the redefinition and relevance of craft in contemporary production
Craft & Architecture:  
The Redefinition and Relevance of Craft in Contemporary Production  

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Masters of Science in Architecture Graduation Thesis  
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MSc Track: Architecture || Studio: Explore Lab  

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I would not argue for the inclusion of craft not only as a practical application, but for craft as a process of thought, and the presence of the hand.

I would say it comes down to human intentionality. And care, and the heart and compassion that goes into it, and I don’t think there is any reason to romanticize craft and natural materials

- Juhani Pallasmaa
This is the research portion of my graduation thesis. The project came forth from a personal fascination with heritage, quality, and materials. I often lament the state of our built environment, where cookie-cutter housing, shoddy construction, and disregard for material properties seem commonplace. This thesis is a plea for architecture of a different kind: one where connection to context is required, where materials are suitably used, and where high quality is the standard. I hope to convince you that the term *craft* encompasses the intention, thoroughness, care, and skill that go into making a product of lasting value, and that *craft architecture* implies an architecture built with these traits defining the design and building process. I hope you'll join me in pleading for more craft architecture!

Many thanks go out to my research mentor Peter Koorstra. From year one he has been part of my academic career, never ceasing to encourage and guide me through the ups and downs of architecture school. His comments and insights pushed me to think further than I could have anticipated. His advice and patience has been greatly appreciated.

Many thanks also to my design mentor Robert Nottrot, for his amazing ability to always know the right thing to say and to find the balance between stern and sweet. His intuitive design sense is something I aspire to someday command.

My third mentor, Ype Cuperus, has my thanks for his patience and his interest in every aspect of the project. He went above and beyond what I expected and being able to discuss elements across the board was very helpful.

A huge thanks also to my family, who somehow never cease to believe in me no matter how hard I try to convince them otherwise. Thanks to my friends, for their listening ears and helpful advice, and to Wouter, for his never-ending patience, optimism, and love.
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PART 0
RESEARCH
PROPOSAL
Introduction

Looking around, the term *craft* seems to be everywhere: craft beer, craft coffee, craft bread, craft furniture, craft bicycles, craft markets, craft festivals, craft-you-name-it. Craft and craftsmanship seem to be making a serious comeback.

Since the onset of the Modern Era and the Industrial Revolution of the 18th century, craftsmanship has functioned as a pillar concept opposite industrialism or mass-manufacture. In the 19th and early 20th centuries, products were either crafted – high quality and expensive – or mass-manufactured – low quality and cheap. However, manufacturing techniques evolved and machines became quite capable of making beautiful, high quality objects. The craftsman thus is replaced by the Designer with a capital D in the quality v quantity debate. The Designer, or Starchitect in the case of architecture, becomes an untouchable king of production, able to dictate his designs to the market. Craftsmanship is pushed to the sidelines as the traditionalist, ideological opposite of manufacturing.

In the past decade or so, however, the reign of the Designer is waning. More and more, the market (read: users) dictates the product and product design becomes an ongoing, participatory process. Additionally, the Digital Age means manufacturing and production processes are completely changing. Techniques like laser printing and 3D-printing are making small-scale production possible and accessible to nearly everyone. Makers design a product, which via crowd-sourcing gets modified or redesigned by users. Crowd-funding and direct, small-scale investments make this financially possible. Interestingly, what I’m describing here is actually a similar system to what production looked like pre-industrialization, where makers and users are one and the same. Have we finally entered a Post-Industrial Era? Perhaps. Or perhaps the revival of terms like *craftsmanship* and *artisanship* is our collective rejection
“Craftsmanship’ may suggest a way of life that waned with the advent of industrial society – but this is misleading. Craftsmanship names an enduring, basic human impulse, the desire to do a job well for its own sake.”

–Richard Sennett, The Craftsman
of the one-size-fits-all philosophy that reigned supreme in the last half of the 20th century.

Craftsmanship is now coming back from the sidelines into the ring, albeit redefined and not necessarily to fight. The definition of craft according to the Merriam-Webster Dictionary is: “an activity that involves making something in a skillful way by using your hands.” This definition is no longer applicable today. Digital technology makes the design and production of high-quality and custom-made ‘crafted’ products possible, hand-made not a requirement (Cardoso, 2008).

With the humanifying “using your hands” bit gone, what then defines craft? A machine can “make something in a skillful way,” often better than human hands. A new definition of craft and craftsmanship is necessary. In 2008, the anthropologist Richard Sennett published *The Craftsman*, in which he examines craft beyond being a production-based concept. He argues that “craftsmanship names an enduring, basic human impulse, the desire to do a job well for its own sake.” He argues that the distinction lies with the motivation that informs the production rather than the production itself (2008). Part of that is the thoroughness and integrity that define a product, and its ability to stand the test of time not only through durability but also aesthetic beauty. In simpler terms, *craft* is the reason a product has lasting value.

**Problem Description**

To think about craft in the context of architecture, we must translate ‘product’ to ‘building’ and ‘production process’ to ‘building process’. Buildings, however, differ from products in other production fields like carpentry for example, in that they are of a much more permanent nature. Lasting value is thus of utmost importance in the context of architecture. Cookie-cutter houses with complete disregard for context, glass monoliths with huge thermal needs, giant McMansions full of
shoddy construction are all products of the mass-production that characterized the past century. The recent revitalization of craft in other production fields will surely also happen in architecture, but what will that look like? **What is craft architecture?**

**Project Goals**

The goal of my research has two parts. The first is to redefine craft and craftsmanship and to examine how and where it can exist along side mass-production within our digitalized and industrialized society. This means studying the history of craftsmanship and reexamining it. It will also mean looking beyond the production process and into the motivation behind the process, a la Richard Sennett.

The second is to place the new definition of craftsmanship in the context of architecture. How does craft inform the way architects can produce better buildings with lasting value?

The design goal sounds rather simple: to produce craft architecture. It remains to be determined what exactly that will look like, though here the ‘production process’ will be most important.

To emphasize the theme of the revitalization of craftsmanship, my design will house a craft brewery, also a great example of a process where traditional craftsmanship, modern manufacturing, and contemporary craftsmanship come together.
Research Hypothesis:

Craftsmanship is experiencing a revitalization and redefinition process that renders it a relevant position in our post-modern society, including within the field of architecture.

Historical

What is the history of craftsmanship and industrialism?
What defines craftsmanship versus art? Versus design?

Architectural

What does craftsmanship mean in the context of architecture?
What is defines craft architecture versus simply good architecture?
Does the architectural detail showcase craftsmanship? How?

Literature Study

RESEARCH PAPER

What are examples of craft architecture and how can this inform my design?

Case Study

DESIGN

Part 0 - Research Proposal
Research Hypothesis

Craftsmanship is experiencing a revitalization and redefinition process that renders it relevant in our post-modern society, including within the field of architecture.

Some subquestions to narrow down my research:

What is the history of craftsmanship and industrialism?
What defines craftsmanship versus art? Versus design?
What defines craftsmanship in architecture versus simply good architecture?
What is the relation of craft and skill?
What are examples of craftsmanship in architecture and how can this inform my design?

Research Methods

My research will be mostly done through literature study. Books and articles on craftsmanship, both from the period of the historical revitalization in the 19th century arts and crafts movement and more current writings. The starting point will be Richard Sennett’s The Craftsman, written in 2008 and the beginning of a new wave of writings on craft. I will be reading the texts through the lens of an architect, to define what crafts means for architecture specifically. Hopefully, a clear understanding of what the new definition of craftsmanship is and how it translates to craft architecture will emerge.

Armed with this understanding I will identify examples of contemporary craft architecture and analyze them in a series of case studies. A visual representation of my research method is shown on the left.
### Pre-P2 Planning

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PART I
CRAFT
Introduction: What is Craft?

When we think of craft or craftsmen, we might think of pottery makers in ancient Greece, carpenters’ guilds in the Middle Ages, or Italian goldsmiths in the Renaissance. Artisan work has been around since the beginning of humankind. However, the term “craft” and all of the associations we have with it today, was not around until the invention of machine production at the dawn of the Modern Era. Glen Adamson, curator of the Victoria and Albert Museum and prolific writer on the topic of craft, argues this point quite vehemently in his book The Invention of Craft: “it emerged as a coherent idea, a defined terrain, only as industry’s opposite number, or “other.”” Before 1750, everything was made by hand; craft was not a separate concept from any other kind of production. With the invention of mechanization, mass production, and factories came also the invention of craft as a paradigm in itself, in juxtaposition to industry. This was a result of major discursive shifts that brought us out of medieval times and into the Modern Age.

An important contextual note: when we speak of the Modern Age and the Industrial Revolution, we are talking about events and changes that took place in Europe and North America, starting with the Italian Renaissance in the 15th century. On other continents, industrialization occurred later and after the Western model. Craft, as a concept, was invented by Europeans at the dawn of the Modern Era. There was and is absolutely beautiful craftwork being produced all over the world. The scope of this paper, however, will extend only to Western Europe and North America.

Identifying craft as a Modern invention is important because it allows us to understand the way craft is and has been viewed in the Post-Modern Era (after 1945). Today, the word craft carries with it certain assumptions and implications; a rejection of modern technology, for instance, or a rigid use of traditional production processes. Another association is
the ‘arts and crafts’ kind: homemade DIY greeting cards or pillowcases. These associations belie the actual story of craft and diminish it to mere ‘traditional hand work’. A redefinition is needed.

In this chapter I will examine craft throughout history to find where craft got its current definition and associations, wrong or right.

I will start in the Middle Ages, in the craftsman’s workshop, a hierarchical system based on authority and ritual. The structure of the workshop changes as society’s focus shifts from God to the individual, and originality and autonomy become key factors in the craft discourse. Here, also, I will discuss the separation of craft into art and craft. As we move into the scientific period of the Enlightenment, we start to see a change in the way craft is being documented. It suddenly becomes more important to write and draw, to be able to show and explain the intricacies of a craft like glass blowing on paper. Diderot’s *Encyclopédie* is an illustrious example of this trend.

The Enlightenment marks the start of the Modern Era, a period of about 400 years where European society changed from the Feudal, Medieval system to the industrial capitalistic society that we still live in. It is during this period that craft as we understand it was ‘invented’ and when it received the traditionalist, idealistic, second-class status that it still carries. Part of this was the division of knowledge into two classes: tacit and explicit. Tacit knowledge is knowledge that cannot be written or spoken, but must be learned by observing and doing. Explicit knowledge is the opposite, it can be conveyed through writing or drawing. In the 18th century a clear hierarchy between the two was made. The result of this was the split of craft into engineering/design and workmanship, the way it still is today.

Lastly, I will examine the Post-Modern era, including the Digital Age. This is where the discourse on craft begins to change. The notion that
Ancient Era
3300 BC - 500 AD

Prehistoric Era
before 3300 BC

Ancient Greece
3300BC - 31BC

Ancient Rome
753BC - 478AD

Middle Ages
500 - 1500

Early Middle Ages
500-1000

High Medieval Times
1000 - 1500

Renaissance
1330-1700

Formation of cities: communities of craftsmen form around Christian hubs
Guild System: a communal system based on hierarchy and authority
Humanism: introduction of autonomy and originality into the craftsman's workshop
craft must be handwork is challenged by digital technology, and the focus shifts from the designer to the designer-maker. At this point we can hopefully understand craft in a different way and redefine it for current and future production. Perhaps understanding, as Adamson does, that “craft is not a movement or a field, but rather a set of concerns that is implicated across many types of cultural production.”

Pre-modern Craft

The Medieval Workshop: Authority

The successful workshop will establish legitimate authority in the flesh, not in rights or duties set down on paper. In the failed workshop, subordinates... will become demoralized or... grow angry in the physical presence of those whom they must nonetheless obey.”

The Middle Ages (ca. 500-1500 AD), with its system of guilds, are perhaps the most often associated with craftsmanship. The romantic image of a blacksmith in his shop, bearded, wearing a leather apron and swinging his large hammer over an anvil while his apprentices work the bellows in the background, is easily pictured. As idealistic as it seems, there is some truth to this image. Over a period of about five centuries, aided by the Catholic Church and agricultural developments, power slowly shifted from the Mediterranean region to Western Europe. Starting around 1100, an era of economic and cultural growth began that saw small, informal settlements that had sprung up around a church or monastery, grow to be trade hubs with markets, banks, and guilds (see image 1, an example of a Medieval city around 1300).

Guilds were strictly hierarchical organizations that set standards for quality, prices, wages and working conditions of their members. They had substantial economic and social power within medieval society, largely sustained by “hands-on transmission of knowledge from generation to
PART I - CRAFT

Image 1 - Nuremburg around 1300 - showing the typical urban pattern of cities in the middle ages: churches and monasteries with houses grouped around them, surrounded by a defensive wall. This is the environment that spawned the guild system that dictated the development of craft for centuries.
generation.” This meant that the leaders of the guilds were (exclusively) men of serious status and influence, on a similar level as the leaders of the church. During the middle ages, the church was an all-encompassing presence, wielding not only religious power but worldly power as well. Much of medieval daily life was structured around Christian rites and rituals, including that of craftsmen.

Within the artisan’s workshops there reigned a similar system of male authority, according to a strict hierarchy of masters, journeymen, and apprentices. A young boy, aged 14 or so, would start his career as an apprentice and work for five to nine years under the direction of the journeymen and master until he could prove his worth in a chef d’oeuvre. Once progressed to journeyman, he would work for another five to ten years until he could demonstrate, by way of a chef d’oeuvre élevé, that he was worthy of the title ‘master craftsman’. The master craftsman had full authority over his workshop. He alone possessed all of the necessary knowledge of his craft. The rigid system of authority was kept in place by honor and reputation: the quality of a master’s technical skills was a direct reflection of his ethics. The apprentice, in turn, showed ethical behavior by keeping his master’s trade secrets. Secrecy was quite important in the guild system, even enforced by it. Only those officially members of the guild were privy to production techniques and knowledge.

Overall, the medieval guild was a system of community, based on the authority that the skills of the master craftsmen demanded. The tacit knowledge that often marks craft, was transferred implicitly by watching and copying, and by showing and correcting. If a certain master couldn’t convey or teach a technique correctly, a journeyman could learn from another, to eventually amass a complete skill set of his own. This skill set, and the products it produced, were regulated and controlled by the guild as a community. This communal nature of workshops would change with the onset of the Renaissance.
Image 2 - Etienne Delaune - Goldsmith’s Shop in Augsburg, 1576
The Renaissance (14th-17th century) saw a move away from all-encompassing Christianity and toward an emphasis on the human individual. This ‘humanism’ brought with it a dichotomy between the traditional craftsman, focused outward to his community, and the artist, focused inward on himself. It meant that autonomy, instead of authority, gained the upper hand in the artist’s workshop. Autonomy is the “drive from within that impels us to work in an expressive way, by ourselves.” This goes hand in hand with originality, a trait that also became increasingly important during the Renaissance. The craftsman’s workshop in fact stayed more or less the same, filled with apprentices and journeymen, although the masters now put value on the originality of the work and claimed it as their own. This focus on the individual also meant a universal need to distinguish oneself. Patrons and artisans began relationships that were much more personal than ever before.

More autonomy in the workshop meant that the organizational structure changed. Craftsmen climbed the social ladder if they had personal relationships with rich patrons, who paid handsomely for personalized products from the best craftsmen. Personal reputation and distinction became important. The medieval guilds’ collective system named where a dagger or a cup was made, not who had made it. In the Renaissance, craftsmen started signing their products. Craft workshops became more about the master’s distinctive talents and his ability to create something original. Originality was both a blessing and a curse for craft workshops during this period. On the one hand, it lent an element of autonomy to the craftsman himself, freeing him from the strict rituals and regulations that the Guilds imposed. On the other, it meant that workshop had a much shorter lifespan, because after the master had passed away, his singular knowledge was lost. As Sennett describes it:
PART I - CRAFT

Image 3 - Stradivarius in his Workshop (1962) by Aleksey Kravchenko. Shows the lone master in his workshop, no assistants to be found. Autonomy is key, but also the downfall of this workshop.
In a workshop where the master’s individuality and distinctiveness dominates, tacit knowledge is also likely to dominate. Once the master dies, all the clues, moves, and insights he or she has gathered into the totality of the work cannot be reconstructed; there is no way to ask him or her to make the tacit explicit.\textsuperscript{11}

An example of this kind of workshop was the one of famous violinmaker Stradavarius (image 3). He was not able to teach his particular, individual kind of genius to his apprentices and thus the ability to produce violins of his quality died with him. Only he could make them. It is this fundamental shift towards individuality in the artisan’s workshop that created two groups out of what was once one: artists and craftsmen. It also laid the groundwork for what would be a quintessential problem of the Modern Era: collectivity versus individualism.

\textbf{Art v. Craft}

At this moment in the history of craft it is appropriate to discuss the art v. craft debate. This debate exists because artists generally enjoy a higher social status than craftsmen/workmen, and works of art a higher financial status than works of craft. Many authors that write on craft lament its inferior position to fine art, especially deploring the lack of ‘intellectual’ discourse on the subject.\textsuperscript{12}

Especially outspoken among these authors is Howard Risatti, professor of Art (And craft! Don’t forget craft!) History at Virginia Commonwealth University. In his book \textit{A Theory of Craft} he argues that craft is, in fact, art (!) and that it deserves the same ‘intellectualization’ that the field of art has undergone.\textsuperscript{13} He writes that the Renaissance was the time that fine artists broke free of the guild system and art and craft became two separate concepts. The disassociation between manual and intellectual labor divided society into ‘makers’ and ‘thinkers’, craftsmen being the former and artists the latter.\textsuperscript{14} Artists formed art academies (like the
Image 4 - Wim Delvoye. Concrete Mixer, from the Gothic Works series, 2012. Laser-cut stainless steel. 78 x 56.5 x 34 cm. Delvoye comments on the art v craft debate by making a buldozer out steel. A user object made in the gothic-craftman style, made to be displayed in a museum. Is it art? Is it craft? It is art. Not useful, though beautiful and skilfully made.
chique Ecole de Beaux Arts in Paris, founded in 1682), in part to stress the “intellectual foundations of their arts in an attempt to increase their economic and social status.”

Risatti writes that the intellectualization of art is based on a tradition of aesthetic theory that began with ancient Greeks and was revived in the eighteenth century with philosophers such as Alexander Baumgarten, Edmund Burke, and Immanuel Kant. He writes: “what this theoretical and critical discourse has done is provide an intellectual framework within which to ground fine art, to transform it, as it were, from a mere object of trade or handwork into a conceptually and intellectually centered activity.” He pleads a similar intellectual framework for craft. I keep putting ‘intellectual’ in quotations marks because what Risatti really means by it is ‘theoretical’ or ‘literal’ or ‘of an intellect that can be described adequately with difficult words’. I hope to make clear in this thesis that craft is for a large part made up of different kind of intellect than the kind Risatti is hoping to equate with it (more on craft and different kinds of intellect later). As Sennett eloquently summarizes how an ‘intellectual framework’ would not work for craft:

> Craftwork establishes a realm of skill and knowledge perhaps beyond human verbal capacities to explain. Here is a, perhaps the, fundamental human limit: language is not an adequate “mirror-tool” for the physical movements of the human body.

Glen Adamson writes in *The Invention of Craft*, however, that though this separation occurred, “the habit of defining craft principally in opposition to fine art is, in fact, a largely twentieth-century, even post-1945, tendency,” mainly due to the fact that only since that time we have encountered craft in museums, along side fine art. The transformation of a small group of craftsman into artists isn’t what regaled craft to an inferior position. That happened a few hundred years later, at the beginning of the Modern Era, with the Enlightenment.

Image 6 - Niels van Eick and Mirian van der Lubbe, Droog Design, Godogan table, 2006. Is it craft? Is it art? This one is tricky! A beautifully crafted table that can be useful. Though not THAT useful, since we can only use half. Grey zone!
I don’t think the art v. craft debate is something to be dismissed or taken lightly, and there are many different ways to define the line between them. For the purpose of this thesis, however, I will simplify it to the following: craft is skilled work and material-based knowledge done by artisans to produce a useful product on a relatively small scale. Art is the physical expression of an artist resulting in a non-useful product. Without craft there is no art, craft is essential to art the same way words are essential to poetry. Shown on the pages to the left there is a clear example of fine art, of craft, and one that could be both!
PART I - CRAFT

Modern Era
1500 - 1945

Age of Explorers
1500 - 1700

Enlightenment
1715 - 1789

Industrial Revolution
1760-1840

Romantic Period
1770 - 1850

Victorian Period
1837 - 1901

World Wars Period
1914 - 1945

Age of Reason
Communication of ideas and techniques is widespread. Draftsmanship becomes an essential element of craftsmanship

Invention Craftsmanship as a paradigm to industrial production. Division of labor becomes commonplace

Arts & Crafts Movement
Ruskin and Morris romanticize craft and call for a regression to traditional ways of production.

Age of the Reveal
Secrecy and mystery are looked down upon, making skill and tacit knowledge less respected.

Age of Mass Production
Mass production really gets going, large scale factories are commonplace.

Rise of the Designer
Designers become the new 'master craftsmen'.
Modern Craft

The conventional story of craft and industry stems from the early Modern Era (1500-1945) and goes something like this: a noble craftsman, hard at work in his picturesque workshop filled with tradition, toils to make honest products. The scene is rudely disturbed by a cloud of black smoke rising in the background and the scenic workshop is replaced by a large, dark space crawling with tired-looking men repeating menial tasks while a big-bellied, top-hatted capitalist looks on from above. The rise of industry, and with it capitalism, has moved his integrity and skill to the sidelines and championed quantity over quality. Then, in rides our hero on his white horse: the high-minded craft reformer of the Arts and Crafts movement, looking to restore craftsmen to their rightful place and undo the terrible wrongs industry has brought. Among these heroes were John Ruskin and William Morris, the former looking to restore an intensely Romantic version of craftsmanship and the latter a utopian socialist with ideals to reform society. After them many more followed, approaching from slightly different angles but all coming down to the same baseline: craft is the fundamental opposite of industrial production.19

In actuality, this history is a lot more nuanced and to some extent simply not true. Morris and Ruskin ignored subtleties in machine-hand relationships, like the ways in which machines extended the reach of hand skills. They also kept arguing that craft was being replaced, that it was fading. Yet this was not the case. On the contrary, craftsmanship was flourishing in the 18th and early 19th centuries, partly due to industrialization and Victorian material culture. Only a small percentage of production processes, like weaving and steel pouring, were mechanized during this time. Most stayed the same until the early 20th century.
Image 7 - A page from Denis Diderot’s Encyclopedia (1751-1753). This page shows the actions of a glass blower, attempting to make his craft understandable. An early start of the growing division between makers and thinkers.
The Age of Reason: Draftsmanship and Design

Around 1500, the invention of the printing press catalyzed many changes in Europe, among which the spread of Protestant ideas. It also meant that knowledge and ideas could be shared much more easily and over much greater distances than ever before. Humanist thinking popularized by the Renaissance led to individuals writing down their experiences and experiments and then being able to publishing them for a wide audience. This allowed a major acceleration in the production process – individuals were now able to build on work previously performed by complete strangers. In this way, James Watt developed the steam engine to a useful extent in the 1780s. He was a craftsman himself, like many if not all inventors and scientists of this era, a fact often forgotten in any discourse on craft. Someone had to build the first (and second, third, fourth…) machines and service them. Cogs, pistons, piping; all were made by skilled metal workers.

The newfound possibility of exchanging information spurred discoveries, experiments, and philosophical thinking. The Enlightenment, as this period came to be called, saw an influx of published works written to enlighten the general public. Denis Diderot’s *L’Encylopedie, ou Dictionnaire Raisonné des Sciences, des Arts et des Métiers* (1751-54) is the first example of production in textual and visual form. In it, Diderot showcases production processes of all kinds, attempting to break each process into a number of steps, with detailed instructions, similar to a cooking book. Interestingly, the illustrations of workspaces are weirdly empty and depersonalized, like a stage. Next to them, the tools of the trade are pinned to the page like an entomologist’s insect specimens. The effect that this had, according to Adamson, is that tradesmen were made out to be homogeneous and interchangeable. Additionally, he argues that the *Encyclopédie* was in essence an attempt to reveal, and thereby control, artisanal secrets. Before the Enlightenment, “artisans protected their processes with all the vigilance of modern corporations, on the
Image 8 - Christopher Dresser (1834-1904), Diagram illustrating lectures on botany at the Government School of Design, 1851. Dresser also wrote the first real handbook on design, *Studies in Design*. This is an example of early design education, where an emphasis was placed on being able to dissect object and draw it very precisely. Those who couldn’t think spatially or draw very well often did not succeed in the School of Design, furthering the chasm between design and workmanship.
assumptions that knowledge was all too easily transmitted.” Knowledge was exchanged through controlled systems, like the apprenticeship period. Apprentices were under control of their masters, whom decided what and when to convey information. With the publishing of the *Encyclopédie* their processes became public knowledge.

Artisanal workshops at this time were also the sites of technical research. Artisanal skill was an empirical basis for science, like in the case of James Watt, who was a skilled instrument maker. With the revealing of artisanal secrets and the detailed explanation of making processes, a split occurred once again within the discourse of craft: those who could write, draw, to explain their process – later called engineers or designers - and those who couldn’t. Between 1750 and 1800, drawing came to be seen as an engine of prosperity for craftsmen, though it put severe limits on creativity and free hand skill. The Government School of Design, now the Royal College of Art, was founded in 1837 in London. The curriculum emphasized drawing first and foremost, to the point of tediousness. Instead of becoming an apprentice in a carpenter’s shop and picking up a chisel on day one, a young man now went to the School of Design and spent the first two years learning to draw or draft their surroundings. As you can imagine, many carpentry students’ talents lay elsewhere. Additionally, Adamson argues, “boredom is a most effective means of discouraging creative autonomy.” The emphasis on draftsmanship over craftsmanship taught at schools and academies led to a definite divide between architects, engineers, and designers on one hand and craftsmen on the other.

With his *Encyclopédie*, Diderot revealed the unknown or magic behind craftwork. Early Manufacturers in the 18th century also did what Diderot did, but in practice. They created ever more specific roles for skilled workers, as to divide labor. One craftsman used to make a chair from leg to tip, now one man made the left legs, the other the right legs, and yet another the seat upholstery. In this way, “skill” was redefined as speed
PART I - CRAFT

**Image 9** - Chair designed by Benjamin Henry Latrobe and decorated by George Bridport, from 1808. Latrobe was an example of a draftsman who wasn’t a craftsman. He designed this chair, had it made by a carpenter, and decorated by another craftsman (Bridport). It looks beautiful. Once sat upon, more often than not the back would completely snap off the seat. A perfect example of what the division between craftsmen and draftsmen resulted in.
instead of quality by manufacturers. Adamson writes that the division of labor “mutilated the spirit of the worker,”24 since alienation results from separation and specialization in workplaces. This was especially true in fields of work for women. With more processes happening simultaneously, eventually a third party was needed for coordination and organization. In the late 18th century, architects and sculptors started offering services as ‘designers’ to take this role. Our current design system still works in this way.

The divide between design and craft led to a divide of sorts between aesthetics and functionality. For example, the Side Chair designed by Benjamin Henry Latrobe in 1808. Latrobe was one of the first formally trained architects in America, and he would later design the U.S. Capitol building. He had no training in carpentry, but designed a chair nonetheless. He had the chair made exactly to his drawings by a local carpenter, who is anonymous, notably. It was then decorated by a painter, George Bridport. Note that the chair was decorated with 2D drawing, not woodcuttings or other advanced carpentry techniques. The chair was described as being “distinguished by its spare, elegant lines and sweeping, curved rear stiles surmounted by a broad, deeply curved tablet.”25 However, it was also distinguished by the fact that the back of the chair could not carry the weight of a person and would snap off when sat upon. Functionally, completely useless! A version of this chair is now at the Metropolitan Museum of Art.

The Age of the Reveal: Victorian Era (1837-1901)

People in the Victorian Age (1837-1901) were fascinated by ‘magic.’ According to Adamson this was because magic is the “theatricalization of knowledge, in which it is shown emerging from obscurity step by inexorable step.” The Victorian era was entranced by trickery, “but also by explanation, the one providing the necessary antidote for the other.”26 Robert-Houdin, the popular French magician after whom Houdini
PART I - CRAFT

Image 10 - “Suspension Ethereenne, suspended equilibrium by atmospheric air, through the action of concentrated ether” So proclaimed the poster announcing a performance by magician Robert-Houdin. London 1848.
named himself, was seen as a hero in his day. Though an unlikely hero, because he was “skilled with his hands and traded in deception – two traits systematically subjected to skepticism in his lifetime.” Adamson shows that unexplained processes came to be deeply mistrusted in the mid 19th century. The ‘explaining trend’ started by Diderot’s Encyclopédie came paired with extreme wordiness, the idea being, the more words of explanation, the better. Books with titles like: *The Artist’s and Mechanic’s Encyclopedia, or, a Complete Exposition of the Arts and Sciences, as Applicable to Practical Purposes, Containing Facts and Principles Useful and Indispensable* were quite commonplace. They contained chapters detailing a trade with mind-numbingly detailed explanations. It was as if there was a war against secrecy. Before this time, making (craft) had been cloaked by the secrets of the trade, a mystery only the tradesmen themselves were let in on. In the 19th century, craft expertise became revealed to the public, no longer hiding behind the doors of a workshop. The effect was (another) decrease in the status and prestige that craftsmen had enjoyed.

An example of this can be found in the ceramic industry of the time. Since the days of exploration and trade with the far east, European ceramic technicians (arcanists) had been trying to imitate China porcelain. A formula was found in 1709 that produced beautiful ceramic by a German alchemist named Böttger, not a scholar but a talented laboratory technician. His recipe was so closely guarded and kept secret that the Böttger porcelain factory in Dresden resembled a prison more than a workplace. The intense secrecy surrounding ceramics was commonplace during the 18th century and contributed largely to its status as a symbol of national ambition. In 1771, the Comte de Milly published *L’art de la porcelaine*, a detailed explanation of the processes for making hard-paste porcelain. This “ended its prestige as a rare and valuable material.”

The culminations of the Age of Reveal were the World Expositions, like the Great Exhibition of 1851, in London. A celebration of making, both artisanal and industrial, the building was a cathedral of explanation.
Böttger attempting to make porcelain in his workshop. The formula for making porcelain, as opposed to plain ceramic, was a closely guarded industry secret. By the late 18th century this was starting to change and secrecy was discouraged.
However, no matter how many tell-all books and detailed explanations of craft were written, it still came down to this: “to really teach a given process requires repeated demonstration, and then handing over the tools.”

This is one of the strange paradoxes that characterize the invention of craft: that exactly the publication of trade ‘secrets’ is what made it clear that craft is fundamentally incompatible with an intellectual discourse. Words could never fully describe the artisan’s skill, because it is personal, intuitive and capricious.

Technical v. Practical Knowledge

The Enlightenment kindled the idea of two types of knowledge: technical knowledge and practical knowledge. The British theorist Michael Oakeshott wrote about this phenomenon in his 1962 book *Rationalism in Politics and Other essays*. In it, he defines technical knowledge as that which can be learned from a book, it has rules, principles, and directions. Practical knowledge on the other hand, can’t be taught or learned, but only imparted or acquired. It can only be gained by continuous contact with a master of practice. Oakeshott argues that this way of thinking meant that practical knowledge was seen as ignorance, “there is no knowledge that is not technical knowledge.” He was quite right in his description, as there were many thinkers and writers of the 18th century that felt exactly that way. Andrew Ure was one of the more outspoken of them, citing ‘mystery’ as not only a sign of backwardness and economic counter productivity; but also as a moral failing. He saw craft as the paradigm of mystery and secrecy, and thus as the opposite of progress. This was a widespread feeling among Victorians, as evidenced by the other meaning of the word craft: “skill in deceiving others to gain an end.” It stems from this period.
Image 12 - William Morris, pages from News from Nowhere, 1890. A beautifully crafted piece of socialist literature, pleading for traditionalism.
The Arts and Crafts Movement

The Arts and Crafts (1880-1910) movement tells a story that is satisfyingly simple: the noble victim (craftsman), an evil villain (capitalist factory owner), and a heroic savior (craft reformer like Morris). The reality wasn’t this simple. First, the Arts and Crafts movement was also largely a political debate: one of socialism v. capitalism, since handwork could only be marginal in a capitalism framework. In the novel *News from Nowhere*, Morris tackles one of the most common criticisms of socialism; the supposed lack of incentive to work in a communistic society. Morris’ response is that all work should be creative and pleasurable. Craftsmanship is the physical translation of that sort of work in Morris’ mind. A world where all workers are craftsmen was his idea of Utopia.

Second, the Arts and Crafts movement was a lament for bygone times. John Ruskin wrote an ode to Medieval times in *The Nature of Gothic*. He cites the building site of a Medieval cathedral as the perfect microcosm for how the world should work: many craftsmen working together as a community, with pride and hard work, towards completing the same goal: the cathedral. His plea for the community of the medieval workshop illustrates a characteristic problem of modern society: the conflict between collectivity and individualism. The Arts and Crafts movement was thus a thoroughly Modern movement, arising in response to Modern issues.

Though by arguing for reverting back to a time before there was any such conflict, Ruskin made a mistake. The idea that the medieval craft workshop was free of conflict and full of creative, pleasurable work is a gross misconception. Another mistake is that Morris and Ruskin ignored nuances in current machine-hand relationships: for example ways in which machines extended the reach of hand skills. They kept arguing that craft was being replaced, was fading, yet this was not the case. On the contrary! Craftsmanship was flourishing, partly due to industrialization
PART I - CRAFT

Post Modern Era
1945 - Present

Rise of the Star Designer
Digital tools and production techniques are invented and become widely used.
Small-scale production becomes a viable option

Digital Age
2000 - Present

Information Age
1945 - Present
and Victorian material culture. By naming *craft* as their solution to fix that ailed the Modern Era, Ruskin and Morris essentially defined craft as antithetical to modernization.

Adamson argues that the Arts and Crafts movement marginalized craft but championing it as anti-Modern. Modernization pushed on, regaling craft to the sidelines as traditionalist and romantic.36

**Post Modern Craft**

When exactly the Modern Era ended and the Post-Modern Era began is a subject of debate. For purposes pertaining to the craft discourse I will follow the thinkers that argue it started right after the Second World War, when television became the provider of mass media and mass production had become widespread.

When mass-production first became a concept in the late 18th century, products produced this way were of generally worse quality than products produced by craftsmen. That starts to change in the 20th century, and by the time WWII is over, it is far from true. Take for example the making of a screw and bolt, or a thinly woven t-shirt, or a light bulb, among countless other examples. There is no way that human hands could make these products as consistently good as machines make it, nor should we want imperfections in those types of products. Craftsmanship at this point does not have an exclusive claim on quality any longer. What it does have, “is an immensely various range of qualities, without which the art of design becomes arid and impoverished.”37

According to David Pye, an English craftsman who wrote extensively on craftsmanship, most notably *The Wheelwright’s Shop* (1960), the problem with mass production is the absence of diversity. “The contemporary (50 years later this is still true!) appetite for junk and antiques may
Image 13 - Lemon Press by Philippe Starck for Alessi. 1990. Beautifully designed, but when actually squeezing citrus with it the juices spray everywhere and drip down the legs, missing the bowl underneath.
partly be a sign of an unsatisfied hunger for diversity and spontaneity in things of everyday use.”

Imagine a world full of sleek, clinical objects. Images from dystopian movies come to mind, like *Equilibrium* or *Brave New World*. Craftsmanship can provide the diversity and spontaneity that mass manufactured products can’t, and is therefore a perfect companion to it, not its opposite.

I like David Pye’s matter-of-fact definition of craft: “it means simply workmanship using any kind of technique or apparatus, in which the quality of the result is not predetermined, but depends on the judgment, dexterity and care which the maker exercises as he works.” Key words are judgment, dexterity and care. Craft includes all products, in the widest sense of the word, made with integrity, thoroughness and skill.

Though Pye does warn: “the danger is not that the workmanship of risk will die out altogether but rather that, from want of theory, and thence lack of standards, its possibilities will be neglected and inferior forms of it will be taken for granted and accepted.” We should be careful to keep standards as a measuring tool, meaning that movements like the recent ‘DIY Craft’ scene don’t fall under what Pye calls workmanship, for lack of skill and dexterity.

Desiger with a Capital D

In the Post-Modern age, the product design matters more than the production, to the point of raising the designer up to celebrity status. Starting with Bauhaus in the 1930s, by the 1950s designers had become stars in their own right. People wanted and paid big money for luxury products, like chairs by Fritz Hansen or a lemon press by Philippe Starck. Nevermind that the lemon press didn’t actually work, it’s the name that counts. Like Latrobe’s chair from 1808, aesthetics often beat functionality during this time period. Part of the reason was that designers lack the
Image 14 - Marcel Wanders for Studio Droog - Knotted Chair 1996. This lightweight chair combines industrial techniques and handcrafting. A thread constructed of aramid and carbon fibres, is knotted into the shape of a chair and then impregnated with epoxy resin and hung in a frame to dry, leaving the final form in the hands of gravity.
skills and equipment necessary to realize their own vision. This is why they often work together with craftspeople. Those craftspeople remain mostly anonymous: apparently they are not valued enough by Post-Modern society to have a name. Though this is a shame and should be corrected, it does not mean that there is a growing disconnect between craft and design. “The process of designing, while it certainly involves semiosis (the production of meaning through signs), nonetheless always has a basis in material interaction.”

Towards the late 20th century, successful high-design products made in collaboration with craftsmen become more popular. The trend opened the market to developments of this kind. Changes in production techniques, which allow for more small-scale production, started making it possible for design and craft to carve out a section of the market. Though admittedly a high-sector one, like haute couture, high end cars, and unique furniture.

Digital Craftsmanship

As early as 1998, the term craft started appearing in the digital context, namely in the form of CAD programs and the development of CNC milling techniques. Malcolm McCullough wrote the authoritative work on early digital craft: Abstracting Craft: The Practiced Digital Hand. In it, he investigates the possibility of craft in the digital realm. The propagates the idea that computation as a medium in itself, instead of a set of physical tools, actually brings us closer to traditional, tactile craft design. “The actions and mind sets are very similar.” In the digital age, the word craft can no longer identified “solely with the hand that works physical material. It must also encompass the mind that can command the operations of technology, which can be understood as intellectual “material.”

Since the late 90s our way or thinking about craft has shifted a little
Image 15 - 3D Printed Haute Couture by Iris van Herpen, in collaboration with architect Daniel Wildrig, and 3D printing specialists Materialise, 2011.
further. A recent article called 5 Way Architects and Postdigital Artisans are Modernizing Craftsmanship is just one in a series of articles applauding digital craft. Guy Martin, owner Guy Martin Design, a studio that uses digital tools for design solutions, puts it this way: “we can’t build a cathedral how we used to, so how do we take craft skills and transport these to the digital realm? I see machine and digital tools as an extension of the hand, not just a generative tool or something abstracted.”

The Digital Age has seen computational tools replacing hand-driven tools, plus production techniques that make customized, one-off production possible. The Industrial Age gave rise to a belief that craft and machine manufacture were locked in combat with each other, with seemingly no victor proclaimed. Now it just may be that the computer offers a means to end that battle, however ironic this may at first blush seem to be. The computer has the potential to expand the professional’s control over the world of built form by linking designers with constructors more closely than since the dawn of machine production, and we are beginning to recognize this. “Indeed, we may now be entering an age of the master-builder-craftsman that John Ruskin sought to revive but getting there in a way Ruskin could not have anticipated.”

Conclusions: Craft is...

Having looked at craftsmanship through a historical lens leaves me with enough ‘ammunition’ to argue for a relevant present (and future) of craft within our contemporary society.

The story that is often told of craft in our society goes something like this: the onset of the Industrial Revolution in the late eighteenth century meant that craft began to suffer an irreversible decline – a process of deskilling and workplace alienation. In response, reformers and
preservationists, most notably those associated with the Arts and Crafts Movement, emerged to rescue it. Though they were not able to maintain craft’s economic value, they did raise awareness about its aesthetic importance and thus paved the way towards its rebirth as a distinct art form. Today more than ever, the artisan’s place in culture is threatened by new technologies, from the Internet to rapid prototyping. But a few institutions and individuals have been able to maintain a viable position for craft, partly by building new bridges to the worlds of contemporary art and design.

This contains some historical and ideal truth, but can also be debunked on almost every detail. First, Craft was not simply eroded as a result of industrialization. Second, the Arts and Crafts Movement was not just a benevolent form of aestheticism that romanticized the workman. “It was modern and political in nature.” Third, the transformation of craft into art can be seen as a category error, as there are many craft practices that have nothing to do with art or museums. Last, the idea that craft and art or design should be ‘bridged’ is strange, since craft has always been a crucial aspect of art and design. “The objective of ‘crossing boundaries’ serves only to produce boundaries that never existed in the first place.”

Craft emerged as industry’s opposite. The two, craft and industry, were created alongside each other, defined by juxtaposition. Of course skilled artisanal work was being done long before and all over the world, but before the Industrial Revolution craft was not a separate paradigm: everything was made by hand! Only in Europe and North America, however, did a ‘discursive shift’ take place, by which craft became a concept only as it stands opposite of industrial production.

We have seen that craftsmanship, once the provider of quality over quantity, does not have that going for it anymore. Machines can make most things more perfectly than human hands could. What craftsmanship does have going for it, “is an immensely various range of qualities, without which
at its command the art of design becomes arid and impoverished.”

In other words: diversity. In no way are crafted products by definition superior in quality to manufactured ones, or should they be seen as a protest against it. Instead, craftsmanship should be a complement to industry, an agent of variety.

What we’ve learned from the Modern Era is that craft has been a way to work through the conflict of connectivity and individualism, but that this does not mean we should revert to revivalism or preservation, “as if stasis were the best we could hope for.” It is quite ironic that today craft has a stigma of weakness and fragility, which is exactly how capitalists want it to look. In reality, “craft remains one of the most effective means of materializing belief, of transforming the world around us, and less positively, of controlling the lives of others.” We might be very tempted to let craft charm us, but it should be much more than that.

There will also have to be an alliance between the craftsmen and the designers. The future of craftsmanship depends on it. Crafts can restore to designers what mass production denies them: the chance to work without being tied hand and foot to selling prices; the chance to design in freedom. I agree heartily with David Pye when he argues that craftsmanship and design are extensions of each other.

Skill is an important element of craftsmanship. Craftsmen take pride in skills, especially those that need time to develop and mature. The slowness of craft is what makes it so satisfying; the 10,000 hours of practice give rhythm and a sense of ownership to the craftsman. This takes us back to the beginning, to Richard Sennett’s all-encompassing statement: “craftsmanship names an enduring, basic human impulse, the desire to do a job well for its own sake.” We shouldn’t limit the boundaries of craft to products made of ceramic, metals, glass, wood. Instead, craft can be open, it can serve the computer programmer, the doctor, and the artist. “Craftsmanship focuses on objective standards, on
the thing in itself.”

So, what is craft? As the last 10,000 words or so have illustrated, there is no precise, scientific answer to this question. I’ve spent considerable time reexamining the traditionally told story of craft, so perhaps we can start by defining what craft is not.

Craft is not anti-modern. It is in fact a product of modernity.
Craft is not unthinking or unintellectual. It is based on a form of knowledge, tacit knowledge, which by definition means it cannot be written down.
Craft is, therefore, not compatible with ‘intellectual’ discourse.
Craft is not the opposite of art, design, or engineering, though often found on the other side of a ‘versus’.
And lastly, unlike what Ruskin and Morris have done their utmost to convince us of, craft is not (necessarily) rooted in tradition.

So then, what is craft?

Craft is modern and adaptive.
Craft is personal, intuitive, and capricious.
Craft is a sense of autonomy and authority.
Craft is knowledge, transferred through practice and observation.
Craft is dexterity and skill. The craftsman is a mastery of material.
Craft is an integral, nay, essential, part of art, design, and engineering.
Craft is a beautiful complement to mass production.
Craft is human intention, care and thoroughness.
Craft is NOT:

Antimodern

Unthinking as opposed to intellectual

Compatible with discourse

Opposite of art, engineering and/or design

Necessarily rooted in tradition

Craft IS:

Adaptive

Personal, intuitive and capricious

Tacit or practical knowledge

Authority & Autonomy

Dexterity and skill

Part of Design & Engineering

A beautiful complement to mass production

Material consciousness
Endnotes

5 Sennett, 57.
8 Adamson, The Invention of Craft, 57.
10 Sennett, 65.
11 Ibid., 74.
12 Example of authors that use this argument are Larry Shiner in The Invention of Art (2003), Richard Sennett in The Craftsman (2008), Howard Risatti in A Theory of Craft (2007), etc. and is based on the writings of Vitruvius, Vasari, Cellini, and others.
15 Risatti, 282.
16 Sennett, 95.
17 Adamson, The Invention of Craft, xiv.
18 This summary definition is a combination of statements made by Adamson, Sennett, Cardoso, Risatti, Pye, and others.
19 Adamson, The Invention of Craft, xv; The Craft Reader.
20 The Invention of Craft.
21 Ibid., 60.
22 Ibid., 8.
23 Ibid., 20.
24 Ibid., 10.
25 Ibid., 41.
26 Ibid., 57.
27 Ibid.
29 Adamson, The Invention of Craft, 60.
30 Michael Oakeshott, Rationalism in Politics and Other Writings (1962), New, Expand-
31 Adamson, The Invention of Craft, 63.
32 Oakeshott.
36 Adamson, The Invention of Craft.
37 Ibid., 344.
38 Ibid., 345.
39 Pye, 342.
40 Ibid., 343.
41 Adamson, The Craft Reader, 461.
45 Ibid.
46 Adamson, The Craft Reader, 2.
47 Ibid.
48 Pye, 344.
49 Adamson, The Invention of Craft, 231.
50 Ibid.
51 Pye, 352.
52 Sennett, 295.
53 Ibid., 9.
54 Ibid.
PART II
ARCHITECTURE
Introduction

"verum ipsum factum"

-the truth and the making are one

I’ve spent some pages attempting to answer the question: “What is craft?” and concluded that most of the elements that define it are tacit and immaterial. Quite a paradox considering craft is essentially the physical manipulation of materials. This is of course part of what makes it such an interesting and elusive concept. In this section craft will be examined through the lens of architecture in order to answer the question: What is craft architecture?

There is a surprisingly small body of literature written on this specific subject, perhaps this is due to the traditionalist and nostalgic stigma attached to the word ‘craft’, perhaps due to its elusiveness, or perhaps because craft architecture simply doesn’t exist. I’m convinced it isn’t the latter. In the past 15 years or so, craft has been slowly shedding its association with traditionalism, due in part to the digital craft revolution.

At this point it has (hopefully) become clear that craftsmanship means more than old-fashioned carpentry techniques applied to the hand railings of a stair case. That it is a human endeavor that involves thoroughness, intention, care, and pride in how ‘things’ are made. Since this is an architecture thesis, and I am an almost architect, I am of course wondering whether this same definition applies to architecture. Is architecture a thing? Are buildings things? Our post-modern society has been attempting to define architecture as a commodity for some time now, most notably after Venturi’s decorated shed. Buildings, however, differ from commodity objects in that they are tied to land and to property, and this in itself resists commodification. Still, the treatment of the built environment as a set of products accounts for much of the current state of affairs; shoddy cheap construction, assembly line
Image 16 - Levittown, Long Island, USA. 17,447 low cost houses, built between 1947-1951. Photograph by Ezra Stoller. One of the earliest examples of ‘mass-production architecture’, where all houses are exactly the same: cheaply made and placed smack-dab in the middle of a potato field.
production techniques, one-size fits all mentality, and the all-importance of profit.

Juhani Pallasmaa, a Finish architect, historian, and theorist explains the dangers of commodifying architecture in a 2011 interview with Arkitektur N:

…one of the consequences of making architecture a commodity is even more serious: architecture is one of the most powerful means of giving us our sense of identity, home and belonging, but architecture defined and produced as a commodity cannot do that any more. So architecture is giving up its most fundamental task. From the very beginning, architecture was not just a question of shelter, physical shelter; it had a mental motivation. And that has now at large been given up.¹

Notably, the ‘mental motivation’ part of architecture that Pallasmaa mentions sounds very reminiscent of the ‘basic human impulse’ that Sennett presents as the foundation for craftsmanship. In essence, both notions are similar in that they should be seen as a profound human endeavor, rather than a set of products. Given the similarities, a similar structure can be used to search for a good definition of craft architecture.

In order to examine craft in the context of architecture, I’ve used parts of the definition reached in the previous section and ‘translated’ them to architectural language. This means a few keywords come forward, ingredients to what makes architecture ‘craft’. These are: context, construction, materiality and detailing, and workmanship. Each will be examined using texts from well-known architects or writers, used to illustrate the way in which each term contributes to making Craft Architecture.
Olson Kundig designed a house in Washington state that uses some of the characteristic rock formations of the area as one of its walls. Here the rock is excavated to make room for the building. The excavated stone was used as aggregate in the concrete construction of the house.

“The Pierre” (French for rock) clearly had many conversations with its surroundings - fitting into its context beautifully.
Context and Connection

The meaning of craft in architecture essentially lies in the connections a building or a space makes, both internally and externally. Internally between its constituent parts and externally through the relationship a building creates with its surroundings.²

When a building reacts to its surroundings, it starts a conversation with the building next door, the tree in front of it, and the street it borders on. I’m imagining the conversations to go something like this:

Building: “It’s great, Tree, that you provide me with shade in the summer time and let the sun shine through in the winter. The ever-changing colors of your leaves lend my spaces a different feel, light, and sound.”

Tree: “Thanks, Building, that you allow me enough space to grow tall and be healthy. Your size and shape allows me to be the best I can be.”

Building: Hey Neighbor Building, I admire your rich history. I hope I can become as old and beautiful as you are.

Neighbor Building: Hi there new guy. It is the contrast of your newness that enriches my history. Luckily we share some of the same building traditions, making us essentially brothers.

Building: Street, I love that you bring people around to see me and enter my spaces – you give me purpose and allow me to exist. The noise is a bit much though.

Street: Building, without you I would lead nowhere. Maybe having less windows facing me would be a good idea.
Image 19 - Ningbo History Museum, 2008. Made of local rubble with a method called “Wa Pan”, which is also how many local buildings are made.

Image 20 - Ningbo History Museum, detail of wall construction.
I’m only partly kidding with these silly conversations. Imagining this kind of dialogue between the physical surroundings in which a building will stand is a simple yet crucial step towards finding answers to questions that the design process brings. Finding certain empathy in context helps make thoughtful, informed decisions. There exists a dialogue between a built space and its context and it should establish a connection to the nature and culture in which they exist.

Kenneth Frampton, an architectural historian, critic, and theorist, is known for his extensive writings on tectonics. Tectonics is basically the constructional logic of architecture – think of the dialogue between a building’s constituent parts. This internal dialogue should be at least as well considered as the contextual dialogue and I’ll get to that in the next section.

As part of his writings on tectonics Frampton argues for ‘critical regionalism’, which calls for a deep connection of a building to its site. He is vehemently opposed to an architecture of placelessness, like prefabricated houses or standardized chain stores that can be dropped down on any razed site in the world. These types of buildings do not form conversations with their context and so fail to be successful.

Frampton barely mentions the word ‘craft’ in his texts, though he sets forth the notion that craft always involves a connection to the local. He has an obvious preference for organic, expressive structures, though that turns out to be a much more laden statement then it seems at first glance, as organic architecture can take on many forms. “For Frampton, craft is the only way forward to a viable built environment.”

Frampton argues that a building “is first and foremost an act of construction rather than a discourse predicated on the surface, volume and plan, to cite Le Corbusier’s *Three Reminders to Architects.*” Thus one may assert that a building is ontological rather than representational
'If you think of Brick, you say to Brick, 'What do you want, Brick?' And Brick says to you, 'I like an Arch.' And if you say to Brick, 'Look, arches are expensive, and I can use a concrete lintel over you. What do you think of that, Brick?' Brick says, 'I like an Arch.' And it's important, you see, that you honor the material that you use. [...] You can only do it if you honor the brick and glorify the brick instead of shortchanging it.'

Louis Kahn.

in character and that built form is a presence rather than something standing in for an absence.

Material, Construction, and Detail

Though I argue that craft doesn’t necessarily have to include the manipulation of physical materials, as in the craft of a computer engineer or a musician, in terms of architecture and really most fields we readily associate with craft, material is a key component. A building and the space it creates are for a part defined by the material used to do so. Therefore, an architect needs to be intimately familiar with the countless properties of the material she chooses to use in her designs. Knowing how a pine wood façade weathers in the local climate, how concrete acts when in contact with cold and moisture, how a clay fired brick interacts with a lime-based mortar, etc etc etc. Structural properties, aesthetic properties, acoustic properties, associative properties – all are vital for an architect to understand when designing a building. The actual manipulation of these materials, however, is not the territory of architects, nor should it be. It is instead better left to skilled workmen who spend their days physically manipulating the materials (more on workmanship and skill later).

The territory of architects, on the other hand, is the design of the detail. A detail is a place in a building where two or more materials come together. Edward R. Ford, American architect and writer of the book *The Architectural Detail* argues the importance of detailing as follows: “details are the basis for, not an accessory to, understanding a building … Architecture, as I have come to know it, is the art of building, and if it communicates any message of significance, it does so through construction.” In other words, understanding the intricacies of construction is the foremost task of an architect.

Ford goes on to quote Peter Zumthor, Swiss architect known for his mastery of detailing and light, from his 1998 book *Thinking Architecture*:
Image 22 - Deventer City Hall, Courtyard Facade. Neutelings Riedijk 2006-2016. The wrought iron panels are images of the fingerprints of citizens of Deventer.
Details express what the basic idea of the design requires at the relevant point in the object: belonging or separation, tension or lightness, friction, solidity, fragility. Details, when they are successful, are not mere decoration...They lead to an understanding of the whole of which they are an inherent part.\textsuperscript{6}

Notably, Ford writes about buildings ‘communicating’ a certain message and Zumthor about ‘understanding’. These terms are too infrequently used in the discourse of architecture, sadly. When we are impelled to communicate with, or understand, our built environment, we establish a connection. Again, connections are integral to determining value.

A recent building that makes a connection to its context is the new city hall in Deventer (Neutelings Riedijk, 2016). The façade is clad with decorative iron panels that are wrought into the shape of the fingerprints of 10,000 randomly selected inhabitants. This way there is a very literal connection established between the building and the people it is meant to serve. Next to that, the building is built like a greek stoa – it has an open courtyard around which the offices are situated. The courtyard is open to the public and is made to be an inviting place to sit, with a fountain and benches. During this past summer, people from all over the city came to have their lunch there daily.

Within a building or a space there are many different levels of connection: the connection between the bricks and the clay bank of the river that flows nearby, the connection between a concrete column and a steel beam, or the connection between a screw and the wood it is embedded in. All these connection together, when designed and made with thoughtfulness, care and purpose, make up the whole that is Craft Architecture.

An example of an architect that has famously mastered the art of
detailing on all levels is Carlo Scarpa. The Venetian architect “is known for his instinctive approach to materials and combining craft techniques with modern manufacturing processes.” He would spend many hours designing, testing, and redesigning a single detail, working in close collaboration with local Venetian carpenters, metalworkers and glassblowers. Many of his works are restoration projects in which he beautifully connects the existing context to the new one. Recent projects like the restoration of the Neues Museum in Berlin by David Chipperfield look to emulate his work.

Scarpa is a Craft Architect par excellence: he reads the existing context and connects the building to it, he is a master of material and detail, and works closely with skilled workmen. As summarized by Tadao Ando, friend and architectural collaborator of Scarpa’s: “In his works, the architectural elements, though expressed as independent parts, together form a magnificent whole.”

Digital Detailing and Fabrication

Architects like Scarpa, Foster, and Pei, all masters of material and detail in my opinion, are also from an older time period. Scarpa famously used almost no digital tools. American architect Robert Stern writes, in Building (in) the Future: Recasting Labor in Architecture, that in his professional practice, dealing with digitally enhanced technology in has become a constant. In the same way that the previous generation of architects had to learn to embrace carbon paper or automatic rulers, Stern argues, “each generation has had to harness the innovations of its time to the age-old task of shaping the built environment. The expanding technology of computer software and digital fabrication techniques promises to make it possible for architects to regain their proper and responsible role, not only with regard to design but also in the generation of construction documents and fabrication of the finished product.”
Image 24 - Matter Design Studio, La Voute de LeFevre, Columbio OH 2012. An example of contemporary craft architecture. It is a compression-only structure, digitally calculated, detailed, and produced.
In the same book, architect Scott Marble drives home the point that digital tools allow architects to gain more control over the building process, this time through detailing. Marble argues that an architect’s means of introducing craft into buildings is through architectural detail, which is largely a product of the relationship of design to industry. Whereas the modernist’s detail was based on negotiating tolerances between prefabricated components that were then assembled, today’s details are based on the management and organization of information, where tolerances and even assembly procedures can be numerically controlled and parametrically integrated during design.\(^\text{10}\)

In this way, Marble argues, “Craft does not disappear, but rather expands to include not only actual making but the design processes as well. The resistance of material, so much a part of traditional craft, can be part of a knowledge base developed through feedback, both real and simulated, that puts this information in the hands of designers who in turn work with it.”\(^\text{11}\) Essentially, digital tools allow the architect to develop a closer relationship to materials and fabrication.

**Workmanship and Skill**

Merriam-Webster’s dictionary defines the verb ‘craft’ simply as: “to make or produce (something) with care or skill” It actually finished with “by hand”, but as we’ve seen that part of it has become outdated in our digital world. Still, as much as designing and understanding are an important part of the making process, the actual physical manifestation of the design is just as important, if not more so. Whereas a product can be made without a design, a design can’t be made into product unless it’s physically produced. Enter workmanship. Since the division of master builders into architects and tradesmen, the communication between them has been a key component in the building process. Sadly, the respect and appreciation for quality workmanship diminished, resulting in worsening relationship between architects and builders and thus in
shoddy architecture.

I’m hopeful this is slowly changing. Many architects are now speaking out about the importance of skilled workmanship, like John Tuomey from the Irish office O’Donnell + Tuomey, in a keynote lecture in 2015:

Architects should speak directly to their clients, to their contractors, to their tradesmen. ... Architecture is a craft based art. An architect’s concept has to be carried across to live in the building itself. This translation is done through the act of commitment of the contractor and the skill of manual work: contractors, site workers, foremen, and tradesmen. [They] are the unsung heroes that make actual architecture out of an architect’s intentions.¹²

He is advocating strongly for a closer relationship between architects and builders. We do need to be careful to not attribute romantic ideals to tradesmen, the same way Ruskin did. Instead, architects and tradesmen alike could learn to understand each other, respect each other. Through first understanding that separation of intellect into two classes of knowledge: technical and practical, still contributes to architects seeing tradesmen as having lower intellect. If we as a society came to see each type of knowledge as valuable as the other, perhaps the level of respect towards tradesmen could grow in the way Tuomey describes.

Mark Sofield, architect and author of the essay *Craft and Connection*, also writes about what happens when skilled workmen gain some form of autonomy:

Some of the most fulfilling moments of my career have come when an unforeseen constructional problem has been solved by a tradesman based on the parameters established by the drawings, models, or patterns I furnished him—because he has
Image 26 - Image from the Renzo Piano Building Workshop in Punta Nave, Genoa, Italy. The Building Workshops are where architects come to design AND build, and to understand the entire process.
understood the larger intent which that documentation conveys. More satisfying still are those instances when that solution has strengthened the meaning of the building in a way that I could not have accomplished alone.\textsuperscript{13}

In short, quality workmanship and skilled tradesmen are vital to the building process in craft architecture. By removing the myth that tacit knowledge is lesser than explicit knowledge, we could close the divide between architects and builders and move toward a system in which they work together, autonomously.

Craft Education

The only way for craft architecture to be the architecture of the future is to change the way architects and tradesmen are educated. Since the School of Design in 1835, designers and tradesmen have been educated separately, as the two schools of knowledge dictated. Bringing the two kinds of education together into one building would mean that architects and tradesmen could have close contact with each other, get to know each other, learn from each other, establish trust and respect.

Renzo Piano, an Italian architect who has long advocated for \textit{craft} as the common unifying principle in the elaboration of teamwork, runs a practice under the name Renzo Piano Building Workshops. He argues that craftsmanship is “the work of someone who does not separate the work of the mind from the work of the hand.”\textsuperscript{14} The architectural design process is circular; “it draws you from an idea to a drawing, from a drawing to an experiment, and from a construction back to an idea again. …Unfortunately many have come to accept each of these steps as independent.”\textsuperscript{15} Frampton argues that Piano’s practice already seeks to “expand the notion of craftsmanship to embrace the idea of a continual creative exchange between manual and intellectual work: an exchange that would implicitly renounce the split between art and science.”\textsuperscript{16} This
creative exchange is exactly what a new education system would advocate.

“These concerns, combined with a profound respect for craft, serve to separate the ethos of the Piano workshop from the parametrical formalist obsessions that currently prevail in elite architecture schools on both sides of the Atlantic. As is common knowledge, the studios of these schools indulge in aestheticized morphing exercises that, while they are brilliantly contrived and graphically seductive, are invariably unspecific as to the substance of the project, not only in terms of site, materials, structure, and environmental performance, but also with regard to the basic raison d’etre underlying the supposed function or programmatic address of the work in hand.”

“This question is, in and of itself, full of risk, and the academic establishment is showing few signs of confronting this issue head-on, despite the presence of a totally new breed of young architects-academics capable of working at both an intellectual and a manual-cum-technical level. And it would be hard to imagine anything more pedagogically counterproductive than perpetuating the largely unacknowledged fiction that it is possible to cultivate through education the romantic notion of a perennial avant-garde, along with the equally absurd idea of a school for geniuses. Instead we should be equipping the younger generation with a deeper and more sober idea of the limits of the modern project in both a political and technical sense. At the same time, we should be encouraging an examination of an equally pernicious contemporary, Candide-like myth regarding the unavoidable market benefits of globalization in combination with the fictitious worldwide triumph of liberal democracy.”

“Unlike in college life, where the hard question seems to be ‘why’, in practice the question is simply ‘how’, this is the craftsman question. The search for an adequate answer can open up avenues of investigation and construction. the technology of communication methods have changed
IHA (interviewer): There has been a discussion about the glorification of handicraft, about the longing some architects seem to have for essentially pre-industrial forms of craftsmanship in building...

KF: There is always this risk that certain materials or processes become fetishized, and so run the risk of being regressive. Also socially regressive. But the term ‘rationalized production’ is promising to me: opens the way for a more productive mixture of techniques. And it brings us back to the synthetic potential of architecture, and the possibility of hybrids.

JP: I would not argue for the inclusion of craft only as a practical application, but for craft as a process of thought, and the presence of the hand. ... I would say it comes down to human intentionality. And care, and the heart and compassion that goes into it, and I don’t think there is any reason to romanticize craft and natural materials.

JP: We are talking about rather sad aspects of our image of the future, but I believe that you share with me an optimism about the potential of arts and architecture to elevate human life again, given a chance. I think the task of architecture and art has never been as important as it is now.

completely, the principles of the tools of the trade have changed less, materials have changed very little.”

Pye argues that if designers and architects understood the theory and aesthetics of workmanship better, and realized the importance of it, they would make better use of the opportunities offered by techniques available to them. So, in part it is a question of educating ourselves on possibilities beyond the available ‘stamps’ in Photoshop.

Conclusion

*I would not argue for the inclusion of craft only as a practical application, but for craft as a process of thought, and the presence of the hand… I would say it comes down to human intentionality. And care, and the heart and compassion that goes into it, and I don’t think there is any reason to romanticize craft and natural materials.*

Architecture should not be seen as a product, he argues, but simply as a profound human endeavor. Craft is another example of such a human endeavor, and its expression is bound to be a force of resistance to the current state of society.

“Poetry results not from an excess of reasoning or intellectual power,” wrote critic Alberto Perez-Gomez, “but rather [from] a lack thereof; it is, finally, an issue of making in order to know, not of harboring information in order to make.” As architects we know this, but we rarely talk about it. To do so would propel ourselves immediately into the messy world of uncertainty, forcing us to confront again the existential fact that in order to know we must first act.

Craftsmanship can also be a key to architectural innovation: by combining traditional techniques with new technologies and sustainable solutions,
or by reassessing the organization of thought processes and handwork. The ability of a well-crafted building to project the thought and effort of its architects and the craftsmen who constructed it is what lifts it above the commonplace. The elevation of spirit we all feel in the presence of true craft is a natural consequence of the quality of effort that created the work.

A last note: the word *craft* comes from the Germanic word *kraft*, or *kracht* in Dutch, which means strength or power. The fact that craft slowly came to mean dexterity and skill in Old English is very interesting in itself and says quite a lot about the English culture, namely: those who make or produce things with skill and dexterity are strong and powerful. Let’s move towards that ideal again! A society in which skilled producers of quality products are strong and powerful.

Craft Architecture is NOT: Frank Gehry and the ‘blob’
Craft Architecture IS: O’Donnel and Tuomey
Endnotes

1 Kenneth Frampton and Juhani Pallasmaa, interview by Ingerid Helsing Almaas, 5 June, 2015, 19 October, 2011.
6 Ibid., 24.
8 Peter Noever, Carlo Scarpa: Das Handwerk Der Architektur, Mak Studies (Ostfildern-Ruit: Hatje Cantz, 2003).
10 Scott Marble, “Imagining Risk,” ibid.
11 Ibid.
13 Ibid.
15 Ibid.
17 Ibid.
18 Ibid.
19 O’Donnell and Tuomey.
20 Frampton and Pallasmaa.
23 Sofield.
PART III
CRAFT ARCHITECTURE
Introduction

In this section I will look three examples of contemporary craft architecture. Each case study will deal with the elements of craft architecture discussed in the previous chapter: connection to context, detailing, materialization, and workmanship. The different cases will have a stronger or more obvious leaning towards one of these elements over the others.

For the sake of comparison, all cases have been built within the past five years, and are located in Western Europe. However, each examples exists at a different building scales and sits in a unique context. This is to illustrate that craft architecture is possible at any scale and within any context.

The first case is a wooden lookout tower, built by DaF Architecten in 2013. It is situated in the Kalverpolder, a protected nature area near Zaandam, the Netherlands. It was built using the same timber construction techniques as the iconic windmills that it looks out over.

The third case is a student centre, situated in downtown London. The building fits perfectly within the intense urban fabric of London. The Irish architects O’Donnell + Tuomey used brick, the building material used in most of London & the UK, in an innovative, unique way.
PART III - CRAFT ARCHITECTURE
Notes: https://www.youtube.com/watch?v=5D7lESYwYks
B.C. Nieuwenhuijs - Restauratiebedrijf, gespecialiseerd in houtbouw.
PART III - CRAFT ARCHITECTURE
PART III - CRAFT ARCHITECTURE
PART III - CRAFT ARCHITECTURE
This is what John Tuomey has to say on craftsmanship:

Architects should speak directly to their clients, to their contractors, to their tradesman. Talking simply about qualities near our hand, qualities that inhere in what Rilke called things, what we call buildings. Architecture is a craft based art. Architects concept has to be carried across to live in the building itself. This translation is done through the act of commitment of the contractor and the skill of manual work: contractors, site workers, foremen, tradesman. … are the unsung actors that make actual unsung heroes that actual architecture out of architect’s intentions. makes architecture. These are the people worth talking to, taking into our confidence, listening to, worth taking advice from. We know that ideas are born in the mind, but the ideas live on in the practical, real things called buildings. “You can go and see it, and the building if it has anything to say, will speak for itself.”

Professional training inclines our profession towards the view that craftsmanship is a thing of the past. By this way of thinking, architectural design should avoid the demands of difficult construction and instead it ought to provide for the norms of the industry, as if the building process should be reduced to the assembly of standardized components. On the on contrary, the whole construction team can rise to the satisfaction of a difficult job done well. Strangely enough, it seems that the more difficult the challenge, the better the chances of getting the job done well. Approaching construction through complication. If it’s too easy to do, no one thinks its worth trying to doing. We practice our own craft through a studio way of working. First thoughts are sketched out in soft pencil and quickly drawn in the computers and then a quick cardboard model, etc. It’s the means by which fluency emergence. Constant practice in the studio helps to create a sense of scale and some experience on site helps to build…Sometimes on a good day a serious jump in thinking happens. The hands action and the minds eye should be connected to each other. Unlike in college life,
PART III - CRAFT ARCHITECTURE
where the hard question seems to be ‘why’, in practice the question is simply ‘how’, this is the craftsman question. The search for an adequate answer can open up avenues of investigation and construction. the technology of communication methods have changed completely, the principles of the tools of the trade have changed less, materials have changed very little.

Construction sites then are social settings. Where the social art of architecture takes on its physical substance. Quality of craftsmanship is always ready to be recognized, like Rilke’s angel, with human respect at every stage, from setting out to finishing off.

Frampton: The LSE brings us to this question of craft. The stairs are within the cradle typology, so to speak. But what’s amazing about the building is it’s a tour de force in perforated brickwork. You had a lot of nerve to go ahead with that idea, and then to get someone to build it must have been quite a game.

O’Donnell: It was. What you said is true, that the stairs wrapping around fits into what we had been working on regarding movement, circulation, and the cat’s cradle. The form and the expression of that building arrived upon us in a rush. Sometimes competitions are amazing in that way, because you’re doing something very quickly and intensely. The LSE is quite different from anything we’ve done before. It felt inevitable and yet really quite frightening. We sent everyone else home one weekend to get our heads around what this building would look like.

It’s odd because it is, in a way, very extreme looking. But it’s also quite ordinary. When walking past, it seems like a piece of brick London wall. I think it was Kester Rattenbury who wrote that she walked past the building without noticing and then came back and said, “Oh yes, here it is.” On the one hand the building is alarming, but we also think it feels steadied in its place. It was a leap out of the known into the
unknown.

And yet we always knew it was going to be brick. So we were trying to work within the bounds of what we thought would be possible with brick, without knowing exactly how it would be possible. It was only after the competition that we worked out that the brick-coursing would be horizontal, that it would be corbelled rather than trying to slope planes of brick.

Tuomey: We worked in model, building up layers of cardboard like you would do in a contour model. We adjusted the layers for the rights to light, because we didn’t want a New York-style setback building. When we looked at the model, we realized that’s exactly how brickwork gets laid: horizontally. We could set one brick back from the next, from the next, from the next, just like cardboard in a contour model.

That, then, required a brick that could withstand freeze-thaw water conditions on all of its surfaces. We couldn’t use the existing bricks, from the demolished buildings, which we had hoped to use, because they wouldn’t withstand the freeze-thaw. So we had to build in what we call an engineering brick. But we didn’t want a hard-edged building, we wanted a soft building; Sheila had been doing watercolor studies for the texture of the building. We thought then of using a paving brick, a brick that’s used on the ground, for the whole building.

We found this company near the Forest of Dean that for hundreds of years had been making paving bricks by hand. Every two years the company goes into the area of the forest that they own and they dig up clay. They make a wooden mold, like an old-fashioned shoemaker, for every brick and then they slop in what they call a clod of clay. Can you believe that? There are four men that are like pizza chefs — they lump the clay in their hand, slop it in, cut it off, pack it down, and shove it in the oven. We were amazed. The LSE is 175,000 bricks. Each guy makes
maybe 500 bricks a day, and every one of them was made like that.

Instead of looking for a brick to match the paintings, we gave them Sheila’s watercolor studies. They used different kinds of sand to finish the bricks so that we had seven colors. The bricklayer had to sort his specials on site in order not to have a block of orange, for instance. The work that tradesmen can do, still, is so impressive — and it’s there for the asking.
LITERATURE


Press, 1923.
IMAGES


Image 12 - William Morris, pages from the Kelmscott Press edition of News from Nowhere, print of woodcut of Kelmscott Manor, 1892. At the British Library, London. From: http://www.bl.uk/voices-of-science/sitecore/content/home/romantics-and-


Title Page Images

Cover page

Part 0-

Part I -

Part II - Olson and Kundig, sketch.