# The Working Space of the Medieval Master Mason: the Tracing Houses of York Minster and Wells Cathedral

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## INTRODUCTION

Our understanding of the practices of medieval design has largely been formed from the work of architectural historians, and to these efforts a great debt is owed. Scholars such as John Harvey (1968; 1972; 1987) have laid the foundations from which investigation continues to be based, having served to define the figure of the medieval architect, his responsibilities and his prominence within the building craft. However, the agenda of the architectural historian has often neglected the space itself where design took place, where attention has always been focused on the evidence for the designs themselves (Colchester and Harvey 1974). This notion is emphasised when considering the 'tracing houses', or drawing offices, that have survived at York Minster and Wells Cathedral, Somerset. While their plaster drawing floors have been the subject of debate (Harvey 1968; 1961), the rooms in which they occur and their position within the sequence of construction had not yet been considered to any great depth. Thus, this has highlighted an opportunity for an archaeological agenda to be employed to enhance the understanding of the working space of the medieval master mason, both in respect to the known survivals at York and Wells, and to those that may exist elsewhere, as yet unrecognised.

The research agenda that was formulated was based upon three main aims: (i) to understand the construction sequence of the rooms themselves to address questions such as the intended use of the rooms, whether or not they were simply commandeered by the masons and when they were constructed; (ii) to set the rooms in the specific context of the construction history of the site and also physical location, perhaps helping to determine whether or not design spaces coincide with major programmes of development at York and Wells, and at cathedrals in general; and (iii) to enhance the understanding of how such spaces were used and what this tells us a) about the practices and process of medieval masonry and b) the working space of the master mason. The results of the analysis that follows begins with the presentation of the two sites individually, before drawing the evidence together in a broader comparative assessment of the archaeology of the tracing house.

## YORK MINSTER: THE MASONS' LOFT

#### Summary

The tracing house at York, known as the masons' loft, is situated at first floor level above the vaulted passage-way of the chapter house vestibule (**fig. 1**). The vestibule is L-shape in plan and

provides access between the north transpet and the chapter house. The masons' loft is reached via a staircase contained within the entrance to the chapter house that provides access to the gallery level and roof. The exterior of the masons' loft is defined by a string course above the first-floor windows of the vestibule. Above this string course in the west and north elevations are two, two-light windows, while the south and east elevations bear only one window of one and two lights respectively.



Figure 1. York Minster, chapter house vestibule

The interior of the masons' loft is composed of two ranges set at right-angles to form the L-shape plan (**fig. 2 and fig. 3**). The walls are built mostly of coursed, un-plastered magnesian limestone. Variations in geology appear in the south and east walls, including the use of Millstone Grit. The room is accessed from the chapter house stair turret in the north-east corner of the east-west range, most of which is used for storing the master mason's templates upon simple racks. The vertical mouldings of the turret are visible above the doorway within the masons' loft. The east-west range is currently boarded over and 'steps-up' towards the eastern end, while the plaster drawing floor, bearing its dense mesh of setting-out lines, survives along the north-south range. There is a fireplace in the south wall and a garderobe in the east wall; both are contemporary with the construction of the room. The north-south range abuts the north transept, of which the cornice, blocked windows

and stair turret are visible (**fig. 4**). The east-west range abuts the exterior of the chapter house, where the parapet moulding can be seen below the summit of the roof (**fig. 5**). The north, south, east and west walls contain a series of unused mortises approximately 0.40m above the floor level. The roof of the loft is of scissor-brace construction, with the trusses converging at the angle of the room by means of a substantial diagonal truss. Each truss rests upon continuous corbelling that circulates around the top of the north, south, east and west walls.



Figure 2. Masons' loft, plan



Figure 3. Masons' loft, isometric projection



Figure 4. Masons' loft, north-south range (Photograph: J Rimmer)



Figure 5. Masons' loft, chapter house cornice

## The Date and Function of the Masons' Loft

Before considering the function of the York tracing house it is important to be aware of the circumstances around which it was built. Comparative stylistic and structural analysis by Coldstream (1972), Brown (2003) and Giles (2005a; 2005b forthcoming) has been productive in understanding the sequence of construction of the chapter house and vestibule. This has shown that the two were conceived as one entity, with the completion of the former by 1288, slightly ahead of the latter in the 1290s. Although the masons' loft has long been accepted as an addition to the vestibule, it has been emphasised by the interior survey that its implementation constituted an afterthought to the design, within a continual programme of works. There is no evidence that the loft had replaced a roof space of any previous single-storey arrangement. Coupled with a lack of major building breaks, this interpretation is supported by the fact that the large un-used mortises that circulate the room are simply putlog holes that were blocked on the outside, but left open on the inside, and not the positions of an earlier tie-beam roof, as suggested by Gee (1977, p. 145). Conversely, to confirm that the builders of the chapter house had seemingly not envisaged the construction of the loft either, the chapter house cornice and stair turret are visible on the inside of the loft, but would have originally remained clear above a single-storey vestibule.

New observations of the evidence beneath the raised area of the boarded floor also shed new light on the understanding of the close sequence of construction between the vestibule and chapter house. By studying the vault of the vestibule at ground level it can be seen that within the final bay before the entrance to the chapter house, the vault rises subtly to avoid masking the blind window (fig. 6). This constitutes one of the many remedial features within the vestibule to enable a coherent visual passage from the north transept. It suggests that the chapter house entrance had been completed without reference to that of the transept, with the two subsequently married by the modified vault. This has implications within the loft, where the displacement of the vault is reflected directly in the raised area of the east-west range and is evident as an unfinished stone surface beneath the boarding. Significantly, this vault surface is bonded into the chapter-house wall and shows that the two projects were completed in relation to one another. The central components of the vault are likely to have been added after the construction of the chapter house and vestibule. However, it is likely that the features supporting the vault's connection to the chapter house were constructed early in the sequence, integrating the vault into the existing structure and thus enhancing its stability (Fitchen 1981, p.25). The close dating of the chapter house and vestibule proposed by Brown (2003, pp. 54-55) and Giles (2005a, p. 16) is evidenced by the fact that the western chapter house wall is built blind in its entirety. Furthermore, it was always envisaged that the roof of the vestibule would front this wall. To support this notion, this survey has drawn attention to that the fact that the apexes of the remaining exterior chapter house windows rise to just below the level of the cornice.



Figure 6. Chapter house vestibule, showing variation in vault construction adjacent to chapter house

The original function of the masons' loft has always been questioned. On the basis of the Lady Chapel window design in the plaster floor, Harvey (1968) believed that the room was an addition of the mid-14<sup>th</sup> century, but that it was built as a tracing house and used for the production of masons'

templates. A later documentary reference in the Fabric Rolls of York Minster substantiates the use of the loft as a 'trasura', independent from the physical evidence. In 1581 workmen were paid 10s. 8d. "for xj daies worke on the leades over the tracinge hows, etc." (Raine 1859, p. 118). In contrast, Brown (2003, p. 51) has suggested that the loft was originally intended as a library or treasury. Ultimately, it may never be possible to deduce whether or not the room was *intended* for any other purpose, although, as a result of the interior survey, it can be said that its first use was as a tracing house. This conclusion has been reached through a) the new observations made of the plaster floor and b) those made of the area beneath the lower area of the boarded floor.

With regard to the plaster drawing floor, no other form of floor surface exists beneath. The upper surface has sustained varying degrees of damage and at its termination at the junction of the northsouth range with the east-west, the surface has been broken up and cut back. Linear designs extend to the full limit of this break, while at its southern extent, adjacent to the north transept lancets, an area of the floor has been broken up and re-set. Immediately beyond this area to the north is a hole approximately 0.15m in diameter through the surface of the floor. Within the section of this hole can be seen the depth of the current floor surface, followed by at least one further plaster layer directly below. Beneath the plaster surfaces lie fragments of loose spoilt tile and finely crushed limestone. This loose material appears to be a hardcore fill of the voids of the vestibule vault, providing a roughly level surface upon which to lay the plaster floor. Over time, it appears that some settlement of this fill has occurred; as a result, the level of the plaster floor has slumped in the south-east corner of the room and between the apexes of the ground floor windows, seen along the west wall of the loft. Further evidence for there being no other surface beneath the plaster floor is in the form of the insertion of a remedial vertical post for the diagonal truss. Instead of being set upon the floor, it is cut into the quoining of the wall to avoid the positioning of its load upon the less stable floor. In relation to the boarded floor, it is possible to suggest that the plaster surface continued through the angle of the room into the east-west range, at least up to the edge of the raised vault. Firstly, this may be illustrated by the maximised implementation of the windows to this level to illuminate the working area. Secondly, the designs on the floor are cut abruptly at the break to imply that it once continued further. Moreover, as noted above, the material found beneath the boarding matches that identified through the damaged area of the plaster floor and is again the rough fill of the vault.

The loft is liturgically remote from the remainder of the building and it is therefore unlikely that it was intended to serve any religious function. The likelihood of the room ever being used as a treasury or library, as suggested by Brown (2003, p. 51), also seems remote. The architecture of the room appears rather base for this purpose, where much of the stone in the loft is weathered and roughly finished when one might expect a higher grade of construction for such rooms. In turn, this questions the origin of the stone in the masons' loft. Attention should be drawn to the presence of gritstone in the south and east walls, given that it is a material primarily associated in Yorkshire with Roman building and, subsequently, Anglo-Saxon re-use (Buckland 1988, p. 237).

Additionally, Millstone Grit and Roman magnesian limestone was recycled in the construction of the Anglo-Norman cathedral by Thomas of Bayeux (Phillips 1985, pp. 182-184; Gee 1981, p. 247). It was not until the fire of 1137 that fresh limestone was being quarried for the Minster, which was to continue throughout its remaining phases of construction. Hence, it is curious as to why re-used stone should still be appearing in the late 13<sup>th</sup> century in the masons' loft, and it is duly possible that these materials could derive from a pre-existing Anglo-Saxon or Norman building in the vicinity of the minster. Candidates for the source of this stone include a number of nearby Anglo-Saxon buildings (Norton 1998) or the Minster's Norman nave that was being dismantled around 1291. The Norman builders appear to have re-used Millstone Grit as coping and quoining stones (Phillips 1985, p. 183) and it is from this use that the appearance of such stone in the loft may derive. But why the re-use in the late 13<sup>th</sup> century when new limestone had long since been quarried? It may be that because the loft was not originally intended, an entirely new stock of materials was not available for its completion and, as a result, only the outer walls and parts of the interior could be built in fresh stone. Perhaps pressure to finish the vestibule so that work could progress with the nave had necessitated the use of salvaged material.

It may be no coincidence that the loft was completed in the 1290s as work on the nave ensued; in fact, this may explain why the loft was constructed in the first place. The introduction of French Rayonnant architecture to the evolving vestibule appears to have been through the powerful influence of Archbishop John le Romeyn, the Younger (1285-†1296) (Brown 2003, p. 71). Although he was not the architect, his time spent in Paris, Lincoln and Troyes could have affected his outlook on the buildings he oversaw as patron. In particular, St. Urbain in Troyes is the only other building to demonstrate the window design found on the vestibule (Coldstream 1991, p. 28). Significantly at Troyes, plaster surfaces were created over "the redundant parts of the building such as the vaults of chapels" (Coldstream 1991, p. 33). Did le Romeyn implement a more permanent solution for a design space from his knowledge of practices at Troves? Coupled with the presence of Master Simon the mason it is possible that the loft was added as an afterthought to cope with the designing of the new nave, usually attributed to Simon (Harvey 1987, p. 274; Brown 2003, p. 87). Although work to the nave was already underway by the completion of the vestibule, its construction was a long time in the making from c.1291-1360. It may therefore be possible that designs for this part of the building exist on the lower layer of plaster identified within the stratigraphy of the cut in the tracing floor.

#### WELLS CATHEDRAL: THE NORTH PORCH

#### Summary

The tracing house at Wells Cathedral is located within the upper chamber of the north porch (**fig. 7 and fig. 8**). The porch is rectangular in plan and provides passage into the north aisle of the nave. The tracing room is presently accessed by taking the south-west tower stairs into the triforium where a small, squat entrance is found mid-way along in the north aisle wall. However, a staircase

leading from a doorway to the east of the north aisle door originally facilitated immediate access from directly below the chamber (**fig. 9**). This staircase, contained within the thickness of the aisle wall, is now blocked at first floor level.



Figure 7. Wells cathedral, north porch

There is a striking contrast between the richly adorned, two-bay ground floor and the single-cell first floor of the porch (**fig. 10**). At this level, the surface of the south wall is unfinished, with only the rubble core in place. The adjacent wall to the north contains a simple tri-lancet arrangement with the remaining work plastered over. Upon the surface of the plaster are traces of lines drawn in charcoal. The timber roof is of a simple truss and tie arrangement, numbers of which have been subsequently strengthened with additional, lower tie beams. The roof rests directly upon the west and east walls without the use of a plate. These walls are set low at parapet level. The east wall is finished with ashlar masonry, while the west only consists of the roughly coursed core. The blocked staircase of the north aisle protrudes through the boarded floor at the entrance to the room and is blocked with a wooden panel. Both the head of the blocked staircase and the current entrance to the room have been cut back and reduced. The boarding continues into the room to where it meets a horizontal timber set in the floor. The plaster floor extends beyond this, abutting the north, east and west walls.



Figure 8. Wells Cathedral, north porch, elevation and section

#### The Date and Function of the North Porch

The construction of the Gothic cathedral at Wells is interesting because it took place on a fresh site immediately north of the earlier Anglo-Saxon and Norman church (Harvey 1982, pp. 52, 59; Rodwell 1996; 2001). Two major campaigns between c.1180-c.1240 and c.1285-c.1345 were the principle periods of development: the nave, transepts, earlier Lady Chapel and west front at sculpture level within the former; the chapter house, new Lady Chapel, choir and the central and western towers within the latter (Pevsner and Metcalf 1985, pp. 292, 295). The surge of new construction in the Early English style in the late 12<sup>th</sup> and early 13<sup>th</sup> centuries at Wells has caused much debate amongst scholars regarding the sequence of building. This has been encouraged by the fact that each element was constructed shortly before, or around the same time, as the next and that comparisons have erroneously been drawn with the contemporary works at Glastonbury (Colchester and Harvey 1974, p. 201).

From c.1180 the earlier eastern end and transepts were built first, with the nave underway by c.1200 and complete by c.1240. Thus, within these 40 years the building of the north porch took place. Both storeys of the porch were seemingly built as one, since there are no traces of any breaks in construction between the lower and upper



Figure 9. North porch, disused staircase from north aisle to tracing room



Figure 10. North porch, interior view of the tracing room

floors. Although no documentary sources exist recording its construction, it stylistically respects both the Early English north transept in its treatment of the buttresses and pinnacles, and the nave and west front in its more advanced use of the style. The Norman detailing has prompted scholars to favour a date nearer 1200, supported by the argument that it is built coherently into the nave (Reid 1973, p. 45). However, as will be discussed, a break between the nave and porch is apparent and the latter was clearly a new addition to the original north entrance scheme. Thus, as Kidson and Tudor-Craig (1978, p. iv) and Rodwell (2001, p. 146) suggest, a date of c.1215 or later is more likely.

There can be little doubt that the north porch was the principle entrance to the cathedral (Pevsner and Metcalf 1985, p. 296). However, it was not the first. Studies by Rodwell (1996, p. 120) have shown that the liturgical quire was complete and ready for use by c.1196 and that it was around this time that the move from the earlier church took place. The principle access at this point was via a major processional door in the south transept. The focus of entry into the building shifted to the north aisle during the construction of the nave, probably brought about by the accommodation of the clergy to the north of the cathedral. However, the porch itself was not intended at first since a break in construction can be seen between the porch and the nave in **fig. 11**.

The transition of the ashlar work is subtle and well contrived, but the 'stepping up' of the string course above plinth level is clear. To the south of the break is the work of the nave, followed later by the porch to the north. Further observations add to this hypothesis. As described above, the staircase to the upper floor of the porch is contained within the north aisle wall. There is evidence to show that the north face of the staircase was meant to be visible on the exterior in the form of a window, now seriously reduced and masked by the abutment of the porch. This staircase would have provided self-contained access to the triforium level of the nave prior to the construction of the

porch. Subsequently, for the porch to be integrated into the north aisle at roof level, the face of the triforium wall, the staircase and the door had to be reduced in height and were roughly cut back. This also enabled the staircase to communicate with the upper chamber. The staircase rises through a newel to a diagonal flight and emerges in the middle of the room. This is due to the fact that if the entrance to the triforium were created directly above the newel it would have to emerge through one of the large inner flyers above the triforium, thus reducing structural stability.



Figure 11. East wall of north porch, showing transition with the north aisle of the nave

The exact use of the triforium is unclear, although it is conceivable that it was used as a processional gallery during important services. At Wells it is possible that the triforium was used for processions on certain occasions, such as Palm Sunday, and that the chamber above the porch was intended as a vestry, within which the clergy would prepare themselves before entering the gallery. The loft was afforded windows and the staircase and doorway were modified so that access could be gained from just inside the interior north door to the chamber and triforium. However, there is reason to believe that, if such a scheme existed, it was never realised. The explanation for this is twofold: the first is that the room was never completed, with the core of the west wall of the

chamber remaining exposed and the staircase and doorway left crudely reduced. The second may be explained through the ongoing development of the west end. Initially, primary access to the triforium was planned via the stairs in the north aisle, but by c.1239 the west front had been completed, minus the upper stages of its north and west towers. Although the north porch remained the regular entrance to the cathedral, the emphasis as a major processional entrance was moved to the west front, where new access to the triforium was created within the bases of the towers. These stairs provided a more convenient route to all ranges of the triforium, where an upper-level procession could be co-ordinated more smoothly with that which passed through the nave from the west. Subsequently, the implications of this are particularly significant in relation to the dating of the north porch and its use. As it neared completion, it is likely that the builders anticipated that the room would not be required and therefore roofed it in an unfinished state, unnoticeable from the exterior. As a result, the porch may have been started fairly early, in line with Kidson and Tudor-Craig's (1978, p. iv) date of c.1215, but was not completed until the west front was underway from c.1220. The careers of the master masons during this period may in fact parallel these changes. Master Adam Lock served from c.1215, if not before, until his death in 1229 where work on the west front had reached plinth level (Harvey 1982, p. 99; Colchester 1987, p. 30). Lock was superseded by Thomas Norreys (†1249) who chose to follow his own, new scheme to complete the west front. Therefore, it may have been around 1230 that the decision was made to finish the north porch prematurely.

The redundancy of the north porch chamber as a vestry would have left it open for other uses, including its function as a tracing house. Some time may have elapsed before this change of use. The next major project was the substructure of the chapter house, laid out shortly after c.1249 (Colchester and Harvey 1974, p. 205). No designs for this can be detected upon the current floor, although, as with York, the potential for more than one surface cannot be ruled out, and Wells also demonstrates re-plastering over earlier designs. From the existing evidence, a date of c.1285 seems more likely, when the second major programme of works at Wells was initiated. The floor was certainly in use into the 14<sup>th</sup> century, from when a portion of the window designs for the Vicars Close survives (Colchester 1987, pp. 59, 61). These houses have been dated to 1348 and were certainly under construction before (Rodwell 1996, pp. 128, 130).

## THE WORKING SPACE OF THE MASTER MASON

This final section will bring together the investigations at York and Wells to consider the wider implications of the archaeology of the tracing house and to address the areas of debate outlined at the beginning of this paper. From the studies undertaken it is possible to consider the ways in which these spaces functioned for the masons. Harvey (1968, p. 2; 1972, p. 102) was convinced that the tracing house and its plaster floor were used directly for the creation of full-size templates. However, fresh observations made of the floor and, importantly, the rooms themselves suggest that this was not the case. In terms of the floors, neither York nor Wells provide consistent evidence of

designs that could be used to produce templates for the cutting of stone. None of the designs are complete, even to a degree to allow production by symmetry. Although the dense mesh of lines and arcs is largely indeterminate upon both floors, it appears that this is all they are. Thus, these forms may demonstrate the testing of dimensions and simple arches that would form the basis of a more accurate design, perhaps composed upon the trestle table in parchment.

So, the significance of the template as the key element of the design process perhaps needs more thought. It may be that emphasis has been placed too heavily upon their earlier use because templates are now the principle tools of restoration. Given the size of even a single phase of Gothic at York, for example, the logistical pressure would have been overwhelming, where a massive amount of timber or parchment would have been required to create every element. Hence, it is likely that the Freemasons, including the carvers, were given much more responsibility in the physical execution of a building. Moreover, the analysis of the locations of the surviving tracing houses has shown that they do not lend themselves to a workshop function. At York, the transport of materials via the chapter house staircase would have been impractical, with the only alternative means being a hoist used through a window. The same may be said for Wells, where access is constricted through the narrow flight of stairs from ground level or by the convoluted route through the triforium via the north-west tower. Thus, it appears that the tracing houses at York and Wells functioned as *design* spaces as opposed to sites of direct template production, as viewed by Harvey (1968; 1972). These rooms served as a permanent area to experiment with new concepts, without wasting timber drawing boards or parchment. This theory adheres to how experiments in Gothic design are implemented on a Europe-wide scale and how the choice of design space may be universally quite deliberate. Experiments in design were intended to be unseen, particularly if they might reflect error or if craft secrecy was to be maintained.

On current understanding, the tracing houses at York and Wells are the most contained instances of a design space. Therefore, these rooms should provide a concise insight into what constituted a suitable place to practice design. York and Wells share both differences and similarities regarding their form and implementation. In respect to differences, York was only ever used as a tracing house and, more likely than not, was intended for this purpose from the outset. In contrast at Wells, the tracing house was created through the assimilation of the roof-space that was intended to serve a much different function. The variation in form of the rooms is striking: York is spacious, owing to both the size of the room and the choice of roof, whilst Wells is far less accommodating, being a biproduct of the elaborate ground-floor of the north porch. York has the garderobe and fireplace, while no such amenities were provided at Wells. However, the Wells example does carry the advantage of allowing access to all areas of would-be development at first-floor level. Although York lacks this asset, access from the chapter house would not have been as inconvenient as first thought if the loft was not used on a day-to-day basis to produce templates. Therefore, the master mason could work around the use of the chapter house by the clergy and government with considerable flexibility. Design work may have been restricted to the winter season, as implied by

the fireplace at York, when the master mason was not occupied with overseeing building operations. The separation of the tracing house may also be expressive of the protection of the design process, while the lodge remained accessible to all working masons. Furthermore, if the space had never been envisaged by the Dean and Chapter, nor subsequently required, this may explain why these tracing houses have survived.

When looking beyond the mere appearance of these rooms, the similarities are as equally strong as the variations. Both are at first floor level and seek the provision of light. While the windows at York were built to serve the room, the fact that the masons at Wells acquired a roof-space with windows was probably a deliberate choice. The implementation of these rooms also coincides with the close of the 13<sup>th</sup> century and, importantly, the rise of the Decorated style in Gothic. It is possible, as suggested by the 13<sup>th</sup>-century archiepiscopal developments at York, that such design spaces were a continental import. Both York and Wells underwent massive programs of change during this period and the tracing house may well have grown as a practical space to tackle the demands of this increasingly complicated style. This is suggested by the recurrence of incomplete tracery designs and the superimposed lines and arcs that represent the planning stages of fenestration schemes. This would have continued into the 14th century with the onset of Perpendicular. The location of the tracing houses at York and Wells are actually very deliberate, whether intended or commandeered, for it is these areas of the building that would remain unaffected by the foreseeable building operations. At York, the chapter house and its vestibule were new structures, with the focus turning to the nave and, later on, the choir and Lady Chapel. At Wells, a similar set of circumstances feature, where the porch and nave were considered complete, with the plan to enhance the eastern end of the building over the following two hundred years.

So, in sum, the tracing house may have existed at any number of cathedrals that underwent significant development from the later 13<sup>th</sup> century onwards; hence, cathedrals that consist almost solely of one phase, such as Salisbury, may never have been developed in the same way. If located within the building, their position was somewhere discreet, with a roof space being the obvious choice, that would be unaffected by the progress of major works. The provision of light was important, and although the architecture of the rooms does not demonstrate status through adornment, the fact that the master mason was provided with a drawing room separate from the lodge highlights his prominence within the cathedral building craft. As shown by Harvey (1982; 1987) the late-13<sup>th</sup> century masters at York and Wells had serious roles in dictating the development of these cathedrals, and it is possible that their demand for a working space within the church was legitimate in the eyes of the Dean and Chapter. In respect to other examples of surviving designs within buildings, such as those at Soissons (Barnes 1972), it is feasible that they represent sites of sporadic problem-solving, as opposed to regular places of design.

The outcome of the studies at York and Wells is by no means conclusive. Whilst the dating of the rooms suggests their role in the development of the Decorated style, the floors themselves can only

be dated to the introduction of Perpendicular as they convey only a closing statement of their period of use. Furthermore, the resultant criteria does not take into consideration the nature of the separate, timber tracing house, exemplified at St. Stephen's Chapel, Westminster, in 1331 (Fergusson 1979, p. 6) Mindful of these caveats however, these investigations have taken us a step closer to an understanding of the practice of medieval design. In the future, the use of laser technology could perhaps enable us to record and unpick the intricate 'design stratigraphy' of these working floors to bring us nearer to the period of first use, and, now equipped with the criteria of what may constitute a design space, it may be possible to test these principles at sites both on the continent and in the United Kingdom. Studies at continental locations, such as St. Urbain, Troyes, may prove particularly significant, since these sites are among some of the earliest to demonstrate innovative design alongside experimentation. With a better appreciation of the design space we may move towards a closer chronology of the genesis of these approaches. This may therefore shed important light on how changes in the Gothic style were disseminated and adapted across Europe during the medieval period.

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