

Boat to Building: An Exploration of Norwegian Craft

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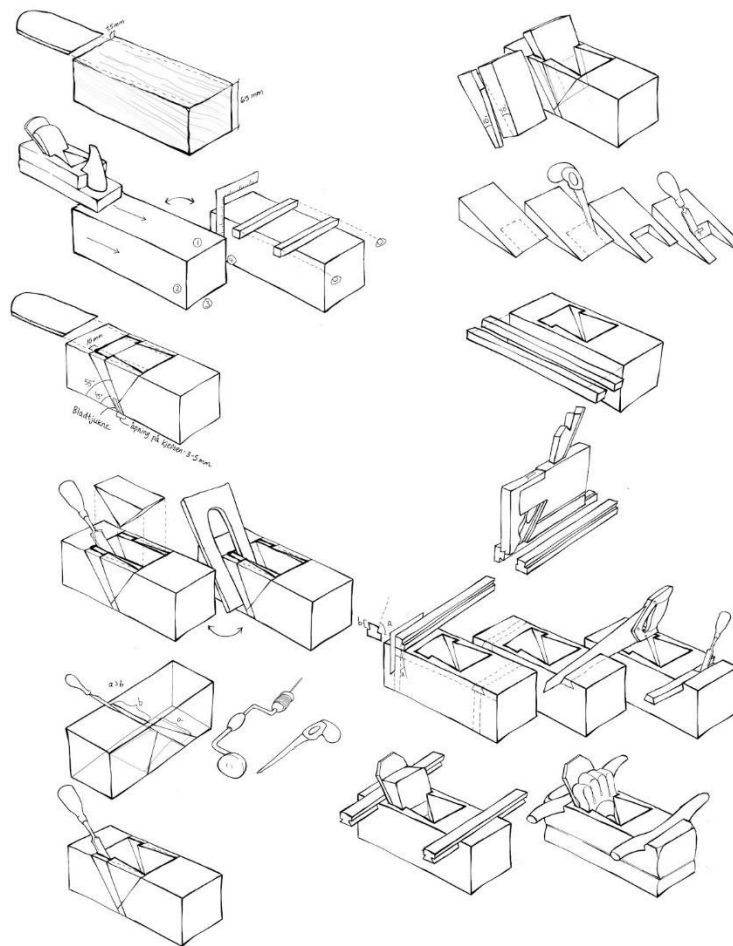


Illustration of the Strandebarmar boat (all of the illustrations in this report were made during my time in Norway)

Through the generosity of the Mortimer Hays-Brandeis Travelling fellowship, I left for Norway in August of 2016 with the expectation that I would be studying the construction of Hardanger boats - a tradition spanning hundreds of years - to better appreciate craft's place in architectural design. After arriving at the Hardanger Maritime Center, I quickly came to see that craft went beyond a series of construction techniques

- it was a completely unique and immersive approach to design. The craftsmen working there weren't solely interested in creating for the sake of the finished product, but in creating something whose worth went beyond appearance to include process, tradition, natural materials, and significance in society.

The day after I arrived, I found myself at a three-day workshop for craftsmen making wooden planes.

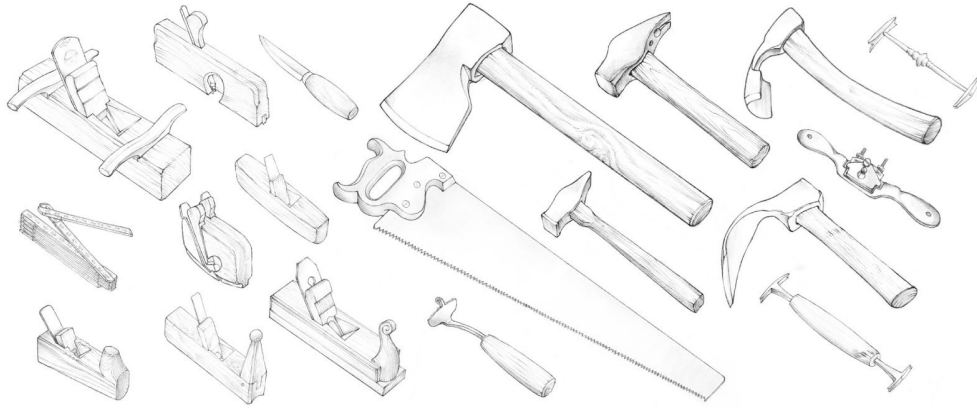


Steps for creating a wooden plane (part of a series of illustrations for a recently-release *Boat Builder's Planing Manual* with text by Peter Helland-Hansen)

Twenty Norwegian men, mostly boat builders and carpenters (including my mentor and master boat builder, Peter Helland-Hansen, who greatly shaped my time there), drove from all over the west coast of Norway to spend three days learning to build a plane. Peter even pitched a tent outside of the building so he could work on his plane late into the night. I can't pinpoint exactly when, but eventually my definition of craft expanded until it became less important which techniques I was investigating - plane making, boat building, fiddle making, traditional hammers, warehouse construction - because they were all motivated by the same holistic idea of craft. My proposal, which was originally much more specific in suggesting a link solely between boat building and architecture, transformed into an investigation of traditional tools and construction processes that allowed me to investigate crafts ranging from boats and buildings to traditional rope and fiddle making. This broader definition of craft enabled me to ignore the walls that unnecessarily divide each discipline (architecture, boat building, etc.) and come to understand the value of process in all facets of design. I am so grateful that the Mortimer-Hays Brandeis fellowship gave me the flexibility and opportunity to embark on this explorative investigation that has truly molded my understanding of design.

To best recount my experience, I've divided my report into key topics that I investigated in my illustration blog (mostly in chronological order) with images and links.

PART 1: TOOLS (Illustration post: <https://www.kategmcmillan.com/blog-post-1>)



As I discovered that first weekend at Jarle Hugstmyr's planing workshop in Voss: tools lie at the heart of craft. This was so completely in opposition to architecture, where design is king and tools serve the design, that it took me a while to accept this idea. I spent most of my days in the small boat shop at the Maritime Center in Norheimsund, learning about the various tools, practicing to use them on small features of the boat and independent projects, and illustrating each step as Peter and his apprentice (Josefine) worked on the Strandebarmar boat. It is not far from an exaggeration to say that the way the tools were treated was similar to how one might regard a family heirloom or sacred relic. Each craftsman had built his or own tool chest with a unique design in which the hard-earned collection of tools was locked. With the exception of the hand drills and larger machines, these tools were owned by the individual - not by the center. This meant that tools were bought and anticipated in the way one saves up for a rare baseball card; a handmade tool with a unique design or signature engraving was exceptionally exciting, and their maintenance was essential for creating good work. Later in the year, Peter started hosting "Tool Time" in the small boat shop where he, Josefine and I would discuss a tool for 30 minutes every day before breakfast. The

center even hosted a three-day hammer-making workshop that included everything from studying traditional hammers to making shafts to recording the sounds made by various-sized caulking hammers. This only solidified my suspicion: an understanding of craft requires a deep understanding and respect for the tools.

PART 2: BENDING (Illustration post: www.kategmcmillan.com/post-2-bending)



Small Boat Shop at the Hardanger Center in Norheimsund

As I began to understand the similar emphasis on process across all crafts, I started examining the physical techniques that connected built forms. At this stage, a new boat was in progress and planks of pine were being soaked to bend into strakes. I was amazed by the sculptural approach as Peter pried the planks into the curve of the hull, giving or taking here or there depending on the qualities of the pine. This again was not what I had seen in architecture, where the design references certain materials and the materials are then pounded into whatever form is required of them, regardless of their natural properties. As I visited various architecture sites and workshops, I began to

notice how other forms rooted in craft followed a similar pattern. For example, a chef/sailor/basket weaver at the center taught me how to make baskets out of willow using a specific sequence of weaves. While my architectural training would have taught me to start with a sketch of the basket, I quickly found that the baskets would bulge and warp as a result of the willow properties. The spontaneous shapes made possible by the materials and process gave an added depth to the design that would have been impossible otherwise.

PART 3: PRESERVATION (illustration post:

www.kategmcmillan.com/post-3-preservation)

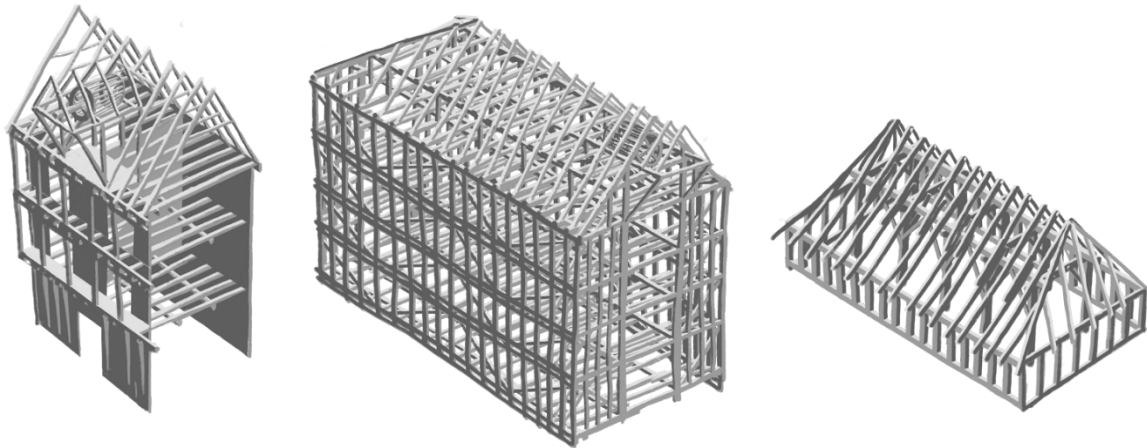


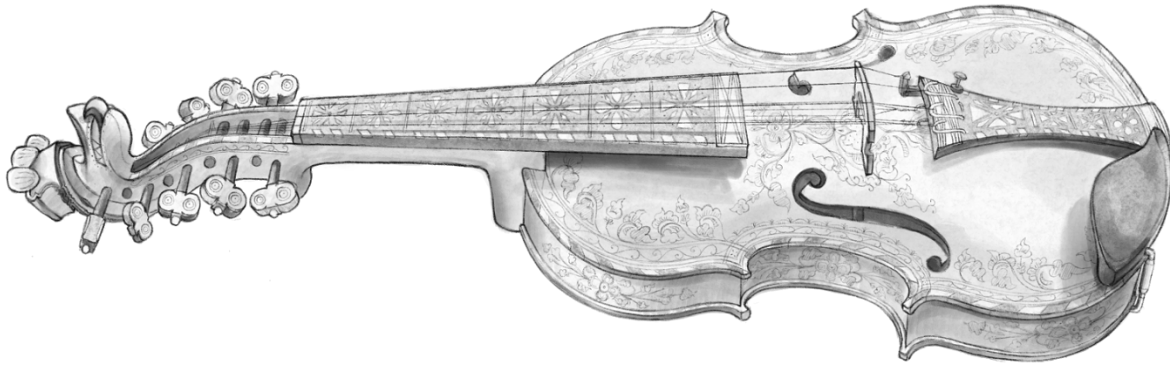
Houses of Bryggen

After recognizing the value of process in craft, I was determined look at various crafts that had been preserved to see how these dying trades can continue to exist. I traveled to multiple stave churches (the oldest still standing dated to 1100) on the west coast of Norway to learn how buildings could be transported, rebuilt, and renovated to

hold on to existence. This necessity for preservation-at-all-cost represented to me the usual and sometimes-hollow approach to preserving more modern architecture. I was happy to find the wooden Bryggen houses in Bergen, where a group of craftsmen in Foundation Bryggen worked to preserve these wooden houses with a much different approach. The buildings had endured through many centuries, so the workers had to actively choose which periods to preserve and then mirror those construction techniques and tools used. Preserving the preservation work of the 80's was just as important as preserving the rococo style of the early 1900's, so in this way preservation became a relevant and continuous process instead of an attempt to place history on life support.

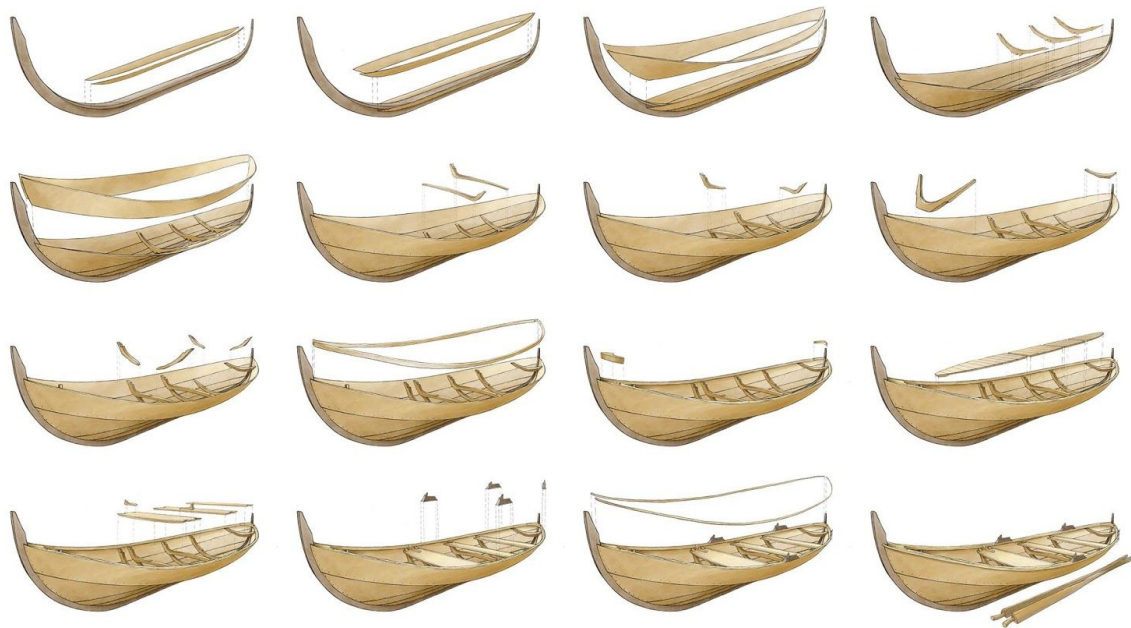
PART 4: MODERN CRAFT (Illustration post: <https://www.kategmcmillan.com/modern-craft>)





Sketches of the Engoyholmen warehouses in Stavanger (top) and Hardanger fiddle from the Olebull school in Voss

My chance to present my findings to the center at the end of my fellowship provided me with a chance to ask: what do these traditional techniques mean for modern design? Seeking a response pushed me to see the similarities between traditional crafts and modern design. For example, the prefabricated trestle-frame warehouses dating to the 1800's that I had visited in Stavanger held the same construction ideas as Zumthor's modern mining museum in the south of Norway (or even IKEA, for that matter). The emphasis on process in Peter's boat workshop mirrored the precise programming of the robotic brick construction I had seen and the Architecture Biennale, and the hybrid design methods for fiddle construction I saw in the Olebull School in Voss mirrored ideas of modern open-source building such as the Wikihouse.



Strandebarmar boat-building process (featured in article I wrote for *WoodenBoat Magazine*)

Now that I am back to the US and fully immersed in a modern design world favoring machines and computers over hand tools and pencils, this link I think is extremely important for understanding how craft exists in modern design. By understanding it's potential even now, I have been able to turn my attention to how the tools and processes I use to create (an electric saw, pencil, modeling program, Photoshop) should demand the same understanding that traditional tools demand from traditional craftsmen. By understanding the processes and values that shape these traditional crafts, one can better design for the present.

The illustrations I created as part of this fellowship have been a part of four illustration posts (links are dispersed throughout article, but can also be found here: <https://www.kategmcmillan.com/blog2>) distributed to a diverse audience of designers, craftsmen, and many people who might just appreciate illustrations paying homage to remarkable craft. I also published an article titled “Preservation through Process” that was recently published in *Woodenboat* magazine, and collaborated with Peter Helland-Hansen on a manual documenting plane making (just recently released) and a Boat Builder’s Tool Dictionary (to be published by the museum once the text is complete). The opportunity presented by this fellowship has deeply shaped the way I approach design as well as my appreciation for all things made.