



**AUCKLAND
TOWER**
BUILDING CASE STUDY



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INTRODUCTION

The Auckland Tower of County Durham was a joint design effort between UK-based architectural practice and heritage master planning consultancies Niall McLaughlin Architects and Purcell, completed in 2018.¹ The glulam exoskeleton tower was constructed as a viewing deck overlooking the entirety of the North East England Bishops Palace of Durham County, and is one of two additions to the existing Auckland Castle grounds.² The tower itself was designed by Niall McLaughlin Architects—a ticketing and information hub with viewing tower—while the extension of the Scotland Wing designed by Purcell houses the Faith Museum.³ For the purposes of this case study, this report will focus its investigation on the Auckland Tower by Niall McLaughlin—its function, its materiality and conceptual underpinnings—but will bring attention to the dialogue between two unique interrelated works by the two firms.

Left: Auckland Castle as seen from afar. Once closed off from the public, the Castle today is open to touring as part of the Auckland Project, an initiative dedicated to the preservation of Bishop Auckland's art and architectural history.⁴

¹ England North East, "The Prince Bishops of Durham," accessed February 19, 2020, <https://englandsnortheast.co.uk/PrinceBishopsDurham.html>.

² Joanne Begiato, Adrian Green and Michael Lobban, *Law, Lawyers and Litigants in Early Modern England: Essays in Memory of Christopher W. Brooks* (Cambridge, UK: Cambridge University Press, 2019), 278, https://books.google.ca/books?id=UoOWDwAAQBAJ&dq=north+east+england+bishops+palace+durham+county&source=gbs_navlinks_s.

³ Niall McLaughlin Architects, "Auckland Tower, County Durham," accessed February 20, 2020, <http://www.niallmclaughlin.com/projects/auckland-tower/>.

⁴ Harry Mount, "Auckland Castle in County Durham, UK, digital image, The Daily Mail, accessed March 18, 2020, <https://www.dailymail.co.uk/travel/article-7616185/Auckland-Castle-Durham-reopen-150-million-refurbishment.html>.

CONTEXT

THE HISTORY OF AUCKLAND CASTLE

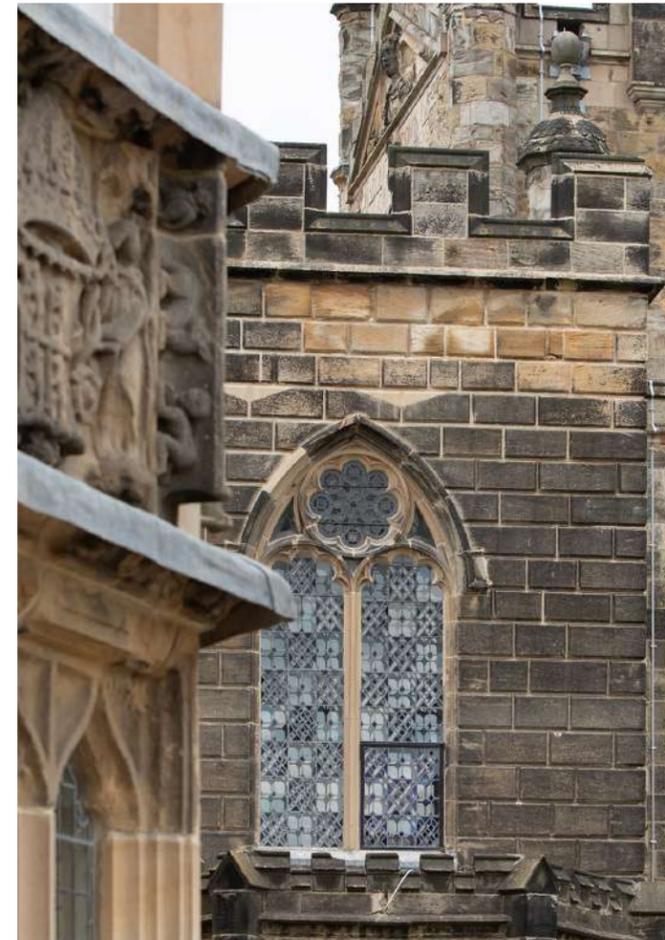
Historically, the County of Durham was originally the Anglo-Saxon kingdom Northumbria. Unlike its neighbours, Durham was governed by the church rather than by monarchy.⁵ Its remote geography made it difficult to govern by contesting forces; rather than attempt to overtake the land by force, King William of England granted the Bishop of Durham secular powers, converting the role to that of "Prince Bishop". Those with the title had authority over Durham's governance, and would act as a representative in mediating between England and Scotland as a sovereign state. In permitting their independence, England was able to establish an alliance with Durham, using them as a protective military force to defend against Scottish invasion.⁶

The County of Durham is geographically located north-east of England. The peninsular region was chosen as the site to establish a cathedral city—a fortress and defensive wall against the Scots to the north around 1066 to 1087 CE.⁷ What is now recognized as the Auckland Castle developed over the course of the following several centuries. In its initial stages, construction was limited to military fortifications, using first motte-and-bailey followed shortly by stone construction.⁸ It was only shortly after William Walcher had been inaugurated as Durham's first

Prince Bishop that Durham came to be seen as a strategic military settlement, with neighbouring towns ill-equipped to endure colonial warfare.⁹ Non-tactical additions such as the 1093 cathedral quickly established the castle as more than an outpost but a seat of power.¹⁰ This in turn led to the development of its township to the south.

Programmatically, the castle served several functions. Though its grandeur was construed as an investment in the defense of England's townships, Durham Castle also performed as a monument to the Prince Bishops' powers. With the newly established jurisdiction of Prince Bishop, the castle acted as the primary residence of the Bishops, as well as a venue for public feasts, celebrations, and demonstrations of the Bishops' exceptional social and political power, all while providing English infantry refuge during warfare.

It could be argued that the castle as a military fortress was perfunctory to its role as symbol of the Bishop's supremacy. As with many medieval structures, its architecture reflects the partisanship of its time. Built with sandstone, its stereotomic form conveyed not only security, but permanence as well. Its scale spoke directly to the Bishop's material wealth. Besides its conventional treatment, its walls were architecturally adorned with



Above: details of the Auckland Castle's exterior walls. The Neo-Gothic facade stands today as a relic of the Bishop Prince's wealth.¹⁵

elements such as Norman arches and window traceries to match the wealth of the Bishop Prince.¹¹ With every passing century, the castle's original purpose as a defensive outpost was outweighed by its symbolism of the Bishop Prince's command.

Much later, architect James Wyatt retrofitted much of the original medieval structure with reference to Gothic and Rococo Gothic typologies.¹² Improvements were informed by James Murphy's 1795 Plans, sections and elevations of the Portuguese church and monastery of Batalha, which provided instructions on Gothic architectural design.¹³ Specific architectural modifications included Gothic woodworking with the addition of "pre-Classical hood moulds, mullions, and arched lights".¹⁴ At present the castle's buildings could be described as an assortment of revisional architecture, with retrofits prioritizing the display of the church's wealth, in juxtaposition to decorative battlements above that harken back to the castle's origins.

5 England North East, "The Prince Bishops of Durham," <https://englandsnortheast.co.uk/PrinceBishopsDurham.html>.

6 Ibid.

7 Britannica, "Durham, England," accessed March 15, 2020, <https://www.britannica.com/place/Durham-England>.

8 Castles Forts Battles, "Durham Castle," accessed March 9, 2020, http://www.castlesfortsbattles.co.uk/north_east/durham_castle.html.

9 Ibid.

10 Ibid.

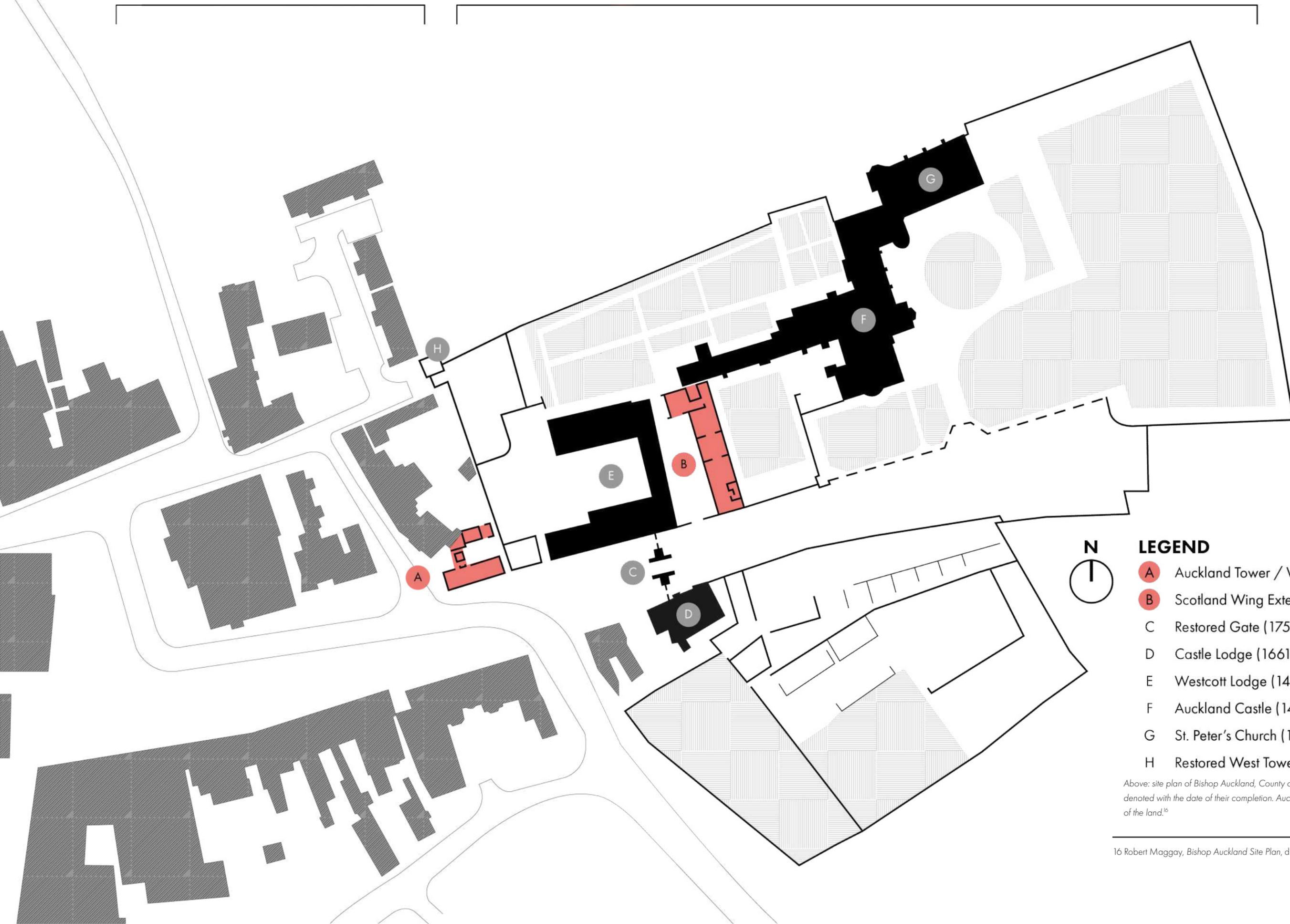
11 Ibid.

12 John Frew, "Gothic in Transition: Wyatt and Bernasconi at New College Chapel, Oxford, 1788-94," *The Burlington Magazine* 126, no. 980 (1984): 684, accessed February 21, 2020, www.jstor.org/stable/881874.

13 John Frew, "Some Observations on James Wyatt's Gothic Style 1790-1797," *Journal of the Society of Architectural Historians* 41, no. 2 (1982): 147, accessed February 19, 2020, doi:10.2307/989676.

14 Giles Worsley, "The Origins of the Gothic Revival: A Reappraisal: The Alexander Prize Essay," *Transactions of the Royal Historical Society* 3 (1993): 111, accessed February 21, 2020, doi:10.2307/3679138.

15 Auckland Castle facade, digital image, Auckland Castle, October 2019, accessed March 18, 2020, <https://goo.gl/maps/aZQ4QYyDPcUD5y5x5>.



LEGEND

- A** Auckland Tower / Welcome Centre (2018)
- B** Scotland Wing Extension (2018+)
- C** Restored Gate (1754-1771)
- D** Castle Lodge (1661-1667)
- E** Westcott Lodge (1400-1600)
- F** Auckland Castle (1400-1600)
- G** St. Peter's Church (1190-1240) / Chapel
- H** Restored West Tower

Above: site plan of Bishop Auckland, County of Durham, with notable buildings denoted with the date of their completion. Auckland Castle's walls enclose the majority of the land.¹⁶

¹⁶ Robert Maggay, *Bishop Auckland Site Plan*, digital illustration, 2020.

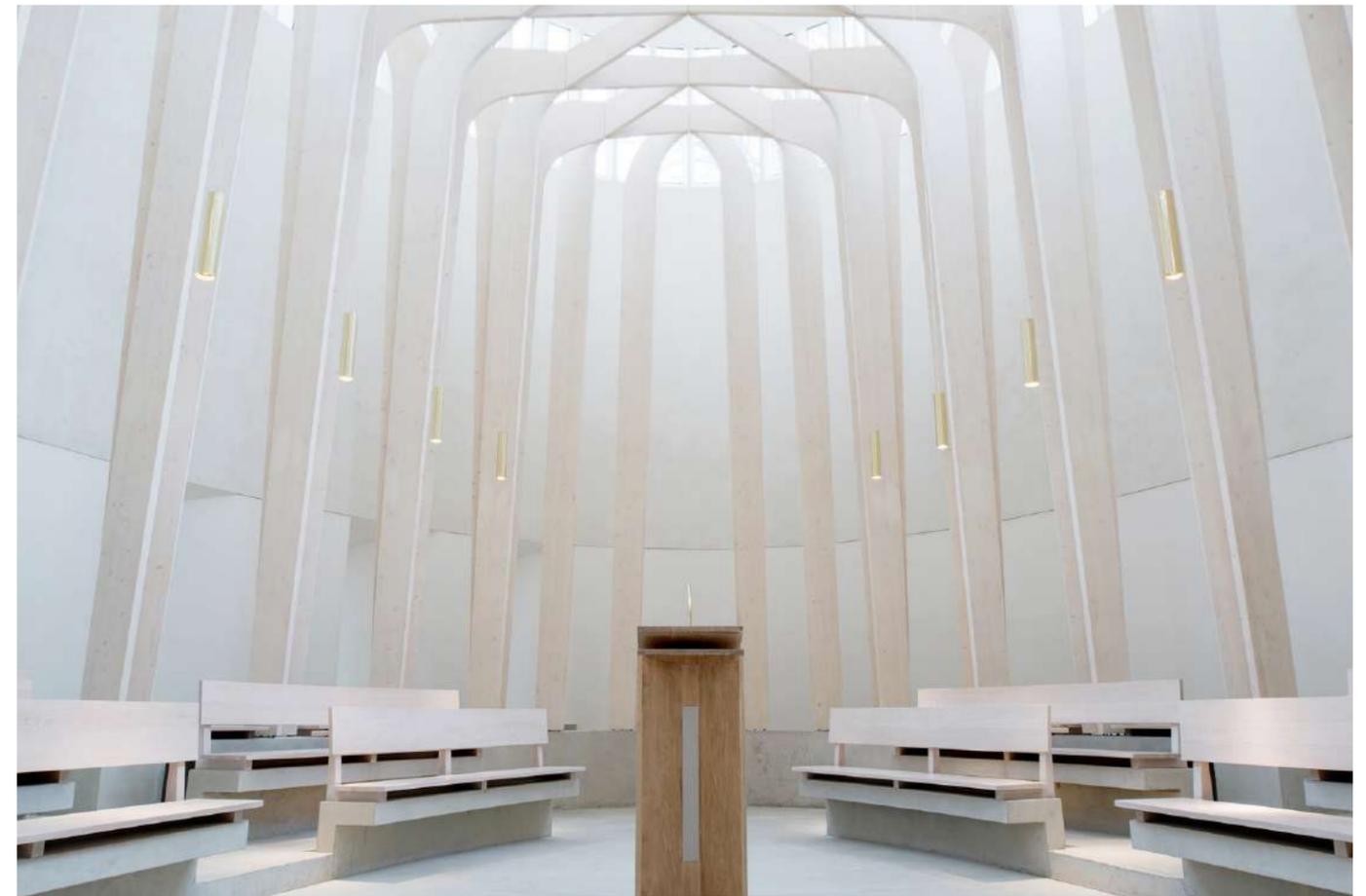
CONTEXT

THE ARCHITECTS & THEIR PRACTICE

As per Niall McLaughlin Architects' website, it is their endeavour to combine traditional and inventive ways to apply new construction techniques.¹⁷ Although their practice does not identify a specialization, their dedication to material exploration and recent body of work relating to timber best typifies their work. The work of Niall McLaughlin Architects at the historic home of Prince Bishops of County Durham spans masterplanning, heritage and adaptive re-use, and reuse of medieval type barn typologies. In their latest works, their latitude of design involves fittings and furniture, installations, models, speculations and collaborations, and, of course, the design of buildings. Worth mentioning, although not the focus of this case study, is the work of Purcell Architects—the heritage consultancy leading the preservation and the development of the Auckland Project; their practice is focused on the lifecycle extension of heritage buildings, the incorporation of new design, and a greater goal of advocacy for robust futures for these sites.¹⁸

Preceding Niall McLaughlin's work at the Auckland Project is their chapel at Bishop Edward Chapel in Cuddesdon, Oxfordshire, UK—completed in 2013.¹⁹ Much like the Auckland Tower, the Bishop Edward Chapel is an award-winning new build—which replaces

the existing 19th century chapel—and will be used to accommodate the worshipping needs of two communities: the Ripon Theological College and a small religious order, the Sister of Begbroke.²⁰ The timber chapel is intended to serve both communal gatherings and individual prayer, while inviting visitors to reflect on the relationship between space, light and liturgy. Smaller breakout spaces and a large adjacent sacristy are hidden in a narrow ambulatory from the chapel's nave using wide lateral load bearing glulam columns in a grove-like setting. The plywood columns are then "knitted together to enclose the space like the timbers of a boat" by concealed metal connections at the structure's peak.²¹ The ceiling is designed like a keel, or V-shape, that carries the visitor's eye upward and outward to the continuous band of high windows that wrap the edge of the building—offering a glimpse of the mature beech trees beyond. Niall McLaughlin's work at Bishop Edward Chapel demonstrates a dedication to concealing bolt-on technologies. The chapel's orientation allows for south oriented windows along the long side of the elliptical plan; unifying passive solar strategies, a dedication to craft and joinery, and larger formal gestures in challenging modern liturgical design.



Above: the interior of the Bishop Edward Chapel, featuring the extensive use of glulam columns to define the perimeter of the pews.²²

17 Niall McLaughlin Architects, "Practice," accessed February 20, 2020, <http://www.niallmclaughlin.com/practice/>.

18 Purcell Architects, "Our Story," accessed March 15, 2020, <https://www.purcelluk.com/about>.

19 The Bartlett School of Architecture, "Bishop Edward King Chapel by Niall McLaughlin Architects," accessed March 17, 2020, https://issuu.com/bartlettarchucl/docs/mclaughlin_03_chapel_s05_update.

20 Ibid.

21 Ibid.

22 NAARO, Bishop Edward King Chapel, digital image, ArchDaily, 2013, accessed March 13, 2020, <https://www.archdaily.com/611186/bishop-edward-king-chapel-niall-mclaughlin-architects>.

PROJECT

AUCKLAND TOWER



Located outside the castle's walls, the Auckland Tower comprises two connected structures: a two-storey hall and a viewing tower. Conceptually, the form of the viewing tower pays homage to the castle's military history, and symbolically breaks down the barrier created between Auckland Castle and the town to allow access into its historic inner realm.²³ As a filigree construction, the structure celebrates the extensive use of timber as a juxtaposition to the castle's stone walls; the viewing tower is symbolic of temporary wooden structures, such as the siege engine, that would have been drawn up against the castle during the time of the secular city.²⁴ Though sited within the town, the tower faces out north-east towards the castle in a direct confrontation. Where the castle walls isolate its occupants, the glulam framework of the tower exposes them to the open air as a commentary on the Bishop Prince's sheltered aristocracy.

The hall affixed to the viewing tower similarly mimics the medieval typology and incorporates within it various ornamental elements indicative of the time of the Prince Bishops.²⁵ Decorative details include engraved text, patterned ceilings and illustrated shutter elements—to allude to illuminated manuscripts and help in the storytelling of Auckland Castle's site and significance throughout English history. With regards to materiality, both heavy timber structures use European larch glulam, with the tower's exterior structure washed in a light grey protective pigment to further protect the wood from daylight exposure.²⁶ The tower reaches 29 metres tall and stands at roughly twice the building height of neighbouring structures.²⁷

Left: Auckland Tower as seen from the townsquare. Unlike most of the Auckland Project attractions, the Tower is located outside the castle walls.²⁸

²³ The Auckland Project, "Auckland Tower," accessed February 21, 2020, <https://www.aucklandproject.org/venues/auckland-tower/>.

²⁴ The Auckland Project, "About Auckland Tower," accessed February 21, 2020, <https://www.aucklandproject.org/about-auckland-tower/>.

²⁵ Niall McLaughlin Architects, "Auckland Tower," <http://www.niallmclaughlin.com/projects/auckland-tower/>.

²⁶ SIOOX, "The Auckland Project," accessed March 14, 2020, <https://sioox.com/en/the-auckland-project/>.

²⁷ Durham City Council, "Auckland Tower finalist for prestigious planning award," accessed March 14, 2020, <https://durham.gov.uk/article/21037/Auckland-Tower-finalist-for-prestigious-planning-award>.

²⁸ Auckland Tower east elevation, digital image, TripAdvisor, November 2013, accessed February 20, 2020, https://www.tripadvisor.ca/Attraction_Review-g191258-d15244717-Reviews-Auckland_Tower-Bishop_Auckland_County_Durham_England.html.

PROJECT

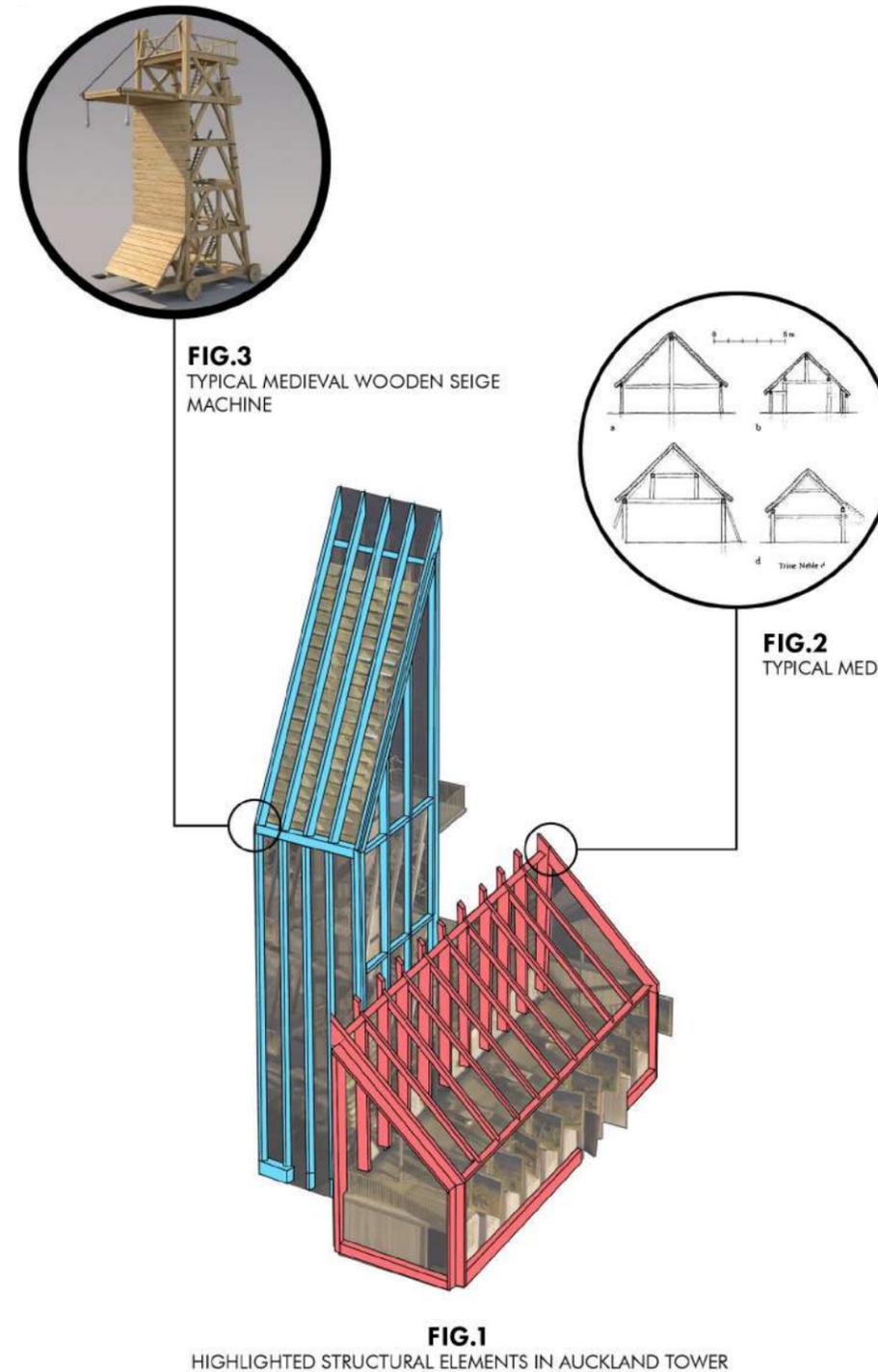
CONCEPTUAL OBJECTIVE

Niall McLaughlin Architects effectively create a dialect with the site through the merging of local historical elements within a modern structural framework. The Auckland Tower, for example, was decisively split into two separate structures (Figure 1) to better articulate distinct aspects of Durham’s architecture. The hall (Figure 2) represents the archetypal residential typology of medieval homes, featuring a square base and pitched roof. The viewing tower (Figure 3), though similar in construction, references the siege machine through its sheer height. As the Welcome Building to the Auckland Project as a whole, both structures together give visitors immediate and intuitive insight into Durham’s history as a significant militaristic establishment. The specific location and alignment of the tower itself alludes to the possibility that a past siege could very well have taken place on its site centuries ago.

In opting for mass timber construction, the flesh of the buildings was able to take precedence over the skeleton. Rather than detracting from the medieval artistry, glulam post-and-beam provided design flexibility to not only create open interiors, but also expose its tectonics. This project as a result is directly in line with the Niall McLaughlin Architects stated ambitions of combining

traditional and modern construction techniques.²⁹ Much like the Bishop Edward Chapel, the framework references traditional joinery and forms to create an enclosure for its contemporary program—in this instance, a ticketing booth and information centre. By taking a relevant historical relic such as the siege machine and the medieval housing typology and combining it with modern mass timber construction techniques, the firm has successfully created a hybrid design that is simultaneously conscientious of its material use while remaining respectful of its locality.

Right: axonometric model of the Auckland Tower, divided into two structures. Both make reference to typologies typical to medieval Auckland, repurposed to suit modern programs that compliment the form.³⁰



²⁹ Niall McLaughlin Architects, "Practice," <http://www.niallmclaughlin.com/practice/>.
³⁰ Pagmeet Cheema, *Auckland Tower Axonometric*, digital illustration, 2020.

PROJECT

SCOTLAND WING EXTENSIVE

In contrast to the Auckland Tower, The Scotland Wing Extension speaks to the church's rule. Inspired by the tithe barn type structure and directly adjacent to the castle, the addition was initiated in concert with Purcell Architects and the Heritage Lottery Fund.³¹ Still under construction, the new space is intended to showcase archaeological artifacts recovered from the ongoing Auckland Project.³² Its facade presents modestly from the exterior to hide an elaborate light-frame steel truss system within.³³ The form of the trusses draws upon the exaggerated slope of the Gothic church roof, calling attention to its verticality (Figure 4). In conjunction with the heavy stone walls and limited openings, the interior of the space becomes self-referential and alludes to the church's opulence without the use of ornamentation (Figure 5).

Between the two projects, both employ historical details that capture the essence of Durham's complex history while concluding with opposing sentiments. Where the Auckland Tower uses structural porosity (Figure 6) to criticize the role of the Bishop Prince as a culpable figure in blurring the distinction between church, state, and aristocracy, the Scotland Wing Extension capitalizes on the distinct scales and geometries of Gothic architecture to create an elegant space that pays tribute to the Bishop

Prince's power. It is through both approaches that Niall McLaughlin Architects and Purcell recreate a piece of the County of Durham's social, political, and economic history.

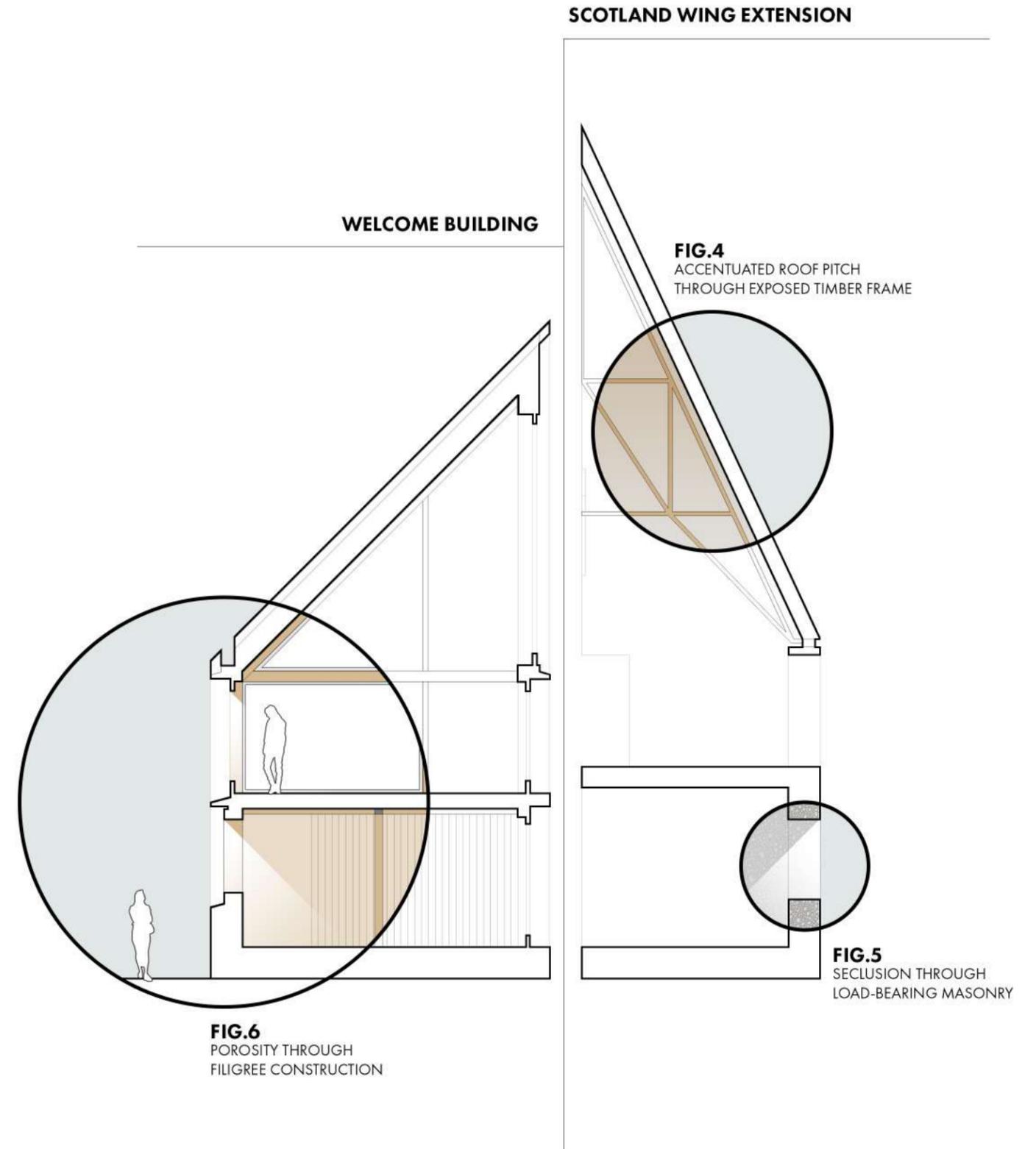
Right: sectional diagram comparing the Auckland Tower to the Scotland Wing Extension. The projects differ in their expression of traditional joinery with contemporary wood construction, each evoking a specific atmosphere.³⁴

31 Niall McLaughlin Architects, "Auckland Castle, County Durham," accessed February 20, 2020, <http://www.niallmclaughlin.com/projects/auckland-castle-county-durham/>.

32 The Auckland Project, "Faith Museum," accessed March 15, 2020, <https://www.aucklandproject.org/venues/faith-museum/>.

33 Niall McLaughlin Architects, "Auckland Castle, County Durham," <http://www.niallmclaughlin.com/projects/auckland-castle-county-durham/>.

34 Lorne MacEachern, *Sectional Analysis of Auckland Tower and Scotland Wing Extension*, digital illustration, 2020.



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IMAGES

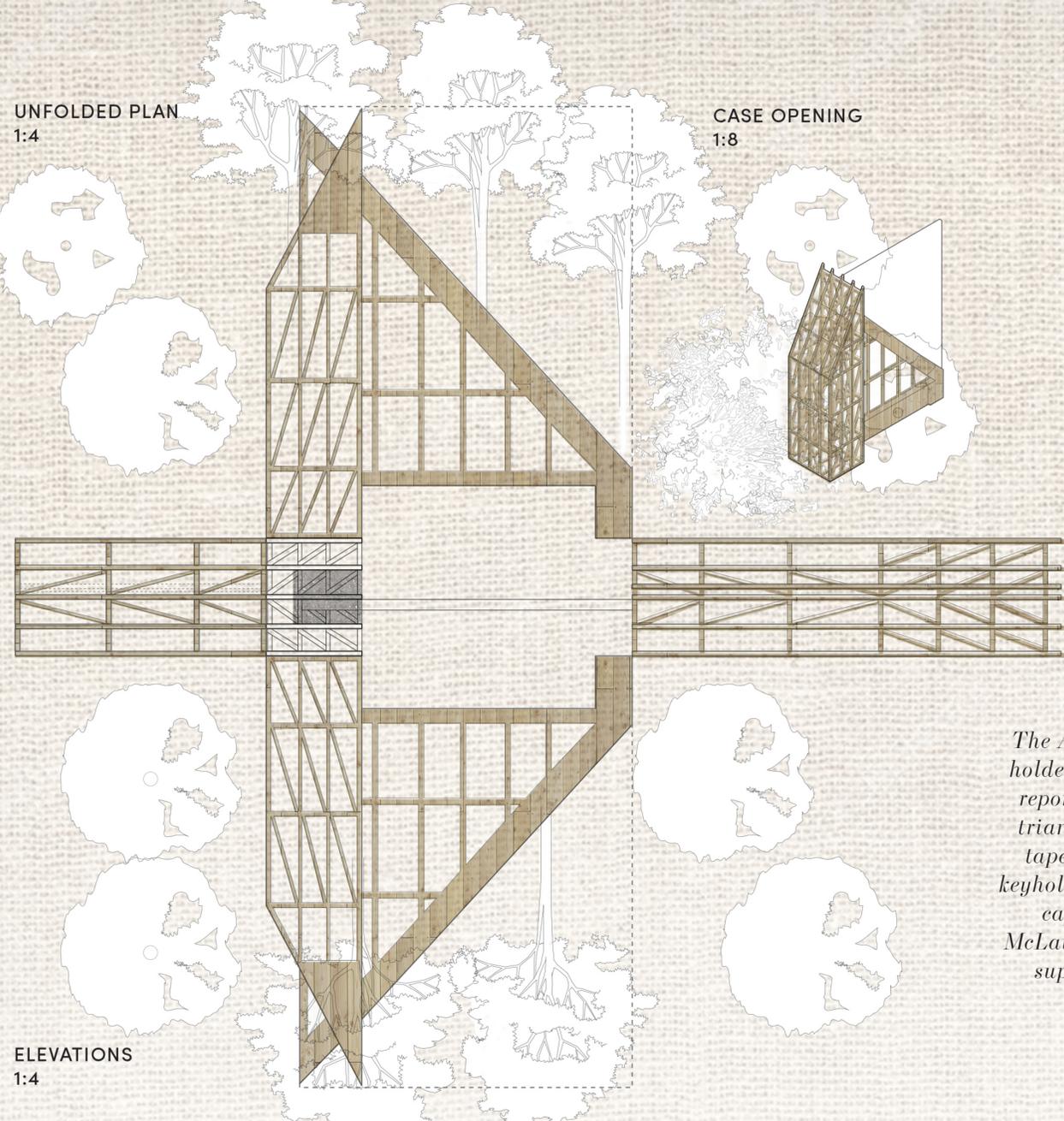
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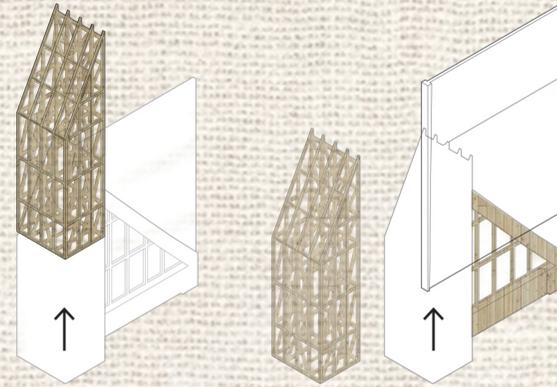
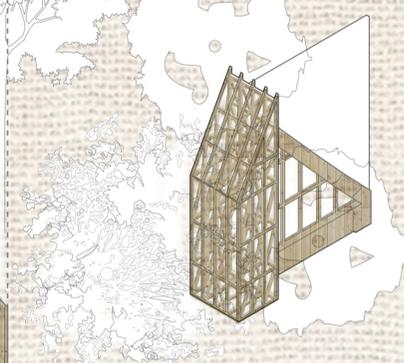


AUCKLAND TOWER CASE

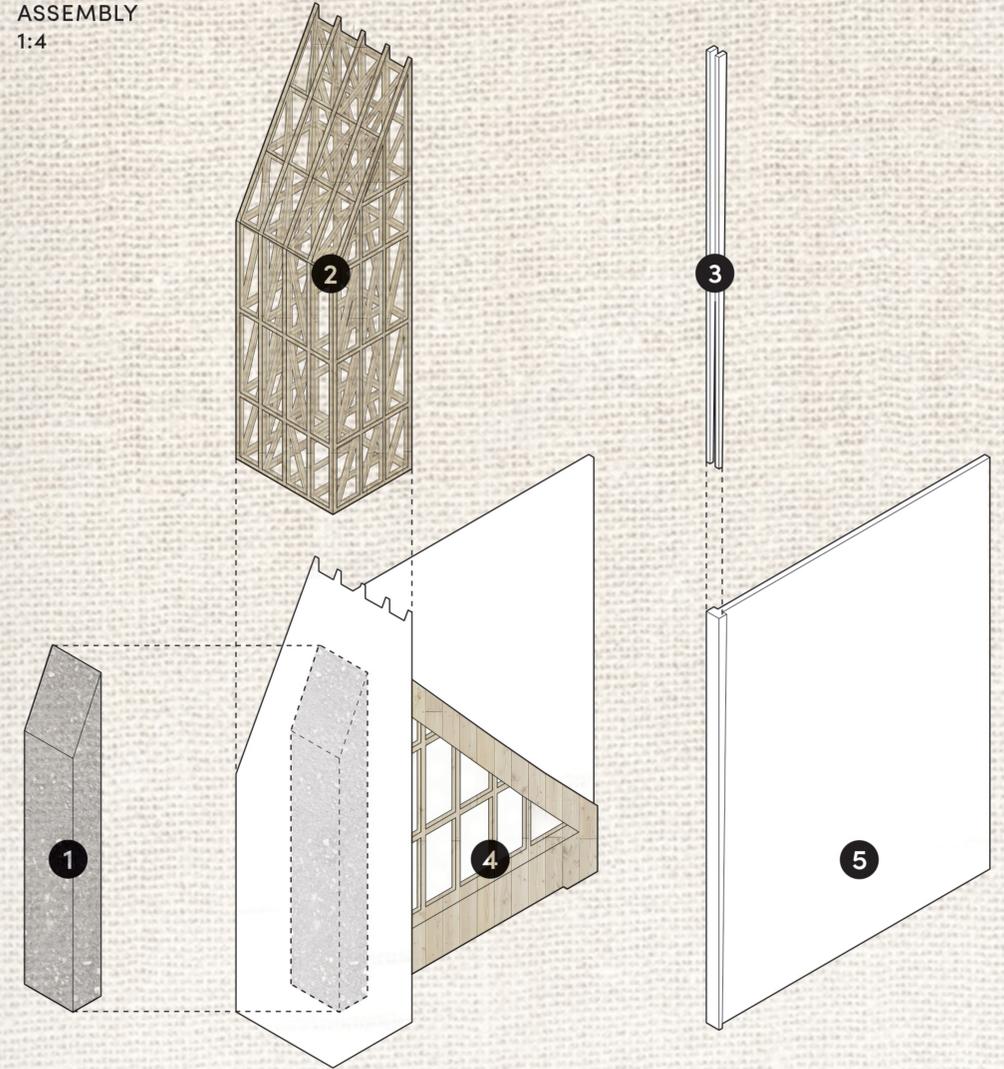
UNFOLDED PLAN
1:4



CASE OPENING
1:8

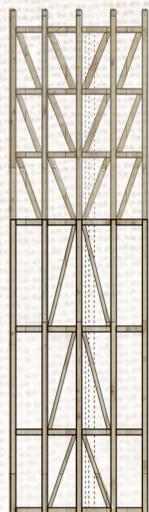


ASSEMBLY
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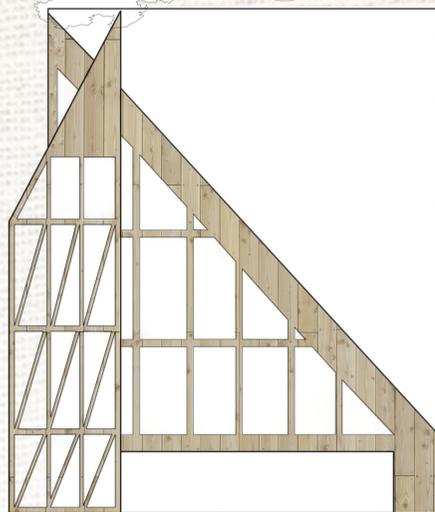


The Auckland Tower case is comprised of a larch book holder weighed down by an internal concrete core. The report is encased in a plexiglass folder affixed onto a triangular larch frame. The larch frame features two tapered wooden sticks that slot into a longitudinal keyhole groove along the concrete core. The larch 'tower' caps the core—acting as a lock. Much like Niall McLaughlin's Auckland Tower, the larch book holder is supported by the medieval typological shapes but weighed by modern 'concrete' masses.

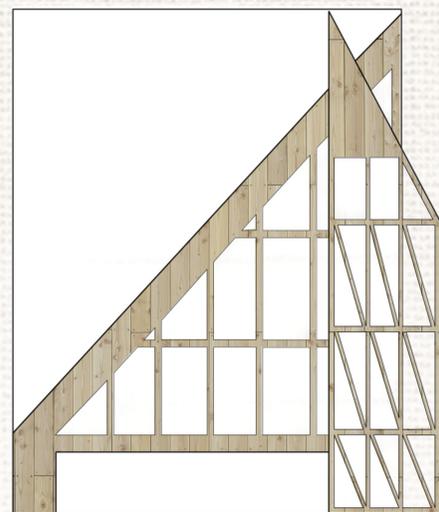
ELEVATIONS
1:4



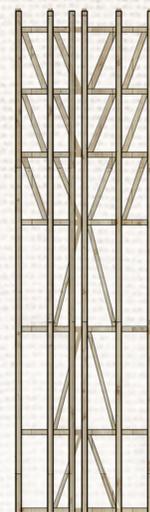
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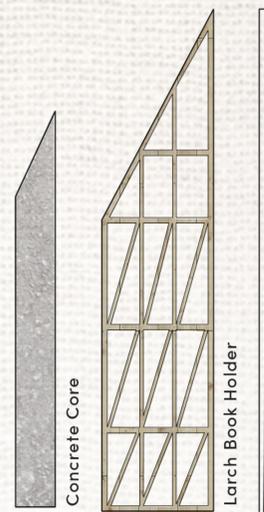
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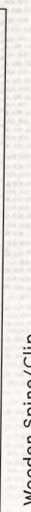
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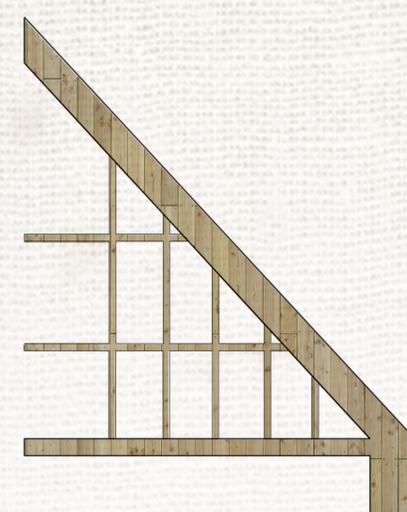
Back



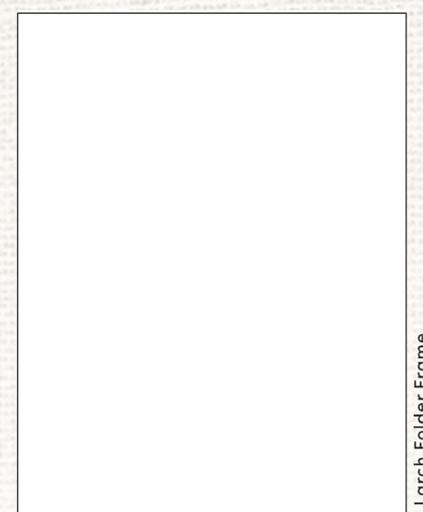
1 Concrete Core
2 Larch Book Holder



3 Wooden Spine/Clip



4 Larch Folder Frame



5 Larch Folder Frame

COMPONENTS
1:4