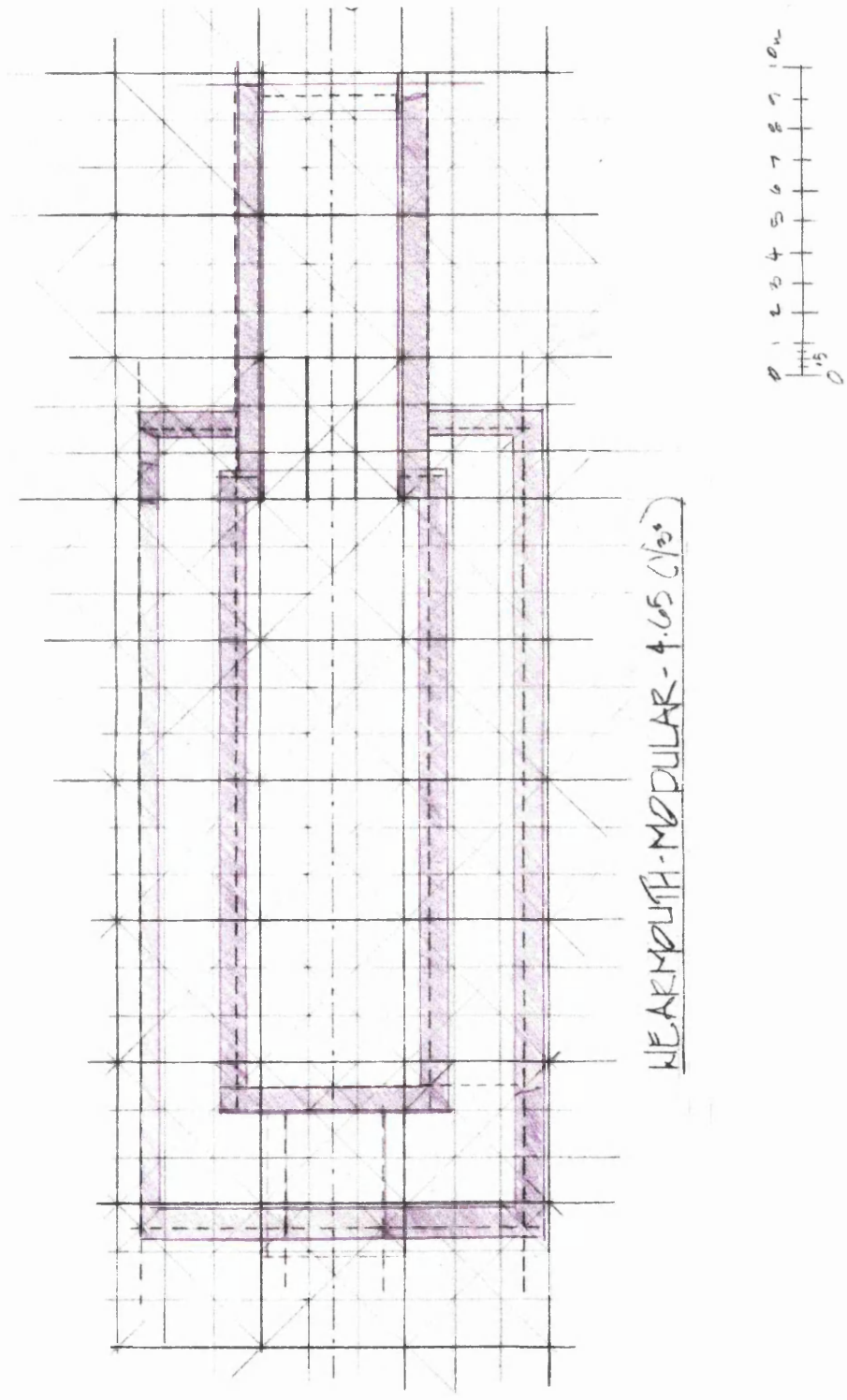


Fig. 20. Wearmouth; modular analysis - 4.65m rod.

proportioning system determining logical relationships as it works in terms of dimensions. From the west face of the nave/chancel wall as the base line, the length of the nave is $4 \frac{1}{3}$ modules. The width of the nave is $1 \frac{2}{3}$ modules. The interior of the nave is $4 \frac{1}{6}$ long and $1 \frac{1}{3}$ wide to the centre of the walls ($1 \frac{1}{6}$ to interior). The chancel is $2 \frac{1}{6}$ to the centre of the E. wall and slightly less than 1 wide internally, $1 \frac{1}{3}$ wide external. The position of the E. wall of the porticus is close to $\frac{1}{2}$ to the centre from the base line, or just inside of $\frac{2}{3}$ to the exterior. The N. porticus wall is $\frac{2}{3}$ of a module from the exterior of the chancel N. wall; the S. porticus wall is just inside 1 from the base square (interior of the chancel). Finally, the W. wall of the porticus is $\frac{5}{6}$ to the centre of the wall from the exterior of the W. nave wall or 1 from the interior of the W. nave wall to the centre of the W. porticus wall.

summary of Wearmouth

As stated above, the 4.65 module works well with dimensioning, however, it is not a logical system of proportion for positioning. These dimensions work fairly well with the equilateral system of proportioning, coming closest to the same positions as the proportioning system. Therefore a proportional system based upon the equilateral triangles (Fig. 12) could have been used in conjunction with a measuring system based upon the 4.65 rod (Fig. 20), although the chancel exterior module works better as a modular grid (Fig. 19). In terms of non-dimensioned modules, the original base chord of the chancel exterior could have been $1 \frac{1}{3} \times 4.65$ rods, thereafter multiplied and divided proportionally and modularly rather than dimensionally.

Jarrow

Equilateral Triangles (Fig. 21, 22)

The overall site length equals 6 of the base (1 leg) of the triangles (using the nave exterior as the dimension) (Fig. 21). The overall width (interior of north and south porticus walls) is 2 triangles (Fig. 22.c). The position of the chancel to nave is determined by the star plan's overlapping $1:\sqrt{3}$ rectangles; thus having a chancel to nave ratio of $1:\sqrt{3}$ (Fig. 21). The length of the nave is +3 of the base

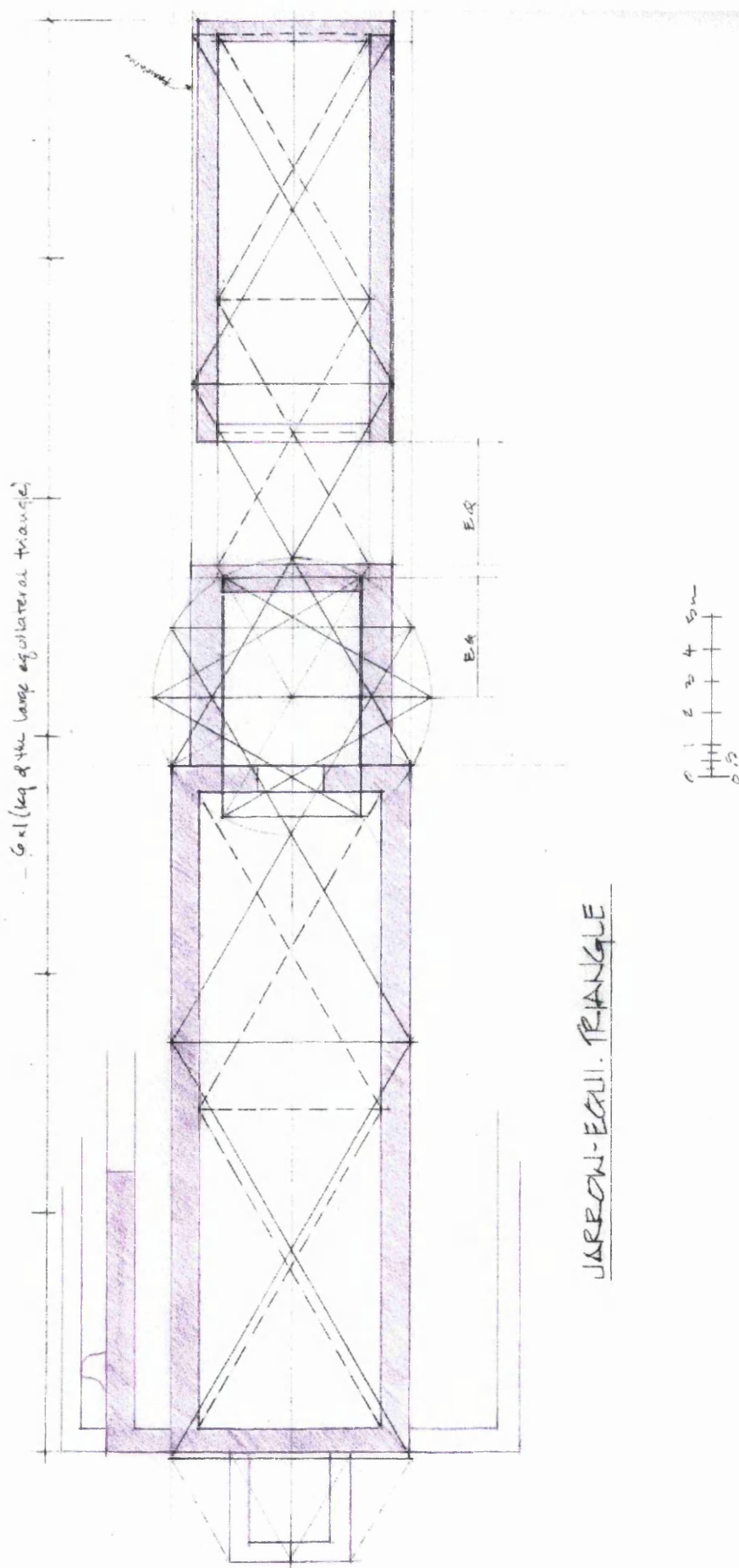


Fig. 21. Jarrow: equilateral triangles analysis.

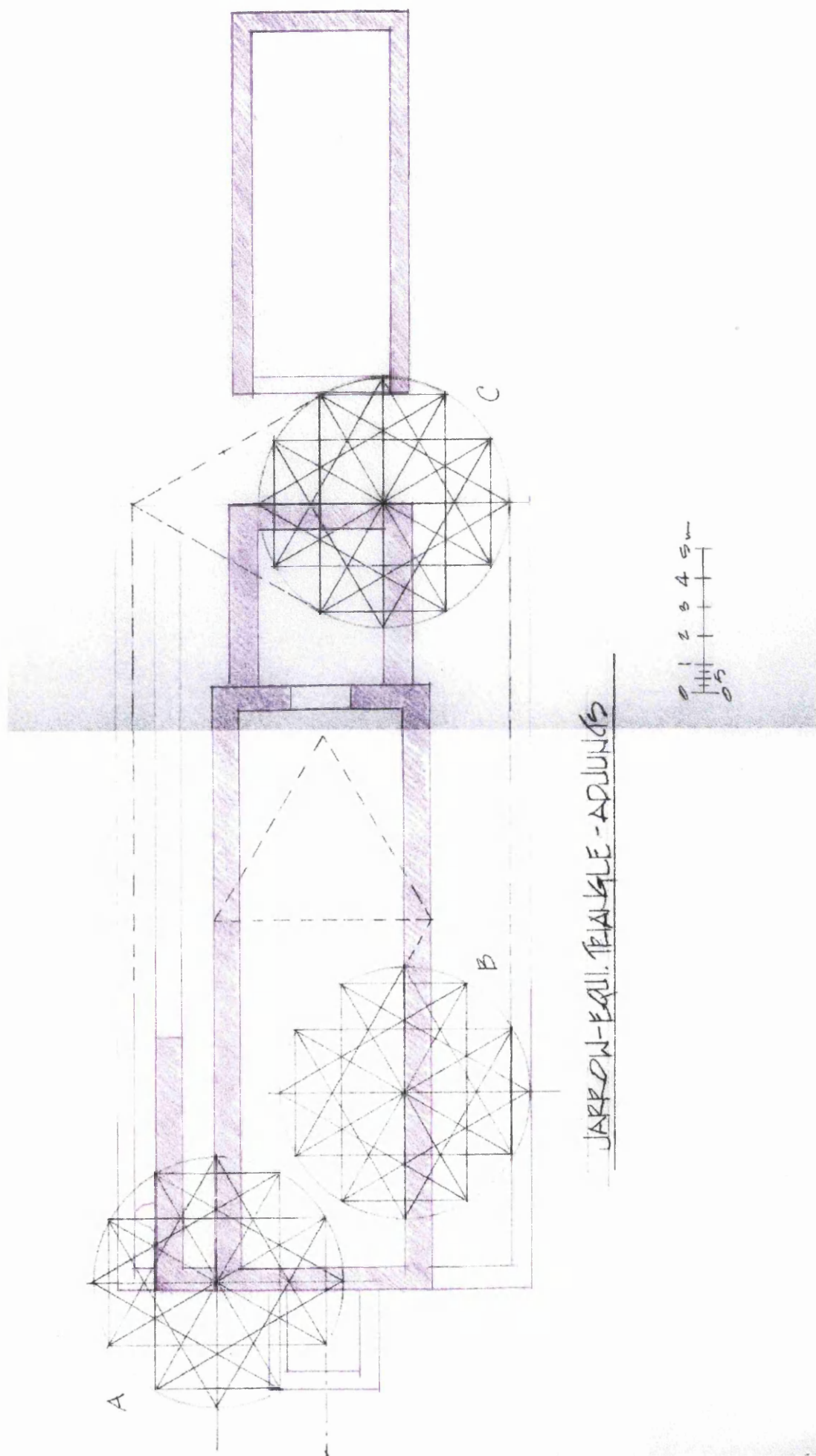
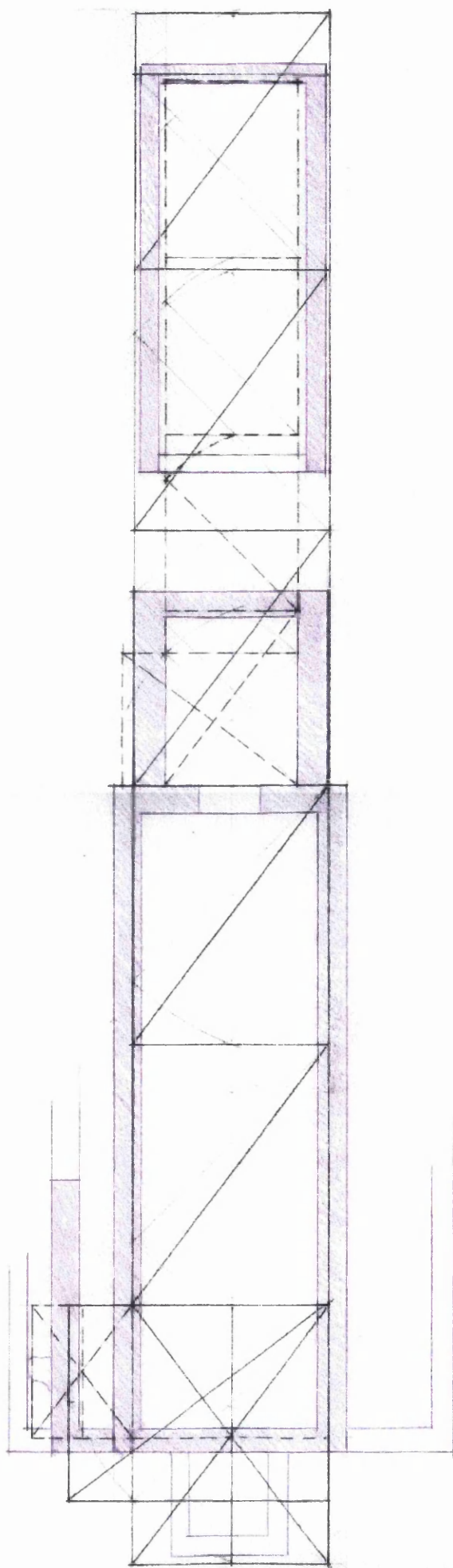


Fig. 22. Jarrow: equilateral triangles - adjuncts.

triangles west from the position of the east pointing triangle of the star plan. The length of the chancel is inscribed by the circle. The interior size of the nave is 4 triangles long using a triangle based upon the interior width of the nave or $2 \times 1:\sqrt{3}$ rectangles. The interior width of the chancel is the short side of the $1:\sqrt{3}$ rectangle. From the exterior of the E. wall of the chancel to the inside of the E. wall of the east chapel is 3 triangles based upon the width of the chancel or $4 (2 \times 1:\sqrt{3} \text{ rectangles})$ triangles based on the interior width of the chapel. The interior width of the chapel is 3 of these smaller triangles. The space between the chancel and the east chapel is $1/2$ the long side of the $1:\sqrt{3}$ rectangle of the star plan (Fig. 22.c). Fig. 22.a shows the positioning of the north porticus and the west porticus with the star plan aligned on the e/w centreline of the church and the centreline of the W. wall. The west porch aligns with the base and corner of the north pointing triangle, the N. wall of the nave with the centreline, and wall 2 of the northern porticus (the southernmost wall) with the base of the south pointing triangle. Fig 22.b has the plan aligned with the positioning of the main triangles (Fig. 21) and the interior of the S. wall of the nave. From here, the S. wall of the porticus is inscribed by the n/s $1:\sqrt{3}$ rectangle to the interior of the wall and the circle to the exterior. Finally, Fig. 22.c. shows the relationship of the chancel to the chapel using the star plan. With the centrelines positioned over the interior of S. chancel wall and the exterior of the E. chancel wall, the circle inscribes the interior of the N. chancel wall, the interior of the W. chapel wall and aligns with the interior of the S. porticus wall.

Sacred Triangle (Fig. 23)

The Sacred Triangle proportioning system works with a only a few points, and only marginally well. Based on a rectangle using the width of the nave, the overall length is 5 base rectangles + 1 base square. The distance to the centre of the E. nave wall from the east face of the chancel/nave wall is 2 rectangles + $1/2$ the base square. The chancel is inscribed by 1 base square. The distance from the east face of the chancel/chapel wall to the interior of the E. chapel wall is 3 smaller rectangles based upon the chancel interior width. The relationship



JARROW - 'SACRED TRIANGLE'



Fig. 23. Jarrow: Sacred Triangle analysis.

between the base rectangle and a rotated base rectangle contains the west porticus and the position of wall 1 of the northern porticus. Wall 2 is positioned proportionally to the base rectangle as $1/4$ of the base rectangle.

Golden Section (Fig. 24)

The Golden Section does not work very well as an organisational device, however there are some interesting (although not absolutely convincing) possibilities for dimensions. The overall length using a rectangle based upon the exterior width of the nave is 4. The nave is $1 + 1$ base square to the inside of the W. nave wall. The chancel is 1 base square in length. A series of reductive Golden Sections based upon the base rectangle (labelled 7), where 6 is the Golden Section of 7, 5 is the Golden Section of 6, 4 is the Golden Section of 5, etc., produce relative dimensions which could have been used for various widths. The width of the nave (exterior) is proportional to the base rectangle as dimension 7:6. The position of the N. walls of the chancel and the chapel could have been placed using the relative dimensions from 1, 2, and 3. The interior width of the chapel is the proportional length 5. These dimensions, however, are impossible to position as part of an organisational system of proportions, e.g. 1, 2 and 3 only work relative to 6 in one direction, this could not be used to obtain the position of the S. chancel wall. The porticus to the north of the church work much better geometrically with the base rectangle; the relationship between the Golden Sections 3, 4 and 5 to their squares align with the positions of the north porticus walls.

The $\sqrt{2}$ and $\sqrt{5}$ systems do not work proportionally (cf. Appendix II).

Modules

The best fit modular grid is the one based upon the interior width of the nave (Fig. 25). The overall width (not including the west porticus) is $7 \frac{3}{4}$ from the exterior of the E. chapel wall to the exterior of the W. nave wall. The length of the nave from the east face of the chancel/nave wall to the exterior of the W. nave wall is $3 \frac{3}{4}$, the width is 1 ($1 \frac{1}{4}$ to the exterior). The chancel walls are

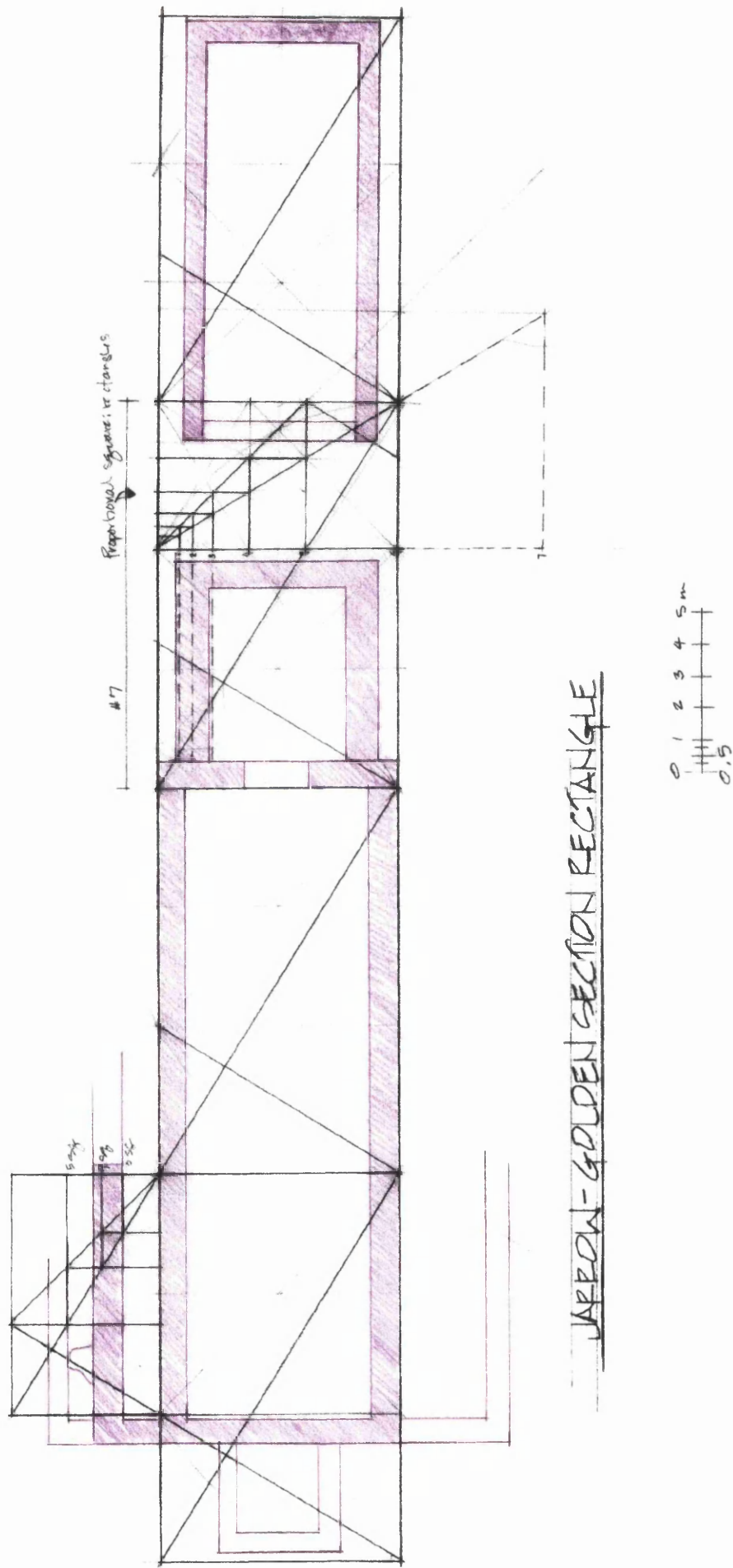


Fig. 24. Jarrow: Golden Section analysis.

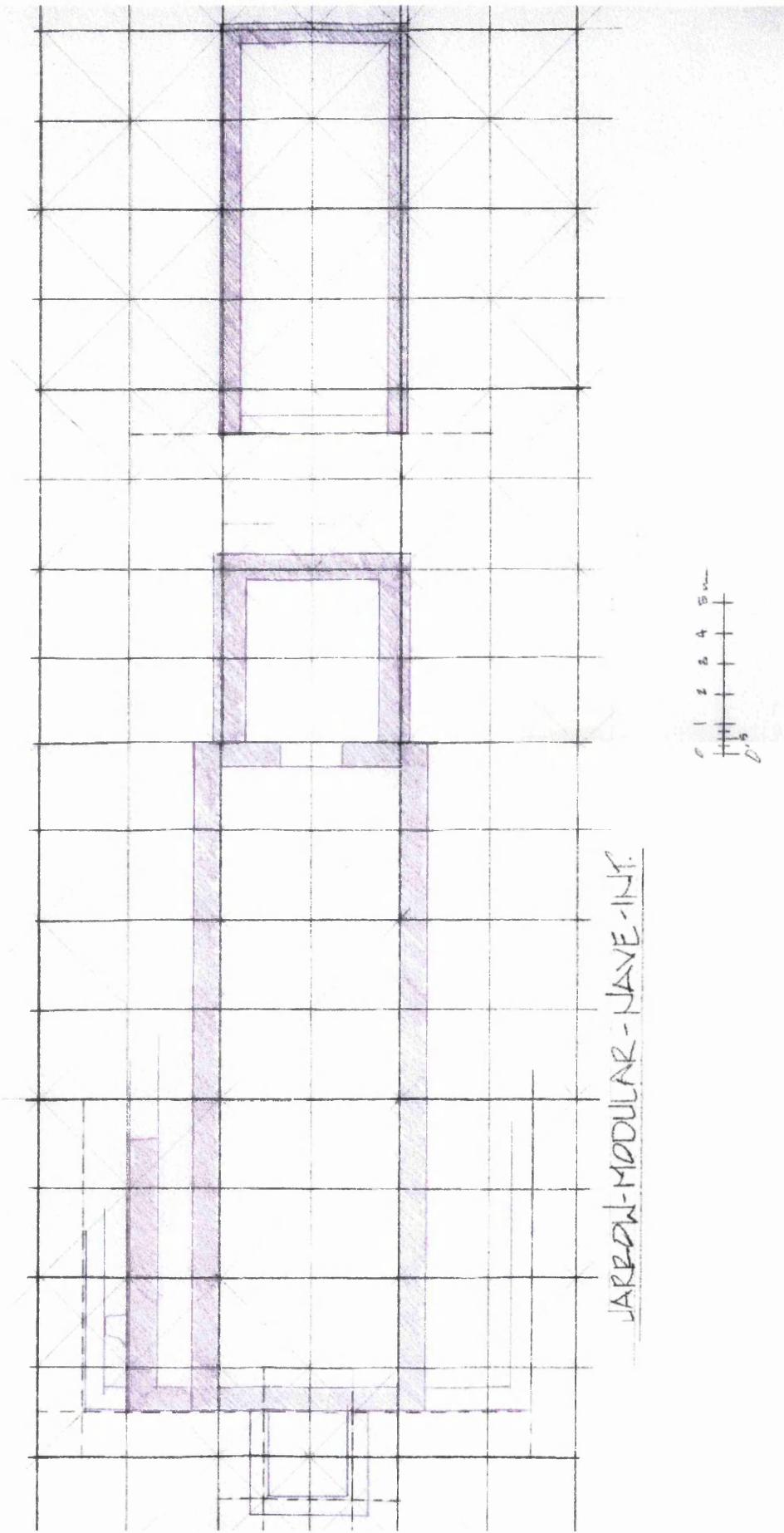


Fig. 25. Jarrow: modular analysis - nave interior.

inscribed by 1 base square. From the inscribed chancel square to the exterior of the W. wall of the chapel is $\frac{3}{4}$. The east chapel is inscribed by a rectangle of $2\frac{1}{4} \times 1$. It is $\frac{1}{2}$ to the exterior of wall 1 of the north porticus, $\frac{3}{4}$ to the exterior of wall 2. The west porticus is inscribed by a $\frac{1}{4}$ square. The relative dimensions ($\pm .10\text{m}$) are 5.64:2.82:1.41m ($1:1\frac{1}{2}:1\frac{1}{4}$).

The best of the historical dimensions (where the wall positions come nearest to a division of the module), is the 4.65 module (Fig. 26). The base line was positioned on the east face of the nave/chancel wall. The overall length, not including the west porticus, is $9\frac{1}{2}$ from the exterior of the E. wall of the chapel to the centre of the W. wall of the nave. The overall width is 3. The nave is $4\frac{1}{2}$ modules long to the centre of the W. wall by $1\frac{2}{3}$ wide to the exterior. The chancel is $1\frac{1}{3} \times \frac{1}{13}$ to the exterior. The gap between the chancel and the chapel is $\frac{5}{6}$ exterior to exterior, or 1 from the interior of the E. chancel wall to the exterior of the W. chapel wall. The chapel is $2\frac{5}{6}$ long to the exterior ($2\frac{2}{3}$ from the interior of the E. wall to the exterior of the W. wall) by 1 wide (internally). Wall 1 of the porticus is positioned $\frac{1}{3}$ from the exterior N. nave wall, $\frac{2}{3}$ to wall 2. The west porch is inscribed by a $1\frac{1}{3}$ module.

summary of Jarrow

The 4.65 module works somewhat for dimensioning, but not in terms of geometrical positioning of the overall site layout and relationships. Additionally, the 4.65 dimensions are not compatible with the best fit grid module based on the nave interior width. There is, however, a compatible dimension between the equilateral system and the 4.65 module: $\frac{5}{6}$ of the 4.65 module equals $\frac{1}{2}$ the long side of the $1:\sqrt{3}$ rectangle inscribed by the star plan. This could point to the 4.65 rod for being used for dimensioning in conjunction with the equilateral system.

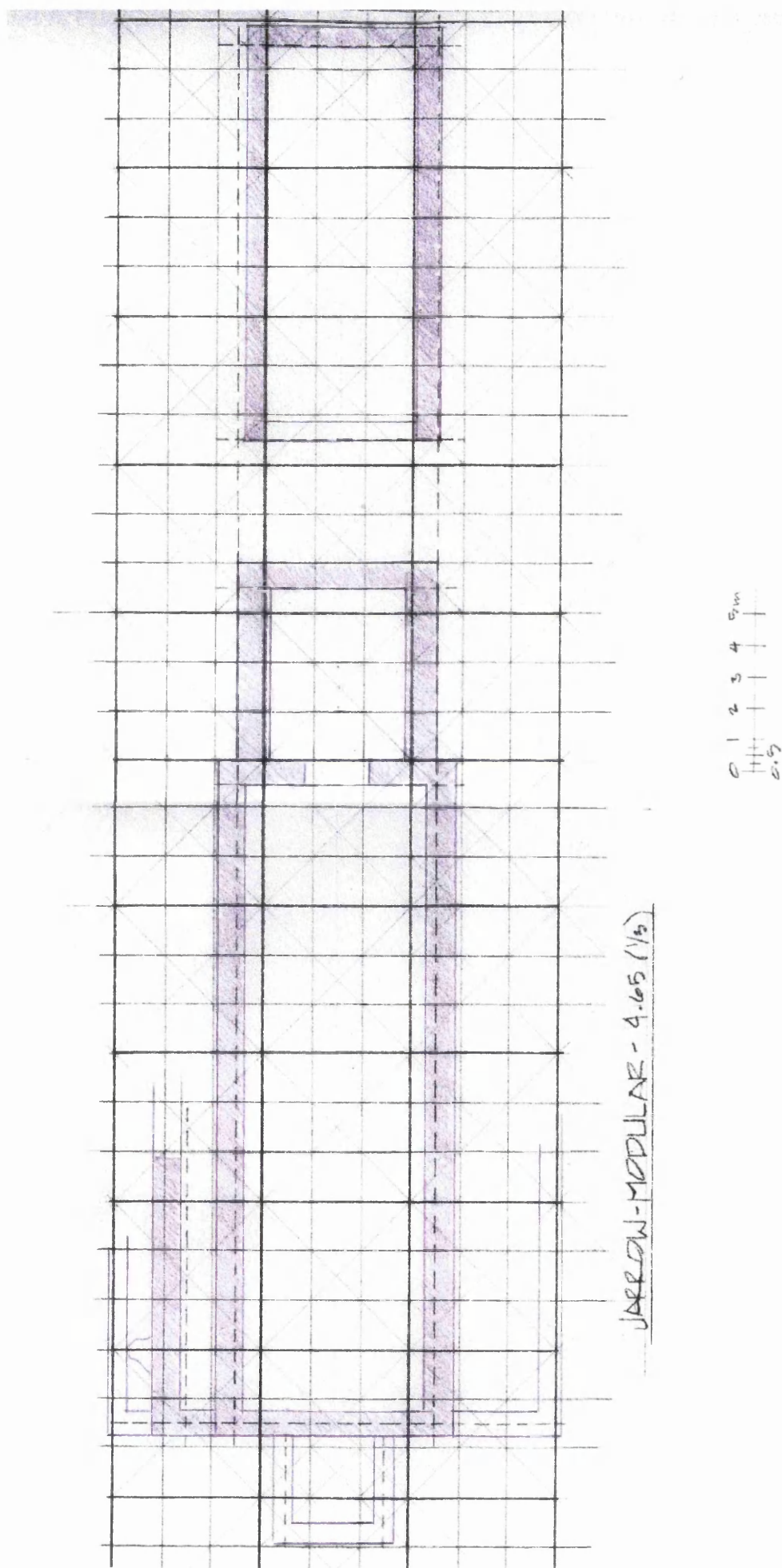


Fig. 26. Jarrow: modular analysis - 4.65m rod.

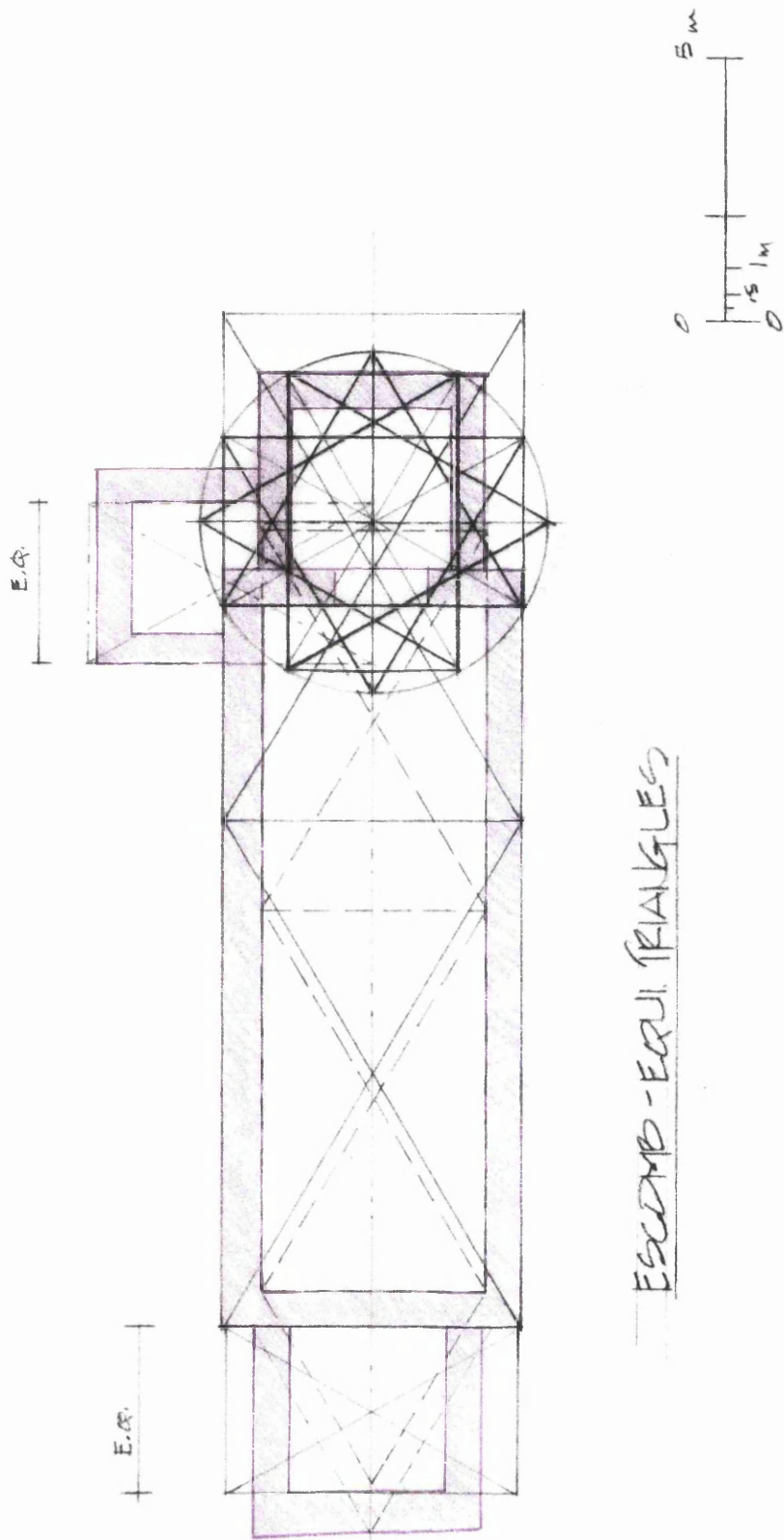
Escomb^{xxiii}*Equilateral Triangles* (Fig. 27, 28, 29)

The overall site equals 4 triangles + 1/2 (rotated) triangles long by 1 + 1/3 triangles wide (Fig. 28). This is the same as 2 x 1:√3 rectangles + 1 rotated rectangle (based upon the large triangle) by 5/6 of the long side of the rectangle wide (exterior to exterior) or 3/4 to the interior of the N. porticus wall (Fig. 28). The length of the nave is 3 triangles long from the exterior of the W. nave wall to the east face of the nave/chancel wall (Fig. 27). The chancel is inscribed by the e/w 1:√3 rectangle of the star plan (Fig. 27). The star plan aligned on the exterior of the W. nave wall inscribes the west porticus resulting in an interior length close to the short side of the 1:√3 rectangle (Fig. 29.a) (the same as the interior length of the chancel). The width of the north porticus is inscribed by a star plan positioned on the n/s centreline of the main star plan and the west face of the nave/chancel wall (Fig. 29.b). The E. wall of the north porticus aligns with the e/w centreline positioned on the interior of the N. nave wall (Fig. 29.c). The north porticus is offset 1/3 from the chancel E. exterior wall and is 2/3 wide (Fig. 28).

Golden Section (Fig. 30)

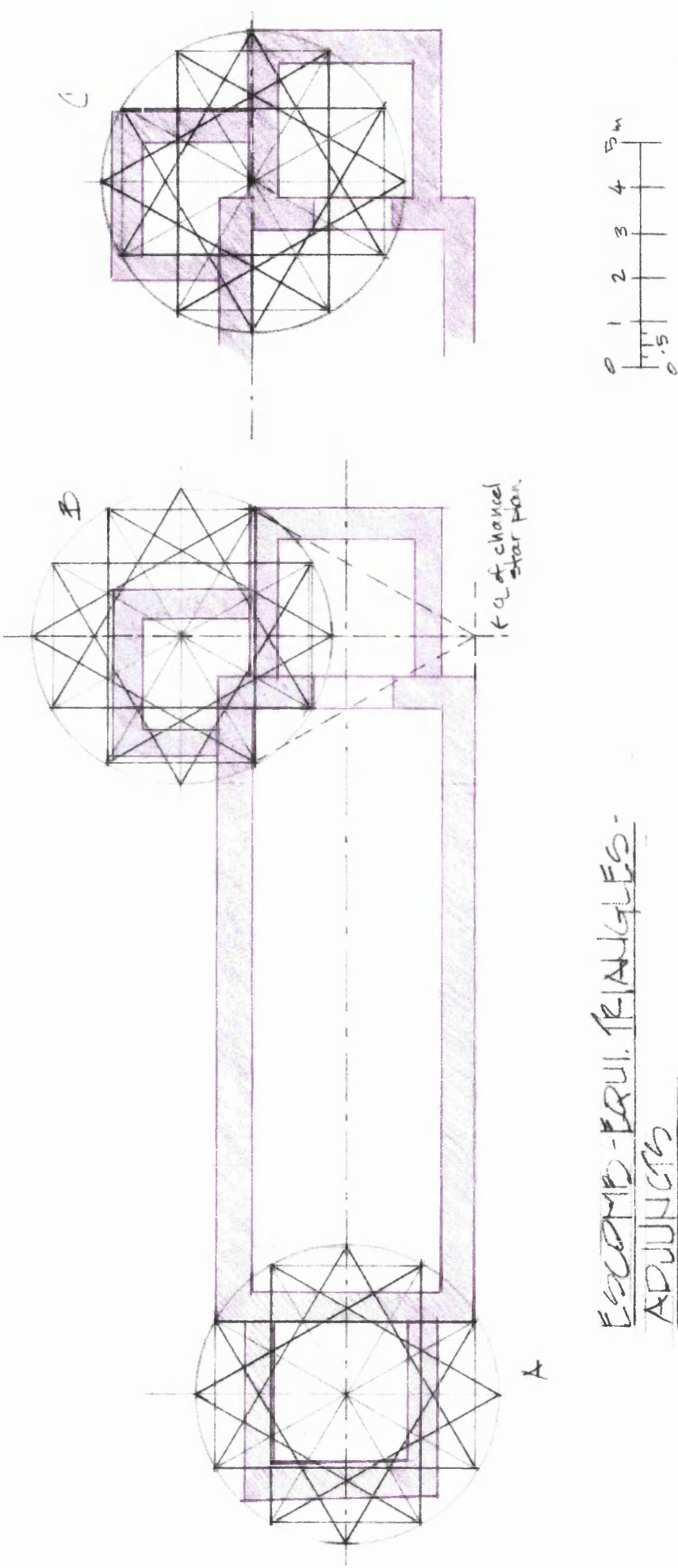
The Golden Section (based upon the exterior width of the nave) produces a proportioning system which works with a few of the significant points. The overall length is 2 rectangles + a rotated Golden Section rectangle proportional to the larger rectangle as subtractive of the base square. The north porticus can be positioned by a reductive proportional rectangle from the base square of the base rectangle. A further proportional rectangle rotated to the side of this can be drawn to the chancel exterior N. wall. A Golden Section rectangle from the line of the exterior of the E. chancel wall the same size as the rectangle which positions the north porticus intersects at the east face of the chancel nave wall.

The Sacred Triangle, √2 and √5 systems do not work for Escomb (cf. Appendix II).



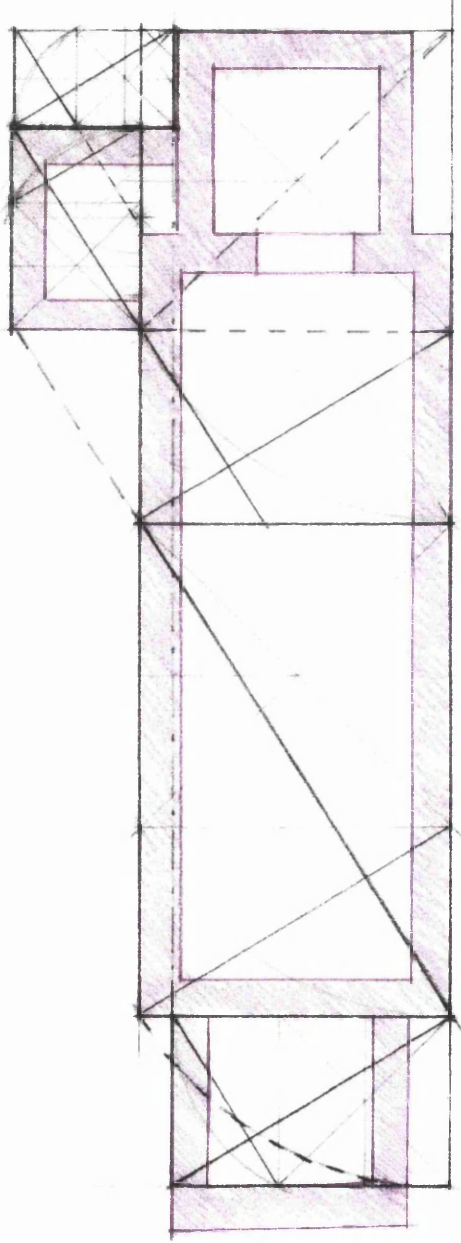
ESCOMB-EQU. TRIANGLES

Fig. 27. Escomb: equilateral triangles analysis.



ESCOMB-EQUILATERAL TRIANGLES -
ADJUNCTS

Fig. 29. Escomb: equilateral triangles - adjuncts.



ESCOMB - GOLDEN SECTION RECTANGLES

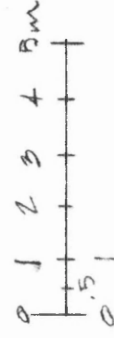


Fig. 30. Escomb: Golden Section analysis.

Modules

The historical module 4.65 works best (Fig. 31). The base line was positioned on the west face of the nave/chancel wall. The overall length from exterior to exterior is $4 \frac{5}{6}$ modules. The width (exterior to exterior) is just under $1 \frac{5}{6}$. The nave is 3 modules long from the west face of the chancel/nave wall to the exterior of the W. nave wall. The width of the nave, to the insides of the walls, is 1 module. The chancel is inscribed by a square of 1 module ($\frac{5}{6}$ from the east face of the chancel/nave wall to the exterior of the E. chancel wall); the interior is $\frac{2}{3}$ square. The north porch, centred on the east face of the chancel/nave wall is, to the inside of the E. and W. walls, $\frac{2}{3}$ long by $\frac{1}{2}$ wide (from the line of the grid just outside the N. chancel wall).

summary of Escomb

The best fit grid is based upon the interior of the chancel (Fig. 32). This module is almost identical to $\frac{2}{3}$ of 4.65 ($=3.10$) resulting in very similar divisions: 4.65:1.55:.755 ($1\frac{1}{3}:1\frac{1}{6}$) and 3.09:1.545:.7725 ($1\frac{1}{2}:1\frac{1}{4}$). The short side of the inscribed $1:\sqrt{3}$ rectangle measures to 3.2 ($\pm .10$). Thus it appears that the equilateral triangles were used as the proportioning system in conjunction with the 4.65 rod for dimensioning.

Hexham Crypt^{xxiv}

The crypts are more complex arrangements than the churches so the proportioning system as an overall geometrical organising system as well as the size and shape of the chambers and the relative dimensions needs to be considered closely.

Equilateral Triangles (Fig. 33)

The main chamber is a $1:\sqrt{3}$ rectangle inscribed by the intersection of the large triangles which form the star plan. This rectangle is proportionally $\frac{1}{4}$ of the larger $1:\sqrt{3}$ rectangle. The plan, centred on the main chamber positions the north-west chamber to the corner and along the base of the south pointing triangle. The width of this chamber aligns with the base of the east pointing triangle. The east

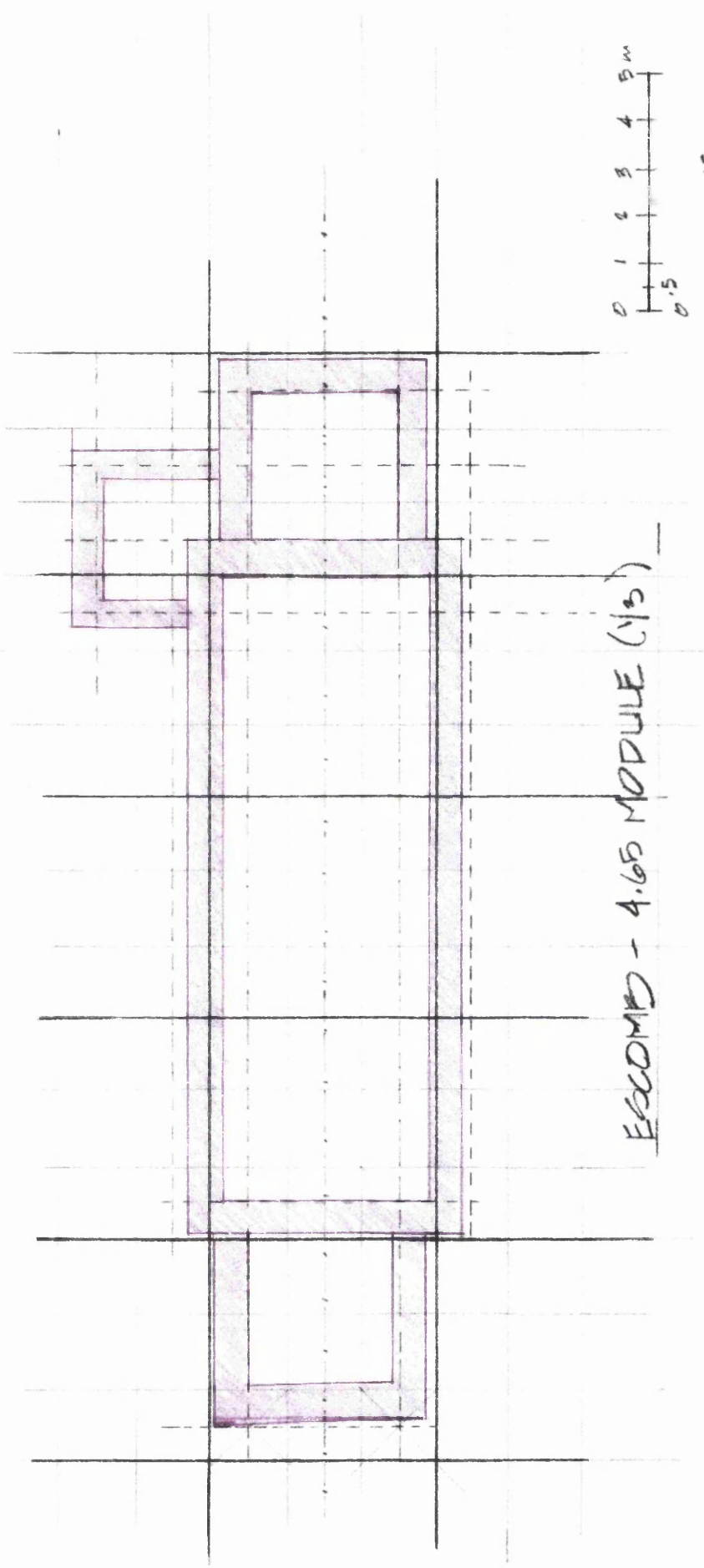


Fig. 31. Escomb; modular analysis - 4.65m rod.

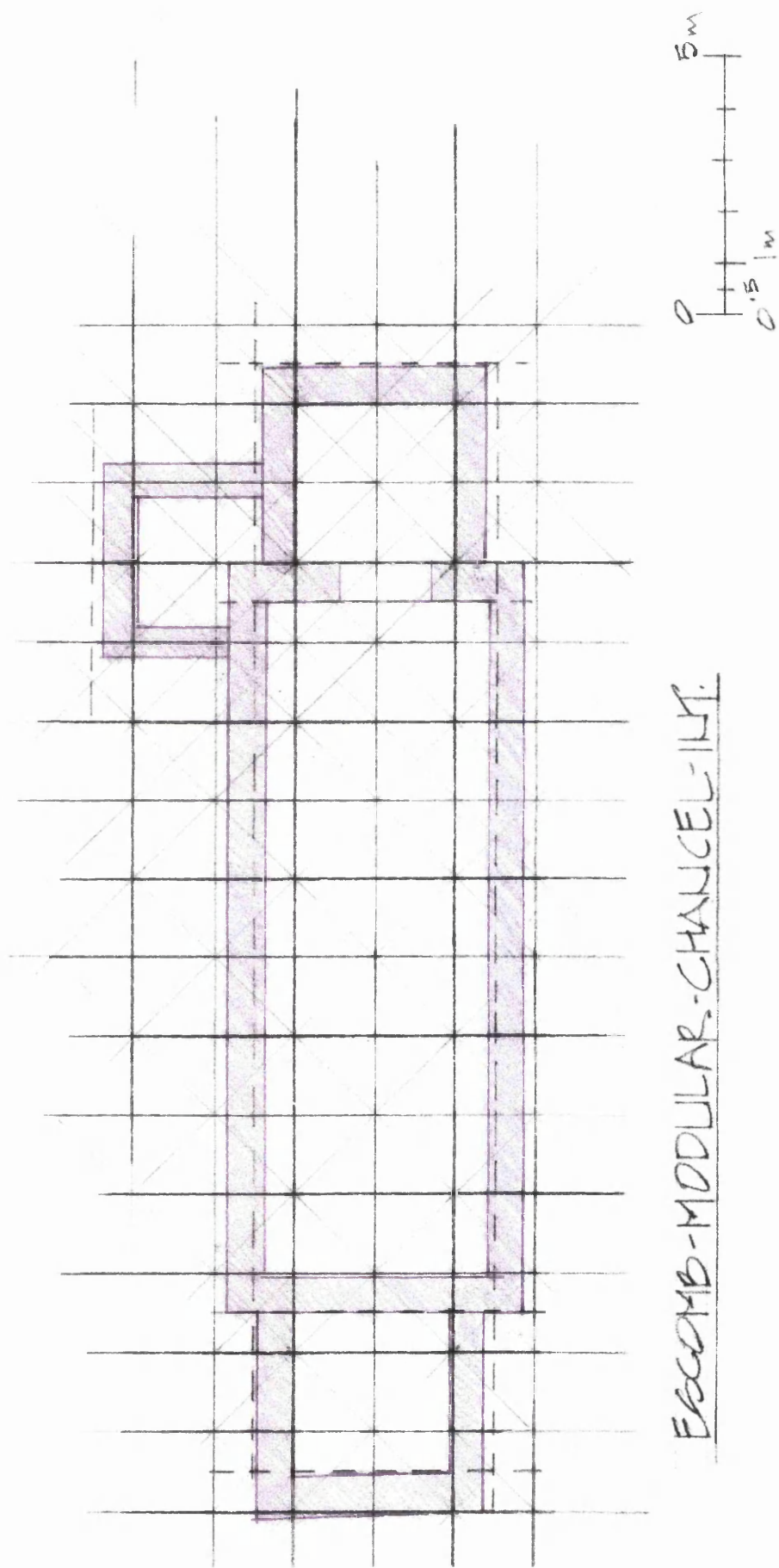
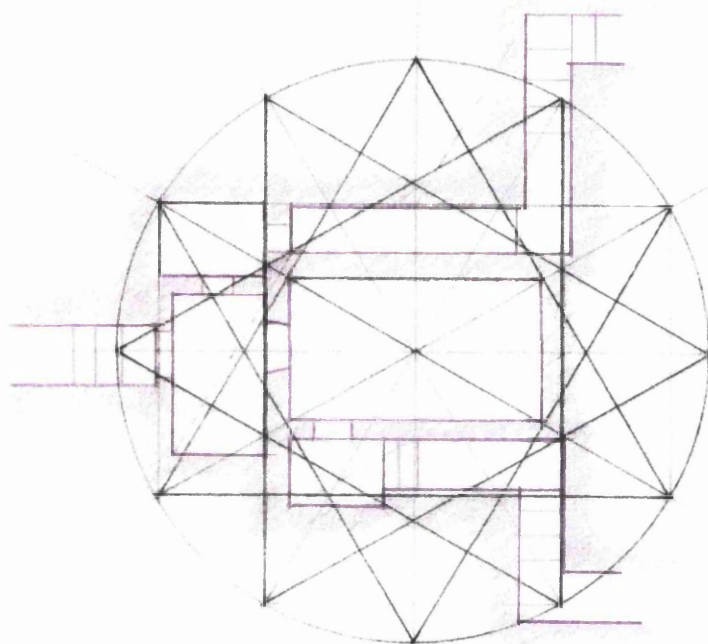


Fig. 32. Escomb: modular analysis - chancel interior.



HEXHAM - CRYPT
EQUI. TRIANGLES

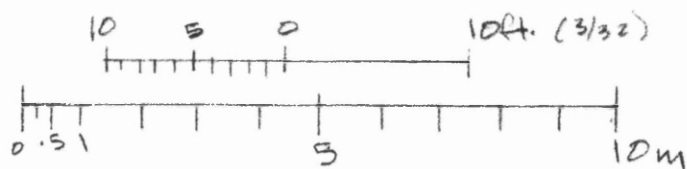


Fig. 33. *Hexham crypt: equilateral triangles analysis.*

walls of the north-west and west chambers are aligned with the base of the east pointing triangle. The N. wall of the north passage aligns with the base of the south pointing triangle, the S. wall of the south passage is just inside the base of the north pointing triangle. The width of the S. passage (to the north-east corner of the N. wall) is to the intersection of the east pointing triangle and the west pointing triangle, which is $1/3$ of the long side of the $1:\sqrt{3}$ rectangle. Other possible indicators are where the south-east corner of the south chamber is aligned along the edge of the east pointing triangle and the relationship between the centreline of the plan and the north-east corner of the stair turning of the north passage is a $1:\sqrt{3}$ rectangle as is the relationship between the south-west corner of the west chamber and the south west corner of the north passage.

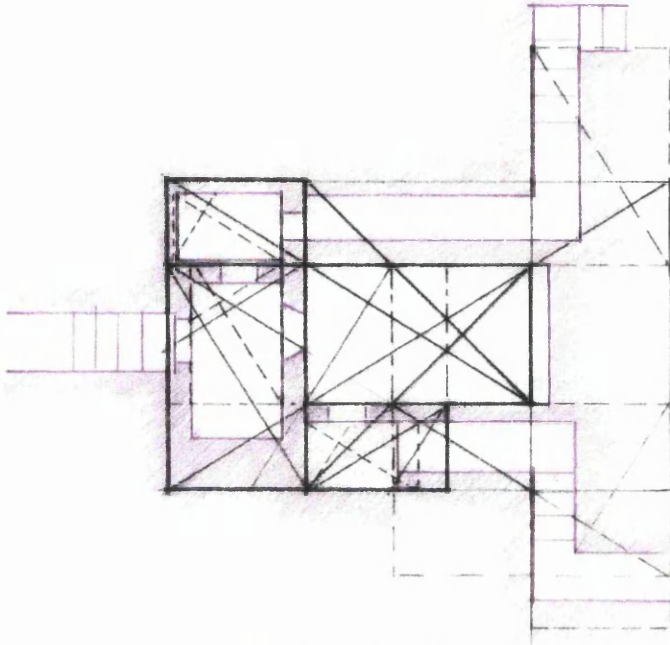
Golden Section (Fig. 34.1)

The base Golden Section rectangle is derived from the width of the main central chamber. The Golden Section of the same size generated proportionally from this to the west inscribes the western space between the west stair and the main chamber. The Golden Section rectangle over the north chamber is proportional to the main and generated from the relationship of the main to the rectangle to the west (the relationship between the square and the Golden Section). The square of a reductive Golden Section rectangle inscribes the southern chamber. Rotated proportional Golden Sections from the main rectangle align with the west walls of the passage turnings north and south. A proportional rectangle generated from the base line of the main rectangle (the southern wall of the main chamber) has a width centred over the east turning of the southern passage. Subsidiary rectangles can be inscribed over the width of the west passage using the line of the main chamber as the base line and over the north chamber using the line of the west wall as the base.

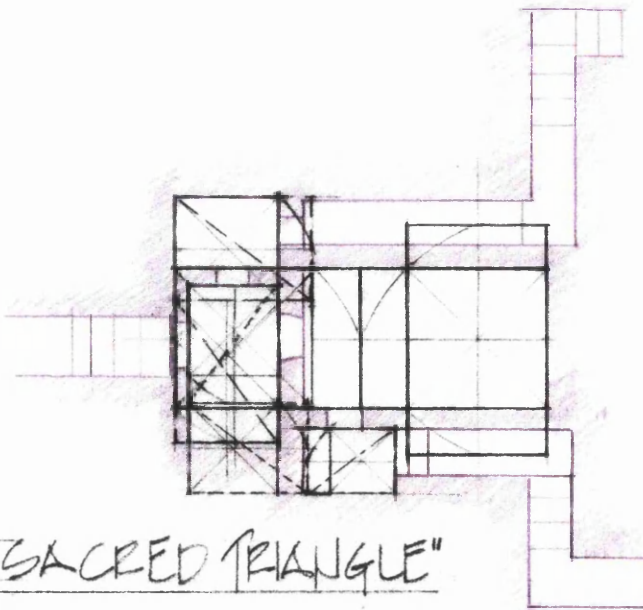
Root Two (Fig 35.2)

The figure for the $\sqrt{2}$ system shows the doubling of the area of a square as the system which best fits the positioning of the crypt. Starting with the north chamber, which is a $\sqrt{2}$ rectangle, the progressive doubling of the area intersects

HEXHAM-CRYPT PROPORTIONS



1. GOLDEN SECTION



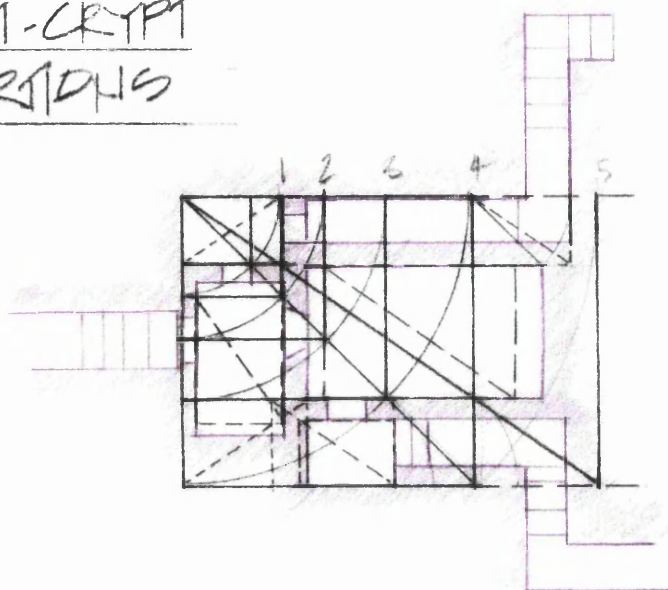
3. SACRED TRIANGLE



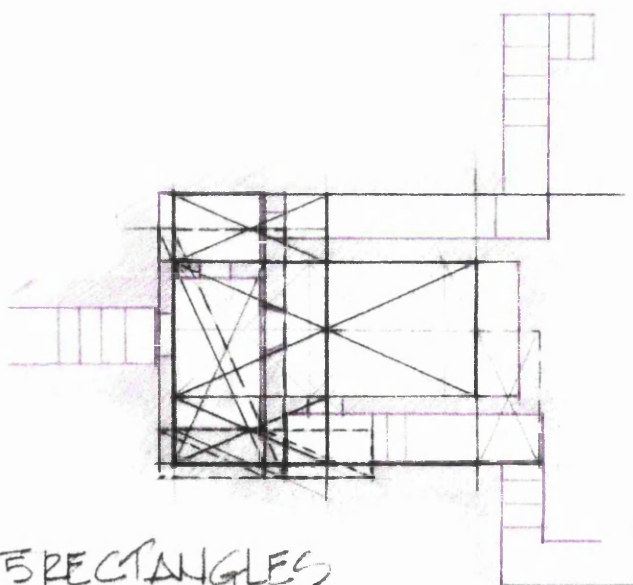
Fig. 34. Hexham crypt: proportional analysis -

1. Golden Section analysis. 3. Sacred Triangle analysis.

HEXHAM - CRYPT PROPORTIONS



2. $\sqrt{2}$ - SQUARE : RECTANGLE



4. $\sqrt{5}$ RECTANGLES

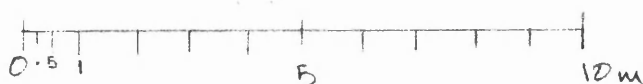


Fig. 35. Hexham crypt: proportional analysis - 2. $\sqrt{2}$ analysis. 4. $\sqrt{5}$ analysis

significant points along the arc used to create the progression: the north-west corner of the main chamber, the east/west centreline of the main chamber, the southern wall of the main chamber and aligns with the southern wall of the south chamber. A rectangle from the south-west corner of the inscribed figure aligns with the southern wall of the main chamber and the west wall of the main chamber and the south chamber. Another rectangle, from the fourth progression to the north wall of the main chamber aligns with the east wall of the north passage turning.

Sacred Triangle (Fig. 34.3)

Two Sacred Triangle rectangles, based upon the width of the main chamber, cover the distance between the E. wall of the main chamber and the W. wall of the north chamber. A rectangle generated from the square of the western base rectangle aligns the N. wall of the north chamber. From the base of this, a rotated rectangle aligns with the S. and W. wall of the west chamber. A rectangle generated from the base of the main west rectangle aligns with the S. wall of the south chamber and is close to the W. wall. A Sacred Triangle rectangle can be formed between this position near to the E. wall of the south chamber and the N. and W. walls. Sacred Triangles rotated north and south over the main chamber are positioned over the centres of the north and south passages.

Root 5 (Fig. 35.4)

A $\sqrt{5}$ rectangle based upon the width of the main chamber aligns with the W. wall of the north chamber. Two $\sqrt{5}$ rectangles, proportionally $1/4$ of the main rectangle, align with the outside walls of the north and south passages. The centreline of the southern $1/4$ rectangle aligns with the S. wall of the west chamber. A $\sqrt{5}$ triangle generated from the centreline of the $1/4$ rectangle over the north chamber aligns with the W. wall of the main chamber and the S. wall of the southern chamber. A triangle the same size generated whose hypotenuse passes through the centre of the southern $1/4$ rectangle to the centreline of the northern $1/4$ rectangle aligns with the W. wall of the north chamber, the E. wall of the west chamber and the S. wall of the southern passage. Two small $\sqrt{5}$

rectangles are inscribed in the space between the line of the W. wall of the north chamber, the line of the S. wall of the south chamber and the W. wall of the south chamber. Another subsidiary relationship can be generated from the centreline of the main chamber and the S. wall of the south passage, where the resultant $\sqrt{5}$ rectangles aligns with the E. wall of the south passage turning.

summary of proportioning system for Hexham Crypt

Only the equilateral triangles satisfactorily explain the size and shape of the main central chamber and the positions of the other chambers and passages relative to this. Although the other systems work well relative to different aspects, such as the $\sqrt{5}$ positioning and widths of the antechambers, the size and shape of the main chamber does not fit and the overall layout is not satisfactory.

Modules

The best fit module is one which is based upon the width of the main chamber (Fig. 36.1). The size of the main chamber is close to $3 \frac{5}{8}$ by 1. The overall length of the crypt complex (from the line of the W. wall of the north chamber to the line of the E. wall of the turning of the south passage) is $2 \frac{3}{4}$. The overall width (N. wall of north chamber to S. wall of south passage) is 2 modules. These dimensions of the overall width and length are very close to the size of the e/w $1:\sqrt{3}$ rectangle (Fig. 33).

Bailey's analysis of the crypts at Ripon and Hexham purported to find the use of the Northern rod of 5.03m in the dimensioning, emphasising that crucial measurements (i.e. the ones which work with the 5.03 system) were relevant to the internal measurements (Bailey 1991, p.7; *fig. 2, p.8*). I have re-drawn Bailey's analysis to scale in Fig. 37.2. Whilst some of these measurements do correlate to the 5.03 Northern rod, as seen from the earlier discussions of techniques for setting out a site, a modular grid system is more likely for the orderly positioning of components of a site. Therefore, I have compared both the 5.03 and 4.65 systems as grid modules (Fig. 36.2 and Fig 37.4). Although some of the dimensions do correspond to close to $1/3$ and $1/6$ of a 5.03 (e.g. the width of the north and south passages, the width of the west chamber) as far as

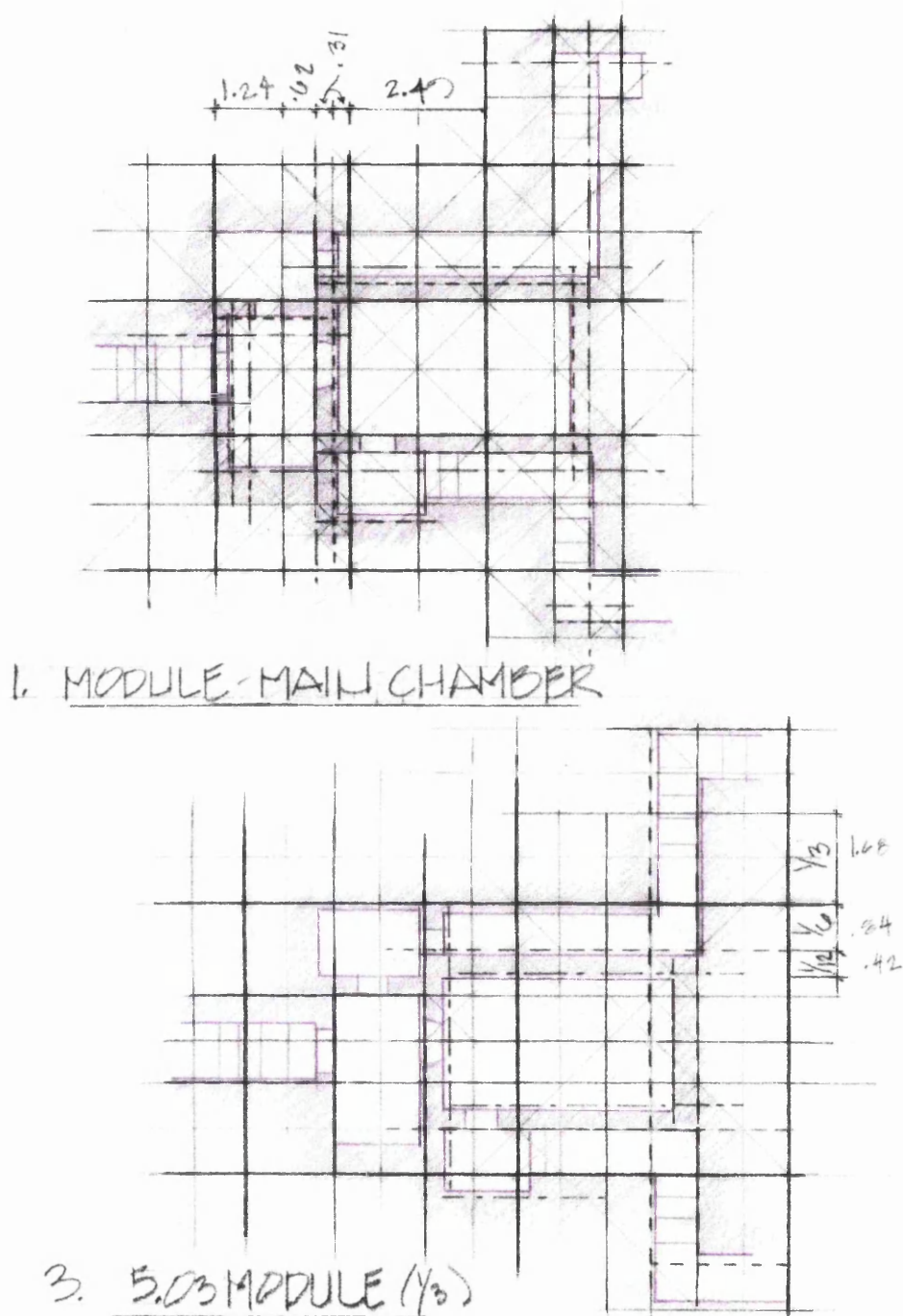
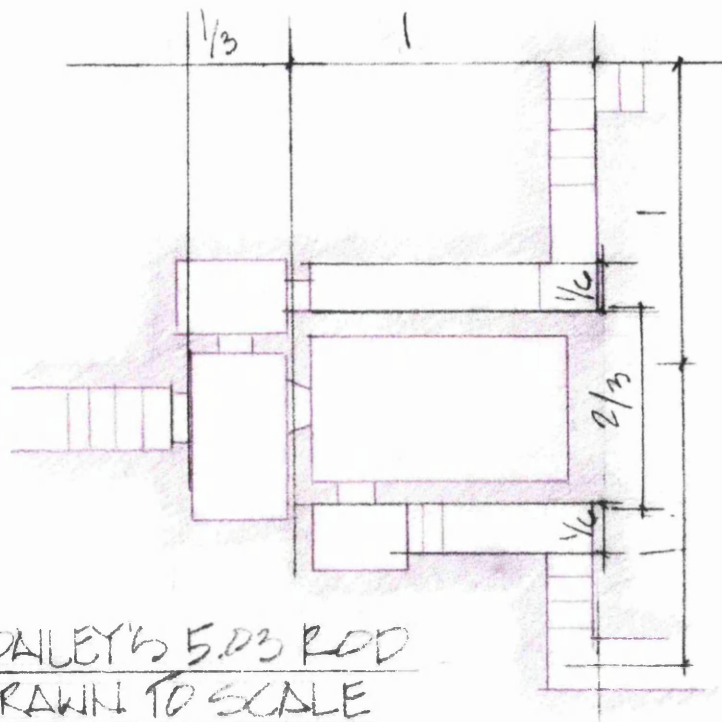
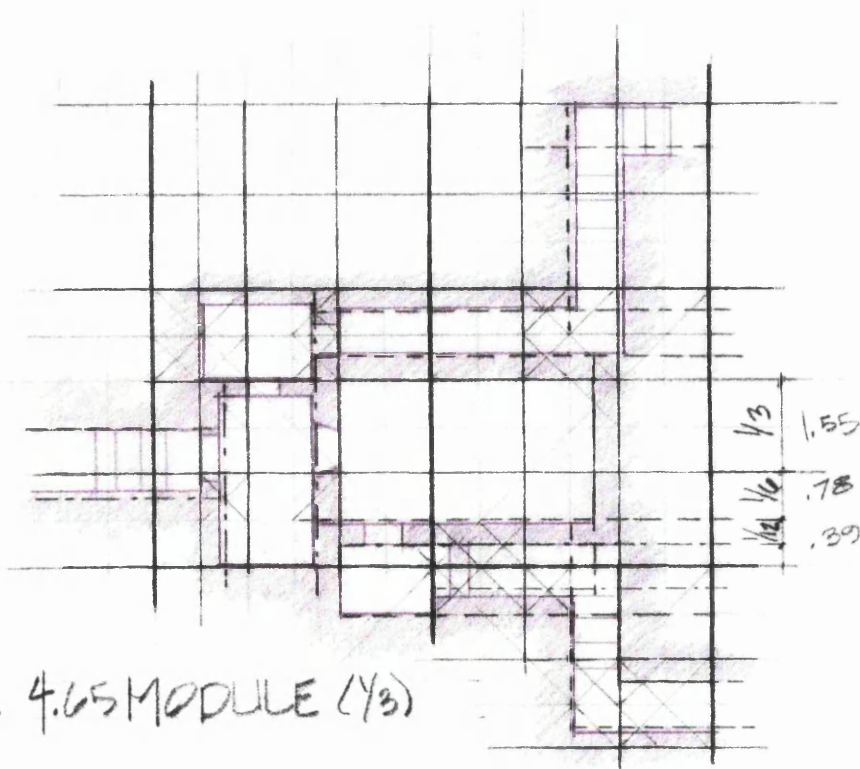


Fig. 36. Hexham crypt: modular analysis -
1. module derived from the main chamber. 3. 5.03m rod analysis.



2. BAILEY'S 5.03 ROD
DRAWN TO SCALE



4. 4.65m MODULE (1/3)

HEXHAM-CRYPT-MODULES

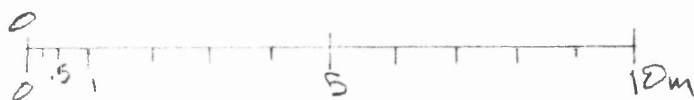


Fig. 37. Hexham crypt: modular analysis -

2. Bailey's 5.03 rod analysis, drawn to scale.. 4. 4.65m rod analysis.

dimensions and placement within a modular grid, the 4.65 module is much closer. Within this system, the length from the W. wall of the west chamber to the E. wall of the turning of the southern passage is $1 \frac{1}{2}$ module; 1 module from the E. wall of the turning of the southern passage to the W. wall of the main chamber. The main chamber is $\frac{11}{12}$ long, (offset $\frac{1}{12}$ either side from the line of the E. wall of the turning of the south passage and the E. wall of the western chamber). The width of the main chamber is $\frac{1}{2}$. The offset from the main chamber to the north and south passages is also close to $\frac{1}{12}$. The width of both the passages is $\frac{1}{6}$ (the southern passage is slightly wider than the northern passage). The overall width from the W. wall of the northern chamber to the E. wall of the southern passage is $1 \frac{1}{2}$ modules. The northern chamber is $\frac{1}{2}$ from the W. wall of the main chamber (offset by $\frac{1}{12}$). The western chamber is $\frac{1}{3}$ wide, offset on either side by $\frac{1}{12}$ to the west stair and the main chamber. The length from the S. wall of the northern chamber to the S. wall of the Western chamber is $\frac{2}{3}$. The southern chamber is $\frac{1}{3}$ in length and $\frac{1}{4}$ wide. The overall width from the N. wall of the northern passage to the S. wall of the southern passage is just over 1 module.

summary of Hexham crypt

The variation between divisions of $\frac{1}{3}$ s and $\frac{1}{4}$ s with the size and the positions of the components of the crypt would point to the grid as not being the underlying geometrical ordering system, however, an organisational system based on the equilateral triangles in conjunction with divisions of 4.65 for the system of measurement and possibly the initial modular grid for the layout of the site, works best for the crypt at Hexham.

Ripon Crypt^{xxv}

None of the proportioning systems (Fig. 38, 39, 40) nor the historical modules (Fig. 41.3, 42.4) works well enough on its own to present one over the other as the best-fit system for Ripon. The best fit module is one derived from the width of the western chamber (Fig. 41.1). This module, and its subdivisions have no correlation with other known lengths, however, in conjunction with the

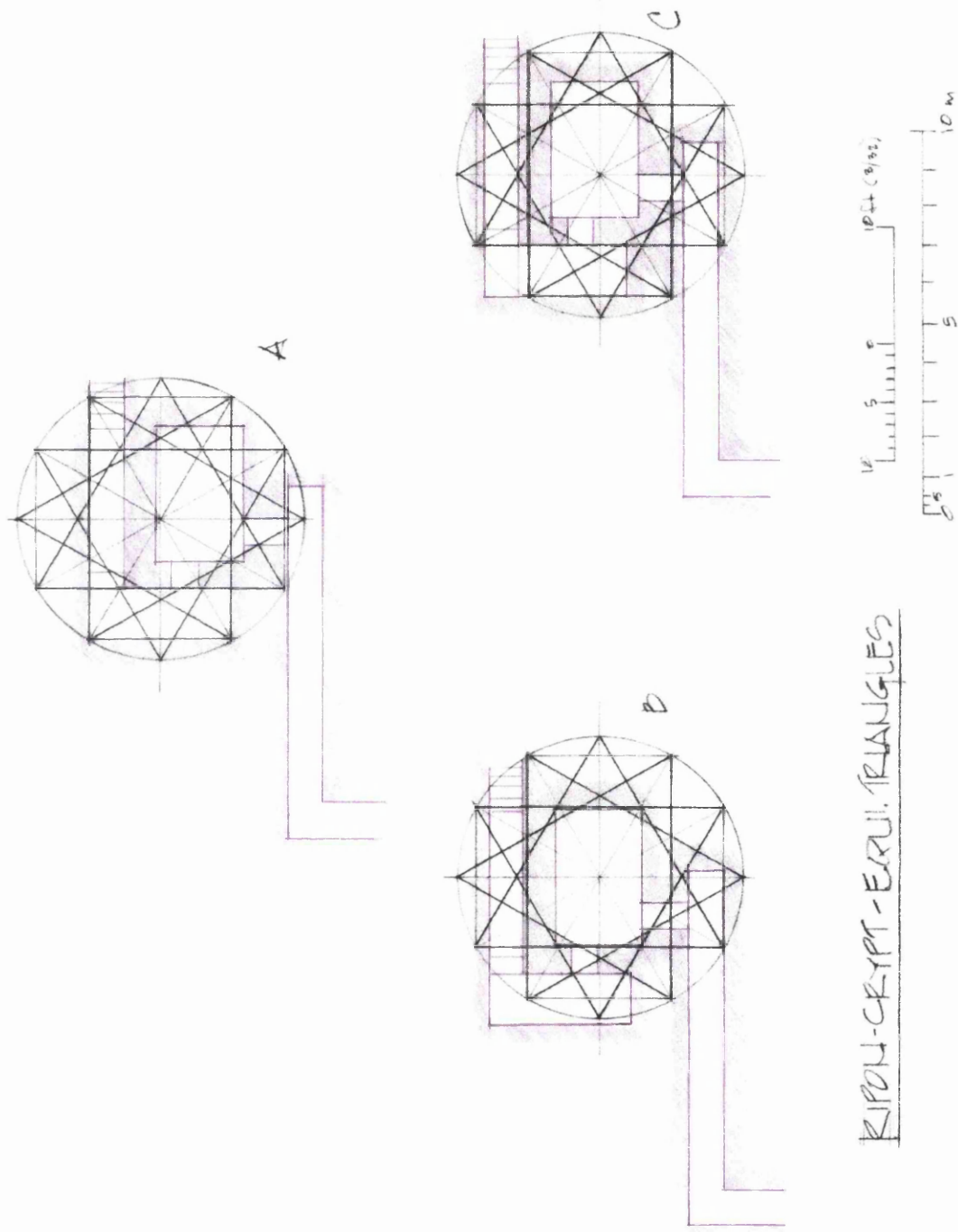


Fig. 38. Ripon crypt: equilateral triangles analysis.

RIPON-CRYPT- PROPORTIONS

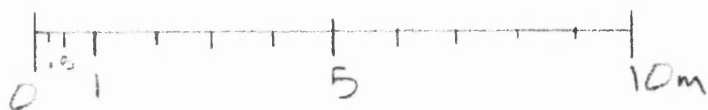
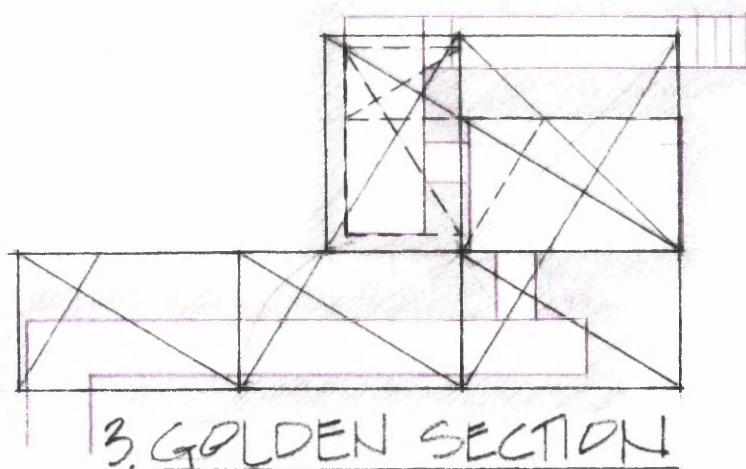
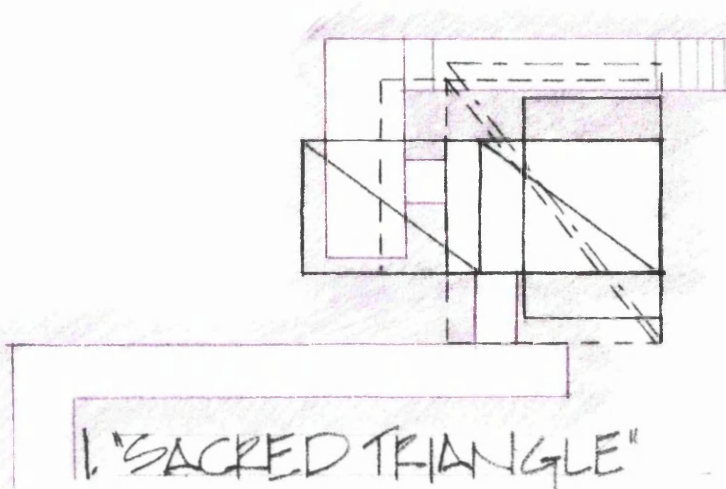
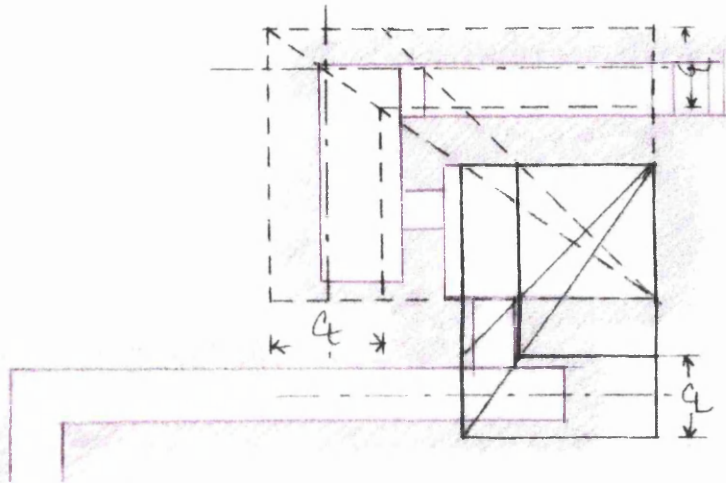
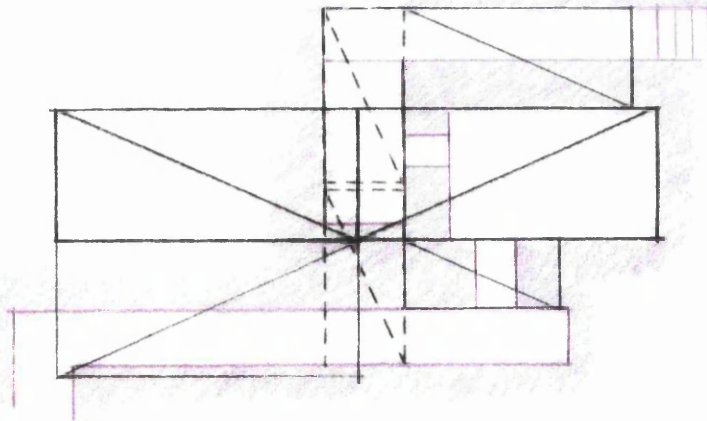


Fig. 39. Ripon crypt: proportional analysis -
1. Sacred Triangle analysis. 3. Golden Section analysis.

RIPON-CRYPT- PROPORTIONS



2. $\sqrt{2}$ RECTANGLES



4. $\sqrt{5}$ RECTANGLES

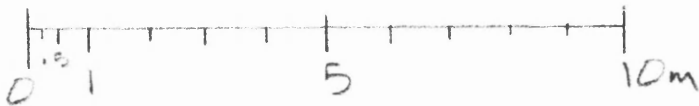
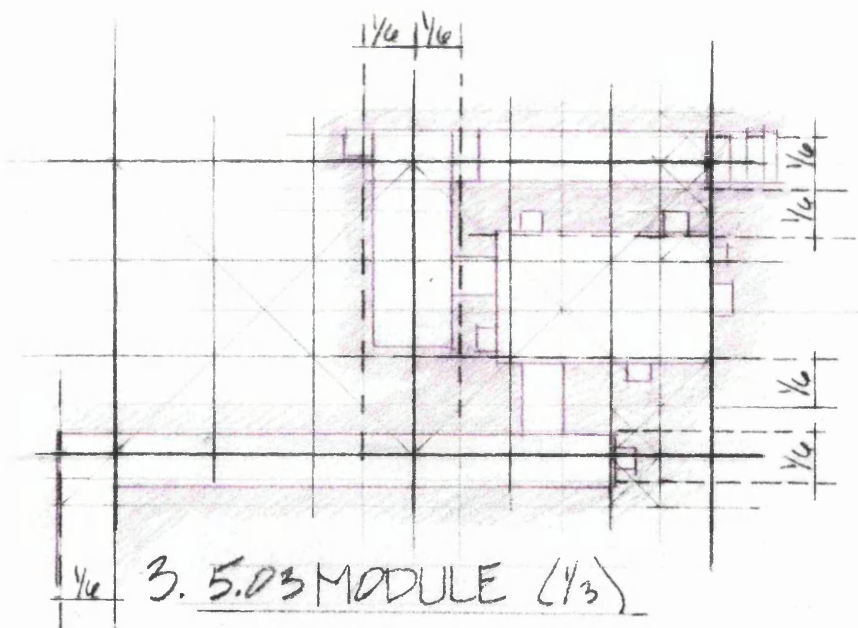


Fig. 40. Ripon crypt: proportional analysis - 2. $\sqrt{2}$ analysis. 4. $\sqrt{5}$ analysis.

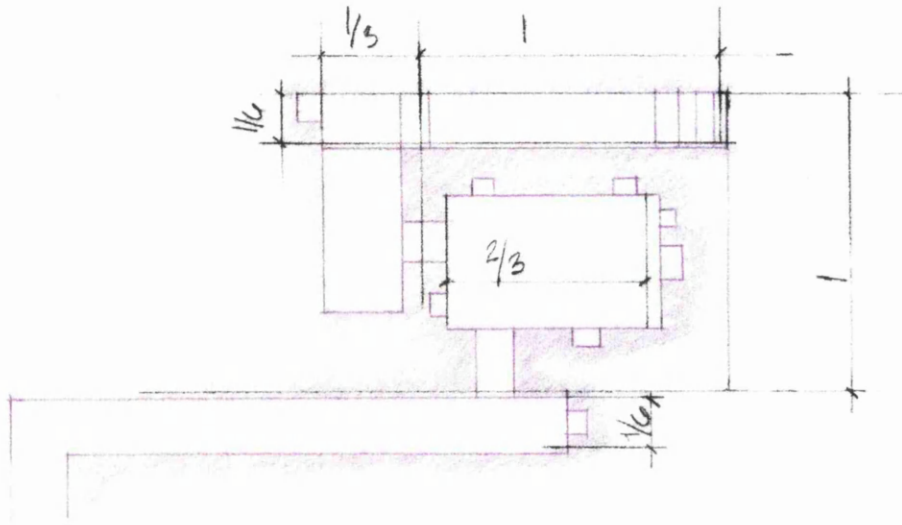


RIPON CRYPT-MODULES



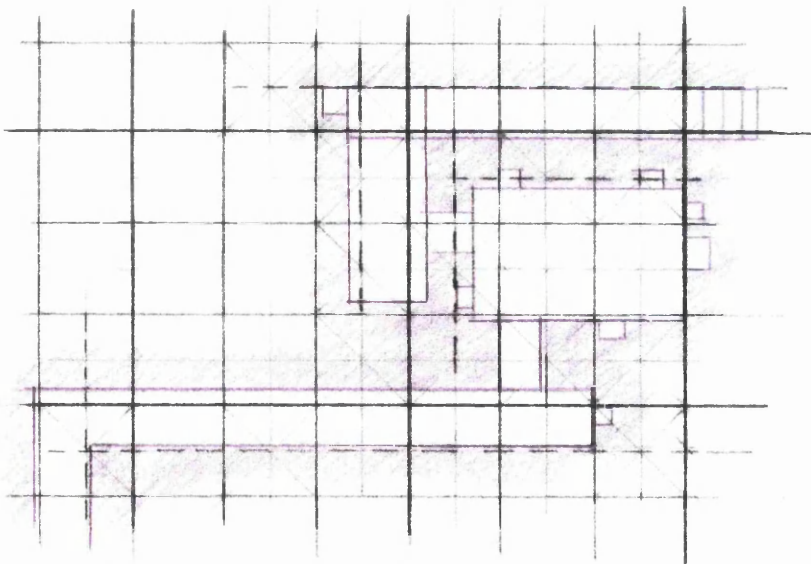
Fig. 41. Ripon crypt: modular analysis -

1. module derived from the western ante-chamber. 3. 5.03m rod analysis.



2. BAILEY'S 5.03 ROD - DRAWN TO SCALE

RIPON CRYPT-MODULES



4. 4.65 MODULE (1/3)

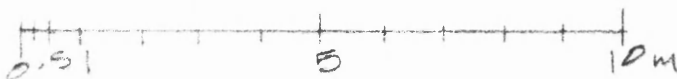


Fig. 42. Ripon crypt: modular analysis -

2. Bailey's 5.03m rod analysis, drawn to scale. 4. 4.65m rod analysis.

equilateral triangle system, it begins to show some logic (Fig. 38). The length to width of the western chamber is inscribed by the intersection of the overlapping $1:\sqrt{3}$ rectangles, which also would align the N. wall of the northern passage (Fig. 38.a). The main chamber is inscribed by the intersections of the east and west pointing triangles when using the same size plan centred over the chamber (Fig. 38.b), which is thus proportionally $1/3$ of the $1:\sqrt{3}$ rectangle. Finally, the distance between the north and south chambers lies on the intersections of the east and west pointing triangles, and thus is proportionally $2/3$ of the $1:\sqrt{3}$ rectangle (Fig. 38.c). Therefore, it appears that modular dimensions derived from the equilateral star plan were used for the setting out of Ripon crypt.

comparison

the churches

A comparison of the best systems for each of the churches, the equilateral triangles, with each other highlights organisational similarities in the use of the system which point towards more than just the use of the system as a proportional device. The most obvious similarity is the star plan overlaid upon the chancel/nave wall resulting in very similar relationships. Additionally, the length of the nave plus chancel at Escomb is 4 triangles ($2 \times 1:\sqrt{3}$) plus $1/2$ of the rotated triangle ($1/2 \ 1:\sqrt{3}$). This is the same for Jarrow. Unfortunately at Wearmouth there is no evidence for where the chancel wall would end in the east and the eastern porticus would begin (Cramp 1996 pers. com.) The interior of the naves at both Wearmouth and Jarrow are 4 small triangles (based upon the interior width) or $2 \times 1:\sqrt{3}$. Using the larger triangles, the naves for both Jarrow and Wearmouth are +3 triangles from the tip of the west pointing triangle of the star plan. Escomb is +3 from the east face of the nave/chancel wall. The overall length for Jarrow is 6 lengths (triangles end-to-end), for Wearmouth it is 6 legs of the base triangle. The east chapel at Jarrow is 3 interior triangles long, the chancel at Wearmouth is the same. The overall width at both Jarrow and Wearmouth is 2 triangles ($1 \ 1:\sqrt{3}$); Escomb's width is determined by the proportional relationships of the rotated $1:\sqrt{3}$ rectangle. Furthermore, the porticus appear to all contain a few similar relationships. The west porches can

all be inscribed by an equilateral triangle, as well as bearing relationships to the star plan. The north and south porticus are all inscribed by relationships determined from the positioning of the centreline of the star plan over the interior of the nave wall (Fig. 29.c; 13.c; 22.b)

the crypts

The crypts also show a few similarities in organisation. Both the size and the shape of the central main chambers are inscribed within the intersections of the star plan for both sites. The western chambers are inscribed by the relationship between the overlapping $1:\sqrt{3}$ rectangles. Finally, the north - south width appears to be determined by the width of the e/w $1:\sqrt{3}$ rectangle for Hexham and by the length of the n/s rectangle at Ripon.

summary

For each of the plans analysed above, it appears that the equilateral system of proportioning works best when compared with the other systems of proportioning for determining the geometrical ordering of the site. Furthermore, with the exception of Ripon crypt, there appears to be a strong case for the 4.65m rod and divisions thereof, to have been used in conjunction with the proportioning system for dimensioning. The exception to this, Ripon, is the only one of these sites which was not completely founded from scratch (which appears to be supported by the archaeological evidence as well as historically). Ripon was originally an Irish monastery before the foundation was given to Wilfrid (Bede's *Prose Life of Cuthbert*, VIII). Although we are told 'For in Ripon he built and completed from the foundations in the earth up to the roof, a church of dressed stone, supported by various columns and side aisles' (*VW XVII*), the site could have been constrained by existing buildings or the builders could have enlarged the original church or used it as the guidelines for the size and position of the new church (cf. Hall 1995 for discussion of the area around Ripon Minster). Whichever the case, developing the site within an existing monastery could explain the discrepancy in terms of a completely different modular system being applied for the dimensions. Finally, when compared with each other, the

plans show remarkable similarities in how the equilateral system was applied as an organisational device

IV.5 Reconstruction of the Plan of St. Andrew's, Hexham

Returning now to the remains of the superstructure of the church at Hexham, a reconstruction will be put forth using the proportioning system derived from the analysis above. Taylor's list of the remains can be referred to in Sec III.4 along with Hodges' plan (Fig. 2).

The fragments which I have used as my base plan are derived from this list, mainly following Cambridge's analysis for the possibilities in terms of later phases of building and his detailed arguments for the particular pieces described by Hodges (Cambridge 1979, 162-167). Furthermore the post-13th c. is differently aligned, north-west to south-east, so I have included this alignment in my considerations (Fig. 43^{xxvi}).

- a) Although Taylor describes this patch of walling as in situ, I agree with Cambridge that it is more likely to be re-used stones because of the placement high in the later wall (Cambridge 1979, 162)
- b) Taylor's opinion is that this is original Saxon work (1965, 300), Cambridge feels it is more likely to be later, 13-15th, although possibly re-used Saxon foundations (1979, 165). It also aligns with the pre-13th c. work, so I have included this on my plan.
- c) This flooring has been disproved to be Saxon during Bailey's excavation (Bailey, 1979).
- d) With (r): this is the eastern chapel
- f) Not apparent as part of any of the later structures, aligned with the pre-13th c. work, included in the plan.
- g) Part of the problems with (g) I have already mentioned, in addition Cambridge would associate it with the 12th century respond which would result in a two-storied elevation with unvaulted aisle with a prominent arcade which is common in the 12th century (Cambridge 1979, 162-164).
- h) Not associated with any later work, aligned pre-13th c., included in plan.

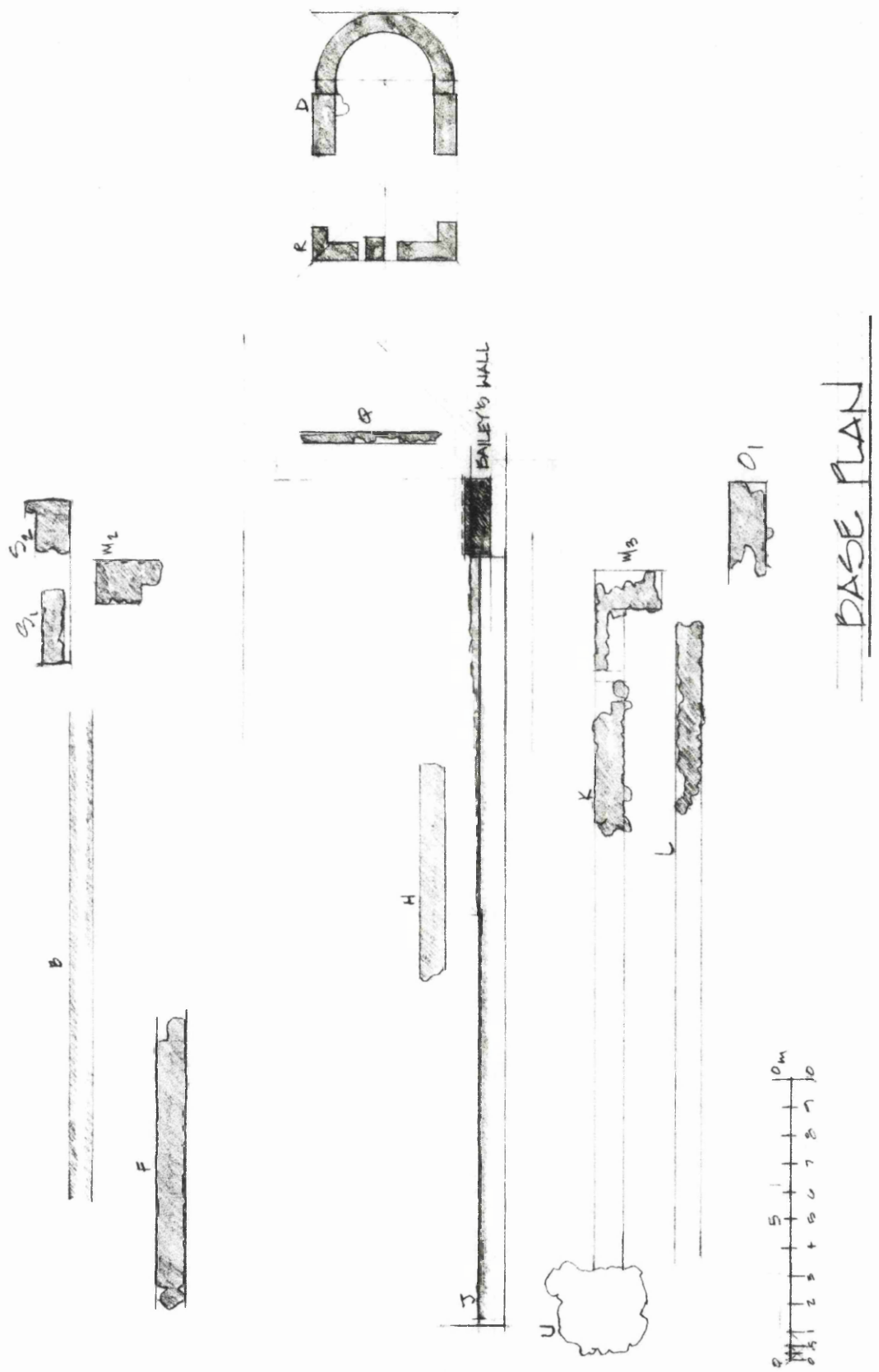


Fig. 43. Base plan of pre-13th century remains of Hexham.

j) Cambridge points out that this does not exactly line up with the wall excavated by Bailey (1979, 166), however I have used this as the south nave wall in conjunction with Bailey's wall as the offset chancel (as does Bailey 1991, 16). Hodges' plan shows this as 'disturbed foundations' and therefore where the line of J begins to deviate could have masked the fact from Hodges that there were two walls, slightly offset one from the other.

k) Not associated with any later work, aligned pre-13th c., included in plan.

l) Cambridge feels this to be a 15th c. rebuild of the south walk of the 13th c. cloister (1979, 167), however, there are enough doubts, similar to the doubts about B, and it is aligned with the pre-13th c. work, to include this on the plan.

m2) Cambridge feels this is part of the 13th c. east walk, but could be reused from earlier (*ibid.*, 167). It is aligned with the pre-13th c. work. Included in plan.

m3) Not associated with any later work, aligned pre-13th c., included in plan.

(All other fragments labelled 'm' are associated with later work)

n) All fragments labelled 'n' are associated with later work (*ibid.* 167)

o1) Not associated with any later work, aligned pre-13th c., included in plan.

o2) Not associated with later work, but aligned post-13th c. Not included in plan

p) Not associated with later work, but aligned post-13th c. Not included in plan.

q) Cambridge associates this with the 13th c. sleeper foundations of the choir, but allows for the possibility of incorporation of older work (*ibid.*, 166). Aligned with pre-13th c. work, so included on plan.

r) part of east chapel

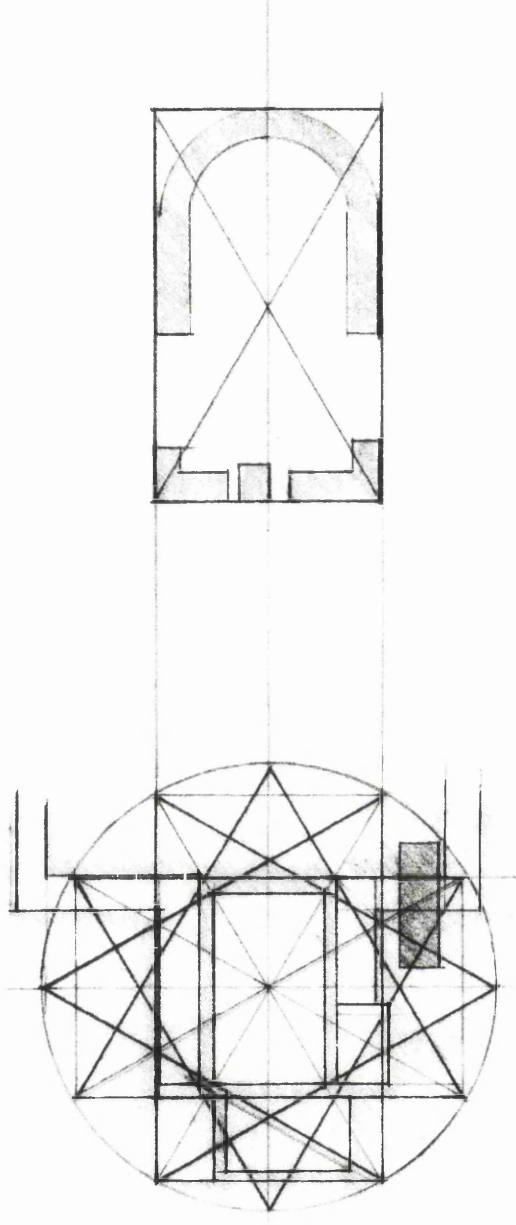
s) Not associated with later work, however the north-south wall is aligned with the post-13th c. work, the fragments to the east of this are not associated with other work so have been included as S1 and S2.

t) Non-structural and could be paving from any time period; not included on plan

u) Associated with buttressing, not included on plan, except for massing at the end of K, which is not associated with the later buttressing.

The first step towards reconstruction is to compare the proportioning system from the analysis with the primary evidence. The crypt and its associated proportioning system (star plan using equilateral triangles, cf. above) were

positioned in relation to the east chapel and Bailey's wall (Fig. 44) The east chapel can be seen to be a $1:\sqrt{3}$ rectangle the same size as the e/w rectangle of the star plan of the crypt. The next step for reconstruction was to compare the geometry with the remains recorded by Hodges (Fig 45 and for following). First, I extended a centre line, based on the centre line of the east chapel, through the length of the nave. Then I mirrored the external dimension (j) across this centre line, using the west alignment before the apparent bend on Hodges' plan, and also mirrored Bailey's wall across this centre line. The resulting width is the same as the n/s $1:\sqrt{3}$ rectangle of the star plan. The star plan also intersects with (q). (N.B references in this section to the star plan are based upon the plan derived from the crypt and indicate that the star plan used in the comparisons and reconstruction of the superstructure is the same size, i.e. the same dimensions, as that of the crypt) The length of the site to the west was constructed as +3 equilateral triangles from the west pointing triangle (cf. Jarrow and Wearmouth analyses, above and Figs. 12, 21). This would position the exterior of the west nave wall just inside the current nave wall. From the east line of the chapel to (q), where the star plan intersects, is 2 triangles (1 of the large $1:\sqrt{3}$ rectangles). The width, constructed as 2 triangles ($1 \times 1:\sqrt{3}$) (cf. Wearmouth and Jarrow, above and Figs. 14, 22), intersects with the centre of (f) to the north and the north face of (k)/(m3) to the south. The centreline of the star plan intersects with (m2) and (m3). Fig. 46 shows a reconstruction of the main body of the church with the crypt and the east chapel. The position of the west wall is determined by the interior geometry of 4 equilateral triangles ($2 \times 1:\sqrt{3}$) (cf. Jarrow and Wearmouth, above and Figs. 12, 21). The position of the external geometric length is shown by the dashed line. The chancel arch opening is the width of the main chamber of the crypt. The width of the chancel to the width of the nave is not a $1:\sqrt{3}$ ratio, unlike the examples in the analysis, however, the construction of the chancel walls needs to clear the north and south passages of the crypt. Bailey's wall sat upon a base .10m wider than the wall which had been constructed to reinforce the passing over the leg of the passage (Bailey 1979). This extra width is shown as the dashed line. If the chancel wall had been placed in the position of the width of the $1:\sqrt{3}$ rectangle, it would have been extremely structurally unsound as the length of the wall would run directly over the length of the passage. The



HEXHAM - CRYPT: DAILEY'S WALL - E. CHAPEL

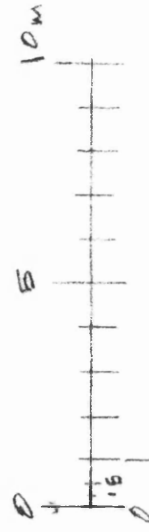


Fig. 44. Hexham: crypt: Bailey's wall: east chapel - analysis.

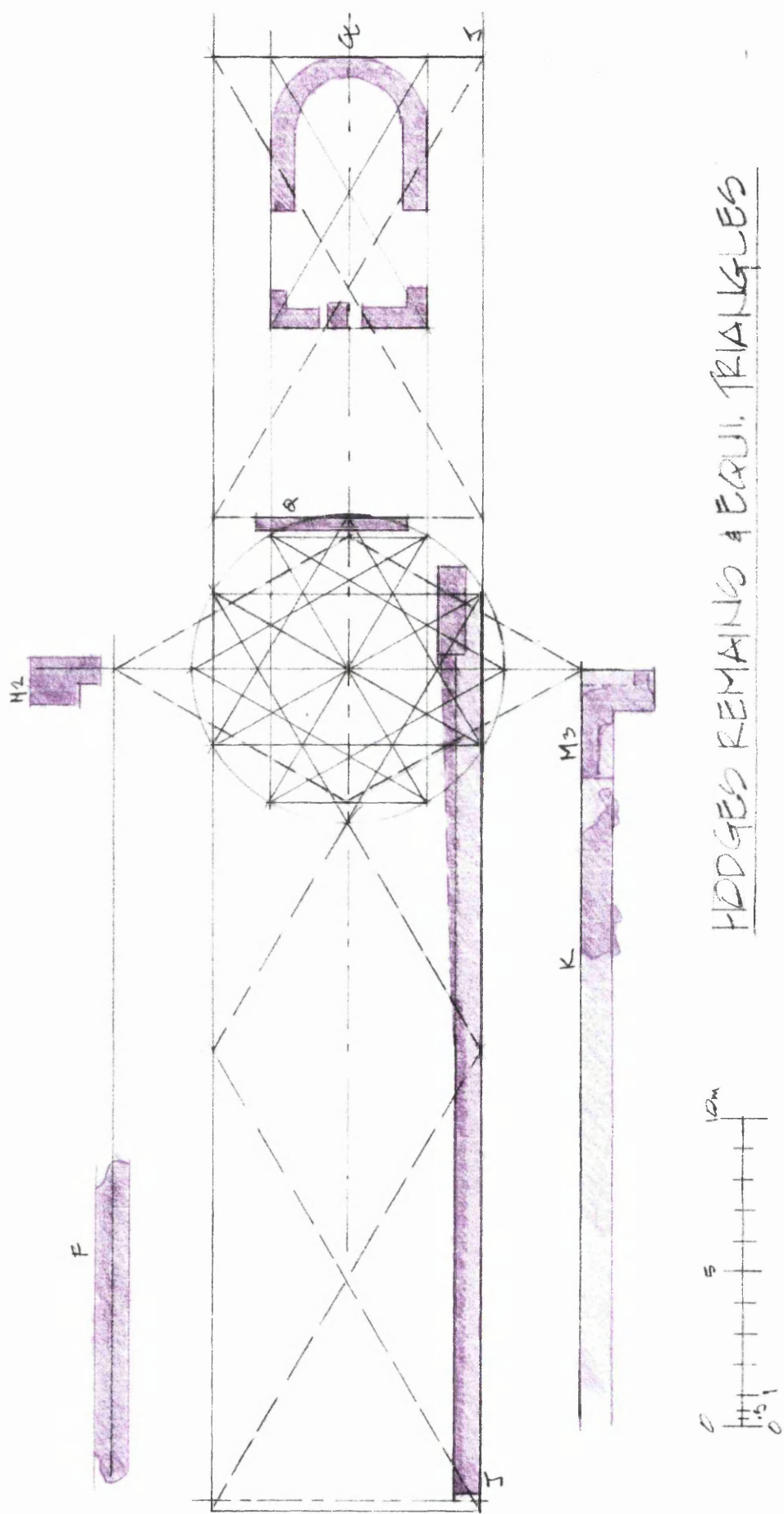
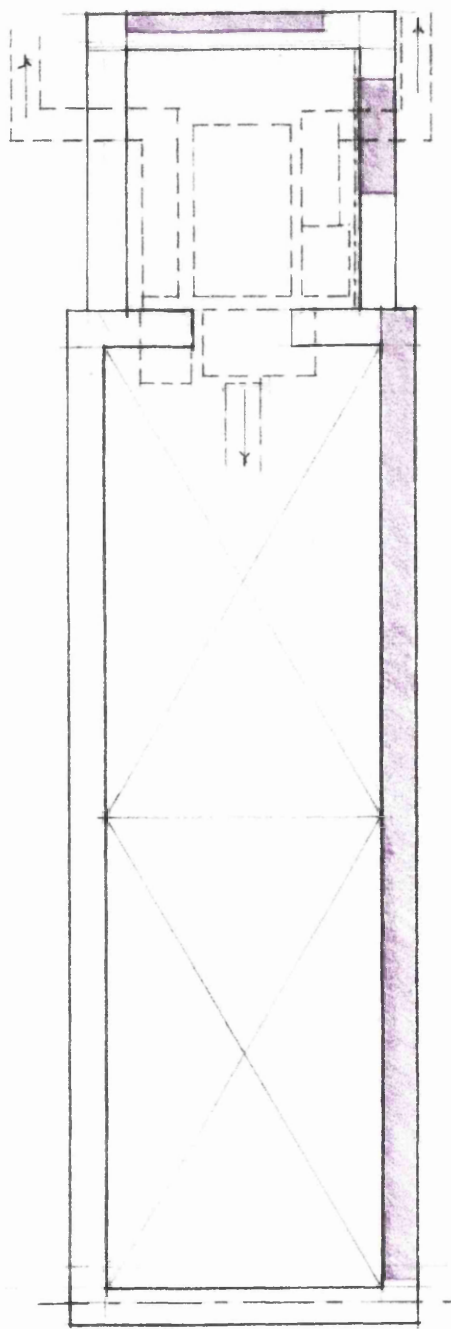


Fig. 45. Hexham: system of equilateral triangles superimposed over the remains.



HEXHAM-RECONSTRUCTION OF CHANCEL NAVE

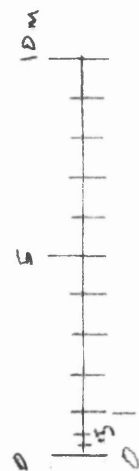


Fig. 46. Hexham: reconstruction of chancel and nave.

passages are not constructed well enough to have withstood this type of load bearing capacity and would probably have collapsed.

Extending a wall across the n/s centreline of the star plan (cf. Wearmouth, above and Fig. 14) intersects with both (m2) and (m3) (Fig. 47 and for following). Extending (k) and (f) to intersect with this wall creates the north and south porticus and their eastern terminus. B and C on Fig H.8 show similar relationships to Jarrow, Wearmouth and Escomb (cf. above and Figs. 13, 22, 29). Although (m2) and (m3) are generally seen to be later (cf. above), there appears to be a geometric relationship and the offsets align with the wall I have constructed for the E. wall of the porticus. The extensions of these remains north and south could be a later enlargement, possibly to incorporate the east chapel into the main body of the church, in the manner put forward by Gilbert and Taylor as Acca's enlargement (Taylor 1965, Gilbert 1974), or as part of the work carried out under Eilaf I & II (cf. above). Unfortunately, the information from Hodges is not sufficiently detailed to deduce stratigraphic differences in the masses marked as (m2) and (m3). The mass in the south-west corner of the plan has not been distinguished by Hodges, however I have included it in the plan as there seems to be the possibility that it could relate to the south-west corner of the south porticus and nave. There is no direct evidence for a western porch or porticus, all references to the western towers are derived from later accounts. Comparison with Jarrow, Wearmouth and Escomb, however, leads to the possibility that there would have been a western adjunct of some sort. I have constructed a western porticus (dashed lines) based upon the equilateral star plan positioned relative to the W. wall of the nave, and the width of the e/w $1:\sqrt{3}$ rectangle over the chancel or the width of the porch. The masses marked as (u) on Hodges' plan are not detailed although they do appear to be related to the later buttressing (cf. above). I have shown them (irregular dashed lines) to indicate the possibility that they might reflect western adjuncts.

Fig 48 shows the basic plan of Hexham reconstructed using the equilateral system of proportioning in relation to the fragmentary remains. This plan is very

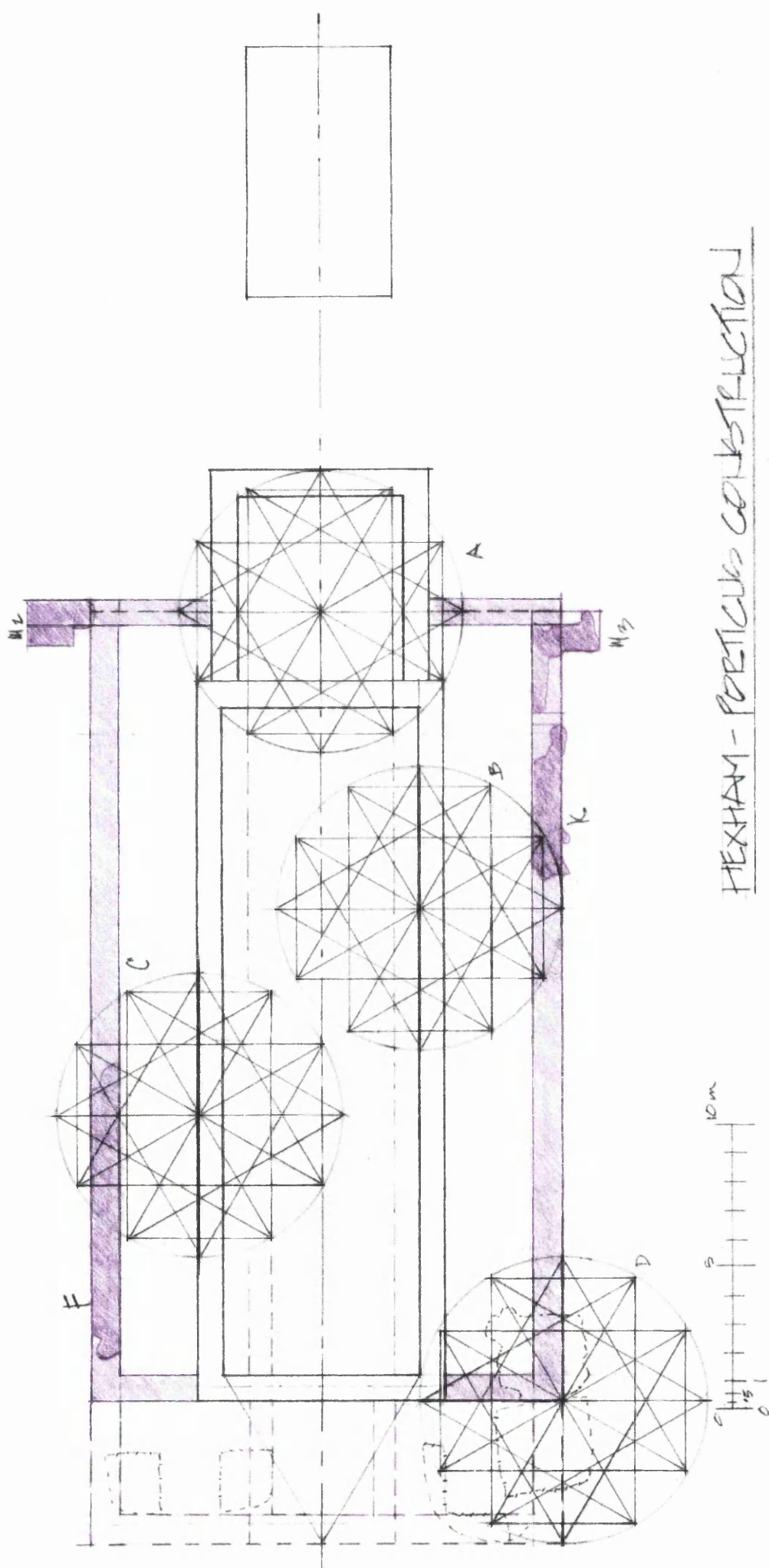
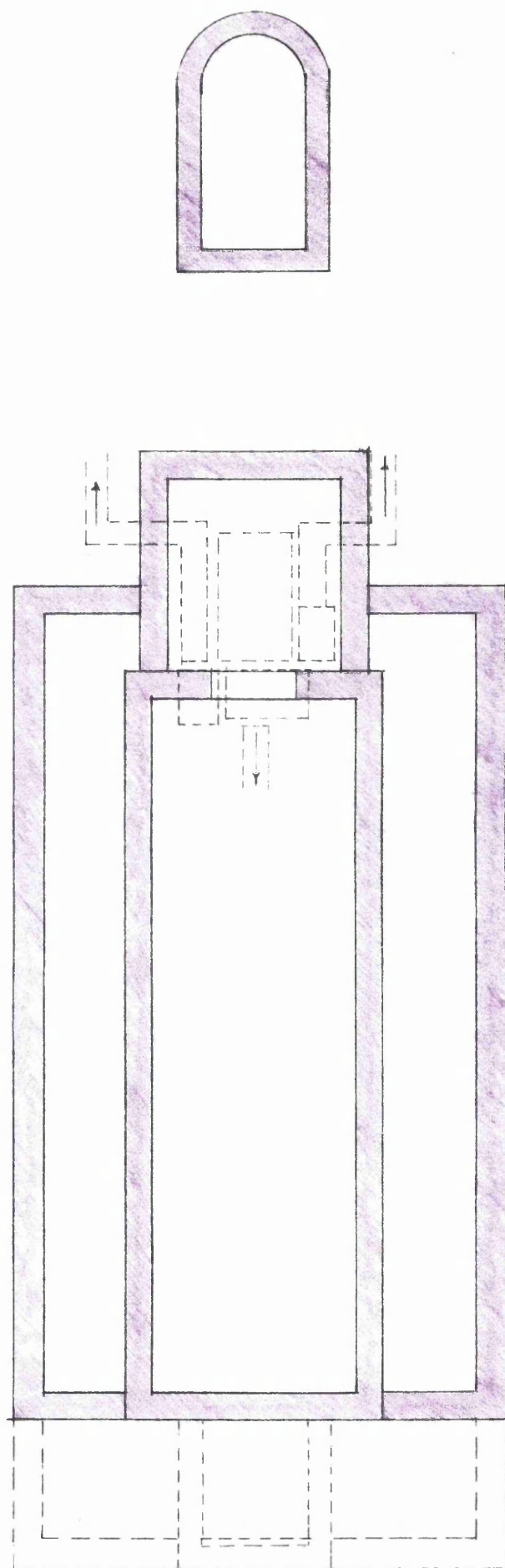


Fig. 47. Hexham: analysis of possible porticus.



HEXHAM-RECONSTRUCTION-BASIC PLAN



Fig. 48. Hexham: reconstruction - basic plan.

similar to Wearmouth and Jarrow. Additionally, it is similar, but differently proportioned, to the independently derived reconstruction by Bailey (1991, *fig. 2, 8*), although he does not put forth any reconstruction for the porticus. The length, from the eastern edge of the east chapels to the exterior of the W. wall of the naves, of Hexham is 2.5m longer than Jarrow. Finally, it should be noted that the north wall of the nave as I have constructed it aligns with the south edge of (g). Although I still do not feel that these piers are part of the Anglo-Saxon work, this later work could sensibly have used the line of the north wall. This reconstruction places the main chamber of the crypt underneath the Anglo-Saxon chancel, the sacred space of the church, whilst the western chamber would be under the sanctuary arch and the location of the main altar in front of the arch.

This plan does not account for the remaining fragments included in the base plan: (b), (h), (l), (s1 & 2) and (o2). Fig. 49 explores these fragments geometrically and in relation to the basic plan. (h) has been alternatively viewed as either the support for an ambo (Bailey 1991, Taylor 1961, 1965) or for a gallery. If (h) is mirrored across the centreline of the nave and extended east and west, it aligns with the width of the main chamber of the crypt (the width of the e/w $1:\sqrt{3}$ rectangle). It also centres geometrically on the subdivisions of the proportional interior triangle of the nave. The remains shown also appear to bear some relationship to the western exit of the crypt. Galleries extended along the length of the nave (possibly supported by columns, which would explain a stone foundation) would just clear the chancel arch as I have postulated it and enhance the length of the nave, focusing on the chancel. Galleries placed thus would also further delineate side altars from the main altar in front of the chancel arch, enhancing liturgical procession. The southern porticus I have divided geometrically, beginning with the south-east chamber using the star plan to form a relationship similar to the north porticus at Escomb which overlaps the nave and the chancel. This leaves the remainder space to be divided up geometrically.

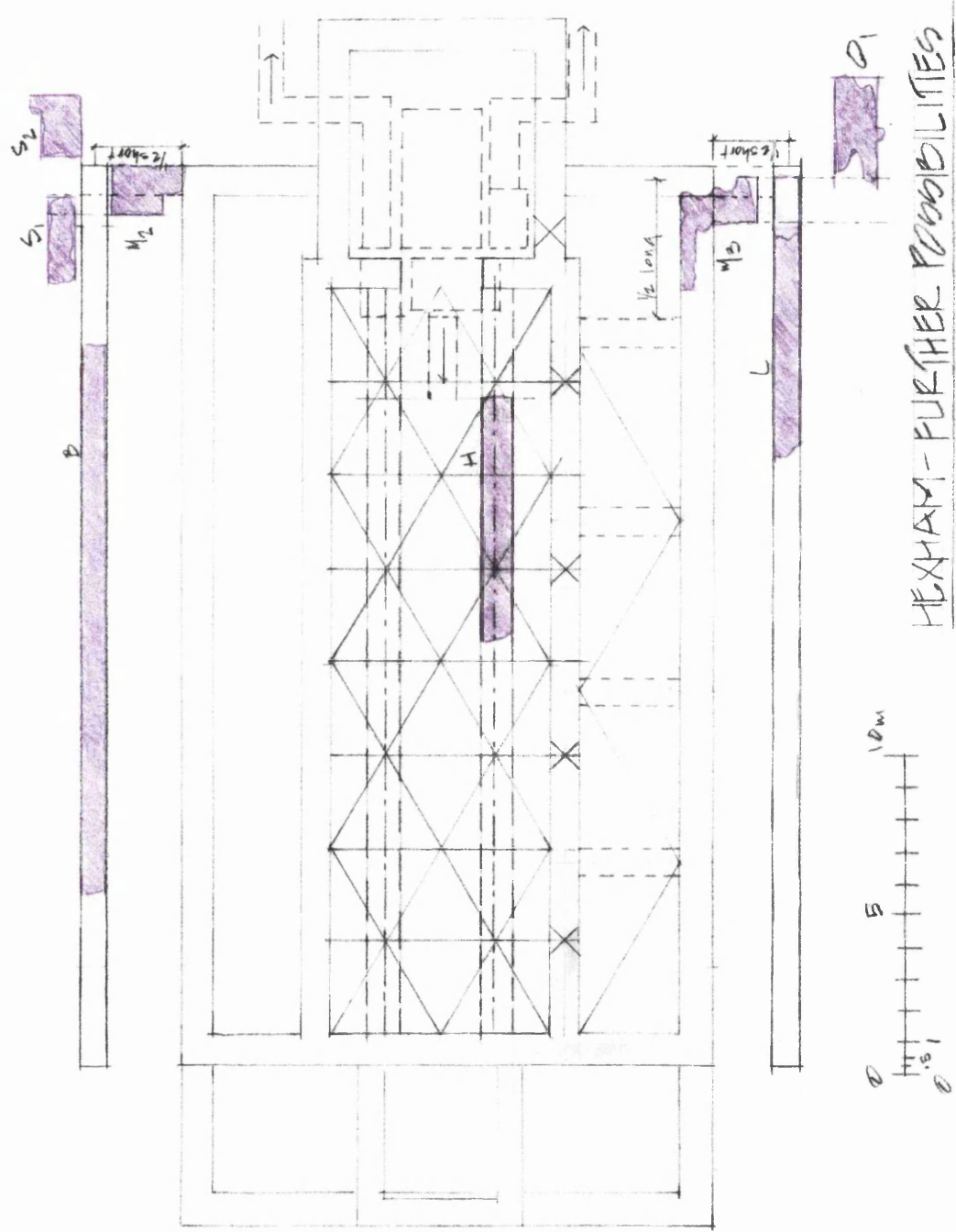


Fig. 49. Hexham: further possibilities based upon geometrical relationships.

If doors were positioned along the S. nave wall along the nave divisions marked by the X, this would create off-set doors which would allow for the placement of altars . Without additional evidence, however, this can only be a suggestion.

The remains of the walls to the north and south of the church, (b) and (l) are $1/2$ the short side of the $1:\sqrt{3}$ rectangle of the star plan distant from (f) and (k). They also appear to work in relation to the east porticus walls through (m2) and (m3).

If these walls do represent earlier work (cf. above), they could be walks to the north and south of the main church. They are noticeably thinner than the main walls of the structure, which might imply they were not required structurally to be load bearing or extended to a great height, which would work with walks.

Alternatively, they could represent a later, but still Anglo-Saxon (as opposed to Norman) enlargement of the church. The remaining fragments, (s2) and (o2), could work with (m2) and (m3) as rebuilds of, or extensions of, the east porticus walls, to form the western exterior corners of north and south adjuncts. These adjuncts could have encompassed the chancel and connected the space to the east chapel with the Norman apse situated just to the east of the east chapel (cf.

Hodges' plan).

Both the plan of the main church I have reconstructed (Fig. 48) and the tentative suggestions explored in Fig. 49 work with the textual description given in the *VW* (22; *intra*. III.1, trans; n.iii). *Liniarum variis anfractibus viarum, aliquando sursum, aliquando deorsum per cocleas circumductam* would be an apt description of multi-level porticus which were interconnected (for example, the west porch at Wearmouth has doors to the north and south on the ground floor, and a door to the north on the first floor, Taylor 1965, *fig. 205*, 436) with stairs positioned in convenient places such as the postulated western porticus or the western ends of the north and south adjuncts. There is evidence for spiral stairs in Anglo-Saxon churches which are distinctly different from the integrated-newel constructed stairs of the Norman's (Taylor 1978, 888). *Columis variis et porticibus multis sufflaturum*, has been discussed previously, but, again, there is nothing in this reconstruction which would contradict this description. (H) carrying a gallery would furthermore enhance it.

The analysis, reconstruction and suggestions I have put forth here for the plan of St Andrew's Hexham, whilst bearing some similarity to others' reconstructions, are based upon a geometric analysis and study of the geometric relationships in conjunction with the physical remains. This type of analysis and reconstructions adds a dimension of rigour and avoids the pitfalls of the educated guesses which are normally based upon typological models.

IV.6 Discussion

This chapter began by indicating that Wilfrid, or any of the secular and ecclesiastic nobility of the time, would have, even at the most unconscious level, had an understanding of the ordering of form and would have been exposed to the techniques and processes for the realisation of the ordering of form.

Continuing from this a discussion of the ordering of form as the process of design implied that a coherent regularising system could possibly be discerned from a study of the architectural remains. The analysis which followed of the churches and crypts specifically within Wilfrid's sphere has shown that in these places there appears to have been a deliberate and coherent structure underlying the arrangement of these spaces. The criteria of analysis were founded in building and site planning - activities which could be carried out using the simplest techniques employing a sightline, a cord and pegs and a basic geometrical understanding necessary for surveying and planning (e.g. divisions of a length into equal modules, inscribing a circle, marking intersections). As was noted, these are traditional skills employed in building and surveying which would have been handed down through the generations from master to apprentice. Although the actual laying out of the site would employ these standard traditional skills, the plans, as analysed, point towards a more sophisticated approach to the design of these particular churches.

What appears at first to be simple rectilinear structures hides a complex series of geometrical relationships, an understanding of the application of proportioning systems to design (and not merely a direct copy), a coherently repeated application of an organisational system, and most interesting, an unusual selection for the system of proportioning used. The relationships, modules and dimensions apparent from the preceding analysis do not seem to be derived from a simple repetitive modular grid division of space (cf. drawings in the appendix: "module from square of equi. circle" for each site, as well as those referred to in the analysis) - the only grid possibly employed would be a rectangular grid (rather than square) where the long to short ratio is $1:\sqrt{3}$, which is derived geometrically from the equilateral triangle. Even a grid such as this would not explain the relationships which seem to be derived from the imposition of the

equilateral star plan at the chancel/nave juncture. The combination of the use of a successive proportioning system and the choice of proportioning system points towards these churches being the product of educated, literate minds. 'Literate' here is not used in the sense of the ability to read, but in the sense that a literate interaction with the world is an outlook; an ideological position rather than a practical skill.

Both Wilfrid and Benedict Biscop are said to have imported masons and other craftsmen from elsewhere for the work on their monastic foundations, in Biscop's case, from Gaul, and although not specifically stated from where, the masons brought back by Wilfrid to Ripon were found during his sojourn to Kent and Mercia (*HHAnon* VII; *HA* V; *VW* XIV). These specifically appear to be craftsmen: *et caementariis omnisque paene artis institoribus* (*VW* XIV), *Benedictus oceano transmissio Gallias petens, caementarios*, (*HA* V); *caementarios* - *caementariis* - from *caementum*, rough stone from the quarry, i.e. stoneworkers - cutters, masons, 'builders of walls'; *artis institoribus* - artisans, professional craftsmen trained in specific traditional vocational skills, as opposed to *architectus* or *praefectus fabrum*. An *architectus* refers to someone formally trained in a variety of arts, "he should be a man of letters, a skilful draughtsman, a mathematician, familiar with scientific inquiries, a diligent student of philosophy, acquainted with music; not ignorant of medicine, learned in the responses of jurisconsults, familiar with astronomy and astronomical calculations"^{xxvii} (Vitruvius, Book 1.i). *Architectus* was also a term applied to military engineers, town planners, and even librarians (Granger 1934, xviii) - the term is applied to those with the ability to develop and manage. *Architectus* in this sense refers to a theoretical outlook, not a vocational trade or profession. It is a term applied to someone with an orientation towards the development and management of an idealised creation learned enough to have the capacity to express these ideas in an innovative manner within a contextualised, conceptual whole. The *architectus* is the one with the ability to *design* (as has been previously defined), which whilst this ability requires an understanding of building construction it does not imply that this person has the practical skill to fashion and place individual stones or carve the ornaments of the building.

Bede refers to *architectus* in the *HE* in only one passage - when Nechtan requests *architectus* from Ceolfrith to build a church for him in the Roman manner (*sed et architectos sibi mitti petiit , qui iuxta morem Romanorum ecclesiam de lapide in gente ipsius facerent*), which are obligingly sent (*cuius religiosus uotis ac precibus fauens reuerentissimus abba Ceolfrid misit architectos quos petebatur*) (*HE* V.xxi). In no other passage does he use this term (Jones 1929).

Furthermore, the only other time Bede refers to those who are involved in the construction of a building in terms other than 'the patron (king or ecclesiastic) built the church of x' or simply 'the church of x was built there' is in the passage already mentioned above, when he refers to the people brought from Gaul as *caementarios*. It is therefore probably significant that Bede uses this term specifically in the passage where Nechtan is requesting assistance from Ceolfrith. In this passage, Nechtan is not merely asking for things, he is asking for religious education; to be educated in orthodoxy - the Petrine tonsure and the calculation of Easter are theological issues requiring proper instruction in order to understand the meaning and importance of these things which might appear to the modern reader as mere symbols or gestures. Thus, Nechtan is not asking for masons and artisans to aid in the construction of his buildings, but is requesting the assistance of those who can properly teach the Picts how to design a church in the Roman (i.e. orthodox) manner. Throughout the *HE*, the references to the Roman way of building in stone and the manner of building with wood and thatch a la the *Scotti* are symbols, along with the tonsure, of orthodoxy versus un-orthodoxy.

The evidence of the churches themselves in their construction detail would make it appear that it was not the 'masons' who were highly educated. The general impression of early Anglo-Saxon ecclesiastic architecture as not being technically very accomplished is slightly exaggerated as a result of comparison with the previous (Roman) and later (Gothic) accomplishments. The crypt at Hexham, for example, does make good use of vaulting. That said, however, the construction technique of the walls of the crypt are a bit haphazard - dig a hole, chuck in a bunch of stones and apply mortar (although the facing stones are more

technically accomplished) (cf. Hexham excavation report, Bailey 1978). Certainly there is no physical evidence in the material construction for having studied a building manual such as Vitruvius' containing such detailed descriptions of construction materials (e.g. best type of stone and wood for different purposes, Book II.vii; II.ix) and construction details (the variety of wall constructions, II.viii; roof construction, IV.ii), of how to make mortar (best sands and mix of parts, II.iii), and especially the techniques of structurally sound load-bearing walls and foundations (VI.viii).

Although these stonemasons could have been trained in an ecclesiastic centre, along with the cantors and other people brought to Northumbria (for example, taught in the manner of the glaziers who stayed to teach their craft at Jarrow/Wearmouth (*HA* V), a manual skill taught from master to apprentice to fulfil a secular need would not require a wider level of education nor be expected to display evidence for the ability of organised abstract reasoning - geometrical logic and stone cutting and laying are two different types of skills. The *HHAnon* does use the term *architectos* to refer to these masons (*Benedictos mare transiens architectos a Torhthelmo abbate...*) (VII), however, there are two arguments for believing this term might be used imprecisely. First is Bede's Latin, his use of vocabulary is fairly extensive and consistent and his writing evidences a technical understanding of building practice, as we have seen. Bede, therefore, is the more authoritative source in this matter. Secondly, the churches appear so similar in design as to appear to be planned by the same individual or group of individuals that it would be difficult to explain a specific group of imported *architectis* from Gaul in 676 (2 years after the foundation of Wearmouth) as having anything to do with the earlier foundations at Ripon and Hexham

Since evidence for masons and craftsmen from Gaul is not necessarily evidence for the designer of these churches, we must turn to Wilfrid and Biscop as potential candidates for the educated minds which lay behind the planning. We therefore must turn to a consideration of the state of education in the 7th century and where the type of knowledge necessary to formulate complex geometrical ordering could have been obtained. The present enquiry is not so much into the

actual identity of an individual *architectus*, in the formal sense of a trained professional, behind these churches. Rather, we can use our historical knowledge of Wilfrid and Biscop to investigate the possibility that the type of knowledge required to apply a sophisticated geometrical organising system to the creation of these churches might have been available in the 7th century. Much attention has been paid to Bede's sources and the library of Wearmouth and Jarrow (cf. Laistner 1935, Ogilvy 1968, Meyvaert 1976, Blair 1976 for general studies) as well as to the library of York (cf. Godman 1982, lx-lxxv; Lapidge 1985, 45-49). These studies, however, primarily cast light upon the 8th century in a post-Theodore environment and after the foundation of Wearmouth and Jarrow. In order for us to attempt to understand the mid-7th century environment in which Wilfrid and Biscop would have gained their education, we must turn to other sources. To begin with, where and when would Wilfrid and Biscop have gained the training appropriate to their positions?

Wilfrid's initial training began at Lindesfarne c. 648 where he spent two years and '... learned the whole Psalter by heart as well as several books'^{xxviii} (*VW* II). After leaving Lindesfarne he spent a further year studying in Kent under Archbishop Honorius, whom Bede tells us was a man 'deeply versed in ecclesiastic matters'^{xxix} and a disciple of Gregory (*HE* V.xix). There he was seen to be diligently learning - 'continually occupied, as was his wont, in prayers and fastings, in reading and vigils' and re-learning the Psalms from the more updated 5th edition^{xxx} (*VW* III). He next spent time in Lyons and a year in Rome (653-655) where he studied the four Gospels and the Easter rule and other rules of ecclesiastic discipline^{xxxi} (*VW* V). He then spent a further 3 years in Lyons, 'learning many things from the most learned teachers'^{xxxii} (*VW* VI) before returning to Britain c. 658, where he appears to have first befriended Coenwalh of the West Saxons before being summoned back to Northumbria (*VW* VII). So it appears Wilfrid's education was from a variety of sources: Lindesfarne under the Irish, under Honorius in Kent, in Lyons under Annemendus and in Rome under Boniface.

Although Wilfrid's education is only presented in sketchy detail, we learn even less detail about Biscop. Until about the age of 25, Biscop had been one of Oswiu's thegns. His decision to renounce the secular life and become a monk led to the trip to Rome which he began in the company of Wilfrid in 653. After his trip to Rome, there is a long period when he returned home, presumably to Northumbria, to diligently study the institutions of the church which he had known in Rome^{xxxiii} (HA II) In 665/666 Biscop returned to Rome via Lerins, then back to Lerins for two years where he trained to become a monk and received his tonsure. He then went back to Rome and returned to Britain in 669 in the company of Archbishop Theodore, where he was put in charge of the monastery of St. Peter and Paul until Hadrian's arrival two years later. Biscop received his education in Rome and in Northumbria, similar to Wilfrid, then continued his studies in Lerins. There is also the further possibility of additional training under Theodore whilst at Canterbury.

This brief outline does not indicate what was studied in more than the most general way. What is not apparent from these vague references is the content of studies required for ecclesiastic training. A literate understanding of the Scriptures required much more than the ability just to read, whether it was in the monasteries, the episcopal schools or the missionaries - literacy was required in order to put wisdom at the service of God - to teach, convert, instruct and contemplate (Riche 1976). Progression through the religious orders was also a progression through levels of education, up to the highest level required for exegetical works such as Bede's. In 7th century Britain there was no one curriculum for this type of training and the different areas were influenced and taught under different customs. Until the mid-7th century and the foundations of Wilfrid and Biscop's monasteries and places such as Whitby, all monastic training in Northumbria was done through the Irish missionaries. Their curriculum was based upon a classic Roman liberal arts education, with a slight difference in the division of subjects. They divided subjects into two groups, *trivium* which consisted of Grammar, Rhetoric, and Dialectic, and *Physica* which consisted of Arithmetic, Astronomy, Geometry, Music, Astrology, Mechanics and Medicine (Mayr-Harting 1991, 196).

The ‘Gregorian school’ (an idea more than a formal schola) which would have been taught in Kent by Honorius, was an adaptation of classical learning to the specific needs of monastic life. This emphasised vocational training for the different requirements of Christian life - learning as part of an ascetic culture rather than liberal arts education simply for its own sake (cf. Jones 1976, Riche 1976). Gregory’s influence upon education was more organisational than curricular. Education became the prerogative of the monasteries where it was embedded into a Christian way of life. Gregory’s own St Andrew’s in Rome (which it is very likely this is the ‘St Andrew’s’ Wilfrid visited) maintained a place within education for higher learning. Riche feels Gregory’s negative attitude towards secular culture (i.e. liberal arts education based upon classical or ‘pagan’ authors) has been overemphasised. He has traced Gregory’s thought and shown that secular learning was never outright condemned by Gregory, but assigned to a higher secondary order of learning reserved for a few elite (Riche 152-57). Although we do not know specifically what would have been taught at Kent, we can possibly trace a line from the Gregorian ideas through the teaching of Theodore and Hadrian to Bede’s views on the subject. We know from Bede that Theodore and Hadrian taught the holy Scriptures, the art of metre, astronomy, ecclesiastic computation, and sacred music - which Bede specifically states was only known previously in Kent (*HE* IV.ii). A careful analysis of the biblical commentaries from the school of Theodore and Hadrian and other texts contained in the Leiden family of manuscripts by Lapidge has shown the subjects covered within this broad outline of study to be medicine, philosophy, rhetoric, metrology and computation, drawing upon patristic authorities and classical authors (1994, 249-266).

A treatise commenting on the scope and function of *grammatica* and its application in monastic training was composed in Britain c. 700 (and preserved in an 8th c. Northumbrian manuscript) (Irvine 1986, 17). *Grammatica* was essential to exegesis and the understanding of Latin texts; “The patristic interpretation of *grammatica* consisted of a comprehensive ‘art of letters’ devoted to literacy, the interpretation of texts, writing, and the scribal arts for

maintaining and promoting Christian monastic *paideia* comprising the Scriptures, Christian literature, and the liturgy” (*ibid.*). This treatise places primacy upon the study of *grammatica*, but also lists the other subjects which make up the *ars* and especially *philosophia* (*arithmetica, geometria, musica, astronomica, astrologia, mechanica, medicina, logica, ethica*), which was considered essential and complementary with *grammatica* (*ibid.*, 23).

Bede composed 3 textbooks on the subject of *grammatica*, *De arte metrica, de schematibus et tropis* and *de orthographia*, and another on ‘the nature of things’, *de natura rerum*, which were widely disseminated in his lifetime and beyond (Jones 1976, 268, Whitelock 1960). The main difference between these works, and Bede’s other treatise and exegetical works, and those which preceded it (such as Isidore, Cassiodorus, Donatus) appears to be that Bede felt the need for a more patristic orientation, so whereas he does have knowledge of and uses classical pagan authors, he focuses his work upon patristic authors and strips any of the classical authors of their pagan associations (Jones 1976, 269; Olgivy 1968, 241). The significance of this for our understanding of the state of things in the 7th c. is that Theodore and Hadrian’s teaching, as well as what was being taught by the Gregorian remnants in Kent and the Irish missionaries, referred to some level of the liberal arts curricula in order to provide the appropriate ‘research tools’ for exposition, comprehension and the teaching of the Scriptures and theology . Patristic authorities which they relied upon such as Augustine, Jerome and Isidore felt no need to completely excise the ‘pagan’ authorities if they were used for the purpose of divine enlightenment. We consider Bede to be an historian, he considered himself to be a teacher and as such addressed the curricular needs of the monastic and ecclesiastic traditions which he had learned from the preceding generation and in turn was passing on to the next generation of monastic scholars.

Continental education in the 5-7th centuries appears to have been in a state of flux. With the breakdown of the Roman secular system, the ecclesiastics took it upon themselves to provide the educational needs for the secular world as well as developing along the Gregorian lines of a specifically liturgically oriented

education. In the 6th century councils divided the provision of education between the basics of literacy (*litterator*) which was the provision of the priests and higher education (*grammaticus*) provided by the episcopal centres for those entering orders (Jones 1976, 262). A further development arrived with the monastic rules of Benedict and Columbanus which emphasised education specifically geared to monastic contemplation. Their emphasis was upon ascetic and liturgical education, focusing upon the scriptures, canons and psalms. Within these monastic traditions was an insistence upon literacy and reading, from which the monasteries developed their places as centres of education for the secular as well as lay persons (Riche 1976, 110 -119). The strongest sphere of influence of the Benedictine and Columbanian monasteries was in the north and eastern parts of Gaul, the southern centres were more recalcitrant about change where there were still vestiges of a separate aristocratic secular liberal arts education (Riche 1976, 84-230), 'old-fashioned' as Wormald has stated it (1976, 145-6), and retained more of their Roman heritage. This was especially true in the Aquitaine, where Wilfrid and Biscop spent their time, since it had experienced the least disruption from the 'barbarian wars' to the north and east and to the south in Italy (Riche 1976, 189).

Three strands of education which appear to be separate during the 5th century started merging together in the 6th century. These strands were the monastic ascetic focus of literacy, the episcopal schools with their focus upon training for administrative and the holding of offices and higher learning for exegetical works based upon the liberal arts. Patristic authors such as Cassiodorus and Isidore wrote their compilations within this milieu. Cassiodorus' *Institutiones* and Isidore's *Etymologies* laid the groundwork for ecclesiastic education and compiled work from a multitude of classical and patristic sources specifically for the purposes of *litterator* and *grammaticus*. Cassiodorus, especially, tried to revive a classical curricula and even to establish a Christian 'university'. "He appealed to the study of etymologies as did other contemporary exegetes. He appealed not only to grammar and rhetoric but even to arithmetic, and especially geometry. The commentary on Psalm 96:4 (*illuxerunt fulgura ejus orbi terrae*) gave him the opportunity to define line and point and to discuss the difference between sense perception and rational knowledge in geometry so that in the end

his commentary became a little treatise on elementary geometry” (Riche 1976, 167). Whereas Cassiodorus tried to address the needs of *litterator* and *grammaticus* separately, Isidore created a formidable encyclopaedia which could be drawn on in all levels of ecclesiastic study (Jones 1976, 262) which was widely known throughout the early Medieval West.

The orientation and ambitions of Isidore and Cassiodorus were given new impetus with the arrival of the refugees from the east and from Africa in the 7th century. Men, such as Hadrian and Theodore, who were trained to a high level in formal schools with liberal arts orientation flooded the Western church and brought their traditions and education with them (Lapidge 1994, 5-132). In the 7th century, when the ‘barbarian’ kings of the north were consolidating their power they had no tradition of formal education and therefore turned to the monasteries (and episcopal centres which by this time were heavily influenced by the monasteries) for the education of the aristocratic elite which further widened the scope of education for the ecclesiastics and strengthened the foundations of a medieval culture of literacy (admittedly for a small elite) (Riche 1976, 324-60). These foundations were consolidated through the learning of the refugees who almost seem to dominate the ecclesiastic hierarchy in the mid-7th century - a large number of bishops, archbishops and even a few popes were of Palestinian, Syriac, Byzantine and African origin (Lapidge 1994, 65-75^{xxxiv})

Wessex-based Aldhelm, a contemporary of Wilfrid’s, is our best source for what a well-educated mid-7th century ecclesiastic in Anglo-Saxon England would have known and studied. Not only is there evidence from his writings of an enormous, vast, knowledge of classical and patristic authors (cf. Lapidge 1979; Lapidge 1985; Mayr-Harting 1991, 191-219), but he specifically speaks of what was being taught in Britain and Ireland and addresses the problems of ecclesiastic education. He studied for brief interrupted intervals under Hadrian and Theodore. In his letter to Leuthere (or Hlothere, Gaulish bishop of the W. Saxons 67-676), he describes what he is studying in Kent: Roman law, metrics, ecclesiastic computation and astrology (trans. Lapidge 1979, 152-53) which concord with what Bede reports. As we have already seen, these terms hide a wealth of subjects considered essential for proper scriptural study. He describes an

intimate knowledge of the Irish curriculum, first in a letter to Withfrith, whom he castigates for the temptations held by secular, pagan authors (*ibid.*, 154-55) and then he praises the Irish system (although staunchly defending what is available under Theodore and Hadrian) in his letter to Heahfrith (*ibid.* 160-64). In the latter, he lists what the scholars in Ireland partake of: “not only the grammatical and geometrical arts - to say nothing of the twice-three scaffolds of the art of physics - but also, the fourfold honeyed oracles of allegorical or rather tropological disputation of opaque problems...” (*ibid.*, 161-162). Additionally, in his *Epistle ad Acircium* he lists the seven-fold division of philosophy: arithmetic, geometry, music, astronomy, astrology, mechanics and medicine (*ibid.*. 42).

This *epistle* particularly demonstrates the depth and range of Aldhelm’s knowledge, as opposed to mere familiarity with a variety of authors and subjects. In actuality it is a lengthy treatise which begins with an exposition of allegorical numerology, then contains a treatise on metrics (*de Metris*), his collection of ‘riddles’ intended for the demonstration of the *ars metrica* (*Enigmata*) and a second metrical treatise (*de Pedum Regulis*) embedded into a letter to Aldfrith, king of Northumbria 685-705 (trans. Lapidge 1979 parts 1,2,5; Lapidge 1982, the *Enigmata*). These are technically accomplished, and, for the modern reader especially, dense, complex and near impenetrable, not from a lack of skill or fluency in language but rather from the opposite. The fact that this treatise was addressed to Aldfrith also demonstrates to us that receiving a high standard of literacy and education was possible in mid-7th c. Northumbria for the laity (albeit the nobility) as well as those in training for an ecclesiastic life. There is no clear proof for where Aldhelm received his training prior to the intermittent 2-3 years with Theodore and Hadrian, when he was already in his 30’s (Lapidge 1979, 8). The ‘Irish’ training he has been said to have had under the eponymous Maelduib is based upon William of Malmesbury (which may or may not be derived from Bede’s reference to *urbs Maildubi*) and recent scholarship shows that whilst he does indeed show knowledge of the Irish educational practices, his Latin and style show closer continental links (Lapidge 1979, 7 & n.8, 181-82). Reference is made in a letter to Aldhelm of a trip to Rome, but there are no details of when, why, or for how long. There is also the possibility of Gaulish influence under the

bishops Acgilbert (the same known to Wilfrid and Biscop) and Leuthere. Whether he received his education primarily under the influence of the Irish, through Theodore and Hadrian, under Gaulish influence or a sojourn to Rome is not necessarily as important as the evidence he provides for the ability of an Anglo-Saxon to gain an extensive education in the mid-7th century. It would thus appear that there are parallels in Anglo-Saxon England for the thesis outlined by Riche for Gaul (cf. above) multiple strands coming together under the necessity of ‘pagan’ conversion, which ultimately was seen by the episcopals and monastics as educating the unlearned in the ways of Christ, who turned to the church for the education of the nobility which in turn provided more literate and educated ecclesiastics.

This fairly detailed look at the forms of education tells us that there was a place within ecclesiastic study for the kind of geometrical knowledge required to design churches such as Hexham, Wearmouth and Jarrow. Additionally it shows us that as well as a reason for this kind of knowledge (ultimately as part of a repertoire of tools for understanding the Scriptures and the patristic authors with the goal of educating followers in a Christian life and exegesis), there was the ability to become a literate, erudite, original thinker (the ability to not just parrot but to formulate and expound ideas in an original manner such as Aldhelm’s metrical treatise) in the mid-7th century. From the previous discussion of the transmission of texts and textual knowledge (cf. above IV.3) it is clear that geometrical knowledge was embedded in a variety of texts, e.g. the *agrimensores* and other textbooks, or authors such as Pliny and Isidore, each of whom we know were available and drawn upon. Furthermore, there is a strong probability that a copy of Vitruvius’ original treatise was available to be copied in an Insular hand, possibly even Northumbrian from the similarities with the *Codex Amiantinus* and the Lindesfarne Gospels, which was then copied on the continent in the 8th c. (cf. above IV.3). If it is permissible to speculate that the Carolingian copy was imported from England by Alcuin of York, then it is permissible to speculate that the copy held in York (i.e. the Anglo-Saxon archetype) was copied from a Roman source which could have been available to the *architectos* of the Wilfrid/Biscop group of churches. The analysis of the churches themselves,

through the use of the geometrical description of a surd and their sophistication, point towards the possible knowledge of Vitruvius either first hand or through another abridged source.

So who was the *architectus* of this group of churches? It could very well have been Wilfrid, as the *VW* informs us: 'for our holy bishop, being taught by the spirit of God, thought out how to construct these buildings' (XXII, *intra* n. iii), although this could very easily be the pride of the disciple for his master speaking. It might also have been Biscop, the ties between Biscop and Wilfrid were much closer than what Bede lets us know (cf. Goffart 1988, Wormald 1976). The analysis shows the probable use of the same system at Ripon as at Hexham, Jarrow and Wearmouth which makes it unlikely that Biscop was the one behind this group since he would have been travelling at the time of the rebuild of Ripon. It could have as easily been Ceolfrith, known from his *Vitae* and from Bede to be a very learned man. His early training must have been under the Irish when he was with the monastery at Gilling (*HAAnon* II). He continued his studies after joining Ripon in 661 and became a priest in 669 (dates: Plummer 1896, 372). We are told he studied in Kent (presumably with Theodore by this date) and in East Anglia under Botulf (*HAAnon*, III, IV). He was sent from Ripon by Wilfrid to aid in the foundation of Wearmouth (*HAAnon*, V). The foundation of Wilfrid's Hexham occurred in 673, Wearmouth in 674 - Ceolfrith is the overlap. Furthermore he was appointed abbot of Jarrow at its foundation in 682 - the dedication stone for Jarrow specifically refers to Ceolfrith, not Biscop (Higgitt 1966). Earlier, in the beginning of this chapter, I had stated the importance of situating any type of geometric architectural analysis within its historical context so as not to confuse our analytical tools with the potential of what might have occurred at the time of the design of a building. Therefore, the evidence for the specific identity of the *architectus* of these group of buildings (or even the existence of a formal *architectus* - which is not what is being argued here) is not as significant as the evidence which points to the ability for the mid-7th c. milieu to have produced someone with nearly the same qualifications and standards of education put forth in Vitruvius' treatise (cf. above).

V. Conclusion

With a similar concern towards a wider context for building practice which has led to a consideration of the literate culture of ecclesiastics, Wood has traced the recurrent themes in church dedications in Gaul (1986) in order to provide a better understanding of the ‘audience of architecture’ in the early Medieval church. These dedications contain comments upon the patrons of the foundation in question, a description of the details of the church which magnify how resplendent it is (*ibid.*, 74) and ultimately, the exaltation of God which is done by this deed of building a magnificent structure for Him. Many of the church details would only be meaningful to a few, for example Wood’s proposal that re-used Roman work, which frequently would be hidden from view in the final product or inscriptions of precious objects which would go unseen, is a result of the importance of gift-exchange in early Medieval Gaul. The same is true of many of the references and allusions in the dedications themselves, they would only be meaningful to a small highly literate elite (*ibid.*, 76-77). The letter of Avitus quoted by Wood is a good example of this:

.....men, who having looked at all the sublime parts of the building, could fittingly ascribe to the founder *a sense of elegance in the quality of the arrangements, extravagance in the outlay of expenditure, concord in the ordering of dimensions, space in the measurements, height in the elevation and stability in the foundations.....*

(*ibid.*, 74, emphasis added)

The emphasised text almost exactly parallels Vitruvius’ canon of good design (cf. above IV.1). It is highly doubtful that even if Avitus’ was familiar with Vitruvius’ canon, more than a very small number of the audience for such a dedication would be. This type of literary referencing is a self-consciousness on the part of the authors of such dedication homilies which is acknowledged by the authors themselves when they differentiate between texts written for a larger audience and texts and letters written to a smaller section of the ecclesiastic and secular world (*ibid.*, 77). As Wood summarises; “.. Such bantering [literate arguments between Avitus and others] reveals a self-consciously literate society, whose literary standards affected its response to ceremonies of dedication and

preconditioned its appreciation of architecture, which ought ideally to be as complex and precious as the literary style used to describe it.” (*ibid.*, 76)

These 6th century Gaulish concerns can be paralleled in Anglo-Saxon England in the 7th century when we look at Aldhelm’s church dedications (*Carmina Ecclesiastica*, trans. Lapidge 1985, 46-60). This collection of church dedications conform to the thematic concerns outlined by Wood. Furthermore, they are liberally sprinkled with quotations and references to Scripture, the patristic authors, the Christian poets, a few pagan authors, and historical detail (*ibid.*, and *notes*, 232-42). Aldhelm’s writing contains the same assumptions about the audience for church dedications as Avitus’: that the smaller audience contains a core of a literate culture which will understand and appreciate the theological dispositions, literary references and the self-consciousness of the dedications. The descriptions of the architecture of Ripon and Hexham in the *VW* (XVII, XXII) are firmly within this tradition of dedications. Furthermore, the description of Ripon is itself a small allegoric homily on the Church as the Virgin Bride. It must be remembered, however, that this literary tradition is not solely aimed at a small elite - the purpose is ultimately one of pastoral care where an exposition on the glory of God, be it manifest in the textual culture or material culture is the responsibility of a few who teach and guide those within the Christian faith. Therefore the literate context will have an effect at some level, especially as manifest in the architecture, upon the larger societal groups of Christians. Finally, these works were outwardly justified by being aimed at the most discriminating ultimate authority, God - in the glorification and exaltation of the heavenly kingdom here on earth.

evaluation

This investigation has been subdivided into two parts. The first, centred around an exploration of analyses of the crypt and superstructure of St. Andrew's, Hexham (Ch. 3), has been an investigation into an assessment of some of the themes which can be addressed through an architectural analysis of the past. The second part (Ch. 4), centred around the reconstructions of the superstructure of the church of St. Andrew's, has been an investigation into some of the methodologies performed upon the architectural remains of churches. These two parts have been embedded within a two-fold theoretical framework. The first concern has been to re-evaluate our own modern paradigms which are applied at an unconscious level of definitions employed within analysis and interpretations. The second concern is to acknowledge that historical events are the result of practice and activity and therefore need to be firmly contextualised within the available evidence for the practices which they arose out of.

There are many issues which could have been addressed within an architectural analysis of the past, therefore it was important to focus upon one very specific event, the foundation and building of St. Andrew's Hexham in the 7th century, in order to allow the evidence to suggest fruitful avenues of inquiry which would have specific relevance rather than allowing a wider, unfocussed investigation of a general nature such as a survey of all Anglo-Saxon architecture. Architectural issues which have been touched upon in this investigation are: the liturgical requirements of spatial ordering; the cult of relics and its spatial implications; the power and politics within which a building is constructed; the concept of a church as a physical and symbolic form (the concept of 'basilica'); the use of selective transfer in the creation of a work of architecture; textual descriptions of architecture and architectural terminology; the need and transmission of practical skills; the textual transmission of knowledge; the process of design and an understanding of proportion; and the theological and educational necessity for specific kinds of knowledge which can be seen to be expressed in architectural form.

The constraints of this investigation have necessitated a restriction of the discussion of some of the specific avenues which have been explored under some of these topics to a brief survey, however, the purpose has been to gather together multiple strands of evidence. It has not been the intention to merely support one type of evidence with another, but instead to facilitate multiple approaches to different types of evidence in order that areas which may have gone unnoticed as minor or unsubstantiated take on a new light when evidence from several directions points to a deeper understanding. Conversely, by contextualising the evidence through the actions of one historic individual this investigation has widened out the scope of the topic to include the conversion period in Anglo-Saxon England and to situate it within the wider context of practices in Gaul and Rome, and to a lesser extent, Ireland.

I would now like to briefly review some of the results of this investigation. An assessment of crypt analyses based upon contextualising typological analogies led to a consideration of the function of crypts and a review of the assumption that crypts were for containing relics and burials. The first level of inquiry was into an understanding of the cult of relics as part of 7th century Anglo-Saxon burial practice, the process of informal canonisation and the attitude towards and treatment of primary and secondary relics in Anglo-Saxon England. Whilst these practices each bear relationships to continental practices, Anglo-Saxon practices differed in significant ways for the functional implications of the crypts: translation to the floor of the church of the primary relics appears to be *de rigueur* for canonisation, and, apparently as part of this process, there is no evidence for crypt burials; dismemberment was uncommon, and frowned upon, and therefore secondary relics of saints were the only way of distributing multiple relics; finally access to relics, whether primary or secondary, is necessary for the miraculous powers to manifest themselves. Therefore a strong relationship to a particular type of continental crypt would be highly unlikely as these developed out of different circumstances. Following from this, the second level of inquiry was into what other ways the crypt and its secondary relics would be integrated into 7th century practice which led to an investigation of the evidence for liturgical performance and the spatial implications of this. Although there is no

unequivocal evidence for specific liturgical processions at this time, combined manuscript evidence, the physical evidence for multiple churches and altars and the significance of Wilfrid having participated in Roman stational liturgy whilst at Rome, points towards the strong possibility of liturgical procession being part of the liturgical enactment. My reinterpretation of the crypt (cf. above III.2) is thus based upon a combined understanding of liturgical practice with the cult of relics which could result in what appears to be unique crypts (if we include Ripon) for their time.

As part of the discussion of the crypts, an understanding of the manner in which architectural form is reconfigured from multiple symbolic and physical references emphasised the importance of what Krautheimer has termed 'selective transfer'. Turning to the superstructure, selective transfer was discussed in conceptual as well as physical terms through a comparison of early medieval textual descriptions of architecture, where the accuracy of the details is not as important as the ability to elicit a conceptual whole. I again questioned the validity of formal assumptions which have been employed in various attempts to typologically locate and reconstruct the church of St. Andrew's, which, in the main, have been based upon the interpretation of the texts as describing 'basilica'. An evaluation of the archaeological evidence for basilicas in 7th century Anglo-Saxon England, the historical development of a structure which is associated with specific formal qualities from Roman models, and a consideration of the modern understanding of the term as opposed to the possible connotations of the term as used in the *HE* and the *VW*, exposed the implicit biasing towards a model of form which is a purely modern construct. The use of the term in the texts analysed shows the possibility that the connotative meaning of the word was more significant than any formal arrangement. The range of the connotations associated with 'basilica' could be: the role of Christ in Majesty - all things associated with Christ are therefore imperial; the possible association of foundations with churches referred to as basilicas with the adjective 'royal' and therefore referring to high-status sites and finally the possibility of papal or some other ecclesiastic purpose. The textual evidence combined with the

archaeological evidence therefore exposed a model of form which cannot be justifiably expected to be found in early Anglo-Saxon England.

The second part of this investigation developed an analysis of methodological investigations out of an understanding of the concept of design and the importance of an understanding of the concept of proportion within design. It showed that the most common approaches to the investigation of the proportions of architecture in Anglo-Saxon England were flawed because of a lack of an understanding of how the process of design was put into the practice of building; a lack of grounding in an understanding of the use and precision of different types of measurement, the methods of surveying and laying out a site on the ground and the tools available. My own methodological approach was a comparative analysis based upon geometrical knowledge as a traditional, practical skill with historical precedents, with an awareness of the issues of measurements, the type of tools required and the problems with the physical remains as we have them available to us. The analysis itself points towards the employment of a successive proportioning system based upon the geometry of the equilateral triangle to generate the design of the crypt at Hexham, the churches of Wearmouth and Jarrow, probably the crypt at Ripon and probably the church at Escomb. A reconstruction of Hexham was then put forth that used this system of proportion which coincided and aligned with the physical remains (those minimally determined to be pre-13th century). Whilst this reconstruction is not radically different than other reconstructions, such as Bailey's, put forth, the method used is more rigorous than a best-guess method based upon possible models of form.

An analysis and reconstruction of this type, however, is meaningless if it is not contextualised and discussed for possible significances. Any historical analysis should do more than just compile data for some database of historical 'facts', it should further our understanding of the potential processes which lay behind an event or creation of an object. Therefore, my next concern was, if this analysis appears to point towards a complex, sophisticated design which is one step beyond the application of traditional building practices, then where would this

knowledge have been acquired and why would it have been considered necessary. We had already seen that a Vitruvian architectural knowledge could have been available through a variety of sources by investigating the manuscript evidence. That a manuscript contains a certain type of knowledge and was available, however, does not necessarily imply that it was read, studied and understood. However, a survey of the types of education required in ecclesiastic circles in Rome, Gaul and Ireland and the display of the level of sophisticated literary culture as well as geometrical and architectural knowledge in various authors works, led to a fuller understanding of the subjects studied for the purposes of Scriptural enlightenment, where geometrical knowledge was part of the repertoire of knowledge.

The point of this investigation was not to prove an hypothesis or provide a survey and overview of evidence but to evaluate if an interdisciplinary architectural analysis would bear any fruit. The answer, I feel, is yes. Although there are several areas where detailed work needs to be undertaken, hopefully this approach has provided a deeper understanding of the practice and the 'history' of a particular moment. For example, an understanding of the building of a church in 7th century Northumbria as a product of and aimed at a sophisticated, literate culture rather than merely a building which serves a supposedly transparent function, requires a re-evaluation of the significance of some of the other churches known from this time, such as Escomb. There is no documentary evidence for the building of the church at Escomb and it is usually dismissed from serious historical consideration as a simple parish church. The lack of contextual evidence around the church is not a large argument in favour of a secondary parish status; the evidence is purely negative evidence and the actual areas excavated in the immediate environs were only two small trenches. All the evidence from this analysis points towards the possibility of Escomb being more than an insignificant parish church. To begin with, a stone church in the 7th century is symbolic in and of itself of a certain type of orthodoxy. Secondly, a church of this type is the product of a wealthy patron who employed someone skilled in the design of a church (seen from the preceding analysis), commissioned skilled labourers (the construction details are well done, window

glass fragments have been found paralleled with Jarrow/Wearmouth), imported stone from another site and decorated the church with fine sculpture (referred to as of the 'Hexham school' and also paralleled with Jarrow/Wearmouth), plastered the walls and embellished the interior with painting (which can still be seen on site) (cf. Pocock and Wheeler 1971 for further details). The similarity to Hexham, Wearmouth and Jarrow in detail and design therefore put Escomb into the same context as a product for a literate culture, albeit a small elite - further supplemented by the re-used Roman stone and the re-used Roman arch if we consider Wood's argument for the prestige of this type of evidence. Although the church is 'small' all of the above things mentioned are associated with wealthy monastic foundations, episcopal centres and the converted aristocratic society, not with the average lay person or general population.

The question of Escomb, and other avenues of investigation which could be followed through from this particular analysis are ones which would require further research than what has been put forth here. However, from this investigation, and hopefully investigations which would be undertaken in a similar vein, a platform has been erected upon which to base further research. It has been recognised by some authors that historical documents are not merely objective by-products but are part of a society's repertoire of expressions for reproducing and adapting the norms, structures, and power relations of the specific group of people who hold these skills. Analyses which recognise this as a precept whilst maintaining a rigorous interrogation of their data, allow us to view the possibilities of complex dynamics which formed what we have as our 'record' of the past (e.g. Goffart 1988a). In addition to the documents themselves, it is beginning to be recognised that the artefacts which are normally viewed separately as material objects, mute 'stones and bones', are part of the same repertoire of resources as the historical documents - part of the cultural system available to co-existing and competing groups and individuals acting as knowledgeable social actors (cf. Driscoll 1988b). These material objects are unique in terms of how they operate to each, differently, produce and reproduce society - documents are not churches, are not clothing, are not coins, but all participated within the same complex system of relationships. Modern

specialisms should be viewed as methodological tools for interrogating data, not as boundaries for separation - an art historian's contributions, an historian's, as well as an archaeologist's are all to be valued, however, these tools need to be based upon a re-thinking of the objective of study (a concrete object, an aesthetic, a structure or situated human praxis?) which informs the questions which are being asked and the interpretations put forth.

The first step towards a revision of the role of architectural studies, specifically church studies within an Early Medieval context, is to perform analyses which are based upon a radically different understanding of the role of church architecture - as a practice, not as a material object - within that particular society. Thus it can be seen that this particular artefact arises from activities and practices, at all levels of human interaction with their surroundings, be it pragmatic, political, or symbolic, which participate in reproducing and transforming that society. Once an analysis has been performed with this type of attitude (or 'gaze') towards the object of study, then future analysis can spring from this which further our understanding of the interrelationships between different groups using different cultural resources to reproduce and transform the system they were situated in - to further our understanding of 'history'.

Notes:

ⁱAn aside is necessary at this juncture regarding two commonly employed terms: *type* and *model*. I will be using the normative, common definitions of these terms, where *type* is a classificatory device for buildings according to nomenclature (social function), their architectural style (e.g. Romanesque, Baroque) or date of construction and a *model* is a general ideal schematic prototype. This is the reverse of the classical definitions in architecture applied by Quattromere de Quincy and occasionally found in current specialised literature (cf. Lawrence 1990 for a return to these usages). Since I am investigating a broad body of literature, I feel it would be confusing to uphold de Quincy's terminology.

ⁱⁱI realise that the approaches that I have outlined so far, and also forthwith, are not as clearly defined as I may seem to be describing, however, I would like to reiterate that I am not attempting to present strict disciplinary practice but to clarify the underlying paradigms.

ⁱⁱⁱFor a further discussion of how agency and performance can guide our analyses, cf. Barrett & Bartley, 1994.

^{iv}...omnen gloriam eius secularem et divitias necnon coenobiorum multitudinem et aedificiorum magnitudinem innumerumque exercitum sodalium regalibus vestimentis et armis ornatum.

^vquae magnalia ornamenta huius multiplicis domus de auro et argento lapidisbusque pretiosis et quomodo altaria purpura et serico induta decoravit

^{vi}Nam Inaegustaldesae, adepta regione a regina sancta Aethelthritae Deo dicata, domum Domino in honorem sancti. Andrea apostoli fabrefactam fundavit: cuius profunditatem in terra cum domibus mire politis lapidibus fundatam et super terram multiplicem domum columnis variis et porticibus multis suffultam mirabileque longitudine et altitudine murorum ornatam et liniarum variis anfractibus viarum, aliquando sursum, aliquando deorsum per cocleas circumductam, non est meae parvitatibus hoc sermone explicare, quod sanctus pontifex noster, a spiritu Dei doctus, opera facere excogitavit, neque enim ullam domum aliam citra Alpes montes talem aedificatam audivimus.

^{vii}Igitur profunditatem ipsius ecclesiae criptis et oratoriis subterraneis, et viarum anfractibus, inferius cum magna industria fundavit. Parietes autem quadratis, et variis, et bene politis columnis suffultos, et tribus tabulatis distinctos, immensae longitudinis et altitudines, erexit Ipsos etiam, et capitella columnarum quibus sustentantur, et arcum sanctuarii, hystoriis, et ymaginibus, et variis caelaturarum figuris ex lapide prominentibus, et picturarum, et colorum grata varietate mirabilique decore decoravit. Ipsum quoque corpus ecclesiae appetitiis et porticibus undique circumcinxit, quae, miro atque inexplicabili artificio, per parietes et cocleas inferius et superius distinxit, et deambulatoria, et varios viarum amfractus, modo sursum, modo deorsum, artificiosissime ita machinari fecit, ut innumera hominum multitudo ibi existere, et ipsum corpus ecclesiae circumdare possit, cum a nemine tamen infra in eum existentium videri queat. Oratoria quoque quam-plurima, superius et inferius, secretissima et pulcherrima, in ipsis porticibus cum maxima diligentia et cautela constituit, in quibus altaria in honore Beatae Dei genetricis semperque Virginis Mariae, et Sancti Michaelis Archanglei, Sanctique Johannis Baptistae, et Sanctorum Apostolorum, Martyrum, Confessorum, atque Virginum, cum eorum apparatibus, honestissime praeparari fecit. Unde etiam, usque hodie, quaedam illorum, ut turres et propugnacula, {supereminet Quas autem, et quorum Sanctorum reliquias, et quas et quam

religiosas personas, et quantam ministrorum copiam Deo devote servientium ibi congregaverit, et qua magnifice et religiose pretiosis thesaris librorum, vestimentorum, et quorumcumque utensilium, et caeterorum ornamentorum, usui sanctae ecclesiae congruentum, ipsam basilicam interius ornaverit, nostrae exiguitatis sermocinulus explicare non sufficit. } Atrium quoque templi magnae spissitudinis et fortitudinis muro circumvallavit. Praeterquam, in alveo lapideo aquaeductus, ad usus officinarum, per mediam villam decurrebat. Multiplicem autem et copiosissimam aedificiorum structuram, quae vastatio et vastitas delevit, supersedemus, cum tamen fundamenta plurima adhuc ibi passim reperiantur. Sicut enim antiquae Historiae et Cronica testantur, inter novem monasteria, quibus praedictus praesul pater et patronus, et inter omnia alia totius Angliae, artificiosa compositione, et eximia pulcritudine, hoc praecellebat. Denique, citra Alpes, nullum tale, tunc temporis, reperiri poterat.

viii”cripta, quam confessionem Romani vocant, subtus erat, ad instar confessionis sancti Petri fabricata” in Biddle 1989, p 7

ix Sed mihi placet ut, siue in Romana siue in Galliarum seu in qualibet ecclesia aliquid inuenisti, quod plus omnipotenti Deo possit placere, sollicite eligas, et in Anglorum ecclesia, quae adhuc ad fidem noua est, institutione praecipua, qua de multis ecclesiis colligere potuisti, infundas. Nom enim pro locis res, sed pro bonis rebus loca amanda sunt. Ex singulis ergo quibusque ecclesiis quae pia, quae religiosa, quae recta sunt elige, et haec quasi in fasciculum collecta apud Anglorum mentes in consuetudinem depone.

*for ease of reference I have provided a list of the various manuscripts cited by the authors referred to in the following discussion:

- a) ‘Gelasian Sacramentary’ - Vatican Library, Codex Vaticanus Reginensis 316; copied mid-8thc. at Chelles
- b) ‘Gregorian Sacramentary’ - *Hadrianum* Cambrai, Bibliotheque Municipale, MS 164; copy of 8thc book sent by Pope Hadrian to Charlemagne
- c) ‘Gallican Missal’ -
3 fragments in Regensburg, (Gamber no. 412; Berlin, Staatsbibliothek der Stiftung Preussischer Kulturbesitz, Lat. fo. 877 & Hauzenstein, Scholls, Graflich Walderdorffsche Bibliothek, s.n. and Regensburg, Bischoflichen Zentral bibliothek Clm 1) mid-8th c. Northumbrian
cf also the Bibbio Missal, the Stowe Missal, the Burghard Gospels, the Lindesfarne Gospels. etc

xi... in uenerationem illorum poneret altaria, distinctis porticibus in hoc ipsum intra muros eiusdem ecclesiae

xiiIn order to focus upon the relevant details of Wilfrid in the following sketch, I have not referred to secondary sources unless necessary. For relevant discussions of Wilfrid and the political, social and cultural contexts of the 7th century cf: Kirby 1974, Goffart 1988b, Roper 1974, Wormald 1982, Mayr-Harting, 1991

xiiiAlhfrith compelety disappears from records after 664, and even though the details and circumstances of what happened to him are not known, Bede record’s the rebellion against Oswiu of by ‘his own son Alhfrith ..’ *HE* III.14. This reference could be to another incident and Alhfrith could have been one of the many carried off by the plague. Whichever, it appears that Wilfrid’s strongest ally is no longer around to support him or he in all probability would have been mentioned again in either Bede or Stephanus’ accounts of Wilfrid’s controversies.

xivI used the translation of Bede from Colgrave, rather than the Shirley-Price translation used by Parsons. The Shirley-Price translation is condensed and with attempting a more modernised syntax, I feel leaves out the sense of the description.

xv*beati Laurentii matryris oratorium, quod in dormitorio | fratrum erat obuuium, intrans*

xviThe Latin text and the English translations for the following are both from Colgrave.

xvii Bede’s references to non-’typical’ basilican form churches is supported by Niermeyer’s findings for the medieval use of the word: 1. church building of lengthy shape consisting of three naves and an apsidal choir; 2. major church; 3. any church, even a small one; 4. martyr’s

memorial; 5. sepulchral chapel. Niermeyer, however, does not reference any usages particular to our purposes. (Niermeyer 1976, 87)

^{xviii}I would like to thank Robert Squair for passing me a copy of his paper 'Style and Materiality', (1992, unpublished work for his dissertation, University of Glasgow), a comprehensive critique of the use and implications of the concept of 'style' within archaeology.

^{xix}*Vitruvius: On Architecture*, edited from the Harleian MSS 2767 and translated, F. Granger 1928 (Vol 1.), 1934 (Vol. 2)

^{xx}I would like to re-emphasise that these terms I am employing are for convenient reference to geometric constructions - I am not implying that there would have been specific mathematical knowledge of the four surds and the Golden Section.

^{xxi}The base plans for both Wearmouth and Jarrow were kindly provided to me by Prof. Rosemary Cramp (1996). There were, however, some discrepancies, apparently through transcription error in the plans, therefore my plans are in appearance slightly different from those most recently published (1994). In order to correct these errors, for the dimensions of the plans I used those given to me by Prof. Cramp (pers comm. 1996); previously published dimensions listed in the text (Cramp 1994, 1976) and Taylor's site measurements (1965).

^{xxii}By this I mean the allowable margin of error between the measurable dimensions and the calculated dimensions.

^{xxiii}Escomb's base plan was measured on site and compared with the excavation (Pocock & Wheeler 1971)

^{xxiv}The plan for the crypt at Hexham was based upon Taylor 1978 (for scalability with Ripon) and compared to Hodges' plan of the crypt (1899) and Bailey's excavation (1978), drawings of which Prof. Bailey kindly provided me.

^{xxv}The plan of Ripon is from Taylor (1978)

^{xxvi}Prof. Bailey kindly provided me with Hodges' plan to reproduce for the analysis. The base plan and subsequent plans are following Bailey's drawing of the original plan (for scalability).

^{xxvii}*Et ut litteratus sit, peritus graphidos, eruditus geometria, histories complures noverit, philosophos diligenter audierit, musicam scierit, medicinae non sit ignarus, responsa iurisconsultorum noverit, astrologiam caelique rationes cognitatas habeat*

^{xxviii}*et omnem psalmorum seriem memorialiter et aliquantos libros didicit*

^{xxix}*uir in rebus ecclesiasticis sublimiter institutus seruabat*

^{xxx}*iuxta consuetudinem suam in orationibus et ieiuniis, in lectione et vigillis semper occupatum; Psalmos namque, quos prius secundum Hieronymi emendationem legerat, more Romanorum iuxta quintam editionem memorialiter transmetuit*

^{xxxi}*a quo quattuor euangleia Christi perfect didicit et paschalem rationem, ... et alias multas ecclesiasticae disciplinae regulas*

^{xxxii}*Nam et per tres annos simul cum eo mansit et a doctoribus valde eruditis multa didicit*

^{xxxiii}*...Ac patriam mox reversus, studiosius ea quae uidit ecclesiasticae uitae instituta, diligere, uenerari, et quibus praedicare non desiit*

^{xxxiv}Although Noble (1995) feels that this 'swamping' of the ecclesiastica by easterners is exaggerated (for Rome at least), work by scholars such as Lapidge has shown that even if not predominate in numbers, there was definitely a cultural influence to be felt in the 7th century in the West.



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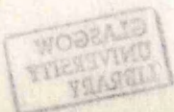
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Appendices

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Class I Northumbrian Church Structures

Corbridge

Northumberland
monastic church

7thc (786)

Symeon's Hist Reg

Taylor & Taylor (1965) (1978)

Nave, west porch, chancel. Survival of west porch with side-alternate quoins, fabric construction of very large, reused Roman stones; western doorway with "Escomb-fashion" jambs; small, round-headed, internally splayed window above arch - round-head in large rectangular re-used Roman stone. Tower arch all reused Roman through stones. Nave: north wall original, monolithic stone head windows above later arcade; original north wall lower courses and flooring; parts of original north and south walls in bond with east and west walls of nave. Chancel no longer surviving but had been recorded and can be reconstructed (minus east end). Historical reference: Symeon of Durham, Hist. Regni, statement of Eadwulf's consecration as Bishop of Nave taking place at monastery of Corbridge in 786.

Escomb

Co. Durham

late 7th/early 8th

Pocock and Wheeler 1968

Pocock and Wheeler (1971) Taylor & Taylor (1965) (1978)

Nave, chancel, west porch, north porch. No historical reference but stratigraphic and archaeologically dated to the late 7th, early 8th c. Reuses Roman stone and roughly dressed large square stones; massive side-alternate reused Roman arch. Paralleled with Jarrow. Archaeological excavations produced Merovingian and window glass fragments paralleled to Wearmouth Jarrow.

Appendix I

Class I Northumbrian Church Structures

Corbridge

Northumberland
monastic church

7thc (786)

Symeon's Hist Reg

Taylor & Taylor (1965) (1978)

Nave, west porch, chancel. Survival of west porch with side-alternate quoins, fabric construction of very large, reused Roman stones; western doorway with "Escomb fashion" jambs; small, round-headed, internally splayed window above arch - round-head in large rectangular re-used Roman stone. Tower arch: all reused Roman through stones. Nave: north wall original, monolithic stone head windows above later arcade; original north wall lower courses and flooring; parts of original north and south walls in bond with east and west walls of nave. Chancel no longer surviving but had been recorded and can be reconstructed (minus east end). Historical reference: Symeon of Durham, Hist. Regum, statement of Eadwulf's consecration as Bishop of Mayo taking place at monastery of Corbridge in 786.

Escomb

Co. Durham

late 7th/early 8th

Pocock and Wheeler 1968

Pocock and Wheeler (1971) Taylor & Taylor (1965) (1978)

Nave, chancel, west porch, north porch. No historical reference but structurally and archaeologically dated to the late 7th, early 8th c. Reused Roman stone and roughly dressed large square stones; massive side-alternate quoins; reconstructed Roman arch. Paralleled with Jarrow. Archaeological excavation produced Mid-Saxon sherds and window glass fragments paralleled at Wearmouth/Jarrow.

Heysham, St Patrick's Chapel, St Peter's Church

Lancashire

700-800

Potter 1977-78

Taylor & Taylor (1965) (1978); Potter & Andrews (1994)

St Patrick's: Single-cell church built upon earlier small stone building. Fabric: rubble masonry with side-alternate quoining; round-headed rebated doorway with three-stone lintel and "Escomb fashion" jambs. Dating: similarity with Wearmouth and Escomb; grave cross-shaft hollows analogous to Hexham finds; painted inscriptions; sculpture; radio-carbon of cemetery. Dating placed 2nd half of 8th c. for phase 2; smaller structure, seen also as a single cell chapel, earlier, poss. late 7th/early 8th.

St Peter's: Anglo-Saxon: Nave, south porticus, chancel. Fabric: same as above. Dating: same as above. However, no excavation possible so date of 8th/9th century given for church in association with Norse-type evidence, although earlier is possible.

Jarrow

Co Durham

St Paul

monastery

HE, Hist Abbots, Life of Ceolfrith (HAA)

Cramp 1959-67, +

Cramp (1969, 1976, 1994, *pers. com.* 1996); Taylor & Taylor (1965) (1978)

Two churches, east - west aligned. Eastern church: extant except for west wall, which was located archaeologically. Coursed sandstone construction with reused Roman; massive side-alternate quoins; single-splayed monolithic round heads; round-headed doorways with early jambs. Western church: nave, chancel, north and south porticus. Recovered archaeologically (demolished in 18th c). Also well-planned monastic buildings recovered to the south of the church which merit analysis at some other time. Historically very well attested by Bede in HE and HA, HAA. Category IV - associated monastic structures.

Nave, chancel, west porch. Historical reference is late 10th century *Historia de Sancto Cuthberto* in connection with S. Wearmouth castle given to St Cuthbert by Athelstan. Fabric: complete nave of roughly squared stones with much larger side-alternate quoins; round-headed single-splayed windows paralleled at Escomb. Excavation in 1913 revealed chancel and western portions (suggested as narthex or baptistry).

Staindrop

Kirk Hammerton

Yorkshire

Taylor & Taylor (1965) (1978)

Nave, chancel. Fabric: roughly dressed large blocks in rough courses with megalithic side-alternate quoins. Nave and chancel are possible to reconstruct because all the quoins have survived. Originally two cell without western annex: single plinth around entirety of chancel and nave, tower has double plinth and is not in bond. South doorway of nave: square jambs probably through stones. Small round-headed, internally splayed window in chancel. Date needs investigating.

St Peter

Lincoln, St Paul-in-the Bail

Lincolnshire

4-7th

HE

Jones & Gilmour, late 1970's

Gilmour (1979); Jones (1994); Taylor & Taylor (1965) (1978)

Attempts to tie in with historical reference to conversion of Edwin by Paulinus - exact location of this site still debatable. Archaeologically recovered two-cell church with apsidal east end centred over a single burial. Timber ('most probably') structure (trench construction) with chancel screen overlaying late-Roman building within the Roman forum of Lincoln. Dating to 7th.c is through stratigraphical relation; stylistic dating of hanging bowl found in grave to 7th century; and historical association with Paulinus' convert Blaecca's church (628/629) (HE II.xvi). Radio-carbon seem to indicate 5/6th c., although wider range possible.

Seaham

Co Durham

650-700

Taylor & Taylor (1965) (1978)

Nave, chancel, west porch. Historical reference is late: 10th century Historia de Sancto Cuthberto in connection with S Wearmouth estates given to St Cuthbert by Athelstan. Fabric: complete nave of roughly squared stones with much larger side alternate quoins; round-headed single-splayed windows paralleled at Escomb. Excavation in 1913 revealed chancel and western porticus (suggested as narthex or baptistry).

Staindrop

Co Durham

650-800

Taylor & Taylor (1965) (1978)

Nave, chancel. Nave: walls above later arcade; round-headed, single splayed windows; south window monolithic head combined with well-dressed and joined voussoirs. Paralleled with remains at Wearmouth for early date. Chancel remains at nave interface with stubs of north and south wall bonded. Eastern wall conjectural.

Wearmouth

Co Durham

St Peter

monastery

674

HE, Hist Abbots, HAA, Bede's Cuthbert

Cramp 1959-67, +

Taylor & Taylor (1965) (1978); Cramp (1969, 1976, 1994, *pers. com.* 1996);

Nave, west porch, annex south of west porch, evidence of same again to north, wall of north porticus. Wearmouth is difficult in terms of the excavation and examination of the church. The standing fabric of the lower west porch and the west wall of the nave have been thoroughly examined and recorded and determined as the original church structure. From the evidence of the west wall the width of the nave is indicated. The eastern terminus is the difficulty: the 1866 excavation recorded a clearly Anglo-Saxon transverse foundation, however there are various interpretation based upon these accounts. Cramp* feels that this is the east wall of St Peter's, however it seems to have been in bond with the remains of the eastern chancel (presumably the line of the current chancel) which she interprets as the location of the church of St Mary's, similar to the arrangement at Jarrow. A further complexity arises from the position of the wall of the northern porticus which was excavated: north-south with the remains of the westward turning. The position of this wall is problematic if the transverse wall is considered the west wall of St Peter's or the east wall of St Mary's - it would overlap the two churches. If the foundation of 1866 was the transverse chancel wall of St Peter's, the chancel itself following the lines of the present chancel, with St Mary's being a small chapel aligned to the east (cf. Jarrow) about the size of Hexham. This would enable the position of the wall of the northern porticus to fit in with some sort of logic, it would overlap the nave and chancel of St Peter's the way the northern porch at Escomb does.

*Cramp 1994 and *pers com* 1996 no longer feels that the remains recorded in 1866 give evidence for a transverse wall (e.g. a terminus) in that position and therefore does not indicate a division between the church and the eastern porticus or chapel.

Whithorn

Martin
700-850
HE III.iv, V.xxiii
Hill
Hill (1991), (1992)

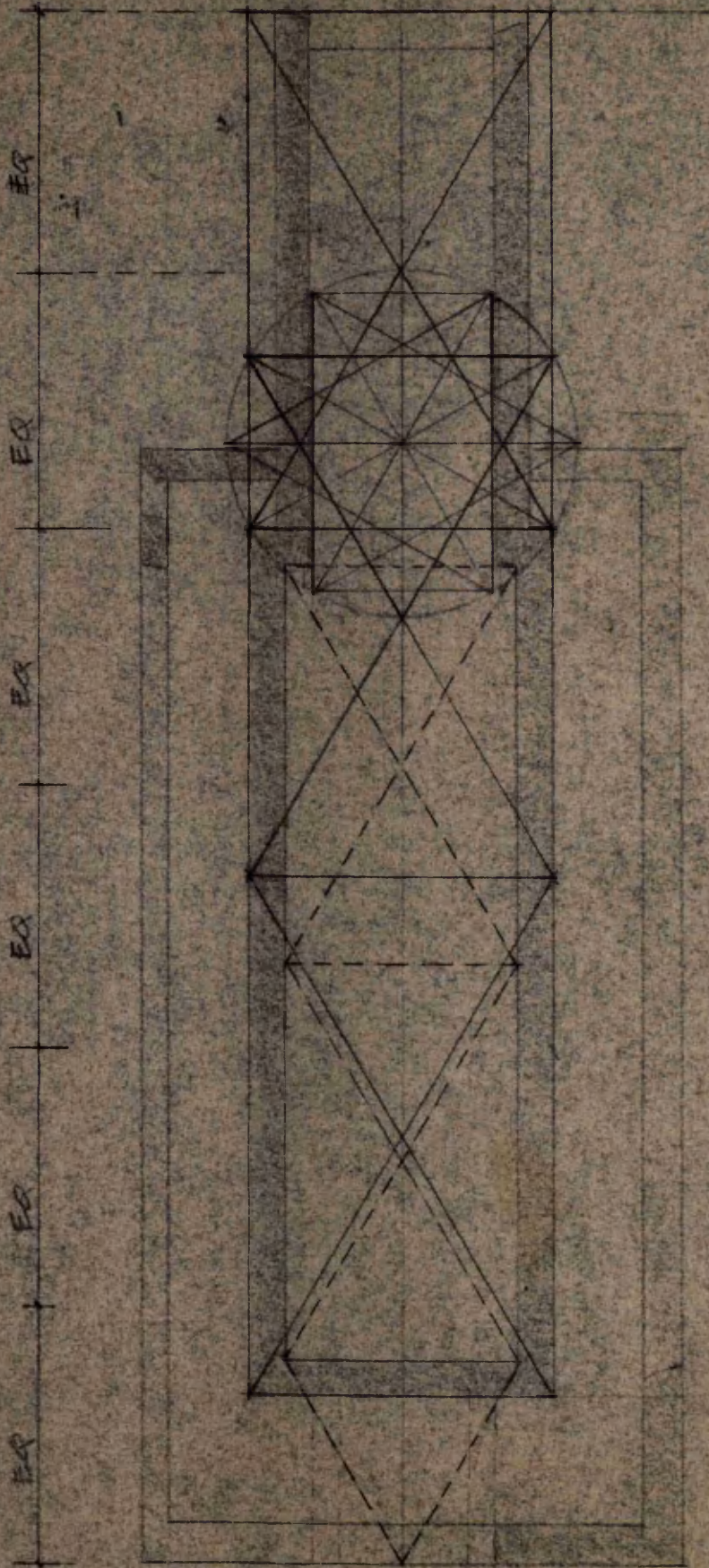
Complete plans of aligned timber churches with two phases. The first phase involved three churches, the second phase involved the joining of the west church and the middle resultant in a configuration such as Jarrow and Hexham, and that proposed for Wearmouth. This occurred during the Northumbrian phase of Whithorn 700 - 850. Dating is based upon archaeological evidence, including coinage and stratigraphic relationships, and identification is based upon stratigraphic relation to underlying shrine. Personal communication with Peter Hill has indicated the completeness of the plans, with very detailed information. Category IV - timber structures with Northumbrian phase

Yeavinger (Ad-Gefrin)

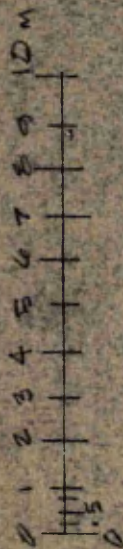
Northumberland
-641
HE 11.14
Hope-Taylor 1976
Hope-Taylor (1977)

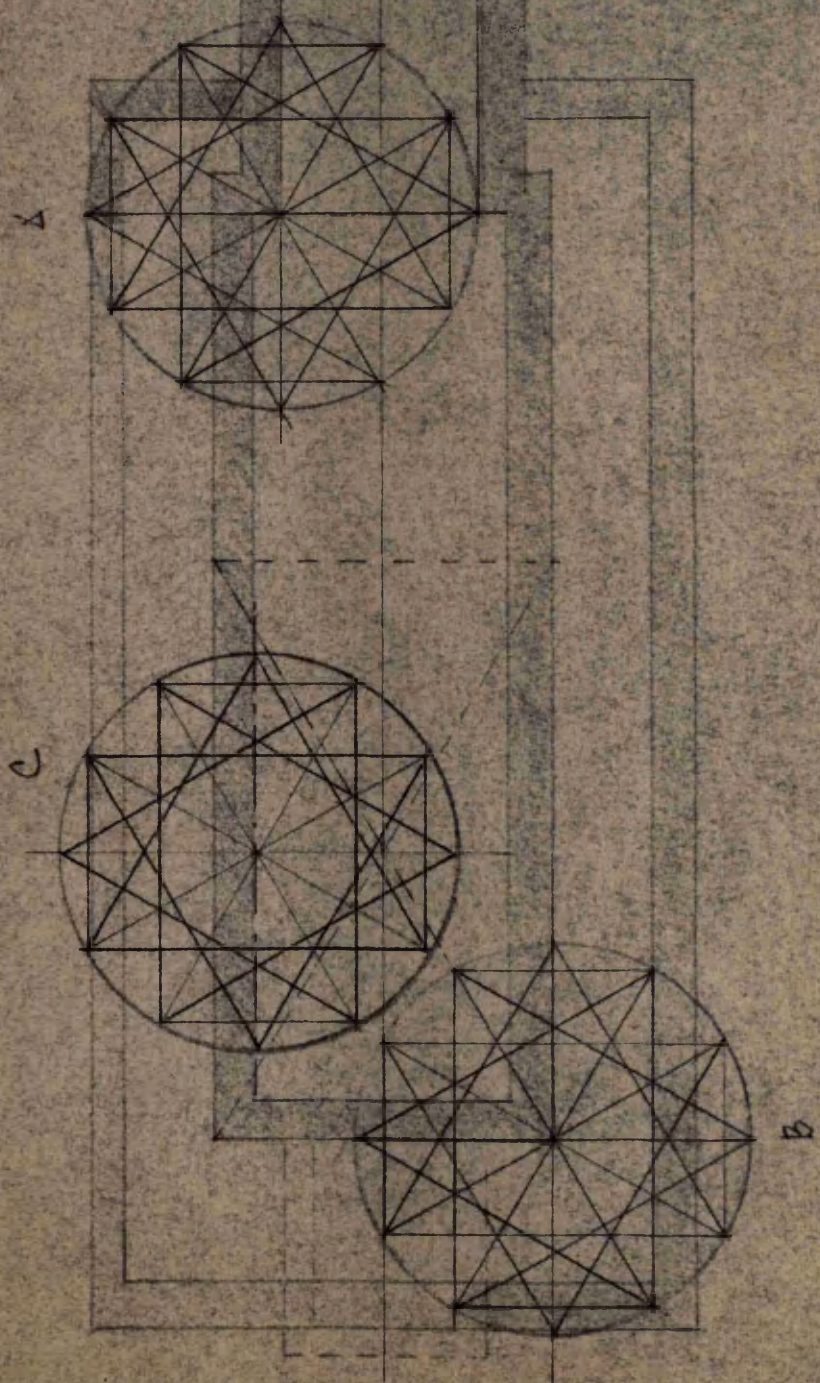
Putative site of timber church with accompanying graveyard. Identification as church because of association with cemetery. Two phase structure: 1st phase - rectilinear structure with east west orientation and opposing doors north-south and east-west. Constructed cutting through earlier "string graves" but clearly respecting what appears to be the three foci of the string graves (especially two of them), inhumations within and around this structure in a delimited area during this phase. Phase two after apparent burning with western annex added, western door off centre similar to chapel/porticus. Intensive inhumation in and around this structure, including deliberately packed sideways against the foundations. Simply put - weird. Does not resemble anything I would associate with the definition "church" - in a liturgical sense of the word; the density of the non-coffined burials is phenomenal. The deposition appears very strongly to me to resemble what would be found in a mausoleum type situation - it appears that the bodies were just piled one on the other inside the structure (which encompasses an area where two of the strings converge) and externally, over and around other of the 'important' early string graves. It would appear that this structure can be considered 'religious' but I would think of it more in terms of an ancestral burial chapel/mausoleum, with the possibility of the western annex functioning as a shrine porch because of its similarity to the porticus/chapels where an altar or shrine was placed along one wall. This structure is identified as mid-7th century with a fairly short life span in which to account for the accumulation of burials. Frequent statements of this structure being 'certainly' a Christian church are therefore problematic.

VI. Appendix II. Analytical Drawings Reproduced in Text

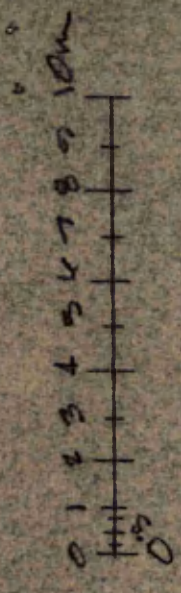


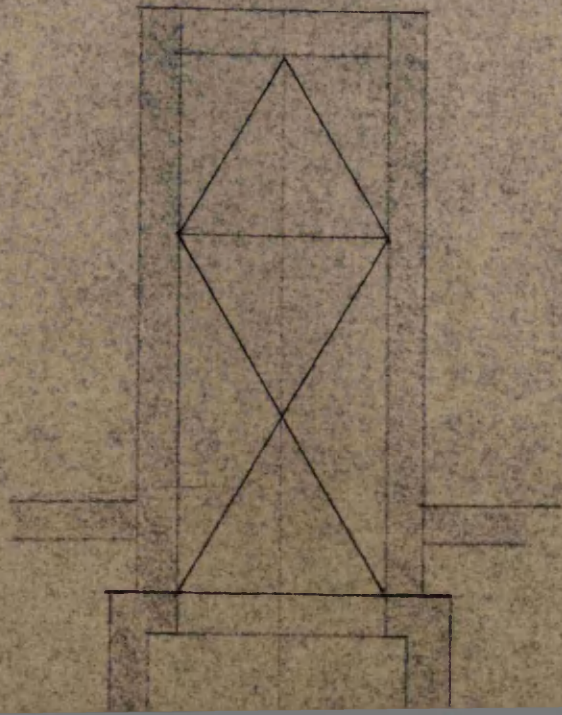
WEARPOUTH-EQUIL. TRIANGLE





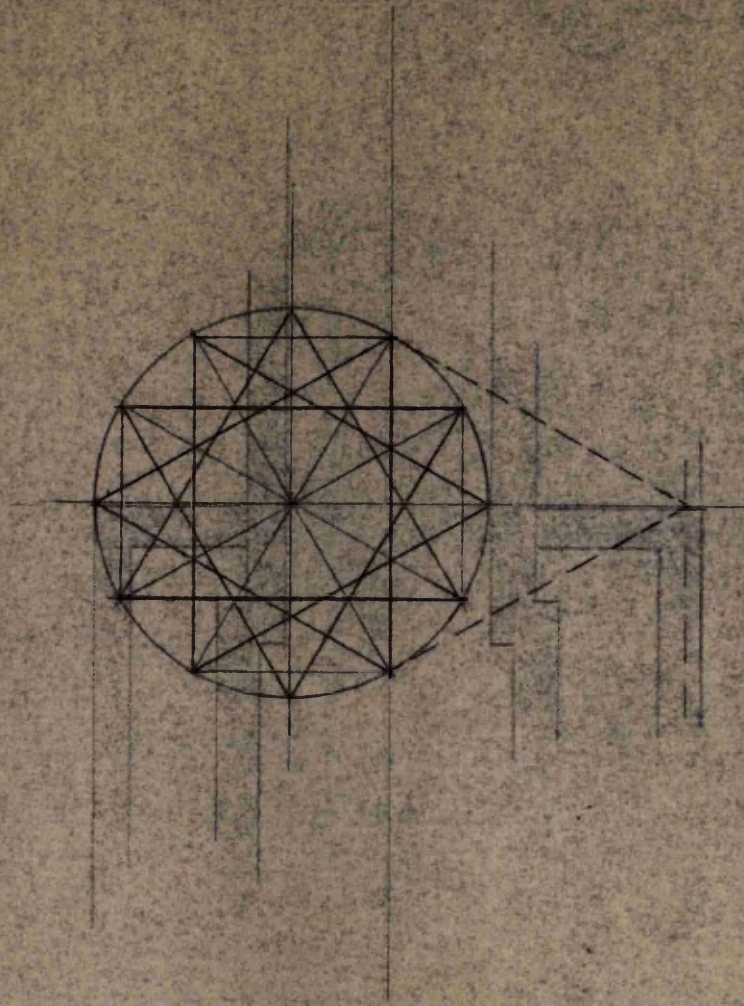
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ADULTS



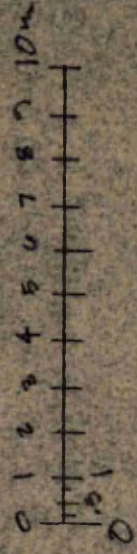


A. CHANCEL

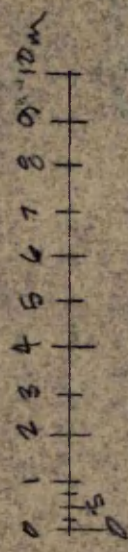
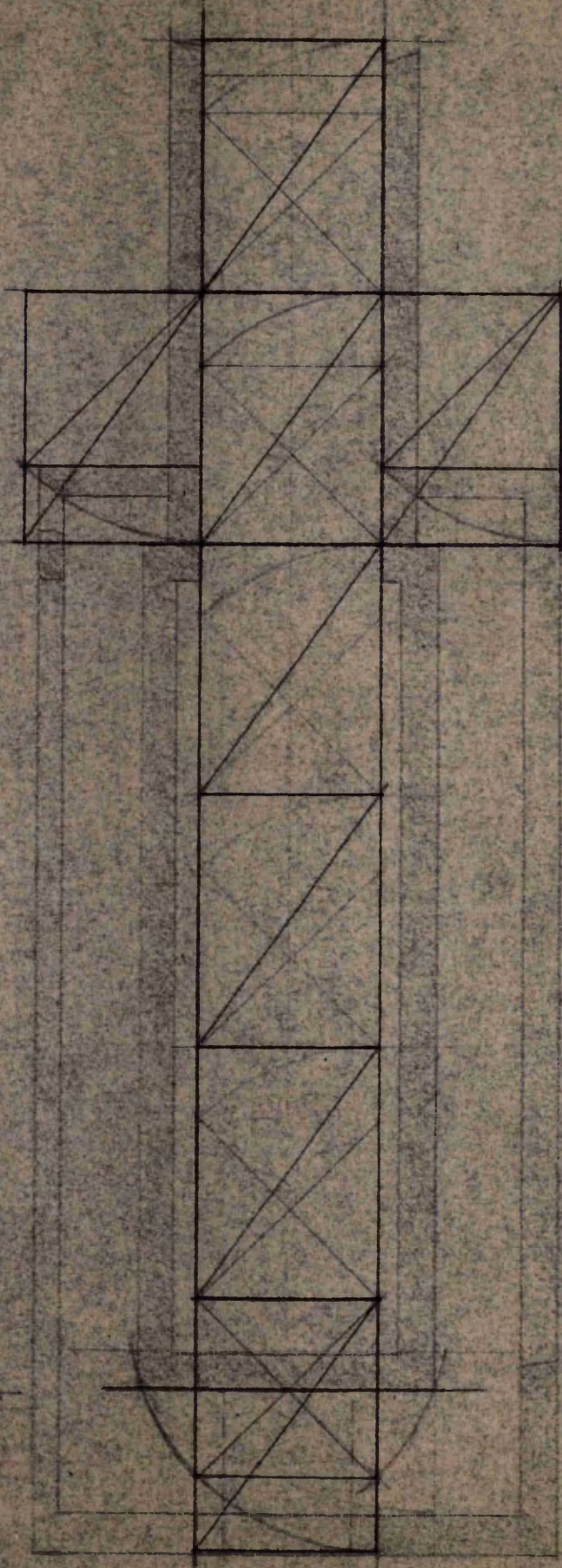
WEAKMOUTH-ADJUNCTS



BRITISH



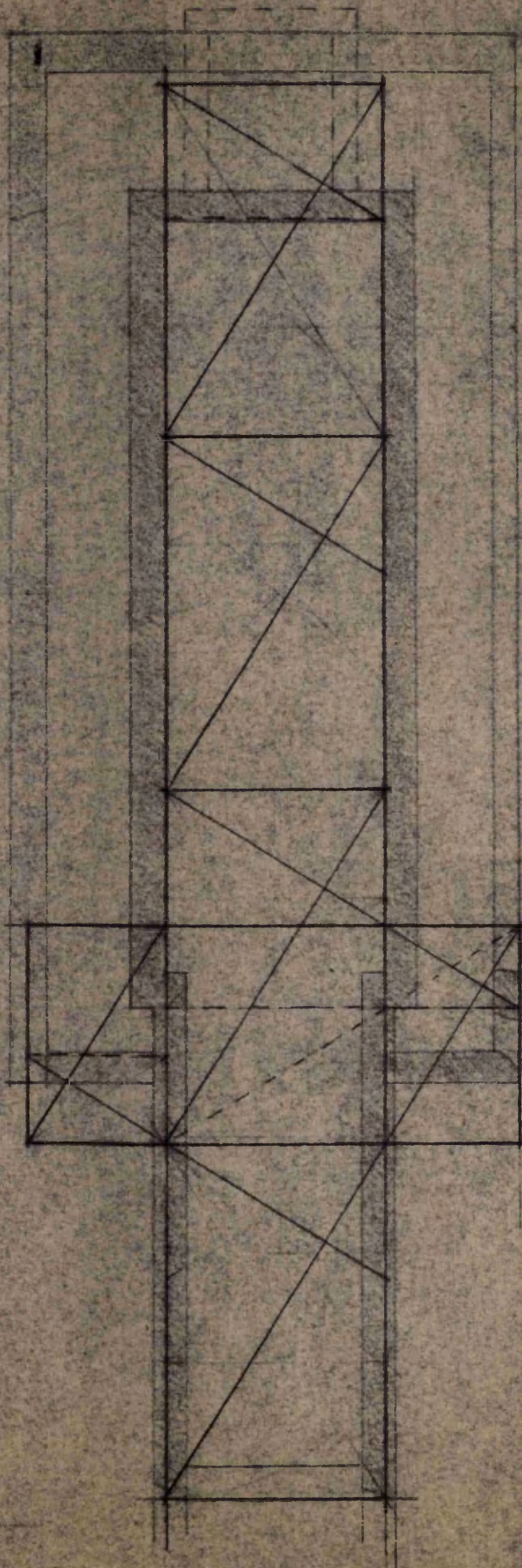
WEARMOUTH - 12 RECTANGLE



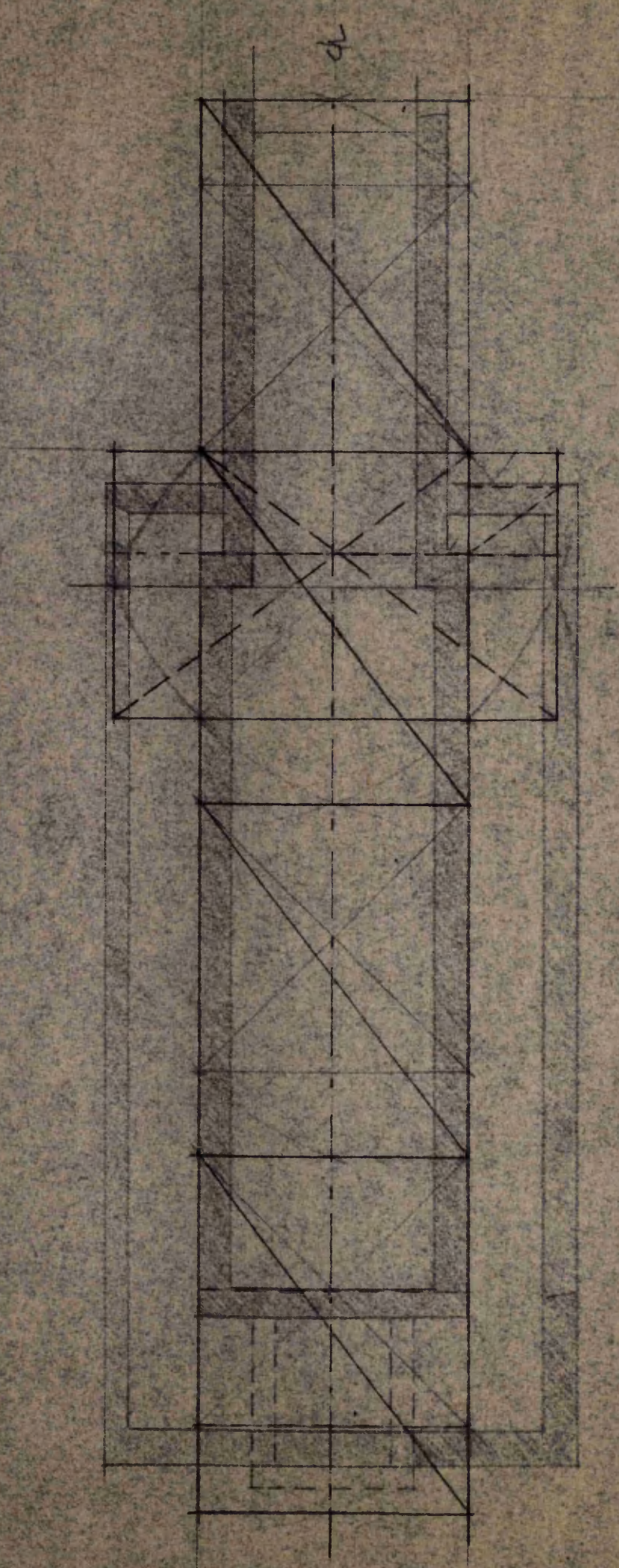
Interior structure

Interior structure

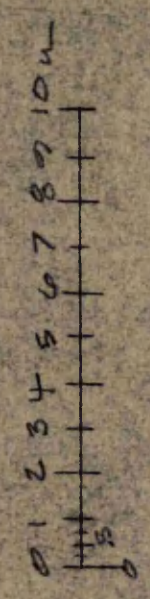
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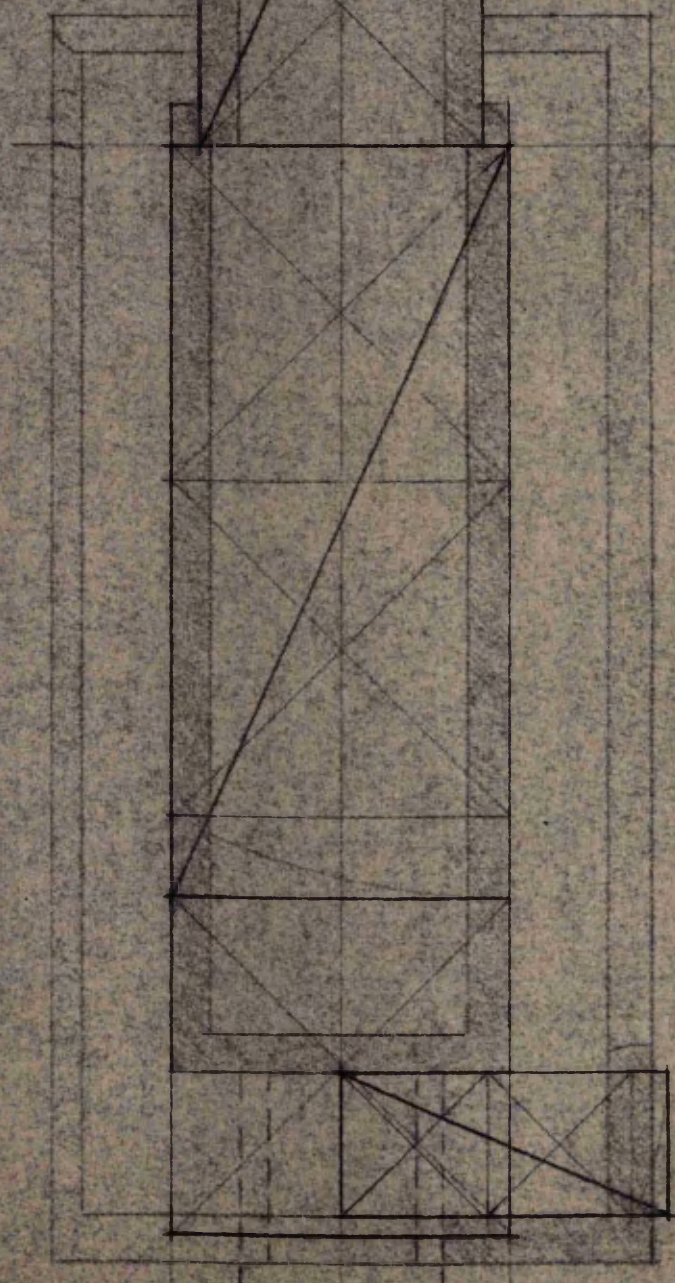


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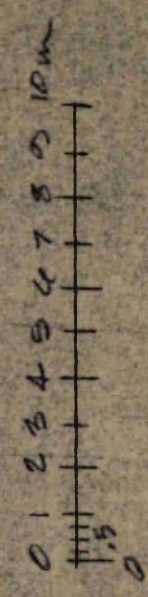


WEARMOUTH - 'SACKED TRIANGLE' (5-4-5)

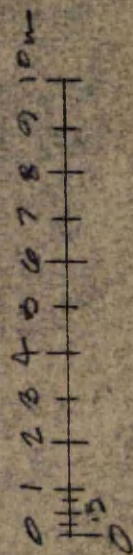




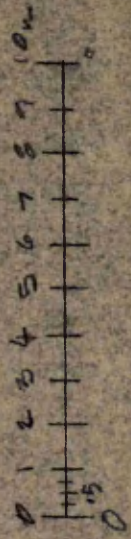
WELLS - RECTANGLE



WEARMOUTH-MODULAR
PLATE - (INT.)



HEARMOUTH-MODULAR-4.65 (V₃₅)

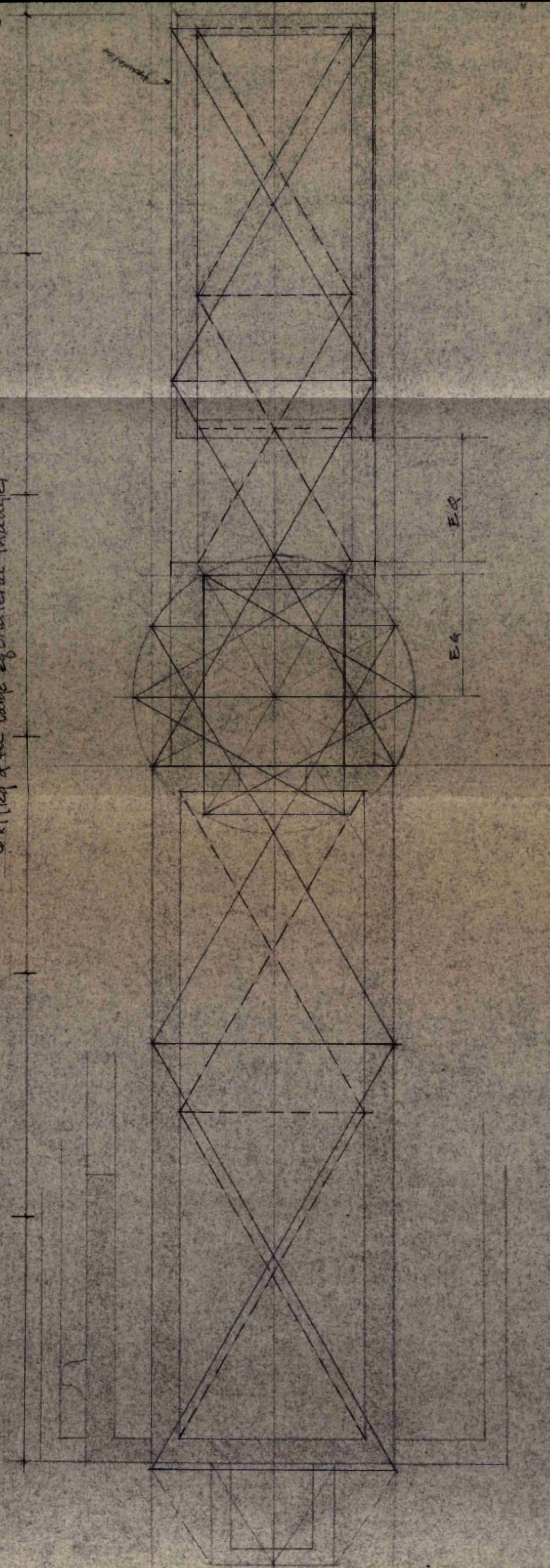


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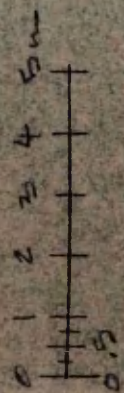
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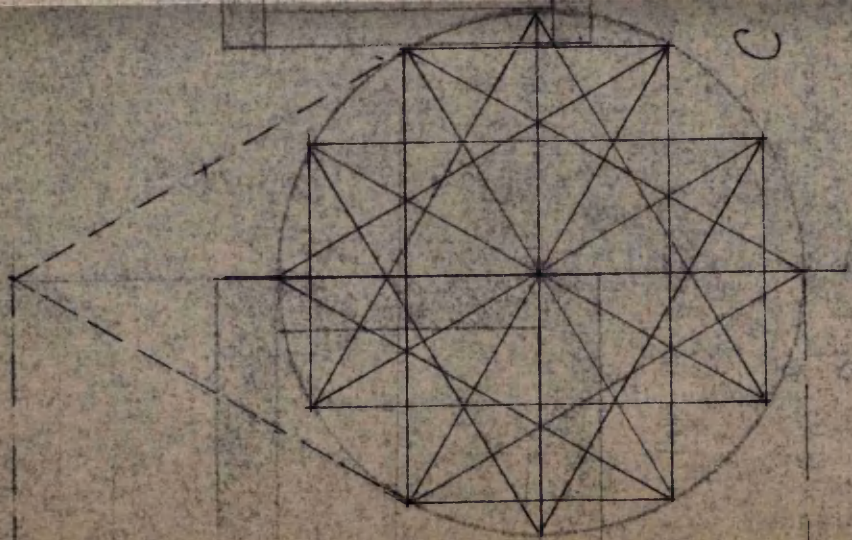
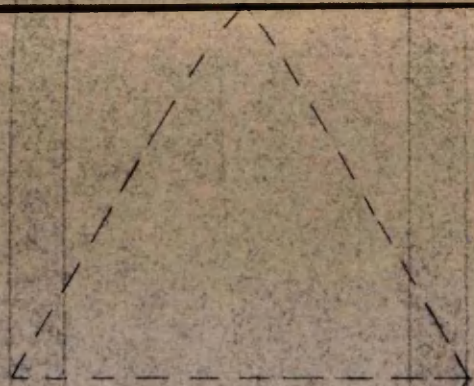
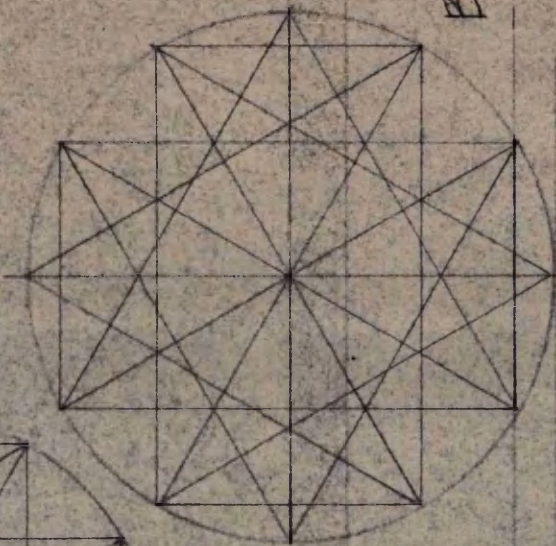
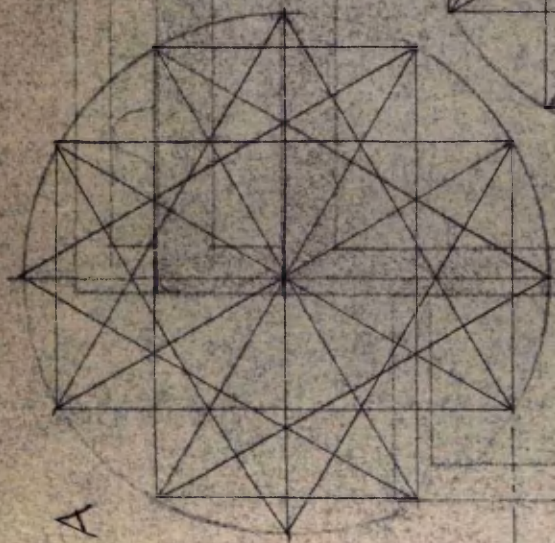
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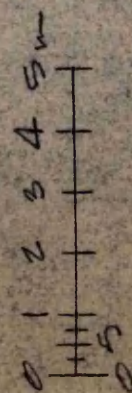


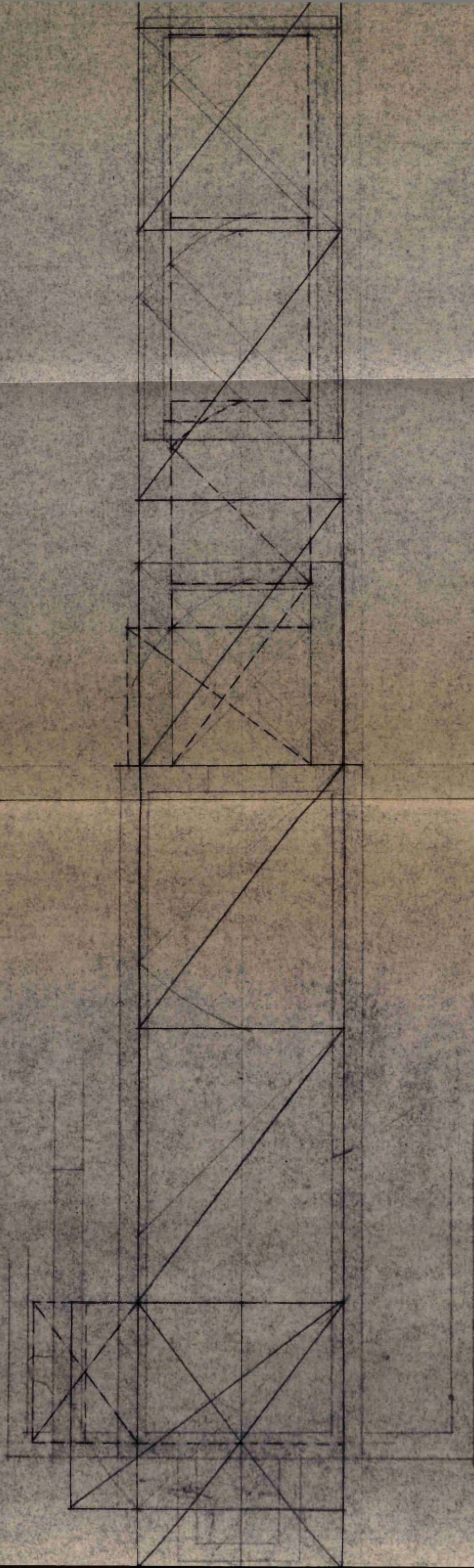
JARROW-EALL. RANGLE



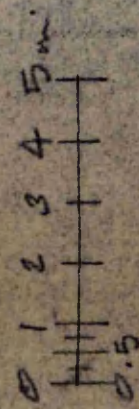


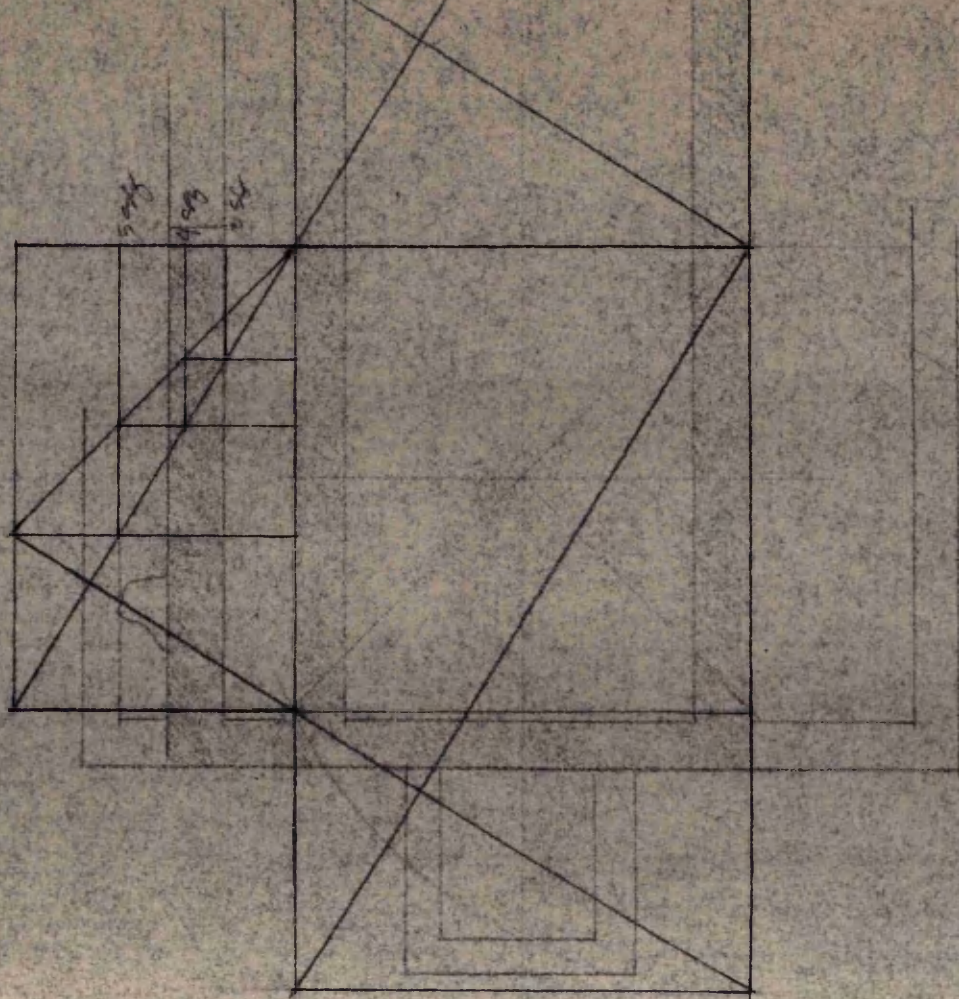
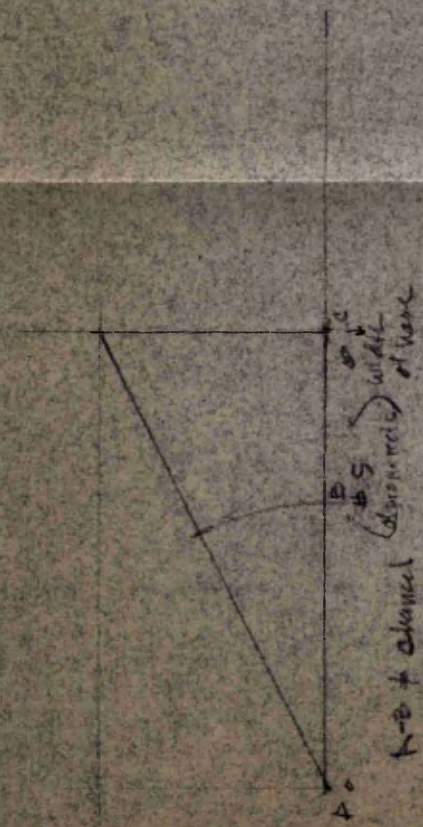
JARROW-EQUIL. TRIANGLE-ADJUNCTS





JARROW - 'SACRED TRIANGLE'



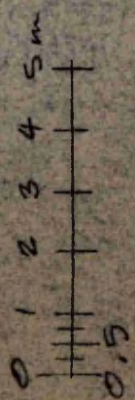


Proportional segments

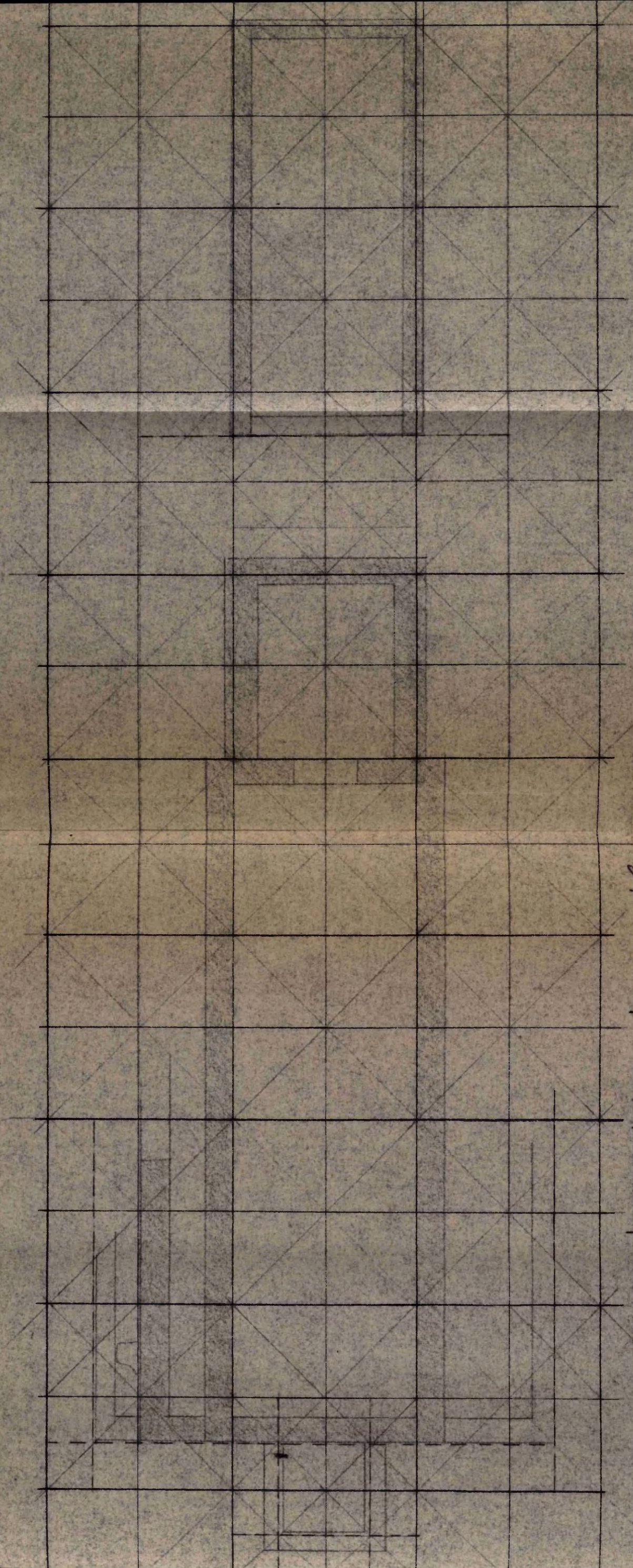
L

T = 1/2 of L

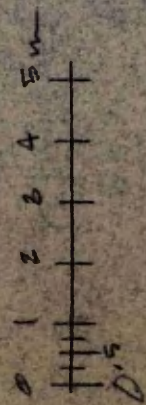
ARROW-GOLDEN SECTION RECTANGLE



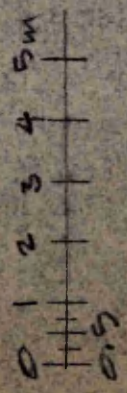
proportion: the proportions of the half-models are the same as the proportions of the whole model. → no proportional relation of width to length to width.

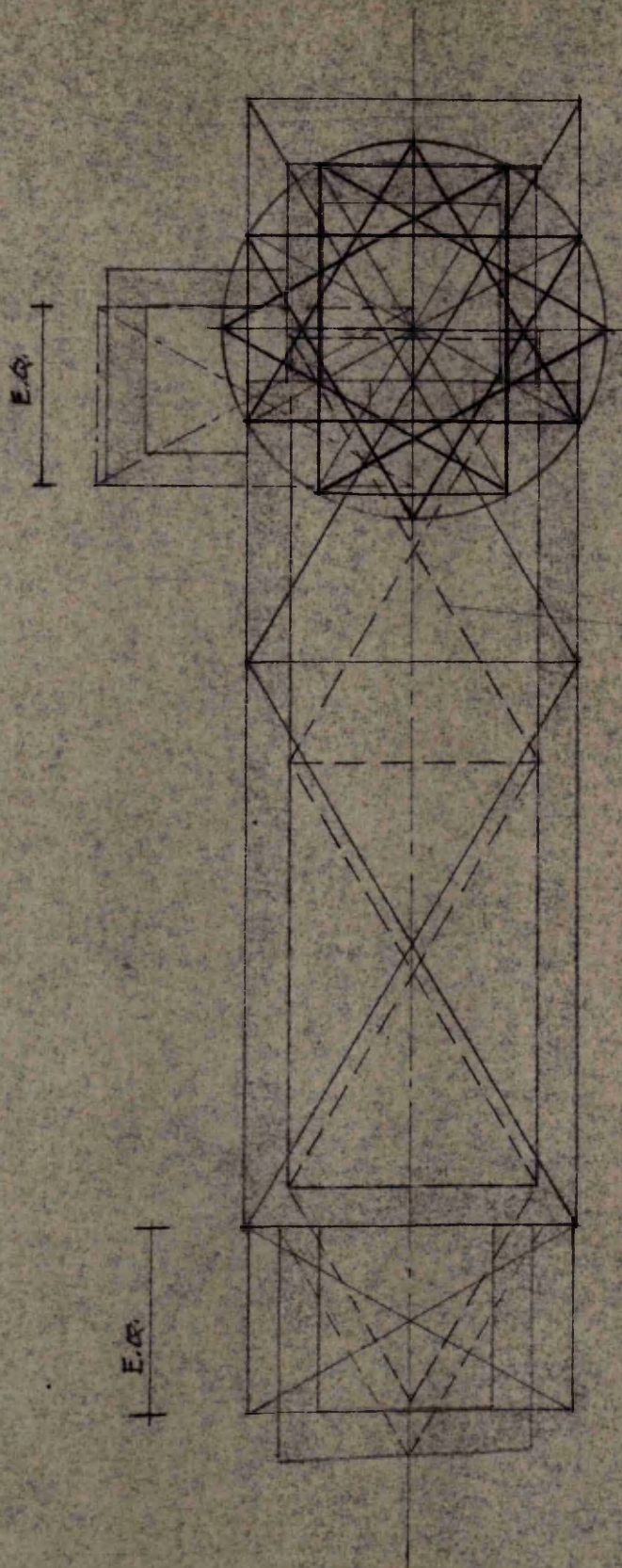


JAREDL-MODULAR-NAVE-INT.

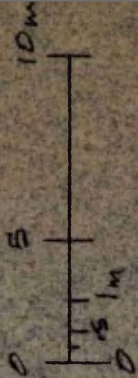


JARROW-MODULAR - 4.65 (1/3)

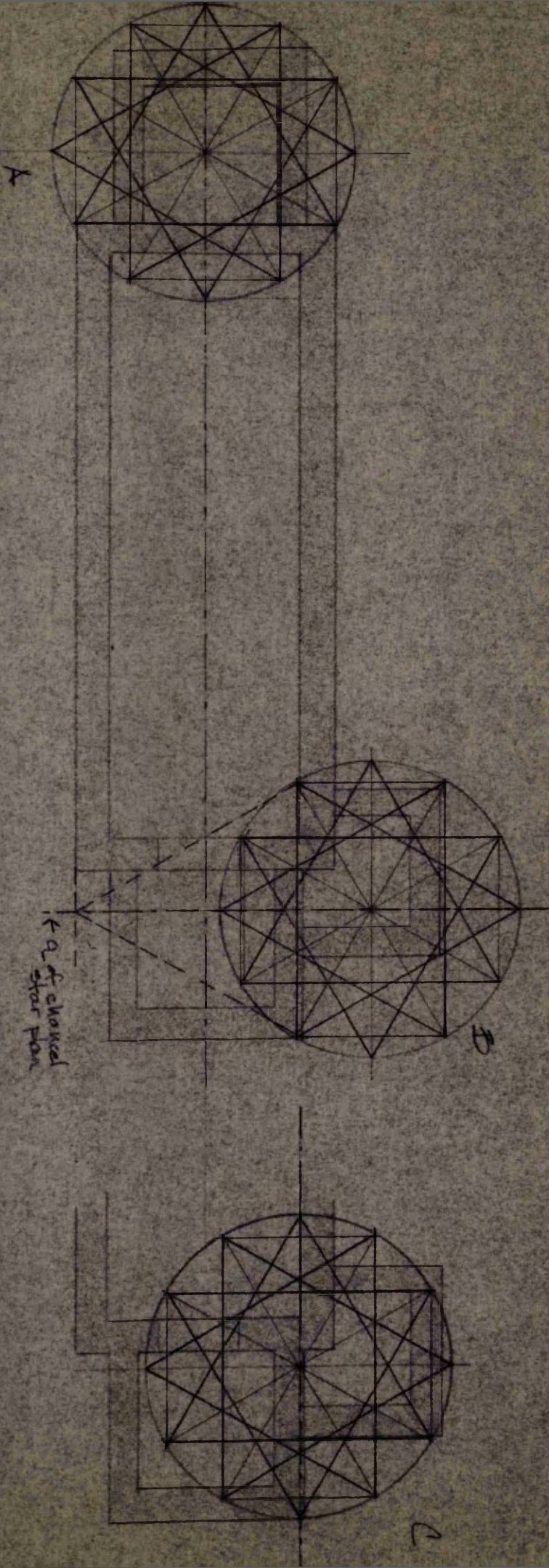




ESCOMP-EQUI TRAILGLES

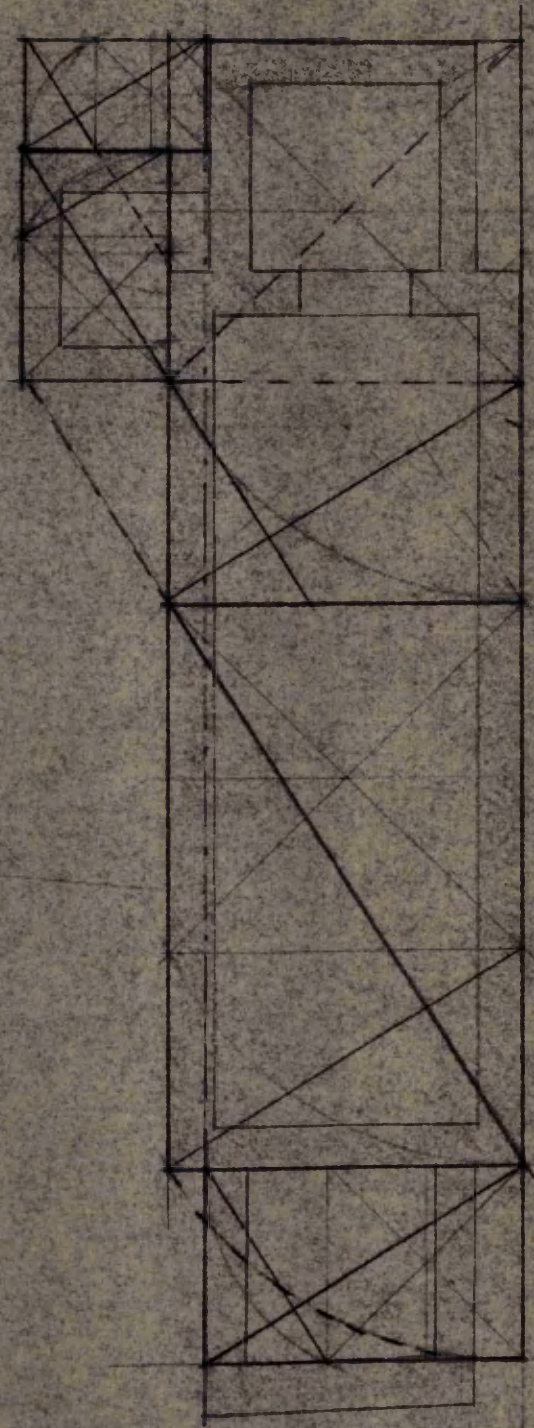


ESOMBS-ROLL TRAILGLES- ADDITIONS

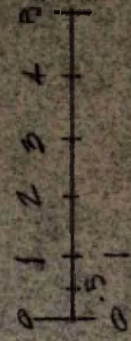


0
0.5
1
2
3
4
5

1.125

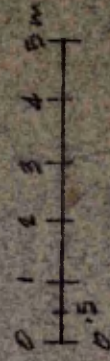


ESLOMB - GOLDEN SECTION RECTANGLES



1.125

ESCOMPS - 4.65 MODULE (1/3)

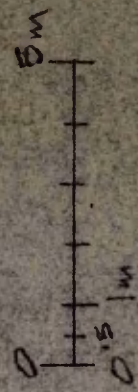
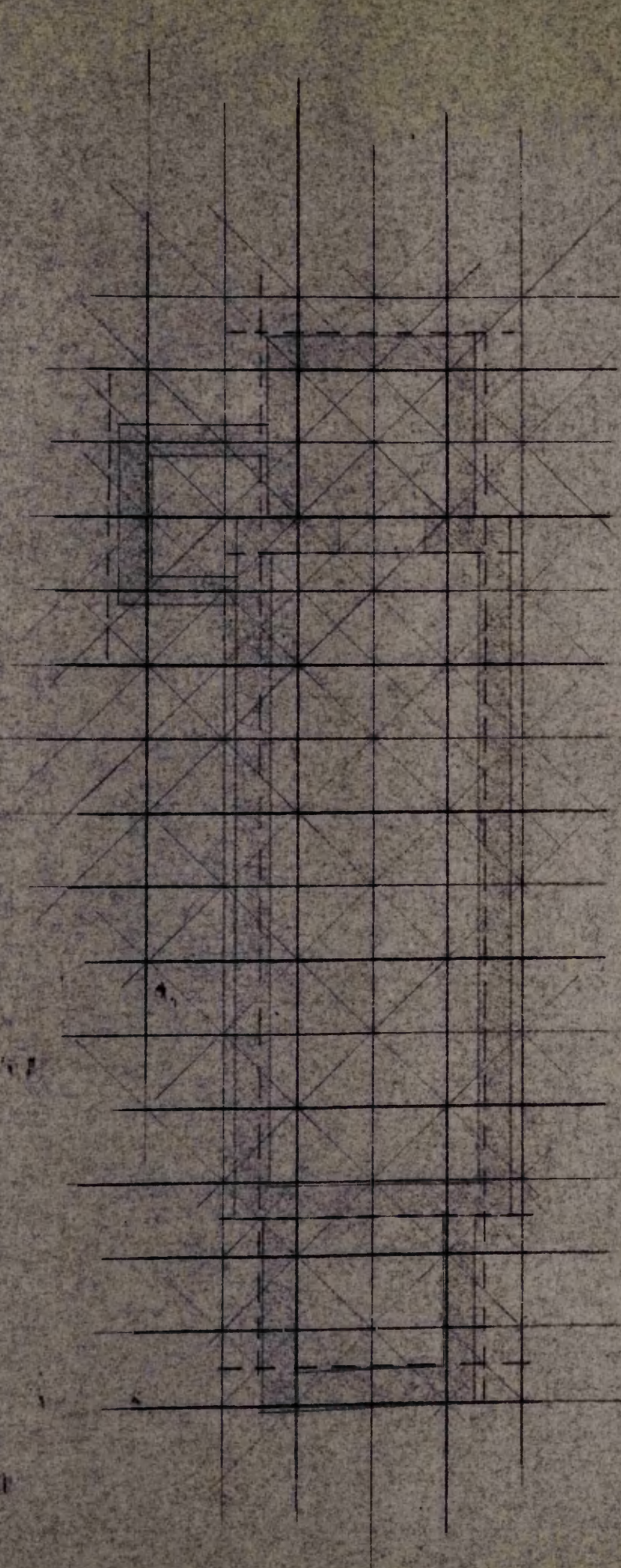


1:125

$$\frac{1/4}{1/3}$$

$$4.65 \div 3 = 1.55 \times 2 = 3.1$$

EXCOMB-MODULAR-CHANCELLY.

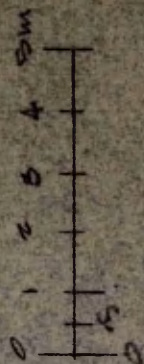


Not a proportional side to
 (a) is not proportional
 of small

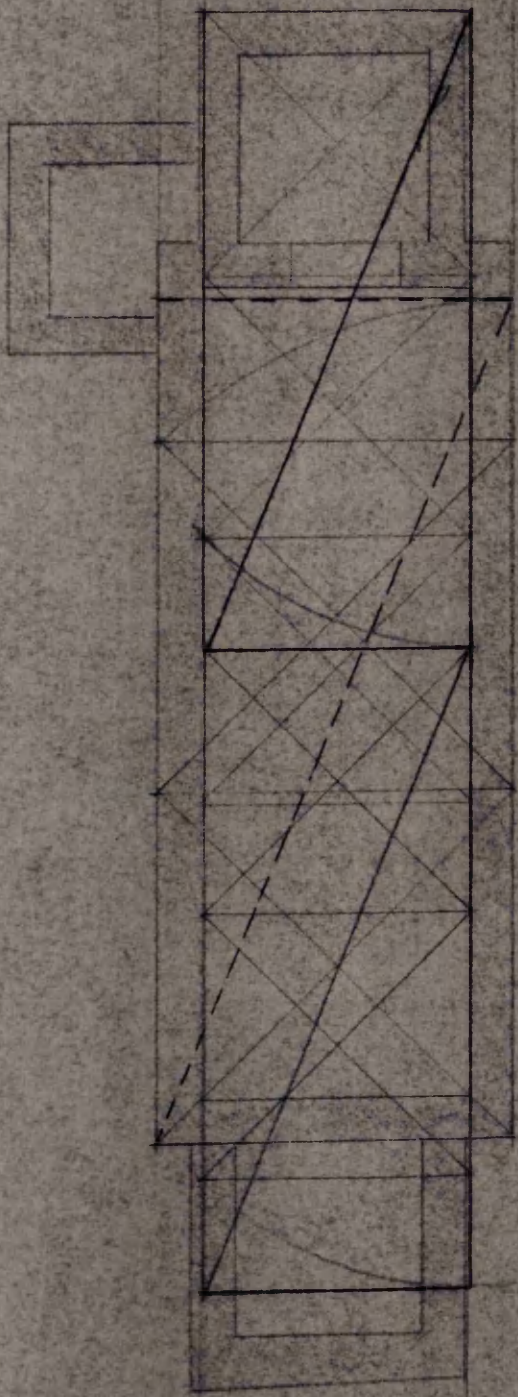


also not
 proportional

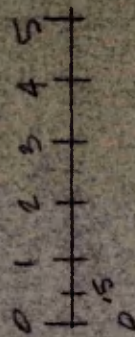
ESCOMB - "SACRED TRIANGLE"



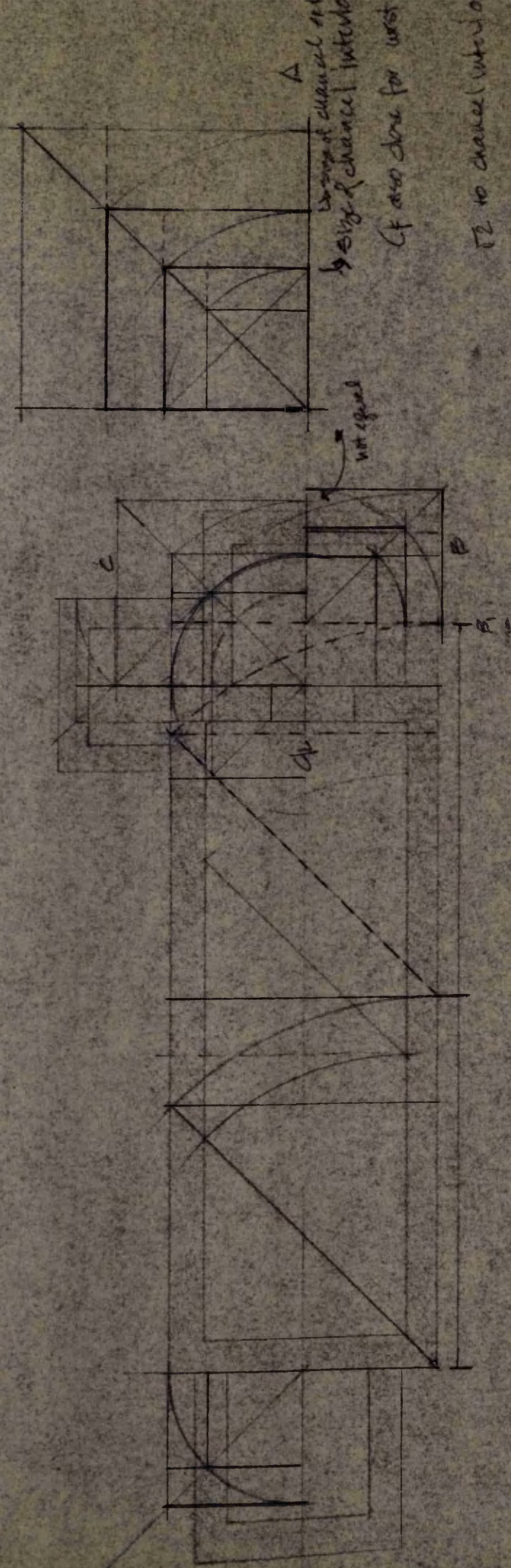
1:125



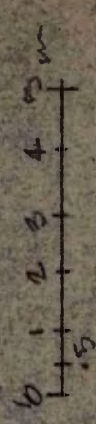
ESCALERA - 15 (4:00)



1:25



EXAMPS - 12



Do everything that really works is mathematical proportion of channel width to channel velocity (Colombo the area)

but can't be that out of mathematically but \square - no curve had some things

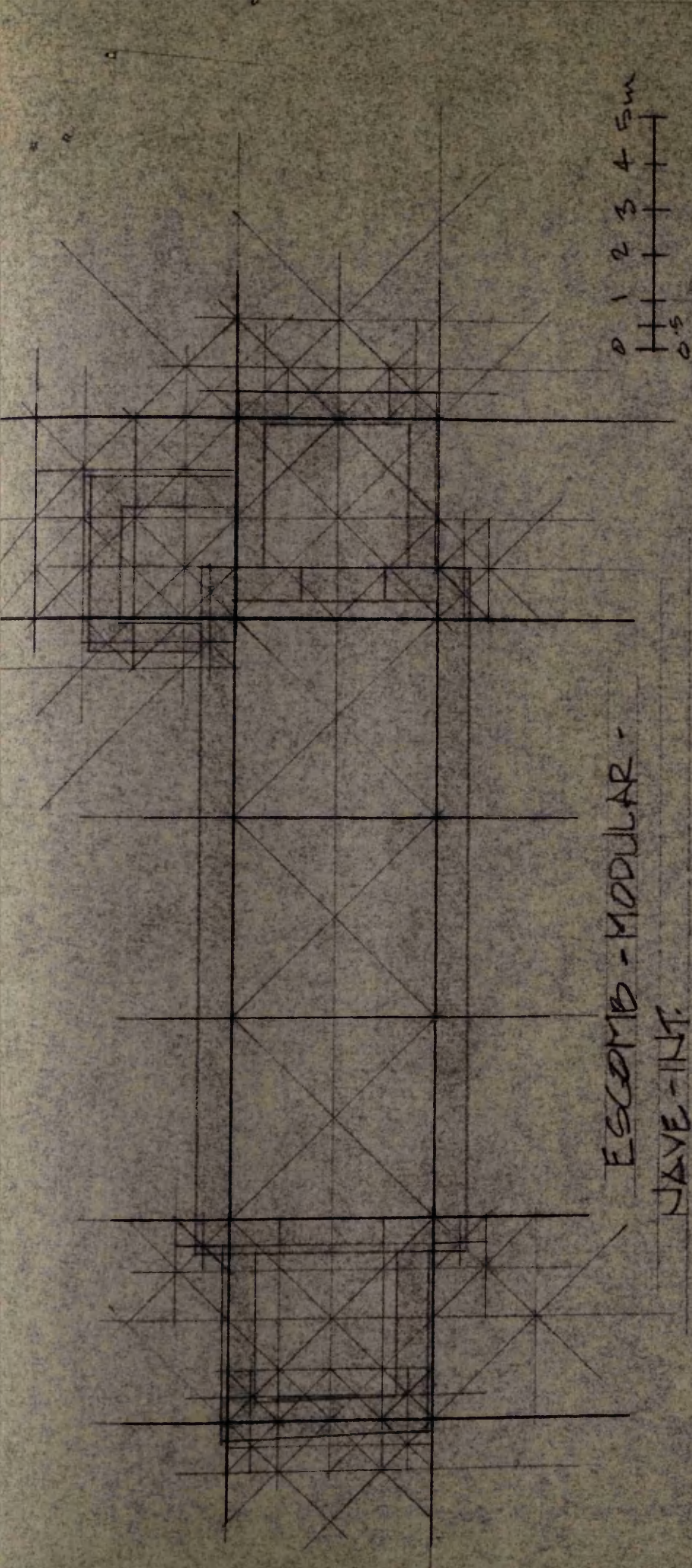
B. Levees can get from out of B. some centation to determine position of south wall? -

not really - has no relation ship of smaller end \square signs to large & does not give any reason for a-w length

C. Also - some bits look like they might work, but for the forces - doesn't have any relationship to anything else

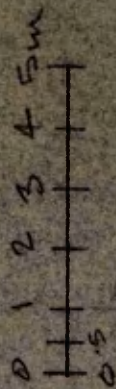
size of channel at
size of channel intervals
(if also done for west
12 to channel intervals)

10th E
10th E
but

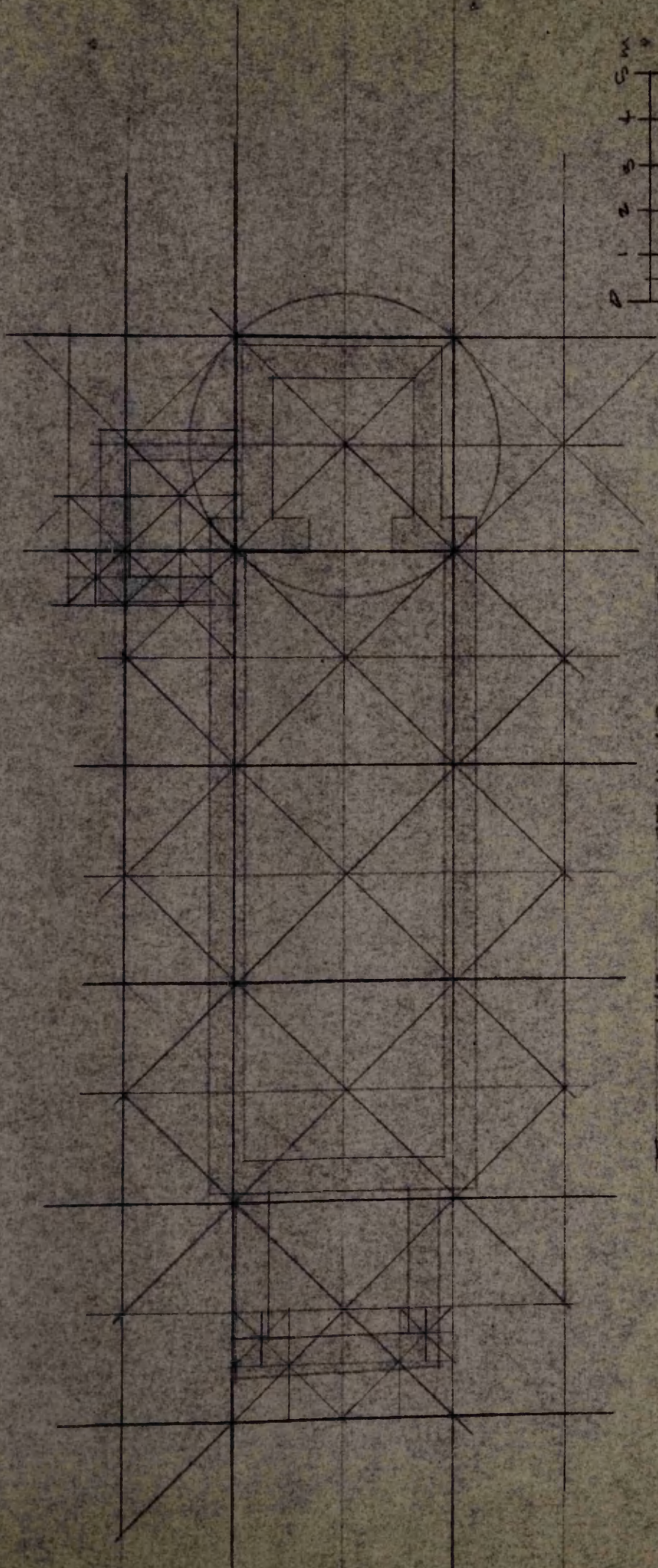


ESCOMB-MODULAR-

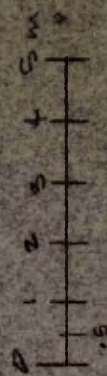
HAVE-INT.



1:125

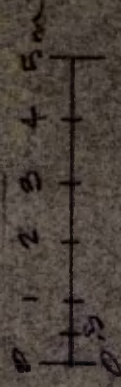


EXAMPLE - MODULAR BASED
ON SQUARE OF EQUAL CIRCLE



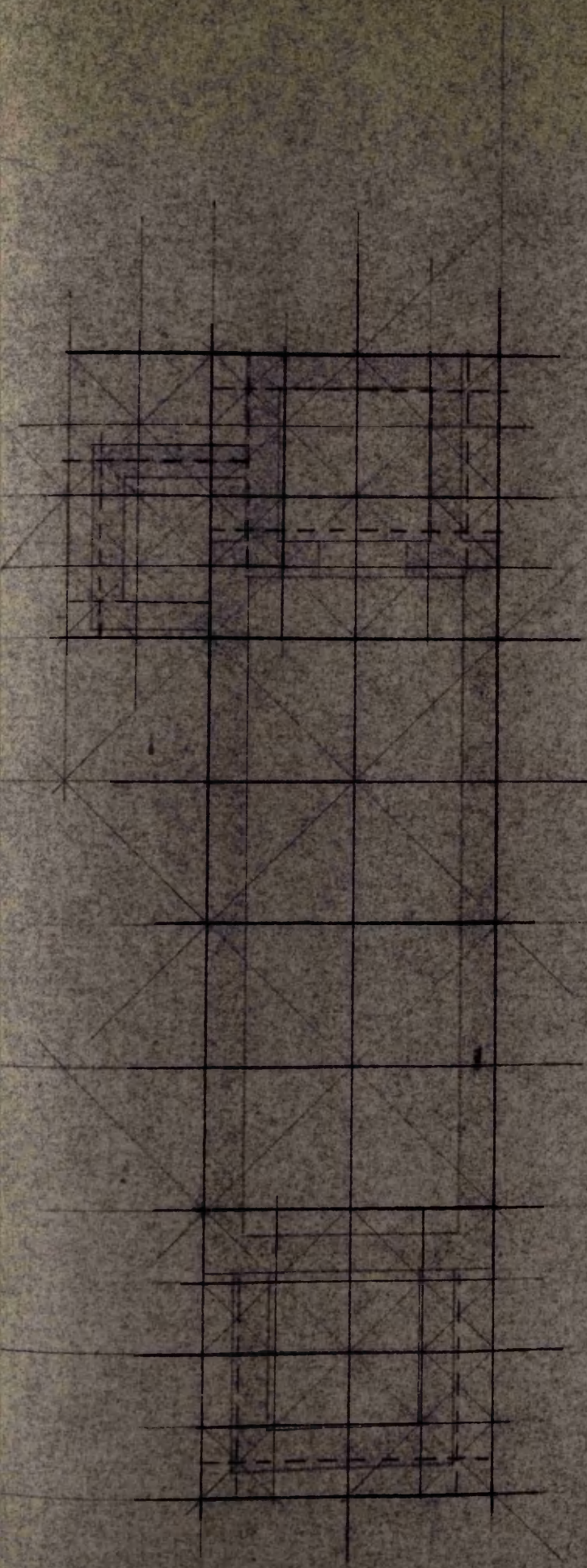
1:125

ESCAPE - MODULAR 5.03 (1/3)

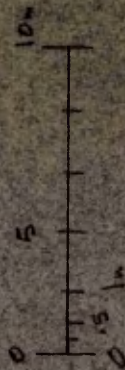


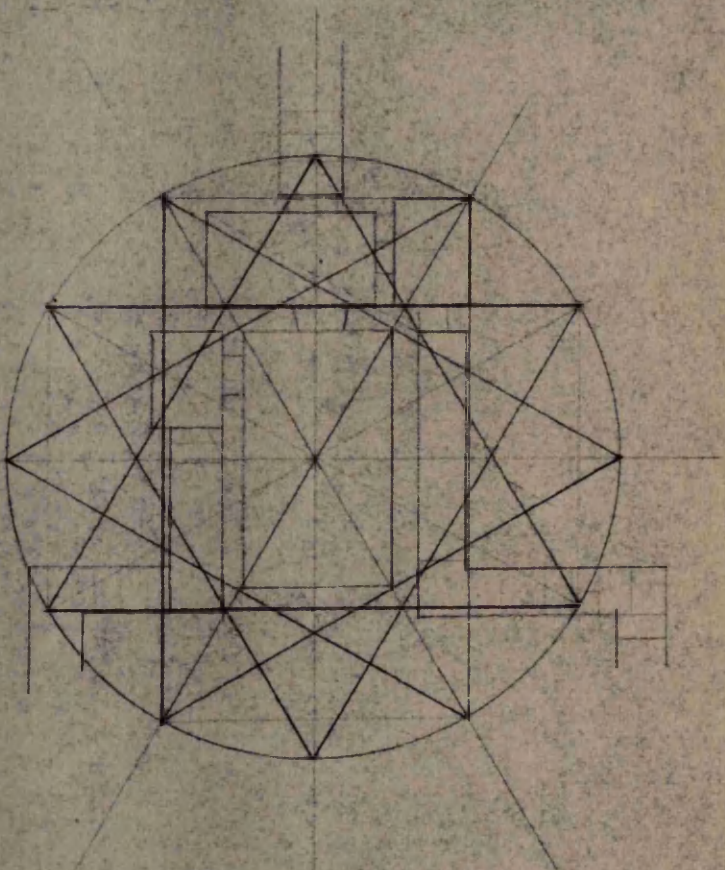
1:125

5.03 → 11.67 → 1.53
1/3



ESCOMB - MODULE - HAVE EXT.

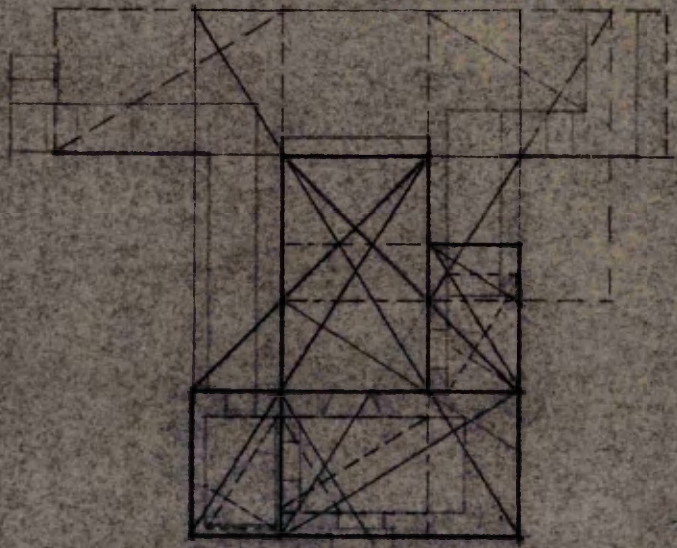




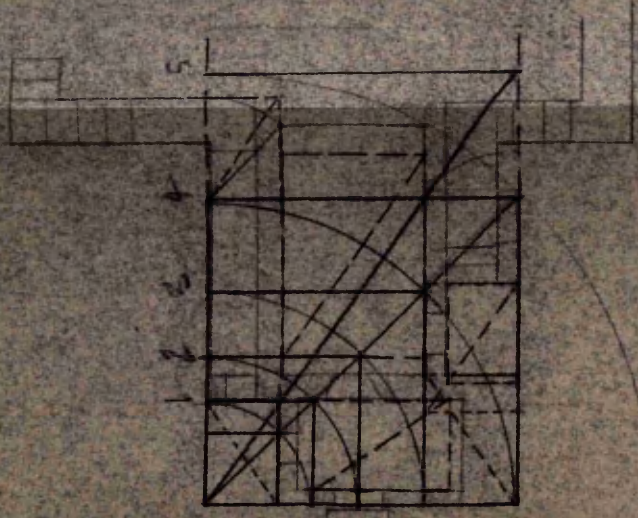
HEXAHAM-CREPP
EARL TRIANGLES

10 5 0 10ft. (3/32)

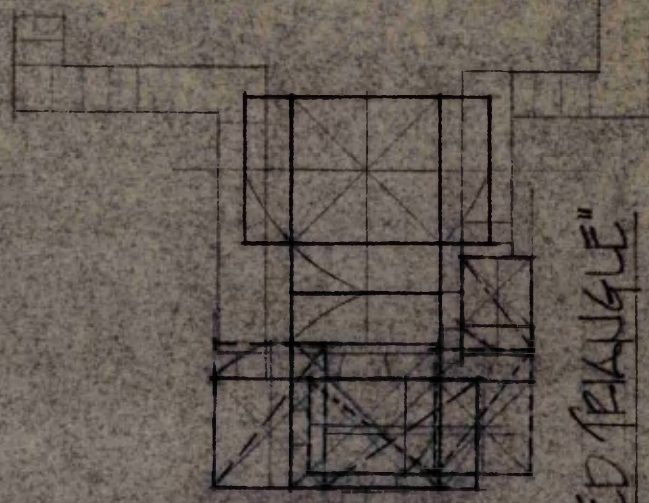
0.5 5 10m



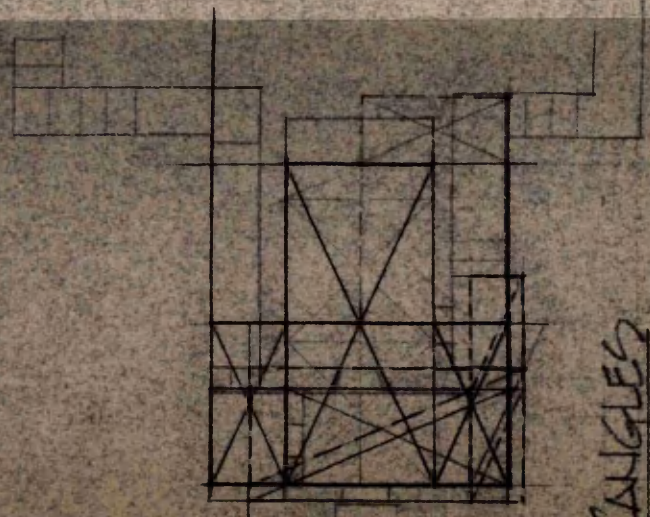
1. GOLDEN SECTION



2. SQUARE: RECTANGLE

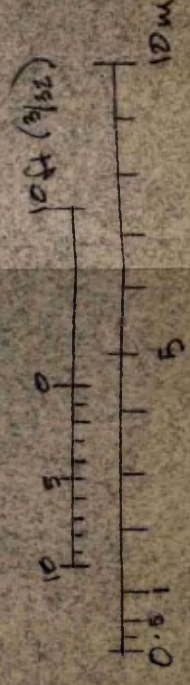


3. "SACRED TRIANGLE"

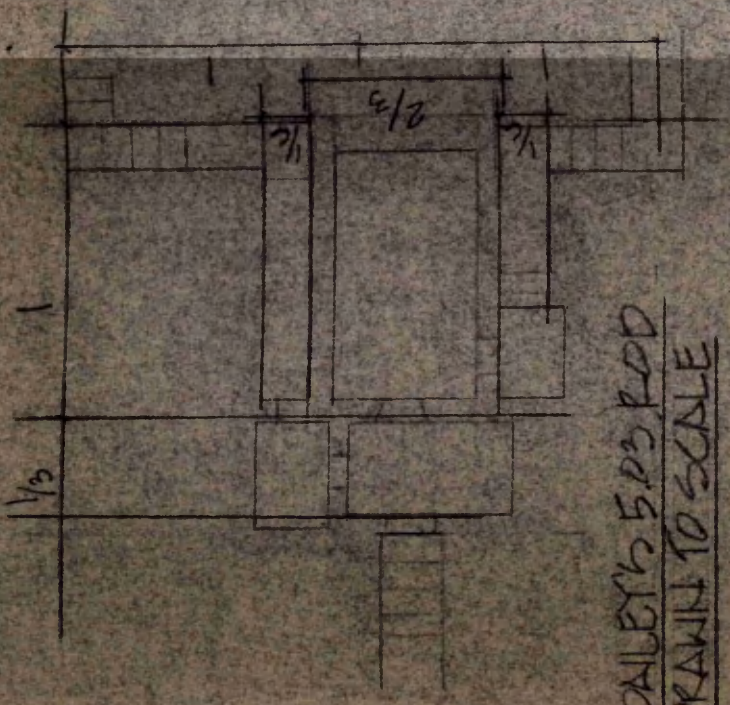


4. 1/5 RECTANGLES

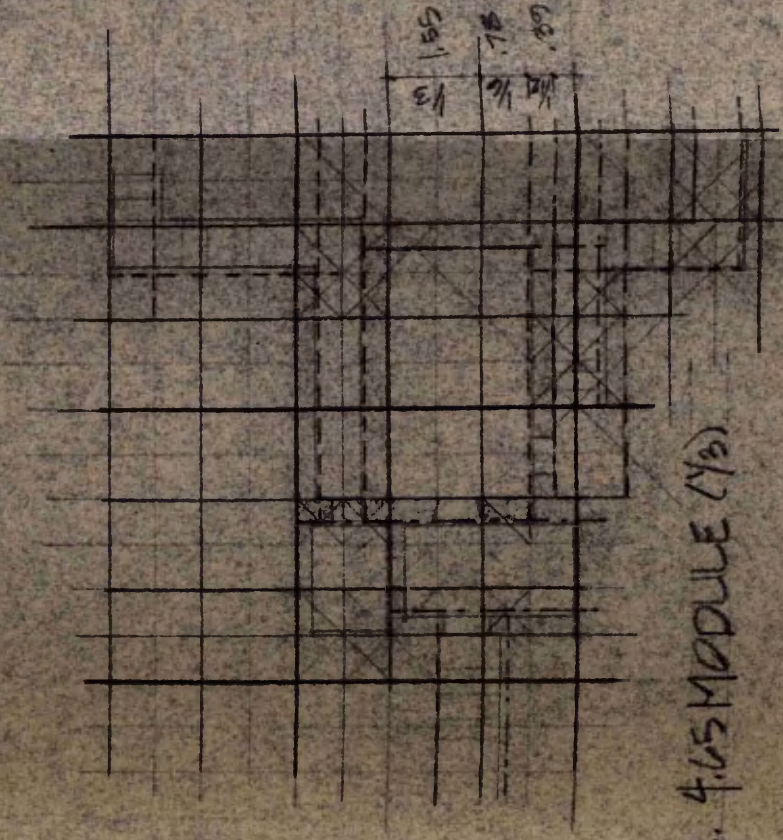
HEXHAM-CRYPT
PROPORTIONS



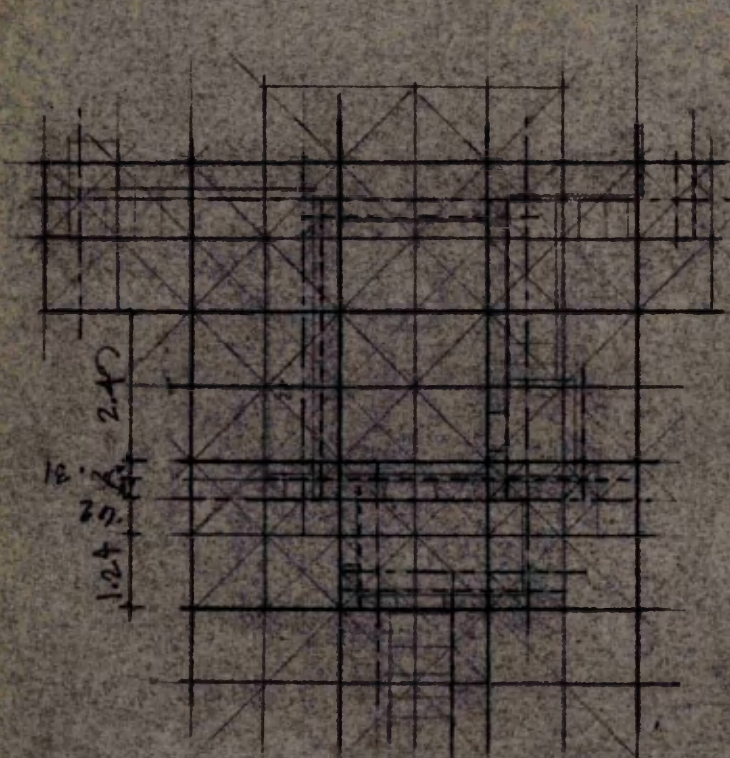
HEXAGONAL T.F.
HEXAGON D.F.



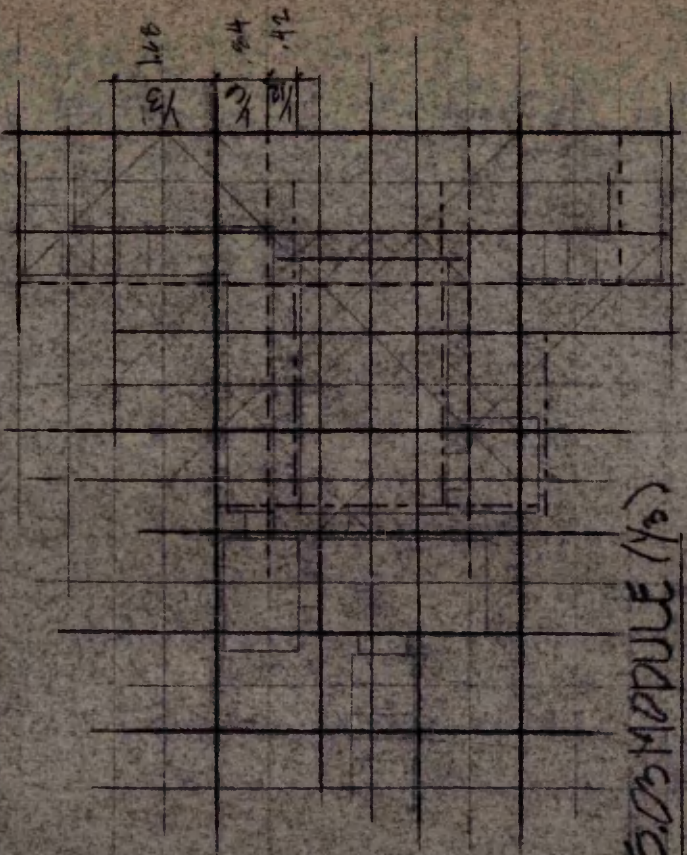
2. 5.03 MODULE
DRAWN TO SCALE



4. 4.65 MODULE (1/3)

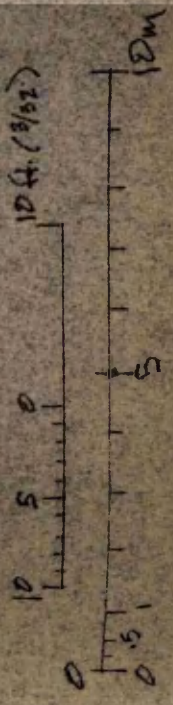


1. MODULE - MAIN CHAMBER



3. 5.03 MODULE (1/3)

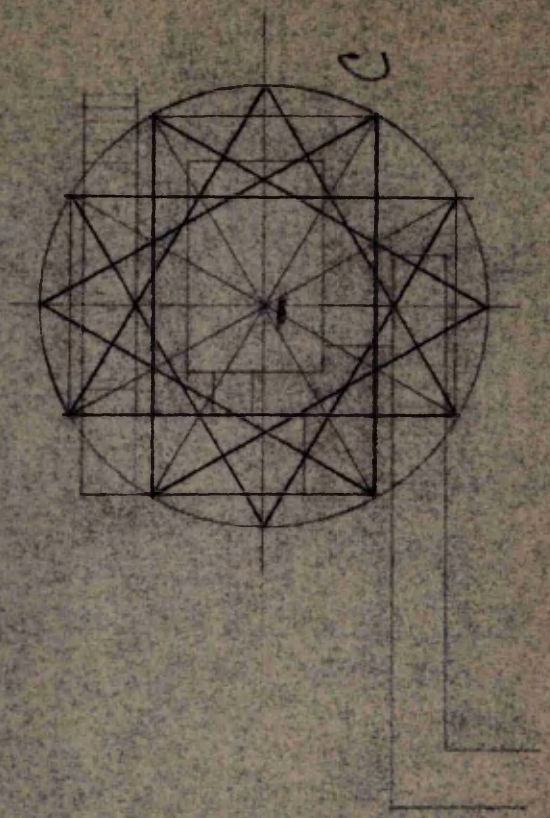
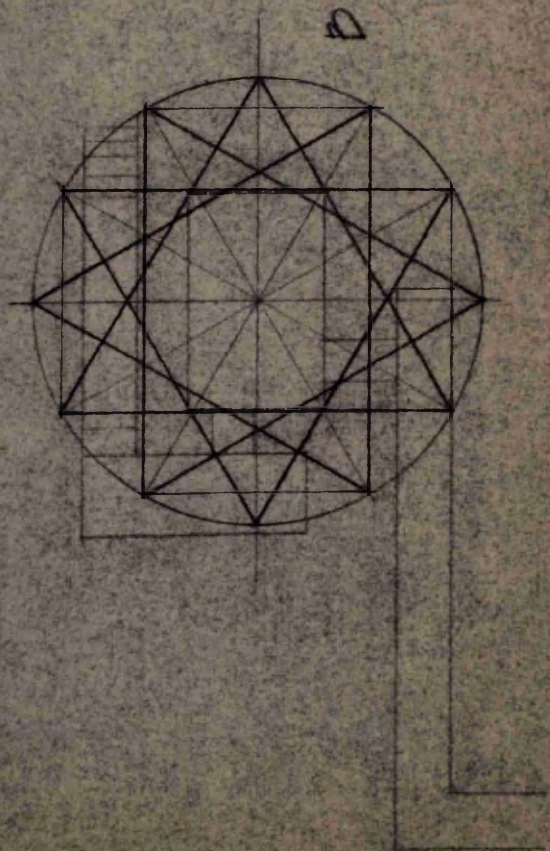
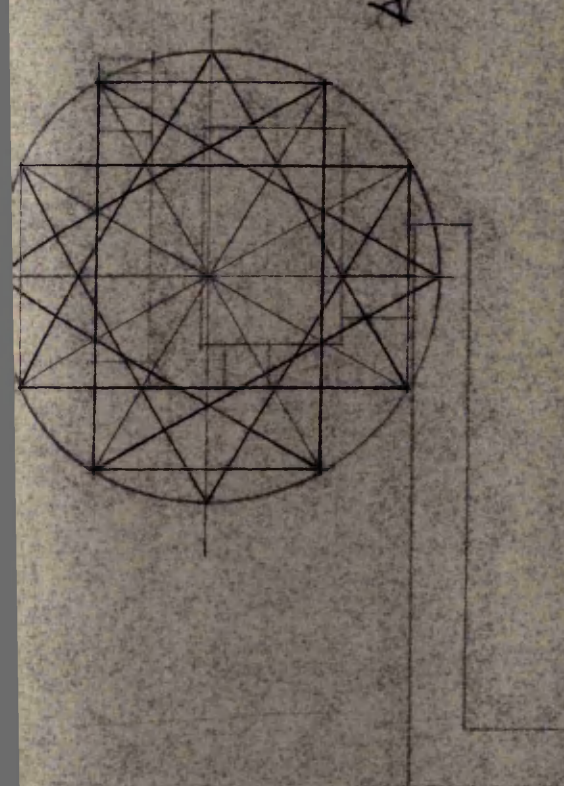
HEXHAM-CRYPT-MODULES

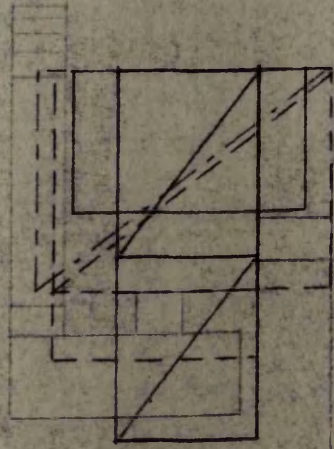


RIPON-CRYPT-EQUAL-TRIANGLES

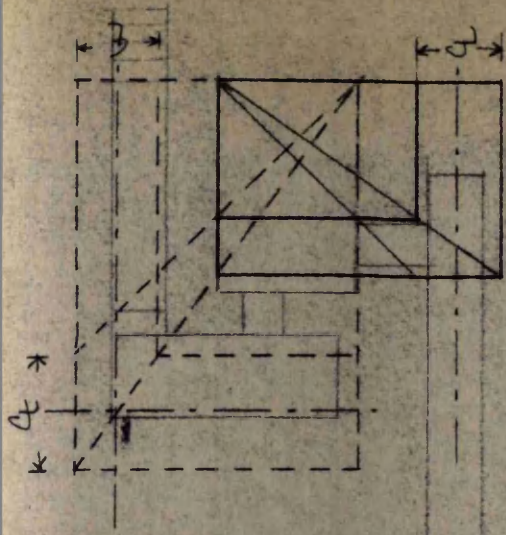
10 ft (3/32)

5 10 m

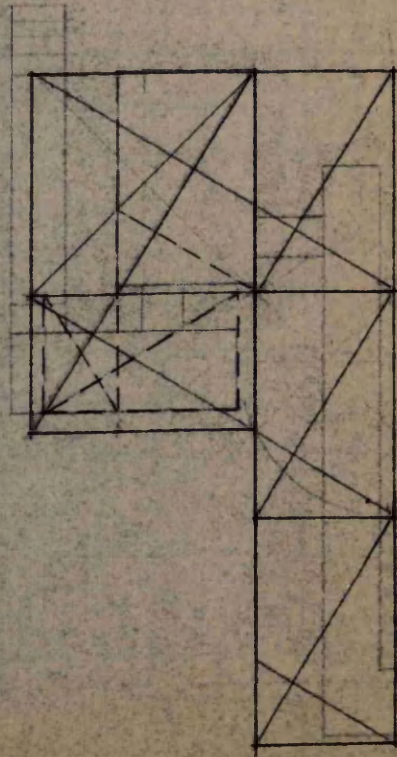




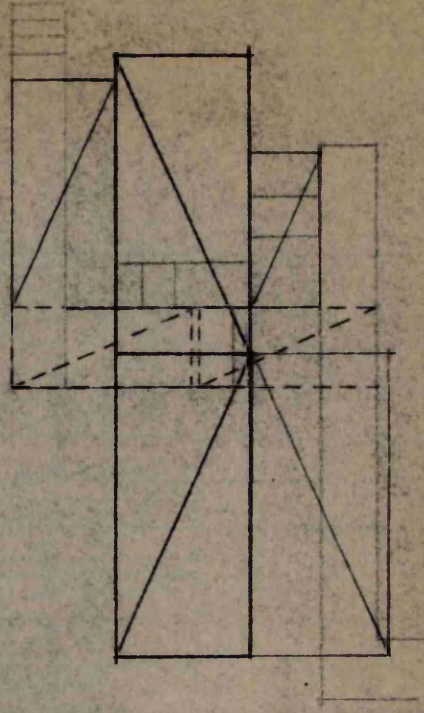
1. "SACRED TRIANGLE"



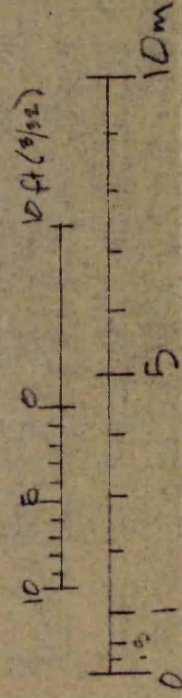
2. RECTANGLES



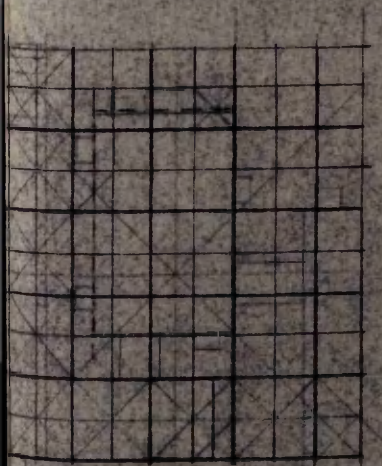
3. GOLDEN SECTION



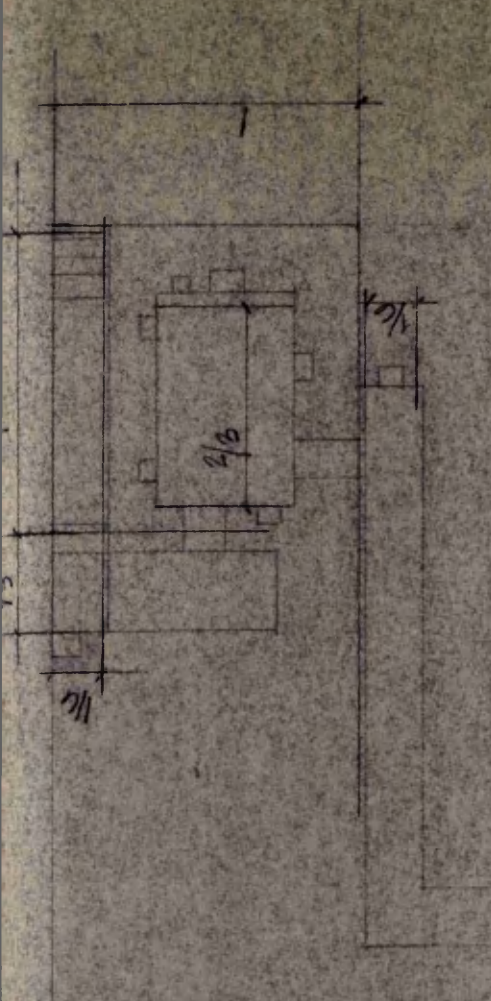
4. RECTANGLES



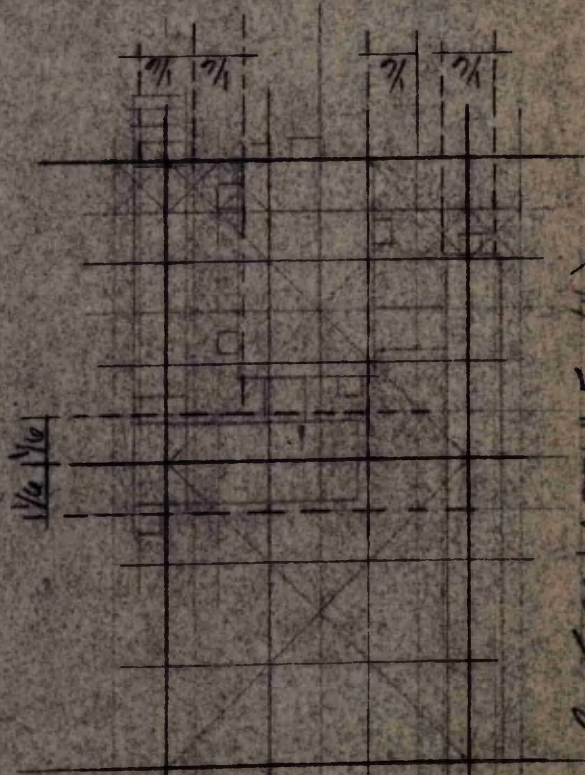
RIPON-CRYPT-PROPORTIONS



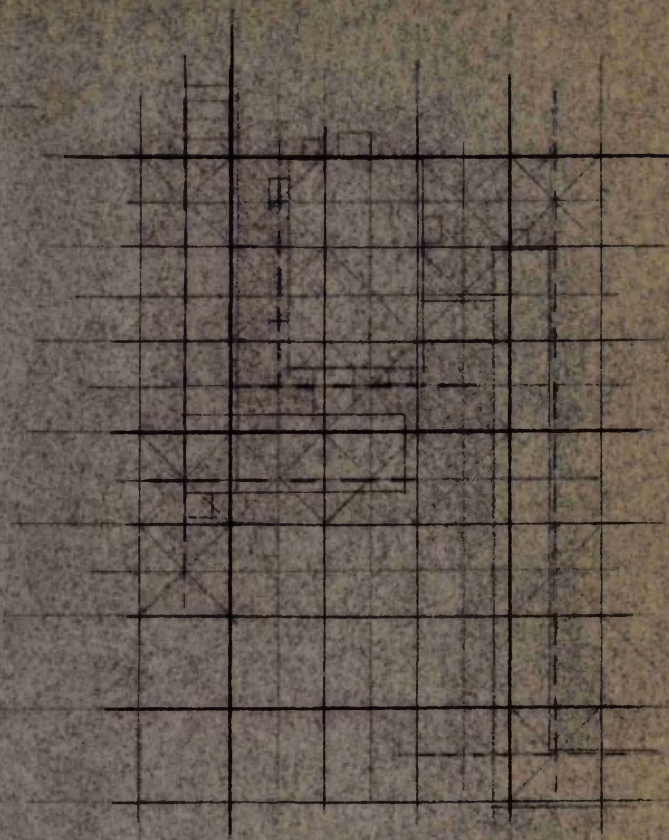
1. MODULE - W. ALTE-CHAMBER



2. BAILEY'S 5.03 MOD - DRAWING SCALE



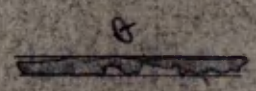
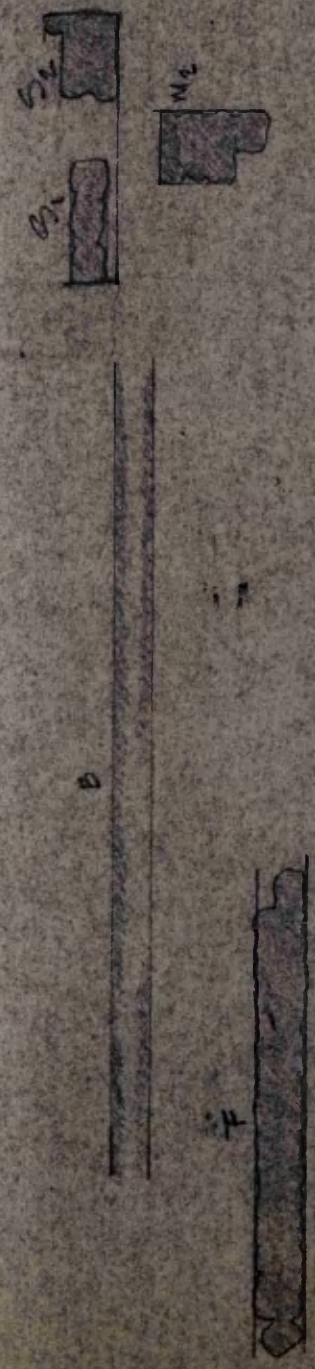
3. 5.03 MODULE (1/3)



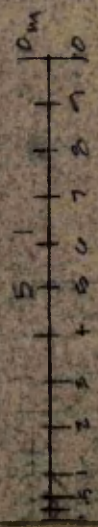
4. 4.65 MODULE (1/3)

ZIPON CRYPT-MODULES

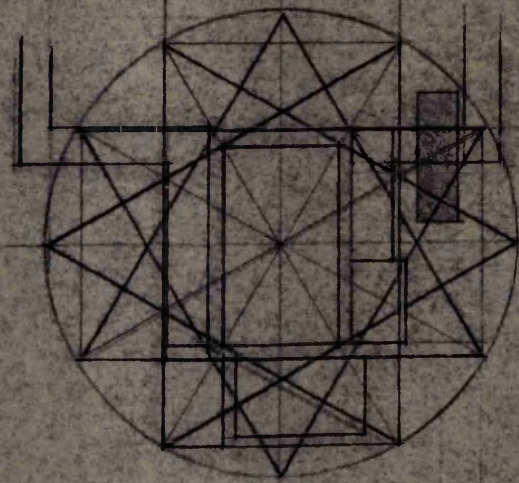




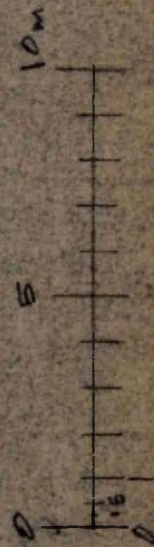
BAILEY'S WALL

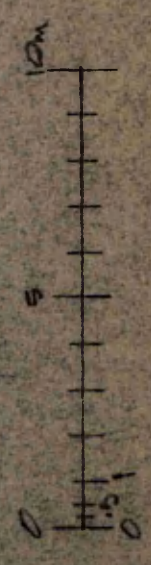
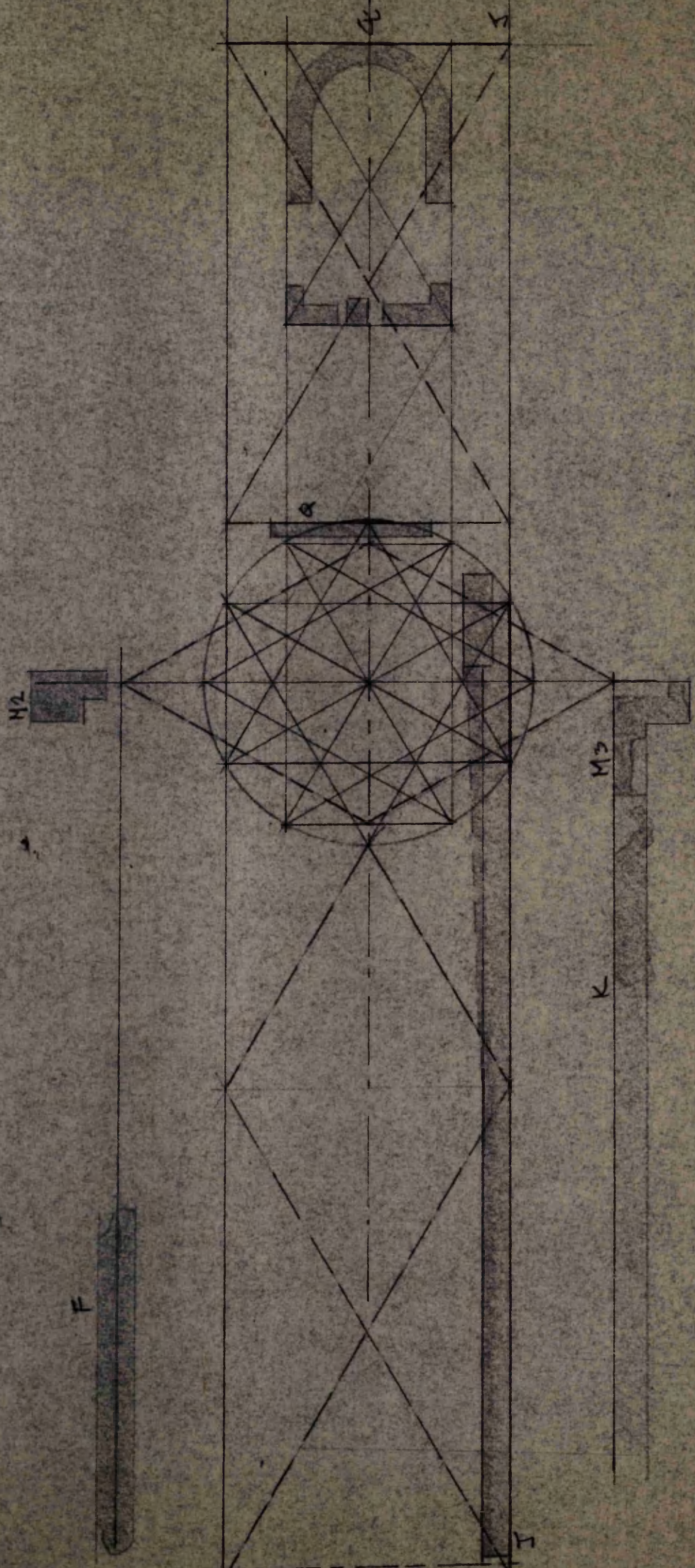


BASE PLAN

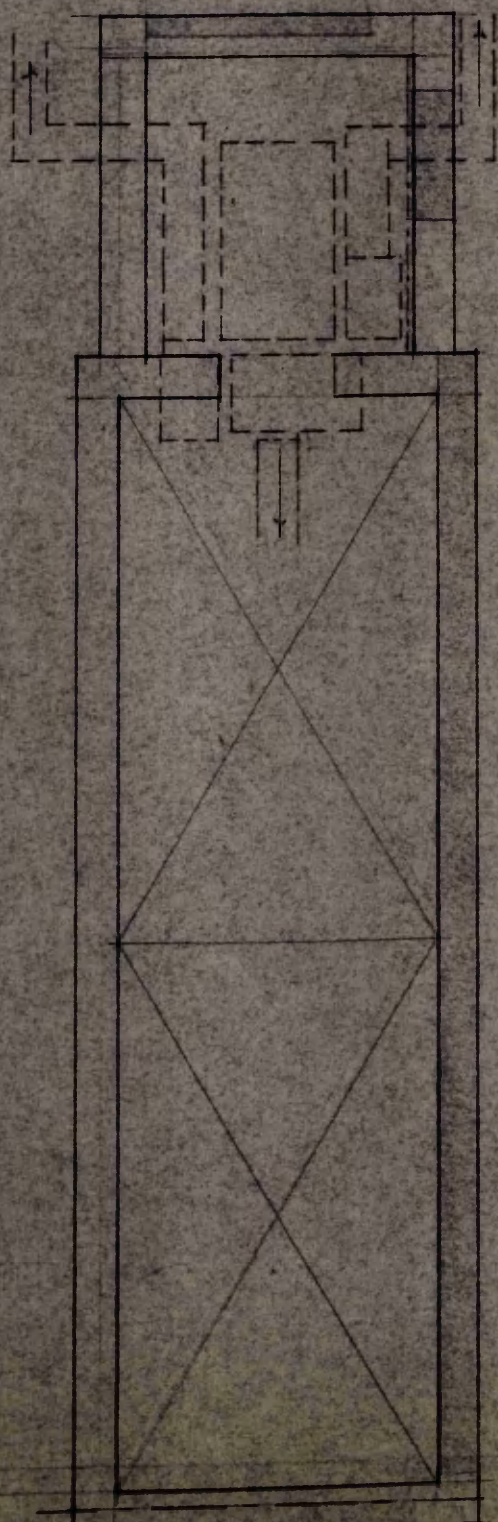


HEXHAM - CRYPT: DAILEYS WALL - E. CHAPEL

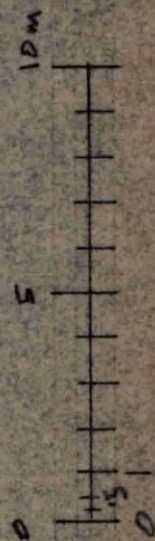


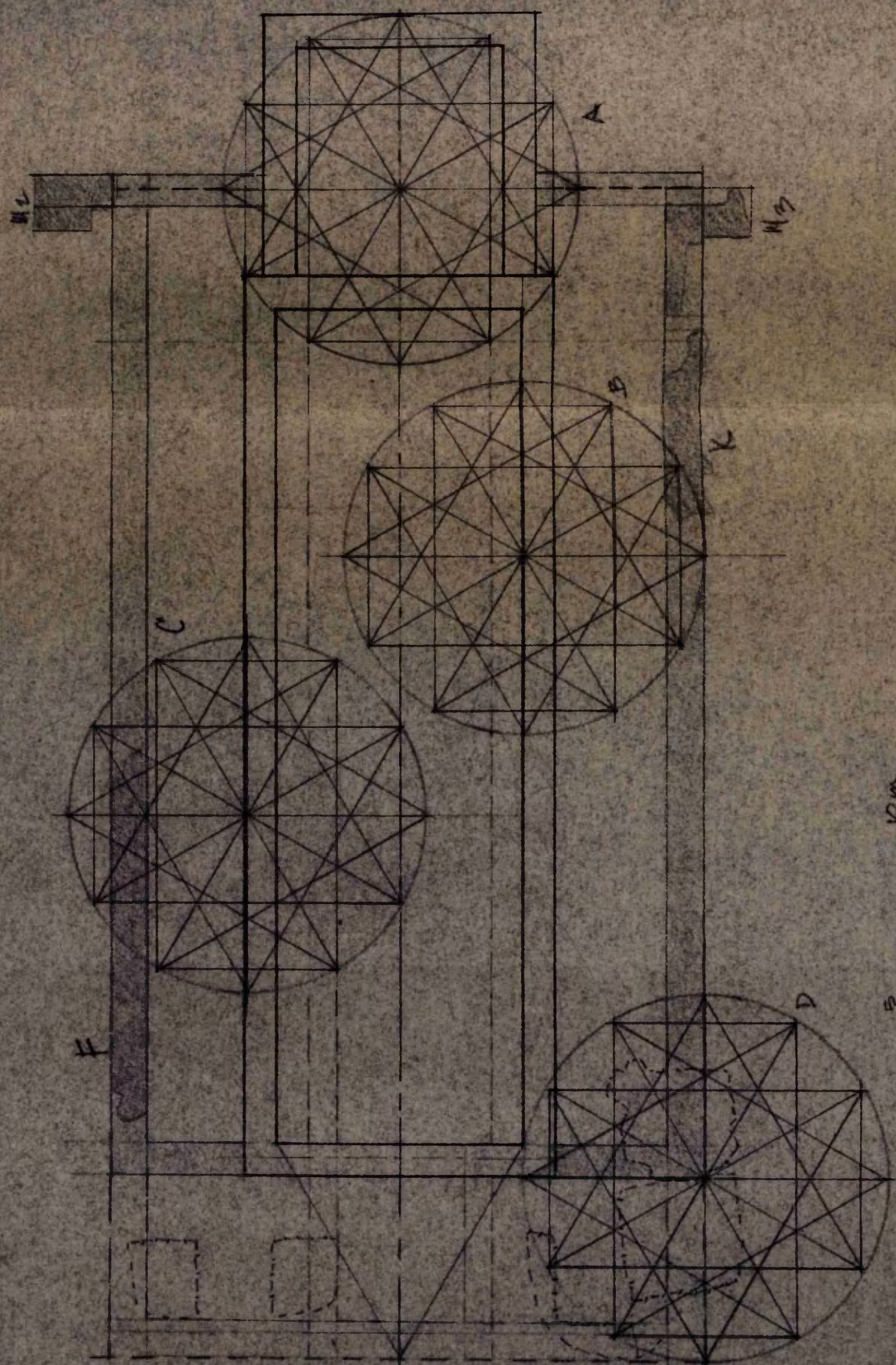


HODGES REMAINS & EQUI. TRIANGLES



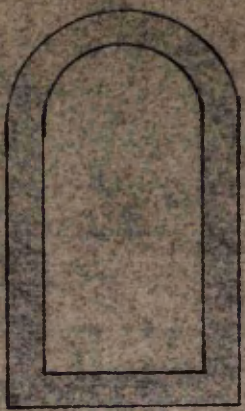
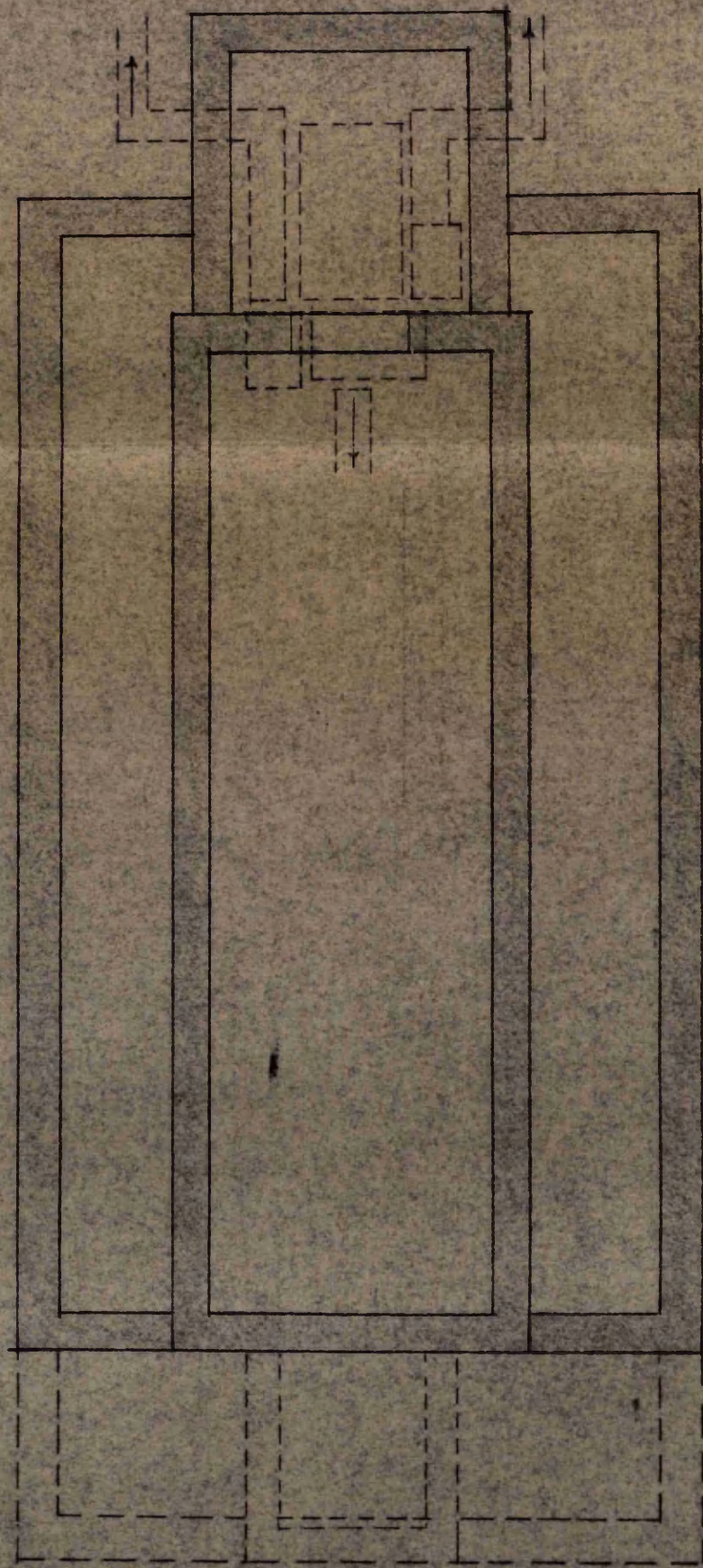
HEXHAM-RECONSTRUCTION OF CHANCEL HAVE





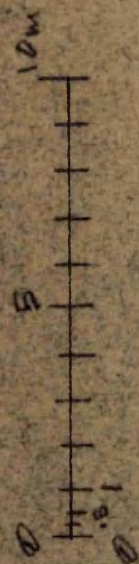
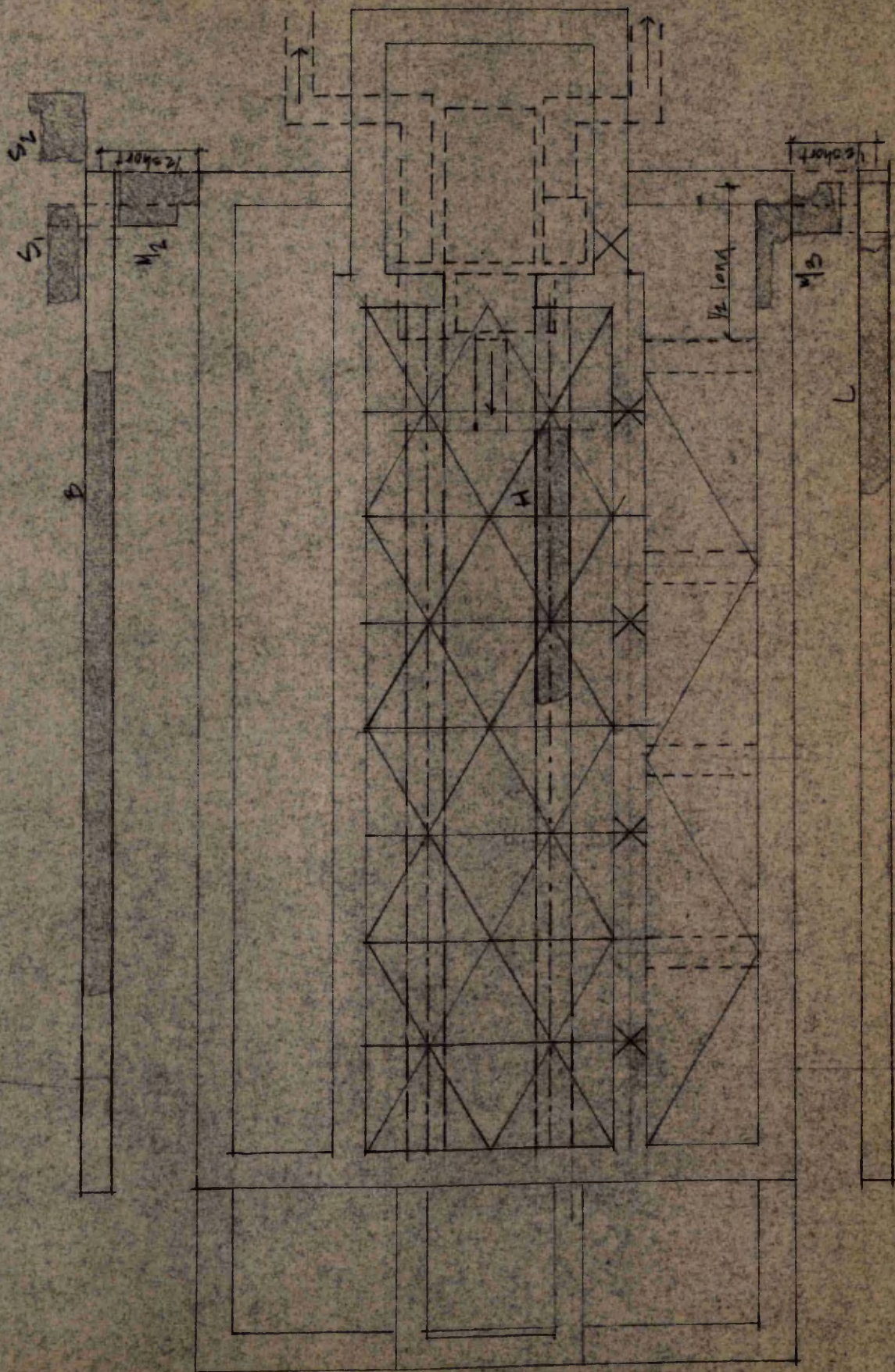
HEXHAM-PORTICUS CONSTELLATION

HEXPORTIF



HEXHAM-RECONSTRUCTION-BASIC PLAN

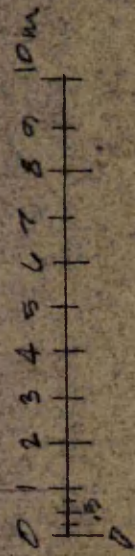




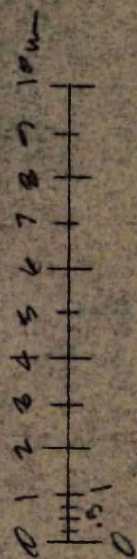
HEXHAM - FURTHER POSSIBILITIES

Analytical Drawings Not Reproduced in the Text

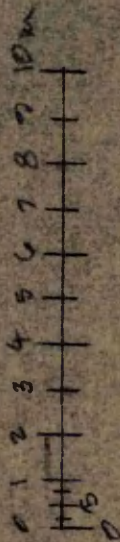
WEARMOUTH-MODULAR-5.03 (1/3)



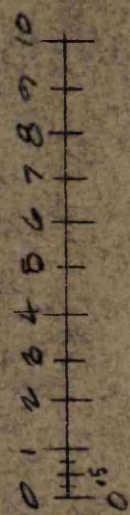
WEARMOUTH-MODULAR
CHARCELE (INT.)



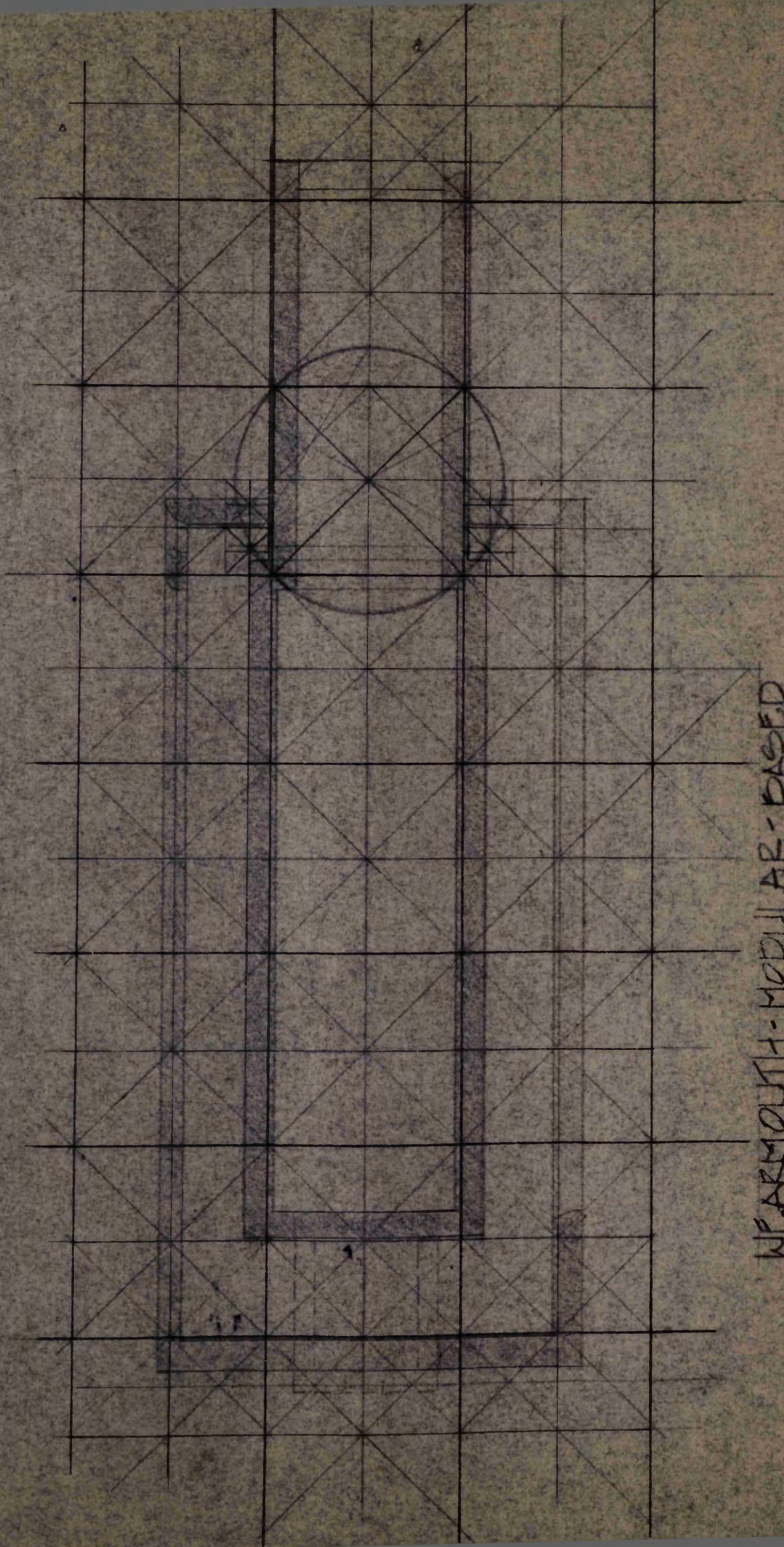
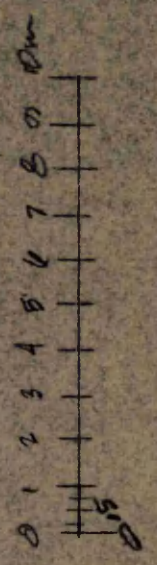
WEARMOUTH-MODULAR
CHANCEL-(EXT.)

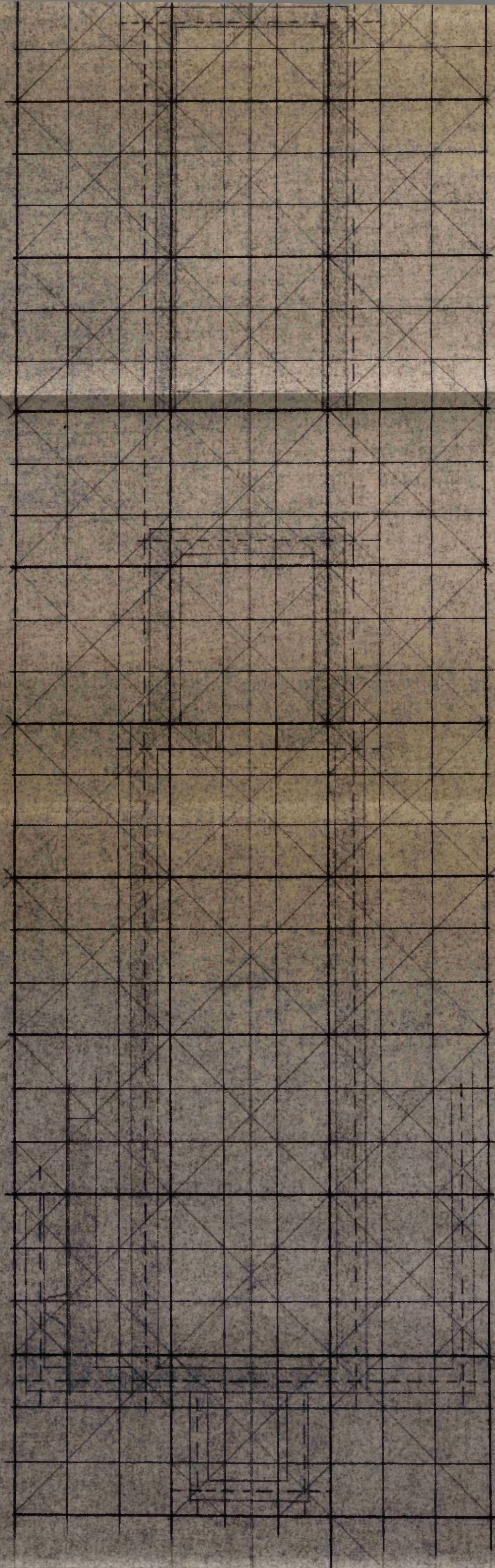


WEARMOUTH-MODULAR
NAVE-EXTERIOR

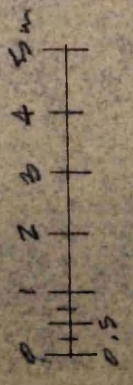


WEARMOUTH-MODULAR-BASED
DISQUARE OF EQUIL. CIRCLE

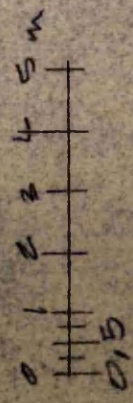




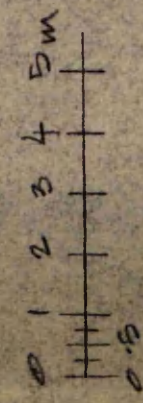
JARROW-MODULAR-5.03(1/3)



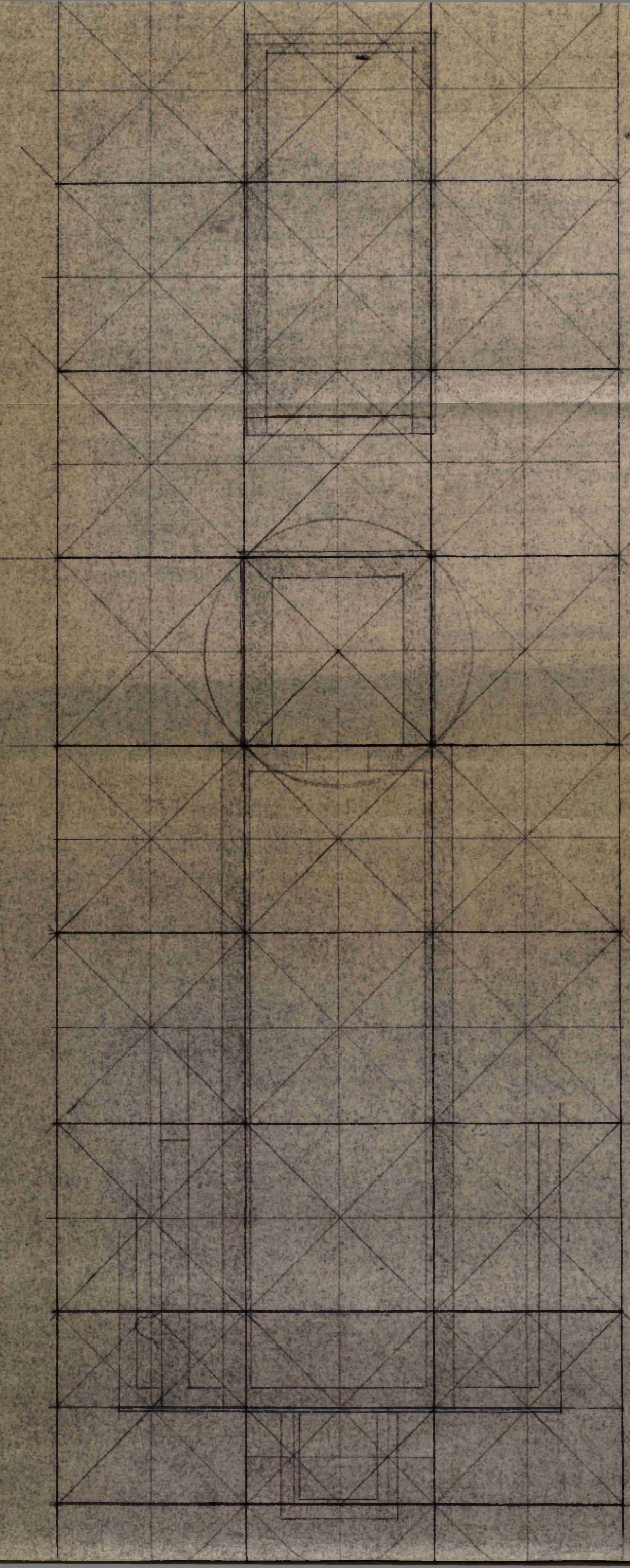
JACKOW-MODULAR-CHANCEL-EXT.



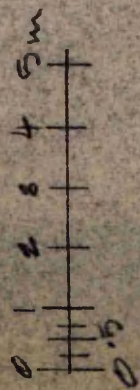
NARROW-MODULAR - SQUARE OF
EQUIL. CIRCLE

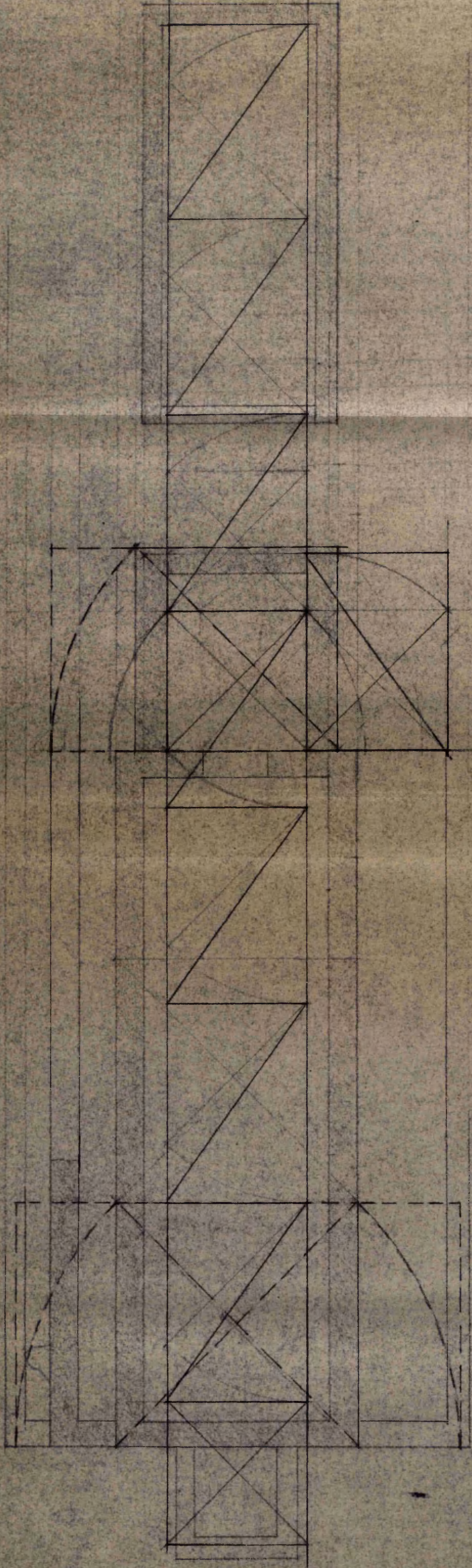


down



JABROW-MODULAR-NAVE-EXT. (1/3)



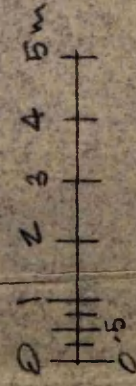


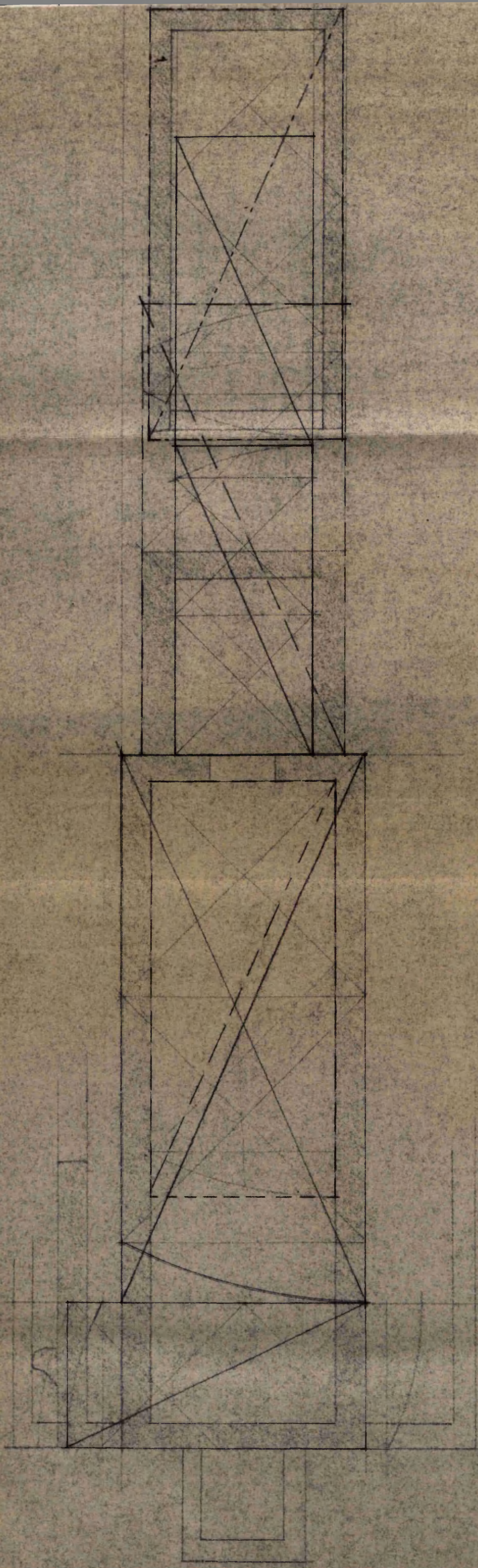
JARROW-12 RECTANGLE

0 1 2 3 4 5m
0.5

- area shaded
relative to
of water

JARROW-MODULAR-CHANCELL-INT.





JARROW-15 (4:07) RECTANGLE

