

Visualising the ‘Long Reformation’ – An Archaeological Discussion of Virtual Reality versus Social Space

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Incorporating the notion of the ‘Long Reformation’ this research focuses upon an archaeology of time to acquire an improved understanding of the change in use and meaning of the post-Reformation monastic church. Through physical and spatial change, expressions can be seen of an emerging religious understanding that highlights contemporary conceptions of religious space from the medieval to the early modern period. It suggests that the meaning and use of a building should not conform to just one archaeological reading. Instead, through the use of virtual reality, the study of space should be seen as fluid – where time is re-incorporated back into meaning. Drawing upon Masinton’s (2008) pioneering research into the post-Reformation monastic church, this paper aims to utilise examples collated during the author’s own MA research. Using Old Malton Priory Church as a case-study, its intention is not to provide a rounded argument but to present alternative ways of thinking about the study of sacred space in the early modern period that has the potential to provoke future debates, new patterns of thought and archaeological practice.

Perhaps the most significant aspect of archaeological studies of post-Reformation monasteries is their relative absence. The Reformation and the monastic Dissolution are notorious for having one of the most significant effects on the country’s religious, social and economic understanding. However, it is only recently that archaeological studies are beginning to apply a theoretical analysis to the structural group affected by these changes (Moreland 1991, 28). It was not until *The Archaeology of the Reformation* was published in 2003 that a new agenda for research was set in this area (Gaimster and Gilchrist 2003). It illustrated that by using different theoretical and methodological perspectives, the archaeological study of the Reformation can challenge our understanding of this cultural change. In recent studies, and in contrast to seeing the Reformation as a single and abrupt watershed, historians have deliberated on the idea of the Long Reformation, which includes the 17th, 18th,

and 19th centuries (Spicer and Coster 2005, 5; King and Sayer 2011; Walsham 2011).

Visualisation plays a vital role within archaeology, and in the last two decades the use of digital three-dimensional visualisation (VR) has increased dramatically within the discipline. The aim in the research discussed here is not to employ it as a tool of presentation, but to incorporate the use of VR in analysis and argument. Through the incorporation of the Long Reformation, VR is used as part of a heuristic process of experimentation and investigation to answer questions concerning its role in the study of long-term changes of spatial use and meanings of monastic churches. Defining ‘*the use of space*’ as the medium in which space is *manipulated* to express the concerns and priorities of its creators and occupants (Masinton 2006, 19), I aim to use VR to aid arguments that have produced new information on the meaning and experience of religious space for ordinary people from

the 16th to 19th centuries. This research allows the assessment and perception of space and time to be seen as fluid, variable, and erratic.

At its most primitive level, the process of computer modelling is one of decision making (McCurdy 2010, 14). The designer has to understand not only the changing shape of the structure over time, but also the materials used, patterns of usage, as well as effects of light, shadow, colour and acoustics. Computer modelling requires an attention to detail that is rarely matched by other forms of interpretation. The construction of a virtual resource, especially one involving video properties of time, is an opportunity to collate all pre-existing research and evidence into one understandable and readable format that has the ability to further our understanding (Masinton 2006, 19). The three-dimensional reconstruction is not limited to one snap-shot of time, but can be a comprehensive example of the current state of research, revealing both information and gaps in the knowledge presented (Giles et al 2010, 28). Focusing upon one particular post-Reformation monastic structure – Malton Priory – and the way in which space was created and re-created over three centuries, provides a perfect example of analysing the various changes of a buildings history and highlights the value of VR.

Old Malton Priory

Malton Priory stands eighteen miles north-east of York and is one of few monastic parish churches left standing in Yorkshire and the only one belonging to the Gilbertine Order. The somewhat rectangular and austere façade (Figs 1–2) would be unrecognisable to those who occupied its internal space throughout the first four centuries of its history. Originally aisled with a central tower, transepts, twin west end towers, a chancel and four chapels, Malton Priory has had a precarious history. It evaded complete destruction by fire in the late 1490s when it lost the original north aisle and north-west tower as well as surviving the first wave of smaller dissolutions by Henry VIII in 1536. Despite its annual income being lower than the £200 value set for the suppression of the lesser houses, Old Malton was bought official pardon by the head of the Gilbertine Order, Robert Holgate, and continued to function as a monastery until it was finally dissolved in December 1539 (YAS RS 1912 (48) 131–33; Huddleston 1962).

Unlike other monastic structures within the region, the priory's buildings were left to a relatively slow process of decay in the aftermath of the Dissolution. Fig 3 shows the remaining monastic precinct in 1728, as depicted by the Buck brothers. By 1636 the central tower was unsafe and, unable to afford repairs and maintenance, the parishioners abandoned the choir and transepts, demolished the tower and moved into the aisled nave. Over the next century, the aisles, clerestory and nave screen were removed and the two eastern bays were demolished (NYCC ZPB VII i/i 31. No 57), reducing the church to less than one third of its original size (Fig 4). It is this reduced building that survives to the present day and is still in use for parochial worship.

The virtual reconstruction and animation of the priory was divided into five sections that fitted with the main phases of its history: pre-1506; 1507–39; 1540–1636; 1637–1729; and post-1730. As documentary sources are rather sparse for the period between the Dissolution and the end of Elizabeth I's reign, modelling was problematic for the earlier post-Reformation periods of the church. It can only be hypothesised from the injunctions and laws passed that this period was predominantly characterised by confusion (Kumin 1996, 202). However, rather sporadic excavations were undertaken in 1801 (YAS MS 996) and 1941–45 (Purvis 1941–44) which resulted in the scaled floor plan that became the basis for the virtual reconstruction of the pre-Dissolution monastery (Fig 4). The church building was the first to be constructed in Blender 2.57, with the original mesh cube being extruded into eleven sections that corresponded with the different components of the structure (ie nave, transepts). The height of this model was then made to match that of the west gable, south-west tower, and aisle in the CAD skeleton (Fig 5). Comparative evidence from other monastic churches was sought, such as Selby Abbey and York Minster, for the modelling of the decorative features. Similarly, for the reconstruction of the north-west tower, principles of symmetry (Hiscock 2000, 180–181), measurements and the appearance of the south-west tower were used. The construction of the cloister buildings proved to be more challenging due to the lack of surviving pictorial and historical evidence, and they are not illustrated in this paper. Only their location is known from the 1940s excavations (Purvis 1941–44), the cloister door visible in Fig 3, and the survival of the kitchen vaults under the adjacent abbey house.

For the later phases of the reconstruction the surviving nave of Malton Priory was heavily used.

Fig 1
West front of Malton Priory (Photo: John Armagh)

Fig 2
Malton Priory, viewed from the north-west (Photo: author)

Fig 3

Illustration by Nathan and Samuel Buck around 1728 of Old Malton Priory (detail)

While every original external wall apart from the western façade has been removed, the core of the nave and key exterior details are preserved in the blocked southern arches (Fig 6). Additionally, the laity's detailed petition that records the alterations to the church provides useful hints of the original size of the pre-1720s nave (ZPB VII i/i 31. No 57 NYCC). Yates argues that alterations such as this illustrate the national importance of the laity, as restorations or remodelling had to be funded by the congregation (2008, 143). The removal of the northern aisle, reduction of the length

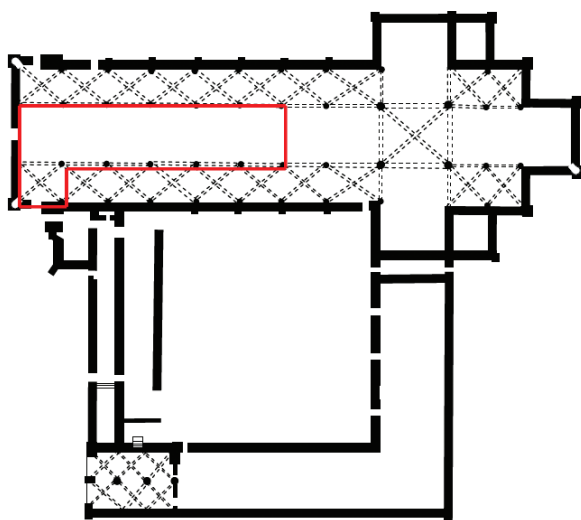


Fig 4

Plan of the original monastery based on the 1801 excavation with the surviving church outlined in red. (after Yorkshire Archaeological Society MS 996)

by 36ft and height by 8ft was due to the space being described as '*too large for the practice of Divine Service and the Celebration of the Lord's Supper*' (ZPB VII i/i 31. No 57 NYCC).

After the reconstruction of the five main phases, the final component of the VR process was the animation (WS1). Graves (2000, 10) argues that time is often an element that is neglected within archaeological studies; it is taken for granted. However, time itself plays an important role within this thesis, and the animation allows a visual presentation of the building's overall chronological development. In order to connect the simulation and reconstructions with archaeological techniques, aspects of stratigraphy were incorporated through the use of rendering to illustrate the changing phases and transitions. As in a building elevation or below ground excavation, different colours were used throughout the rendering process in order to signify the different stages of its development, making it apparent to the viewer which areas of the building experienced change. The simplistic 'fade in/fade out' nature reinforced the academic point that there are gaps in our understanding (Fig 7; WS1). The process of creating the animation sequence further illuminated the gaps within our archaeological knowledge and understanding, raising questions about what happened in the immediate aftermath of the Dissolution to the interior of the structure, as well as how the east end fell into ruin. Furthermore, the lack of a realistic interpretation does not subsequently detract the viewers' attention from the academic points the model intended to convey. It removed the danger of convincing the uncritical viewer that the model presented shows an

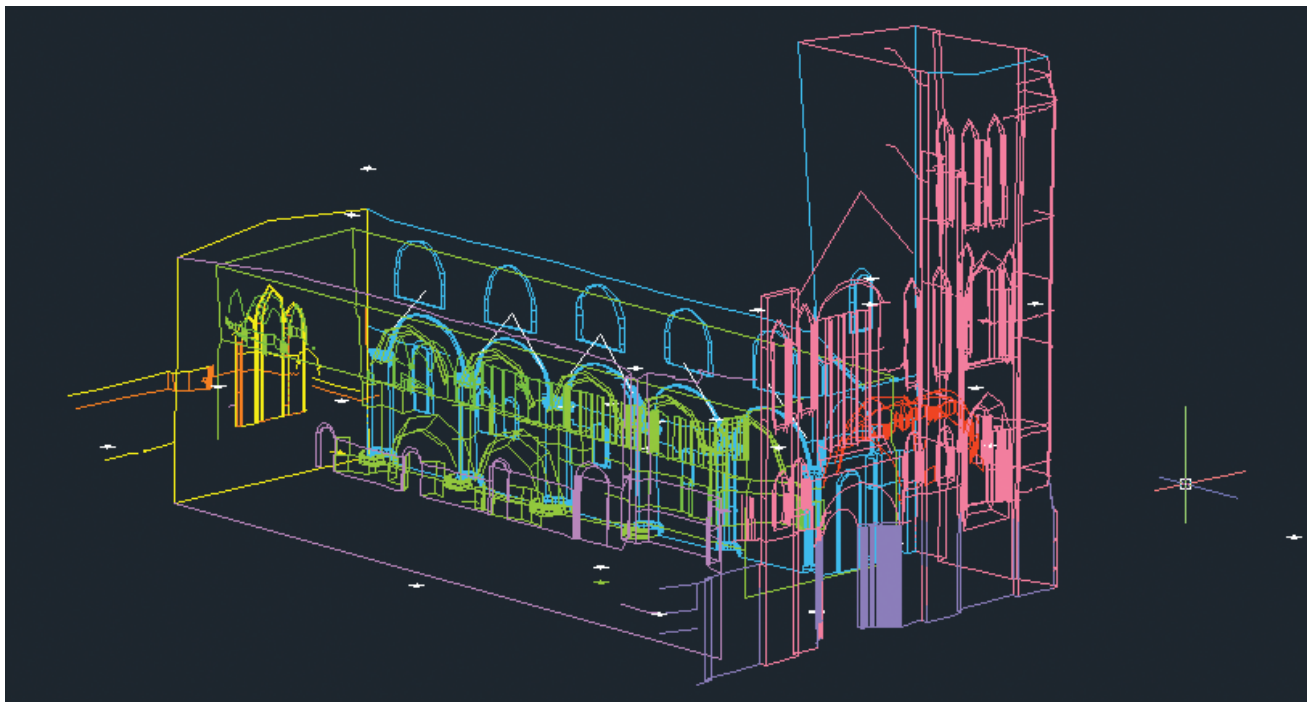


Fig 5
End result of the points skeleton from the north-west perspective (CAD 12; author)



Fig 6
Malton Priory from south, looking west, showing blocked arches of nave arcade and gallery and roof weathering on tower (Photo: author)

exact, original appearance (Reilly 1992, 159). In order to allow VR its full potential within archaeology, the goal of the model should not always reside in imitating 'realism' (Barcelo 2002, 22). Instead it should contribute to understanding and interpreting the input of data and information.

Employing the methods of VR to recreate the chronological development of Malton Priory required an in-depth understanding of the remaining evidence. The construction of the chronological sequence meant that the original construction was being simulated and re-experienced. In order to represent the building accurately, one has to understand each individual phase in as much detail as is available or possible. This inevitably leads to new questions, ideas and insights into or about the archaeological subject matter (McCurdy 2010, 63). Two main questions emerged from the reconstruction of the priory. Firstly relating to the original position of the nave roof, the scaled CAD model and the primary sources raise questions over how much the roof was lowered in the early 1700s. Secondly, it highlighted potential areas for further research regarding the impact of changing light levels on liturgical practices and understandings of space: especially when associated with the decoration of the church and religious practice, such as the removal of candles and internal lighting in the immediate periods after the Reformation (Kumin 1996, 202).

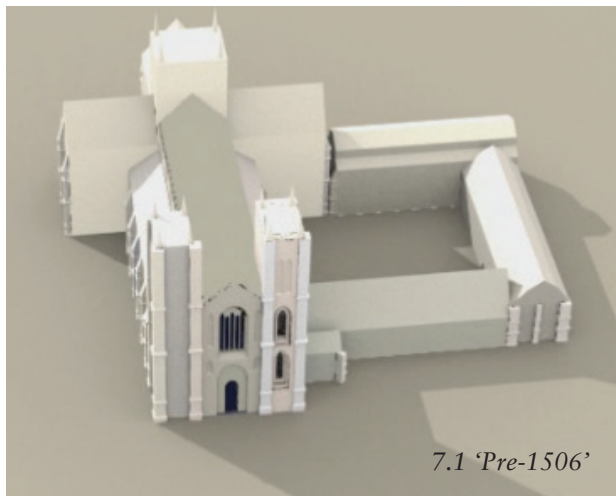


Fig 7

Stills from the video (WS1) showing changes to the priory through time (author)

Whilst the experience of creating a VR animation does illuminate areas of insufficient information, it can also present opportunities for learning beyond the simplistic visual analysis of images. Although there are no early sources relating to Malton Priory's medieval appearance, using the points skeleton and floor plan as a guide for the width, height and depth of walls, along with the idea of the honest model, allowed the scaled construction of the original priory to be based predominantly on evidence. Our responsibility to produce an accurate model and the use of detail as a 'knowledge-map' does at least highlight to non-academics and academics alike our levels of understanding. In turn, this 'map' represents how VR can be used as a scientific tool for the interpretation and presentation of data within archaeological studies.

This form of research and interpretation addresses the issue of VR carrying more authority than paper images, enabling the virtual past to not '*be expressed as a known entity*' (Miller and Richards 1995, 20). Consequently, the problems of control, adequacy of visualisation, and the management of understanding chronologically inconsistent data have been solved or reduced by the creation of models of reality where

the creator has total control of all three elements (Masinton 2006, 23). The construction of these models has permitted a broader understanding and an honest visual representation that represents the state of current knowledge concerning the processes which Old Malton underwent in order to become solely St Mary's parish church.

It must be noted that VR is not the overall solution for archaeological research. One main limitation discovered whilst reconstructing the transitions of Malton Priory church was the idea of an 'honest' model. It restricted the creator's level of input, and confined the creator to the use of only known information. Yet, as already mentioned, this limitation does have the potential to be positive rather than negative, as it makes the archaeologist focus upon evidence rather than speculation. Other limitations also include time itself, as the modelling process is a lengthy one, and the depiction of the church interior as a clean, composed, and quiet space may not be true. Works such as Masinton (2006), Duffy (2001), Craig (2005) and Brown (2003) have acknowledged the under-represented active participation of the laity in historical and archaeological studies.

VR will not always be the most efficient or effective method of explanation (Masinton 2006, 186) and as with any research, archaeological computer visualisation requires a method that must be adapted to the aim, content, and audience (Niccolucci 2002, 4). However, it is believed that the *process* of constructing the virtual entity has definite benefits for an archaeological understanding and interpretation of buildings. The level in which one has to use the data to reconstruct the building, the modelling process itself – the chronological sequence and subsequent methodology – as well as the creation of the animated sequence, all have the potential to highlight questions, issues, and concepts, that would otherwise have been left undiscovered.

Social space vs virtual reality?

The initial aim of this research was to undertake a preliminary sortie into the post-monastic religious conversion. However, what transpired is not only a complex story, but also a deep exploration into the issues concerning the '*longue-duree*' of the post-Reformation, arguments of archaeological understandings of time-space, and the potential of VR.

By combining the visual reconstruction with historical sources the study of the priory's transition through an amalgamation of political, economical, and accidental processes beginning in the early 17th century dynamically revealed that the priory church was reduced to a single-celled space where the choir, transepts, crossing, aisles and clerestory had been demolished (Masinton 2008, 13). Its process of conversion and destruction is just as interesting for what is preserved as for what is destroyed. In this 'new' church, the segregated spaces of its medieval counterpart associated with intercession (ie separate chapels, individual bays), were actively removed. The removal of the rood screen, the shortening of the nave, and the removal of the north aisle, now meant that nothing separated the laity from the representative location of God.

From the late 16th century onwards we see the slow process of formalisation of the spatial relationship changing to express community participation in acts of worship. The unity of the congregation and their desire to actively participate in the divine service becomes visible. This internalisation of a religion that focused on direct relationships with God required no space at all. Therefore, the transformation of Old Malton – the

disappearance of separate divisions to the focus upon a space which was central, open, and audible – illustrates the changing notions of sacred space from one of a combined 'eye', that heavily relied upon the complex segregation of space belonging to the medieval period, to one belonging to the mind of each individual, a shift from a visual to an acoustic space (Masinton 2008, 15; Dix 1945, 622–624). However, at the same time the parish records illustrate a continuation and preservation in the labelling and patriarchal organisation of its space, as well as the maintenance of medieval burial practices into the 18th century. The notion and importance of sacred space was not completely eradicated with the introduction of the Anglican Church. As archaeologists have more control over time and space than other disciplines (Austin and Thomas 1990, 57), we should consider how it survived and the nature in which it did so.

Thus the analysis of Malton Priory over the Long Reformation suggests the development of a new understanding of the relationship between man and God that is not apparent in studies of a single period (Spicer and Coster 2005, 7; Dyrness 2004, 91). Single period studies do not incorporate notions of fluidity – of either time or space – and potentially cause archaeologists to interpret the use and meaning of these buildings through one view. However, buildings are neither inert structures nor passive objects; they are active palimpsests of construction campaigns that reflect religious, economic and social objectives. Consequently, should not the archaeological study of space reflect this? Animated VR could play a significant role by visually mapping evidence of change in the religious use and understandings of the post-Reformation monastic church over time.

With increasing archaeological interest in VR, one important point is the similarity between the understanding of archaeological theories of social space and the process of VR; '*in the act of virtually reconstructing a building, one is creating space*' (McCurdy 2010, 9). Austin and Thomas (1990, 57) state that the entities of time and space are more than merely backdrops to human existence, but are mediums '*through which social life is threaded*' and that archaeologists should use time and space '*as a framework for analysis*'. Similarly Masinton (2006, 19) advocates that the use of virtual software allows the creator to have complete control over these two entities. This research endeavours to illustrate that by building on previous, multidisciplinary, studies of social space and incorporating VR and changing theoretical issues

of social action; space and time become 'multi-vocal' and fluid (Branton 2009, 53). VR has the potential to visually map the changing religious practices throughout the decades subsequent to the upheaval of the Reformation.

Although this level of visual representation is, at the moment, far beyond the author's abilities, this article endeavours to illustrate that VR through time is a possibility. Graves (1989, 297) points out that all human action occurs within time and space, and that the archaeological study of space is based around its ability to reflect the different ways that society can be created and reproduced. VR essentially enables the recreation at an interactive and visible level, compared to previous two-dimensional 'paper space', such as viewed/isovist analysis. Instead of illustrating the two-dimensional levels of visibility throughout the church from a top-down approach, VR can incorporate both a third and fourth dimension: time and movement (Masinton 2006, 19). Graves (2000, 14) argues that meaning is created through moments of action; that people understood their surroundings through day-to-day activities that would have inevitably changed along with the appearance and layout of the surrounding spaces. Again, the combination of fluid VRs and primary sources would enable archaeologists to further examine and thus understand meaning and use through an interactive perspective, and how it changed through time. This approach could enable archaeologists to track social changes and how they were incorporated within different communities, allowing a fuller understanding of a building's history compared to a static interpretation.

It is quite possible to argue that the study of space incorporating the 'Long Reformation' could give more of an overview rather than a deep insight into one specific period. Yet, this research has aimed to reinforce the notion that the 17th and 18th centuries continued to be a period of religious change. Through the study of just one phase, archaeologists can be tempted to extract the 'real', contemporary understanding. However, the examination of Malton Priory has attempted to illustrate that there is no way back to the *real* meaning and use of a parish church – if ever such a thing existed. These structures are palimpsests of architectural and social fashions and are inevitably employed and understood in correlation with changing social, political and religious concepts (Moreland 2001, 98). Further time, research and knowledge could enable the correlation between this information and the virtual reconstruction of these interiors that would visually illustrate these changes.

This article has sought to build upon previous understandings of social space, by taking it in a new direction that incorporates the analysis and use of diachronic VR to demonstrate that the study of space does not have to be static, but can be seen as a shifting entity where time is re-incorporated back with meaning. The next logical step to further our understanding of social space is to accept that 'space' is inevitably a fluid entity which is formed through perceptions of action. Archaeologists can study it through the changing article of time and consequently use an analytical and interpretative tool that allows complete control over both these entities: virtual reality. It must be emphasised that the use of VR is unavoidably subjective and conformed to the imaginations and abilities of the creator, and it will never be able to reconstruct an exact replica of society's relationships with space. Similarly, in order to receive the greatest potential it is the buildings archaeologist that should be trained in the use of VR, and not the VR modeller that should be trained in buildings archaeology. At its core the process of VR manages and combines a range of known information and presents it in one understandable format. Consequently, if a more holistic, archaeological analysis of space and time is used – incorporating theoretical social issues, virtual software, and primary sources – the archaeological study of space has the potential to draw out a far more vibrant interpretation of the diverse changes, functions, meanings, and experiences attributed to historic buildings.

Charlotte Staniforth is currently working for a heritage organisation after undertaking work experience in Christchurch (NZ), assisting archaeological and conservation aspects of the city subsequent to the 2011 earthquake.

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