



THE PAST, PRESENT AND FUTURE  
OF RESTORATION, CONSERVATION AND ADAPTATION OF  
**CATHEDRALS**



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## ABSTRACT

I have chosen a study of buildings that relates to the pinnacle of architectural design. Therefore, the focus is on four cathedrals with rich European history and with different attitudes to the upkeep of their fabric over the last 100 years. These cathedrals are those that have been key influences in restoration, conservation and adaptation. Through site visits and interviews with professionals who undertook the works on these cathedrals, the study will uncover trends and confirm whether these works have maintained their original spirit after the tests of time. Thus I can better understand how the philosophy of intervention on cathedrals have changed as time has passed and in accordance with changes in guidelines.

Ancient and loved buildings should be properly maintained so that their spirit with the origin and history of their places can be upheld too. An ancient building's spirit is established from its architectural origin, the construction materials used and the history it has witnessed.

For centuries after their original construction, architects have attempted to restore cathedrals to a certain state, deeming their work to be in keeping with the building's original history and setting. Such projects are considered controversial in today's conservation architectural world due to their interpretations of the word "conservation". This has led to the altered perception of their past, present and future. How this study becomes critical is due to the international charters on conservation, which look to oppose such restoration and conservation interventions. These bodies comprise guidelines to provide an international framework for the proper restoration and conservation of historic buildings.

The conclusion is that since modern building standards and methods are required in today's construction, compromises are inevitable. All buildings inevitably decay and so, change is necessary. Furthermore, needs and uses of these buildings have evolved since their origins. The amount of revenue required to maintain these cathedrals is immense and requires a meaningful purpose to provide income from visitors and users. It is the balance between modern interventions and spirit that creates this study's critical element.

## INTRODUCTION



**Intent**

Following on from my previous study of sacred architecture and their impact on the changing urban landscape, the past, present and future of architectural restoration, conservation and adaptation are the focuses of this study. It shall focus on cathedrals due to my desire to study and understand the different approaches to work on them. This is since they need to be carefully managed as they hold such a history behind them. They also mean so much to the communities that surround them. However, in order to stay current and have a fitting purpose in their evolving communities, cathedrals' uses must adapt accordingly. Cathedrals are like books that began centuries ago and as time passes, one author after another writes a chapter to make for a comprehensive story.

There is an increasing awareness of the significance and value of our heritage and of the cultural community we enjoy. This is seen in our buildings, particularly

cathedrals (Insall, 2008:7). Since it is these that provide us with a sense of belonging, it is crucial that cathedrals are preserved appropriately and using suitable materials and skills.

**Grade Listings**

Many prominent and historic buildings are protected in Britain and France by legislation. Furthermore, there is legislation to protect cathedrals in Britain since they are considered Grade I listed buildings.

There are three separate grades of building: Grade I is defined as being of "exceptional interest", and having international significance (Pers. Comm. see Appendix D).

Grade II\* is defined as being "more than special interest".

Grade II is defined as being "special interest".

As can be seen Figure 1, only 2% of the 440,000 listed buildings are Grade I listed.

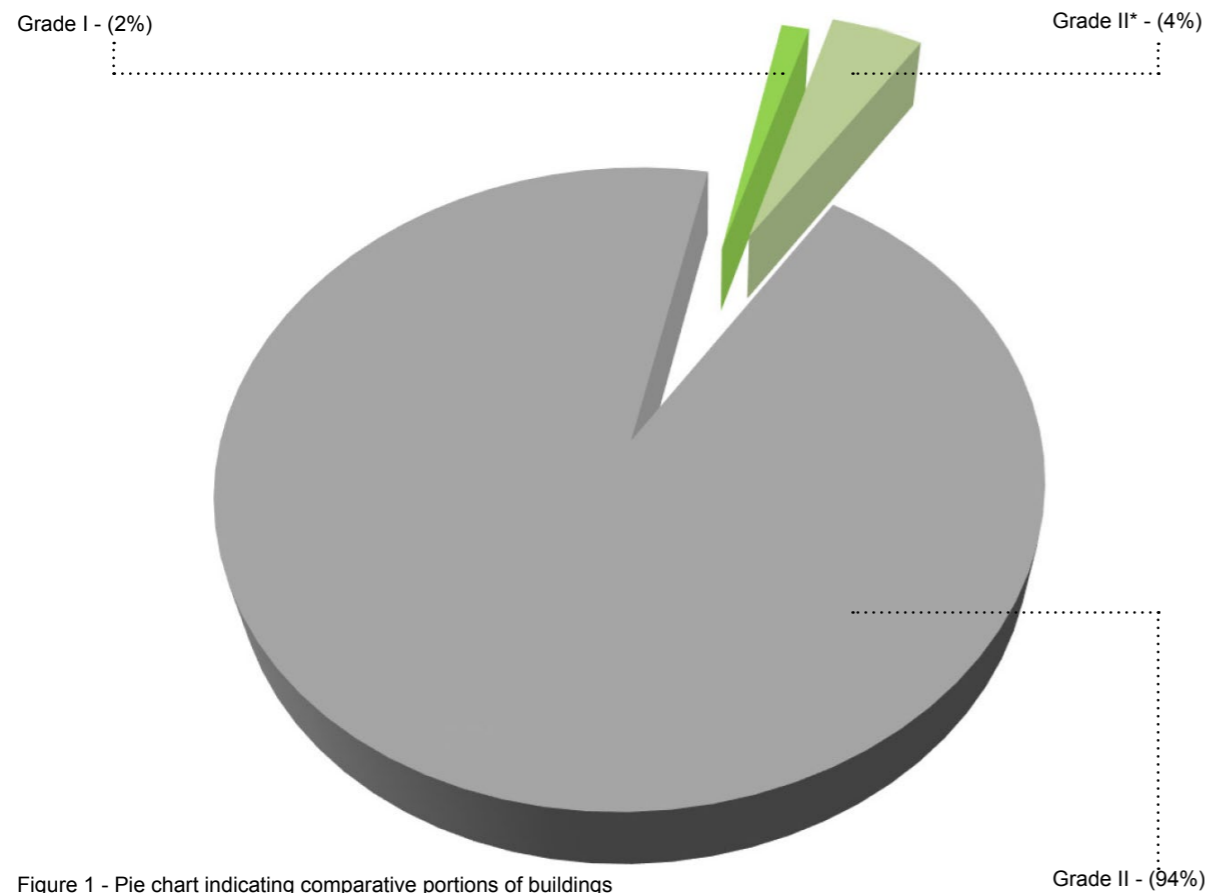


Figure 1 - Pie chart indicating comparative portions of buildings distributed across the grade categories (Author's own)



- ..... Chester Cathedral
- ..... St Albans Cathedral
- ..... Notre Dame de Paris

Figure 2 - Map indicating positions of case studies across UK and France (Author's own)

**Case Studies**

The case studies are internationally significant medieval Cathedrals, demonstrating different intervention styles into their historic fabric. The first is located in France and the other three are located in England. These case studies' construction is unique in terms of method, architectural style, building materials used and even those aspects reflect the history of the place.

The first two case studies reflect 19th Century restoration practice. The first restoration is at Notre Dame in Paris. The second restoration is St Albans Cathedral in Hertfordshire, which also has elements of adaptation.

The third is an example of conservation. York Minster in Yorkshire, which has an issue with deteriorating fabric.

The fourth is an example of an adaptation of Chester Cathedral to a 20th Century usage.

## Key Definitions

However, the critical edge of the study is how the definitions of restoration, conservation and adaptation have been interpreted. The study concludes with determining whether the cathedral case studies have maintained their original spirit and presence within their surrounding towns/cities.

The terms, restoration and conservation have been used interchangeably in charters, without attributing their distinctive meanings. This is somewhat dangerous. These three terms are defined as follows.

Preservation is defined as the state of survival of a historic building (BSI Group, 2013:6).

Restoration is defined as modifying existing materials and a structure to reveal the culturally significant qualities of a historically important asset. It is based on respect for the original material and evidences the earlier state (Earl, 1996:193). However, Historic England believe that it can become controversial when new techniques or materials are used, or when the restoration is based on speculative reconstructions (Keith, 1991:12).

Conservation, as Tony Barton, the lead conservation architect of Donald Insall Associates describes, is the management of change. As a profession, conservationists manage the change in buildings, in parallel with economies and communities and in people's lives (Pers. Comm. see Appendix E). There is insistence for initial studies and records to be carried out prior to works beginning. It also includes preservation and treatment during works (Earl, 1996:191). Furthermore, it is described as managing change and thus should not

be done lightly. This embraces all acts that prolong the life of our cultural and natural heritage (Feilden, 1982:3).

Conservation's intention relates back to the initial idea of architecture as a whole. Architects are charged with presenting to those who use and look at cathedrals with wonder at the artistic and human messages that they possess. It is also desirable to enhance the vision as a result of conservation work. This increases the challenge set for the conservation architect and the rest of team involved in the works. The debatable aspect of conservation comes, from Historic England's point of view, when buildings become sterile museum-like attractions, which become dead when unused (Keith, 1991:12).

Significance is defined by Historic England as the value of a heritage asset in the present and future because of its heritage interest. The interest can be archaeological, architectural, artistic or historic. This significance comes from that asset's physical presence and its setting (<https://historicengland.org.uk/>, December 20th 2016).

Heritage is another relevant term in this study that should be considered along with restoration and conservation. Heritage relates to inherited possessions and traditions. UNESCO (United Nations Educational, Scientific and Cultural Organisation) defines heritage as being "our legacy from the past, what we live with today, and what we pass on to future generations" (Rodwell, 2007:7). It is therefore timeless and relates to anything, whether it be buildings or artefacts. Unfortunately, not everybody understand the full sense of the word and instead, misinterpret it as something relating only to history and separate from life today. In architecture, a consequence of this limits the perceptions of the purposes of conservation architecture: for preserving historic

evidence and providing work for the industry.

This study on the other hand was not a focus on how cathedrals of significance have been reused. It was focused on how the architecture has been maintained in terms of their forms and materiality, by means of restoration, conservation and adaptation.

Furthermore, what is considered alongside these three philosophies of intervention are designation and protection of these cathedrals in recognition of their significance.

## Initial questions

Therefore, the key question to be answered in this study comes in two parts:

With the evolution of repairing our cathedrals through restoration, conservation and adaptation, can our cathedrals maintain their original spirit? If so, is there a philosophical approach that is preferable to achieve this? This question is significant since the choices of approaches have evolved over time in accordance to change of tastes and uses for buildings.

## Methodology

The research progress began with reading books by authors that have backgrounds in the aspects of restoration, conservation and adaptation. The first key resource was the SPAB (Society for the Protection of Ancient Buildings) Manifesto. The second was the Venice Charter, which includes their interpretations of crucial words in this study. Further books read are those directly relating to the case studies, which contain

information on the earliest chapters of the cathedrals' histories.

At this point, enough information was acquired to interview the relevant restoration, conservation and adaptation professionals who worked on modern interventions on the cathedrals. In addition to their explanations of how their work was integrated with the architecture that preceded theirs, they discussed the legislation and charters they adhered to, which would help to establish a timeline that flows towards its conclusion.

## Chapters

The chapter sequence is as follows:

- The advent of the restoration phenomenon that began with Viollet-le-duc's controversial restoring of Notre Dame de Paris in France - 1844
- The controversial restoration of St Albans Cathedral in Hertfordshire, UK by various architects - 1870s
- The anti-restoration movement, which led to the formation of the SPAB manifesto - 1877
- The Venice Charter - 1966
- The Conservation works at York Minster, Yorkshire by Arrol and Snell - 2000
- Adaptations of St Albans Cathedral, York Minster and Chester Cathedral, following their restoration and conservation works - (Various dates)
- The final analysis between restoration, conservation and adaptation and what the future holds for cathedrals

I  
VIOLLET-LE-DUC AND THE RESTORATION  
OF NOTRE DAME DE PARIS





Figure 3 - Map indicating location of Notre Dame de Paris in relation to other case studies, (Author's own)

**A need to restore Notre Dame de Paris**

Notre Dame de Paris, first completed in 1345, is a 19th Century example of a restoration project.

It was originally built over 160 years between the 1160s to the 1320s. Most of it was completed by the 1220s in the Early Gothic style (Ayers, 2004:78). The High Gothic period followed and so it was partly remodelled to modernise the cathedral to respond to stylistic developments.

In the 19th century, the cathedral was damaged by

neglect and vandalism, during the French Revolution. The cathedral's spire, stained glass windows and the sculptures from the south, north and west fronts were destroyed (Ayers, 2004:83).

By the 19th century, the cathedral was in a poor state (Ayers, 2004:83). The masonry had crumbled to the point that collapse was imminent. The gargoyles were also gone and sculptures of individuals, particularly those on the West Front (see Figure 4), were beheaded as symbols of royal despotism by their perpetrators (Coloni: 2010:24) and consequently buried (Appendix H).

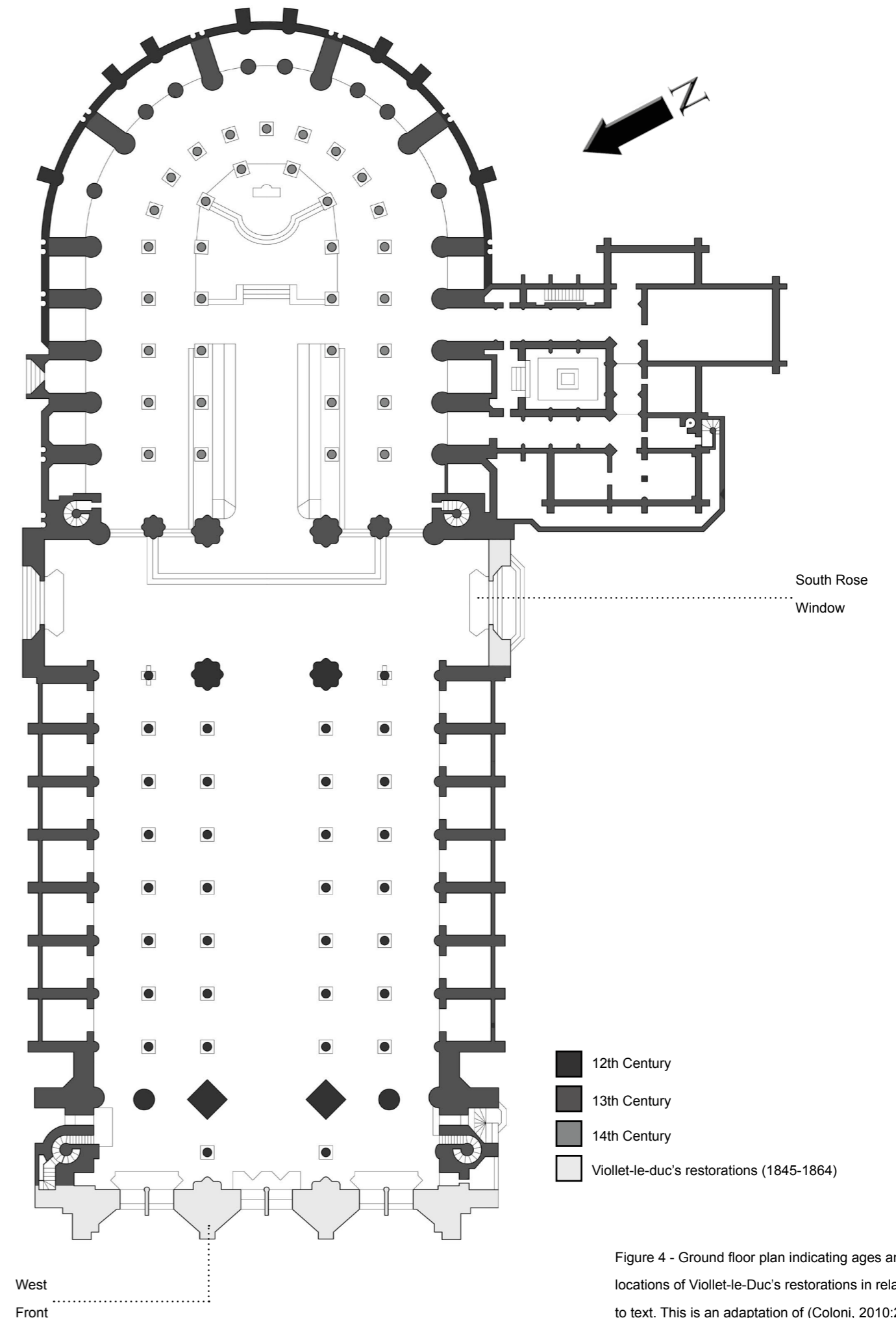


Figure 4 - Ground floor plan indicating ages and locations of Viollet-le-Duc's restorations in relation to text. This is an adaptation of (Coloni, 2010:26)

However, the reign of Louis Philippe (1773 –1850) saw a change in attitude in France’s medieval heritage, which was reinforced by the then king’s desire to reconcile the country to its past. This was when restorations across Paris in general began.

Notre Dame’s restoration began in 1844, but it was due to influence from a committed writer and social democrat Victor Hugo (1802 – 1885), known for writing “Notre Dame de Paris” in 1830 (Hugo, 2004:7). He wrote of the cathedral’s architecture, describing the effects on the cathedral of the French Revolution as “degradations and mutilations which time and men have wrought simultaneously on this venerable monument (Hugo, 2004:18).” Although speaking highly of Notre Dame, Hugo never classified it as either Romanesque or Gothic architecture (Hugo, 2004:127). Most crucially, he described the monument as something that could not be deemed complete. This was what, as Shelley Rice describes, gave rise to restoration fever in the first place (1997:121). Hugo’s writings described Notre Dame’s decayed condition as suggestive of France’s negligence of its Gothic heritage and caused a chorus of disapproval in 1844. It was then that the government hired Eugène Emmanuel Viollet-le-duc (1814 – 1879) to restore the cathedral to its current state, between 1845-1864

(Coloni, 2010:24).

### **Viollet-le-Duc**

Viollet-le-duc had a long career in restoration to churches, castles and towns and known for being highly analytical in his views of structure. During his work on the fortified town for Carcassonne’s in Southern France, for example, his main focus was the turrets. At the time, he was only familiar with Northern French turrets, which were all slate clad. He then covered all of Carcassonne’s in that too, as opposed to the original Southern style tiles. This led to historical inaccuracy. Yet, his slate cladding held such historic value that the French government restored them as slate cladding since it was an example of Viollet-le-duc’s work (Pers. Comm. See Appendix D). Despite being chronologically imprecise in his work, Viollet-le-Duc was still an exceptional historian due to his extensive knowledge of history, technology, and architecture into his historical interpretations of the buildings he restored (Costa Guix, 1988:5).

In addition to these works, Viollet-le-duc had been appointed in 1837 (Earl, 1996:149) by the French Historical Monuments Commission for key restoration work during the Second Empire. He created controversy

by having a unique yet questionable interpretation of restoration. He deemed himself responsible for re-completing buildings in a way that may never have existed in the past (Earl, 1996:55). This is what Keith described, as stated earlier, as speculative reconstruction (1991:12).

Viollet-le-Duc’s approach to restoration was condemned in the 19th and 20th Centuries, owing to his controversial interpretation (Hardy, 2008:497). SPAB (Society for the Protection of Ancient Buildings) has an attitude on reusing buildings. “If it (a building) has become inconvenient for its present use, to raise another building rather than alter or enlarge the old one’ (<https://www.spab.org.uk>, 16th December, 2016).” However, Viollet-le-duc argued that if said building could be used in another way that there would be no need to make any changes to the building or raise another in its place (Hardy, 2008:496). The twentieth century world condemned this since this implies that a building no longer naturally remains in keeping with its original setting in the history of place, even though the conservation community did agree that the best way to maintain a building was to constantly use it. (Hardy, 2008:496)

*“...we plead, and call upon those who have to deal with them, to put Protection in the place of Restoration, to stave off decay by daily care, to prop a perilous wall...”* (<https://www.spab.org.uk>, 16th December, 2016)

Viollet-le-Duc was also chosen as a case study in terms of architectural individuals because despite the controversy surrounding his work and his theories, the conservation world did go on to satisfy itself with an interpretation of his theories that have been inspired in today’s conservation architectural works (Hardy, 2008:497). There is merit in the controversy, which owes itself to an in-depth conversation about architecture and how this sector has translated itself into the ever changing urban landscape that surrounds these buildings. What introduces four-dimensionality into the argument is that Viollet-le-duc defined restoration as an “action which reinstates (a building) in a condition of completeness which may never have existed at any given time’ (Jokilehto, 1999:151)”. This implies that in today’s conservation world, we may have fallen into a trap where conservation architecture has become lost in time given that the conservation world has become inspired by his works.

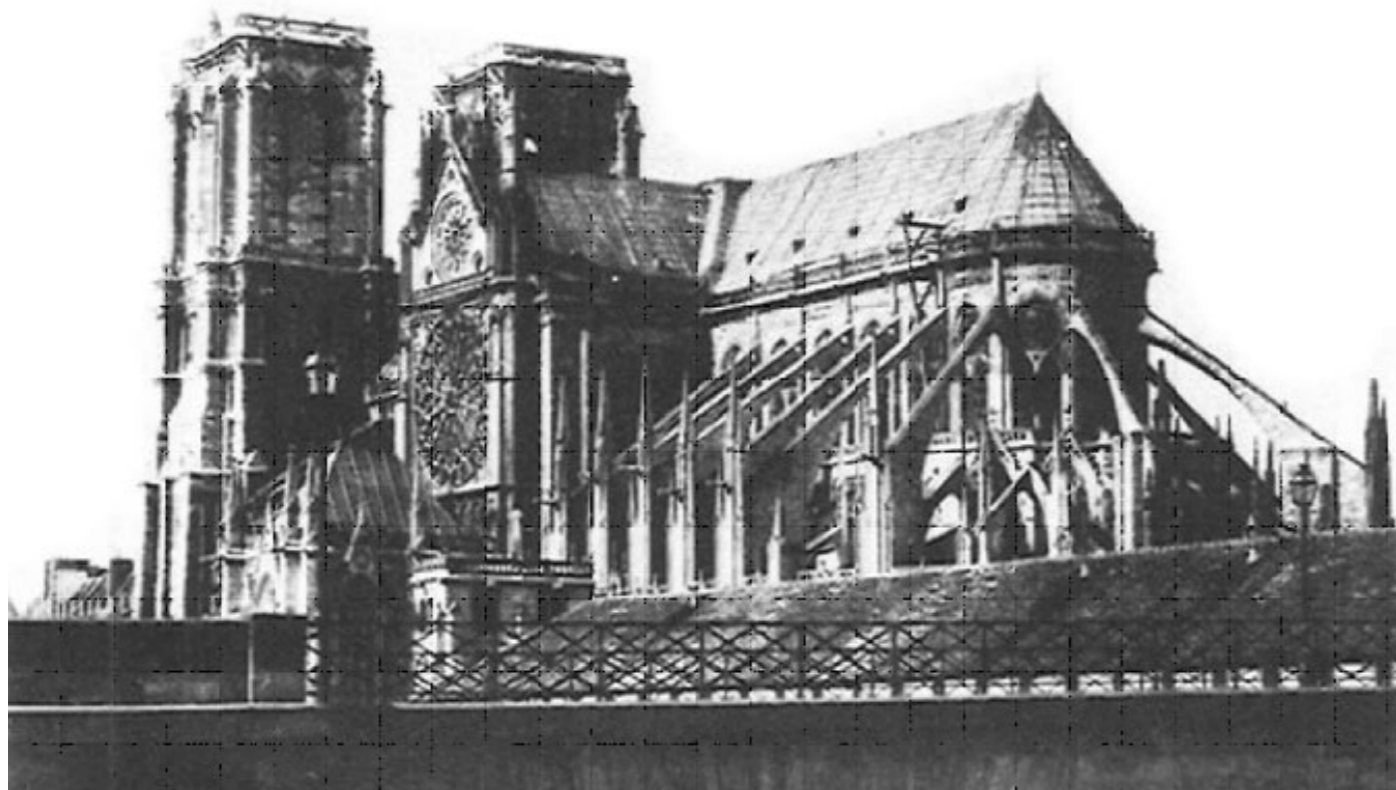


Figure 5 – Photograph of Notre Dame prior to main restoration works, taken in the 1850s (Donzet and Siret, 1980:73)

Figure 6 – South Elevation of Notre Dame, restored with fleche on central axis as seen today (Author's own)



### Controversial restoration

The debate is that despite controversial repairs made by Viollet-le-duc, Notre Dame de Paris, along with the monuments he repaired, still survived even after the damage incurred during the French Revolution. Most of these fell into almost complete disrepair. Jokilehto writes that Viollet-le-duc's restorations were justified by research and consolidation of historic evidence found about the building (Jokilehto, 1999:146). The evidence was nevertheless scarce, thus not reliable. This led to other alterations across Notre Dame. These included the added fleche, the central spire found at the intersection of the nave and the transept seen in Figure 6 and not in Figure 5. Although a potentially rich and traditional element in cathedral architecture, it still created a false account of the historical development of the building.





Figure 7 – West Elevation of Notre Dame (Author's own)

Viollet-le-duc's restorations of Notre Dame began with the fabric being rebuilt. He would however go further than merely restoring what was necessary (Ayers, 2004:83). This is where the controversy begins. With regards to restoring the missing sculptures on the West Front (see Figure 7) and furnishings, he did not hesitate to invent where historical documentation was non-existent. Ayers wrote that Viollet-le-duc was cavalier in

his attitude towards being historically accurate (2004:83), thus he showed a lack of proper concern. Viollet-le-duc's reasoning for "restoring" the sculptures at all was that without them, the cathedral could not be understood. This reasoning is understandable since they contribute to the story of the cathedral's historic origin, but, on the other hand, it has potentially created a false sense of history since the sculptures did not resemble those

Figure 8 – Row of kings on the west elevation of which their spatial and sculptural qualities differ from their medieval predecessors (Author's own)



Figure 9 – Original king sculptures' heads, as now found at the Cluny Museum, Paris (Author's own)

aesthetically to what was there before the vandalism during the French Revolution. The sculptures were not found until 1977 when they were discovered by chance and donated to the Cluny Museum after that (see Appendix H and Figures 9 and 10).

The sculptures (see Figure 8) unavoidably differed from their predecessors, since it was impossible for modern

sculptors to replicate them, owing to their damage (Jokilehto, 1999:146) and absence. However, this can be seen as a serendipitous sign of progress in terms of Notre Dame's external aesthetic owing to the quality of craftsmanship seen in the restored sculptures.

Figure 10 – Original beheaded king sculptures' heads, as now found at the Cluny Museum, Paris (Author's own)







Figure 11 – South Rose window at Notre Dame de Paris

(Author's own)

### South Rose Window

Problems specifically were noted on the South Rose Window (see Figure 11), which demonstrated Viollet-le-duc's lack of restraint. Charles Hiatt wrote in 1902 that the amount of colour used within the clear glass confuses our appreciation of the architecture's fine lines. It is frequently restless and irritating where it should be relaxing (cited in <http://www.victorianweb.org>, 2nd December 2016).

The coldness and severity which the mural decorations of Viollet-le-Duc ineffectively strive to lessen were not felt at all. The light from the window seemed to be transmitted in glowing and gleaming shafts of too many conceivable colours and tones (Hiatt, 1902:69). This is crucial owing to its orientation in relation to the sunpath (see Figure 4).

Proposing that by finishing what the original Gothic Architect for Notre Dame Cathedral had started, the 19th century could regenerate architecture (Middleton, 1982:139). The controversy being, of course, although the Gothic architecture style was reflected in Viollet-le-Duc's restoration work, individual elements of the work itself bears no resemblance to the building's history. Thus, the representation, in terms of its setting and community that cherished it, was affected (Jokilehto, 1999:136). This occurred even after he was reminded to pay respect to the original buildings that have become damaged. He still completed the restoration according

to his own desires and tastes that it implied the rewriting of Notre Dame's history. However, not all others agreed with this due to the implication.

Yet not everybody was against Viollet-le-duc's work. His work at Notre Dame was described, by Clemen, as "not, by the nature of it, escaping the limitations of its time" (Clemen, 1938,xxx). He also stated that Viollet-le-duc filled the gaps with much devotion. His Gothic Art expertise was applied to direct the sculptors so well to reflect the form of the original cathedral construction. Today, it is difficult to ascertain what original construction was and what Viollet-le-Duc's restoration work was. It was this way of thinking that has caused controversy in today's restoration standards. Given that it is difficult to differentiate between the original and new, the restoration works can be interpreted as rewriting history by constructing sculpting forms as if they already had been there (Sutcliffe, 1993:67).

Notre Dame was targeted for destruction during the French Revolution since it was a Christian monument and therefore was the king's possession (Rodwell, 2007:4). It was also one of many symbols of former oppression and was soon recognised as testimony to the past achievements of those who had formed the French nation. Thus, there was a responsibility to protect monuments, such as Notre Dame, for it was believed that the purpose of a building can change and beneficially for the better as the restoration after the Revolution proved.



### **Influence on Conservation and Restoration Architecture Today**

Not all Conservation Architecture practices agree with Viollet-le-duc's philosophies, since the point of restoration/conservation is to reveal the qualities of a cathedral based on respect for the original form. His work was deemed to have turned out to look like a slightly imagined piece of architecture as he wanted it to be (Pers. Comm. see Appendix C). In spite of this, Donald Insall Associates, a British Conservation Architecture practice, for instance, like the idea of cross fertilisation of architecture styles between two countries. In this case, it is France and Great Britain. What Viollet-le-duc's influence in Great Britain was inspiration of cast iron work that is visible in Notre Dame. This inspired landmarks in Great Britain, most significantly Crystal Palace, which is known for being a cross between cast iron and plate glass (Pers. Comm. see Appendix A).

The conservation world condemned Viollet-le-duc's restoration approach. This was since he aimed to achieve formal integrity and coherence of the old and new by following principles of formal relationships appropriate to a style that he used (Jokilehto, 1999:151). This implies a melding of the old and the new, but done meticulously. Whilst this does seem like a genuine solution to maintain a building's structure and aesthetics, it is this melding that is the precise issue that causes the restoration to be deemed "imagined architecture",

as how British Conservation Architect Richard Griffiths described Viollet-le-duc's work (Pers. Comm. see Appendix C).

The conservation world has since made an artificial interpretation of his work by using his "unity of style" approach. How style has been understood is only in terms of form and decoration particular to a certain historical period in time. Kenneth Frampton reconsidered Viollet-le-duc's architectural theories and explained that style is something that is defined by relationships between the main building structure and cladding, for instance. Then the decoration is the technical and architectural link that creates the relationship between the structure and cladding (Hardy, 2008:497).

A greater controversy emerges in today's conservation and restoration architecture is that conservation literature does not offer any alternative method to approaching formal unity, which is a concept that originated from Viollet-le-duc. Various international charters today require an alternative anyway (Hardy, 2008:497).

Frampton's interpretations of where style comes from have opened up a new idea of what "unity of style" may mean. It has therefore introduced a potential search for new architectural forms, which are appropriate to express the social and technological conditions of that time in Europe.

Frampton would see Viollet-le-duc as a protagonist as

well as a "prominent theorist" (Frampton, 1995:48-54).

For Viollet-le-duc, the principle of relationships between the elements and parts and then, the parts and the whole are the main rule of architecture. He could therefore justify the choice for implementing new materials in restoration and conservation work. This would be on the condition that they are structurally suitable to the building's principles that are identified in the historic building. Jokilehto wrote that Viollet-le-duc was justified using iron and steel instead of timber in roof structures, for instance (Jokilehto, 1999:153). It could therefore be concluded that, for Viollet-le-duc, architecture's goal is unity is established by following the identified structural principal, whether the building is old or new (Hardy, 2008:498). However, although this architectural aspect can be justified, there is still an issue where materiality choice can still lead to a misinterpretation of history, which is an aspect that many conservation architecture practice believe play a significant role in restoration.

Michael Shippobottom, a highly experienced Conservation Architect from Donald Insall Associates, a practice established in 1958 (Pers. Comm. see Appendix A), stated that the practice believe that "Materials are crucial in the understanding of creating a relevant conservation architecture."

To make matters worse, in today's architecture world, the need for sustainable architecture is paramount. This

of course affects the choice in the material itself and also, embodied energy. In the case of cathedrals, these factors are even more crucial since in the architecture of such larger monuments, materiality has a large responsibility, not only in terms of the structure but particularly the aesthetic.

To conclude, whilst the architectural conservation world would question the restoration of Notre Dame de Paris, one cannot dispute the improved aesthetics that were introduced by Viollet-le-duc's work. It was unfortunate that the sculptures from the West Front for instance were mutilated and lost for many years. As mentioned, the current sculptures were a result of better craftsmanship methods and thus reflects the improved quality of a more modern era. Visitors and worshippers who are not architecturally savvy would also appreciate a more beautiful representation of their kings. It is true that all of the historical information that was needed to allow for a more succinct restoration was not available to Viollet-le-Duc either. Furthermore, given that the restorer was qualified and knowledgeable in terms of history, what more could have been done on his part?

Viollet-le-duc's restoration work became an inspiring precedent for a similar attitude to restoration in England. These elements would bring about the anti-restoration movement, which shall be discussed further in Chapter III.

II

RESTORATION OF ST ALBANS CATHEDRAL



Figure 12 - Map indicating location of St Albans Cathedral in relation to other case studies (Author's own)

The second case study is St Albans Cathedral in Hertfordshire since it is a critical example of an English restoration, which took place in the early 1870s. This also contributed to the anti-restoration movement, which was founded later in the decade.

Strike describes this cathedral as an example of a 'restoration' according to current ideology as opposed to historical research. (1994:11)

### Roman Origins

The origin of this cathedral is Roman. St Alban was known for being the first Christian martyr in Britain having being converted by a priest. This was deemed a controversial act during the rule of the Roman Empire.

He was thus beheaded and it was at the site of this act that the Cathedral was built (Halliday, 2015:10). The Cathedral also houses his tomb (Herbert, Martin and Thomas, 2015:6).

Prior to the existing cathedral however, construction of an abbey had commenced in the year 793 on the site. This abbey was made from materials that had been plundered from the ruins. The most substantial material of this plunder was Roman brick. It was the Romans who had initially brought the brickmaking art to Britain. Since the abbey was made from Roman brick, St Alban's Cathedral that stands today would also be made from it. Ironically, the Romans, who had executed St Alban, provided the Cathedral's bricks (Halliday, 2015:12 - 13). This informed the cathedral's construction



Figure 13 - Watercolour painting by Cornelius Varley, illustrating the Abbey in 1850, dominating the local landscape and only 20 years prior to it gaining cathedral status (Herbert, Martin and Thomas, 2015:100-101)

and thus, the symbolic architecture that it is known for today. 'Symbolic' is an appropriate adjective in this case since, as Strike writes, architecture can act as a symbol by means of its construction, structural system, details, but most importantly, in the case of St Albans Cathedral, the materials used in the construction. The hard-edged regular brickwork is associated with industry and precision (Strike, 1994:26). This makes a statement about the authoritative, yet contributory influence of the Romans in relation to the architecture of the cathedral as well as St Albans Cathedral altogether.

Yet there is even more depth to the story of St Albans Cathedral than this, which provides further support to the overarching theme of the whole study. Following the abbey's surrender to Henry VIII in 1539, it was,

metaphorically speaking, broken up. It became separate buildings with different purposes. A part became a school, another a jail, the church was sold to the people of St Albans as a parish church.

The church gained its cathedral status around the 1870s when the population of the town finally reached 10,000 during Queen Victoria's reign. As seen in Figure 13, this cathedral was unique in its setting. This is since traditionally a community is not classed as a city without a cathedral's presence. Given that St Albans has a cathedral in a town setting, its significance gives the town the status of a city.



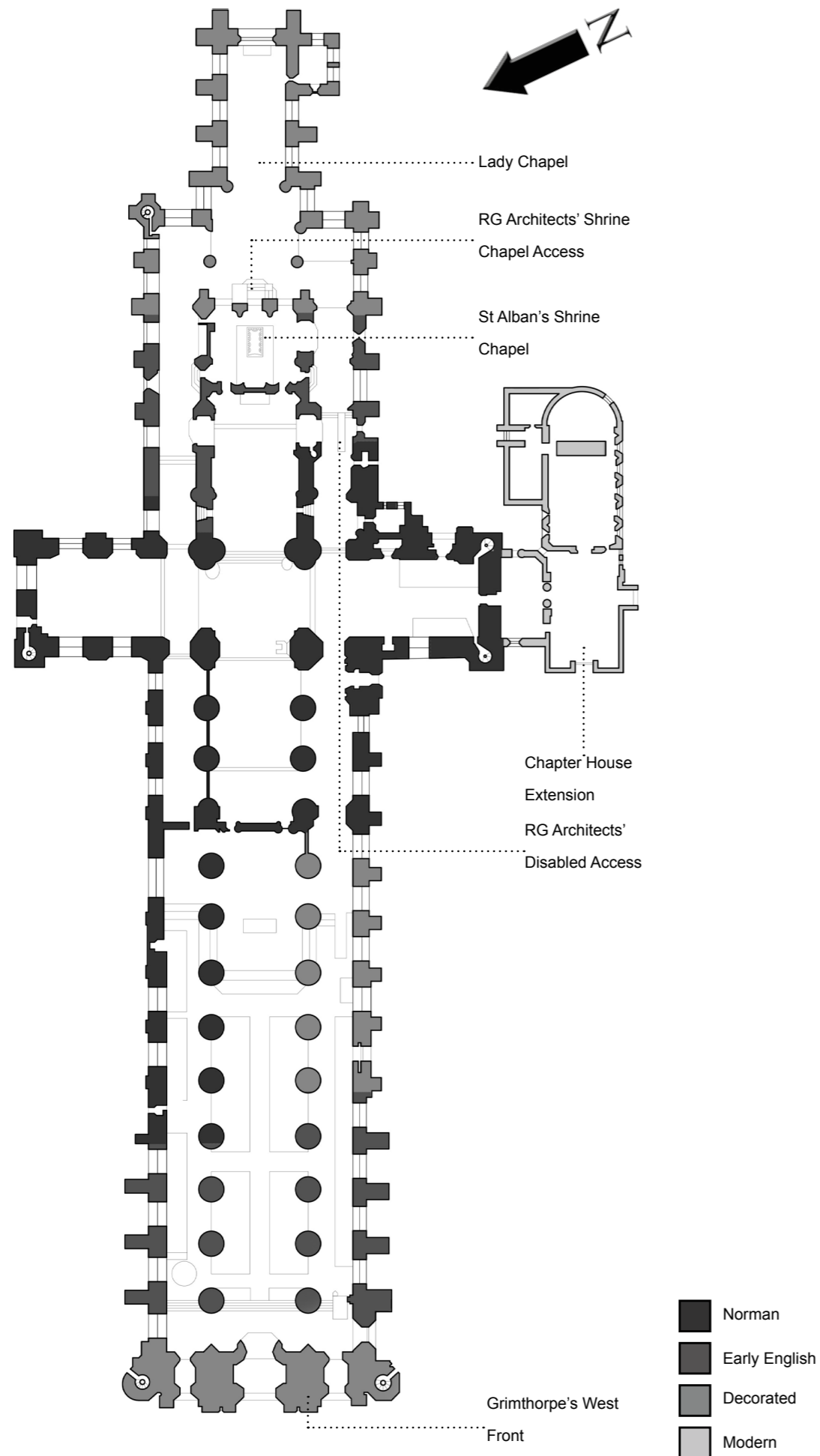


Figure 14 - Ground floor plan indicating locations of restorations in relation to text. This is an adaptation of St Albans Cathedral's own plan (<https://www.stalbanscathedral.org> and <http://www.antiquemapsandprints.com>)

### St Alban's Shrine

To honour the memory of St Alban, his remains were kept inside a shrine (see Figure 14), which still survives today (Herbert, Martin and Thomas, 2015:26). However, this shrine also underwent reconstruction and restoration. This was necessary since after the abbey's surrender to Henry VIII, the eastern part of the abbey was walled off to become a part of a new grammar school. The shrine was demolished since the stone was needed for rubble in the new blocking wall. However, the former site of the shrine was marked to once again honour his memory.

In 1872, the east end was reunited with the Abbey church and the blocking wall was taken down (Herbert, Martin and Thomas, 2015:29). Fragments of the former shrine were recognised by the clerk of works and it was re-erected by architect J.T. Micklethwaite (1843 –1906), seen in Figure 15. However, by the 1990s, the reconstructed shrine had become unstable. Additional pieces, including surrounding shafts, flying buttresses and pinnacles, were found and so it was decided to reconstruct the shrine to its present state (Herbert, Martin and Thomas, 2015:30), see in Figure 16. This was accomplished with the aid of modern technology. It was dedicated in 1993 by the Bishop of St Albans in the presence of Queen Elizabeth, the Queen Mother. This is how the shrine's timeless significance is justified.



Figure 15 - St Alban's Shrine as reconstructed in 1872, but before restoration in 1992, (Herbert, Martin and Thomas, 2015:30)

Figure 16 - View of the restored St Albans Shrine, (Author's own)







Figure 17 - The West end prior to Grimthorpe's interventions (Herbert, Martin and Thomas, 2015:106)

### Sir George Gilbert Scott and his inspiration from A.W.N. Pugin

Jeffery John, the Dean of St Albans, describes the cathedral's architecture as a synthesis of styles that shows traces of every stage of its long ancestry, from the Ancient Roman bricks to the more contemporary presence made by the Chapter House Extension, to be covered in Chapter VI (Herbert, Martin and Thomas, 2015:6). It is here that controversy arises. Despite its elevated status, its condition did not reflect it.

Before the controversial restoration took place, several thousands of pounds were raised to restore the work under Victorian architect Sir George Gilbert Scott (1811 – 1878), a key figure in the Scott family, known for restoration projects across Britain.

Dennis Rodwell described Sir George Gilbert Scott as Viollet-le-duc's contemporary (2007:4), since he was a devotee to the Gothic and Medieval styles of architecture and brought a similar mindset to his

restoration projects (Earl, 1996:158). Scott was known for being knowledgeable and sensitive to detail, which had originated from his artistic education and studies of A.W.N. Pugin's works on medieval architecture (<https://www.britannica.com>, December 20th 2016). Pugin (1812-1852) was an Anglo Catholic and a key figure in the Gothic Revival's development. The revival represented a moral high ground that Pugin promoted as the only morally acceptable Christian architecture for religious buildings (Jokilehto, 1999:110-111). The Catholicism represents an evolution of Christianity in Britain in which it has a universal definition relating to the Jesus' universal community, which is intended for all people and for all time in every circumstance in human life (<http://www.aboutcatholics.com>, December 20th). This is why Scott reintroduced Catholicism into his restoration works. It would be his layer that he would apply to cathedral architecture in Britain and represented an important step in Christianity.

Following Scott's death in 1878, St Albans Cathedral needed a restorer to take his place (Halliday, 2015:10).



Figure 18 - The West End after Grimthorpe's interventions (Author's own)

### Lord Grimthorpe

Sir George Gilbert Scott had planned to restore the west end, as seen in Figure 17, which was a key elevation of the cathedral. However, following his death, it was completely dismantled and rebuilt by Edmund Beckett Denison (1816 – 1905), better known as Lord Grimthorpe (Herbert, Martin and Thomas, 2015:107), who Halliday describes as a "force of nature". He funded the restoration of the cathedral, but on the condition that his own designs were implemented (2015:14). With a background predominantly in horology and

not architecture, it was his wealth that allowed him to dominate the restoration. He was tasked with working with Sir Charles Barry (1795 – 1860) on the project, but Grimthorpe was assertive and uncompromising of his work. The lack of compromise resulted in a bastardised west end of the cathedral that could be described as "Victorian Disney Gothic" owing to the perhaps overly elaborate embellishments on the cathedral (Halliday, 2015:14), seen in Figure 18. This highly significant cathedral would not have survived without his financial contribution. His interventions kept the Cathedral structurally sound, but greatly altered it (Kane, 2015:6).





Figure 19 - Grimthorpe's distinguishing West Front in relation to the rest of the cathedral (Author's own)

Whilst the original cathedral, including the West End, was made from locally sourced Roman Brick, Dr David Kelsall, the archivist at St Albans Cathedral, confirmed that the material used in Grimthorpe's West End were Barnack and Ancaster stone from Lincolnshire (Pers. Comm. see Appendix B). These materials were certainly not locally sourced and bear no relevance to the history of the cathedral or its surrounding setting.

Nevertheless, it is saddening that in this instance, money has been a key driver in the restoration. Since Grimthorpe had the advantage of great wealth, he could get away with achieving his goal of establishing his own architectural vision without necessarily maintaining the sense of place or authenticity. Figure 19 indicates the distinction between Grimthorpe's West Front, in terms of its materiality, and the original Roman brick found on the rest of the cathedral behind it.



Figure 20 - Map indicating Barnack and Ancaster in relation to St Albans (Author's own)



Figure 21 - View East into Lady Chapel (Author's own)

### Restoration by RG Architects

Richard Griffiths Architects are a specialist practice from London with a reputation for restoring and adapting historic buildings to respond sensitively to their historic contexts. Their philosophy was different to that of George Gilbert Scott.

In 2000, RG Architects were selected, following a shortlisting and interviewing process which was hosted by the Cathedral (the client), a member of Historic England and the Fabric Advisory Committee.

A key question asked in this interview was how revenue is obtained from visitors (Pers. Comm. see Appendix C). This would of course be crucial for the cathedral's survival since it costs £5000 per day to maintain and keep the cathedral open. Therefore, their works needed to attract people into the space to encourage donations. Revenue needed to be acquired. However, the Chapter House extension has aided in this. There will be more explanation of the Chapter House in Chapter VI.

It was not just money that was a consideration for the survival of the cathedral. The choice of materials used on the cathedral was considered at length. In this instance, it was chosen by the context and not specifically for their embodied energy qualities (Pers. Comm. see Appendix C). That meant matching historic materials will always come from a very small area, unless occasionally it was cheaper to bring stone from France in the Norman times than it was bring it in over land for miles. So, if using oak or clay (in the case of St Albans), it will not have come from very far in the first place. It is better to use English Oak rather than

American Oak.

RG Architects' works in the Lady Chapel (see Figure 21) were mainly cleaning (Pers. Comm. see Appendix C). Although their main works were restoration, there was a conservation challenge in maintaining the paintings on the side walls, the cleaning of the 19th century stonework and also relighting.

The paintings were deemed high value and significant in scale. This work could only be done by accredited conservators. A part of the methodology they use is scoping report, based on historical research. The work was then carried out and a detailed record of what was done was made. Copies of this record are kept in the cathedral archive, with the central cathedral fabric commission and also with RG Architects themselves. However, this was only emergency conservation. Therefore, anything that was flaking was tended to immediately. Anything that could wait, such as their general cleaning, waited. This was due to the budget and prioritising money accordingly.

LEDs were used as the new lighting source since they have long life, low maintenance and low running costs. They're also safer than candles. The Cathedral had a moral and religious responsibility to take carbon use into account as much as possible. All cathedrals require an audit of their energy use and their embodied energy. Griffiths believes that architectural design in general is moving in that direction.

Along with the restoration work, there had also been interventions to St Albans Cathedral, relating to 21st Century users' needs. This will be covered in Chapter VI.





III

THE SPAB MANIFESTO AND ITS RESULTS



## Formation

*“Neither by the public, nor by those who have the care of public monuments, is the true meaning of the word restoration understood. It means the total destruction which a building can suffer: a destruction out of which no remnants can be gathered: a destruction accompanied with false description of the thing destroyed.”*

John Ruskin  
(cited in Jokilehto, 1999:175)

In the nineteenth century, the stylistic restoration of Gothic cathedrals, such as those of Notre Dame and St Albans, restored by Viollet-le-Duc and George Gilbert Scott respectively, led to a strong anti-restoration movement in both France and Britain (Rodwell, 2007:4).

In Britain, this was in the form of The Society for the Protection of Ancient Buildings, founded in 1877 by William Morris (1834 - 1896) and John Ruskin (1819 – 1900). Ruskin, like Viollet-le-duc, was a Gothic Revivalist (Brooks, 1989:290). Morris and Ruskin believed that ancient buildings in general warranted rich study and thus was “one of the undoubted gains of our time” (Strike, 1994:11). They also believed that with buildings’ current treatment, our descendants will not enjoy them in the way that we and our ancestors have. Morris believed that any restoration made should be shaped in the fashion of the period of the building’s initial

construction and to a high level of accuracy so as not to mislead others and give a false account of the buildings’ history. The manifesto portrays history in the objective of preserving the “living spirit” and appearance of the building according to the original craftsmen. (Strike, 1994:11)

For the reasons explained in the previous chapter, Grimthorpe’s controversial work at St Albans cathedral was another of many reasons that William Morris engaged in aggressive arguments at a meeting at the Royal Institute of British Architects in 1877.

## Manifesto

The SPAB Manifesto was consequently written, which would go on to be a key document in the development of Building Conservation philosophy (Earl, 1996:61).

Cathedrals, given their richness in architectural form, in accordance to their styles of their time, can be seen as monuments of art. SPAB writes about these monuments of art as becoming the subject of one of the most interesting of studies, and of enthusiasm, religion, history and art, which is one of the undoubted gains of our time (Feilden, 1982:359). For cathedrals, this is specifically the case in terms of religion, owing to Christianity’s hierarchical and cosmological philosophies that establish the form that the building takes. Cosmology, in architectural terms, is the relationship between the

cathedral and the cosmos (Hennigan, 2011:10).

Earl (1996) then wrote as a commentary to the manifesto that three tenets emerged from it which is as follows.

“1 - We are custodians of the ancient buildings we have inherited. We should not regard ourselves as free to do as we please with them.

2 - Effective and honest repair should always be the first consideration

3 - We should do more than prudence demands. In particular we should not fall into the trap of allowing scholarly or artistic ambitions to dictate what is done.”

(Earl, 1996:158)

These tenets imply that since we are responsible for the safeguarding of our ancient cathedrals, we are not to treat them as we so wish. Artistic ambitions can relate back to the wrongdoings of Lord Grimthorpe’s work of St Albans, which Morris can justify since the aesthetics of that work did not reflect sufficiently the original spirit of the Abbey.

Scholarly ambitions is relative to somebody who is nothing more than an amateur or a student. This implies a lack of knowledge to carry out conservation or restoration practice of a satisfactory standard. Dr David Kelsall, the archivist at St Albans Cathedral describes Lord Grimthorpe’s an amateur architect at best (Pers.

Comm. see Appendix B).

This description is further justified by the recordings that Grimthorpe’s background was not predominantly architecture, but rather horology. (Halliday, 2015:14)

The manifesto also contained a further thought. It stated that it was better to raise a new building rather than enlarge or alter the previous one on the basis that it had become inconvenient for modern use. However, unsure of this statement, SPAB then replaced the thought with a firm statement that “any permanently necessary new work should be clearly distinguishable from the old and should not reproduce any past style.” (Earl, 1996:158 - 159)

However, this implied that restoration is contradictory to the manifesto. Further evidence of this can be found towards the end of the manifesto itself:

“It is for all these buildings, therefore, of all times and styles, that we plead, and call upon those who have to deal with them to out Protection in the place of Restoration, to stave off decay by daily care, to prop up a perilous wall or mend a leaky roof by such means as are obviously meant for supporter covering, and show no pretence of other art, and otherwise to resist all tampering with either the fabric or ornament of the building as it stands;” (Earl, 1996:158).

### **Anti-Scrape**

The term 'anti-scrape', coined by Morris, relates to opposing the practice or restoring and conserving buildings by scraping away weathered surfaces. The SPAB manifesto talks of the organisation's objectives, which are to preserve anything that can be seen from an artistic and historical perspective (Cowell, 2008:76). This implies the keeping of aged surfaces since it tells of the age of the cathedral. What this leads to is the revelation of Morris' vision to protect buildings and not restore. This implies the propping up of crumbling walls and mending leaking roofs through preventative maintenance and not tampering with the fabric.

### **Criticism against SPAB**

The Church of England have criticised SPAB for being against modernisation. A pivotal question asked, which serves as the critical component of this study, was: "What is the preservation of a few antiquated relics to the general welfare of the public?" (Cowell, 2008:77)

The idea of saving redundant ruins according to how the general public can benefit from them was questioned.

The Church of England believed that churches and cathedrals should be modernised to allow for more comfortable places of worship for instance.

This is of course necessary since, if the building is unusable, why keep it? As discussed in Chapter II, the amount of revenue required to keep St. Albans Cathedral running is astronomical. People that can use the building efficiently can certainly provide that.

Therefore, interventions are inevitable. However, in Morris' defence, SPAB's aims were to look after old monuments and protest against restoration, which was based on merely keeping out the wind and weather.

This necessity is based on realising that our ancient buildings, and this is certainly true of cathedrals, can awaken a feeling of lending to the nation's spiritual growth and hope (Cowell, 2008:76). It was in this characteristic that contributed greatly to the moral framework in which much thinking of conservation architecture would develop.

IV

THE VENICE CHARTER AND ITS RESULTS

**Venice Charter**

Despite the controversy surrounding it, Viollet-le-duc's restoration work at Notre Dame, for instance, is considered today as a historical layer in conservation architecture. His methods were used in the rebuilding of France of in the early 20th Century after the events of the Second Empire. This was geared towards restoring monuments to their original state, yet calling on modern techniques and materials. Towards the end of the 20th Century however, restoration escaped the pressure of emergency actions and protection to come within the framework of the ICOMOS Venice Charter, which French representatives contributed towards along with others worldwide (Pickard, 2001:101).

The Venice Charter is so named when these representatives met in Venice in 1964 to set down principles regarding restoration of ancient buildings. These principles would form the 1966 Charter used today. (Strike, 1994:4)

Today, it is the most important document in this significant field. The formal affirmation of its position is its recognition for containing the most doctrinal texts in conservation (Hardy, 1998:73). It is referred to in many smaller charters and documents worldwide. Thus, it has its significant role as the basis for conservation theory and works today. Such guidelines are needed when it comes to monuments and buildings (Hardy, 1998:73). This is since the protection of cathedrals need clear definitions of the subject, the aim and methods of conservation and restoration work being carried out, owing to its complexity.

Interestingly, these are yet to be given a proper definition in the charter (Hardy, 1998:73).

This has therefore led to more freedom in terms of conservation and restoration projects.

**Collaboration**

The last thirty years have seen a rising debate in conservation architecture. Philosophical aspects make up a significant part of decisions needed to be made in this field. Decisions include marketing the history of a place, recognising key historical elements on a site, whether to keep them in their original form or restore to a specific period. These need to be deeply comprehended before technical construction decisions are made, such as; should ivy be stripped from masonry walls, should historic floors be removed, should decorative stone be treated with specific chemicals to preserve them? These decisions are governed by the philosophical aspects ascertained beforehand (Strike, 1994:3).

If restoring a monument has to include renewal of fabric, then the new work should be identifiable. Article 12 states that, "Replacements of missing parts must integrate harmoniously with the whole, but at the same time must be distinguishable from the original so that restoration does not falsify the artistic or historic evidence." (Hardy, 2008:731)

Adding a new building into a cathedral site that sits within a setting of modern buildings and houses, can be rather straightforward. Because there is no clear architectural style or typology on the site that should be adhered to, there is greater freedom in the design of the additional building to the site. However, scales of new interventions should be carefully handled. (Strike, 1994:119)

Multi disciplinary collaboration is encouraged according to the ICOMOS Guidelines for Education and Training for the Conservation of Monuments, Ensembles and Sites, which were written in 1972. (Feilden, 1982:189). Paragraph 5 of the guidelines state that there are 16 professionals that should be involved in a conservation project.

Profession		Tasks														Score	
		A	B	C	D	E	F	G	H	I	J	K	L	M	N		
1	Administrator / Owner																8
2	Archaeologist																10
3	Architect																14
4	Art / Architectural Historian																11
5	Builder / Contractor																9
6	Conservation Officer																14
7	Conservator																14
8	Engineer																9
9	Environmental Engineer																10
10	Landscape Architect																14
11	Master Craft Worker																6
12	Materials Scientist																10
13	Building Economist																9
14	Surveyor																14
15	Town Planner																9
16	Curator																14
		7	12	11	14	11	12	14	16	16	9	13	15	15	10		

Figure 22 - Adaptation of Chart showing the relevance of paragraph 5 sections to each professional (Feilden, 1982:190)

- A - Read and identify a monument's cultural and use significance
  - B - Understand the history and technology of a monument and its site. Following research, plan for the conservation and / or restoration works
  - C - Understand the monument's setting, site and the full content in relation to surrounding buildings and landscape
  - D - Absorb all retrievable relevant information to a monument and its site
  - E - Understand and analyse behaviour of monuments, sites and contents as complex systems
  - F - Diagnose intrinsic and extrinsic causes of decay as a basis for appropriate action
  - G - Inspect and make reports clear to the public and anyone relative to the monument and its site. Sketches and photographs better explain works being undertaken
  - H - Have full comprehension and apply UNESCO conventions and recommendations, and ICOMOS and other recognised Charters, regulations and guidelines
  - I - Establish an impartial point of view in terms of ethical principles. With this comes responsibility for the long term welfare of cultural heritage in terms of the monument's restoration / conservation
  - J - Recognise when advice must be sought for and define needs of further research by other specialists for any relevant details i.e. materiality and sculptures of significance
  - K - Provide maintenance strategies and advice, management policies and their framework for environmental protection and preservation of monuments and their sites
  - L - All works to be documented and made accessible for clarification and approval
  - M - Make use of Multi disciplinary collaboration
  - N - Cooperate with the local community, administrators and planning authorities to resolve conflicts and develop conservation strategies appropriate to local needs, abilities and resources." (Feilden, 1982:190)
- As can be seen, as well as the conservator, the conservation officer, landscape architect, surveyor and curators, the architect is also responsible for ensuring they have all abilities required for any upcoming conservation / restoration work.

This eliminates the tyrannical project control by those with power and/or money.

As for the architect in his individual responsibilities in the team, not only are they responsible for their usual tasks such as spatial design, materials understanding, obtaining statutory consents and proper maintenance through design, but they are also required to understand the social significance of the cathedral being worked on (Feilden, 1982:192).

Donald Insall Associates encourage the idea of change and that buildings can develop. The best of the old must be taken and developed with new architectural interventions. Heritage is not regarded as a hindrance to new development and an exciting challenge. The practice has always been keen to see the best modern interventions with retained. Michael Shippobottom describes this in terms of conservation in the context of the urban landscape. However, when working with cathedrals and considering how they exist in relation to the evolving landscape, the challenge is ever greater

(Pers. Comm. see Appendix A).

Whilst it is necessary to maintain the buildings by any means possible, whether it be in terms of the construction itself or constructing further buildings to create revenue for cathedrals' maintenance, the process and work required, it must be done in such a way that it remains sensitive with not only its current setting, but also its historic setting. It is therefore through this characteristic that cathedrals become powerful symbols that tell the story of their city as it has changed through the centuries.

Robert Adam, an internationally known traditional and classical British architect and theorist, states that "heritage is often seen by professionals as an anti-progressive movement." Originally it was an architectural wish to keep our built heritage. (Hardy, 2008:3) However, progress has to occur to keep up with the changing urban landscape. But in order for progress to occur, change must take place, which is contradictory to the idea of heritage being an anti-progressive movement.

This further implies there are potential changes to the philosophy of conservation architecture.

However, having queried Shippobottom on this matter, he did not believe it was necessarily the case. The practice believes that heritage can be progressive. The combination of retention of old buildings and adapting them alongside modern buildings can be mutually stimulating. In terms of the general public, modern movements of architecture are something the ordinary person likes seeing (Pers. Comm. see Appendix A). There is however the need to establish balance, in terms of physical presence, between modern and old.

Heritage implies a force for change and a challenge to build on and retaining landmarks that people like and can develop from (Pers. Comm. see Appendix A). However, Griffiths believes that the unique importance of St Albans cathedral architecturally and historically is not sufficiently appreciated in St Albans itself apart from outside it. It is a shame since the Cathedral can barely be seen in the middle of the city. Griffiths has described

cases of bad modern developments in St Albans. These would have been successful if they had been built on the context and setting of the buildings that are there currently (Pers. Comm. see Appendix C).

To conclude, the Venice Charter represents the acknowledgement of change of the requirements of buildings and so the idea of restoration is considered more acceptable than SPAB did. SPAB's intention was to prioritise protect buildings over restoring them. The Venice Charter permits restoration on the condition that it is clear what is contemporary work. This is a fair compromise owing to the fact that restoration, albeit controversial at times, have allowed cathedrals to survive. Sometimes conservation is not possible if historical information and key buildings are not there. The architect's decision to conserve or restore depends on the information and opportunities they can capitalise on.



V

CONSERVATION OF YORK MINSTER



Below: Figure 23 - Map indicating location of York Minster in relation to other case studies, author's own

Right: Figure 24 - External View of East Front, Author's own



**Origins of the Minster**

The third case study is York Minster, located in Yorkshire. It is an example of a purist conservational approach and is the largest cathedral in Europe (Willey, 1998:5).

The Cathedral standing today was constructed shortly after William the Conqueror's reign began. The construction lasted until 1472, when it was consecrated (Halliday, 2015:132).

**Arrol and Snell**

Over the centuries, the minster began decaying, owing to the magnesian limestone, which is highly prone to decay.

In 2000, Arrol and Snell were appointed under the provisions of the Care of Cathedrals Measure. Their philosophy is comprehensive since they attempt whenever possible to:

- follow the ICOMOS principles and the Historic

**England guidelines**

- understand the significance of a building before they intervene
- understand the building from a structural and historical point of view to subsequently make the object continue to be useful and usable

The practice believes, regarding intervention, it is about how it is sensitively done and preserving aspects to keep them going. Depending on the circumstances, parts must be preserved precisely as found, but most things change with age and the practice is comfortable about making changes.

As with RG Architects at St Albans, there was a competitive interview process. Arrol and Snell were appointed based on their experience and suitability for what was required. For York Minster, a crucial factor was having a knowledge of stonemasonry issues.

One aspect of the conservation work carried out was the work on the East Front (see Figure 24), included the stonework and the great window (Pers. Comm. see Appendix D).







Figure 25 - East Front as seen in Lady Chapel (Author's own)

Figure 26 - Ground floor plan and surrounding context indicating locations of conservations and stonemasons yard in relation to text. This is an adaptation of (Willey, 2004:97)

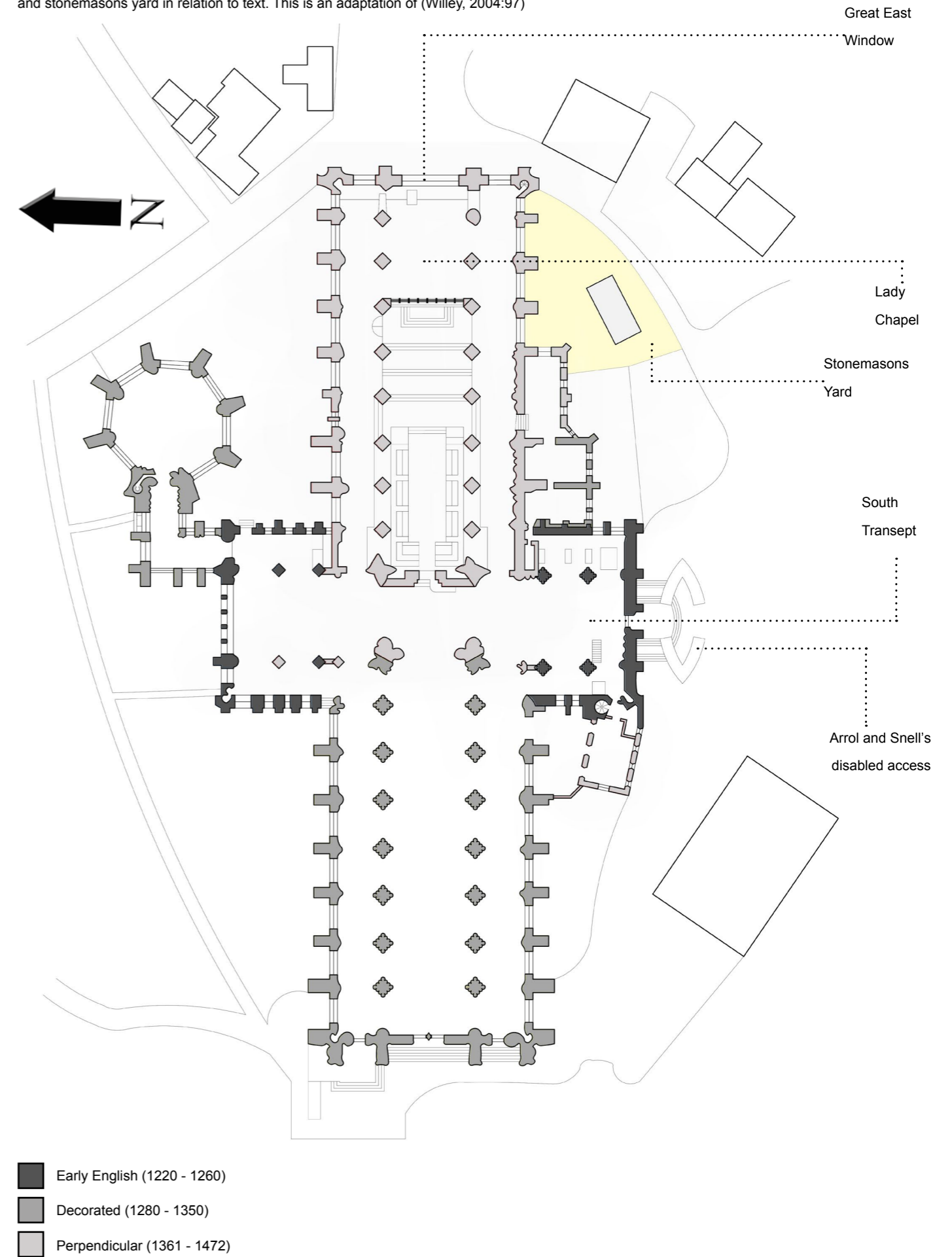






Figure 27 - An example of stonework prior to conservation

works carried out by stonemasons, Andrew Arrol

### Stonework repair

Repairing the stonework was a long process that comprehended thousands of stones, such as those seen in Figure 27. Arrol and the Master Mason made joint inspections, which began with standing in front of every relevant stone (Pers. Comm. see Appendix D). They tapped, examined and recorded it, noting whether it had to come out or go back. The investigation concluded if a stone can be retained or repaired in situ. If neither was possible, the stone was inevitably replaced.

Arrol had to initially question how loads were transmitted. There were many structural problems to be understood. There were also decay mechanisms that required isolating, analysing and understanding. Arrol's design tried to stabilise and give longevity to the fabric so that maintenance was not needed for another 100 years. SPAB and Historic England were concerned about this, because they felt it was necessary to undertake maintenance sooner, for instance, 30 to 40 years later. This was since they could retain more decayed stone.

Arrol's view was to retain stones near ground level.

They had retained decayed material since it was easily replaceable. Yet it was dangerous to leave badly decayed items at 120 feet in the air. If any fell, it would become a risk to the public. Every stone necessary had to be individually checked, assessed, tested and passed. This method was eventually accepted by Historic England, CFC and SPAB as being the prudent way forward.

After this was completed, the surveyor wrote a required specification. Arrol wrote the Current Stone Practice document, which is particular to York Minster. It began with the process of identifying the site issues. It went on to talk about selecting stones in the quarry and then how all of the parties involved go through the whole conservation process. In the stonemasons yard, as seen in Figure 30, there was a multi-skilled team. There was also the Master Masons and his team, which prepared the setting out drawings for another team that consisted of the Banker Masons, Carvers, Fixers and Conservators. Therefore, even the sculpting, which is seen in Figures 28 and 29, also undergoes deep consideration as part of these conservation works. This ancient process has been going on for over 1000 years.



Figure 28 - New sculptures crafted by stonemasons, Andrew Arrol



Figure 29 - An example of completed stonework after conservation works carried out by stonemasons, Andrew Arrol



Figure 30 - Stonemason's yard during conservation works, Andrew Arrol



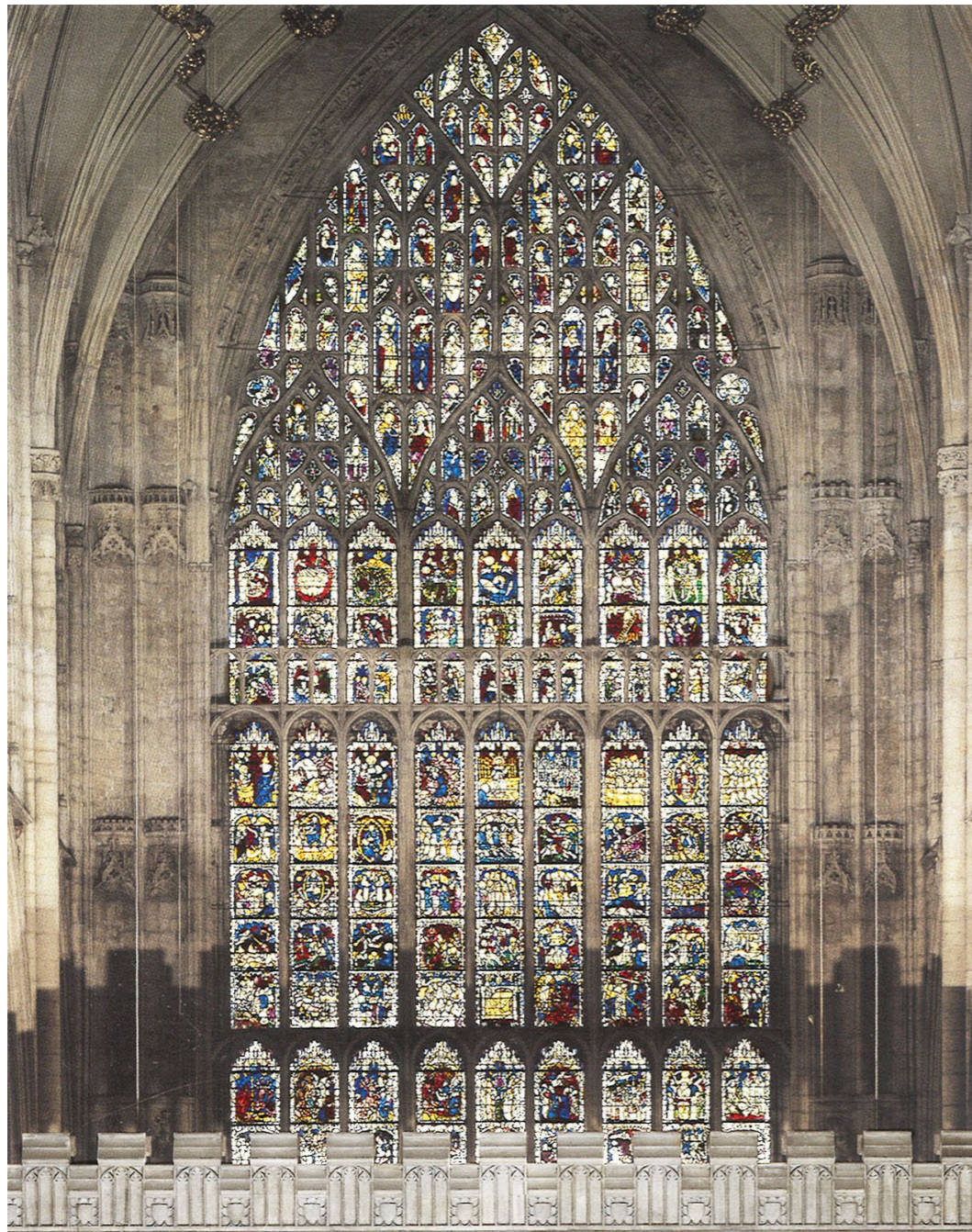


Figure 31 - Full extent of Great Window, indicating all panels illustrating scenes from books from the bible (Willey, 1998:54)

### The Great East Window

Constructed originally in 1405 (Brown, 2014:11), the Great East Window features the two biblical cycles of Creation and Revelation. The first and last books of the Bible tell of the beginning and end of all things. Each window panel represent scenes from these books (see Figure 31). However, the panel at the apex of that window features God himself and a text from Revelation that translates as 'the beginning of the end'. This window symbolises the purpose of the entire minster: to teach the human race where we are, and the whole creation,

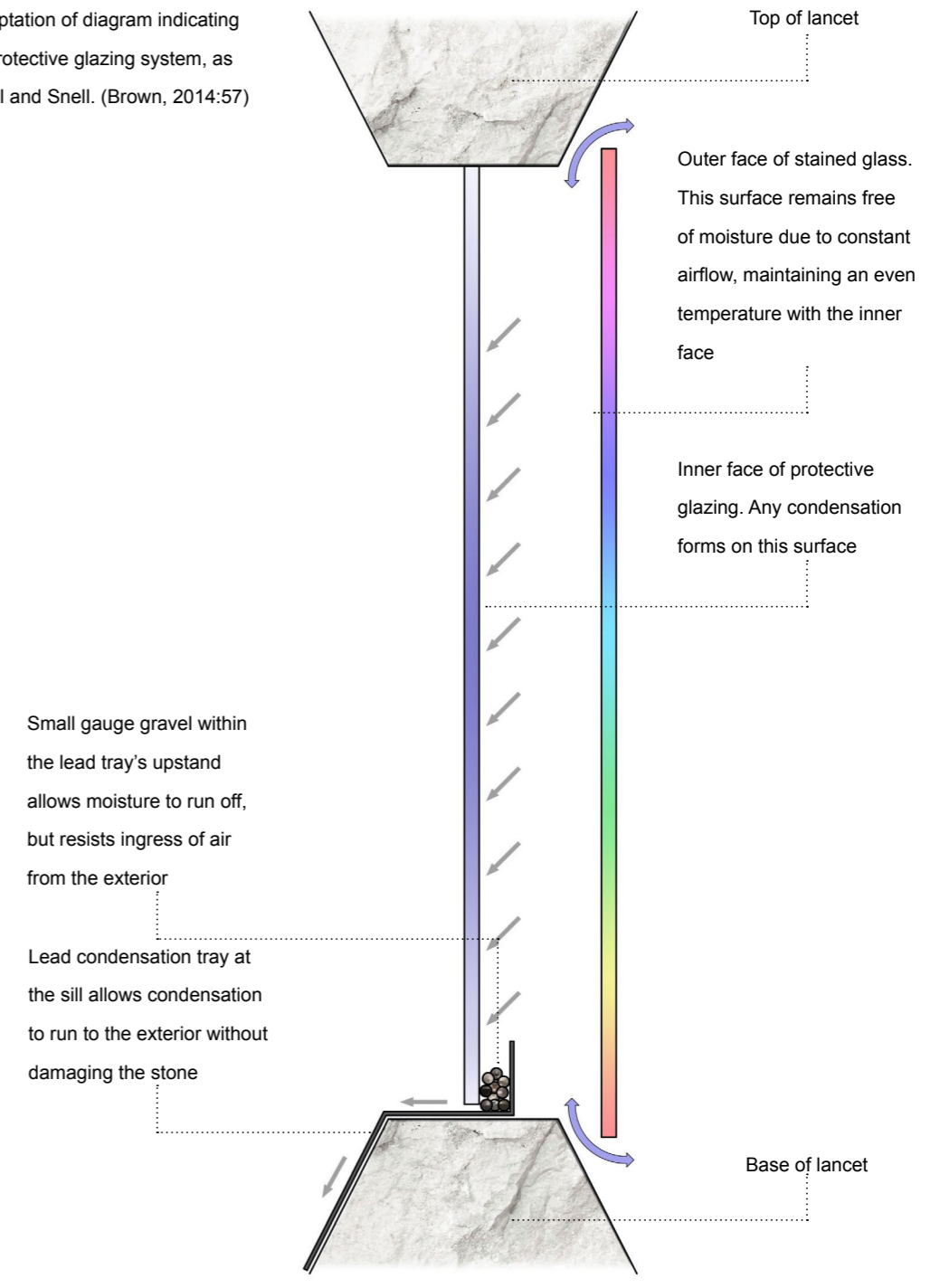
has come from and where we are going (Brown, 2014:9).

The main design consideration for the window was that the ancient glass required protection from condensation (see Figure 32). Therefore, an isothermal internally ventilated system was implemented (Brown, 2014:57).

Arrol had to design it in such a way that would minimise its appearance and nobody would know it was there.

This meant using good quality magnesium bronze fittings. An acceptable methodology for the glass'

Left: Figure 32 - Adaptation of diagram indicating ventilated external protective glazing system, as implemented by Arrol and Snell. (Brown, 2014:57)



conservation was required, which was developed over an 18 month trial period. This then required approval by the cathedral's Fabric Commission since they were keen on making sure that the ethics relating to the philosophy are correct (Pers. Comm. see Appendix D).

The window conservation needed to consider modern stained glass conservation developments. These offered techniques that our predecessors never had. These would allow more efficiently conservation to be conducted as defined in international guidelines, including the Venice Charter (Brown, 2014:49).

Sarah Brown of the York Glaziers Trust writes that they have not only secured the future of the cathedral, but, in the process, the conservation team revealed much about the circumstances of its creation (2014:7). Along with the conservation work, there were adaptations made to York Minster by Arrol and Snell, relating to disabled users' needs. This will be covered in Chapter VI.



VI

ADAPTATIONS AND CHESTER CATHEDRAL

## Adaptations

This chapter comments on another philosophical approach to interventions in historic fabric, that of adaptation as opposed to restoration or conservation, which were discussed earlier. The adaptations to St Albans and York Minster, the subject of previous chapters, and the final case study Chester Cathedral will be discussed.

As time passes and society changes, the way that buildings are used change. This is when buildings must adapt, even cathedrals, as restoration or conservation would not be appropriate. However, new buildings require new methodology.

BS 7913:2013 is a standard produced by the BSI (British Standards Organisation), which states about adaptation as being new development, which affects the historic outbuildings' context or involves their extension. Analysis of the historic building should be undertaken by considering:

- a) significance;
- b) building style, including any underlying design theories or principles;
- c) scale, massing and composition;
- d) features of interest;
- e) materials and construction;
- f) previous alterations, including an assessment of whether they enhanced or harmed the building's integrity; and
- g) the relationship of the building to surrounding buildings and features.

These facets also consider elements from the Venice Charter. For instance, Article 9 states that restoration's aim is to preserve and reveal the aesthetic and historic value of the monument and is based on respect for original materials (Hardy, 2008:731).

New extensions should normally be subservient to the historic building in terms of scale, height and massing. New works should not obliterate or destroy features of interest in the historic building. It might be necessary for extensions to be attached by a smaller link section rather than directly to the original building. (BSI Group, 2013:27)

Along with restoration, there had also been adaptations to St Albans Cathedral, relating to 21st Century users' needs.



Figure 33 - Chapter House extension as seen from the south  
(Author's own)



Figure 34 - Chapter House extension as seen from the east (Author's own)

### St Albans Cathedral's Chapter House

In 1982, the Chapter House extension was constructed and was also crucial for the cathedral's survival since it generates revenue to ensure the cathedral's survival. It required attracting people into its spaces to encourage donations.

At first impression, as can be seen in Figure 33, this extension does not clearly have any architectural link to the current cathedral except for the use of red bricks.

Despite being red bricks, the brickwork style is modern as can be seen in Figure 34. However, the Venice Charter permits this, which is evident from Article 9.

Jeffery John, the current Dean of St Albans Cathedral, speaks highly of it. He believes that that Cathedral cannot operate without it. Along with the expected functions of a library, refectory, vestry, crypt and offices, it also has a shop and song school (Kane, p.5, 2015) which bring much needed revenue into the Cathedral.





Figure 35 - Signage indicating monetary need for cathedral's upkeep. (Author's own)

Figure 35 indicates a notice that indicates the monetary requirement to maintain this cathedral. The extension was about more than revenue though. John believes it helps to realise a greater vision: (Kane, p.5, 2015)

“To make the Benedictine rule of hospitality to the stranger a reality again in this holy place - and that meant attending to the visitors' need of food, books and information as well as their spiritual needs.” (Kane, p.5, 2015)

The extension was designed by Sir William Whitfield (Kane, p.4, 2015) to be as minimal as possible owing to the archaeological sensitivity found on the site. Although the space inside the extension was limited, it was still

used to its full potential whilst eliminating the sense of enclosure inside. For instance, as seen in Figures 36 and 37, there are double heighted spaces and walkways that link the extension to the cathedral's south transept. Richard Griffiths believes that William Whitfield's 1982 Chapter House Extension at St Albans Cathedral does reflect that of the original architectural spirit of the Cathedral for two reasons (Pers. Comm. see Appendix C). Firstly, the bricks are rather like roman bricks. Secondly, the plan which followed and intended to follow from the archaeology of the Norman chapter house. With regards to the Roman bricks, although they are not exact Roman bricks, the aesthetic's original spirit is intact. The Venice Charter does not clearly oppose this. Therefore, it is deemed an acceptable adaptation.



Figure 36 - Interior view inside slype indicating walkway within double heighted space. (Author's own)

Figure 37 - Alternate interior view inside slype indicating walkway within double heighted space. South transept of main church is beyond brick archway (Author's own)





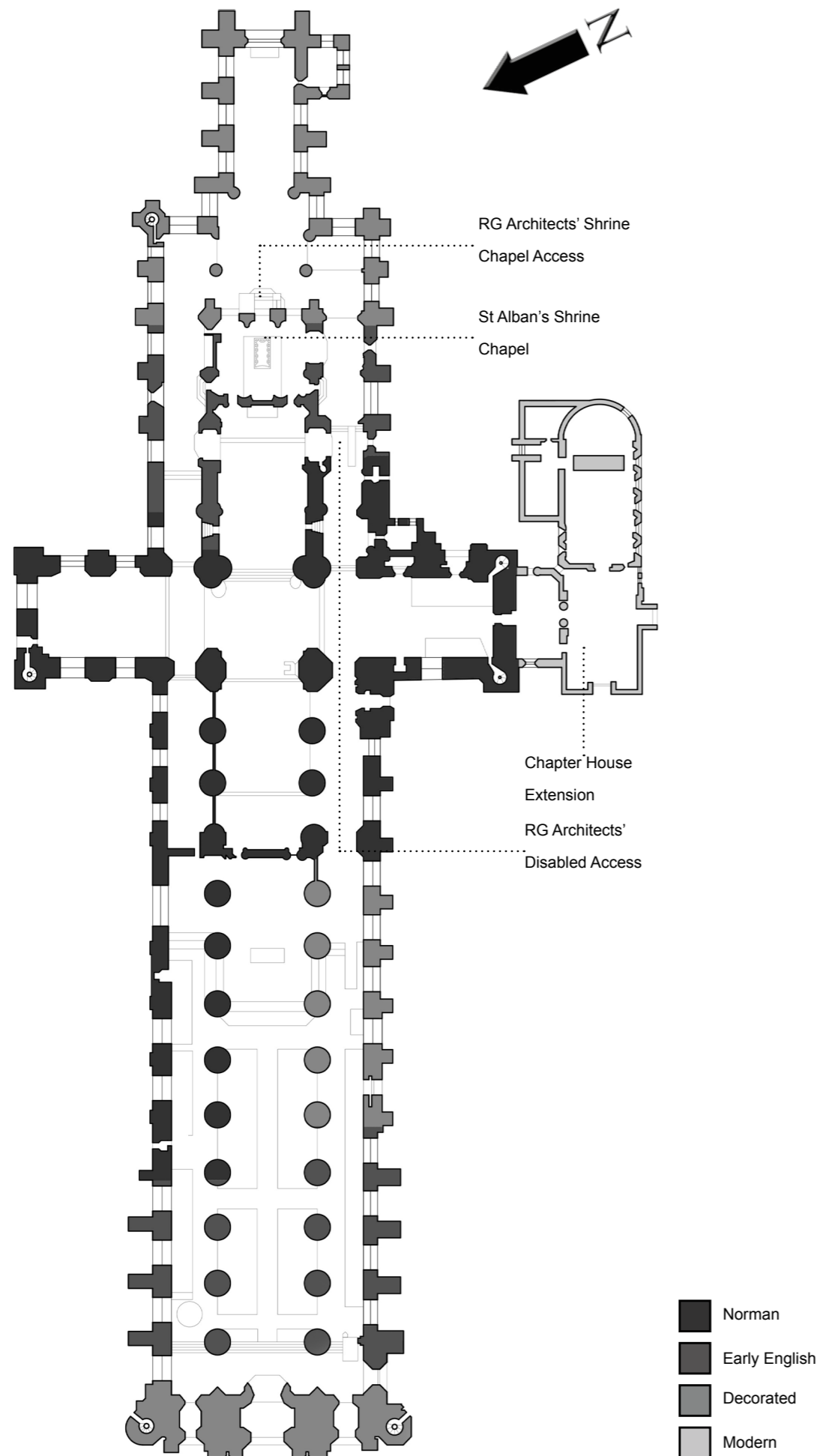


Figure 38 - Ground floor plan indicating locations of restorations and adaptations in relation to text. This is an adaptation of St Albans Cathedral's own plan (<https://www.stalbanscathedral.org> and <http://www.antiquemapsandprints.com>)



Figure 39 - Platform lift concealed behind steps into Shrine Chapel. (<http://www.rgarchitects.com/>)

Figure 40 - View along nave that indicates disabled ramp accessway into transepts (Author's own)



**Adaptations by RG Architects**

In addition to the restoration work discussed in Chapter II, RG Architects carried out adaptation work at St Albans Cathedral, which consisted of making the cathedral usable for all. This necessitated the need to provide disabled access, whilst maintaining compliance with the Building Regulations, which are the Government's minimum standards for design, construction and alterations that are used today. One key element of the adaptation works was providing this kind of access to the shrine chapel and this was not done lightly. Several options were considered. The first was a ramp (Pers. Comm. see Appendix C) (see Figure 39). However, Building Regulations Approved Document Part M - Access to and use of buildings required this ramp to be on a specific gradient (HM Government, 2010:12). This gradient was too long and space consuming for the purpose, thus the platform lift was used.

With the other steps (see Figure 40), the platform lift would have been next door to the steps and would not have been concealed as well as those at the shrine chapel access. The idea with those was to bring the steps forward (Pers. Comm. see Appendix C). That would have allowed for ambulant disabled access to the left and the platform to the right. The issue there was the archaeological impact. RG Architects had to be careful not to damage the foundations that were present. These were close to the floor. Griffiths had to try and get a lift with a platform with minimal depth to avoid hitting the archaeological artefacts, which were still unavoidably hit. Another challenge that Griffiths faced was understanding how it was possible for the disabled access interventions to not blatantly look like disabled facilities, but the priority was to avoid scarring the cathedral and the archaeology.





Figure 41 - Reordered South Transept entrance access

by Arrol and Snell, Author's own

Figure 42 - Alternative view of Reordered South Transept

entrance access by Arrol and Snell, Author's own



### York Minster's Disabled Access

In the case of York Minster, Arrol and Snell were also appointed for the adaptation of the South Transept entrance, seen in Figures 41 and 42. With regards to the external piazza, the reordering was about getting access into the Minster for anybody of any ability, without requiring assistance (Pers. Comm. see Appendix D). To comply with Building Regulations Approved Document M, the gradient of the disabled ramps needed to be 1:20 or better (HM Government, 2010:12). Whilst the surface needed to be suitable for the purpose, it could not be

distracting to the aesthetic of the rest of the reordered access. Arrol was asked, why he had not delineated the line of the roman fortress in it. Eventually, he decided to design the access to look and be used as plain and simple as possible so it was seen as a nice place to be. Whilst it is an elegant and integrated architectural piece, it does not draw attention away from the minster itself. It is York stone paving that has a monk bond pattern to it. With regards to its immediate surroundings, it has a very subtle delineated carriageway for the cyclists and the horse drawn carriages.





Figure 43 - Screening room located in the "York Minster Revealed" exhibition, Author's own

**User Experience**

In a similar fashion with St Albans Cathedral, Arrol and Snell considered how York Minster would generate crucial revenue to ensure its survival. Whilst the Minster still is a place of worship, it has become an international tourist attraction owing to being the largest Gothic cathedral in Northern Europe.

York Minster Revealed, found in its undercroft, is an adaptation project completed in 2015 and combines modern technology with the ancient craftsmanship of the

historic minster. The intention was to protect parts of the medieval cathedral for future generations and to allow for an interactive experience that current society would appreciate.

Through film, graphics and signage, such as those seen in Figures 43, 44 and 45.

The exhibits, such as those seen in Figures 46 and 47, educate the minster's visitors in a way that is enjoyable as well as educating them of the rich history, including in terms of its architecture, of the minster.

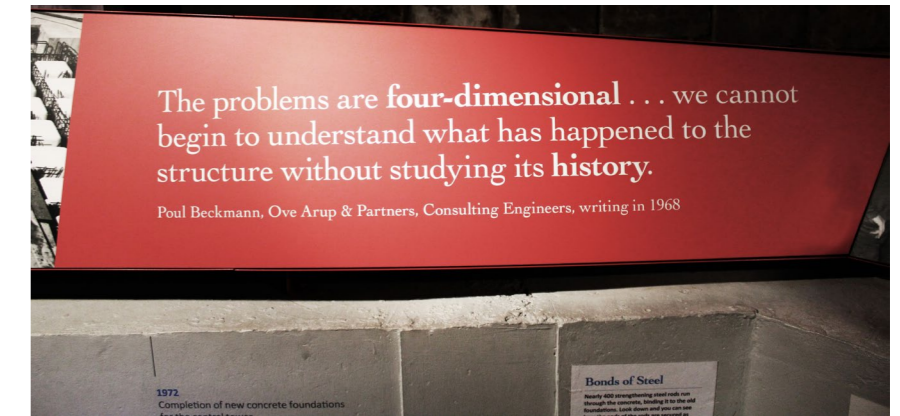


Figure 44 - Plaque with a significant quote found in the "York Minster Revealed" exhibition, Author's own

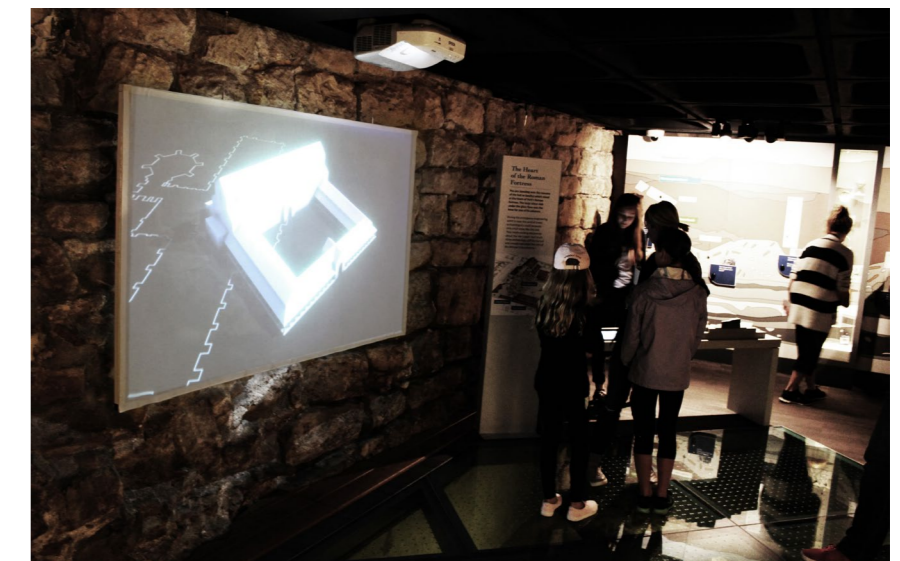


Figure 45 - Interactive exhibit indicating steel rods reinforcing the concrete collar, Author's own



Figure 46 - Interactive exhibit indicating concrete collar reinforcing the old foundations of the Minster, Author's own

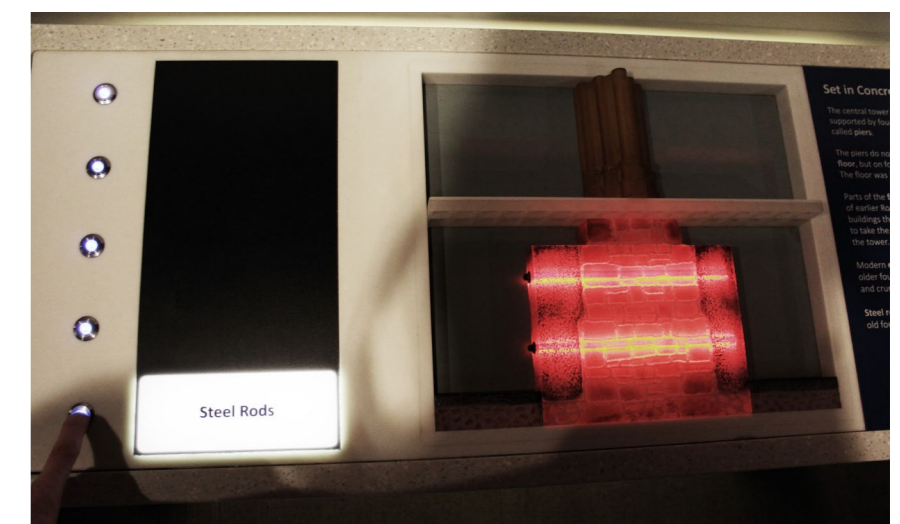


Figure 47 - Interactive exhibit indicating steel rods reinforcing the concrete collar, Author's own





Figure 48 - External view of Chester Cathedral indicating various levels of weathered red sandstone, Author's own

### Chester Cathedral

A fourth example of a cathedral restoration is Chester Cathedral, but this included adaptation and was the main focus for Donald Insall Associates' work here. The restoration aspect of the works also contributed to the formation of SPAB by William Morris.

George Gilbert Scott restored this cathedral between 1868 and 1875 (Curl and Wilson, 1999:page unknown). Just as he did at St Albans Cathedral, he brought his Gothic and Medieval mindset, which was similar to Viollet-le-duc's mindset, to Chester Cathedral.

The controversy at this cathedral was that it was described as rebuilding rather than restoring. The original 1541 cathedral was constructed of locally

sourced red sandstone since it was easy to carve into sculptural forms. However, a key disadvantage of red sandstone is that it easily eroded in rain or air pollution (Halliday, 2015:31).

Understandably, given the building's age, the cathedral would not have survived without repairs. Scott's restoration was cladding the cathedral in Runcorn sourced limestone (see Figure 48). His argument was that his work was in keeping with the history and character of the original cathedral. In addition to this, the cathedral needed to be adapted for contemporary worship, at a time when the Anglican Church was in force and permeated every aspect of national life. His restoration is further justified for his love and devotion to the Gothic and Medieval styles (Curl and Wilson, 1999:page unknown).



Figure 49 - Diagram indicating location of Chester Cathedral in relation to other case studies, Author's own



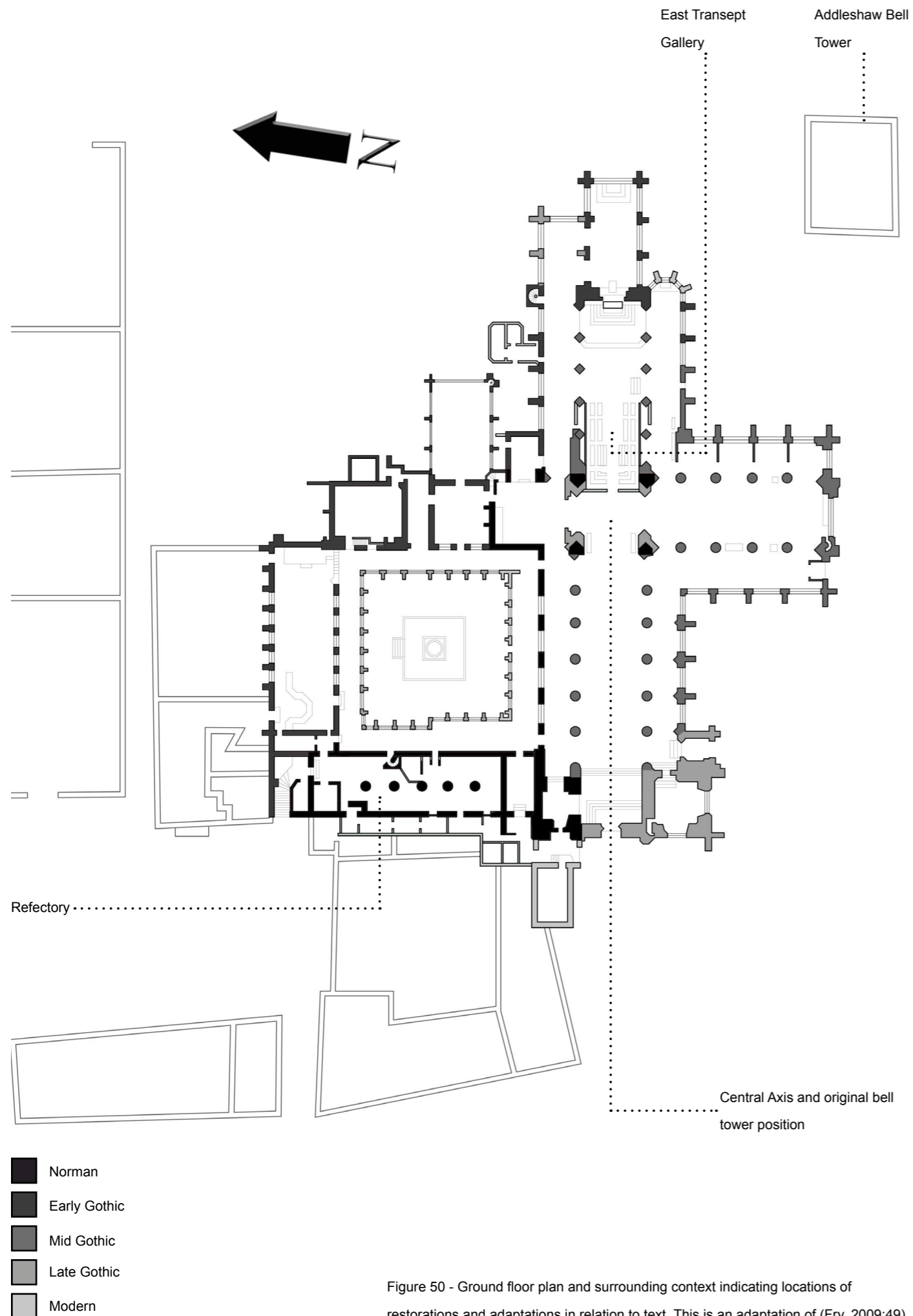


Figure 50 - Ground floor plan and surrounding context indicating locations of restorations and adaptations in relation to text. This is an adaptation of (Fry, 2009:49)



Figure 51 - External view of Addleshaw Bell Tower as seen from the top of the cathedral's central tower, Author's own

**For Where The Bells Toll**

The bell tower, which is part of the main cathedral itself, dates back to 1400s. In the 1960s, the bells were moved higher in the tower. Soon after, the decision was made to move the bells outside (Pers. Comm. see Appendix F). It was found that

it was structurally unsafe for the bells to be ringing here due to the vibration, causing the walls to move. This led to the new external Addleshaw Bell Tower, designed by George Pace (1915 –1975 ), being constructed, (Fry, 2009:18), which opened in 1975. It is within this new tower that the bells can be heard (see Figure 51).





### Interventions by Donald Insall Associates

Donald Insall Associates's recent work was to studying and reporting on the implications of a conservation policy, which would promote and enhance the architectural and historic quality of the town. (Insall, 2008:197)

They contributed with structural engineers Ramboll (<http://www.ramboll-mea.com/projects/ruk/chester-cathedral>, August 2nd 2016) to convert the space into what is now an exhibition space to commemorate the bell ringing that took place here (Pers. Comm. see Appendix F). This is now a key space for the Chester Cathedral at Height tour. Therefore, it was necessary to make the space safe for exploration by the public. Whilst

the space was partly modernised for this reason, the old clockwork mechanism and the carillon were kept in their historic positions from when the tower was in its full use to celebrate the significant events that took place here, including its last toll on the day of passing of Winston Churchill and the curfew set for trading Welshmen (Pers. Comm. see Appendix F).

Figure 52 - Bell ringing chamber converted into tourist-friendly space as part of Cathedral at Height tour, <http://www.ramboll-mea.com/projects/ruk/chester-cathedral>, August 2nd 2016





Figure 53 - Chester Cathedral's nave, indicating timber roof restored by Donald Insall Associates following serendipitous discovery, Author's own

### East Transept Gallery

The Benedictine monks, who once lived here for hundreds of years (Fry, 2009:4), had originally planned to put in a stone ceiling in the East Transept Gallery. This was more in keeping with the architecture of the original cathedral. However, by the time Henry VIII (1491–1547) had dissolved the monasteries, the monks were not able to build the stone ceiling. Therefore, an oak ceiling to support everything was installed. Sir George Gilbert Scott's justification for this was to not overload the medieval walls (Fry, 2009:21)

In Victorian times, this ceiling was completed along with all of the beautiful intricate artwork. By the 1960s, the ceiling had turned black, due to all of the soot and candle fumes. So people genuinely thought it was a black ceiling. It was then that Donald Insall Associates came and did a structural survey. During the process, a small piece of the gold relief, concealed by the soot, had been tapped off by accident. It was then apparent that the ceiling was not naturally black after all (Pers. Comm. see Appendix F).





(Above) Figure 54 - Cloister Garden, indicating the song school and cloister walk in front elevation, Author's own

(Right) Figure 55 - Interior of refectory as it exists today (Fry, 2009:45)

### Cloister Walk

Another critical adaptation aspect was the cloister walk, which had a modern roof. It was installed at the time of the song school (see Figure 54), which was roughly in the year 2000. It was a stainless steel folded seam roof, but when people walked on it and stood on the seams, the roof leaked. Donald Insall Associates received a grant to put in a cast lead high specification roof that would last much longer (Pers. Comm. see Appendix E).

### Chester Cathedral today and moving forward

The Very Reverend Professor Gordon McPhate writes about the cathedral that its fortress-like architecture speaks of the strength of God, which invites the trust of the community. The pinkish-red sandstone also adds to the aesthetic of the loving tenderness of God for each and every one of us, inviting our response. But most importantly, he speaks of the living community being

open to change (Fry, 2009:1), which reflects the rise of the Anglican church implying change to the cathedral for modern worship.

Along the way, adaptations and improvements, such as the lead roof, have ensured the survival of Chester Cathedral's fabric. The original spirit is maintained through the keeping of the Gothic structure and through the exhibition that tells the historic story of the bell tower.

The refectory, seen in Figure 55, used by the monks historically for their meals, is used today as the Cathedral's restaurant, for meetings, receptions and dinners (Fry, 2009:45). Therefore, whenever possible, looking back on history has informed the way that the spaces are used now. Although the use has evolved, but proven to be in its original spirit. Therefore, although there has been change, the memories of Chester Cathedral have been comprehended.





VII  
RESTORATION, CONSERVATION AND ADAPTATION  
IN THE FUTURE



### Future Debates

Dennis Rodwell wrote that conservation and restoration have evolved from the eighteenth century, in terms of urban and architectural (2007:215). This evolution is brought about by the change of needs of people. Architecture has adapted to suit those needs. This explains why cities and towns evolve. In turn, cathedrals and how they are altered, whether it be via conservation, restoration or adaptation, are affected by this evolution. People have moved on and today, in the architecture industry, there are more debates focusing on environmental issues under the notion of sustainability (Rodwell, 2007:215). Fortunately, the philosophy of architectural conservation offers a lot to offer to sustainability in the form of using locally sourced materials and craft skills, but more particularly reusing buildings. However, people are also enthusiastic about heritage and saving our buildings.

For cathedrals, as evident from the case studies, they hold a huge significance to the communities around them, but the main issue with maintaining them is the required cost of upkeep.

### The Three Intervention Approaches and their Future Uses in Practices Today

Donald Insall Associates believe that a building cannot be created at one stroke and incapable of change. It is about its interaction with the people within it. This is supported with an applied expression of its locality and materials. St Albans and Chester Cathedral, prior to their restorations ironically, are prime examples of this.

Insall further states that from the moment a building has occupants, their needs reflect the changes of form and structure. They have their own pasts and presents that are intimately intertwined with the needs of generations of users and the life cycles and renewable needs of its materials (Insall, 2008:27). Shippobottom confirmed that recycled materials are used more when possible (Pers. Comm. see Appendix A). This implies a greater probability of using restoration and adaptation methods to ensure a cathedral's survival since conservation implies using historical materials which may be damaged and need checking, which is evident in Arrol and Snell's conservation works at York Minster.

Material choice can be affected by their own separate story and contribute as mere chapters in the timeline of a cathedral's construction. Materials, particularly those used in cathedrals from ancient times, speak powerfully of their local origin. Mostly, the case studies discussed all cathedrals built from local materials. (Insall, 2008:27). They are examples of buildings that are direct expressions of their locality and therefore contribute to the story of the town or city the cathedral is found in other than the controversial anomaly of Grimthorpe's West Front restoration at St Albans Cathedral. This is why Donald Insall Associates were set the open brief of studying the implications of a conservation policy, enhancing Chester's overall architectural quality (Insall, 2008:197).

Once written was conservation may have elements of preservation (Keith, 1991:12). However, Tony Barton from Donald Insall Associates argues that conservation is not about preservation anymore. Buildings must

change approximately every generation. Their work mostly comes from repairing failing services i.e. new wiring and heating (Pers. Comm. see Appendix E). Given the government's insistence for a push for sustainability aspects in our buildings, change in cathedrals too, in terms of that term alone, will significantly change.

The Government also requires buildings to change when it comes to access for the public and particularly the disabled. This is no temporary requirement, which is when a building becomes contrary to everything an architect wants to do. Not everything can be saved. Sacrifices must be made. New elements against and within a cathedral end up being built, which also implies a possible pulling away from conservation.

Donald Insall Associates believe that it is not always worth conserving small aspects of a building such as lino when it can be easier to just restore it with other materials. However, conservation has been the saviour for cities. The mix of old and new buildings is very stimulating across European cities. This balance between modern buildings and those that have been conserved with modern interventions is how they became successful (Pers. Comm. see Appendix E).

With regards to the future of conservation, Arrol believes there are good prospects for it since it is becoming more adventurous and scientific than before. The Heritage Lottery Fund contributed immensely to fund the research and investment into the cutting edge technology that allowed for the successful conservation of the stonework and Great East Window. For Arrol, conservation is done

according to what was under consideration. What he conserved at the minster was certainly valid, but he was no advocate for deliberately keeping harmonious or pleasing decay, as defined by William Morris. (Pers. Comm. see Appendix D).

Given the evidence, conservation's definition is becoming broader owing to legislation's evolution.

The Venice Charter is Latin/European and not Anglo Saxon in terms of its language. Arrol and Snell found the Burra Charter easier to follow and this gave rise to the inventions to the ICOMOS principles. The Venice Charter was non-British in terms of clarity of thought.

This introduces a discussion that legislation will need to keep on adapting as societies change. This affects how interventions to cathedrals in the future are made. Each country differs. What interventions work in one country may not work in another. Societies differ with every country along with the materials' availability, technology and workmanship. Whilst materials are whenever possible locally sourced, there are still times when original matching materials are sourced overseas (Pers. Comm. see Appendix C). With the increasing need for sustainability, which implies lower embodied energy requirements, thus locally sourcing materials, it mean that restoration and adaptation becomes preferable to the purist conservation approach, depending on the budget and historical evidence.



### Environmental Factors affecting change

The political climate is changing and it is for conservationists to manage change in our economy and in our lives (Pers. Comm. see Appendix E). Barton believes that there are too many people in power that see heritage as being in the way, rather than something to be celebrated, enhanced and used in a positive, historical and economical way.

Crispin Keith, of Historic England, writes that building conservation should take into account people's emotional attachment to monuments. This is since their demise can be deeply upsetting for their communities, especially for the older generation who were around for the first rich chapters of the cathedral's story. However, it is difficult to measure or anticipate this emotional impact. (1991:15)

It is unfortunate that the Government has almost no interest in the funding or support of our cathedrals. As Griffiths mentioned, sometimes clients are able to gain grants for restoration works, but this is no common occurrence (Pers. Comm. see Appendix C). However, the Heritage Lottery fund is the financial saving grace. As their name implies, they are funded by lottery players only and receive no Government support (Pers. Comm. see Appendix G). They have done so much to fund cathedrals amongst other British monuments. Their top considerations are the diverse stories from the communities. It is then they fund the breathing of new

life into that community (<https://www.hlf.org.uk/looking-funding/what-we-fund>, 29th July, 2016). Cathedrals, of course, tell the rich story of the community that surrounds them. This is something the HLF appreciates. This is why they intend to continue supporting cathedral related projects that meet their programmes' outcomes, which are based on heritage, people and communities (Pers. Comm. see Appendix G). In spite of a somewhat fluctuating economy that Britain faces in present times, the HLF have confirmed that there are currently no plans to change the funding for heritage, which includes the funding British cathedrals. So it is assuring that there will always be money available to support the initial restoration, conservation or adaptation to cathedrals. However, as has been established, it is the cathedral's responsibility to generate the revenue to maintain its upkeep. A cathedral's revenue comes from the community and its visitors. So it is the people themselves that maintain the book that tells the story of the community that surrounds the cathedral, which allows for its true sense of belonging. Victor Hugo wrote about architecture that "Great buildings, like great mountains, are the work of centuries (Hugo, 2004:129)," and that architecture transforms as time progresses, and the building with it, as was the case with Notre Dame. In this scenario, Romanesque transformed into Gothic that took Notre Dame as it found it and assimilated a layer of itself onto the cathedral. Consequently, Hugo wrote that the architecture developed as desired in accordance with nature.



CONCLUSION



### Money Matters

Conservation, restoration and adaptation professionals, such as those interviewed, do not hesitate to spend a little more money for a genuine intervention proposal.

Since it is a significant factor in the selection of materials and the amount of time spent for works, whether it be restoration, conservation or adaptation, practices will mainly do what the client can afford, but sometimes it becomes a balancing act, since certain aspects of the design have to be carried out to retain the spirit of the design (Pers. Comm. see Appendix A). This is when restoration or adaptation becomes more considerable since it is better accommodating for the balancing act. Evidence proves conservation requires more time and research for feasibility.

### Architects' Egos

Architects in general have their own personal goal of leaving their mark on a building or a site. This is a great accomplishment since it implies an enhancement to a building, thus its users or inhabitants, therefore their lives. One can argue that it can also enhance their ego since the designer can potentially be remembered for their accomplishments and go down in history, often for the wrong reasons. As has been discovered throughout this study, a key example of how one's vision has been realised is Lord Grimthorpe's at St. Alban's Cathedral. His works, particularly to the West Front, have allowed him to go down in history as being a key visionary in Conservation Architecture, for all the wrong reasons. Instead of protecting the spirit of the original cathedral, it was drastically altered. With his money, he got away with not compromising with his colleagues and therefore not consider what is best to preserve the cathedral's history.

This self-centredness ironically brought about change in terms of principles in Conservation Architectural practice i.e. SPAB's formation and the writing of the Venice Charter in 1966.

### Collaboration and working to Guidelines

In restoration, conservation and adaptations, architects are encouraged now to let go of their desires of leaving their mark and taking as much control as possible to ensure their vision is realised. This is necessary owing to one's knowledge is never sufficient enough. As with any architectural proposal, richness is established through communicating and compromising with others. It is at least desirable with any architectural project to implement working in a team and comprehending other professionals' knowledge and skills. In terms of restoration and conservation work, it is never sufficient enough to merely consider teamwork as a possible

option. As stated in the ICOMOS guidelines, each team member contributes in their unique way to generate the most gratifying, comprehensive and rich proposal whilst maintaining the original spirit of the cathedral. All of the professionals interviewed are advocates to team working. Not only had they worked alongside conservators, but they worked alongside artists, sculptors and engineers, which included shortlisting and interviewing processes to ensure the best outcome for the proposed works.

Furthermore, the collaboration process need not stop there. When there is a chance for community involvement with the propositions, it only leads to a better chapter written in the cathedral's story that is being constantly written into the future.



Date	Cathedrals				Documents	
	Notre Dame	St Albans Cathedral	York Minster	Chester Cathedral	SPAB	Venice Charter
627			1st version of building constructed for marriage of Edwin and Ethelburga			
741			2nd version of building burned down			
793		Original abbey built				
1066			William the Conqueror becomes King after Battle of Hastings. Construction of Current York Minster begins			
1066	Original Construction of Notre Dame begins					
1539		Abbey broken up and its surrender to Henry VIII				
1405			Original construction of Great East Window			
1541				Original Cathedral built		
1789-1799	French Revolution					
1837	Viollet le Duc hired for restoration work during Second Empire					
1844	Restoration of Notre Dame					
1868-1875				Restoration by George Gilbert Scott		
1870s		Abbey gains Cathedral status				
1872		St Albans Shrine reconstructed				
1877		George Gilbert Scott's death and restoration takeover by Lord Grimthorpe			SPAB formed by William Morris and John Ruskin	
1960s				Bells relocated from bell tower		
1966						Venice Charter Established
1975				Addleshaw Bell Tower opened		
1982		Chapter House Extension built				
1922		St Albans Shrine restored				
1993		Shrine dedicated by Bishop in presence of Her Late Majesty Queen Elizabeth				
1995				Restoration and adaptation work by Donald Insall Associates commences		
2000		RG Architects appointed for adaptation work	Arrol and Snell appointed for Conservation work	Cloister work and song school completed		

Figure 56 - Timeline of events as indicated

throughout study (Author's own)

**New Chapters**

Every professional interviewed believes that, in terms of historic buildings, you have to understand it, protect its significance, and then you may add your time's layer onto it. Each layer of a cathedral, represents a moment in time across history like chapters in a storybook.

As can be seen on each of the floor plans of the cathedral case studies, they have components from various ages. No cathedral has ever stayed in its original form.

Like a storybook, a cathedral may lose its appeal to the community if there are no shocking twists. It is these twists that draw the reader in. In terms of the cathedral's story, the twists come in the form of war and the changes in standards of buildings of that era, and even religious evolution (see Figure 56). It is then that the architecture becomes the script that propels the story of the cathedral, with the restoration, conservation and adaptation professionals as the writers. The story becomes ever the more rich as the years pass and when the years become decades, which consequently become

centuries.

As mentioned earlier, Viollet-le-duc argued that if a building is reusable, there would be no need to make any changes to the building or raise another in its place (Hardy, 2008:496). This implies continuing the story after the plot twist and not abandoning it in favour of starting a new story as it means the cathedral will have failed, therefore an abrupt sad ending.

**Religious Aspect**

As mentioned in Chapter III, the Church of England opposed SPAB, with the belief that churches and cathedrals should be modernised to allow for more comfortable places of worship for instance. This therefore implies that adaptation is preferred out of the three intervention methods since it is not as restricting in terms of materials and historical traditions. For instance, Chester Cathedral was adapted for contemporary worship to accommodate the time of the dominant Anglican Church was in force and permeated every aspect of life. The architecture must adapt to religion and not the other way around.



## Technology

Technology has developed to improve the environment we live in, and that also is true in architecture and artefacts. We cannot shy away from these methods owing to their benefits they offer to historic materials.

In terms of artefacts, St Albans shrine was reconstructed from fragments of the original material, but owing to them being broken up previously, stability was compromised. Modern technology aided in the design of the shafts, flying buttresses and pinnacles, which would result in the shrine's survival.

The glass protection on the Great East Window was the most expensive ultraviolet resisting glass in the world, but it guarantees protection of the glass from ultraviolet radiation (Pers. Comm. see Appendix D). Modern technology developed this and no less than this could conserve the glass to allow the Great East Window, thus York Minster entirely, to maintain its original spirit.

Furthermore, in the York Minster Revealed exhibition, as can be seen in Figures 43 to 47, and the Chester Cathedral at Height tour in which the original bell

tower was adapted by Donald Insall Associates (Pers. Comm. see Appendix E), systems and gadgets, which are user-friendly to visitors and the community, allow for interaction, understanding and appreciation. We are in an age where digital technology is becoming a significant part of our lifestyles and therefore a system like this is necessary for the cathedral to be current with its audience.

As mentioned in the introduction, Historic England believes that conservation and restoration is debatable, when buildings become sterile museum-like attractions, which become dead when unused (Keith, 1991:12). As this study has proved, the cathedrals are still in use although the use has changed, but this is a reflection of the changing societies, environment and legislation. Nevertheless, these buildings have survived and are used today. Technology and improved materials with robust qualities play a significant and succeeding role.

## Closing Statement

As mentioned in the introduction, the key question to be answered in this study came in two parts:

With the evolution of repairing our cathedrals through restoration, conservation and adaptation, can our cathedrals maintain their original spirit? If so, is there a philosophical approach that is preferable to achieve this? John Ruskin once wrote that architectural value is dependent on two facets; the impression it receives from people and the image it bears of its original creation (1849:85). Given that the communities support the cathedrals by visiting them and donating money, thus generating the revenue required to keep them running, the cathedrals do receive a good impression. However, this is achieved following the adaptation of cathedrals, as evident particularly with St Albans' and Chester's Cathedrals. This would imply that adaptation is the preferred method of ensuring the survival of the cathedrals.

Whilst this method caters for the general public and current target audience, older generations who perhaps comprehend the story of the cathedral through its life events, such as damage from war, would understand

more of the architectural significance of these cathedrals. Therefore, adaptation wouldn't be enough since it is this method that is a result of the Venice Charter that allows for more relaxation in works. As Ruskin mentioned above, this does not necessarily imply an image of the cathedral's original creation. As was revealed in Arrol's works at York Minster, there was a large emphasis of retaining and protecting as much of the original material as possible and replacing only what was needed. Whilst this is respectful towards the original cathedral's material, sometimes it is just not practical to do so owing to the overwhelming damage that the cathedral took prior to the need to conserve. Therefore, restoration, which as history has revealed has caused controversy, may have to be the first point of call.

All that we can ask for is that the architects, along with the professionals that they collaborate with, collect as much information necessary to decide the best course of action to maintain the building's original spirit in the most respectful way as possible. And if the communities surrounding these cathedrals and their visitors can appreciate and embrace their rich stories, the interventions are therefore successful if spirit is maintained.

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## APPENDICES

**APPENDIX A - MICHAEL SHIPPOBOTTOM**

Michael Shippobottom is a semi-retired conservation architect who has worked for Donald Insall Associates at the company's London Branch on Devonshire Street. With 40 years of experience in conservation architecture, Shippobottom was deemed a very reliable source of information on the company's philosophy of conservation architecture. He was interviewed by the author at the Devonshire Street office at 11:30am on the 3rd June 2016. All answers are written as quotes.

**1. What is your philosophy on conservation architecture?**

Our ideas are inspired by William Morris and John Ruskin, particularly the book "7 Lamps of Architecture". The Lamp of Memory is where Ruskin introduces us to the idea of trusteeship. '...it is again no question of expediency or feeling whether we shall preserve the buildings of past times or not. We have no right whatever to touch them. They are not ours. They belong partly to those who built them, and partly to all the generations of mankind who are to follow us', and this same idea of trusteeship is elsewhere memorably extended to natural beauty, to Mother Earth, and her resources. In so many ways, Ruskin anticipates the anxieties, concerns and problems of the late 20th Century.

**2. Are materials still greatly considered in the way they used to be during the history of conservation architecture?**

Very much so. Materials are crucial in the understanding of creating a relevant conservation architecture. When it comes to medieval buildings, the practice believe it is vital to find out what exactly that stone was and implement it. This is also true when it comes to finding the right bedding for the stone, i.e. Portland stone. Some stone types are no longer available and so an alternative is required. Weathering characteristics are considered

consequently.

**3. Is it your practice that decide the materials for a project based on the place's history or is it the client's choice?**

It is the practice that gives advice, unless the private client has a particular view in this matter. One would want to get an understanding of that view. The practice will then discuss this with the client accordingly. Sometimes, colour schemes are in place, although the same material is kept when possible.

**4. How much does embodied energy influence this, in terms of:****a) Processing of natural resources**

Embodied energy wasn't considered so much in the past, but now that there is more of an encouragement to be more environmentally friendly. We are fully signed up for the ISO/ISA form. We have to make sure we are kept up to mark, even if one might get a little bit lax. The right materials for the purpose must be used, within reason. Recycled materials are being used when possible.

**b) Transportation**

Materials are ideally locally sourced when possible, but we would be willing to go further afield to source it if necessary. This depends on how crucial the material selection is in the proposed works, in relation to the existing building. There are limits at times and the practice has to be sensible about this. The practice are also informed by Ruskin and Morris and by the ideals of low energy use.

**5. Does the necessity of sustainable materials affect this?**

Yes. Particularly timber. It is nice sometimes to do something where there is a little use of steel. However, the use of steel is limited in the design whenever

possible. One has to bear in mind that the works have to survive with the building for a very long time and will weather. Resistance to climate change necessary.

**6. How significant is money a factor in the selection of materials for conservation works?**

Money unfortunately decides a lot. The practice only does what the client can afford, but sometimes it becomes a balancing act, certain aspects of the design have to be carried out to retain the spirit of the design. The practice also must inform the client if certain aspects, such as finer details cannot be done with a time or budget. However, the practice and client don't always reach mutual ground and thus does not get done.

**7. How significant is money a factor in the time spent in conservation architecture work?**

It largely depends on the practice's experience on a project and the type of building being worked on, the condition of the building and how compromising the client will be. The practice is very passionate about producing genuine authentic conservation architecture. Therefore, there is a much more time spent, even time outside of usual working hours, due to being emotionally attached to the building. It becomes a thing of love at the end of the day. All people involved in conversation feel the same way, from the client to the contractor. When these people are keen and knowledgeable, it makes for a better project experience. They are getting fewer.

**8. How significant is the changing use of a building or part of it, if any, affect the design of proposed restoration works and thus the materials implemented?**

The practice's interventions include the consideration of materials and forms to help establish a specific feel, according to the use of the building. The materials and proposed forms are governed by the preliminary research on the building. i.e. Windsor Castle. We

had discussions with English Heritage where certain materials are introduced after they had been destroyed by fire. These materials are considered based on cost efficiency and offering of contributing to the speed of reconstruction.

**9. Are you aware of Viollet - le duc's presence in the Conservation Architecture World?**

He is deemed a great figure for introducing exposed iron work. He was a pre cursor to Pugin. I am rather keen on Viollet-le-duc, but I am not too certain about his influence in English Conservation. I am also not sure about his existence dates vis a vis Ruskin and Morris. Donald Insall Associates like the idea of cross fertilisation between two countries (France and Great Britain), starting off at Crystal Palace with the cross between cast iron and plate glass work.

**10. Viollet-le-duc argued that if said building could be used in another way that there would be no need to make any changes to the building or raise another in its place (Hardy, p.496, 2008). Do you agree with this statement?**

Yes, in terms of keeping a building sustainable. Good buildings ought to be reused. If you can reuse a building without altering it or affecting the architecture, then great. The practice like to see good buildings reused. Though not all buildings are good, which therefore can allow for alteration to better its presence. The Philosophy of Donald Insall Associates is that buildings are alive. They're like people, they adapt, change and need help.

**11. Viollet le duc defined restoration as an "action which reinstates (a building) in a condition of completeness which may never have existed at any given time' (Jokilehto 1999:151)". This implies that in today's conservation world, we may have fallen into a trap where conservation architecture has become lost in time. Do you agree with this statement?**



No. However, it isn't always worth conserving aspects of a building, such as lino, when it can be easier to restore with other materials. Conservation has been the saviour for cities like Chester. The mix of old buildings and new is very stimulating across European cities are successful. There is a nice balance between modern buildings and those that have been conserved with modern interventions. We are keen to see the best modern interventions with those that have been retained.

**12. Donald Insall's practice believe a building is not something that is created at one stroke and is incapable of change. It is however about its interaction with the people within it. Furthermore, this is supported with an applied expression of its locality and materials (Insall, p.27, 2008). What is the process that your firm goes through to articulate this expression?**

Before any works begin, one must understand the building in depth. First, analysis is carried out and a conservation report is made. The report describes what is there, its history etc. This is embodied in the conservation statement / plan. You get to understand the significance of a building, relative significance of its different parts. It will become apparent that some features are more important than others. At the same time, you need to get an understanding of what the client wants and what their functional needs are. That is written down on paper as well. The two aspects together start to inform each other. Planners, conservation architects and English Heritage can grasp your understanding. You can sign up to a common understanding of relative importance of the building and its separate significant parts. These will highlight where weaknesses, i.e. parts with lesser qualities, in the building are and discussions can be made prior to putting in a lift for instance, necessary for accessibility for disabled, which can become a problem. Initial understanding of the building helps to inform where that

will go. This applies to services as well. Consultation with the client follows. This is to gain an understanding of the client's needs and tastes.

**13. Article 1 of the Venice Charter states that a Historic monument embraces not only the single architectural work, but also the urban setting in which is found the evidence of a particular civilisation, a significant development or a historic event. Is this something that Donald Insall Associates believe in?**

Yes. The surroundings, the culture and the history of the place all work as one. Conservation architecture is about reflecting the where and the when of when they were produced. The vernacular architecture grows out of the land.

**14. SPAB (Society for the Protection of Ancient Buildings) has an attitude on reusing buildings. "If it (a building) has become inconvenient for its present use, to raise another building rather than alter or enlarge the old one' (SPAB 2008)". To what extent do you agree with this statement?**

The practice is informed by doctrines, but they still believe in being sensible in the interest of the building and always consider what is achievable. Work, whether it is restoring a building affected by fire i.e. Windsor Castle, is being informed by the doctrines and teachings of others once needs to think sensibly for the interest of the building. Also considered is what is achievable.

**15. Robert Adam states in Venice Charter Revisited that "heritage is often seen by professionals as an anti-progressive movement." Originally it was an architectural wish to keep our built heritage. (Hardy, p.3, 2008) However, progress has to occur to keep up with the changing urban landscape in cities. But in order for progress to occur, change has to take place which is contradictory to the idea of heritage**

**being an anti-progressive movement. Given that London is a fast changing city, do you feel heritage is compromised?**

Heritage can be progressive. The combination of the retention of old buildings and using / adapting them, alongside modern buildings' best quality of modern design, can be mutually stimulating. This is particularly as the modern movement is something the ordinary person likes, along with certain ideas of monotony about huge areas of modern movement buildings. Even when they're put together, reusing these buildings and adapting them can be stimulating. For instance, the Reichstag is the combination of old and the new, but there are whole areas of Berlin which are all completely new buildings. Heritage implies a force for change and a challenge to build on and retain landmarks that people like and can develop from it. The practice like the idea of change and that buildings can develop. Cities have always been places of change. Change inevitably has to be taken on the chin. The best of the old has to be taken and develop them with new architectural interventions. Heritage should not be regarded as a hold up to new development. It is an exciting challenge and can be a stimulant to good buildings.

**16. Where does Donald Insall Associates feel the conservation world is heading?**

The practice is optimistic about a progressive future for conservation architecture. Changes need to be sought in buildings. A change of use can be introduced if the building is worthy of retention. I have had 40 years of huge enjoyment in conservation architecture. Sometimes it is necessary to upgrade them with modern plumbing and services. Seeing an old building brought back into new use is significantly rewarding, from client to contractor.

**17. What changing environmental factors affect this heading?**

Money is a key driver. Developers wish to cut corners in design. We are great believers in our planning system, particularly with conservation architects. English Heritage are the brakes for any client that want to go on a rough ride on the scheme. It is deemed that it is better to implement reliable materials regardless of how modern they are if it allows the building to survive longer into the future. Embodied energy is another key element in the equation. Also, national economics and economics in the city will also affect the heading. When better materials cannot be afforded, a certain textured finish and colour could compensate.

**18. How much do architects compromise with clients and their visions to ensure a genuine conservation architecture project?**

Everything is compromised. The practice feels that they would not be doing their job if they felt the scheme was not worthy of the building. The comprehension includes the material finish and the design.

**19. When being selected by clients for conservation work, what do clients look for in an architecture practice prior to selection?**

Every client is different. They seek:

- Quality
  - Clean and quick transaction - ride through permissions and applications etc.
  - Track record of reliability
  - Financially care with money spending and ensuring that no projects overrun
  - Skill and flare to produce a scheme to suit their needs
  - Confidence with practice for potential future work.
- Donald Insall do not advertise much, so word of mouth efficient
- Friendship and working relationship
  - Transparency
  - No secrets - always inform about materials delay etc.
  - General practice reliability.

**APPENDIX B - DR DAVID KELSALL**

Dr David Kelsall is one of four archivists for St Albans Cathedral with an in-depth knowledge of the Cathedral's history and Lord Grimthorpe's controversial restorations. Dr Kelsall was able to provide an insightful backstory to the cathedral prior to the restorations made by RG Architects (Appendix C). He was interviewed by the author at St Albans Cathedral at 3:00pm on the 6th June 2016. All answers are written as quotes.

**1. In spite of the restoration work being over engineered by Lord Grimthorpe, do you believe that materials used in said restoration reflect that of the Abbey's/Cathedral's history?**

No

**2. Do records indicate where said materials were sourced from?**

They were sourced from Barnack stone and Ancaster stone, which both come from Lincolnshire. Ordinary bricks were used, not Roman ones that were used in the original construction.

**3. As has been established, Lord Grimthorpe's wealth was how he was able to get away with his controversial restoration work. However, do you feel that he had accomplished what he had with completely no regard for the history of Saint Albans as a town?**

Grimthorpe's attitude to it was Low Church. There was a row about the crucifix. The original abbey had a lot of perpendicular elements, which Grimthorpe deemed to be rather Pope-ish. This was not to his taste and thus it was removed as part of the restoration.

**4. St Albans Cathedral is investing over £7 million in a major development project which will reveal the importance of Alban and raise the profile of the**

**Cathedral built in his honour. The project will bring recognition of the importance of this cathedral. In order to reveal the story of Alban, and drawing on the remarkable physical survivals of the shrines and striking architecture, how would you advise the conservation and restoration architectural team to achieve a successful project that remains in keeping with the spirit of St Alban?**

They should consult with English Heritage on the matter.

**5. Viollet-le-duc, a key French architect, argued that if said building could be used in another way that there would be no need to make any changes to the building or raise another in its place (Hardy, p.496, 2008). Do you agree with this statement?**

Yes

**6. Viollet le duc defined restoration as an "action which reinstates (a building) in a condition of completeness which may never have existed at any given time' (Jokilehto 1999:151)". This implies that in today's conservation world, we may have fallen into a trap where conservation architecture has become lost in time. Do you agree with this statement?**

It is interesting looking back at the nave. They wanted something up to date and yet did not consider this.

Otherwise, they would have copied old styles.

**7. Article 1 of the Venice Charter states that a Historic monument embraces not only the single architectural work, but also the urban setting in which is found the evidence of a particular civilisation, a significant development or a historic event. Do you believe St Alban's Cathedral reflected these aspects before the interventions of Lord Grimthorpe?**

It is just a Parish Church. It is a large building for a small town. They could not maintain the fabric.

**8. Do you believe St Alban's Cathedral reflected these aspects after the interventions of Lord Grimthorpe?**

No, but it stopped the building falling down. The St. Albans community didn't like his architectural thinking.

**9. SPAB (Society for the Protection of Ancient Buildings) has an attitude on reusing buildings. "If it (a building) has become inconvenient for its present use, to raise another building rather than alter or enlarge the old one' (SPAB 2008)". To what extent do you agree with this statement?**

It tends to depend on the circumstances and the condition of the building. As for St Albans, SPAB had no liking for Lord Grimthorpe because of his attitude, lack of architectural knowledge and taste.

**10. Robert Adam states in Venice Charter Revisited that "heritage is often seen by professionals as an anti-progressive movement." Originally it was an architectural wish to keep our built heritage. (Hardy, p.3, 2008) However, progress has to occur to keep up with the changing urban landscape in cities. But in order for progress to occur, change has to take place which is contradictory to the idea of heritage being an anti-progressive movement. Do you feel heritage is compromised by the works of Lord Grimthorpe?**

I am not sure, but the building is still standing today.

There are no improvements on the aesthetics though.

**11. Given the architectural form of the Chapter House extension, do you feel heritage is compromised?**

People did not during the 80s, when the extension was relatively new, but people have become tolerant of it in recent times.

**12. What changing environmental factors do you feel will affect the upcoming major development work?**

Climate change

**13. Given these factors, do you believe it's possible that the spirit of the original cathedral architecture can remain intact?**

Yes, owing to the strong original material used in its construction, particularly the Roman mortar that is elastic enough to prevent the Cathedral falling down.

**Other notes**

The Norman construction work consisted of mortar that was as thick as the brick. The reclaimed paintings that were around during reconstruction were painted in the 1960s.

The timber vaulting that is found at the cathedral is still in place. If these are replaced with stone, flying buttresses would be needed.



## APPENDIX C - RICHARD GRIFFITHS

Richard Griffiths is the lead conservation architect and founder of RG Architects. This firm was responsible for the most recent restoration works at St Albans Cathedral since 2000, which is why the firm would provide crucial information on not only the company's philosophy of conservation architecture, but also how it is reflected in their restoration works. He was interviewed by the author at their Maidstone Mews office in London at 5:00pm on the 24th June 2016. All answers are written as quotes.

### 1. Who exactly appointed RG Architects for the restoration work at St. Albans Cathedral?

There was an advertisement in the year 2000 for the post of Cathedral Architect. There was a shortlist of four based on those who applied. The four of us were asked to visit and walk around the Cathedral. An interview was conducted, which were with representatives of 5 different bodies, which included the cathedral itself, the Fabric Advisory Committee and English Heritage.

We were asked how we would get people to give money to the Cathedral.

### 2. Was it your practice that decide the materials for your restoration project based on St Alban's history or is it your client's choice?

The materials decision is made by myself. I.e. when the urgency of retiling the Abbey roof becomes more urgent, and when we do the work, we wanted to replace the existing tiles with warmer red ones, which are hand-made, with dark grey tiles that are there currently. That totally changes the external aesthetic, which is what I was intending. I had a job to persuade the Cathedral that it was the right thing to do, but the point has not been reached yet since they is no money to do that. There has been a report written to justify this based on all of the history and relevant information collated prior.

### 3. How much did embodied energy influence this, in terms of:

#### a) Processing of natural resources

The choice of materials for working on the cathedral is considered by the context and they're therefore not specifically chosen for their embodied energy. On the other hand, one is very conscious that one of the reasons for keeping old buildings to keep them going is they have massive amounts of embodied energy. If you knock it down and replace it, the other one might use less energy, but you still have all that capital that gets thrown away needlessly. Research carried out by SPAB says that by reducing the amount of jobs, embodied energy is lessened there too.

#### b) Transportation

We use materials that are appropriate for the building. That means that matching historic materials will always come from a very small area, unless occasionally you have stone which is cheaper to bring over from France in the Norman times than it was bring it in over land for miles. So, by using oak or clay (in the case of St Albans), it won't come from very far in the first place. It is better to use English Oak rather than American Oak.

### 4. Did the necessity of sustainable materials affect this?

Yes. Timber for instance is carbon neutral. Brick is high in terms of carbon capital, but it lasts forever without maintenance. So you are saving all the way down the line. Timber cladding, for instance, falls off and needs replacing. Bricks are long life and I always think about long life in selection of materials.

### 5. When considering embodied energy, is the culture of the cathedral and setting still considered?

Definitely. The Cathedral takes a view that they have a moral and religious responsibility to take the carbon use and side of equation seriously as possible. All cathedrals

have had an audit done about their energy use, as well as embodied energy. There is always consideration on how this can be improved. The most impactful one has been about the cost of lighting. New LEDs have long life, low maintenance and low running costs. Design in general is going in that direction. Heating is more difficult, but there are also measures to combat this.

### 6. How significant was money a factor in the selection of materials for conservation works?

It was not very significant, because it has always taken a view that need to be done. It is up to them to find the money. If they cannot find the money, you either do not do it or you do so over a longer period of time. Some clients can find grants to save the day, depending on whether the Government is happy to donate.

### 7. How significant was money a factor in the time spent in conservation architecture work?

RG Architects have always quoted reasonably in terms of cost over time. You can save cost in professional fees by reducing time. However, you cannot do a proper job if you are trying to cut time all the time. There were negotiations about whether our work would be done on a fixed rate or hourly rate. We made it clear to the client about what could be done in the specified budget.

### 8. What were the design considerations during the work on

#### a) The Shrine Chapel Access?

The problem was how to get full disabled access up to the shrine. We looked at options. The most radical challenge was at the eastern steps, because instead of just having platform lift, there was a consideration for a ramp on a specific gradient. This was too long and space consuming for the purpose, thus the platform lift was used. With the other steps, the platform lift would have been next door to the steps and would have been

very visible. The idea there was to bring the steps forward and that would have allowed for ambulant disabled to the left and a platform to the right. He issues were the archaeological impact, which were quite close to the floor and had to try and get a lift with a platform with minimal depth to avoid hitting the archaeological artefacts. This was still unavoidably hit anyway. Another issue was understanding how it was possible that would not blatantly look like disabled facilities. RG architects do not like the idea of rubbing disabled people's faces in it. In this case, it is there, but not in your face. You can either go up the ambulant steps or the wheelchair access and you will end up in same place. It was an aesthetic challenge to avoid scarring the cathedral and the archaeology.

#### b) Lady Chapel?

The works were cleaning only. Conservation challenge was maintaining the painting on side walls. The cleaning of 19th century stonework and on the back of that, there was relighting.

#### c) St. Albans Cathedral as a whole?

As well as the work already mentioned, St Albans was also converting the Chapter House into the Education centre, and then building a new welcome building between chapter house on the south side of the cathedral next to the north transept. We prepared the drawings etc and then we were awarded the work. We believed we saved the cathedral from a whole lot of unfortunate things that were about to happen. I have transformed the inside of the cathedral, most importantly the nave that was a real mess before. There is now a new nave platform, choir furniture etc. The area underneath the organ was transformed along with the west porches. The cathedral is looking better than it ever has done. There is however the frustration of having prepared the grounds of the project for the new building, which has gone to someone else who is

messing it up. They had to do four major redesigns just to gain building permissions. Even then, it got approved along with a whole lot of conditions. There was also the south churchyard landscaping work that has yet to be completed, which would provide a tidier access route for visitors. As a building, St Albans is one of the greatest cathedrals. Yet, nobody realises it partly due to its size and partly because the reputation of Grimthorpe was so bad, but underneath it all, it is a great cathedral built of roman bricks and totally unique.

**9. Are you aware of Viollet - le duc's presence in the Conservation Architecture World?**

Yes, but we do not agree with his philosophies, since the point of restoration/conservation is to put it back to how it was. It turns out to look like a slightly imagined piece of architecture as he as an architect wants it to be.

**10. Viollet le duc defined restoration as an "action which reinstates (a building) in a condition of completeness which may never have existed at any given time' (Jokilehto 1999:151)". This implies that in today's conservation world, we may have fallen into a trap where conservation architecture has become lost in time. Do you agree with this statement?**

Conservation architecture's greatest risk it faces is in taking an unnecessary restrictive view of what the past can offer and what the present can offer. A lot of architects in the Conservation Architecture field are not very good when it comes to design.

**11. Article 1 of the Venice Charter states that a Historic monument embraces not only the single architectural work, but also the urban setting in which is found the evidence of a particular civilisation, a significant development or a historic event. Is this something that RG Architects believe in?**

Very much so. Buildings do not exist in isolation, they

are always in context. The context changes in time, away from what it used to be historically and thus the building itself, but in as much as the context contributes to the appreciation of the building. RG Architects then see it as a layer you can add on to the historical layers of the site as opposed to just the layer of the building.

**12. Robert Adam states in Venice Charter Revisited that "heritage is often seen by professionals as an anti-progressive movement." Originally it was an architectural wish to keep our built heritage. (Hardy, p.3, 2008) However, progress has to occur to keep up with the changing urban landscape in cities. But in order for progress to occur, change has to take place which is contradictory to the idea of heritage being an anti-progressive movement. With St Albans, do you feel heritage is compromised?**

The unique importance of the cathedral architecturally and historically are not appreciated sufficiently in St Albans itself apart from outside. It is a shame since you cannot really see it in the middle of St Albans. There have been definitely the case of bad development of St Albans, they would have been successful if built on context and setting of nice buildings they have and not mess it up by having rubbish new development.

**13. Where does RG Architects feel the conservation world is heading?**

I fear it is ever a more specialist field with the accreditation. Therefore, it means that the reality is there will be more examples that the conservation specialist is not acting as an architect. They are acting as a separate consultant within a team where there is another architect. RG Architects do that, but we would not want to do it all the time. We like projects where they are the primary architect. 30% of work is conservation specialist within a team. That may mean to help get Planning and Listed Building Consent and help to get work where there are conservation sensitivities. Occasionally it goes

much beyond that where you get given a certain piece of a building to design where you are acting as the primary architect. However, we feel that conservation architects perhaps are less involved with drawing and designing themselves.

**14. What changing environmental factors affect this heading?**

There is the new element of consultation of what can be done in a project to lower the carbon footprint. BREEAM assessments come into play now.

**15. You state that, in relation to the Lady Chapel, "The older wall surfaces, especially the window reveals, exhibit fragments of brightly coloured medieval decoration, and have been recorded and partly conserved."**

**a) How are they recorded and where is the record kept?**

Those paintings count as very high value and significant in scale. That work could only be done by accredited conservators. A part of the methodology they use is scoping report, based on historical research. They prepare a report of work based on a number of people over a certain number of days. Assuming it is accepted, they do the work and then create a detailed record of what was done in form of a printed report with pictures. It is now produced in InDesign and lodged in the cathedral archive. Another copy of the report goes to the central cathedral fabric commission. The practice traditionally keeps a third copy. There is still a resistance storing things on disk. A printed copy is best and can be expensive.

**b) Why partly conserve the decoration?**

It was emergency conservation. Anything that was flaking was tended to immediately. Anything that can wait, such as general cleaning, waits.

**16. You state that, in relation to the Shrine Chapel, "The scissor mechanism of the new platform lift has a very shallow pit sitting above sensitive archaeology, which was fully recorded. What exactly was the sensitive archaeology?"**

It was the Norman cathedral and apses. Their foundations were affected.

**17. Were there any alternative solutions to the platform lift? If so, what were they?**

There were no alternatives.

**18. How and was the nave reordered for worship?**

The nave platform in Lord Grimthorpe's time was one bay long. We made it three bays long since it was nicer. It made enough space for the altar onto the platform, with seating around that bay. Two bays were left for the choir. It was driven partly by access considerations so you can get more steps and ramps to get into nave.

The steps were dictated by people taking communion. Beyond that, it was question of two different piers of different architecture styles: Norman and Gothic. It was also a question of trying to make sense with it with a chamfer that differed on each side. Aspects of relighting for the altar as well were considered. Most importantly, there was a need to reorder the space under the organ for when they have a huge choral concert. They need furniture out of the way for staging and orchestra. Therefore, storage is needed.

**19. How and to what extent were the Medieval wall paintings to the nave and south ambulatory preserved?**

This was the Conservator's speciality and there is an accreditation system for them. Cotton buds are dipped in deionised water instead of solvents. The cotton buds are not rubbed over the surface, but rather rolled over to avoid damaging the surface. Dirt is residual. The



paintings can be just stuck back onto the frames.

### **20. How did you advise on the new stained glass windows, sculpture and liturgical furniture?**

The donor of the window came up with a specific artist. We did research and found two more. Those three were paid to come up with designs preliminarily. We then appointed their favourite. There were negotiations over this since we were not sure that the chosen artist could do the work. This was since the stained glass windows would need to last a long time. With the sculptures, we did research for recommendations of sculptors from the craft end to the fine art aspect of spectrum. All were invited to meet the cathedral's dean. Three were invited and paid to come up with designs. The choice was then made for a craft style sculptor. It was an intricate process.

### **21. What aspects of RG Architect's work was reworking Lord Grimthorpe's work?**

The West Front was cleaned. This distracted attention from it, but it was not obliterated.

### **22. Do you believe Whitfield's 1982 Chapter House Extension reflects that of the original architectural spirit of the Cathedral?**

Yes - from two points of view. Firstly because of the bricks that are rather like roman bricks. Secondly, the plan follows and intended to follow from the archaeology of the Norman chapter house.

## **APPENDIX D - ANDREW ARROL**

Andrew Arrol is the lead conservation architect and co-founder of Arrol and Snell. This firm was responsible for the most recent conservation works at York Minster, which is why the firm would provide crucial information on not only the company's philosophy of conservation architecture, but also how it is reflected in their conservation works. He was interviewed by the author at their office in Shrewsbury at 11:30am on the 8th July 2016. All answers are written as quotes.

### **1. What is your philosophy when it comes to conservation architecture?**

Our philosophy is quite complicated. We always like to:

- try to understand and follow the ICOMOS principles and the English Heritage guidelines
- understand the significance of the object before you intervene

So it is about trying to understand from a structural and historical point of view and then try to make the object continue useful and usable. We do not mind intervening. It is about how you make the intervention.

It is about trying to preserve aspects and keep them going. Sometimes you have to preserve parts absolutely as found. It all depends on the circumstances, but most things change with age and so we are comfortable about making changes.

### **2. Who exactly appointed Arrol and Snell for the restoration work at York Minster?**

The cathedral architects are appointed under the provisions of the Care of Cathedrals Measure. It is an act of parliament. Every cathedral has to appoint an architect or surveyor and there is also a competitive interview process. You are appointed based on experience or your suitability for whatever is required. For York Minster, one of the key factors was having a knowledge of stonemasonry issues and the ability to

make changes to historic buildings

### **3. Was it your practice that decide the materials for your restoration project based on York Minster's history or is it your client's choice?**

The client was an informed client. In the case of the glass, there was the Glaziers Trust. The project was already under way before I was appointed. I took over from the architect who had already started it. I amended it to be more conservative of fabric and to increase the amount of in-situ conservation work that the masons would do. So there was a lot of training of masons so they could carry out in-situ work. It was not just about making new stones. The whole ethos of philosophy of The Stoneyard changed to include high levels of conservation skills and making new pieces to high standard.

### **4. How much did embodied energy influence this, in terms of processing of natural resources**

The primary issue in terms of getting new stone is that you have to be very scientific about the analysis of the stone that's there, such as the reasons why the existing stone has failed. You have to know how many different quarry sources they went to over the last 700 years. You have to analyse each stone and you have to bear in mind that in every quarry that makes good stone, there will be beds of stone that you cannot use. One of the main problems, not only with York Minster but most larger cathedrals, is that they suffered from poor quality stone selection in the 19th century. Our aim was to find the stone that would last as long as possible and combat the problems we identified, such as salt and pollution. There were 150 quarries in Yorkshire, but now there are about 10. Half of those only tend to release stone for industrial silicone glass making purposes. We cannot always be certain, even when we go to Tancaster or Wadsworth, that the stone is going to be acceptable. Sometimes we have to send it back. It is really about

trying to make sure the stone is suitable. With regards to embodied energy, we have to transport some stone from France. That was only when we could not get the stone at the right bed height in this country at the time. We had to use lepine. We were very careful where we put that so it does not react with the lime.

### **5. How significant was money a factor in the selection of materials for conservation works?**

It does not really affect the decision. You have to use what is appropriate. York Minster is a Grade I building, which has international significance. There is no room for manoeuvre. You have to use the best materials. So for example, with the glass protection on the outside, it is the most expensive ultraviolet resisting glass in the world, but it is there for a reason. It will protect the glass from ultraviolet radiation. The stone was the best quality stone we could get. You cannot cut corners with that. With the piazza, I deliberately specified very thick stones for the paving because I knew it would not break apart. It needed to be of lasting high quality. It did not mean they went over-budget or overtime. We were in time in all aspects of the project.

### **6. What were the design considerations during the work on**

#### **a) The Great East Window?**

The main design consideration was that you should be able to protect the ancient glass from condensation and so it had to be an isothermal internally ventilated system. We had to design that in such a way that would minimise its appearance and you would not know it is there. That meant using good quality magnesium bronze fittings. A lot of trial work went on for that. There had to be an acceptable methodology for the conservation of the glass, so the methodology had to be developed over a year and a half trial period. That then had to be approved by the cathedral's Fabric Commission since

they were keen on making sure that the ethics relating to the philosophy are correct. They were road tested to the point where it was proved to be helpful to that philosophy.

#### **b) The East Front Stonework?**

When you look at the object, the first question you ask is: how are the loads transmitted? In this case we had to. The front is leaning out by roughly a metre. So there was an outward lean, a left and right lean and a backward lean. There were lots of structural problems to be comprehended and understood. There were also the decay mechanisms that needed to be isolated, analysed and understood. The design was trying to stabilise and give longevity to the fabric so we don't have to come back for another 100 years. The scaffold cycles for the east front would be about 100 years. SPAB and English Heritage got frightened about that since they felt it was necessary to go back between 30 and 40 years. This was since they would be able to retain more decayed stone. Our view was to retain ground stone near ground level. We had retained decayed material since it was easy to replace. Yet it was not safe to leave badly decayed items at 120 feet in the air. If any fell off, they would easily kill someone or go through the roof. Every stone had to be individually checked, assessed, tested and passed. That method was eventually accepted by English heritage, CFC and SPAB as being the prudent thing to do.

#### **c) Reordering the South Transept?**

With regards to the external piazza, that was about getting access into the Minster for all comers of any ability, without the need of assistance i.e. someone pushing the wheelchair. The gradient needed to be 1:20 for the ramps or better. The surface could not be distracting. We were asked why we did not delineate the line of the roman fortress in it. In the end, we decided to make the accesses as plain and simple as possible so

it is seen as a nice place to be. You are not distracted by it and you look right at the Minster. It is just a York stone paving. It has a monk bond pattern to it so makes sense with the diagonal lines in it. It has a very subtle delineated carriageway for the cyclists and the horse drawn carriages, but really it is the signage that is at the absolute minimum so there is no distraction. When people come, they have to behave themselves because it is a self governing space where everyone has to get along.

**9. Viollet le duc defined restoration as an “action which reinstates (a building) in a condition of completeness which may never have existed at any given time’ (Jokilehto 1999:151)”. This implies that in today’s conservation world, we may have fallen into a trap where restoration architecture has become lost in time. Do you agree with this statement?**

He can also be described as Violated by le-duc! He had a long career in restoration. He was very analytical in his views of structure. When he did work on Carcasson for example , he looked at the turrets. At the time, he was only familiar with Northern French turrets, so they all had to be slate clad. He then covered them all in that, as opposed to the original tiles. Now, his slate cladding held such historic value that the French government restored them as slate cladding since it was an example of his work. The French have the tendency to over-restore. Things look brand new. I do not want work to look brand new. On the other hand, I am not one for deliberately keeping harmonious decay or pleasing decay, as defined by Morris. Things do change and they are bound to. It is about how you do it and in such a way so it is not in your face.

**10. Article 1 of the Venice Charter states that a Historic monument embraces not only the single architectural work, but also the urban setting in which is found the evidence of a particular**

**civilisation, a significant development or a historic event. Is this something that Arrol and Snell believe in?**

The Venice Charter is very Latin/European and not Anglo Saxon in terms of its language. The Burra Charter is easier to follow and it gives rise to the inventions to the ICOMOS principles. Context is clearly important . You cannot live in Europe without being constantly reminded of how everything fits together. The Venice Charter was non-British in terms of its clarity of thought.

**11. Robert Adam states in Venice Charter Revisited that “heritage is often seen by professionals as an anti-progressive movement.” Originally it was an architectural wish to keep our built heritage. (Hardy, p.3, 2008) However, progress has to occur to keep up with the changing urban landscape in cities. But in order for progress to occur, change has to take place which is contradictory to the idea of heritage being an anti-progressive movement. Do you agree with this statement?**

I do since everything changes. It is how you manage change. There will always be a discussion of balance of retaining something important and making a change. History is full of examples of people making radical changes to buildings. You should not be frightened about making change, but be careful about how you make the changes.

**12. Where does Arrol and Snell feel the conservation world is heading?**

It is getting much more informed and more scientific than it was. The training of conservation is improving. It is not easily taught. It is much better to discover it through being in practice and training as it were. There are good prospects for it. The Heritage Lottery Fund has done a huge amount to fund it. I just hope it carries on. They made some very significant contributions.

**13. How much did Arrol and Snell compromise with the York Minster restoration clients and their visions to ensure a genuine conservation architecture project?**

There was no compromise on either side. The clients accepted all our advice and we all achieved our objectives. Possibly, the whole window and masonry may have come out, but then we thought it would be technically feasible to retain where it is and repair in situ. It was done and kept it in budget. The ethos in The Stoneyard is very high. It is one the best centres of excellence in the country if not in the world for their masonry and the glazing skill. They are very conscious about it. They take their education seriously. They record everything they do. They are building up a large body of knowledge that should reside there.

**14. As the Surveyor of the Fabric for York Minster, what did this responsibility consist of?**

The surveyor's primary task is to assess and report on the quality and condition of the fabric in the form of a report. I reorganised the quinquennial inspection process so it is much more logical. I accompanied it with a huge photographic condition report and it has seven volumes. It covers everything. The stone records are very comprehensive , which includes Internal and external photographs. The sequence for which its recorded is done in such a way to easily revisit and refine it. Its purpose was to set up a system whereby it can be monitored really well. It has allowed a really good 50 year long forward plan to be developed. We would never be able to stick to it since things will change. Costs can be predicted earlier by this method.

**15. You have been “overseeing a range of projects both for the Minster itself and for other properties in the precinct, such as the fifteenth-century St William’s College, which now acts as a conference centre and restaurant.” How are these related to the**



**Minster?**

Yes, they do. The college belongs to a separate organisation called the Trustees Surveyors College who are the Dean and Chapter, but it is separate. It may be brought into the Chapter ownership by discussion with the Charity commissions at the moment. Essentially, it does generate revenue, but not currently at the moment since the restaurant is closed. There are no activities taking place and we are in the process of taking the roof off and putting it back on again after changing the insulation and the dormer windows. There are many cathedrals have large property holdings, which lose money and drag them down, This was the case at Chester Cathedral. So, Cathedrals need to be quite savvy about how they look after their holdings and their funds. That is not really what they specialise in and they need to be better. The current Dean has a grip on it and it is getting better for York Minster. There is a scheme in hand for the college and the Bishop's Palace to improve, particularly in terms of the change the use of both of those buildings.

**16. What was the process for the stonework repair?**

The process is that the architect and the master mason make joint inspections. They literally stand in front of every stone and they tap, examine and record it. They note whether it has to come out, go back or it can be retained, repaired in situ or be replaced. So there is a very long process. You are dealing with thousands of stones. Then the surveyor has to write a specification. I have written a document called the Current Stone Practice document, which is particular to the Minster. It starts with the process of identifying the site issues, it talks about selecting stones in the quarry and then how you go through the whole process. In the minster masons yard, you have the banker masons, the carvers, the fixers and conservators. Then you have the master masons and his team preparing the setting out drawings. There is a whole series of related activities going on all

the time. That is an ancient process that has been going on for over 1000 years. Yet it is quite modern and up to date in York and it works well by comparison with other cathedrals I have been to.

**17. The East Front Stonework won a top national award for stone conservation and craftsmanship.****Who was it awarded by and what was their awarding criteria?**

The Worshipful Company of Masons, a London guild, works in conjunction with the Stone Federation. The Stone Federation produce a magazine called National Stone Specialist. Once a year, they hold the Natural Stone Awards, which coincides with The Stone Exhibition. There are different categories; housing, conservation, sculpture, pavings etc. There are 10 - 20 categories altogether. The judges are appointed by The Stone Federation and they consist of a Worshipful Company of Masons representative, an RIBA representative and an architect with knowledge of masonry. They go around the country, visit the sites and then they decide. We have won 3 natural stone awards over the years.

**APPENDIX E - TONY BARTON**

Tony Barton is the current lead conservation architect of Donald Insall Associates and is based at the practice's Chester branch. This branch was responsible for the most recent conservation works at Chester Cathedral. Whilst the interview with Michael Shippobottom was based on the practice's philosophy, Barton's interview would provide crucial information on how the practice's philosophy is reflected in their conservation works. He was interviewed by the author at their office in Chester at 4:30pm on the 20th July 2016. All answers are written as quotes.

**1. Who exactly appointed Donald Insall Associates for the restoration work at Chester Cathedral?**

It was Chester Cathedral itself. They received funding from the Church of England, but only to cover costs of some of their clergy. The rest of the money they had to raise themselves completely. Every cathedral has to have their own architect. They paid DIA out of money raised from events, collections, donations and Cathedral at Height tour.

**2. Was it your practice that decide the materials for your restoration project based on York Minster's history or is it your client's choice?**

It was certainly not the client's choice. We specify all of the work we do. We kept the client's budget in mind and maintained pragmatism.

**3. How much did embodied energy influence this, in terms of:****a) Processing of natural resources**

We like to think that with all of our work, we used traditional locally sourced materials as much as we can. That was not a big factor at the Chester Cathedral. The cathedral is very minded towards their footprint on the plant and sustainability. The main materials used are red

sandstone and the mortars are lime that are from Wales.

**b) Transportation**

The main bulk of materials come from North West England

**4. Did the necessity of sustainable materials affect this?**

It is our own ethos and nothing to do with the Cathedral.

**5. When considering embodied energy, is the culture of the cathedral and setting still considered?**

Absolutely. The whole of the church of England has a green agenda, as can be seen on the Church Care website. The cathedral sign up to that and do whatever they can. For instance, their boilers failed last year and they were just moving to replace them with oil fired. We advised them that the carbon footprint on gas fired boilers are lower than oil. They were able to negotiate a gas supply from the centre of town. They now have gas fired boilers, which are the most sustainable, least harmful to the carbon footprint that you can get since they are so efficient.

**6. How significant was money a factor in the selection of materials for conservation works?**

It always is. The project we had in mind is the roof repairs. The cathedral just received £750,000 from the government under the World War I Centenary Cathedral Repair fund. We did lots of stone and lead repairs, lead roof, stone repairs and cleaning inside, floors were levelled off. We had a strict budget. We could not go a penny over that budget. So we used the best materials we could. We were pragmatic about specification. Money is always an issue. You have to steer the ship towards the end result. At the Cathedral At Height, the handrails were originally going to be bronze. They were mild steel that would go on to be rusted. DIA threw the rattle out of the pram when they could not be done in

bronze.

**7. How significant was money a factor in the time spent in conservation architecture work?**

We try to keep the time spent within the budget of the fees available. That is a factor in every job we do. If we did not manage that, we would go out of business.

**8. How much did Donald Insall Associates compromise with the Chester Cathedral restoration clients and their visions to ensure a genuine conservation architecture project?**

There was no compromise.

**9. What were the design considerations during the work on**

**a) Cathedral Roof repair?**

- Longevity
- keeping the water out
- cost
- aesthetics
- sustainability
- appropriate materials

We are talking about lead, red sandstone, not much slate roof works.

**b) South Aisle pinnacles**

As above

**c) Chester Cathedral at Height project?**

They are mainly aesthetic in trying to have the least visual impact on the cathedral itself. The handrail was concealed so that it cannot be seen from the ground floor. This is what we call a stealth job.

**10. Article 1 of the Venice Charter states that a Historic monument embraces not only the single architectural work, but also the urban setting**

**in which is found the evidence of a particular civilisation, a significant development or a historic event. Is this something that Donald Insall Associates believe in?**

Absolutely. I cannot really say that the repair job at Chester Cathedral contributed to its urban setting or historical context, other than giving a historical building a bit more of a life, such as with repairing the roofs.

**11. Back in World War II, some of the original colourful Victorian windows were shattered, and so during repairs, clearer and more light emitting windows were implemented to make the cathedral brighter. As a conservation architect, do you believe that this is justifiable intervention as opposed to Victorian style?**

The windows had been bombed out. There was a conversation about "should we repair Coventry cathedral?" "Should we accept the war damage is a part of the history of the building?" It is hard to answer the question since we were not there. I think you have to take in the wider considerations of the urban city. It was the right thing to do, because on a sunny day, the interior of that cathedral shines. If you had old heavy Victorian glass, you would have to put in a far higher degree of artificial light in there. The new lights in the Chester Cathedral actually reflect the events of WWII, which is a key part of our shared history.

**12. The original 1541 cathedral had been constructed of locally sourced red sandstone for the reason that it was easy to carve into sculptural forms. George Gilbert Scott's restoration was cladding the cathedral in Runcorn sourced limestone. His argument was that his work was in keeping with the history and character of the original cathedral. Given that red sandstone has been proven to erode easily in the rain, do you agree that the Runcorn limestone should have been used to ensure the survival of the**

**cathedral in general?**

We spend our life dealing with red sandstone. Chester's red sandstone is dreadful. If you read DaFoe's Tour of Britain. He talks about the grim red sandstone decaying throughout the city of Chester. It still is today. So, there are two schools of thought on Scott as a pragmatist.

It was the Industrial Revolution, so stone could be transported. Whereas before all that, all/most buildings were built from stone dug from the ground next to them, since a horse and cart was the best mode of transport at the time. They could not be transported far. The reason why a lot of country houses have lakes next to them is since they were quarries. But to reface a red sandstone building in limestone would have been a real falsification of history, so Scott would be even more reviled had he done that.

**13. What is your opinion of George Gilbert Scott in relation to his work on Chester Cathedral?**

I have no problem with Scott. Scott reflects the spirit of his age, just as Pace's work reflects the spirit of post war Britain. As with most churches that we do with, they are medieval at their core, but they are 19th century.

**14. Donald Insall Associates have been involved with the restoration of the Chester Cathedral. This was after the British Government had decided to commission this historic town, along with three others. The practice had been set an open brief, which was to study and report on the implications of a conservation policy, which would promote and enhance the architectural and historic quality of the town. Are you able to please elaborate on these processes?**

I was still at University when this was going on, between 1968 to mid 70's. It is widely accepted that DIA have had a really significant impact on what you see in the city of Chester today. Without government help or with Insall's inspired work, we would have lost a lot. The first

conservation officer was in Chester. Conservation tax was invented here. The good people of Chester paid a penny rate on their rates to fund the Conservation Grant Scheme. Method of survey of historic buildings was set by DIA in Chester. New conservation techniques were founded here. It was not only about interventions, but a way of working as well. Donald was the Conservation Consultant for Chester. So all of the other architects, like it or not, had to liaise with Donald about all the work that they were doing as well. It was his influence on a generation of architects.

**15. You describe your work on the Chester Cathedral at Height project as "fitting discretely into the Cathedral's fabric" and "although brilliantly detailed, is totally subservient to the Cathedral architecture". How is this done?**

Skillfully! It was hard, it was a design skill that we have, because we put our egos to one side.

**16. You describe the work as "carried out in conjunction with an interpretation consultant to provide an enhanced visitor experience with graphics and video." Can you please describe how you worked with the interpretation consultant on this matter?**

We worked with interpretation consultants a lot. There is a dialogue, which firstly informs the interpretation designer about the history of the building, what we find and what is there. For instance, in the bell ringing chamber, opposite the stairs was a clock. When we were there with the interpretation designer, all they saw were two brackets coming out of the wall. They asked what they were and I replied that looks like a clock mechanism, but there is no clock on the cathedral. Someone from the Cathedral then informed them about the historic presence of the curfew bell. The clock mechanism was found in the bell tower. It was that spark of knowledge that helps the interpretation designer.



Normally, when we do our own research, we go through the records and locate them in the building. Then you may find that only some aspects are written down. Not all of the story was written. Sometimes, it is the case of serendipitous discoveries that help to fill in the gaps. You read the building and then take it from there.

#### 17. Could you please describe the processes of:

##### a) The gentle cleaning of the cloister and why the cleaning was necessary?

Cleaning is a touchy subject. Normally we do not clean the building since it can cause further damage and things getting dirty and old, such as a patina, it is a part of its history. There is archaeology in dirt. In the cloister, there is a different element playing since the big 5 year plan for the cathedral was to have the cloister as the centre of the visitor experience. The cathedral cloister was dingy and it had trip hazards on the floors. We concentrated first of all on relaying the floors so that they are reasonably level. One wall on the north cloister was just black. We had a go at some trials, it was very noisy and wet and we tried to take off the black layer, which was just decades of candle wax, hand dirt, grime. It was not all taken off, but it did reveal some of the concealed stone. Contrary to a purist conservation approach, we did it to make the cloister more attractive.

##### b) Re-laying of the floor?

We were worried about the burials. the process was the cloister was in use at the time, but there was plenty of access, as in not just one route through, at the time. We took up the slabs and discard the broken ones. The cathedral archaeologist came along and instructed further clearing away. We didn't find very much since the floor was recent, but we recorded what we did find. We luckily found no interments. The archaeologist authorised the removal of the sub-base to a depth deep enough to put a good stratum down to keep them in

place and prevent them from failing in the future.

##### c) The detrimental cement pointing renewed with lime?

We wanted to do more of that. It was our plan to take out all the cement pointing in the cloister, but there was no money and it was not that great a priority for the cathedral. Trip hazards for instance were a greater priority. Cement mortar is detrimental to stone but we're inside, so it was just an aesthetic consideration. The stone was not weathering. We did take out one wall and repointed that and it does look much better. We had a long term plan to get rid of the rest of it. It's so hard, it took ages to take by hand. It took a team of 4 people a week to take out one wall. It's not an easy or cheap job.

##### d) Renewal of the cloister roof using traditional materials and techniques?

The cloister walk had a modern roof. It was put in at the time of the song school, which was 10-15 years ago. It was a stainless steel folded seam roof. People walked on the roof and stood on the seams, which led to failure. The roof leaked. We applied for the grant and got the grant to put in a cast lead high specification roof that would last much longer.

#### 18. Robert Adam states in Venice Charter Revisited that "heritage is often seen by professionals as an anti-progressive movement." Originally it was an architectural wish to keep our built heritage. (Hardy, p.3, 2008) However, progress has to occur to keep up with the changing urban landscape in cities. But in order for progress to occur, change has to take place which is contradictory to the idea of heritage being an anti-progressive movement. Do you agree with this statement?

Conservation is about change, not preservation.

Buildings have to change more or less every generation.

A lot of our jobs come from failing services, so new

wiring and heating for instance. There is also the push for sustainability. Change related to access for all, that is not temporary. It is something that has to change in all of our buildings. A building is contrary to everything we want to do. You cannot save everything. There is a way of changing every historic building. You can make sacrifices, you can build new elements against and within a historic building. I see no contradiction. It is something we do every day. You have to understand a historic building, you have to protect its significance, and you add your time's layer onto it.

#### 19. Where do you feel the conservation world is heading?

We will carry on changing buildings. I think that the conservation, this generation is changing is there aren't many buildings, cities, towns and villages left to save. Money has been found and spent on our crumbling heritage, which no longer really crumbles. I think that it is a very big question. The political climate is changing. I think there are too many people in power that see heritage as being something that is in the way, rather than something that is to be celebrated, enhanced and used in a positive historical and economical way. What we do as conservationists is manage change so we, as a profession, who manage the change in our economy, in our lives and working lives.

#### APPENDIX F - CHESTER CATHEDRAL AT HEIGHT TOUR

What follows are notes that are taken from the Cathedral at Height tour at Chester Cathedral, which was given at 3pm on the 27th June 2016. All information is written as quotes from the tour guide.

#### THE TWO ARCHES IN THE CENTRAL AXIS

One of the two arches is Norman and dates back 900 years, which is quite rounded at the top. It is of typical Norman design. Next to it is the newer gothic arch.

The Romanesque architecture theme went out of date rather quickly. The monks cottoned on and they started putting in these new arches instead. Monks built it as a monastery right up to 1540. Victorians came along and restored the cathedral subsequently and patched parts up. Roman columns add to the Romanesque theme being brought back. The staircase was originally used by monks to go up to their dormitories, but it has since been used for the present day song school. Horse hair was used to bind the mortar.

The Victorian organ from 1875 dominates the area. The tallest organ pipe is 32 metres high. The mechanical bellows are the size of a bed. It is easy to see contrast of Norman and Roman Gothic architecture. Originally, when they were first building the monastery, the arches may not have gone as high. You can see some of the Victorian stained glass windows. The reason for the clear windows is that back in World War II, original Victorian windows were shattered, and so during repairs, clearer and more light emitting windows were implemented. They make the cathedral brighter. The beautiful ceiling was put in the 1500s, when Henry VIII was dissolving the monasteries. The monks were crafty when they were putting the ceiling up. There are three coats of arms on beams. One was Cardinal Woolsey, the Archbishop of York at the time. This was implying

loyalty to the church, the other was the coat of arms of Henry VIII, which was implying loyalty to the crown. In the middle was the coat of arms of Hugh Lupus (Hugh d'Avranches), who was the first Earl of Norman Chester and nephew of William the Conqueror. This coat of arms shows wolf life characteristics and there are wolf symbol references around the cathedral. The bell tower dates back to the 1400s.

### **INSIDE THE BELL TOWER**

In pre-Victorian times, there would have been a floor here. The bell ringers would have rung the bells from here. The Victorians wanted to show things off with architecture with the key stone, a structural piece. This helps to hold up the tower, but it is beautiful and unique to the cathedral. When the bells were taken out, a gasolier would hang down by the organ, before it was removed due to so much heat. It threw the organ out of tune and there was a fire risk due to the 14th century wooden choir stalls. In the 1960s, the bells were moved to higher in the tower.

There are carved stone faces dotted around the tower. These were stonemasons marks, which were deliberately out of sight of the monks. They looked like gargoyles and were believed to be impersonations of those that they did not like working for.

### **THE BELL RINGING CHAMBER**

In the 1960s, the bells were rung here. Then decision was then made to move the bells outside, after it was found that structurally it was unsafe due to the moving walls. The new Addleshaw Tower, which opened in 1970s, has them now. The former space is now an exhibition space to commemorate the bell ringing that took place here. What is kept is the old clockwork mechanism from when the tower was in its full use. Also featured is the carillon that was used in Victorian times. It allows one man to ring eight bells at once. A

hole in the floor kept, which was the hole the cable to the gasolier went through. Sounds are played into the space to represent the bell chiming of the times.

### **BELFRY**

The belfry have views outside. The original medieval belfry had ten bells in here. Two bells are left and they date back to the 17th century. One was the service bell, which was last rung at the time of the death of Winston Churchill. The other was the curfew bell, which rang at 9pm, which was used to order any trading Welshmen to leave. This was to prevent them causing trouble. If they were caught in the city after 9pm, they could be shot with bow and arrow. This law in fact was never actually taken back.

### **EAST TRANSEPT GALLERY**

This is used every day and an active part of the cathedral, including during the evening song. Booths are like chairs where the monks stood. Seven services a day are given here. They start at midnight and would go on throughout the day. They had chairs installed into them for apparently relief from standing.

The cathedra, or the bishop's chair, was Victorian and was cleverly made to look similar to choir stalls. The floor was also Victorian. George Gilbert Scott was commissioned to come here and he brought in a lot of architectural design. The cathedral was in sorry state in the Victorian period and he brought it back to life. The windows here are clear.

Along this transept gallery are little doors, which are believed to be used when the monks may have come out on special occasions to sing. They were individual accesses. The monks originally planned to put in stone ceiling, but by the time Henry VIII dissolved the monasteries, they had not gotten around to it. They hurriedly put in a wooden ceiling to support everything. By the Victorian times, the ceiling was completed along

with all of the beautiful intricate artwork. By the 1960s, the ceiling had turned black by all the soot and candle fumes. So people genuinely thought it was a black ceiling. An architect came and did a structural survey, tapped a little off by accident and saw some of the gold relief.

### **ROOF SPACE**

The medieval beams held everything up, but they did not have much faith in them. Therefore, arches and steelwork were used.

## **APPENDIX G - CLARE BUTLER-HENDERSON**

Clare Butler-Henderson is the Customer Information Manager for the Heritage Lottery Fund and is based at Holbein Place in London. She was deemed a very reliable source of information on what the HLF looks for prior to funding projects and what cathedral restoration and conservation means to them. She was interviewed by the author via telephone at 9:00am on the 4th August 2016. All answers are written as quotes.

### **1. Are you supported / or even partly supported by the government?**

The Heritage Lottery Fund is not funded by Government. We are funded by the lottery players.

### **2. Do you forecast any changes in future funding for ancient monuments, for better or for worse?**

We can only comment on funding provided by the Heritage Lottery Fund. There are currently no plans to change our funding for heritage, which includes funding for historic buildings, places of worship and ancient monuments amongst many other things.

### **3. What does the survival of cathedrals mean to the Heritage Lottery fund?**

Cathedrals are an important part of our heritage and so we will continue support cathedral related projects that meet our programme outcomes for heritage, people and communities. Church of England cathedrals specifically have benefited significantly from our open programmes with more than 80 projects funded since 1994 and over £100m awarded.



## APPENDIX H - BROCHURE FROM MUSÉE DE CLUNY

This is a brochure that is distributed at the Musée de Cluny and gives a description of the contents in the specific rooms. As can be seen, room 8 features the original sculptures from Notre Dame de Paris before their mutilation during the French Revolution.

# ENGLISH / First floor

## MUSÉE DE CLUNY

le monde médiéval

Exhibition « Merovingian times »  
From october 26th 2016  
to february 13th 2017

Entrance of the museum

rue de Cluny

place Paul-Painlevé

rue Du Sommerard

- Museum Entrance
- Informations / Audioguides
- Ticket desk / Reception
- Bookshop / Store
- Cloakroom / Toilets
- Exit

**2. & 3. TEMPORARY EXHIBITION**  
The first rooms are designed to receive renewed presentations of pieces from the permanent collections (sculptures and tapestry work from the 15<sup>th</sup> century).

**5. ALABASTERS**  
Polychromed alabaster reliefs were produced extensively in 14<sup>th</sup> and 15<sup>th</sup> century England and exported throughout Europe.

**6. STAINED-GLASS 12<sup>TH</sup> - 13<sup>TH</sup> CENTURIES**  
Most of the stained-glass panels shown here date from the 12<sup>th</sup> and 13<sup>th</sup> centuries. Many are of prestigious origin: Saint-Denis (circa 1140-1144), Troyes (circa 1170-1180), Gercy (circa 1230-1240), the *Sainte-Chapelle* de Paris (7243-1248), Rouen (circa 127-1300).

**7. TOMBSTONES**  
Tombstones were one of the dominant forms of funeral art from the 12th century onwards. On the right, the *Portal of the Chapel of the Virgin* at Saint-Germain-des-Prés is a true jewel of Gothic art from the Saint Louis era and serves as an introduction to the Notre-Dame room.

**8. NOTRE-DAME DE PARIS**  
The sculptures from the Paris cathedral exhibited in this room testify to the various stages of the building's construction. The most spectacular exhibits include the remnants of the *Sainte-Anne portal* (circa 1145) and the twenty-one monumental heads from the gallery of the Kings of Juda (circa 1220-1230) buried during the French Revolution and discovered by chance in 1977, as well as a delightful *Adam* (circa 1260).

**9. FRIGIDARIUM**  
The surviving facings and renderings of the frigidarium (cold room), the major remnant of the « Northern thermal baths » of Lutetia, underwent global restoration. This exceptional vaulted space (almost 15 meters high) hosts the *Pillar of the Nauti*, offered to Jupiter by the Parisian Nauti and dated 14-37 AD precisely by its dedication to Tiberius, making it the most ancient known monument of Lutetia. Other antique works are exhibited, among which a mosaic which probably adorned the thermal baths of Cluny and the *Pillar of Saint Landry* (2<sup>nd</sup> century).  
*The temporary exhibition «Merovingian times» is presented in the Frigidarium from october 26<sup>th</sup> 2016 to february 13<sup>th</sup> 2017*

**10. ROMANESQUE SCULPTURES**  
This room contains stone, wood and ivory sculptures; capitals from the abbey of Saint-Germain-des-Prés, as well as Auvergnat Christs. The ivories inside the display cases illustrate, from the 4<sup>th</sup> to the 12<sup>th</sup> century, the evolution of this precious material, much favoured in the Middle Ages.

**11. GOTHIC SCULPTURES**  
Between the Romanesque room and the first Gothic room the heads of column-statues from Saint-Denis can be seen. The evolution of monumental sculpture between the late 13<sup>th</sup> and the early 14<sup>th</sup> centuries is masterfully represented by the statues of Apostles from the Sainte-Chapelle and the hospital of Saint-Jacques-aux-Pèlerins, as well as those from Poissy. They sit alongside Parisian ivory masterpieces: Blessed Virgin Madonnas, *Triptych from Saint-Sulpice-du-Tarn*, box showing the Assault on the Castle of Love.