

CRAFTSMANSHIP: IN THE PURSUIT OF THINGS WELL-MADE

by

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# CRAFTSMANSHIP

*In the pursuit of things well made*

## *Abstract*

As a commonly misunderstood topic, craftsmanship is often seen as a primarily anachronistic act that fails to play a meaningful role in contemporary culture. However, as many critics have recognized, craftsmanship suggests a way of working that extends beyond manual labour as an attitude towards work. As an attitude, craftsmanship can be reevaluated as a process which results in the pursuit of things well-made.

To investigate this position, different viewpoints towards the process of craftsmanship are discussed from which a set of strategies are anticipated. These strategies have then been applied to an existing building in order to verify which methods can be generalized and which remain specific. Through four unique design interventions an expressive, material based architecture is developed that appropriately responds to the buildings' original craftsmanship.

Through this new perspective craftsmanship can be brought to life as both a valid and valuable way of working in contemporary architecture.



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*to God and my family,*





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# Section I

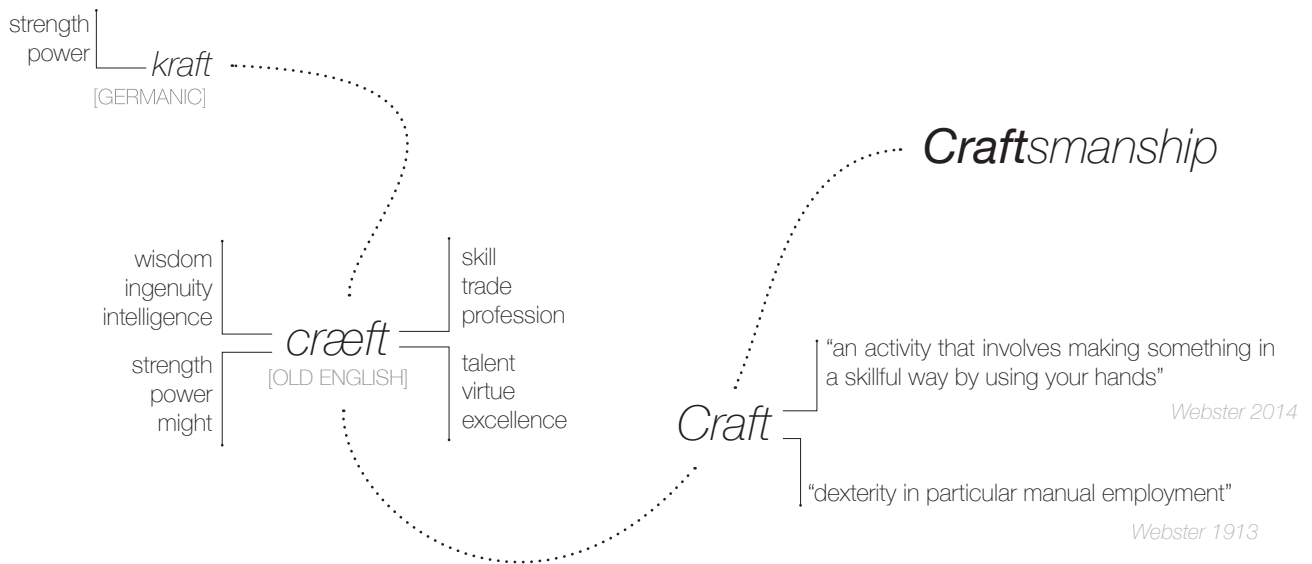
*Theory*



## CHAPTER 1 | *Craftsmanship*

Picture for yourself two men. The first, Doug, is a second-generation carpenter who makes his living building custom furniture in a small shop in rural Ontario. Most days he can be found alone in his woodshop milling, carving, and assembling an assortment of chairs, tables, and other small articles of furniture. His clients range from wealthy lawyers to local farmers and his work is well known in the area. The second man, James, despite every discouragement from his father is an architect like his grandfather. James, living not far from downtown Toronto, bikes to work, where his days are busy and consist of meetings, design reviews, and client interactions. His relatively small firm of which he is the founding member specializes in small-scale projects particularly historic renovations. Similar to Doug, James' clients range in income.

Based on this small amount of information, who would you consider to be a craftsman? Most, I would suspect, would conclude that Doug appears a clear example of a craftsman. This answer, although not surprising, is fundamentally based on a nostalgic view of craftsmanship that I do not want to dispel, but rather investigate and expand upon, in an effort to present a definition which is more applicable to our current culture.



It is important to begin such a discussion in a somewhat obvious place. Although the definition of craftsmanship may seem straightforward and simplistic, it is in fact a very complex and misunderstood topic as the above illustration suggests. Part of the reason for this misunderstanding can be traced back to the origins of the word craftsmanship. At the root, craft comes from the Old English *cræft*, which was diversely defined as strength, skill, talent, knowledge, and excellence. At the time the word was used in numerous contexts to describe a deluge of activities and actions. Yet as the word craft evolved through the centuries it became simplified as “dexterity in particular manual employment”<sup>1</sup> during the early 20th century and “an activity that involves making something in a skillful way by using your hands”<sup>2</sup> in the early 21st century. To cause further confusion, modern advertisers have twisted the word to describe everything from well-crafted sandwiches to video games. Small changes in definition and association have caused confusion on the topic and resulted in a nostalgic picture of craftsmanship fundamentally divorced from its original meaning. To be clear, I am in no way suggesting we forget about traditional forms of craftsmanship. On the contrary the traditional practices of woodworking, pottery, metalwork, etc. involve a high level of dexterity, and skill. Instead, I am suggesting this assumption does a

disservice to the complex processes of craftsmanship and limits its practice to a specific type of vocation.

Craftsmanship, as Richard Sennett argues in his book *The Craftsman*, involves more than a way of life that has come and past and carves a larger path within modern society than simply skilled manual labour.<sup>3</sup> In light of misunderstandings surrounding the concept what seems to be a consistent thread in contemporary explanations is the acknowledgment that it is an enduring practice involving a complex, continually evolving relationship between the head and hand. With the intention of more fully understanding the process of craftsmanship and its application to the discipline of architecture, it's important to examine the different perspectives informing both the discourse within and beyond the profession of architecture.

During the 19<sup>th</sup> century, industrial processes associated with production led to significant concern over the nature of work and the relationship between the worker, the designer, and their tools. One critic, in his writings on the issue of craftsmanship in the *International Moulders' Journal* of 1880 described this problem by arguing,

*"[w]e think craftsmanship ordinarily as the ability to manipulate skillfully the tools and materials of a craft or trade but true craftsmanship is much more than this. The really essential element in it is not manual skill and dexterity but something stored up in the mind of the worker. This something is partly the intimate knowledge of the character and uses of the tools, materials and processes of the craft which tradition has given the worker but beyond this and above this, it is the knowledge which enable him to understand and overcome the constantly arising difficulties that grow out of variations, not only in tools and materials but in the conditions under which the work must be done."*

He goes on to remark - similar to both Morris and Ruskin - that the industrialized process

*"separates skill and knowledge even in their narrow relationship and when it is completed the worker is no longer a craftsman in any sense, but is an animated tool."*<sup>4</sup>

As Christopher Frayling points out, this critique although valid is a misleading conclusion which presents a very static notion of skill, and assumed the majority of pre-industrial activities to be highly skilled. He points out that this theory fails to address loss of control as the pivotal change that occurred during this process of industrialization.<sup>5</sup> Despite these issues there appears to be an important thread within his writing that craftsmanship is ultimately a process wrapped up in the mind of the worker, rather than simply skilled manual labour. This perspective that craftsmanship is a process of mediating between the head and hand, mind and body, is pivotal to this discussion. Yet the idea of synergizing the work of the hand and mind is not unique or solely anachronistic; in fact Renzo Piano spoke about architecture in a similar way when he commented,

*“... it is still craftsmanship - the work of someone who does not separate the work of the mind from the work of the hand. It involves a circular process that draws you from an idea to a drawing, from a drawing to an experiment, and from a construction back to an idea again.”<sup>6</sup>*

This position is not exclusive to architecture; as New York sociologist Richard Sennett points out, craftsmanship is about “the intimate connection between hand and head” and “a dialogue between concrete practices and thinking.”<sup>7</sup> Sennett suggests, craftsmanship needs to be thought of in a new way, for although it “may suggest a way of life that waned with the advent of industrial society – this is misleading. Craftsmanship names an enduring, basic human impulse, the desire to do a job well for its own sake.”<sup>8</sup> This description, although shockingly different from the dictionary description, offers a new and much broader way of conceptualizing it. Christopher Frayling, an educationalist currently working in Britain, points out what he sees as a pivotal aspect of craftsmanship.

*“For although today’s various types of craftsmen may argue forever about the process itself (does skill involve mental or manual dexterity, or both?) they all seem to have a common, strong belief in the importance of controlling every aspect of the work they do, and having the time to control every aspect of the work they do. There is no need to bring nostalgia into the picture at all.”<sup>9</sup>*



Fraylings' bold conclusion for the removal of nostalgia brings us to the interesting discussion of the digital craftsman. Although this topic will not be the focus of this thesis it is important to understand that even though the digital craftsman is not a new concept, it is a continually growing field of interest. Despite the fact that many voices including those of Sennett and Frayling seem to point to the enduring aspects of craftsmanship as a way of life and practice of thought some - as Branko Kolarevic has done - seek to redefine our understanding of the topic from a digital point of view. Kolarevic argues that within the context of a digital process,

*"craft could be understood as a set of deliberate actions based on continuous, iterative experimentation, error, and modification that could lead in the end to some innovative, unexpected, unpredictable outcome to be discovered in the intertwined process of conception and production."*<sup>10</sup>

Whether or not these definitions are accurate in isolation is not the primary focus. What is crucial is the current discourse on the topic and how it impacts architectural practice. Craftsmanship involves much more than skilled manual labour as in fact its definition suggests. On the contrary, craftsmanship is about the synergy of mental and physical practices. It is about iteration, dexterity, and control. Craftsmanship is a basic human impulse, and as the title of this suggests, the pursuit of things well-made. The concept of "well-made" is an idea put forth by John Ruskin in *The Stones of Venice* where he claims that well-made architecture does "not merely ... answer its purpose ... it must answer this purpose in the simplest way, and with no over-expenditure of means."<sup>11</sup> Embedded within this definition is the idea that the durability of a well-crafted object is an element of beauty, a beauty that is intrinsically tied to strength. Simply put, architecture well-made responds to its purpose in a beautiful way.

Given the broad and complex context surrounding craftsmanship it is essential to understand, as Frayling points out, that each discipline interprets the concepts of craft and craftsmanship through a different lens, in turn leading to different conclusions

and definitions.<sup>12</sup> Although common threads can be tied between each definition, the context of each is their difference. With this background in mind it is the primary goal of this thesis to engage craftsmanship not simply from a theoretical framework, but rather as a craftsman engages a project; with a process of design through making, thinking by doing, and abstraction to reality.

## CHAPTER 2 | Ornament & Detail

Architecture went through a major shift in identity during the turn of the 19th century, changing the way it was understood and how it was produced. William Morris and John Ruskin were at the theoretical forefront of this shift as they fought against the increasingly industrialized world. Ruskin was primarily concerned with how the division of labour, more specifically the segregation of the worker, affected the relationship between architect and artisan<sup>13</sup> and was concerned that craftsmanship would be lost as the worker became a mindless slave of the designer.<sup>14</sup> Although Adolf Loos agreed with him on this point, he did not see labour and ornament in the same way. Where Ruskin concluded that good architecture was the result of good workers working in a good society, Loos argued that craftsmanship was a much more impersonal act.<sup>15</sup> In some ways these two perspectives on craftsmanship and the role of the architect and artisan are summed up well by Edward R. Ford when he states in *The Details of Modern Architecture*,

*“ In so far as 20th century architects have concerned themselves with the social consequences of their work, they have focused on the way in which buildings affect the behavior of their occupants. Insofar as 19th century architects concerned themselves with the social consequence of their work, they focused on the way in which buildings (and particularly their ornaments) affect those who build them. There is perhaps no greater difference between the architects of the 19th century and those of the 20th than that each group was so indifferent to the social concerns of the other.”<sup>16</sup>*

As Ford points out, the turn of the century marked a point where architecture began to shift from being primarily about those who



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built to those who inhabited. Although this began as a result of the industrial revolution and the division of labour, it was accelerated by a complex set of issues embedded within the fundamental principles of modern architecture. The first major change came as a result of the changing clientele following the First World War and the mass devastation in Europe. With millions of people homeless and in desperate need for shelter, sanitation, and stability, architects began designing mass housing for the middle and low income populations that had lost everything. This resulted in a significant change in client as architects begin working for the lower middle class rather than the wealthy. Interestingly this shift was something Marxist architect William Morris argued for during the mid 19th century, although he failed to actually follow through with the concept. As a result of this change in client and the need for mass amounts of housing, a second major change occurred as architecture began to shift from being primarily concerned with quality, to instead focus on quantity. This is not to say that quality was not considered or discussed, but rather that it became of secondary importance to the mass production of post-war housing.

The third change that occurred during this period was the removal of ornament from architectural practice. In some ways the most complex change of the two aforementioned, ornament was

2: Pruitt Igoe is a classic example of post-war housing concerned with quantity over quality.

targeted on several levels. Otto Wagner working in the late 19th century somewhat unintentionally encouraged this removal as he predicted the dramatic division of labour that occurred during the next century. Observing the speed at which the steel workers erected the structure compared to the much slower pace of masonry concluded that the future construction process would be divided into smaller categories, as we see in contemporary practice.<sup>17</sup> In response to this observation and with the desire to retain quality construction, Wagner as well as many practitioners attempted to retain control through “paper detailing”.<sup>18</sup> Although the shift was not as stark as this description suggests, the shift from the freedom of ornament produced by the artisan, to the controlled detail produced by the architect widened the gap between architect and constructor. Peggy Deamer summarizes these thoughts by noting;

*“The control embedded in the architectural detail, so feared by Ruskin and Loos, and the redeployment of the artisan into the ranks of specialized union labor described by Wagner became the hallmark of the new era”<sup>19</sup>*

The second angle from which ornament was targeted has a very close relationship to the change of client that occurred following WW1. Famously argued by Loos in his essay Ornament and Crime, ornament was considered to be an over-expenditure of means, something any modern man had no need of. This removal of ornament from the practice of architecture is complex and a result of many changes within the profession.

Although working earlier than Morris, Loos, and Ruskin, Gottfried Semper speaks about a different idea of detail, one that can be found at the beginning of the production process<sup>20</sup> and one that is no longer situated in opposition to craft. Using the example of a knot, he speaks about ornament which is the expression of tectonic evolution, and the product of the maker and designer. Presenting the idea of a communal workforce rather than a traditional hierarchy, his thoughts are very relevant in today's context. One of the important contemporary voices on the topic of ornament is the Dutch architect Lars Spuybroek. He argues that it is important not to simply follow

the Semperian model of ornament into what he calls Historicism,<sup>21</sup> but rather to adjoin it with Ruskin's thoughts of expressionism as acts of making which transfer the abstract to concrete. In other words, he presents an idea of ornament which is not separated from structure, but rather one which is a result of the structure coming to be. Spuybroek concludes his essay *The Matter of Ornament* by asserting that

*"ornament is often mistaken for a sign of exuberance, a kind of special treatment, a dressing-up for a special occasion, but in fact it is simply dressing as keeping - an everyday act, the act of care as work, calm and dutiful, like gardening"*<sup>22</sup>

As a pivotal part of the discussion of craftsmanship it is important to re-evaluate, as Spuybroek has suggested, the idea of ornament and detail and their role within architecture.

Historically the issues of ornament and detail have played a key role in discussions on craftsmanship. As explained, the significant rejection of ornament at the turn of the century was not simply a turning from former practice but rather it was a response to many socio-political issues resulting from the division of labour, the change of clientele, and the reversal of quality and quantity. In our present day we see ourselves in a similar situation to those of the late 19th century who were resistant to the changes brought on by the industrial revolution. In hopes of re-evaluating this idea of craftsmanship it is crucial that we don't simply throw away the past, but rather seek to learn from it in hopes that we may apply it to the future.



## Endnotes

- 1       Websters Dictionary, 1913. < <http://machaut.uchicago.edu>>
- 2       Merriam-Webster Dictionary, 2014.  
< <http://www.merriam-webster.com/dictionary/craft>>
- 3       Richard Sennett, *The Craftsman* (New Haven: Yale University Press, 2008), 9.
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- 6       Branko Kolarevic, "Between Conception and Production," in *Building [in] the Future: Recasting Labor in Architecture*, eds. Peggy Deamer and Phillip Bernstein (New Haven: Yale University Press, 2010), 68.
- 7       Sennett, *The Craftsman*, 9.
- 8       Ibid, 8.
- 9       Frayling, *On Craftsmanship*, 80.
- 10      Kolarevic, Between Conception and Production, 73.
- 11      John Ruskin, *The Stones of Venice*, eds. J.G. Links (New York: Da Capo Press, 1960), 32.
- 12      Frayling, *On Craftsmanship*, 10-13.
- 13      Peggy Deamer, "Detail Deliberations," in *Building [in] the Future: Recasting Labor in Architecture*, eds. Peggy Deamer and Phillip Bernstein (New Haven: Yale University Press, 2010), 81-84.
- 14      John Ruskin, *The Seven Lamps of Architecture* (New York: Hill and Wang, 1989)
- 15      Deamer, *Detail Deliberations*, 82.
- 16      Edward R. Ford, *Details of Modern Architecture* (Cambridge MA, MIT Press, 2003), 9.
- 17      Ibid.
- 18      Ibid.
- 19      Deamer, *Building [in] the Future*, 3.
- 20      Ibid., 82-83.
- 21      Lars Spuybroek, "The Matter of Ornament," in *The Politics of the Impure*, eds. Joke Brouwer, Arjen Mulder, Lars Spuybroek (V2\_Publishing, 2010), 233.
- 22      Ibid., 266.







# Section II

*Experiments*



## CHAPTER 3 | *Tools, Materials, Techniques*

In the previous chapters craftsmanship is presented as a way of life, and a process of thinking. This chapter seeks to look at the other side of the equation, the hand, a practical and concrete investigation of the tools, materials, and techniques of the craftsman. Considering the architectural context this section will not be overly concerned with specific tools in themselves, but rather on the relationship tools have to the making process. This chapter is an investigation into the physical aspects of craftsmanship by looking into its process and practice. The process of work plays a critical role in this discussion as it reveals the importance of the relationship between making and designing, a process which, as I will argue, is fundamentally intertwined in any work of craftsmanship.

For the past century the connection between the tools of the architect and the tools of the artisan have been all but non-existent. As Richard Sennett points out in his investigation of craftsmanship, “[h]istory has drawn fault lines dividing practice and theory, technique and expression, craftsman and artist, maker and user”.<sup>1</sup> This divide between theory and practice still carries a significant impact on the profession of architecture and somewhat inevitably so. In many cases this disconnect has resulted in buildings which are uninformed by the tools, materials, and techniques of their construction. This way of working represents a linear design development in which

the design is created in isolation from the construction process. Craftsmanship on the other hand represents a cyclical process in which the ideas and concepts are tested against their constructability creating a continual feedback loop between theory and practice. In some ways this is exactly what William Morris, and John Ruskin were fighting against, albeit with different goals in mind. Each one, in their own respect, fought against this idea of the separation of design and construction and the loss of craftsmanship. David Pye, writing in the late 1960s, addresses the issue of applied aesthetics by discussing the importance of ornamentation as simply a product of making. Referencing Ruskin's *Lamp of Beauty*, he points out that

*"[s]ome contrast and tension between regulation and freedom, uniformity and diversity is essential...The delight which has always been felt in things made of wood and marble rests mainly on the contrast between the regularity of their design and the diversity of the material."*<sup>2</sup>

The key here is not to simply become nostalgic about former ways of working with materials, but rather to understand that tools, materials, and techniques cannot be separated from one another. Instead they must be considered holistically and understood as co-dependent on each other.

This investigation of tools inherently brings us to a discussion on the tools of the architect. While I will not go into detail on what they are, how they are used, or even their current state of use, it is important to understand that architectural craftsmanship exists on two levels; the craft of the building, and the craft of the drawing. Although I will be focusing on the former, it is important to spend a short amount of time speaking to the role of the architect's tools in relation to craftsmanship. Stan Allen in his article *Artificial Ecologies* put the situation quite clearly by noting that "the practice of architecture has always been in the paradoxical position of being invested in the production of real, concrete matter yet working with tools of abstract representation."<sup>3</sup> Although this is an obvious statement, it brings up an important part of the conversation. Traditionally architect's tools (pencil, ruler, scale, etc.) were purely those of representation. Drawings were completed





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through analog techniques and contractors were responsible for reading, interpreting and building those images. Although this still represents the majority of practice today, as Larry Sass and his Shotgun House (Figure 3) make very clear architects are quickly becoming more involved in construction than they have been for the past 100 years. The key difference between analog and digital drawing is where paper drawings are a representation, digital drawings contain information regarding procedures and processes. Peggy Deamer discusses this idea in some detail when speaking of what she refers to as the “Parametric Detail” that describes material and procedural logic, rather than representation. As she points out, this workflow results in architecture that is continually informed by construction since the digital file is sent directly to the manufacturing process.<sup>4</sup> This eliminates the interpretation that is typically required in a construction process and allows the architect’s design to be flawlessly produced. While this concept is somewhat of an aside from the core of this thesis project, it is important to understand that the relationship between architects, tools, and buildings is changing drastically. In fact this new type of design and manufacturing is creating a new type of architecture where the architects are once again becoming more involved in the making process through digital technologies.

3: The fully CNC’d Shotgun House built by Larry Sass from MIT displayed at the MOMA in 2008.

One of the significant areas in which the digital design and manufacturing platform has affected architecture can be seen in the complex, organic forms generated with parametric tools. Contemporary practitioners such as Greg Lynn who have engaged this stream of architecture have used computational tools to investigate form and abstraction rather than detail and construction. In some ways this is a similar process to the modernist idea of the purification of the object which sought to eliminate signs of labour altogether. James Carpenter in his essay titled *Valuing Material Comprehension* brings up this point as he observes that

*"[i]t seems as if a concern for materiality has been replaced by a preference for pure abstraction...[t]he meaning we desire to find in our natural and built environment cannot be provided by the computer alone...[u]nderstanding the material world and its texture, behavior, and scale is as essential as ever."*<sup>5</sup>

In conclusion to this chapter it is critical as we continue to discuss this idea of craftsmanship in architecture that we understand the importance of materials and their manipulation. The abstract nature of the computer need not limit our perspective of materials, in fact it is beginning to give us opportunity to be more involved in the process of construction. Architects should not be divorced from construction but be responsible for understanding their materials and techniques. With the purpose of creating an architecture that is well-made, this process of hand and mind which is informed by construction can change the way we design. In this way architecture can involve a more cyclical process that seeks to bring concept and construction together in a cohesive design approach.

## CHAPTER 4 | *Making & Designing*

In previous chapters it was suggested that craftsmanship is fundamentally an attitude towards work rather than a physical practice. This conclusion begs the question; If craftsmanship is an attitude, a way of working, a lifestyle, then how does the crafted artifact reflect that attitude? What are the qualities of a product of craftsmanship, and how does the process inform the product?

In response to the practical and physical nature of a theory on craftsmanship, it demands more than simply thoughts and opinions. In an attempt to more fully understand the process of craftsmanship and evaluate the qualities that it produces, it was important to examine the concept through the creation of a physical object. For this reason an experiment was developed for the purpose of investigating this relationship between making and designing. The two sided goal of the experiment was first to understand more practically the process of design and construction and second to distill a series of qualities. The experiment focused on the topics discussed in the previous chapter, Tools Materials and Techniques, with a focus on extracting principles and qualities of craftsmanship that could further be applied to architecture.

Titled Changing Elevations, the experiment was to build a series of architectural objects each of which would involve a different evolution of tool, and a more complex level of design. As the title suggests, Changing Elevations was anticipated to be the creation of a stair located within different contexts and environments. As an architectural element, the stair was chosen for three specific reasons. First, as Rem Koolhaas pointed out at the 2014 Venice Biennale, the stair has long been understood as one of the fundamental Elements of Architecture, shown earliest in the work of Vitruvius.<sup>6</sup> Secondly, although the stair is often considered an isolated object, it is one of the few objects that creates space by acting as a mediator between floors and exists as a necessary piece in the “changing of elevations”. Finally, the stair represents an architectural moment of



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interaction that engages each person on an intimate level. The stair is an architectural building block that has and does play a significant role within architecture. For these three reasons it was chosen as an appropriate vehicle for the investigation of craftsmanship.

### *Investigation*

The experiment resulted in three distinct built projects. Subtitled Hand & Body (Figure 4) and Hand Tools (Figure 5), the first and second pieces were created in a forest north of Toronto with no predetermined design. As the subtitles suggest, the first was created using only my hands, arms and body, and the second using simply a 20lb axe and small hatchet. The result was two very different pieces created in the same context, with the same materials, but different tools. This progression of tool became a very important piece of the process as it completely changed the form, texture, and type of stair. The introduction of the simple hand tools transformed the making process from an additive to a subtractive building technique. As seen from the photos this change of tool and resulting change of process greatly affected the final outcome. The third and final piece was created as an exhibition piece within the Department of Architectural Science for a course investigating the role of curation within contemporary architecture. Subtitled Power Tools, the third piece was created using hand guided, electricity driven tools and was built using 100% hard maple. In addition to the

4: Hand & Body, experiment 1

5: Hand Tools, experiment 2

6: Power Tools, experiment 3





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use of power tools, this piece included a significant design process that investigated stair joinery and construction methods. The final piece (Figure 6) included one stringer and four treads each of which contains a different connection detail based solely on joinery and exemplifying the process of craftsmanship. Designed as the most resolved detail, the final tread consists of a wedged mortise and tenon connection.

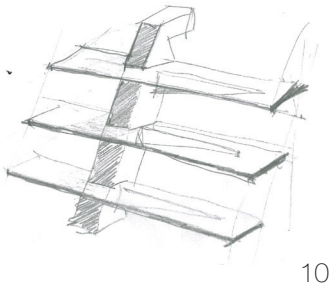
In relation to these three experiments there are several overarching concepts and lessons that require reflection. The first, although expected, is the idea that craftsmanship requires a different level of refinement depending on the tools and techniques used. For example, it would have been foolish to expect the same level of detail or refinement when using an axe compared to that of the power tools. Although both objects may be the result of a crafted process, and both may be in fact crafted objects, they may remain at different levels of finish. This is not to say that crafted objects should remain incomplete or unfinished, but rather there is an important aspect of craftsmanship that although interested in the pursuit of perfection, understands when something is finished. Sennett points out this dilemma by insisting that a good craftsman understands when something is complete in order to not get trapped in perfectionism, which can cause the demise of the work.<sup>7</sup> In the same way, these pieces represent three levels of refinement that directly reflect their tools. In the end, it is not so much the craftsman's technique or skill that determines the finished refinement, but rather the tools he chooses and the resolve he lives by.

Another observation taken from this experiment is the importance

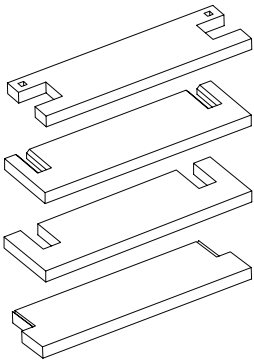
7: Screenshot from Youtube video of Making & Designing 1.0

8: Screenshot from Youtube video of Making & Designing 2.0

9: Screenshot from Youtube video of Making & Designing 3.0



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of subtle decisions, which have a significant impact on the final product. Subtle decisions are moments within a making process that aren't necessarily consciously considered, but rather occur out of reaction. These subtle decisions happen numerous times during any making process and significantly impact the final product. An example of this can be seen most clearly in the video of the Hand Tools piece where the consistent swings of the axe are a result of subconscious decisions. In this case, the minute tweaking of movement or hesitation changes the cutting path of the axe. Although these decisions are small they reflect the attitude of the worker and are critical to works of craftsmanship. This reinforces the idea that craftsmanship is an attitude towards work that not only affects the major decisions, such as what materials or tools to use, but also these subtle decisions of making.

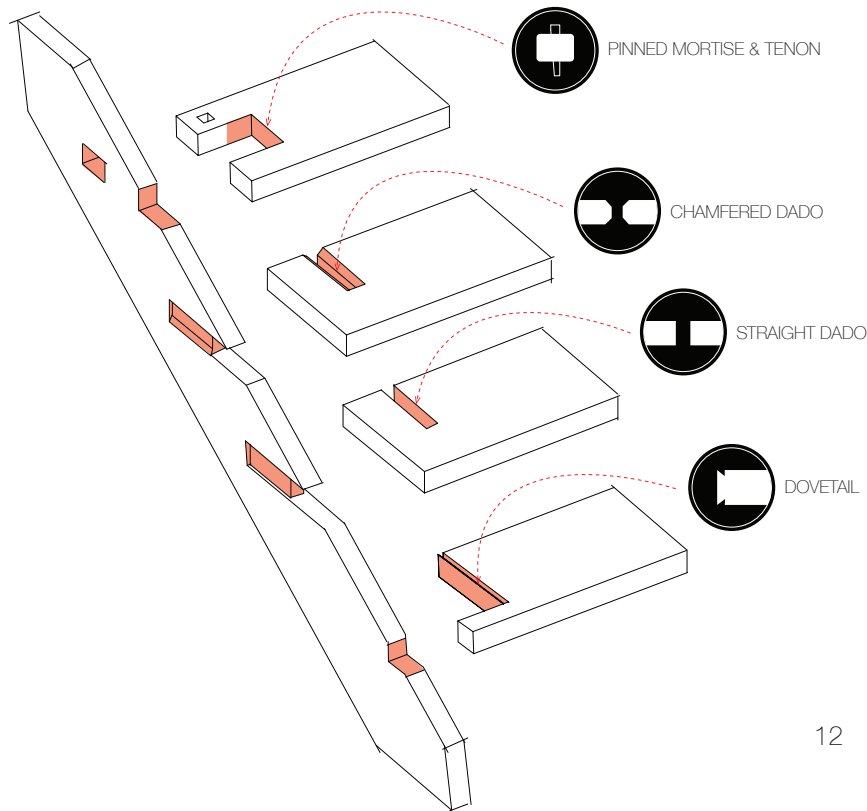
As briefly mentioned, to look more holistically at the process of making and designing the construction of each piece was recorded and reproduced. These videos, available on Youtube, show not only the time but also the technique and bodily actions required in each case. The two most important principles to pull from these videos is first the repetition of movement, and second the jigs and templates required in the making of complex joinery. These two observations overlap each other because both jigs and repetitive movement are used as techniques to ensure consistent patterns and affects. Most clearly shown in the Power Tools piece, each separate stair joint required a custom jig to control the path of the cutting tool. Although these jigs were not designed prior to the construction process, they were built solely for the purposes of each joint. Jigs and templates are an important part of craftsmanship that cannot be seen in the final piece, but remain pivotal during the making process.

It is through these subtle decisions and refined techniques that a craftsman pursues finished but not perfect work. For as Richard Sennett wisely points out

*"[w]e share in common and in roughly equal measure the raw abilities that allow us to become good craftsman; it is the motivation and aspiration for quality that takes people along different paths in their lives."*<sup>8</sup>

10: The initial sketch design for the exhibition piece

11: The four final tread designs



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This understanding reinforces the idea that craftsmanship is fundamentally an attitude towards work that shapes what and how something is made.

### *The Process of Design*

Two of the expected outcomes from this series of work were to investigate the relationship between design and making and to analyze how these two processes are interrelated. Unlike the first two pieces, Power Tools went through a considerable design process prior to construction. The initial concept sketch (Figure 10) for the project, although containing elements within the final piece, was very different from what was built. This came as a result

12: An axonometric view showing the four different joints used in the Power Tools project







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of the design process involving sketched concepts and details, and prototyped models and connections. In this case, the design process revealed four crucial perspectives on the relationship between design and making. In essence the design sketch, drawing, or digital file all work to anticipate both the making process, and the final product. In other words the design of the object requires not just an understanding of the final object, but also how that object is to be made. This divides the design process into two categories that in reality operate in tandem. The first aspect is the projection of formal qualities desired in the final built work. In the Power Tools exhibition piece this meant that the functional requirements of the rise and run of a stair, the structural requirements of a person walking on the treads, and the aesthetic qualities of it as an object were all taken into consideration. The second aspect of the design is the anticipation of the making process. As one can imagine, this process has significant implications on the previous areas of function, structure, and aesthetics, but often times these two are very separate practices.

A work of craftsmanship seeks to combine these two elements into one coherent design. Figure 12 graphically explains the process of design for the Power Tools project. The final details serve each category of structure, function, and aesthetics while responding to the tools and materials used in its making. The craftsmanship in this

13: Cross elevation of the final stair made of hard maple

14: Handrail detail created using the common "y" sticks

15: Final cross section of the spruce log which was used for the Hand Tools piece

16: Pinned mortis & tenon joint is the most "resolved detail"

work exists in using the strength of the material and the process of making to reduce complexity and improve the quality of the product. Although the quality of the final product does not rely on the design, it is greatly affected by it. In the specific case of the pinned mortise and tenon joint, the connection is not only the strongest of the four, but is also the simplest to make using power tools. This specific design required approximately half the construction time of the other joints. A design that works with materials to reduce complexity and improve functionality and durability is the mark of a crafted design. Described by Ruskin as things that are well-made, they contain no “over expenditure of means.”

### *Qualities of Craftsmanship*

Even though this process of making and designing is very important, as Richard Sennett points out “craftsmanship focuses on objective standards, on the thing itself.”<sup>9</sup> By this he clearly means that works of craftsmanship, although requiring the right process and attitude, are fundamentally evaluated by their finished quality. Understanding this, it was important to reflect on the qualities and quality of the three final pieces. As a result of this reflection four qualities of craftsmanship were recognized. These qualities are by no means an exhaustive list but represent necessary qualities of craftsmanship which can clearly be seen in the experiments and are a result of a process which seeks to work with and express a material’s inherent qualities.

### *Warmth of Detail*

In most cases when referring to a detail in an architectural conversation it refers to the two-dimensional drawing that represents the specific layering of materials at a given location within the building. Within the context of craftsmanship this concept refers to the micro details present in an object. While it may be quite apparent that the relationship between detail and craft are closely related, warmth of detail is a more comprehensive understanding. Using more eloquent and elaborate terminology Ruskin also spoke about this idea by stressing the importance of beauty within architecture, a beauty that he argues comes as a result of careful

17: The final texture is a direct result of the making process

18: The broken branch gives reference to the tools used during the making

19: The finished dovetail joint fits together perfectly with no glue or fasteners





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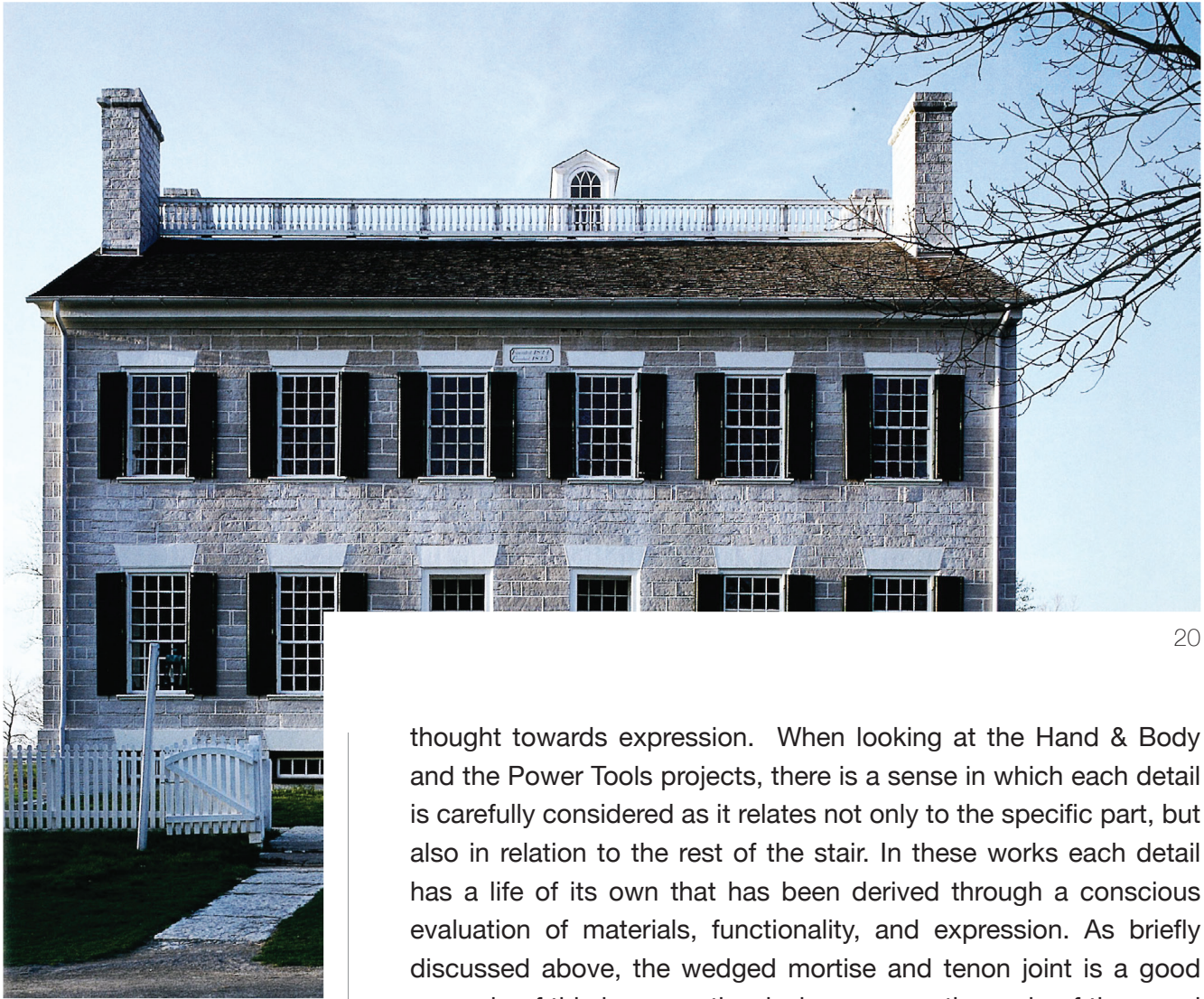


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thought towards expression. When looking at the Hand & Body and the Power Tools projects, there is a sense in which each detail is carefully considered as it relates not only to the specific part, but also in relation to the rest of the stair. In these works each detail has a life of its own that has been derived through a conscious evaluation of materials, functionality, and expression. As briefly discussed above, the wedged mortise and tenon joint is a good example of this because the design ensures the grain of the wood and construction technique are considered. Allowing the wood to expand and contract naturally through the use of a wood wedge, the beauty of the detail is directly related to its functional and material qualities. The wedged mortise and tenon joint is a clear response to the structural, material, and functional requirements of the stair.

### *Honesty of Materials*

In our contemporary construction culture materials tend to be somewhat abstract in their texture, colour, and structural capacities. In many cases, particularly in the case of interiors, materials are purposefully designed to mimic other natural materials. Honesty of materials is a way of thinking that involves working with materials

20: Shaker architecture is a clear example of crafted work designed and built for worship



and celebrating their natural qualities. In the case of the experiments each one uses wood as a medium but each piece responds differently based on the tools and techniques of construction. Although each one has a very different expression they are all tied together through the use of wood as a natural material involving, grain, colour, moisture, texture, and so on. Each one of these works with the natural material to create something unique and crafted. In the case of the Hand Tools project this principle can be specifically seen as the process of cutting reveals the inner characteristics of the fallen spruce log. The colour variations and texture created by the making process are not hidden or covered over, but rather celebrated and result in the final expression. This concept of honesty is important in many ways and should remind us of the importance of understanding materials and their natural environments.

### *Roughness*

Understood by many cultures as an important mark of craftsmanship, roughness is a concept that has theoretical and practical implications. David Pye discusses the importance of this idea by suggesting that “diversity imports into our man-made environment something which is akin to the natural environment we have abandoned.”<sup>10</sup> Known as Wabi-Sabi, the Japanese have taken a similar approach towards craftsmanship that seeks to celebrate the beauty of imperfection. It is important to understand that imperfection and roughness are not literal concepts that prescribe some form of tactile sensation or level of perfection, but rather represent completeness. For example, when looking at the Hand Tools project the roughness should not be understood literally, but rather refers to the completeness of the project. Richard Sennett touches on this idea when speaking about the dangers of perfectionism. Often craftsmen can get caught in the vicious cycle of perfection. As he points out, perfection can often times result in the demise of a project. In each of the three Changing Elevation pieces there is a level of roughness that clearly shows the action of the craftsman and the expression of work. Interestingly with the changing and increasing complexity of the tool and refined design process the level of finish increases with the complexity of the tool. For example, Hand & Body contains much more diversity than Power Tools due to the tools, materials, and techniques of its construction.

### *Life*

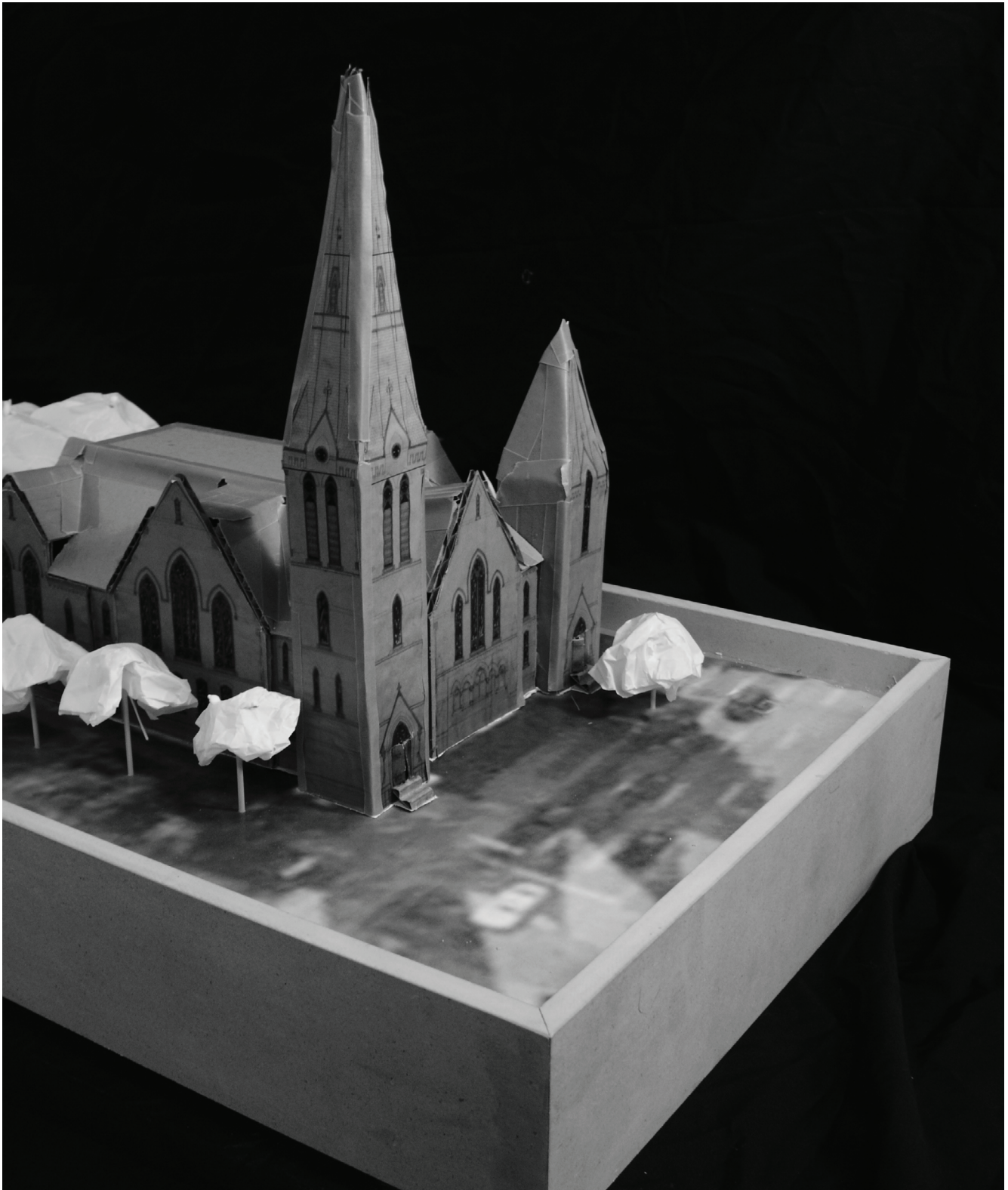
Life is a concept that is difficult to describe in technical terms, but serves an important purpose in craftsmanship. It speaks to the spiritual nature of work and the existential transfer of life from human to object that takes place through making. Although contemporary practice often hesitates to acknowledge the spiritual aspect of work, craftsmanship contains something more than simply materials and tools. Clearly seen in the mid 19<sup>th</sup> century Shaker communities across the United States, they represent an extreme condition of a society working within this context. Their highly religious worldview followed the mantra, “[p]ut your hands to work, and your hearts to God”<sup>11</sup> where they believed that each and every act of work was an act of worship. This resulted in work which is celebrated to this day, and embodies the life of an entire society (Figure 21). The Changing Elevation projects exemplify this same characteristic; a sense of life as if spiritually marked through the process of making. Although this idea may seem abstract in nature, it is important to acknowledge the spiritual side of craftsmanship and its impact on the built world.

### *Conclusion*

As we have seen, the process of making and designing plays a critical role in the analysis of craftsmanship. As the craftsman designs, measures, and builds he engages in this dialogue between abstract thought and concrete making. Evaluating aesthetics with functionality, materiality with structure, and tools with expression. This cyclical act must include hands-on experience that is continually reflecting on the work. The importance of in-person physical evaluation and reflection cannot be overstated as a crucial element in both the design and making process. It is a cyclical act, one that is continually breaking preconceptions and encouraging innovation and creativity. This maturing process is also referred to as problem solving and problem finding<sup>12</sup> which play an important role in the process of craftsmanship and work to produce qualities of warmth, honesty, roughness, and life.

## Endnotes

- 1 Richard Sennett, *The Craftsman* (New Haven: Yale University Press, 2008), 11.
- 2 David Pye, *The Nature and Art of Workmanship*, eds. James Pye, Elizabeth Balaam (London: The Herbert Press), 64.
- 3 Stan Allan, "Artificial Ecologies," in *Reading MVRDV*, ed. Veronique Patteeuw (Rotterdam: NAI, 2003), 82-87.
- 4 Peggy Deamer, "Detail Deliberations," in *Building [in] the Future: Recasting Labor in Architecture*, eds. Peggy Deamer and Phillip Bernstein (New Haven: Yale University Press, 2010), 87.
- 5 James Carpenter, "Valuing Material Comprehension," in *Building [in] the Future: Recasting Labor in Architecture*, eds. Peggy Deamer and Phillip Bernstein (New Haven: Yale University Press, 2010), 61.
- 6 Rem Koolhaas, "Stair," in *Elements of Architecture*, (Venezia: Marsilio, 2014), 3.
- 7 Sennett, *The Craftsman*, 266.
- 8 Ibid.
- 9 Sennett, *The Craftsman*, 9.
- 10 Pye, *The Nature and Art of Workmanship*, 64.
- 11 June Sprigg, *Shaker Design* (Great Britain: Balding + Mansell, 1986), 17.
- 12 Sennett, *The Craftsman*, 48.



# Section III

*Design*





## CHAPTER 5 | *Design Project*

As seen in the previous chapters, craftsmanship is not dead; in fact it is once again a significant topic of discussion within architectural discourse. However as the world of design and making continually change, so do the applications of craftsmanship. In some ways, similar changes to those of the industrial revolution have changed our relationship to tools, and how they are controlled. From fundamentally relying on physical dexterity, to our current reliance on mental dexterity the way a craftsman practices his work has undergone a massive shift even in the last two decades. This trend does not threaten to stop, in fact it seemingly increases with every passing year.

Working within this digital space will require continual involvement with the physical aspects of design, and the importance of design through making will become all the more critical. The architectural craftsman must be mindful of this change and be willing to re-evaluate how new tools and construction methods inform his work, not simply as a replacement of the old, but as an addition to current and past ways of working. Scott Marble in his essay *Imagining Risk* puts forward the critique that if “craft is defined as a skill developed over time and in direct relationship to making and to working with materials, architects have long been disconnected from this skill.”<sup>1</sup> In response to this problem he proposes that



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*"for craft to function as a useful concept today, especially in the context of digital design and production, it might best be rethought as a process of mediating not only between tools and the objects that are produced but also between design as a process of imagination and production as a process of technique."<sup>2</sup>*

In this context the craftsman is a mediator who is continually working between design and production to have his work informed by making. Digital technologies seem to separate us from physical work, however as Marble points out, a craftsman is responsible to use these tools to imagine new ways of making. Within this ever-changing digital world it is important that we do not throw out the ways of the past but re-evaluate their relevance in our contemporary culture. Moving forward the values of craftsmanship and the multitude of making techniques must be gauged based on their pursuit of things well made. Although this project is not an attempt to investigate digital craftsmanship directly, the goal of the project is to propose a crafted contemporary architecture.

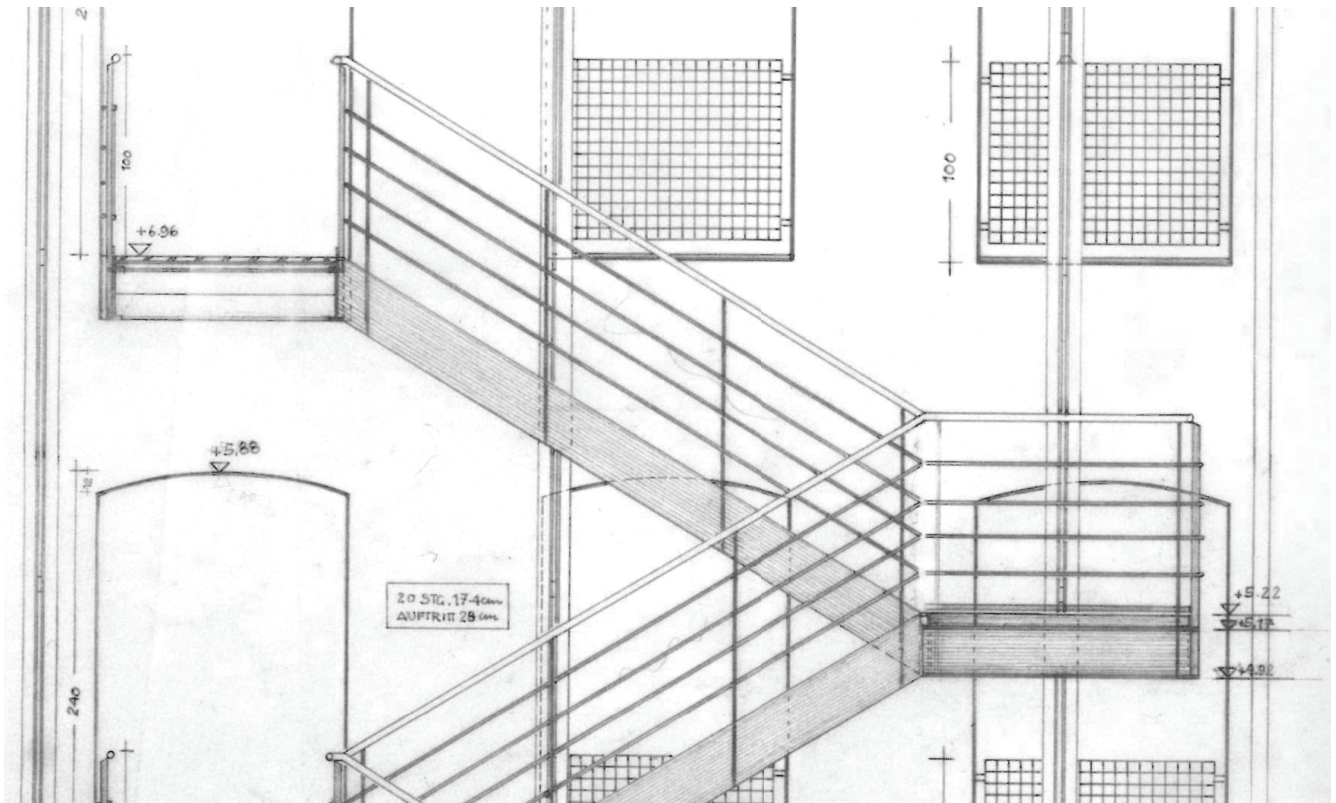
### *Choosing a Design Project*

In looking for an appropriate design project to investigate craftsmanship, an obvious place to start looking is at the craft of the past. John Ruskin recognized this as well when he commented on the beauty and durability of architecture in Venice.<sup>3</sup> These historic

3: Castelevecchio Museum in Verona,  
renovated by Carlo Scarpa

4: Punta Della Dogana in Venice,  
renovated by Tadao Ando





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buildings, although in many cases in impressive condition for their age, require renovation as they deteriorate and change uses. When looking at the buildings of the past it is often easy to jump to the conclusion that all of them were well-built. Renovating these highly crafted buildings demands a response which is worthy of the initial construction, one of craftsmanship. Looking at more contemporary examples of craftsmanship within architecture the focus shifts to works of Carlo Scarpa, Tadao Ando, and Karl-Josef Schattner. Interestingly each of these architects has significant examples of historic renovations within their work. The most prominent of these include Tadao Ando's renovation of the Punta della Dogana in Venice (Figure 4), Carlo Scarpa's intervention at the Castelevecchio Museum in Verona (Figure 3), and Karljosef Schattner's renovation and remodeling of the orphanage in Eichstätt, Germany (Figure 5). With these inspiring examples of contemporary craftsmanship in historic buildings, it was decided that this would be a valuable context for the thesis project.

5: Eichstätt School of Journalism and Psychology in Germany, renovated by Karljosef Schattner

Given this context it was decided that an appropriate scenario for the thesis project would be a proposed renovation of an existing historic building. This historic context allows for two unique opportunities that do not exist in the same capacity on a new-build project. The first is the juxtaposition between the new and old styles and forms of craftsmanship. Given that this thesis is fundamentally about re-evaluating craftsmanship, it is a natural progression to have the opportunity to directly compare these two forms in one project. The second opportunity made possible through this historic context is the unification of the old and new structure. This applies on many levels, but fundamentally the design of the new should not oppose or intimidate the old but support and celebrate it. Early in the process a renovation project for the Detroit Central Rail Station was considered, however upon further consideration the large scale and programmatic requirements of the project were too large. As one might imagine it was critical to the project that each detail be carefully considered and thus choosing the appropriate scale project was of utmost importance.

Chosen for its appropriate scale and relationship to craftsmanship, the thesis project is a proposed renovation of Old St Andrew's Presbyterian Church at Carlton and Jarvis Streets in Toronto, Ontario. (Figure 6) Although the current congregation has been worshipping in the church for over 50 years, the membership has continually shrunk and the building has been recently sold to a new church. Recently purchasing St. Andrew's, Grace Toronto Church is an urban Presbyterian congregation which has been looking for a new home as a result of continued growth. Considering the importance craftsmanship places on real-world conditions, choosing a project that reflected this was most appropriate.

#### *History of St. Andrews Church*

Constructed between 1878 and 1883, St. Andrew's Presbyterian Church located on the corners of Jarvis and Carlton Streets is a prominent historic landmark within Toronto.<sup>4</sup> Originally constructed as solely a worship space in 1878 followed five years later by the construction of the eastern school house, the church was designed



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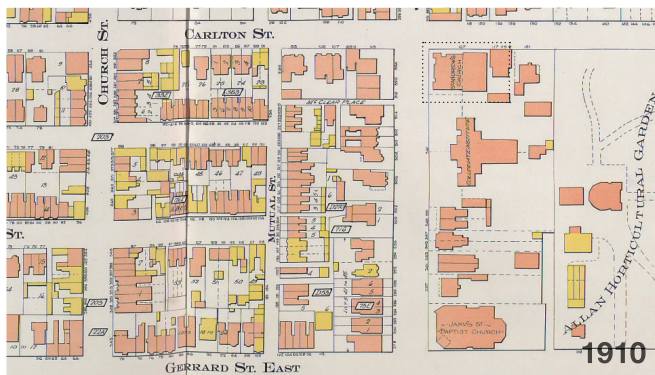
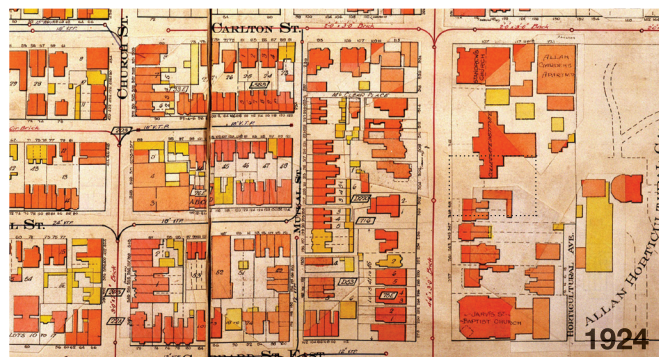
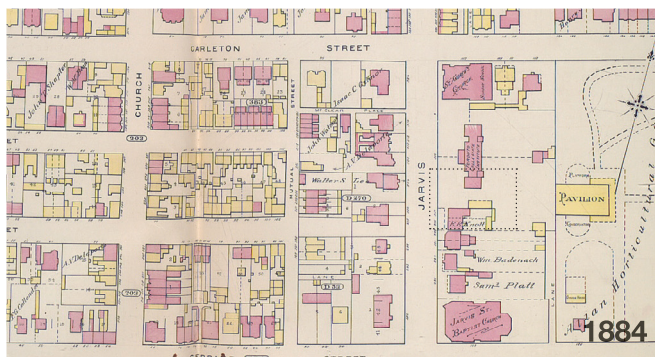
and constructed during a critical time in the development of Toronto both culturally and spiritually. Designed by the architecture firm Langley, Langley and Burke, the building is a great example of a new type of religious architecture in Canada by a firm that is distinctly Canadian. To understand the context in which Old St. Andrew's Church was originally conceived and constructed, it is important to step back for a moment and understand the cultural and religious background that led to its construction.

During the nineteenth century in Ontario, protestant Christian culture went through a major shift of identity as the traditional relationship between church and state was ruptured as Canada became independent from Britain. Described in immense detail by William Westfall in his book titled *Two Worlds*, the protestant churches during the 1840s were looking to understand the "proper relationship between religion, the state, and society."<sup>5</sup>

6: St. Andrews Church located at the corner of Jarvis & Carlton Streets



During the mid 1800s not only the church but also the province of Ontario were experiencing substantial growth in population. Amazingly this population growth did not dilute the strength of the four main protestant groups (Baptist, Presbyterian, Anglican, and Methodist) as one might expect, but instead all four groups experienced substantial growth alongside the province. To put things into perspective, between 1842 and 1881 Ontario grew from a population of 487,053 - 1,923,228 which represents a growth of around 400%.<sup>6</sup> During the same time period, Methodist church membership grew by 700%, Presbyterian membership by 550%, and Anglican membership by 340%.<sup>7</sup> Considering such substantial provincial growth it would be expected that small sects would form and larger denominations would shrink, however as the numbers show, these four primary groups of protestants made up 82% of the population opposed to 58% at the beginning of the Victorian Era.<sup>8</sup> The protestant culture in Ontario during the mid nineteenth century had a phenomenal impact on not only social and political issues, but also on the development of an architectural style that could

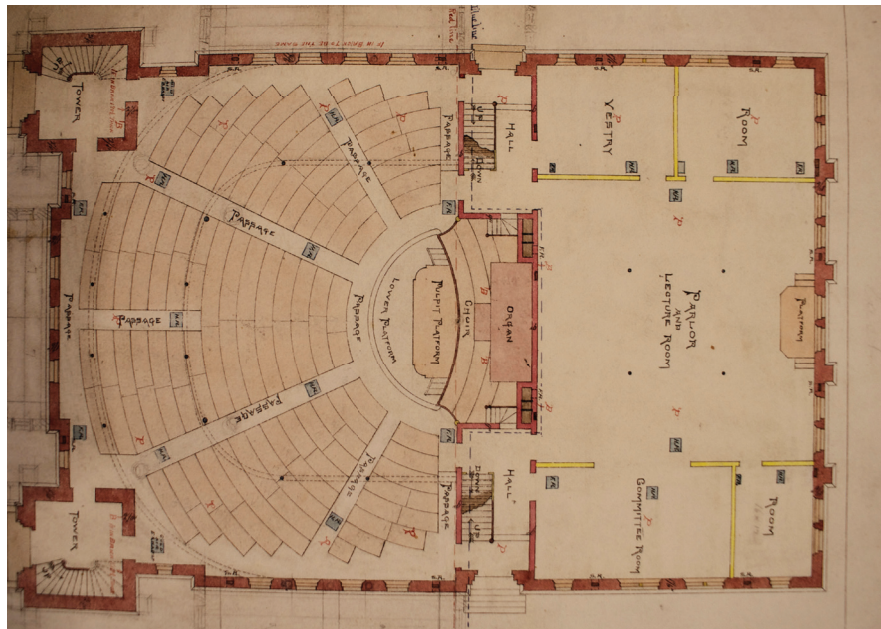


represent and support this continually growing group of people.

Many architects at the time discussed the relationship between the church and the state as well as how architecture could reflect the purposes and beliefs of the Christian community. One of the forerunners in the discussion was Scottish trained architect William Hay who had significant experience designing sacred architecture in Scotland.<sup>9</sup> It was his opinion and the opinion of many others at the time that the Gothic style of architecture embodied Christian values in the most appropriate way and therefore considered the Gothic Revival style to be “The Christian Architecture”<sup>10</sup> This position became so strong that in the 1840s a competition was held by the Presbyterian church to develop a set of standard church designs based on the new “revived medieval manner”.<sup>11</sup> This style included such things as increased masonry construction, the use of buttresses, increased window tracery, and arched moldings.

Although many pieces of this new style were taken from traditional forms of architecture, the specific aspects of the buildings which make them distinctly Canadian were strongly influenced by the political and social changes that took place in Ontario during that time. Although traditionally politics and religion were considered very tightly linked aspects of culture, the social and cultural revolution which took place in Ontario threatened to change that relationship.<sup>12</sup> In the traditional relationship, the state would provide funding and protect the church and in return the church would teach order and obedience to the people. This resulted in a culture where “the church was absolutely necessary to civil government.”<sup>13</sup> However as Westfall points out, two major events of the mid 19th century fractured this relationship changing the way church and state interacted and in turn changing the design of religious architecture. The first shift took place when in 1849 the church was no longer in control over public universities as they became government controlled.<sup>14</sup> The second occurred five years later when the government secularized the revenue from the clergy reserves. Westfall summarizes these events by concluding that

7: Four city maps showing the progression of development on Allan Gardens from 1884 - 2015. Once filled with buildings the park is now occupied only by two churches.



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*“the alliance of church and state broke down because the state decided it no longer needed the church; the state rejected the old axiom that public religion was essential to public order because it had found a new formula for creating order and happiness”<sup>15</sup>*

Fundamentally this change was reflected in Lord Durham’s famous report of 1839 where he controversially recommended that political power should be placed in the hands of the wealthy, rather than the religious.<sup>16</sup> This shift from a culture of religion to a culture of economy greatly affected and influenced church architecture for the next century.

This shift resulted in some very significant changes to church architecture as funding was reduced, and churches were offered a significant amount more individual freedom. One of the most significant changes realized as part of this Gothic Revival style was the introduction of a semi-circular balcony to accommodate the increasing church membership without the additional cost associated with larger spaces. As a result, the nave was widened significantly to allow for proper viewing angles, thus changing the typical proportions of a church. This change also came as a result of new design styles that took cues from American theatre design. The

8: The original floor plan of St. Andrews shows the widening of the Nave and addition of an eastern school house





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second major shift was focused on a question of the importance of sacred elements. Traditionally, the altar was the object of focus in church architecture as Catholic liturgy points to the sacrament of communion as the most sacred ritual. However in protestant belief, the altar is not the primary focal point, but rather the preaching of the Bible was elevated. This change resulted in an architecture that was primarily concerned with the “visibility and audibility” of the space which was “reflected in the interior where the pulpit was located at the center front while banked floors transformed the body of the church into an auditorium.”<sup>17</sup> This change in design focus from the altar to the pulpit reflected the belief of the protestant church which was changing from a focus on sacrament to that of teaching. In addition, with the removal of the altar the apse which was traditionally located on the east end of the building was no longer required and was designed as a space for the administrative duties of the church as well as the Sunday school functions. These three new design

9: The interior worship spaces celebrates a new architectural form modeled after American theaters.



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criteria can be clearly seen in the St. Andrew's church which is one of the best examples of this new Canadian church architecture.

### *Physical Context*

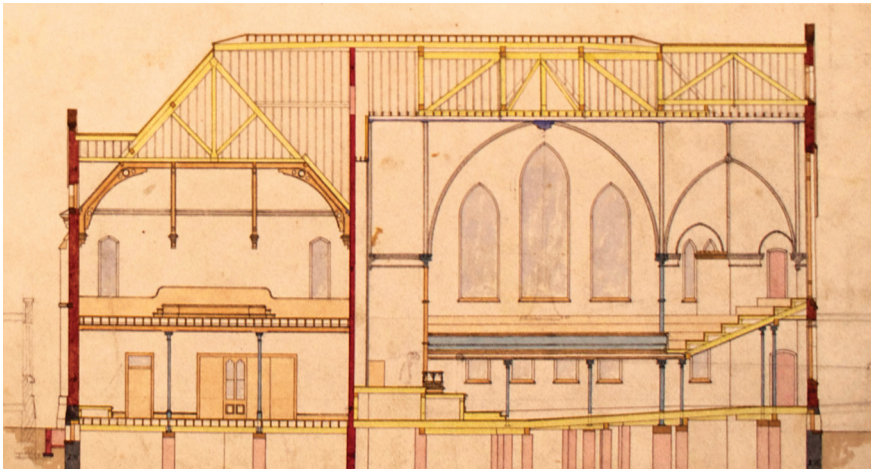
Henry Langley, the chief architect of St. Andrew's, is considered to be one of the first Canadian trained architects as he was born and raised in Toronto where he apprenticed under the aforementioned William Hay for seven years.<sup>18</sup> Born in 1836 and trained in the early 1850s, Langley became one of the founding fathers of architecture in Toronto as he was among the founders of the Royal Canadian Academy of the Arts and the OAA.<sup>19</sup> In addition, Langley "established the endowment of a chair for the study of architecture at the University of Toronto"<sup>20</sup> where his son and future business partner Edward Langley was the first graduate in 1892.<sup>21</sup>

Langley, Langley and Burke were chosen by a portion of the congregation originally located at Church and Adelaide streets to design a new worship space at the corner of Jarvis and Carlton which was considered one of the most prominent new locations within the city. Prior to the redevelopment of Jarvis St in 1889, (Figure 10,11) the street was considered one of the most beautiful residential boulevards in Toronto lined with mansions and mature chestnut trees that were tragically removed when the street was widened. As a result of funding issues, St Andrew's was conceived

10: A view of Jarvis St. looking South taken before it's redevelopment in 1889

11: A view of Jarvis St. looking North from Shuter taken at the same time.





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and constructed in two phases. The first consisted of the main worship space including two spires, balcony, and organ totally \$25,000 and the second schoolhouse phase which was completed 6 years later totaling \$21,000.<sup>22</sup> With the exception of a full roof replacement and the redesign of several stained glass windows in 1989 very few and minor alterations have taken place to the original structure, which attests to the durability and quality of the original construction.

### *Architectural Context*

At this point it is important to reflect on the decision to work on St. Andrew's specifically for this thesis project. Since we have already looked at the decision to work in a historic building, it is appropriate to briefly address the specific building choice in relation to the thesis topic.

Considering one of the primary drivers of this project was to juxtapose contemporary craftsmanship alongside historic craftsmanship it was important that St. Andrew's displays a clear position of craftsmanship from both a design and construction standpoint. The original craftsmanship exhibited in St. Andrew's is by no means perfect; in fact many portions of the building show awkward and unsatisfying details. Despite this, the church was clearly built to last, and its designers and constructors show a clear

12: The building cross section shows the specific materials by use of colour  
13: The transverse section also shows a similar pattern

attention to the built expression of their labors. If craftsmanship is in fact as I am suggesting the pursuit of things well made, then St. Andrew's is a clear example of it.

From an architectural point of view there are two distinct areas that display the designed craftsmanship of the building. The first is in the structural concept which can be clearly seen throughout the building as it relates to the exterior expression, and interior organization of space. One critic writing about St. Andrew's remarked that despite being "devoid of especial ornamentation,... it [St. Andrew's] ma[de] up for it in symmetry and harmony of construction."<sup>23</sup> The second area that craftsmanship can be seen is in the material construction of the building, which is reflected in the original design drawings as they clearly demarcate a structural and a material hierarchy throughout the building. As a firm, Langley, Langley and Burke Architects placed considerable importance on the construction of their buildings. The architectural drawings show a clear and symmetrical relationship between structure and architectural expression as well as the importance of materiality within the design. Figure 12 and Figure 13 show the clear denotation of materials through colour that speak to the importance they placed on materiality. Constructed out of sandstone from the Credit Valley and large timber roof trusses, St Andrew's is a clear example of a work of craftsmanship from design through construction. One of the reasons for this focus can be seen in the business structure of the firm. Although it may be arguable that architects during this time generally had a closer relationship with the construction process than they do today, it is an important fact that this firm put a focus on the constructed quality of their architecture. Langley, Langley, and Burke are clear examples of architects that invested heavily in the built realization of their designs, and St. Andrew's makes that clear.

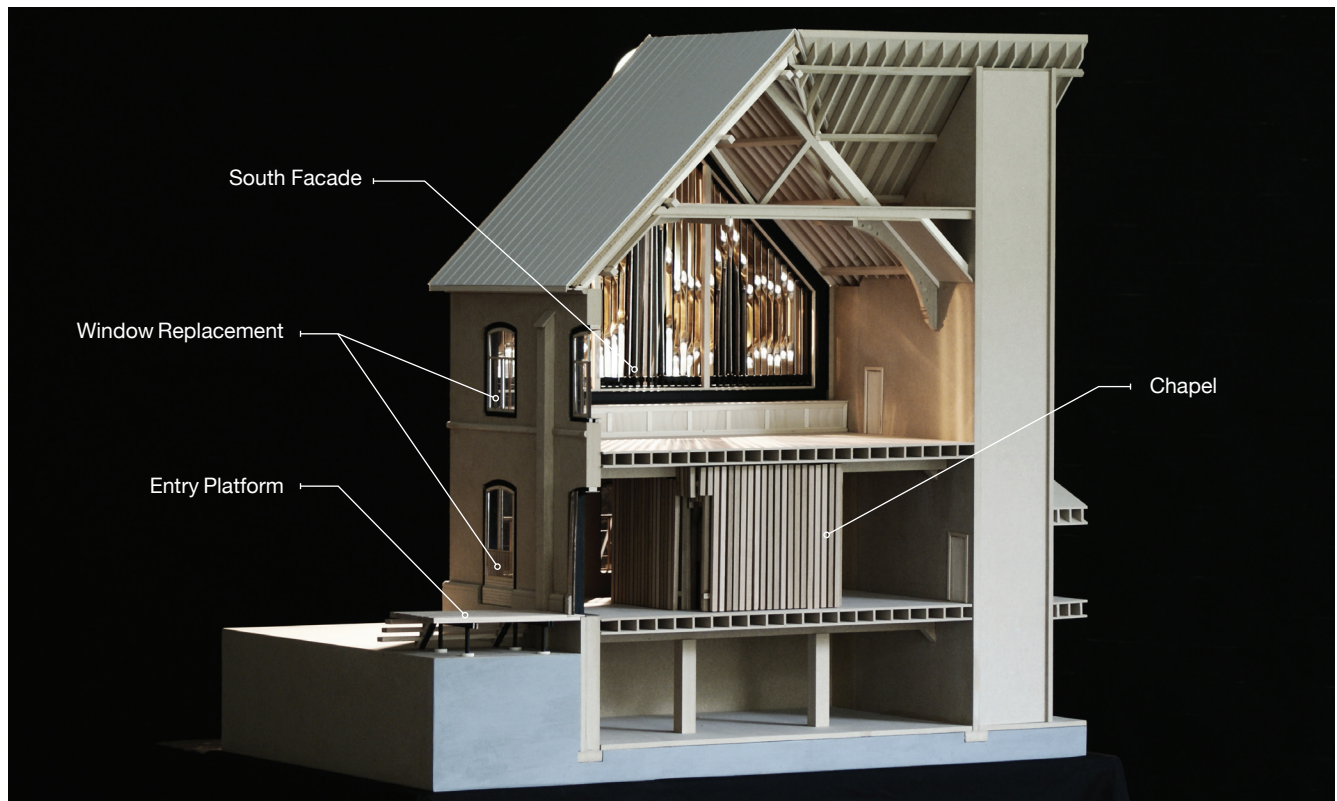


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### *Initial Design Reflections*

Unbeknownst to me, when beginning the thesis design project my idea of craftsmanship was shallow and uninformed. This is not to say that I was consciously striving to create a skin-deep architecture, but rather that the image based design world in which we find ourselves had strongly influenced my work. As seen in Figure 14, the initial design proposals focused on major interventions that were fixated on creating an external appearance of significance rather than working with the existing fabric and responding to its craftsmanship. In this type of design process the overall image comes at the detriment of the details and is void of any local factors. Immediately following my first design review I was challenged to think more critically about the design process and focus less upon the image (skin) of the intervention, and more upon the details (bones). This is not to say that visual expression is not important, but rather it must be an informed expression. It is here that I realized that without knowing it I began producing the same type of architecture that I was fighting so hard to displace; the skin-deep, image based architecture that has become so prevalent in today's culture.

14: Initial design sketch



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## CHAPTER 6 | *Design Strategies*

When approaching the design project it was important to set out some specific strategies to direct the process. The following chapter explains these strategies in more detail and evaluates their unique and universal qualities in relation to craftsmanship. In summary the design strategies consist of choosing focused interventions, working with natural materials, establishing a relationship to the existing structure, uncovering existing craftsmanship, developing a material hierarchy, exposing and expressing construction methods, and creating crafted details.

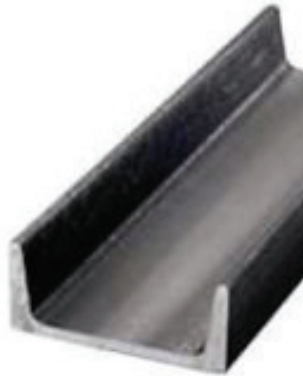
### *S1 | Focused Interventions*

As mentioned, the thesis project consists of a proposed renovation of St. Andrew's to accommodate the new owner, Grace





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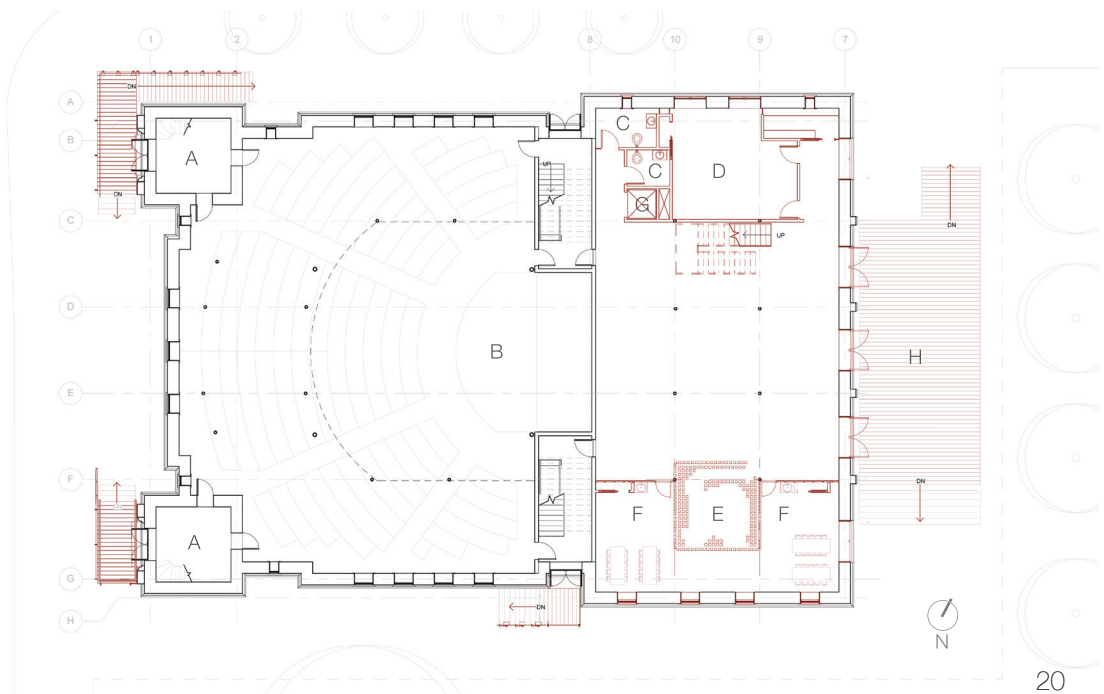
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Toronto Church. Although the programmatic distribution of the renovation has been considered and designed, it is secondary to the specific details of the project and will not be discussed in great detail. Simplified, the design proposal includes the addition of a community hall and kitchen, chapel, classrooms, and offices all within the existing St. Andrew's envelope. With the intention of providing the most focused investigation of craftsmanship, four specific areas of intervention were isolated and designed in greater detail. While somewhat naturally, this decision came about as a result of the Changing Elevations experiments which showed the importance of detailing on a fine scale. Each of these interventions seek in some major way to improve the quality of the space inside, more clearly define the relationship between interior and exterior, or improve accessibility. The interventions consist of The Entrance Platforms, Window Replacement, South Gable Design, and Interior Chapel. These four interventions were the primary focus of the project and are explained in greater detail in Chapter 9.

## S2 | *Working with Natural Materials*

As in Section II, materials play a significant role in any work of craftsmanship. This is especially true for architects who for the most part specify exactly which materials to use on a project. Although he/she may not weld the steel with their own hands, or chisel the wood planks, the architect is responsible for choosing the most

- 15: Areas of intervention highlighted
- 16: Douglas Fir grain pattern
- 17: Steel C-Channel painted black
- 18: Copper in patina
- 19: Glass planes



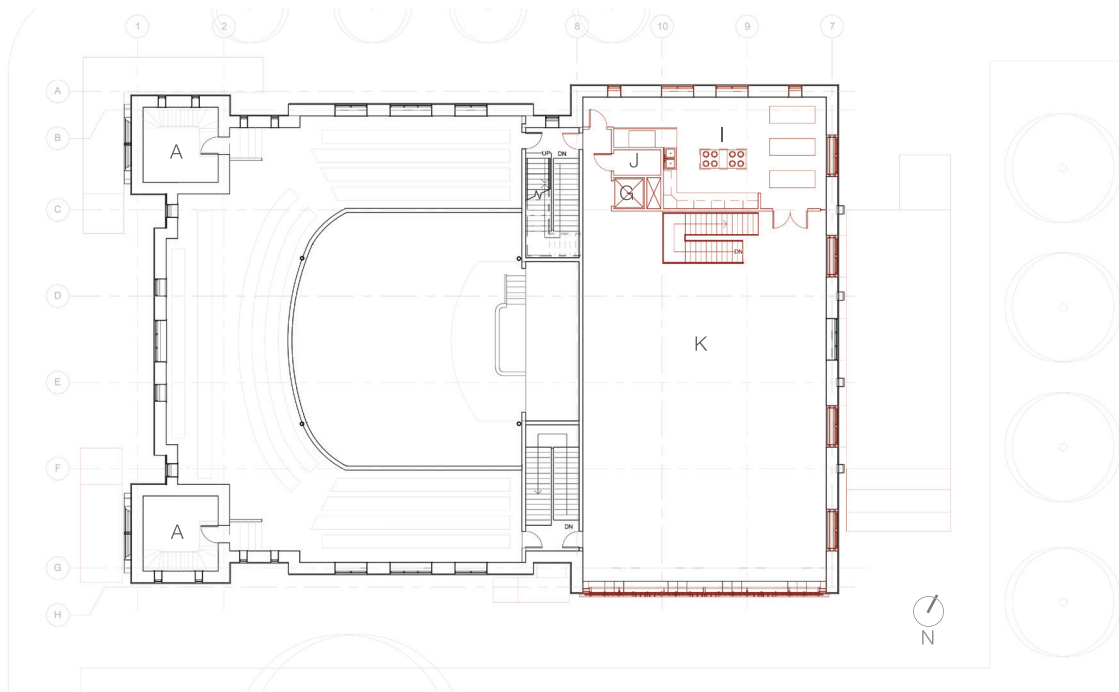
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appropriate materials for the condition, and specifying how they come into contact with each other. Another aspect that wasn't fully understood while researching craftsmanship from a theoretical point of view was the importance of working with natural materials. Although this does not mean only working with wooden logs or iron ore, it does mean designing based on a set of basic simplified elements that require minimal manufacturing procedures rather than complex industrial processes. For this project I have selected five materials as the primary building blocks of the design. As primary structural elements Douglas Fir and steel will be used throughout the project and glass, copper, and cedar as secondary materials. These elements consist of minimally manufactured and consistent materials that contain basically one natural element. Looking at each material closely the properties and qualities of each material are used for a specific purpose.

### Douglas Fir

This material was chosen for its unique combination of strength, colour, and grain pattern. Its warm orange colour and strong grain accentuate its strength and natural properties. Able to span longer

- A: Entry Tower
- B: Central Worship Space
- C: Washroom
- D: Multi-Purpose Space
- E: Chapel
- F: Classroom
- G: Elevator
- H: Outdoor Patio
- I: Kitchen
- J: Storage Room
- K: Community Space



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distances than other wood products, fir is a good material in an exterior condition if treated properly.

### Cedar

Chosen for the variations in colour and aromatic qualities, cedar is only used in the prayer chapel. Ranging in colour from dark brown to yellow and even pink, cedar is an immersive material that demands attention and stands alone within the space. The aromatic qualities of the wood are used to create an isolated environment that is conducive to private prayer. The uniqueness of the material sets it apart from the rest of the interior spaces.

### Steel Profiles

Using basic steel profiles such as C channels, flat plates, and angles, steel is used as the primary structural material. The thin profiles and black colour support the heavier Douglas Fir and subtly bridge the gap between the old and new portions of the project.

### Copper

Known most prominently for its uses on church steeples, copper

20: Ground Floor Plan - 1:400

21: Second Floor Plan - 1:400

is an amazingly rich material that was selected for its ability to show the passing of time through the natural process of patina. Along with its importance within church architecture tradition, copper is a material that changes based on its exposure to sun, wind, rain, and time. It is used in specific locations throughout the project to accentuate important conditions such as the South Gable fins.

### Glass

Possibly one of the most overused materials in contemporary architecture, glass is used in this project to subtly delineate space and provide views to the exterior. Used in select locations, glass is a modern material that serves as a contrast to the natural stone and existing wood.

### *S3 | Relationship to Existing*

Working within an existing building as an important aspect of the design was to have a clear relationship between the historic building and the new intervention; a concept that determined the relationship between old and new no matter the context. This relationship is a consistent approach that weaves its way throughout the building manifesting itself in different but similar ways. Since St. Andrew's has been listed but not designated as a historic building by the city of Toronto it became clear that the appropriate relationship between old and new was not one of mimicry or one of dominance, but rather an approach that respects the existing condition while creating bold interventions to improve the interior and exterior quality of the building.

To accomplish this I began working with the idea of a reveal to delineate and articulate the interventions within the space. The four major interventions connect to the existing building by means of a reveal, with each responding in a different manner. This approach is a subtle way of respecting the existing work of craftsmanship.

### *S4 | Revealing Subtleties.*

Considering the crafted nature of the existing building, it is important that one strategy include the pronouncement of those

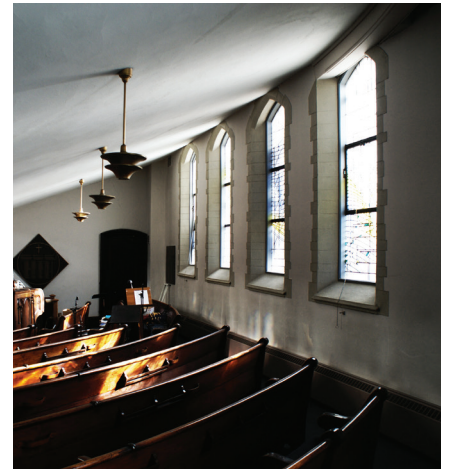




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existing elements. Tradition plays an important role in craftsmanship as new technologies and construction methods replace former practices. In an attempt to preserve and celebrate those traditional methods, it is appropriate when considering an architecture of craftsmanship to include this idea of revealed subtleties. One of the specific ways this is accomplished in the St. Andrew's renovation is through the preservation of the existing building footprint and majority of its existing sandstone envelope. A second and more intentional aspect of revealed craftsmanship is the uncovering of existing elements which have been hidden or covered over. In St. Andrew's there are many elements that have been hidden, passed over, or simply forgotten through its long history. This strategy aims to bring those elements out into the open so they might be experienced more directly by the users of the space. Although I will not go into exhaustive detail on these expressed subtleties, here are a few of the most prominent examples and how the new interventions act to accentuate and reveal the former craftsmanship.

### Entry Tower

During one of the first site reviews of the existing building, Dr. Paul Floerke and I were able to climb part way up the North-West entry tower just beneath the primary steeple. Emerging from an old wooden staircase above a false ceiling, we were shocked to find

22: View of the upper West tower.

23: Wood detailing connecting the truss and stone walls

24: Window trim painted to appear as stone

stunning stained glass windows and exposed brick walls. (Figure 22) For whatever reason, most likely to conserve heat, the false ceiling was installed, hiding this unique space. A simple removal of this ceiling, and some minor repair work would allow the entry tower to become an open 40 foot chase filled with beautiful light. In this small way the existing beauty of the building can be celebrated in a more direct way.

### Woodwork

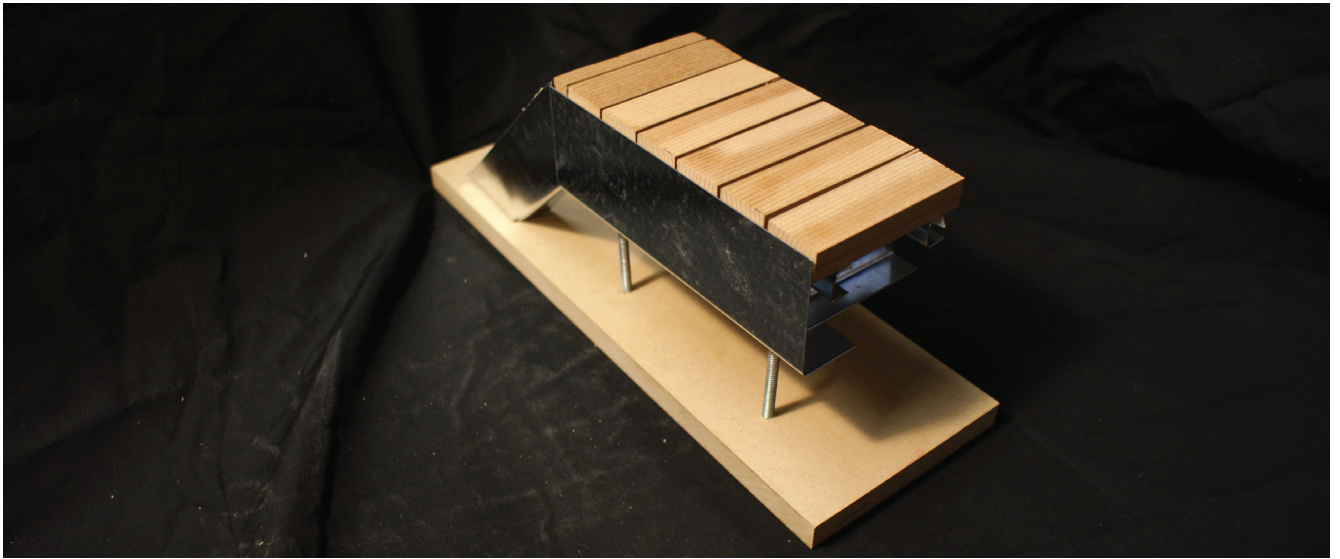
A unique condition existing within many Canadian churches is the use of wood tracery rather than stone. This is particularly the case in St. Andrew's as all complex window geometries are constructed with local wood. Sadly many of these windows have been painted since their original construction to make them appear to be made of stone (Figure 24). Once again, a simple removal of paint and refinishing of the wood will allow the true materiality to come forward. Although this condition exists throughout the building it would be of most significant effect within the worship space.

### Roof Trusses

The most significant area in which this strategy is applied exists within the eastern building's attic space. Designed and built to support the original slate roof, the timber roof trusses have little to no impact on the users of the spaces below. To reveal more of these beautiful pieces of woodwork the existing ceiling has been peeled back in part, and occupiable space has been created in another section. The second floor has been opened up to the south and the ceiling peeled back to reveal the existing structure. The trusses are constructed of 8x8 wood members and vertical steel strengthening rods. Spanning from the exterior to interior structural wall, the wood connects to the stone in an expressive manner (Figure 23). These beautiful elements should be clearly seen adding to the crafted nature of the project.

## *S5 | Material Hierarchy*

When discussing the original design of St. Andrew's, the idea that materials should have a specific relationship to each other was an

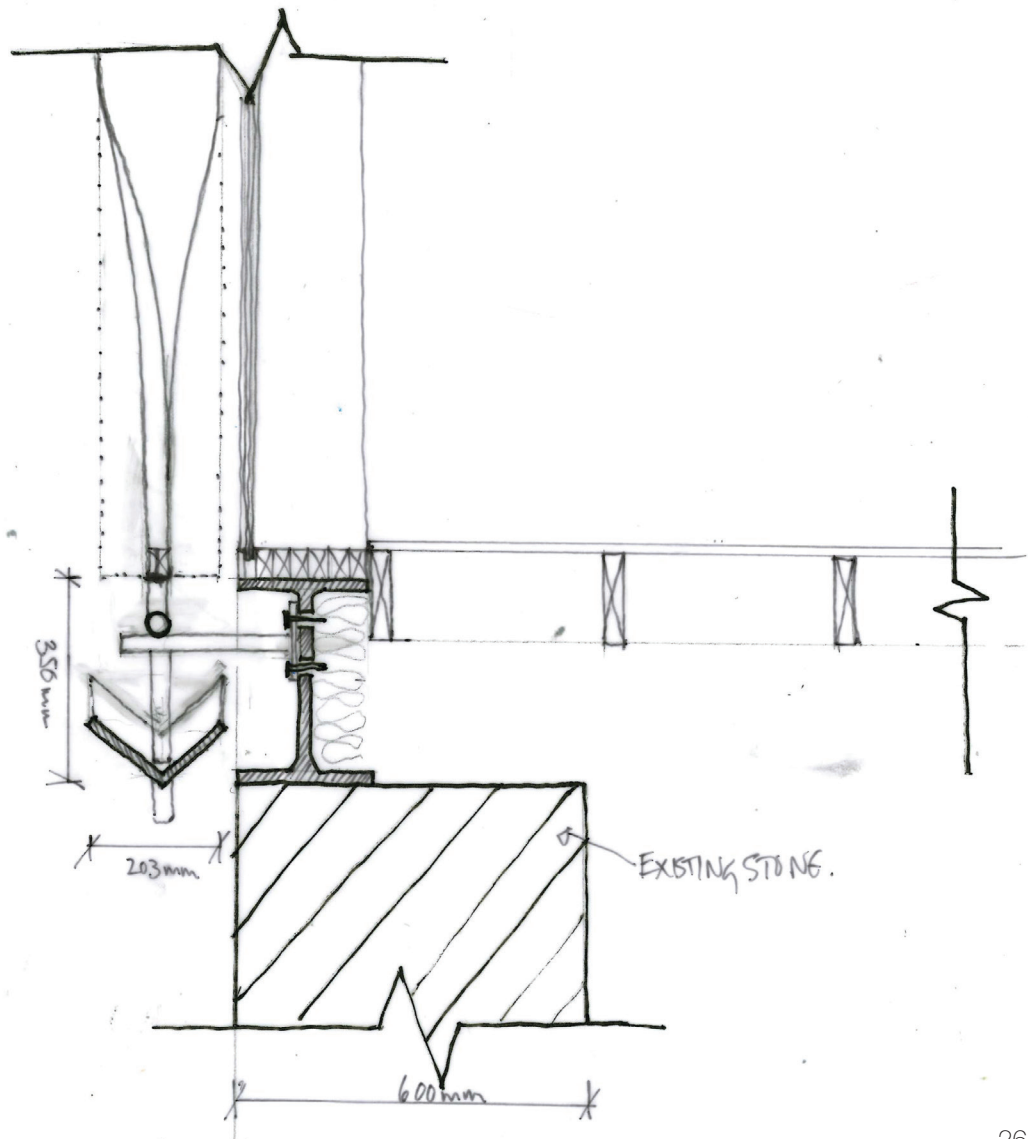


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important part of the project. As can be seen on the original design drawings, stone, wood, and cast-iron are all used as structural elements. However, where stone mediated between the interior and exterior, wood mediated between stone and cast iron creating a particular material relationship that was carried out throughout the building. Although it is not this way 100% of the time, there is a clear material hierarchy throughout the project. A similar approach was taken in my thesis project with the use of steel, wood, copper, and glass as the four primary elements.

In the design steel acts as the primary mediator between old and new. Seen in the window reveals, the south gable framing, and the steel platform connectors, a variety of steel profiles bridge the gap, in some cases literally, between the new interventions and the existing structure. Wood, also acting as a type of transition material, functions as the secondary structure for the project. Seen in the platform surfaces and the windows, wood elements have a more intimate connection to the users with the warmth, texture, and colour standing in strong contrast to the cold, hard steel elements that support it. Copper is used solely on the exterior of the building. Used for the twisting fins on the south gable, it is primarily used to highlight important moments in the project while speaking to the

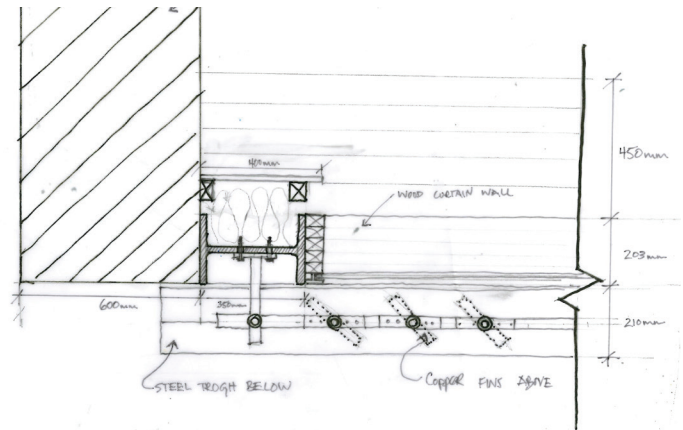
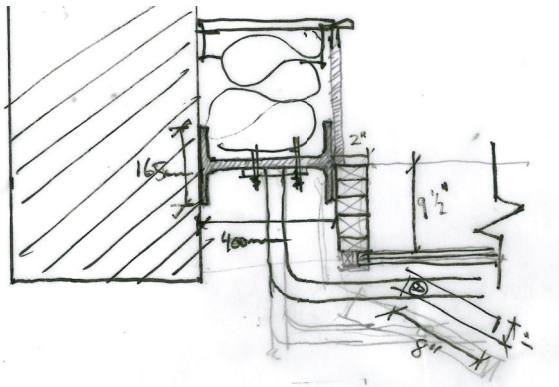
25: Initial platform design hid the structural detail by the use of a large exterior beam.



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historic role that copper has played in religious architecture. The final material is glass, arguably one of the most overused materials in contemporary architecture, used sparingly within the project. Used in the most obvious conditions to provide vision and light from the exterior, glass is also used on the interior of the building to act as the reveal between the interventions and the existing structure. Similar to the steel on the exterior, the glass separates the new from the old by means of a reveal and creates a consistent relationship between the two.





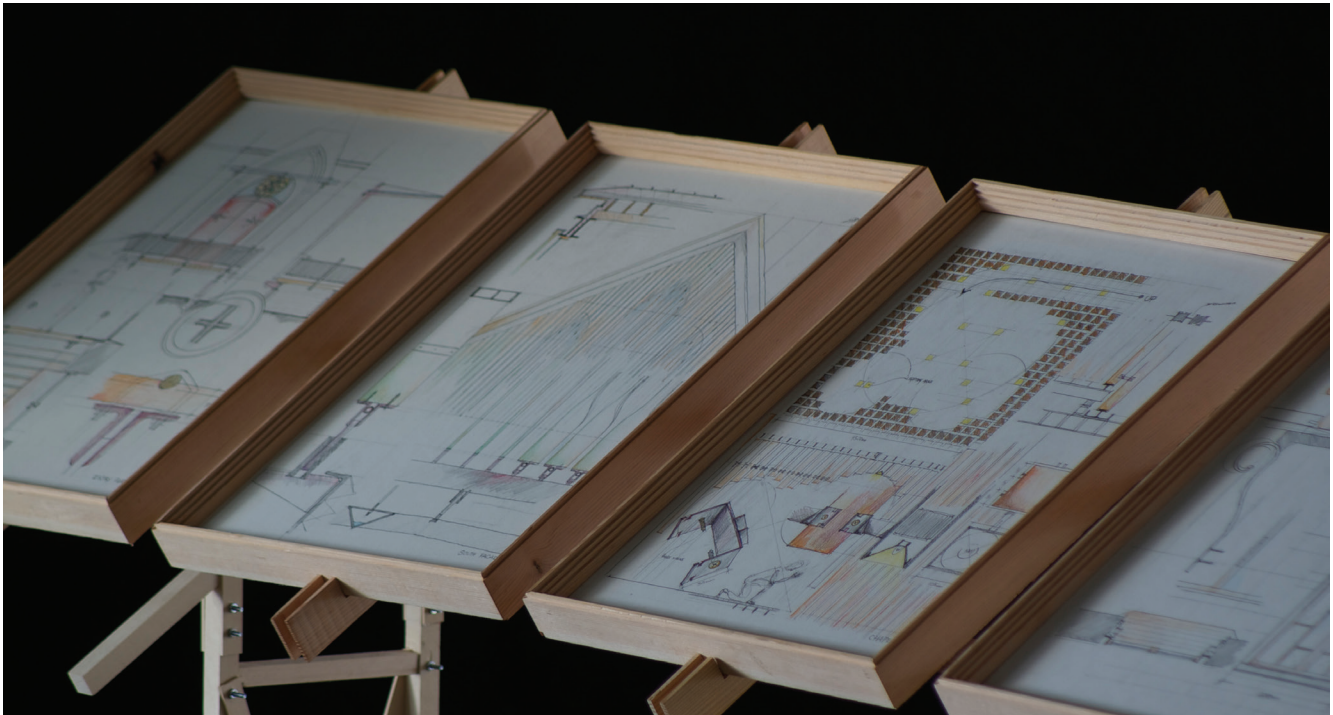
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### S6 | *Exposure and Expression of Construction*

One of the areas of my theoretical stance on craftsmanship that failed to translate to my early design proposals was the idea of the expression of joints. This may seem quite obvious when thinking about craft-driven architecture, but similar to the idea of working with natural materials, it was overlooked at first. A particular example of this can be seen in the first design proposal for the entry platforms which left all the engaging structural joints hidden behind a large exterior beam (Figure 25). An important aspect of this craft-driven architecture is the avoidance of fake or applied ornament. The process of craftsmanship considers each detail as a piece of a larger puzzle that is determined to reveal its construction. For this reason one of the strategies of the design was to take advantage of typical moments within a design project, and transforms them into crafted objects which express their construction and material. In this way the building can speak more clearly about its making process. For example, when we look specifically at the copper fin support brackets the two steel angles welded together with a small piece of brass pipe adds a finer level of scale and expresses the vertical forces through the bracket. This bracket is clearly a designed element that brings expression to the façade while performing a structurally essential task. By designing necessary components that express their material and construction process, the expression and structure of the project is intertwined. Lars Spuybroek makes this very point in his essay *The Matter of Ornament* by explaining that ornamentation should not be thought of as extravagance

26: Section design sketch addressing the reveal using a steel I section.

27: Plan design sketch thinking about the copper fins attaching to the substructure.



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but understood as a process which is necessary to architectural expression.<sup>24</sup> This position seeks to bring ornament back to the proverbial table as a reasonable form of expression.

### S7 | *The Crafted Detail*

This design strategy is a reflection on the fundamental question: what is the purpose and value of craftsmanship, and further, crafted architecture? Is it a valid expression and form of construction given our industrialized culture, or is it a traditional means of building that should be forgotten? John Ruskin asked the same question when confronted with the industrializing world of the 19th century. His fundamental argument for the preservation of craftsmanship rested on the idea that it was a reflection of human nature itself. He argued that humans do not find delight solely in the beauty of an object, but rather in the intelligence that the object embodies. Put simply, the beauty which exists within well-crafted objects is directly tied to the making process and the craftsman. Howard Risatti, professor of Contemporary Art and Critical Theory at Virginia Commonwealth

27: Hand drawings of each design intervention mounted for the final review.



University, has a similar position on contemporary craft theory where he suggests that crafted objects “occupy a unique position in the world of man-made objects because they bridge the gulf between the world of nature and that of culture. They straddle the line between the two, partaking of both.”<sup>25</sup> Although he is specifically speaking about the arts and crafts in his discussion, his argument speaks to a similar position that crafted objects engage in two worlds; firstly the functional, structural, and purposeful aspects and secondly the beautiful, cultural, and aesthetic characteristics. Craft engages both positions in tandem with each other to ensure that the design and making processes are linked together. In essence a crafted object responds to the three essential virtues of architecture summarized by Ruskin: A building must act well, speak well, and look well.<sup>26</sup> As a design strategy these crafted details should, as Ruskin put it, “act well” and “look well”<sup>27</sup>.

### *Conclusion*

In summary, the goal of these strategies is to direct the design towards an architecture that reflects the theoretical positions previously discussed. These strategies do not offer a blanket solution for all craft oriented projects, but do offer some helpful and meaningful considerations for similar projects. In specific the material hierarchy strategy came about as a direct result of the design of St. Andrew’s and would not necessarily be the case for other projects. However crafted details, expression of construction, and working with natural materials are strategies that would apply in any context. Clearly it is of the utmost importance that clear strategies of intervention that support and celebrate the existing structures be used in this type of renovation project.



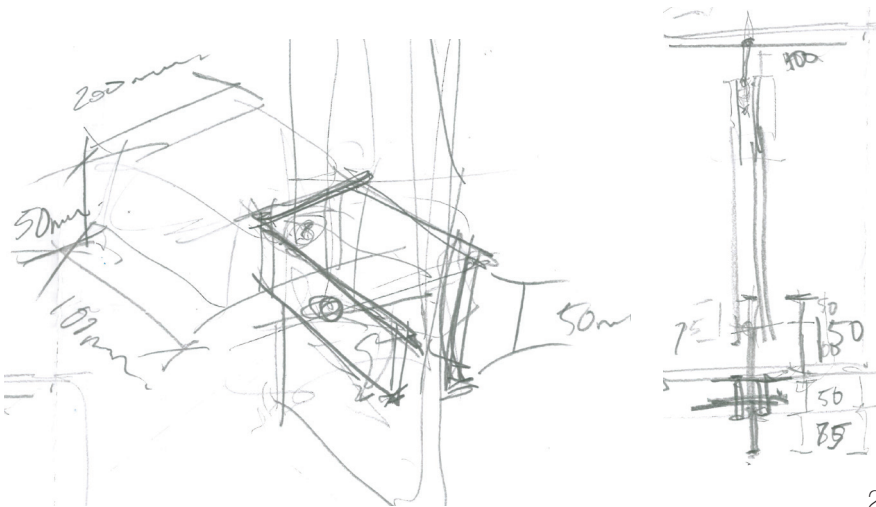
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## CHAPTER 7 | *Design Interventions*

The following chapter consists of documenting, explaining, and reflecting on the four major design interventions. Each one responds in some way to the previously discussed strategies and seeks to present an architecture driven by craftsmanship. The interventions include the entrance platforms, window and door replacements, the south façade, and interior chapel. Their process and final design are documented here through sketches, models, and drawings.

### *Entrance Platforms*

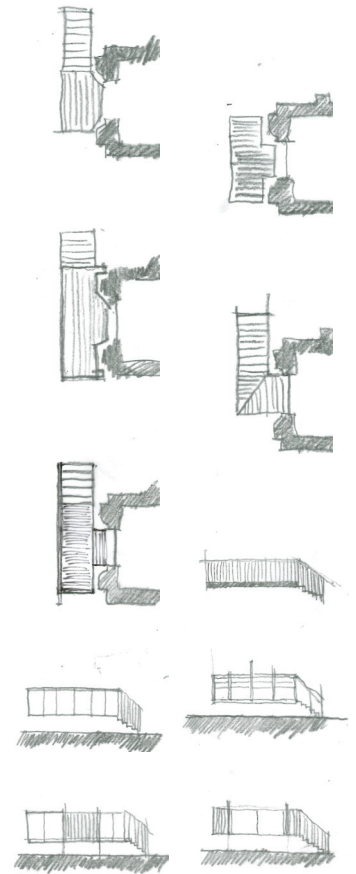
One of the primary design goals of the project was to improve the overall accessibility of the church. This was a particular problem when looking at the exterior entrances, which were designed with different site conditions, and were not accessible. (Figure 28) In order to unify the exterior of the church it was important to replace each entry platform in a systematic way by using the same material and configuration. The design development is focused on the entrances that face Jarvis Street because they are the most prominent and the design has been appropriately applied to all other entrances in the building.



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Prior to the detailed design of the stair construction and the railing orientation, it was critical to look more holistically at the relationship between these platforms and the existing structure. Looking back to the design strategies, a reveal would be required between the old and new portions of the church. As shown in Figure 16, each design although formally different, reacts to the building in the same way by creating a reveal between the existing walls and the new platforms. With the intention of accentuation the direction and orientation of the stair treads, it was important that the platform slats followed parallel to the stair direction. This decision allows the platforms to remain structurally straightforward and visually consistent resulting in slats that are perpendicular to the building façade.

Early in the design process I began by making a model of the platform to understand the relationship between structure and expression. The initial design proposal was not expressive and failed to reveal its construction method or material qualities. This was not only contrary to one of the design strategies but also created a false sense of structure by requiring an oversized steel beam. Following this realization the platforms themselves were simplified considerably to consist of two mirrored steel channels, and 3" thick Douglas Fir slats. Rather than hiding the structure, the entire composition is revealed allowing the steel to remain light in appearance and celebrate the end-grain and strength of the Douglas Fir.



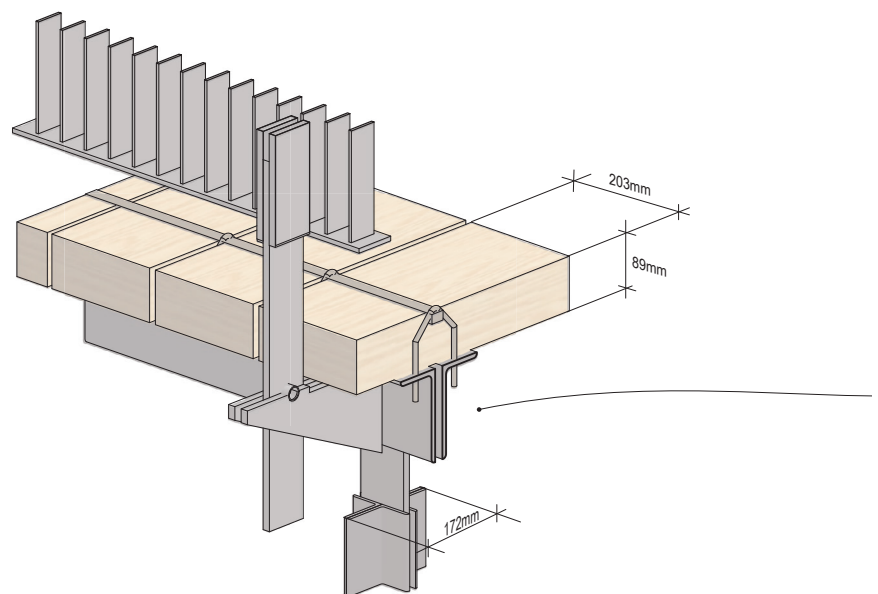
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28: Current entryway condition on Jarvis St.

29: Design sketch for the railing support

39: Platform design iterations.

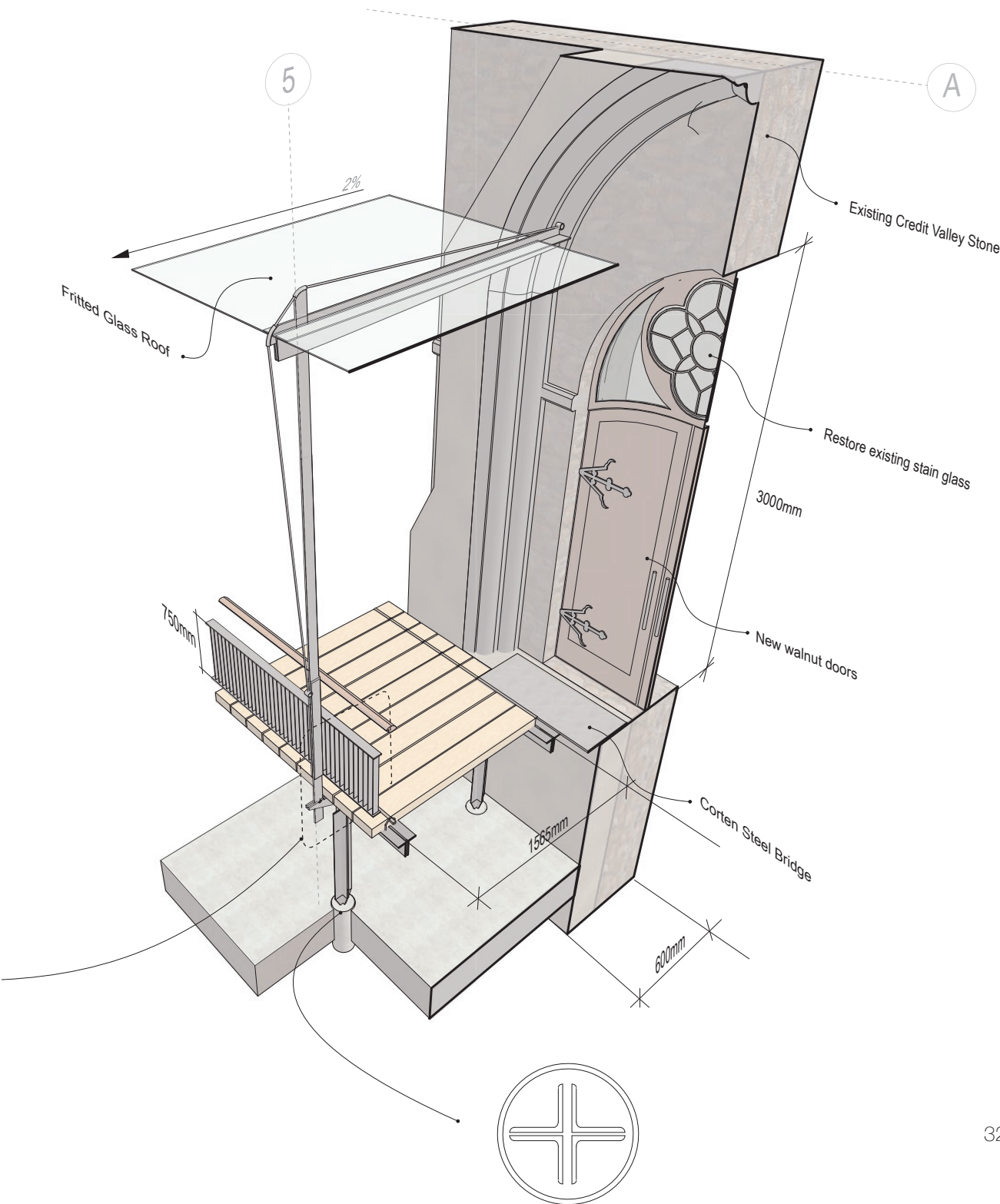
Another important part of the platform design is the relationship between the railings, platforms and existing building. Although the first design proposal did not include coverings over the platform, the resulting design felt detached and overly removed. To ensure the permanence and significance of the intervention the platforms include a small glass which accentuates the entrance and protects the entryway. Through considerable design review investigating the connection between the platforms, supporting members, railings, and cover, a simple steel structure with wood slats, glass roof, and cable suspension was used. The sketches shown in Figure 29 are examples of design work investigating the size and relationship between the steel elements. Through models, sketching and drawing a final design was reached that celebrates the heaviness of the wood slats and the lightness of the steel structure. One of the important techniques used to accomplish this was the duplication of elements to accentuate moments and draw attention to joints. For example, the steel supports for the canopy use a series of flat stock steel components to denote the transition from grade to canopy. The use of mirrored identical elements creates a rhythm and scale



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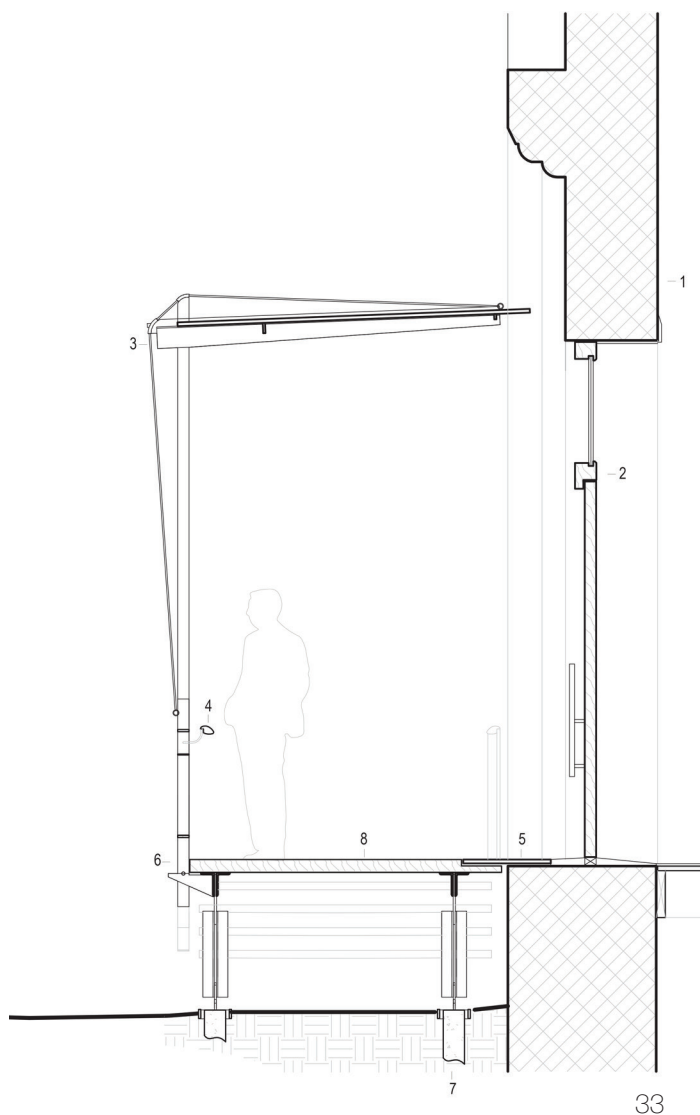
31: Design sketch with mirrored steel channels and crussiform columns.

32: Axonometric view of the entire entry platform design.





that results in an engaging aesthetic. The final design (Figure 34) includes an intricate fastening system which allows the Douglas Fir slats to expand and contract without damaging the wood. Using bent rods as spacers, the slats are pinched between the steel beam below and the steel bar above (Figure 32). Considering the materials' expansion and deterioration patterns was a critical aspect of the design and influenced the final elements.



33: Entry Canopy Section - 1:50

34: Entry Canopy Elevation - 1:50



Canopy Materials

- 1 - Existing Stone Facade

2 - Wood Entry Door

3 - Steel Cable Supports

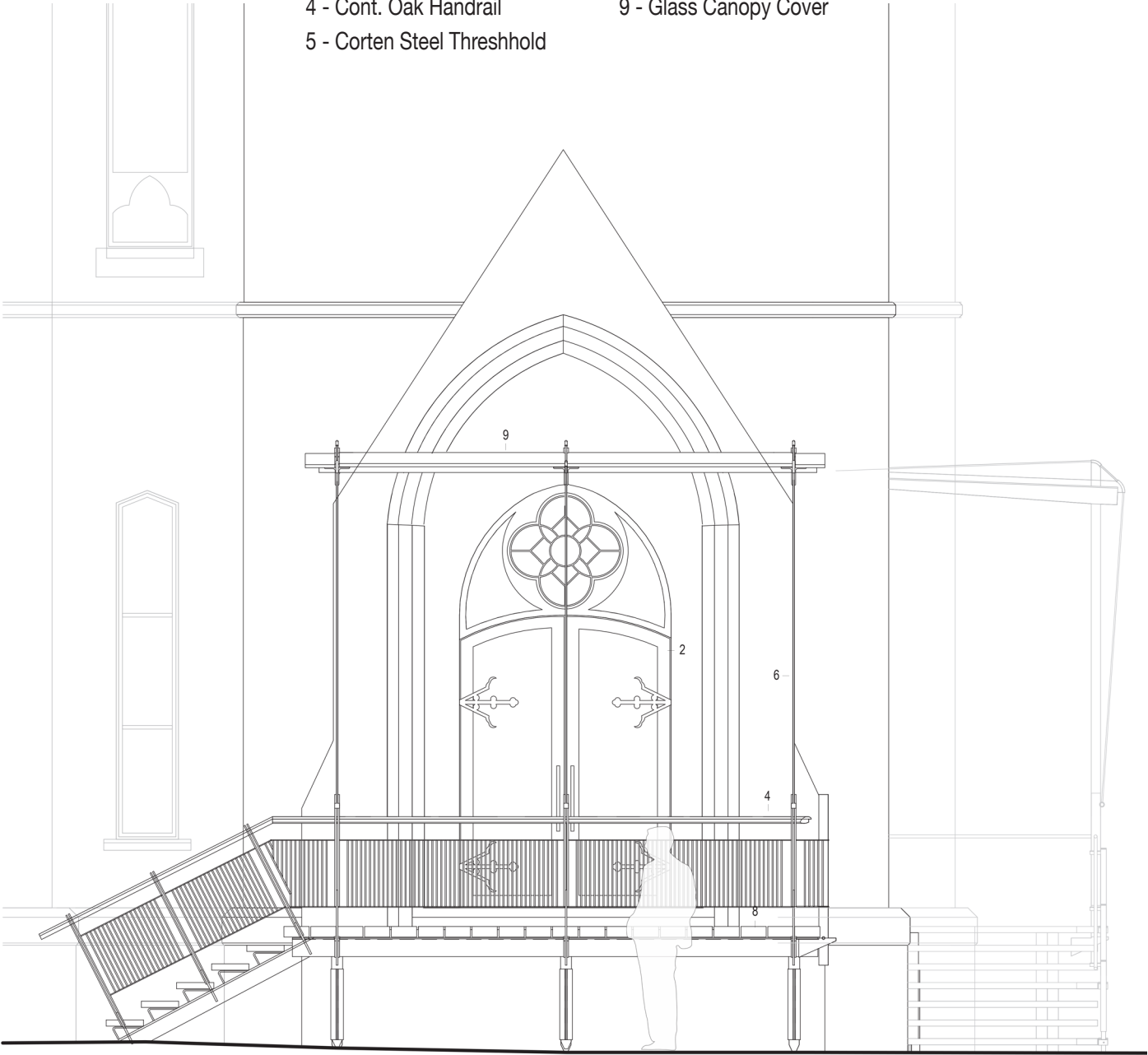
4 - Cont. Oak Handrail

5 - Corten Steel Threshold
- 6 - Steel Canopy Supports

7 - Concrete Piles

8 - Douglas Fir Platform Slats

9 - Glass Canopy Cover





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### *Window and Door Replacement*

Another practical problem that needed to be addressed is the replacement of all the windows on the school house building (The eastern portion of the church). The original frames and single glass lites are in poor condition and only made worse by the aluminum storm windows applied at a later date. Although most of the windows will be strictly replacements, there are three existing windows on the ground floor that will be transformed into doors to allow the church to be more connected with the park. This connection to Allan Gardens is a very important part of the overall building concept and is most significantly addressed through these doors.

Similar to the approach taken with respect to the platforms, working with a reveal and natural materials was essential. The

35: Existing East Elevation where window replacement will occur.

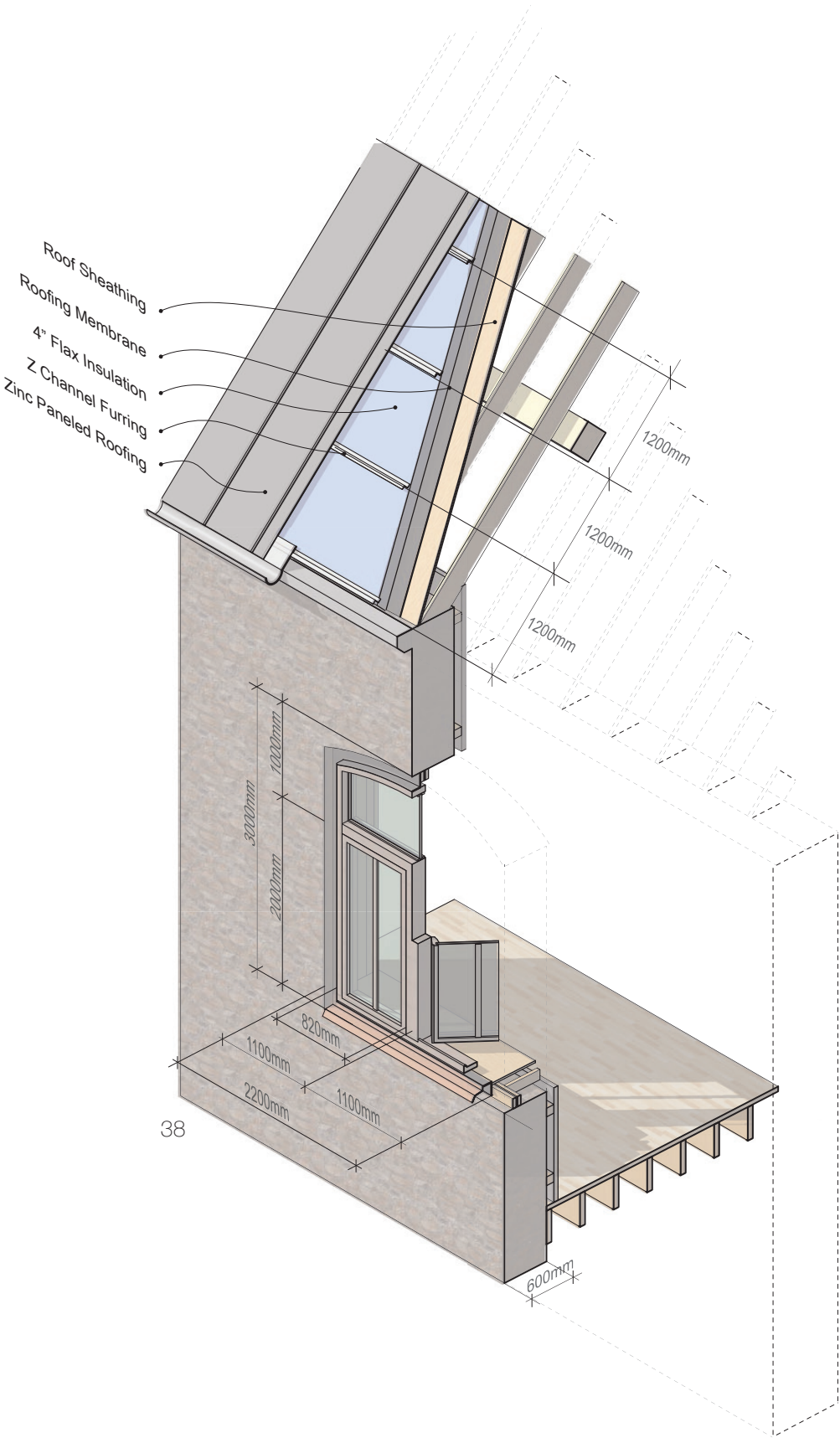
36: Design drawings for the new windows & doors.





process began by thinking schematically about how the windows would read from the interior and exterior. Through physical models, section sketches, and elevation sketches the relationship between the building and the new lites was explored. From a conceptual point of view it was important that the new lites not dominate the elevation by protruding from the openings but rather remain flush in section, but revealed in elevation. To accomplish this a steel channel was used as a visual bridge between the stone façade and wood window. This allowed the windows to remain in their original plane while clearly existing as new elements. In addition to the





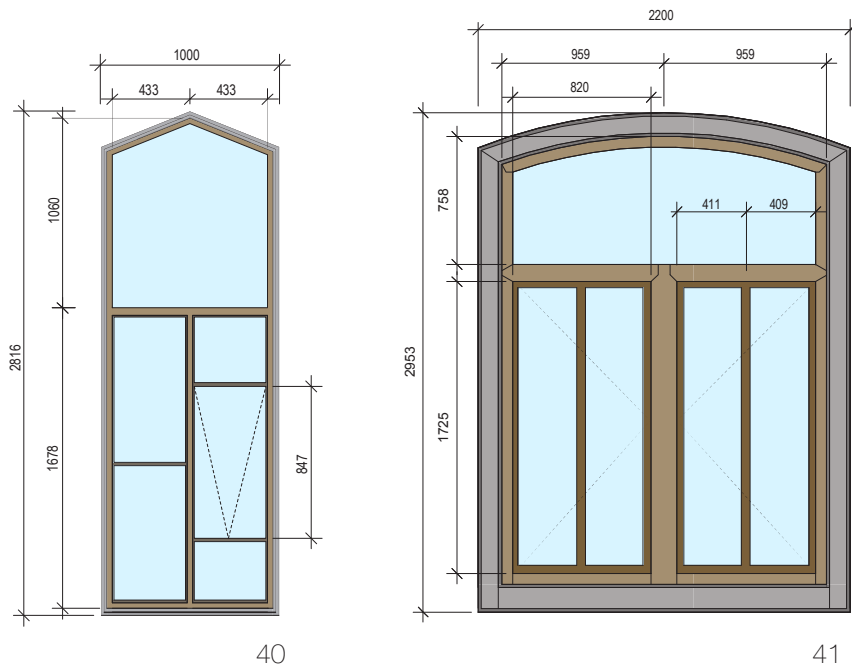
37: East Elevation - 1:300  
38: Axonometric view of window replacement & roof detail.



Split down the center as a remnant of the original design, the windows are divided into smaller sections to allow for operable portions and break down the scale of the large openings. The resulting design makes reference to the previous windows while celebrating the new materials and proportions. The three central doors and ground floor windows differ from the upper set through increasing levels of porosity to ensure privacy at grade. This intervention significantly improves the interior spaces by connecting them to the park and allowing light to penetrate deep within the space.

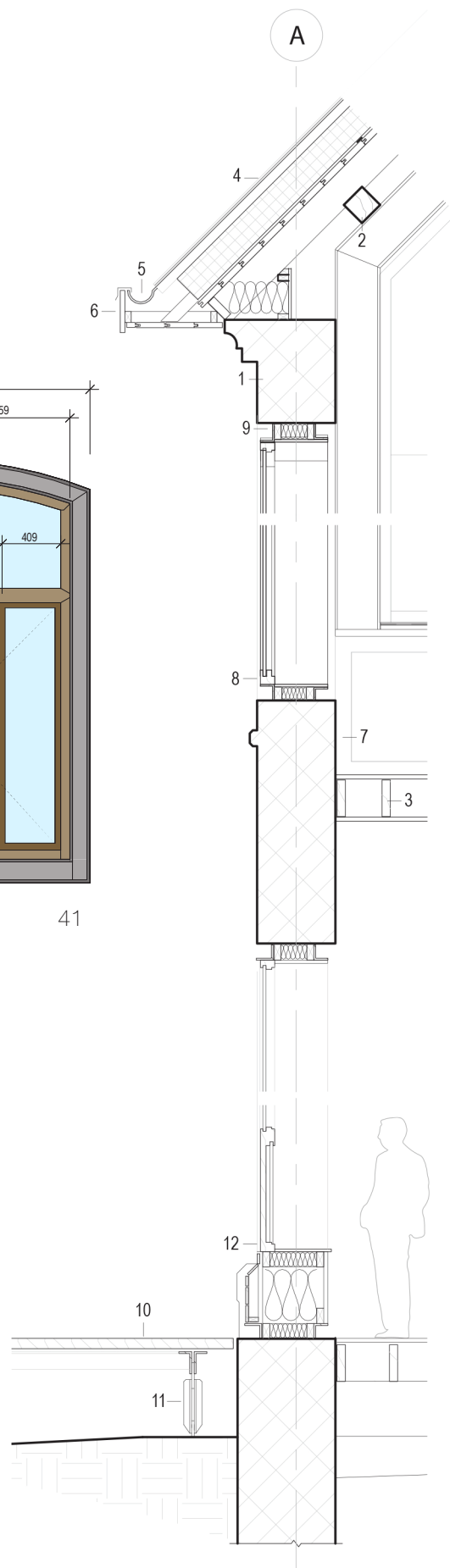


39: Physical model window detail.  
40: South Window Dimensions  
41: East Window Dimensions  
42: East Facade Section - 1:20



### East Wall Section Materials

- 1 - Existing Stone Facade
- 2 - Existing 8x8 Wood Perlins
- 3 - Existing 2x12 Wood Floors
- 4 - Standing Seam Metal Roofing
- 5 - Drain Gutter
- 6 - Wood Fascia
- 7 - Chair Storage Bench
- 8 - Wood Frame Operable Window
- 9 - Steel Channel Reveal
- 10 - Douglas Fir Platform Slats
- 11 - Crussiform Steel Column
- 12 - Wood Privacy Screen





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### *South Façade*

By far the most significant and impactful intervention in the project, the south façade is primarily designed to create an open gathering space on the second floor. It was important to the overall design concept to connect the church to Allan Gardens from which it had been previously disconnected. The first floor physically connects to the park through openings to the east, and the second floor is visually connected to the park through the opening of the south façade. Originally designed as a small raised theatre stage, the southern portion of the third floor has become an underutilized storage area. In order to open the south façade to the park and extend the gathering space, the roof plane was extended beyond the original hipped roof creating a similar elevation to the worship space. Figure 43 show the current exterior condition at the south façade.

43: Existing South Façade

44: Façade design sketches







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Through the design development of this portion of the project the scale of the intervention continually grew. Figure 44 shows a series of sketches that capture a small snippet of the design process that informed the current proposal. The initial size of the intervention was intended to replace only a portion of the façade as seen in the first sketch. However through the design process it was determined the most appropriate solution given the context would involve the entire second floor portion. Appropriate to the topic, the design was not a quick process. In fact the finalized design took much longer than expected. However, this process supports my theory of craftsmanship, which is driven by thought that cannot be rushed.

The original concept for the twisted fins came in the most appropriate but unexpected place, church. I was sitting in a small church in the GTA when the window above the worship band caught my attention. The generic window blinds moved by the slight breeze and the mid-day sunshine combined to create an array of light that filled the space. This moment of inspiration drove me to create a vertical louvre system to both shade and engage the interior space.





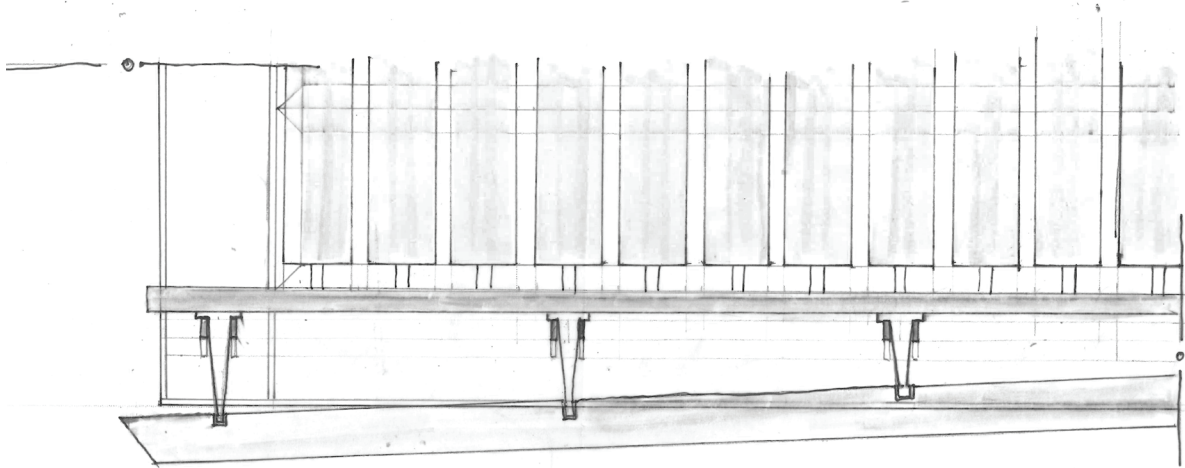
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In an attempt to connect the old and new portions of the church through geometry, the openings in the fins were based on the triform gothic windows which can be seen in many other parts of the building. This creates coherence between the two conditions.

From this basic design concept the process became focused on a system which could provide interesting lighting on the interior and solar shading on the exterior. Originally imagined as twisted

45: Lighting Model - 1:75

46: Detail Facade Model - 1:25



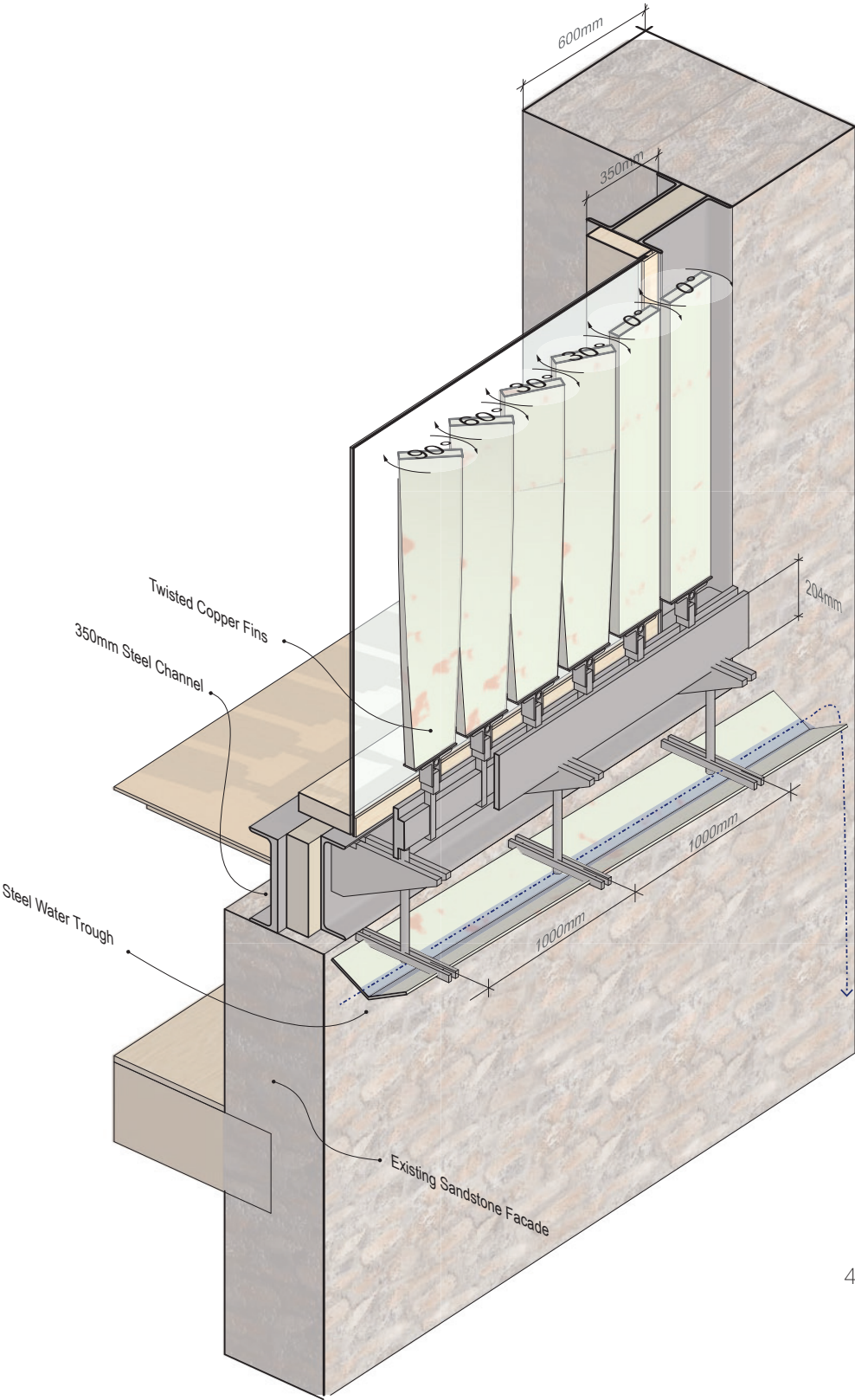
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wood fins, the exterior vertical louver system is formally designed to mimic the Gothic Revival forms. Realizing the impracticality of constructing massive twisted wood members, it was decided that steel and copper would be more appropriate materials .

Through several physical models I began to experiment with lighting conditions, exterior experience, types of twisting methods, and construction procedures. Modeling began at 1:75 to test the effect of light passing through the louvers into the space (Figure 45) From there a more detailed model at 1:25 was used to look into the scale of the louvers and the build ability of the system. Based on these tests the fins were shrunk from the original 300mm to 204mm in width. (Figure 46) To understand the more specific lighting conditions given fin rotation and orientation, a solar study was completed based on specific angles of rotation (30, 45, 60, 75, 90), at different times of the year. From this study it was decided that all of the fins would be twisted in a clock-wise manner in order to protect from the harsh western sun, and catch the early eastern light. This decision was also based on religious tradition which puts a higher value on the eastern sunlight. Interestingly this decision also results in a unified lighting pattern on the interior and creates two very distinct expressions on the exterior. These decisions allow the façade to respect the historic patterns and geometries while remaining a contemporary piece of design.

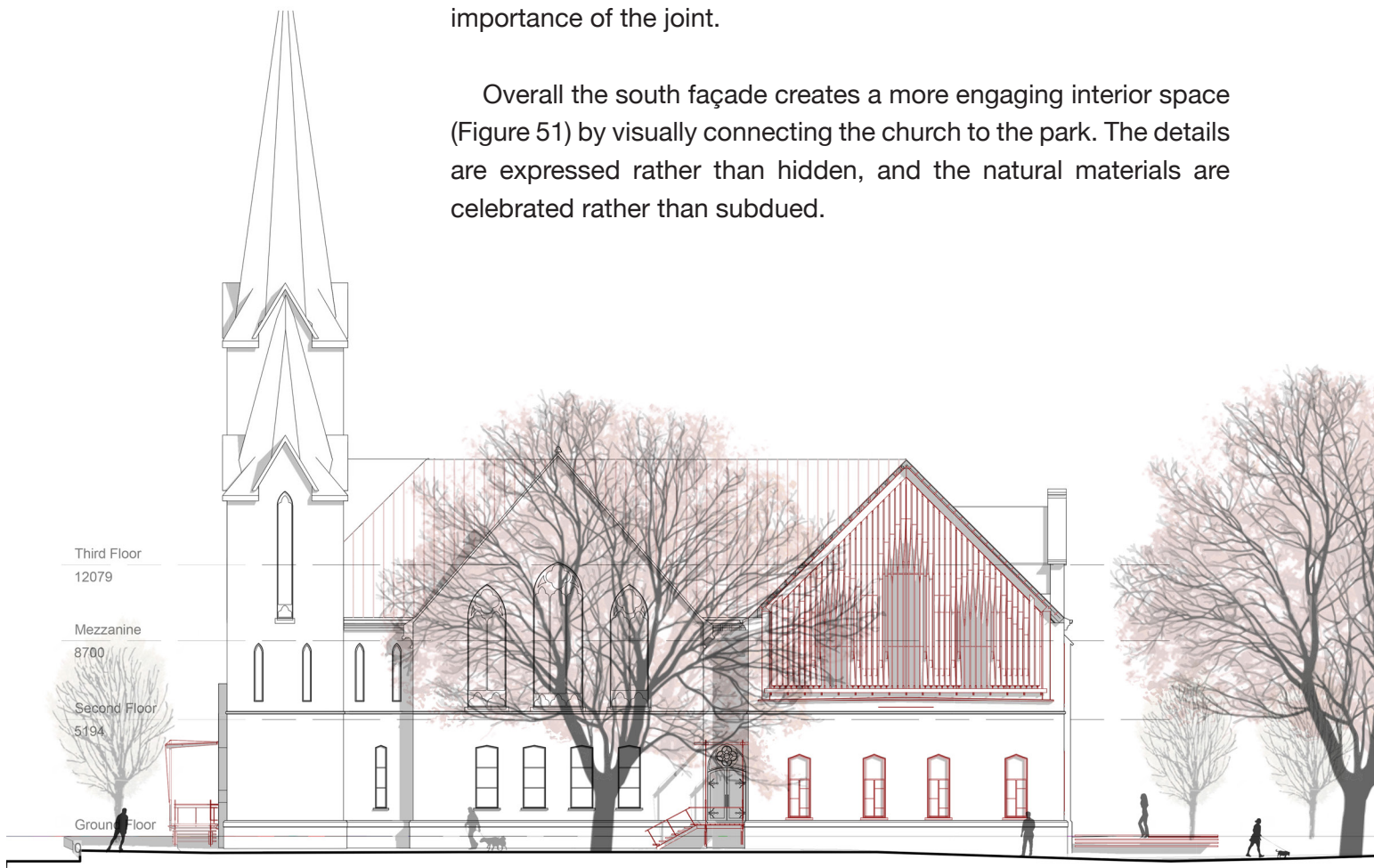
47: South Facade detail elevation.

48: Axonometric detail of south facade connections.



In addition to the expression of the fins and the façade's overall qualities, the design was developed at a 1:5 scale to investigate the supporting structure for the system. Referencing the design strategies, large 350mm deep steel channels are used around the new opening to create a reveal between the old and new. Using flat steel components welded together the supports express the forces and materials by accentuating the vertical and horizontal loads. The main supports seen in Figure 48 also support a steel trough which catches runoff water from the copper fins and directs it to either side of the façade. In a similar way to the platform design, mirrored elements create a finer sense of scale and accentuate important structural moments. The finest scale of this can be seen in the connecting brackets that use typical steel sections to express the importance of the joint.

Overall the south façade creates a more engaging interior space (Figure 51) by visually connecting the church to the park. The details are expressed rather than hidden, and the natural materials are celebrated rather than subdued.

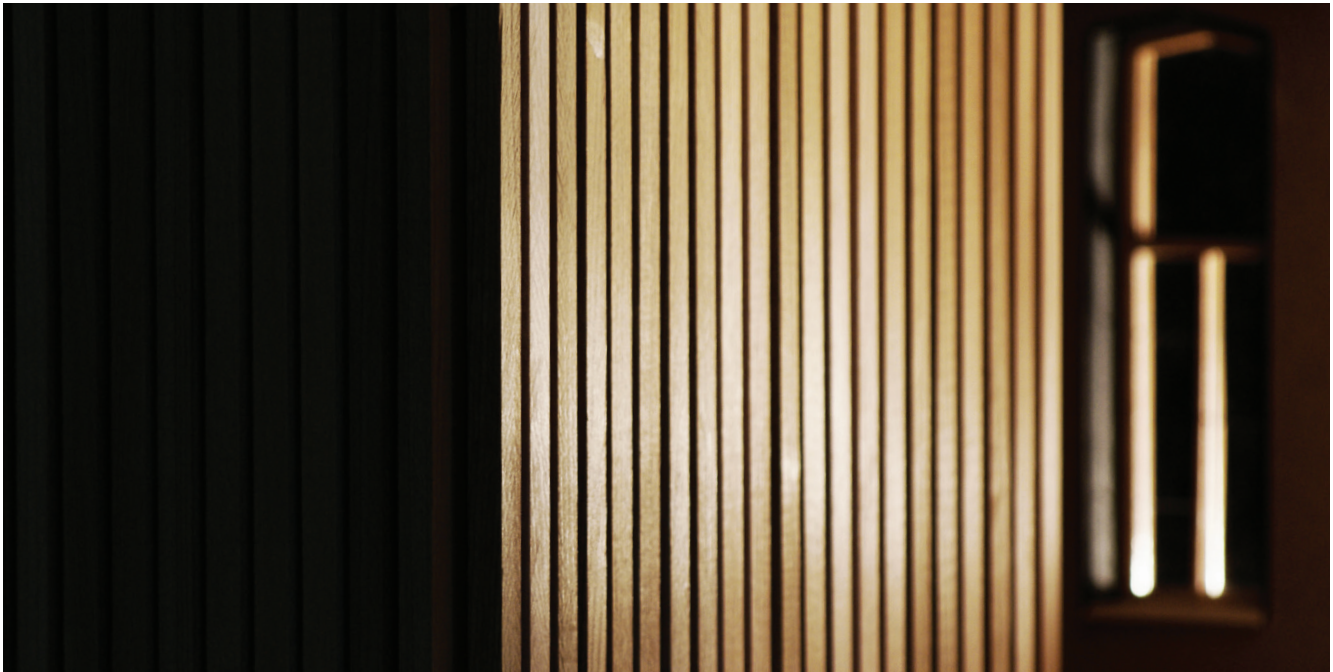






49: South Elevation - 1:300  
50: Physical model with light passing through the South Facade.





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### *Chapel*

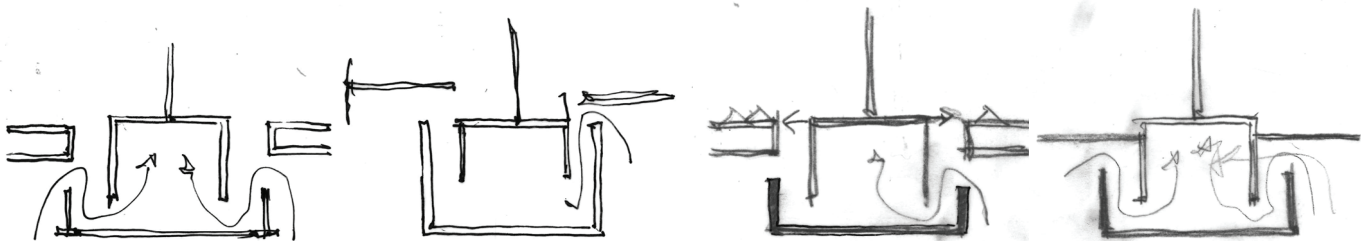
The final and most intimate intervention is the addition of a prayer chapel on the ground floor. Imagined as the most sacred space within the church, it is pulled into the space and isolated from the exterior walls. This movement allows the chapel to exist as an object within a space and provides a more intimate environment.

An important aspect of any sacred space is the entryway and approach. In this case the entry path ramps upwards to the interior space, and delicately curves inward to hide what's inside. This approach was determined through drawing and modeling (Figure 52) which occurred early in the design process. As a unique program within the building, the chapel is constructed primarily out of 4"x4" cedar posts with black steel components tying the posts together. With over 400 posts cut to different lengths, the exterior's rectilinear form is contrasted by the organic shape created on the interior. The intimate interior spaces take advantage of the cedar's aromatic and tectonic qualities by creating three volumes which interlock to create the entirety of the chapel. Seen in Figure 57, the floor plan

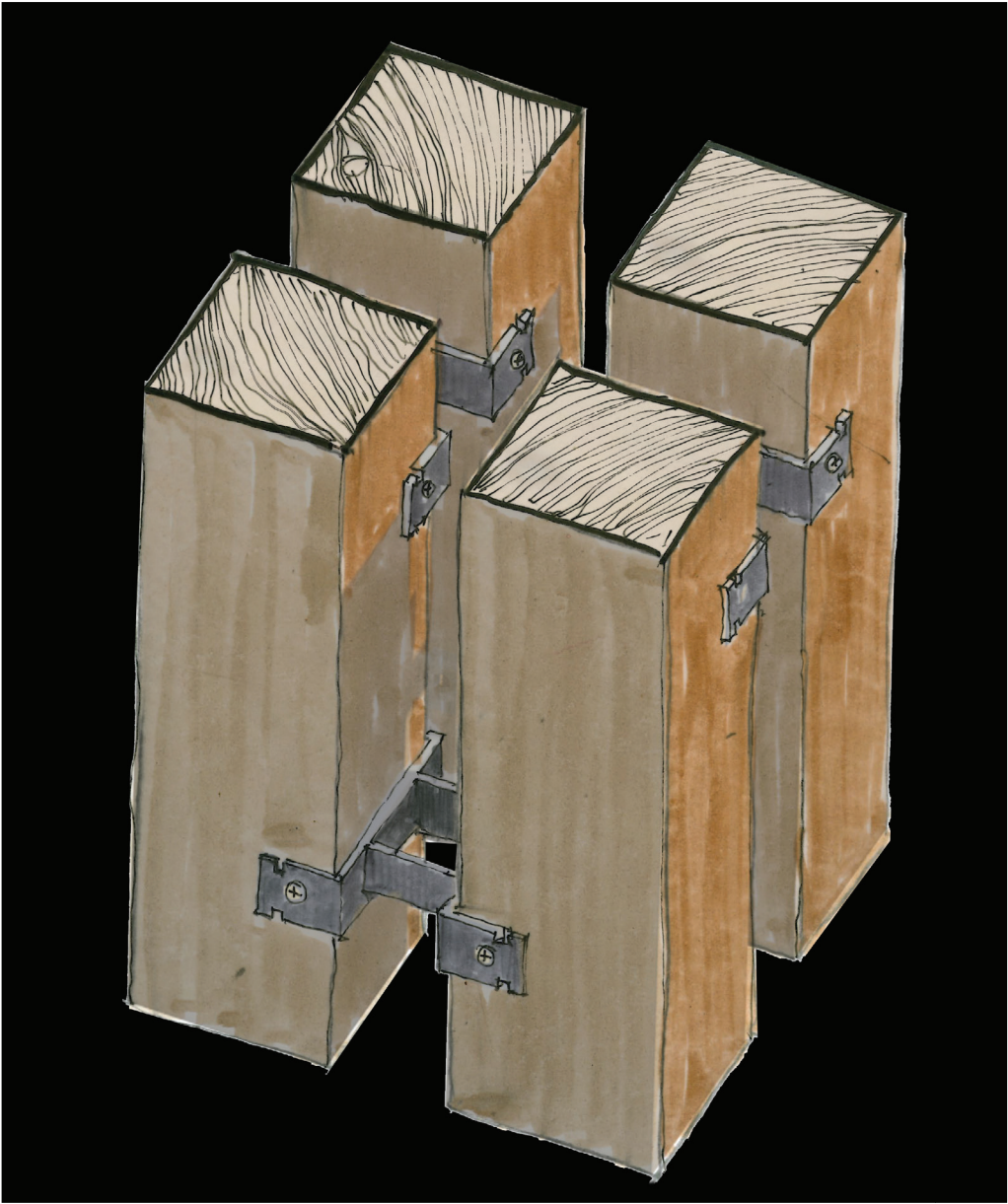
51: Physical model of the exterior of the chapel.

52: Entry pattern sketches.

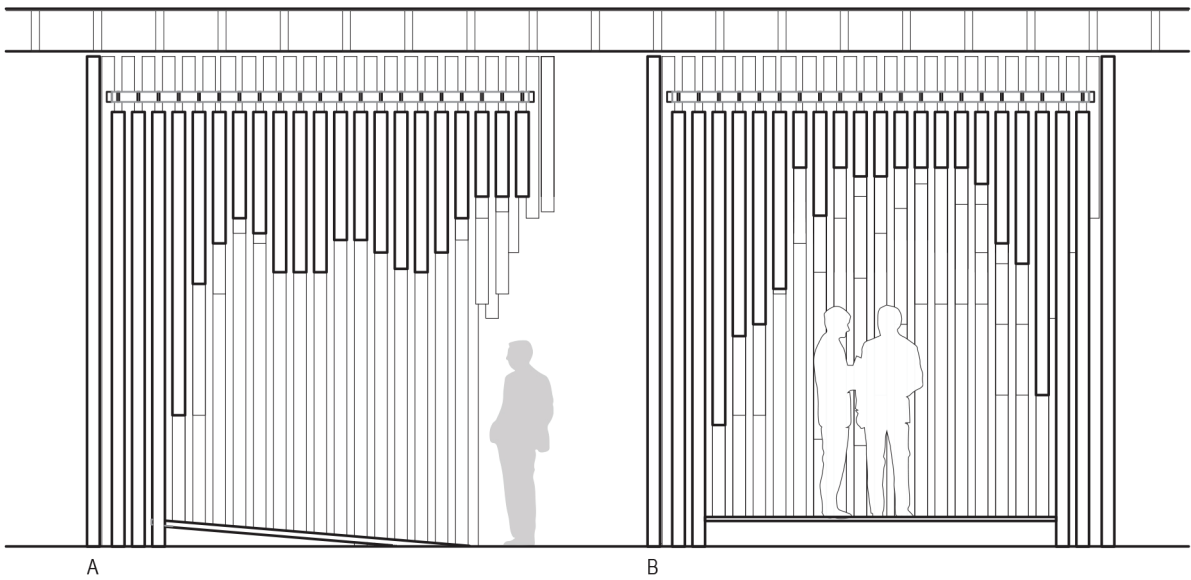
53: Chapel post details.



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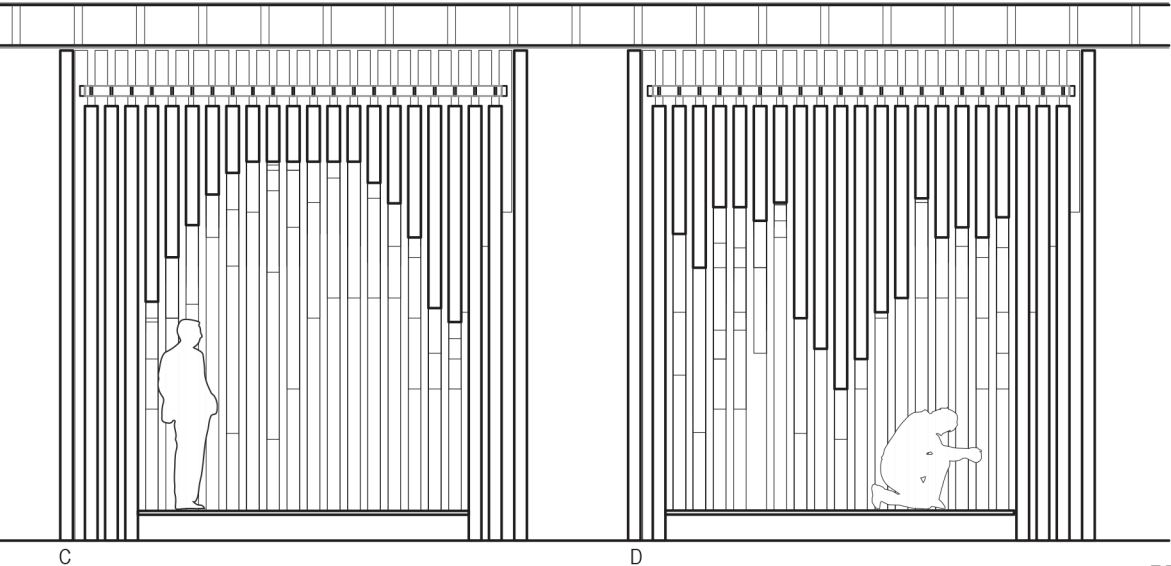
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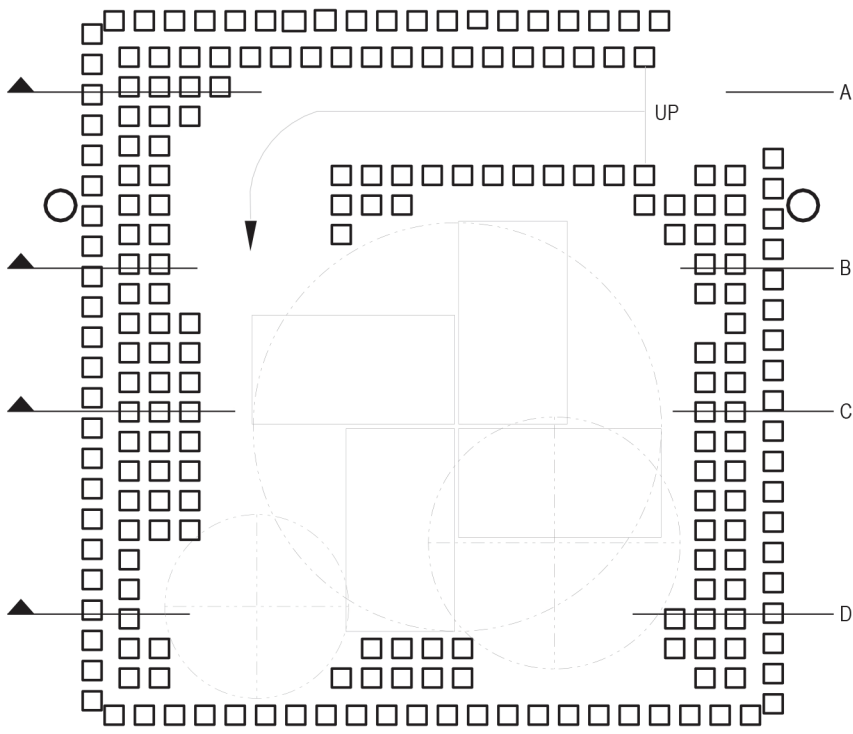
was derived from 3 interlocking circles that signify three levels of intimacy.

Composed of a rectilinear exterior and curvilinear interior, the contrasting chapel design uses the material's naturally aromatic and tectonic qualities to enhance the intimacy and uniqueness of the space and create a quiet place of reflection within a larger religious context.

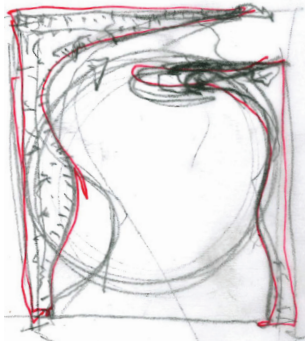




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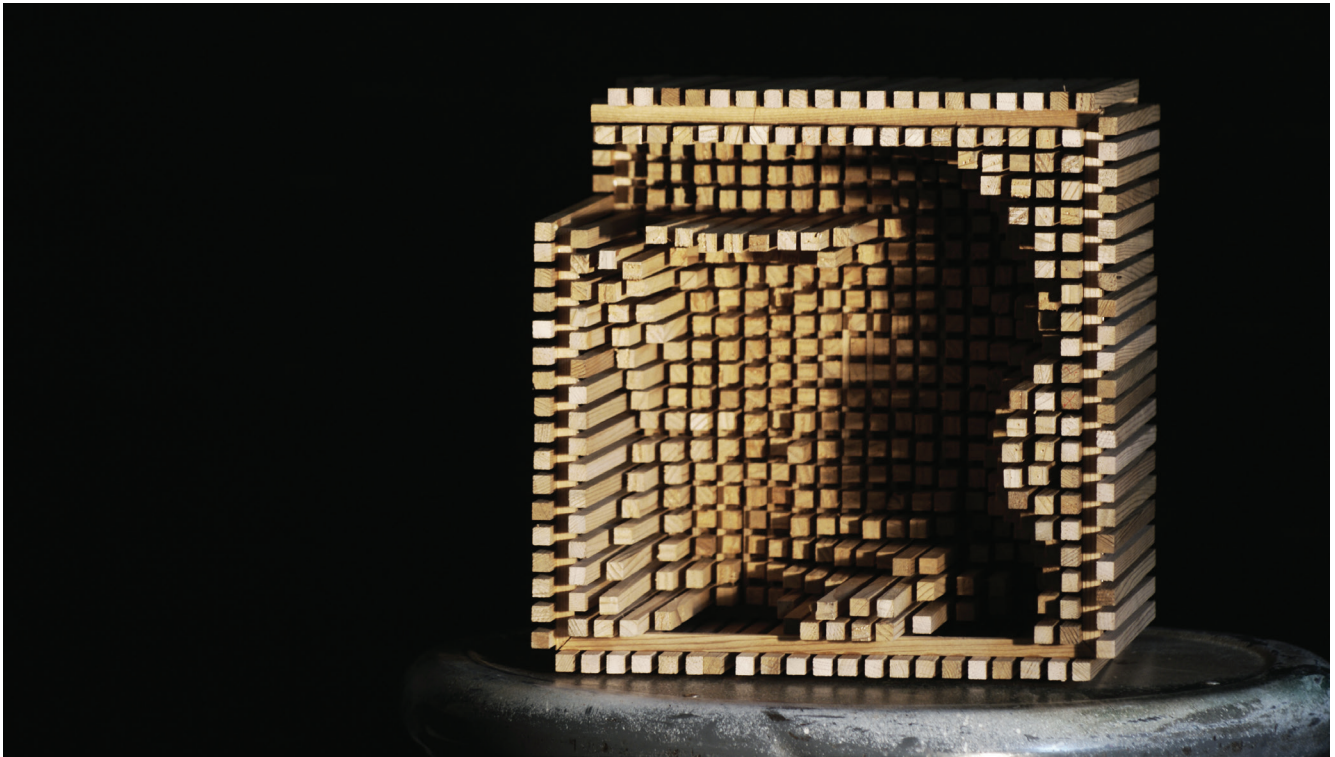
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54: E-W Building Section - 1:300  
55: Chapel Sections A,B,C,D  
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57: Chapel Floor Plan





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## CHAPTER 8 | *Conclusions*

It is clear from this investigation that craftsmanship is in fact a very complicated subject of discussion that involves far more than skilled manual labour. Craftsmanship is an attitude towards work that is continually involved in the process of mediating between head and hand to pursue quality in built things. Through the investment of time and talent, craftsmanship is a cyclical process of problem solving and problem finding by means of constant reflection on one's own work.

Despite fact that architects do not build, they must remain responsible for the built quality of their work by using the tools of drawing and model making to anticipate this process. Rather than seeing design and construction as two separate spheres it is the responsibility of architects to be continually engaged in both, with one foot planted in the abstract world and the other in the



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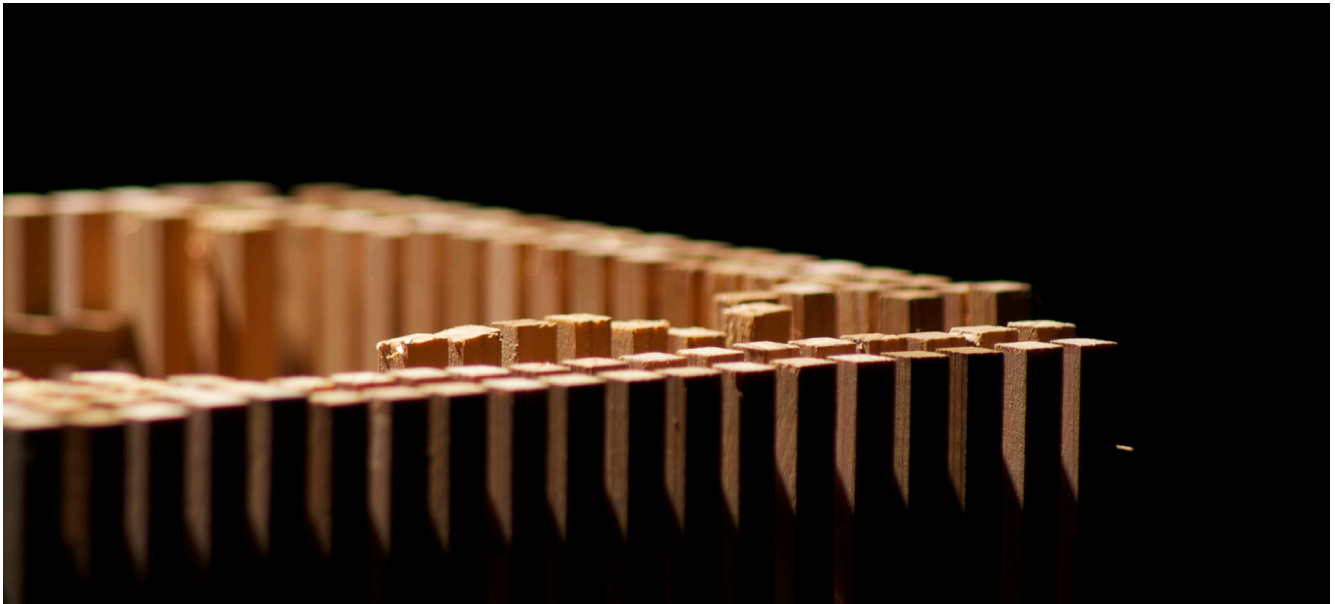
physical encouraging a cyclical process of design that is informed by construction.

On reflection it is important to note the important role that model making and drawing play in the process of architectural craftsmanship. Working with physical models is the primary way in which we are able to simulate the building process in anticipation of construction. In this way architects are able to prepare and test ideas using real materials in real-world situations. In this project specifically, a 1:25 scale model was the primary method of investigating this concept.

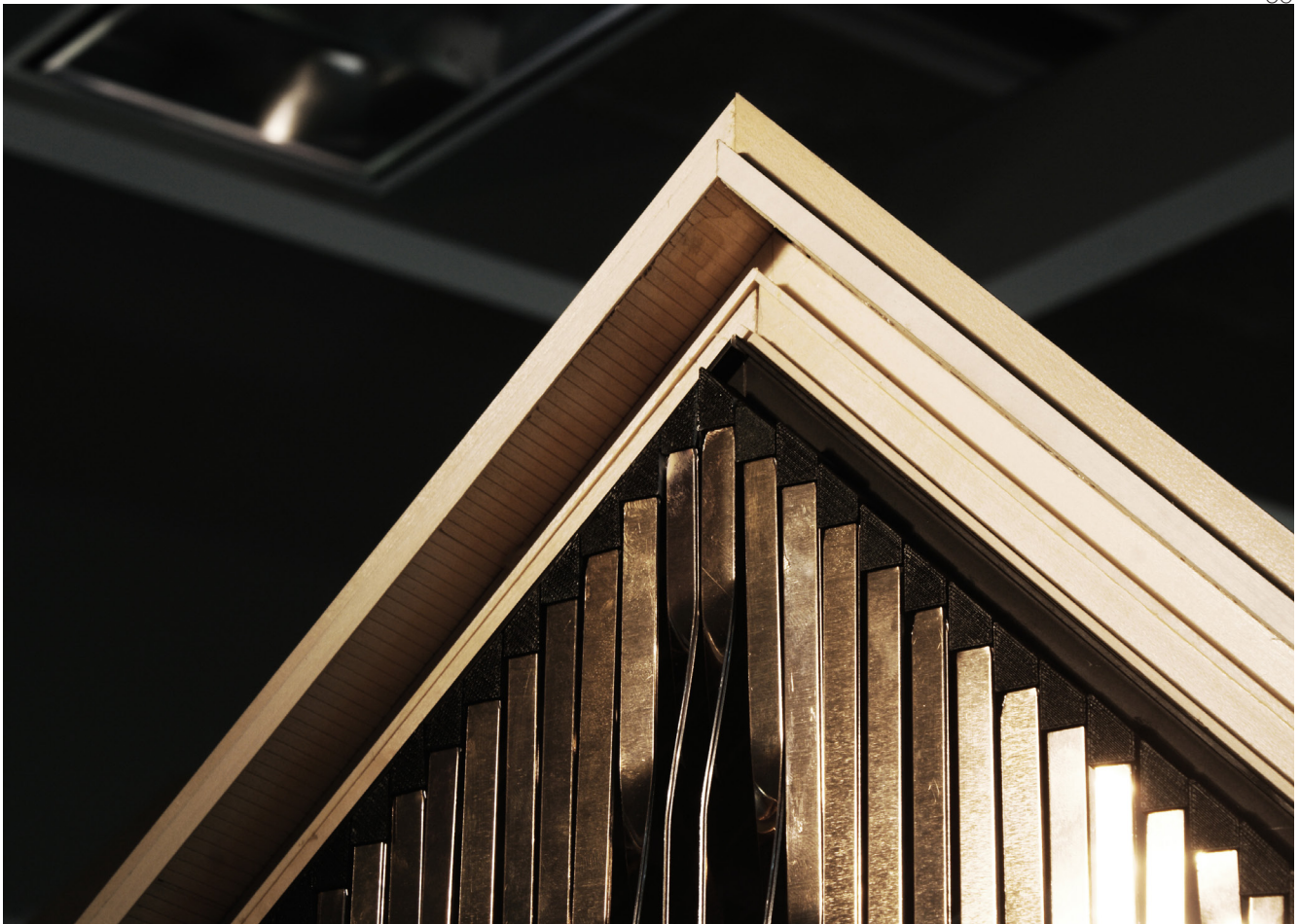
58: Interior of chapel model.

59: Physical model w/ southern light coming through facade.





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During the physical building process it challenged certain ideas and allowed me to simulate the construction process and understand more fully the components and order of their arrangement. In a similar way, drawings are a form of simulation that anticipate the construction process and provide the architect with some control over the final result.

As architects it is important to celebrate craftsmanship within our culture both as a historical remnant, and as a current practice. As Howard Risatti points out, crafted objects exist as both physical and social objects because they inhabit both functional and stylistic form. In the same way, architecture occupies a “unique position in the world of man-made objects because [it] bridges the gulf between the world of nature and that of culture.”<sup>28</sup>

Looking into the current architectural landscape that has become primarily driven by cost it is critical to understand that craftsmanship can still play a significant role within our society. Although it may look much different than it once did, the value of craftsmanship as a cultural remnant cannot be lost. Without craftsmanship and the pursuit of things well-made there will be no record of what we build for those to come.

## *Reflections*

The connection between theory and design has always been a point of contention in my work. Struggling with the tangible ways that ideas become reality, this investigation of craftsmanship helped me understand how theory and design are interconnected. Craftsmanship presents not just a way of thinking or a way of acting, but a way of living and an approach towards architecture. It is not simply an idea that comes and goes from project to project, it is a subtle approach to design that looks for the best solution, in each and every respect.

I felt this most clearly in my work during the building of the physical model and it brought up an idea that was suggested early in my thesis; the importance of the unseen. In many cases, particularly when making the physical model, decisions arose that directly affected the quality of the product. However many of these

60: Light passing through the chapel walls

61: South facade roof detail on model.



decisions were unseen and unknown to those experiencing the model after its completion. The same is true of architecture which requires a dedication to design that extends far beyond the visual.

In reflection upon the design work that I completed during this thesis, a very valuable aspect of the project was the development personal method of working. Each element no matter how small suggests and points to other ideas which change the intended meaning of a design. To their benefit, architects such as Tadao Ando, and Carlo Scarpa created their own way of working through many years of refinement. In the same way this thesis has begun this process of developing a similar method of working that I plan on pursuing through a professional career.

Finally this thesis has taught me the importance of mentorship, respect, and experience. The constant direction and critical reflection provided by both Dr. Paul Floerke and Professor Marco Polo have continually humbled me and encouraged me to learn from those with more experience. Although a healthy dose of personal confidence is required, the importance of humility and respect cannot be overstated.

With these remarks in mind I conclude with a quote from John Ruskin that I believe sums up the goal of my work. Work that respects, but demands respect, work that speaks of its time, but remembers the past, and work that pursues things well-made.

*When we build, let us think that we build forever.  
Let it not be for present delight nor for present use alone.  
Let it be such work as our descendants will thank us for;  
and let us think, as we lay stone on stone,  
that a time is to come when those stones will be held  
sacred because our hands have touched them.<sup>29</sup>*





## Endnotes

- 1 Scott Marble, "Imagining Risk," in *Building [in] the Future: Recasting Labor in Architecture*, eds. Peggy Deamer and Phillip Bernstein (New Haven: Yale University Press, 2010), 39.
- 2 Ibid.
- 3 John Ruskin, *The Stones of Venice*, eds. J.G. Links (New York: Da Capo Press, 1960), 32.
- 4 V. Pikkand, *Toronto's Old Saint Andrew's Church: Centennial 1878-1978* (Toronto: Town Press, 1979), 15-17.
- 5 William Westfall, *Two Worlds: The Protestant Culture of Nineteenth Century Ontario* (Quebec: McGill-Queen's University Press, 1989), 82.
- 6 Ibid., 11.
- 7 Ibid.
- 8 Ibid.
- 9 Angela Carr, *Toronto Architect Edmund Burke: Redefining Canadian Architecture* (Quebec, McGill-Queen's University Press, 1995), 7.
- 10 Westfall, *Two Worlds*, 135.
- 11 Ibid., 127.
- 12 Ibid.
- 13 Ibid., 90.
- 14 Ibid., 106.
- 15 Ibid., 108.
- 16 Ibid., 109.
- 17 Carr, *Toronto Architect Edmund Burke*, 25.
- 18 Toronto Public Library Exhibit, *Toronto's Sanctuaries: Church Designs by Henry Langley* (TD Gallery: Toronto Reference Library, 2007), Accessed March 30, 2015. < [http://static.torontopubliclibrary.ca/ve/toronto\\_sanctuaries/main.html](http://static.torontopubliclibrary.ca/ve/toronto_sanctuaries/main.html)>
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- 20 Ibid.
- 21 Ibid.
- 22 Pikkand, *Toronto's Old Saint Andrew's Church*, 15-17.
- 23 John Ross Robertson, *Robertson's Landmarks of Toronto: Volume 4* (Toronto, 1898), 229.
- 24 Lars Spuybroek, "The Matter of Ornament," in *The Politics of the Impure*, eds. Joke Brouwer, Arjen Mulder, Lars Spuybroek (V2\_Publishing, 2010), 233.
- 25 Howard Risatti, *A Theory of Craft: function and aesthetic expression* (Chapel Hill: The University of North Carolina Press, 2007), 231.
- 26 Ruskin, *The Stones of Venice*, 29.
- 27 Ibid.
- 28 Risatti, *A Theory of Craft*, 231.
- 29 John Ruskin, *Selections and Essays: The Lamp of Memory*. eds. Frederick William Roe (Charles Scribner's Sons, New York, 1918), 118.





# Section IV

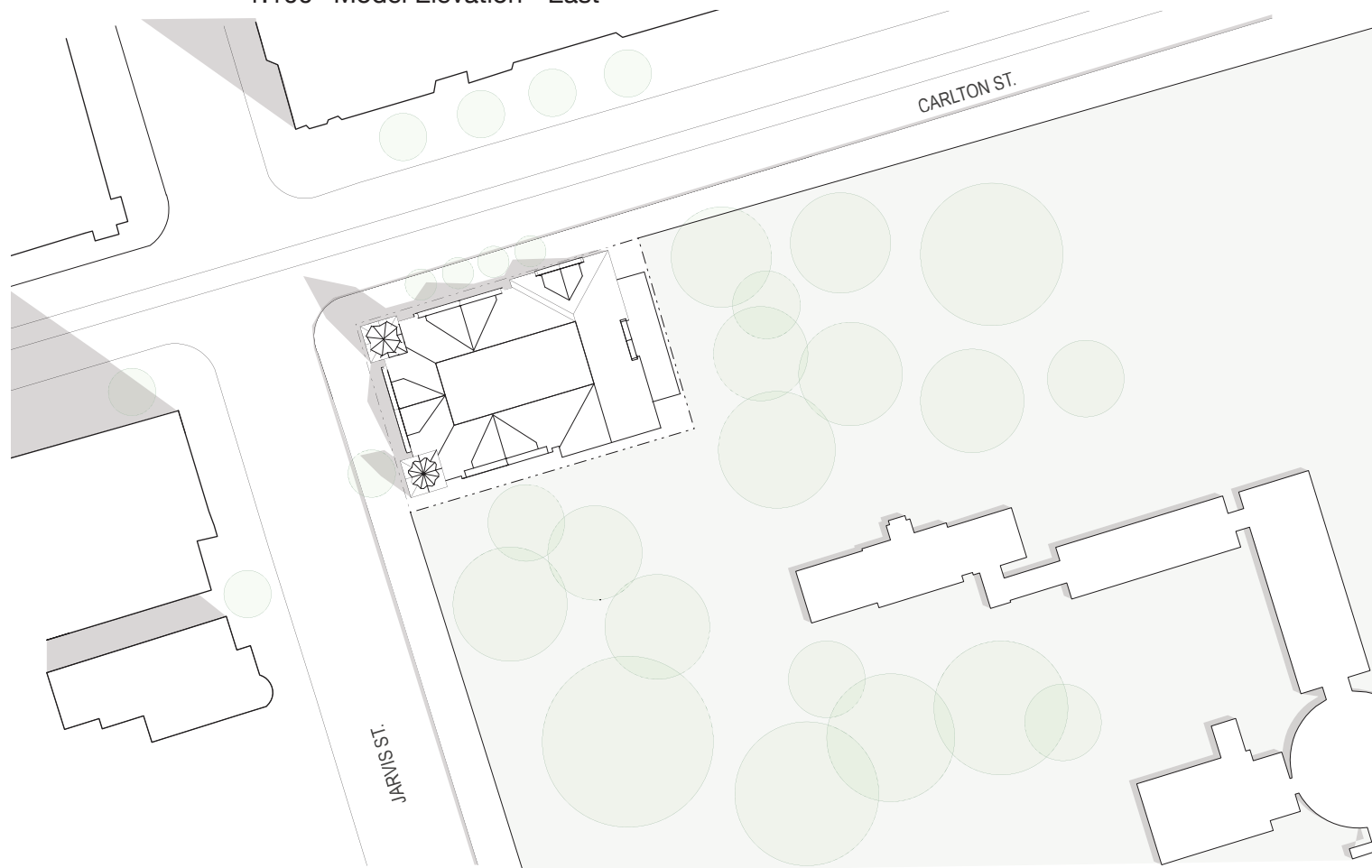
*Appendix*

Final Drawings  
Design Proposal 1  
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Model Photos

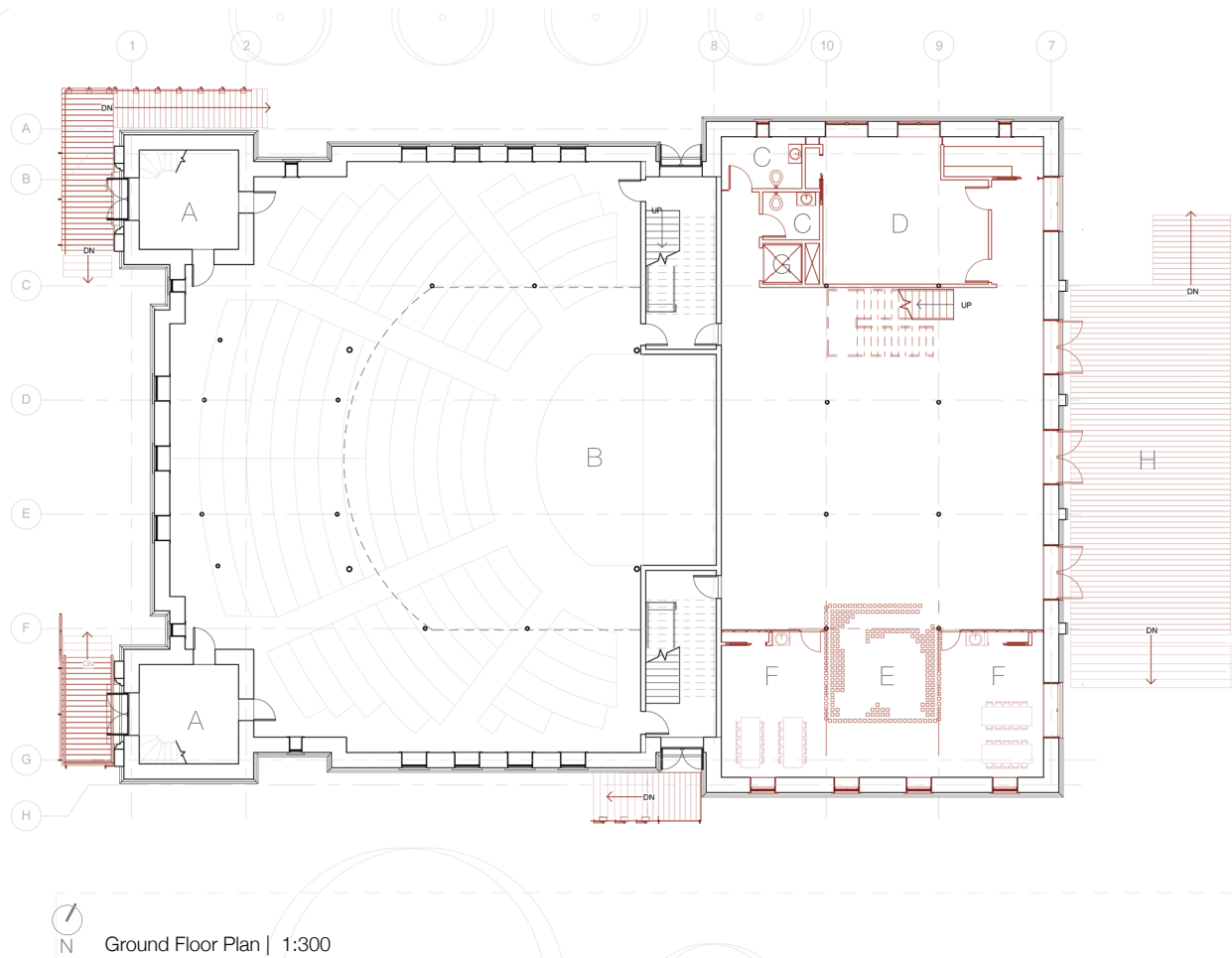


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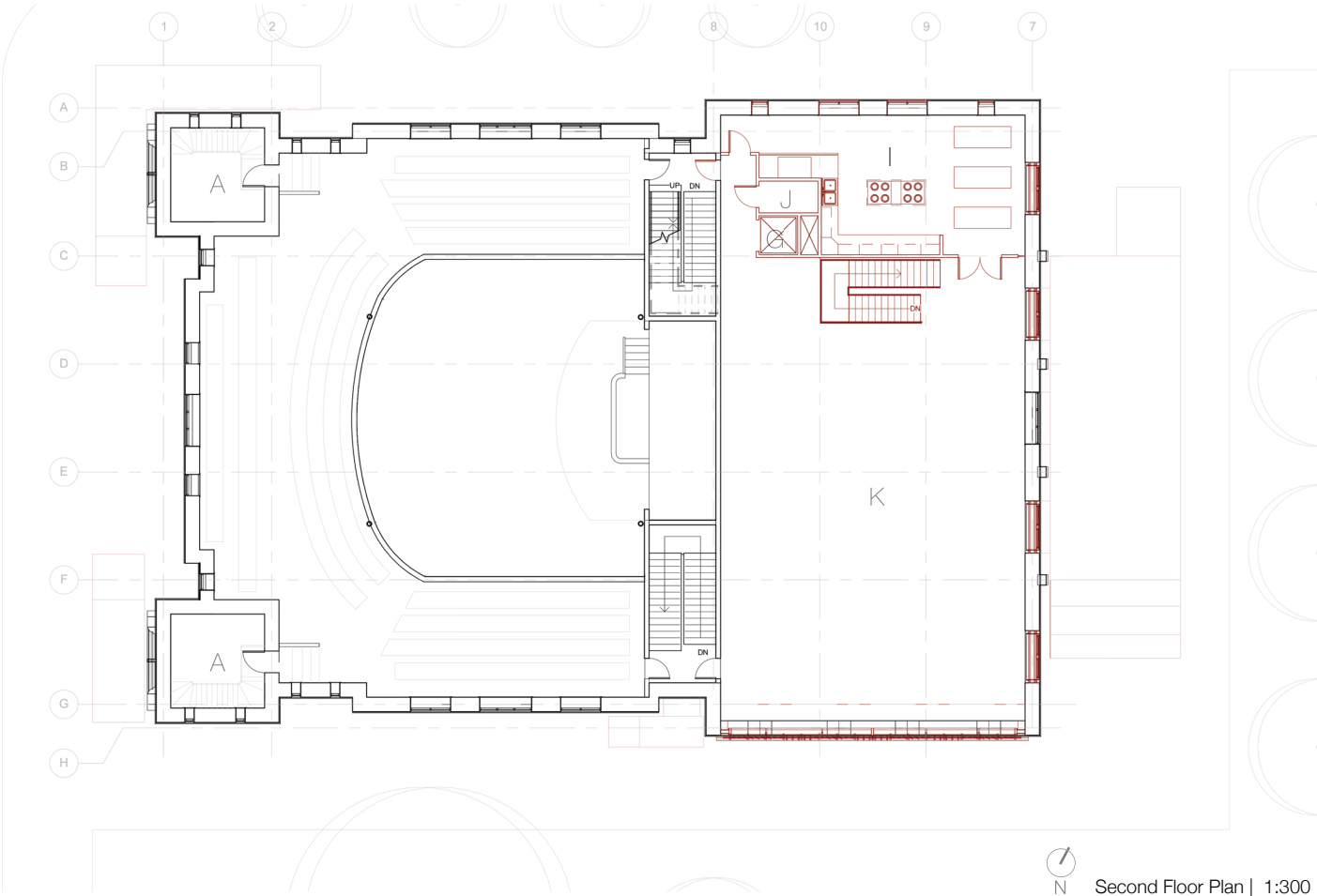
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- E: Chapel
- F: Classroom
- G: Elevator
- H: Outdoor Patio
- I: Kitchen
- J: Storage Room
- K: Community Space



N Second Floor Plan | 1:300



North Elevation | 1:300



West Elevation | 1:300





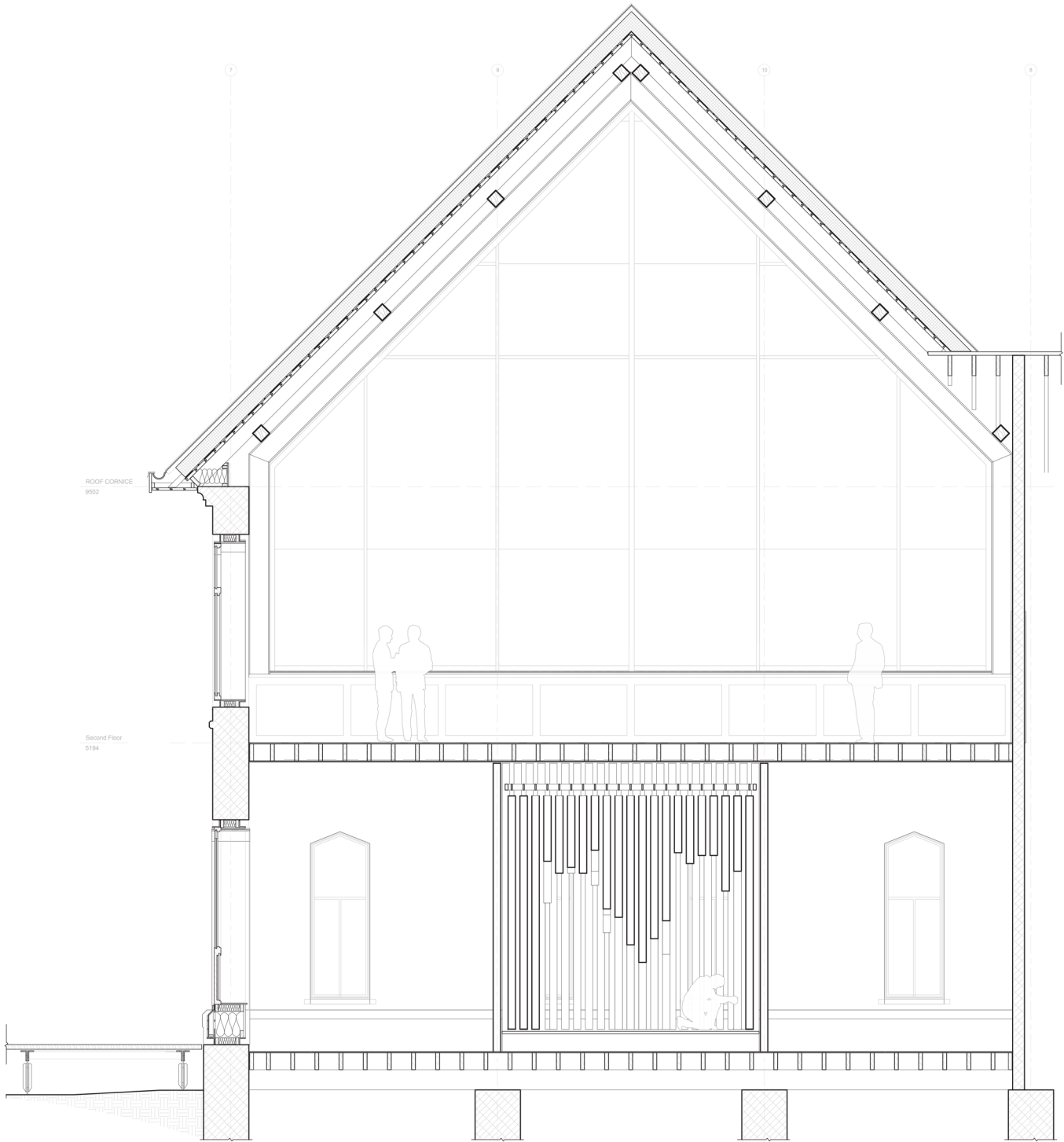
South Elevation | 1:300



East Elevation | 1:300



East - West Section | 1:300

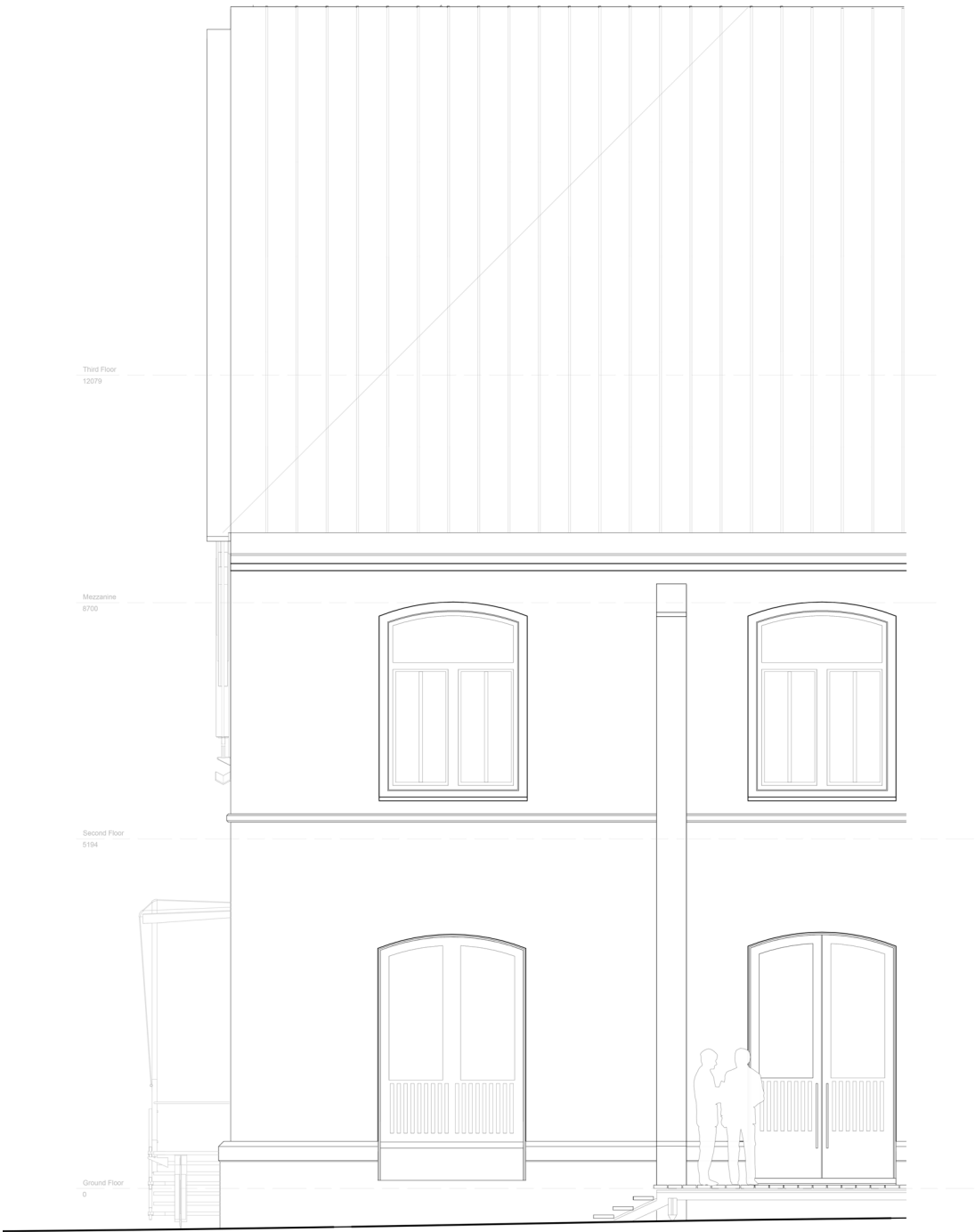


East - West Detail Section | 1:100



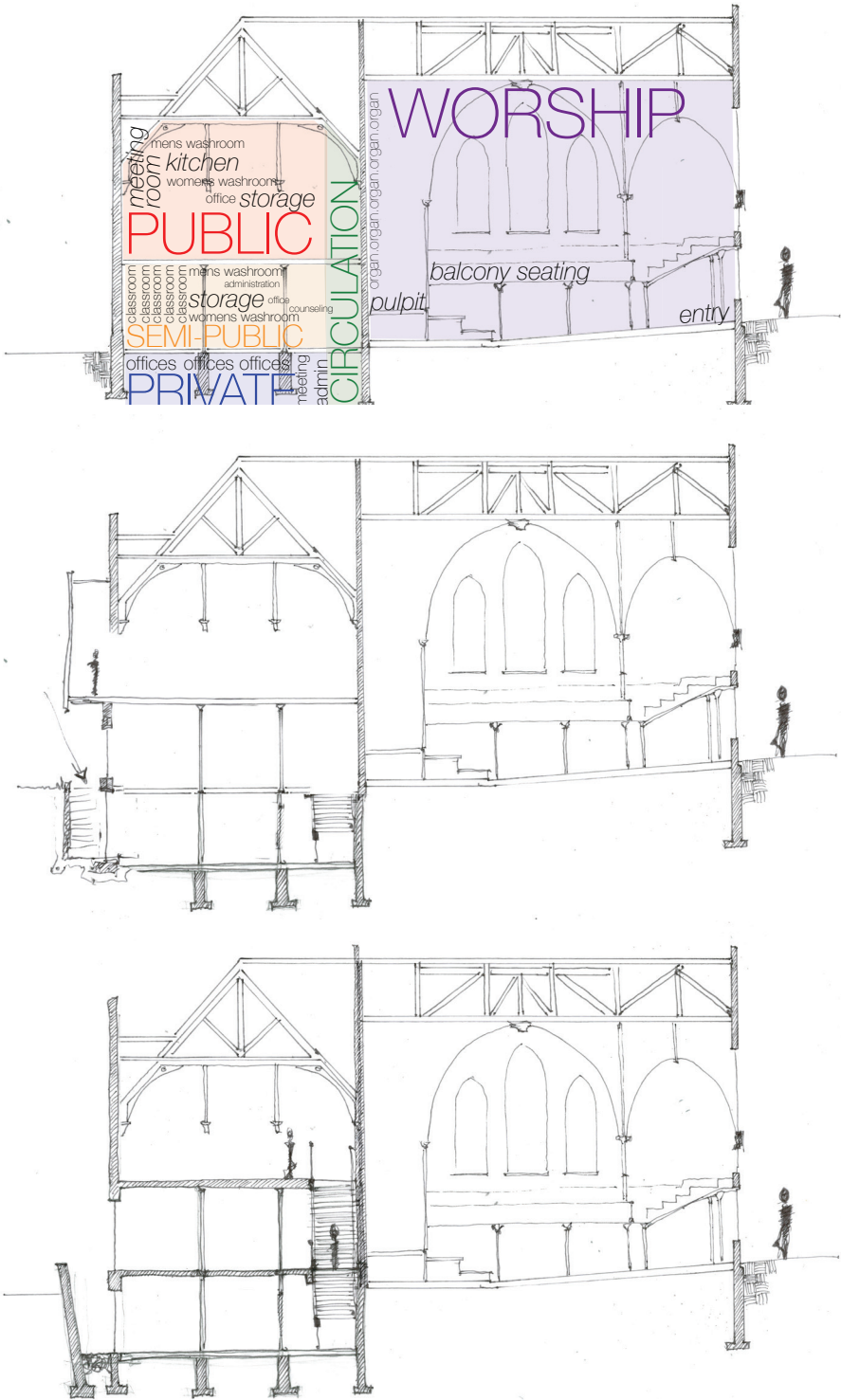


Model - South Elevation | 1:100



Model - East Elevation | 1:100



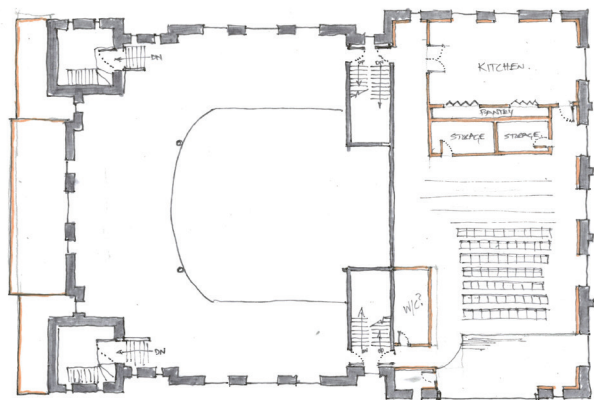


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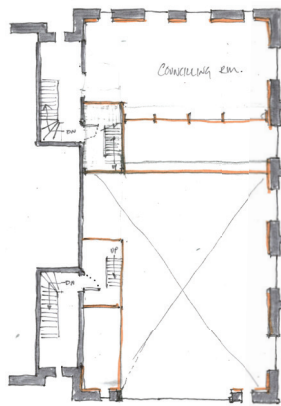




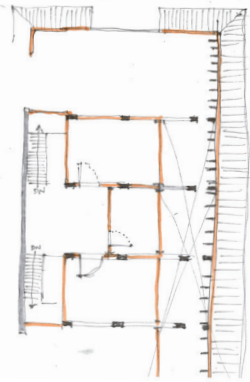
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0 1 3 8m | SECOND FLOOR

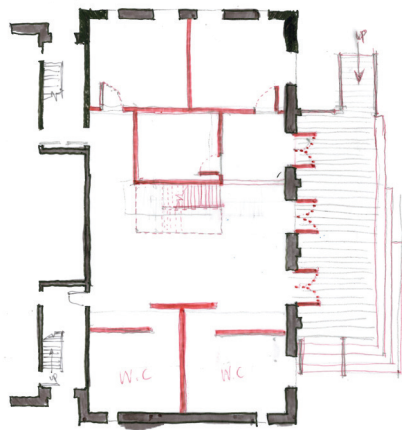


0 1 3 8m | MESSING FLOOR

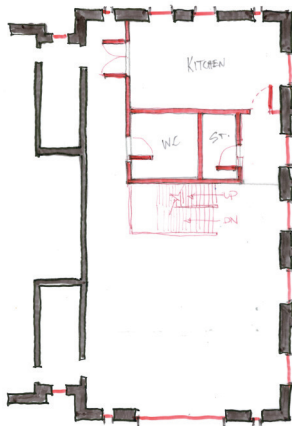


SOUTH ELEVATION

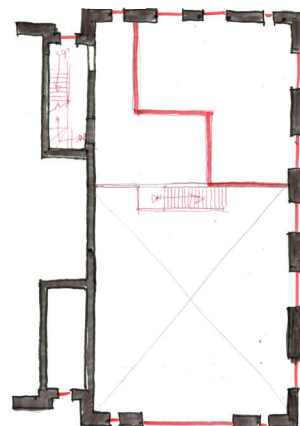
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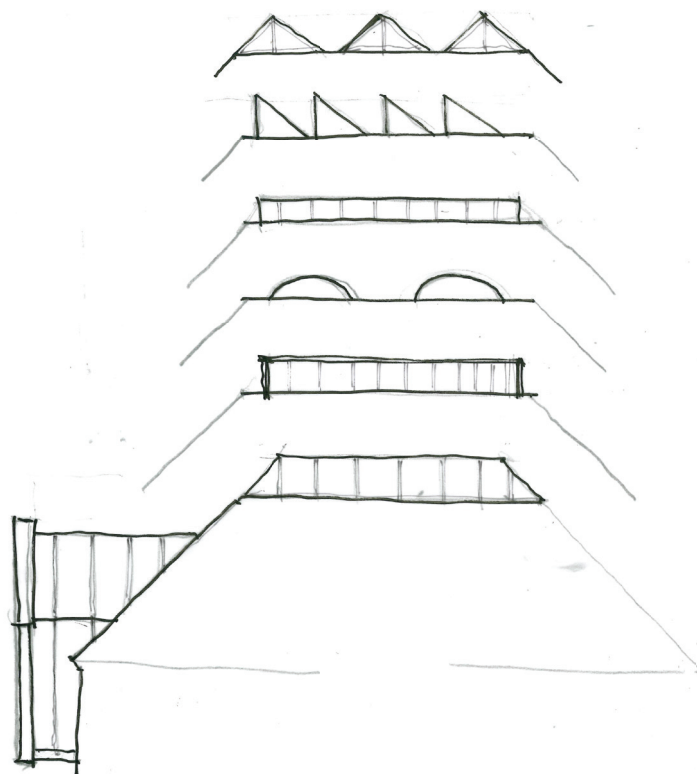
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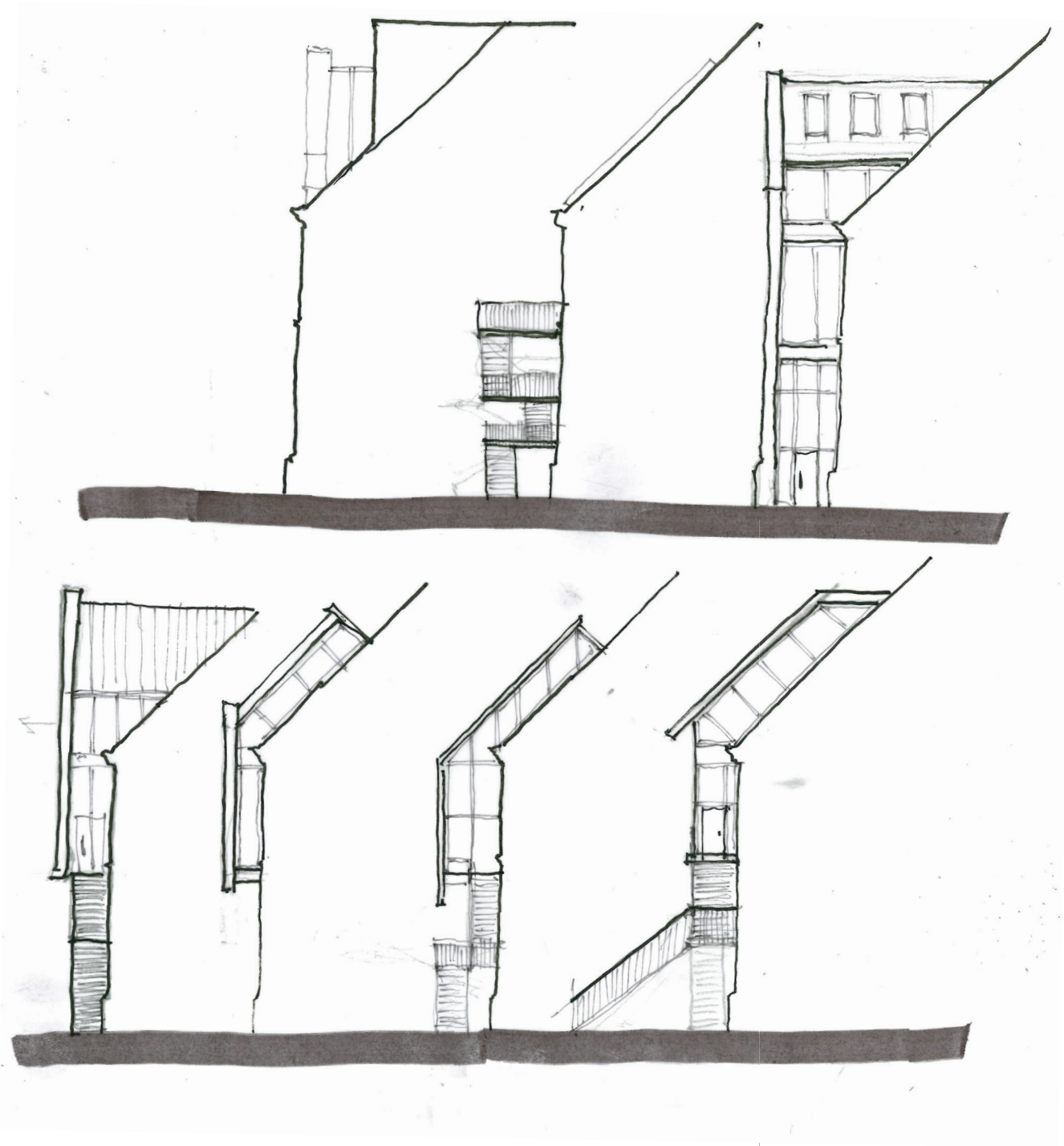


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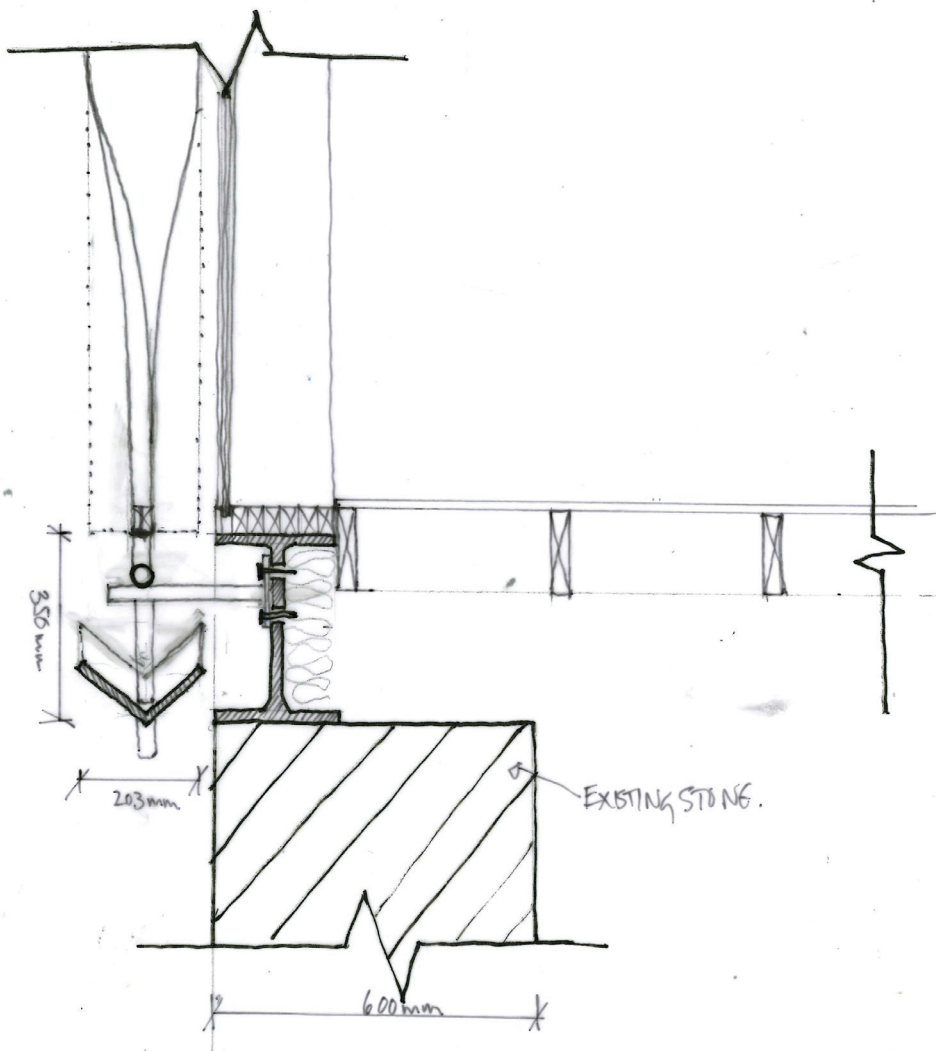
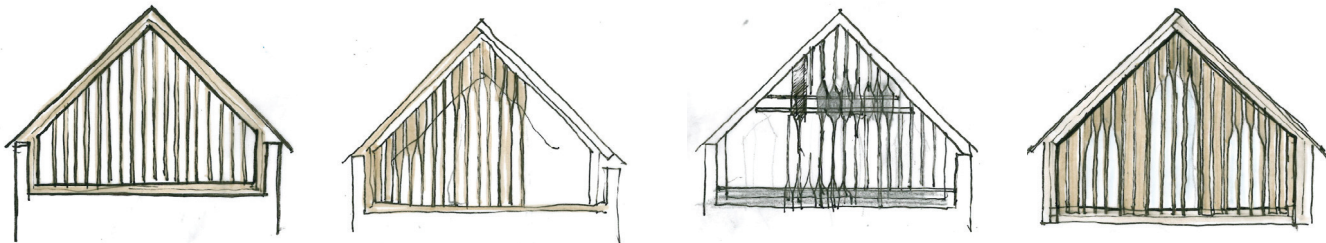
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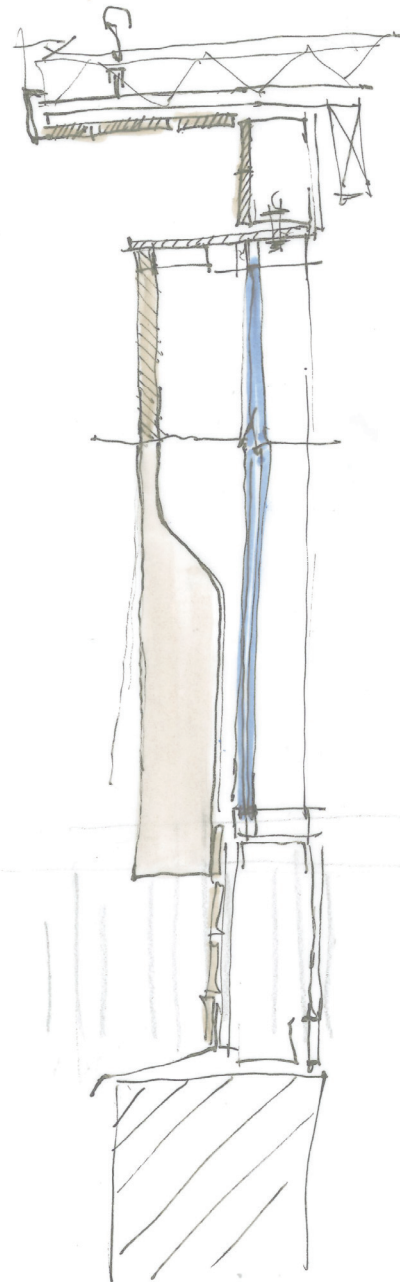
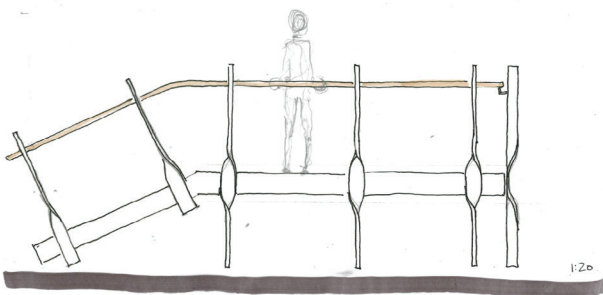
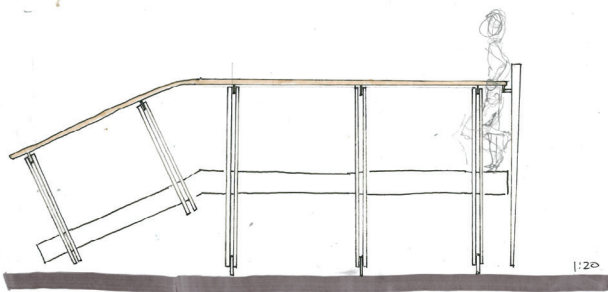
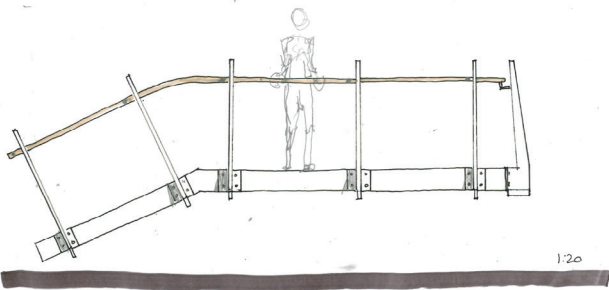
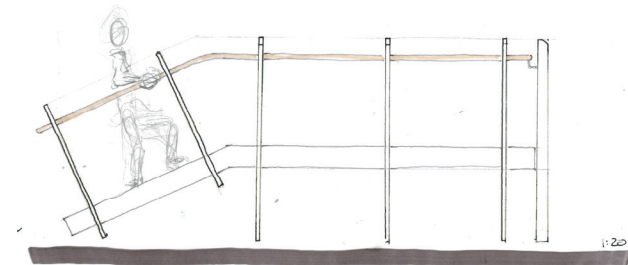
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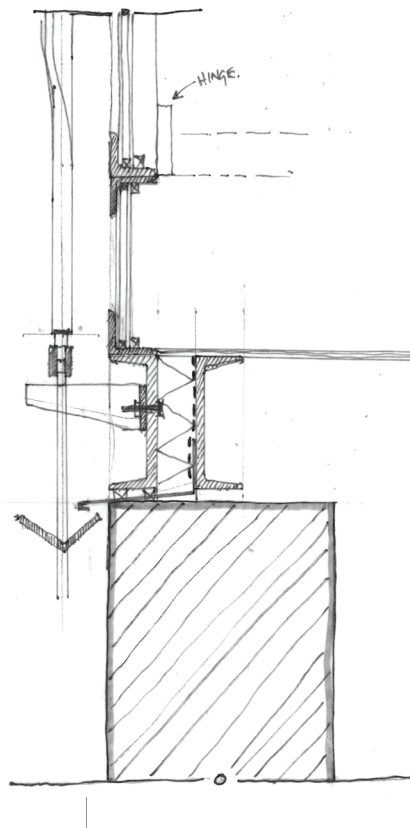
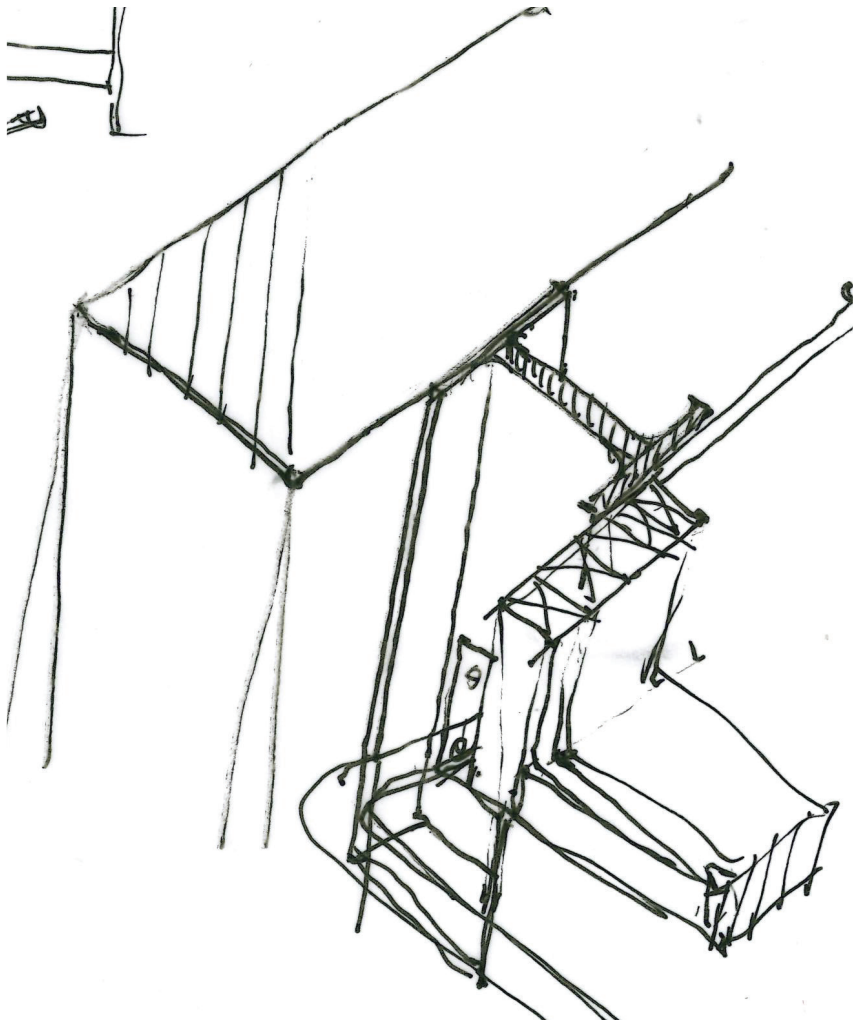
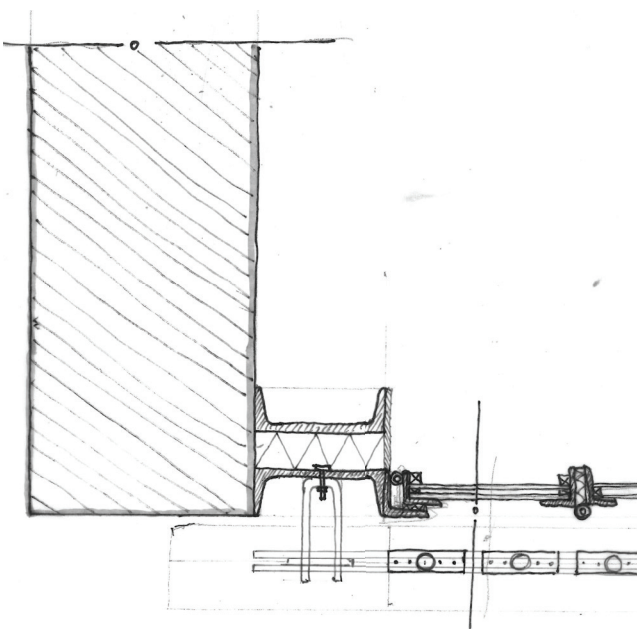


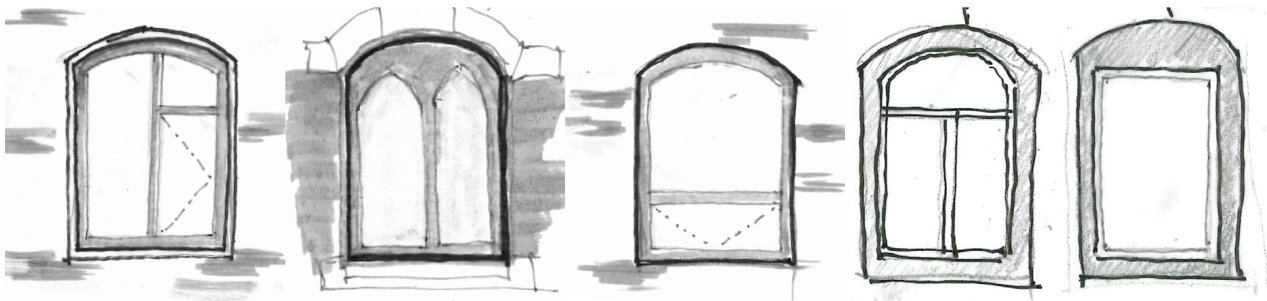
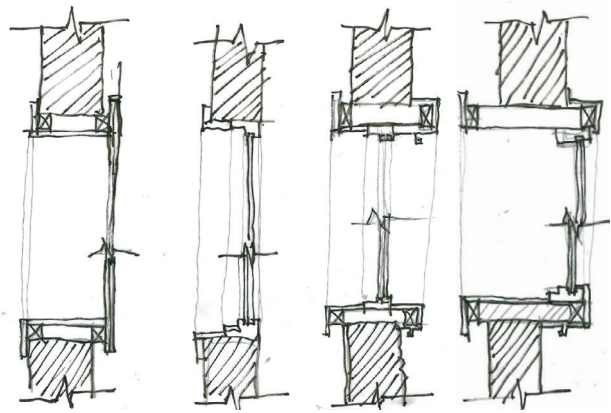




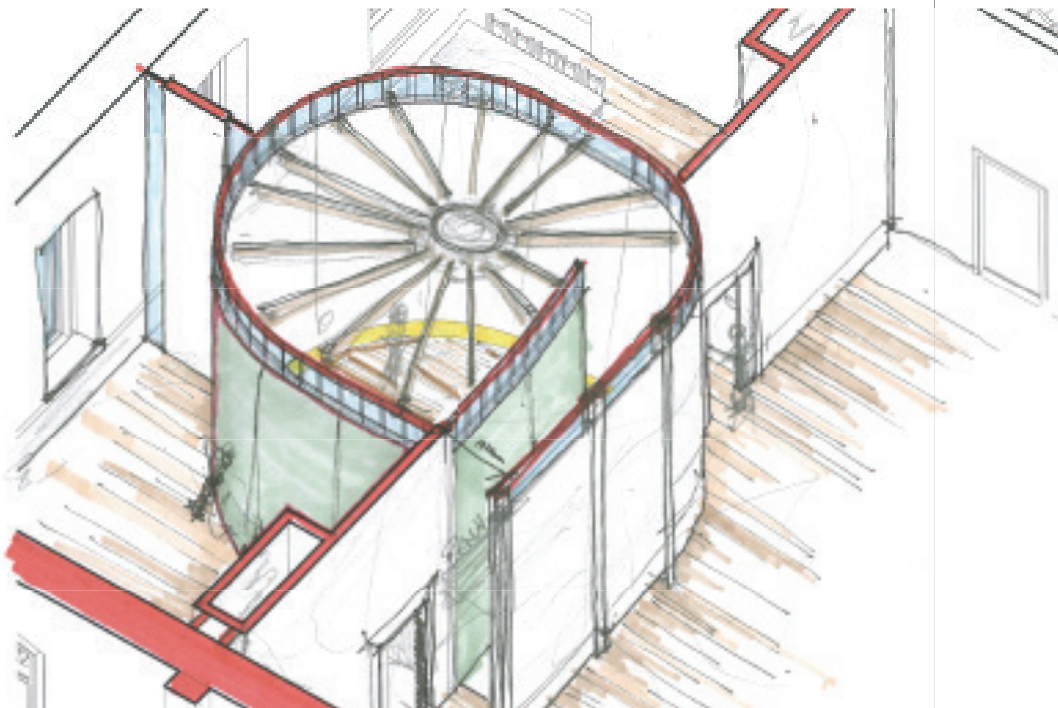
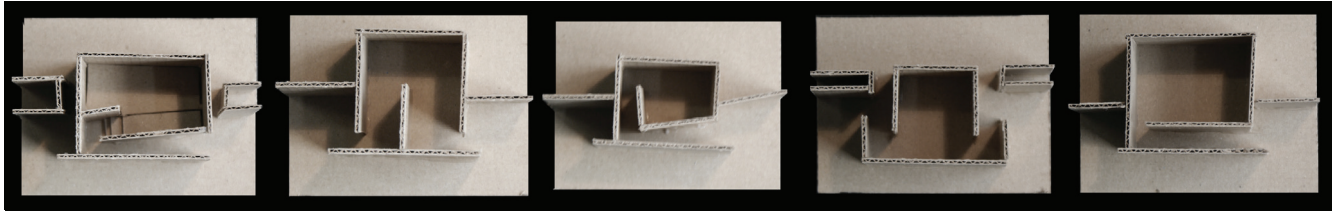
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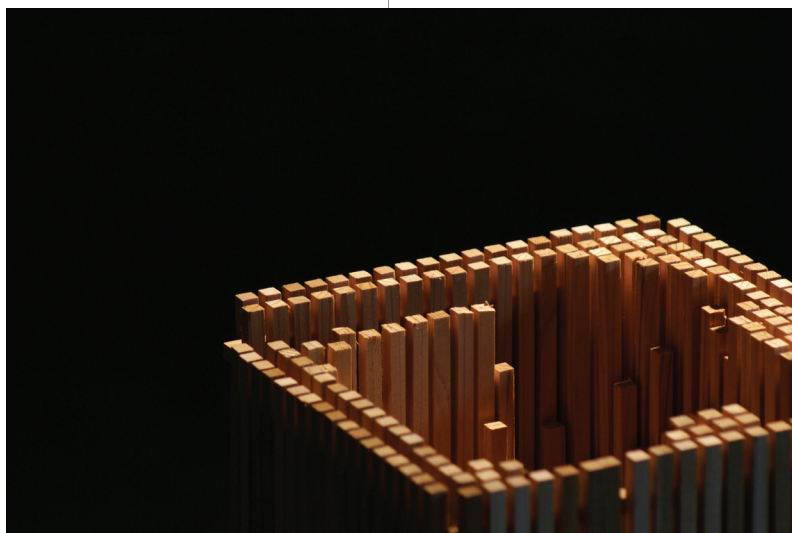
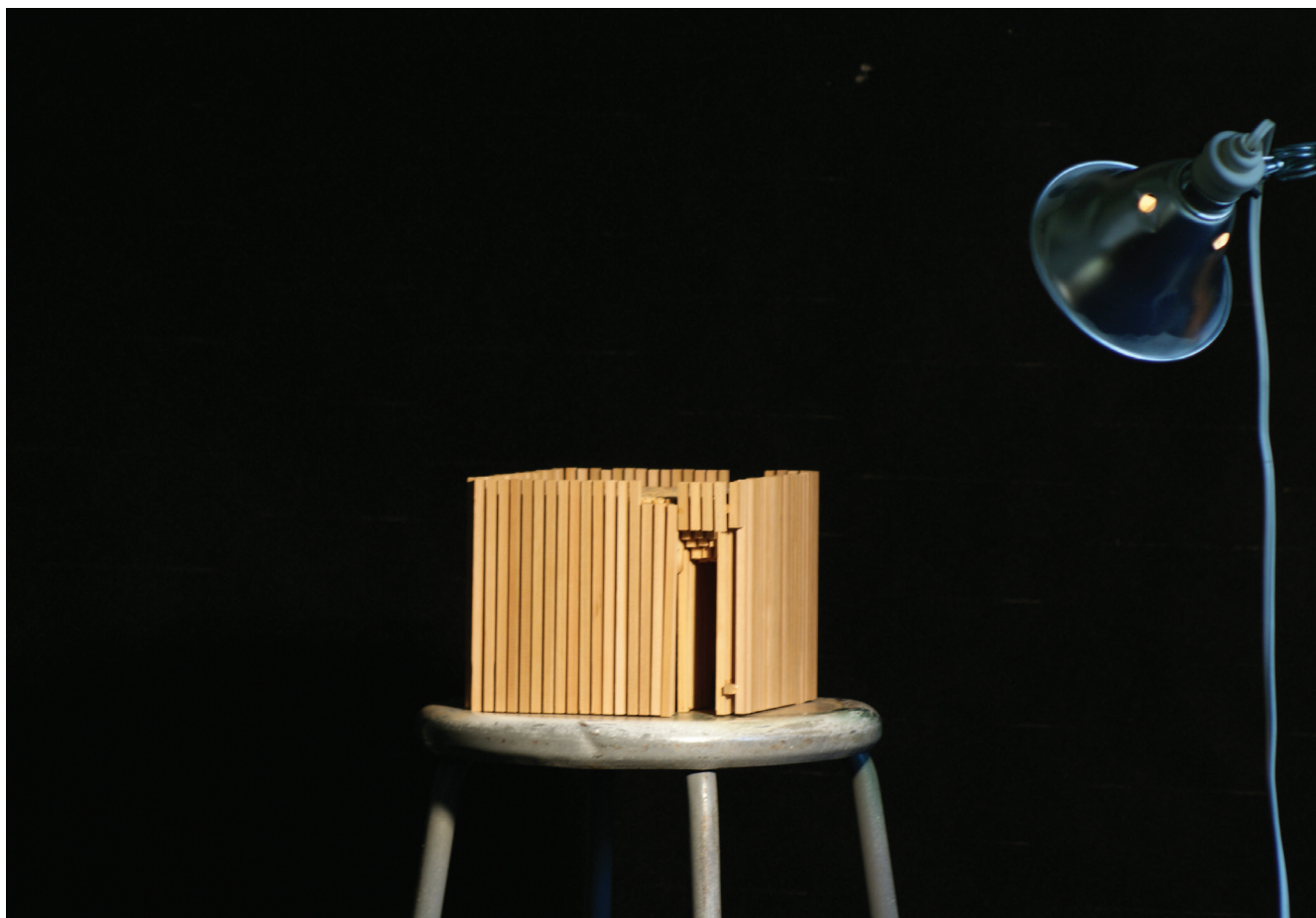










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Source: Plummer, Henry. Stillness & Light: The Silent Eloquence of Shaker Architecture. Indiana University Press. (2009). 55.

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