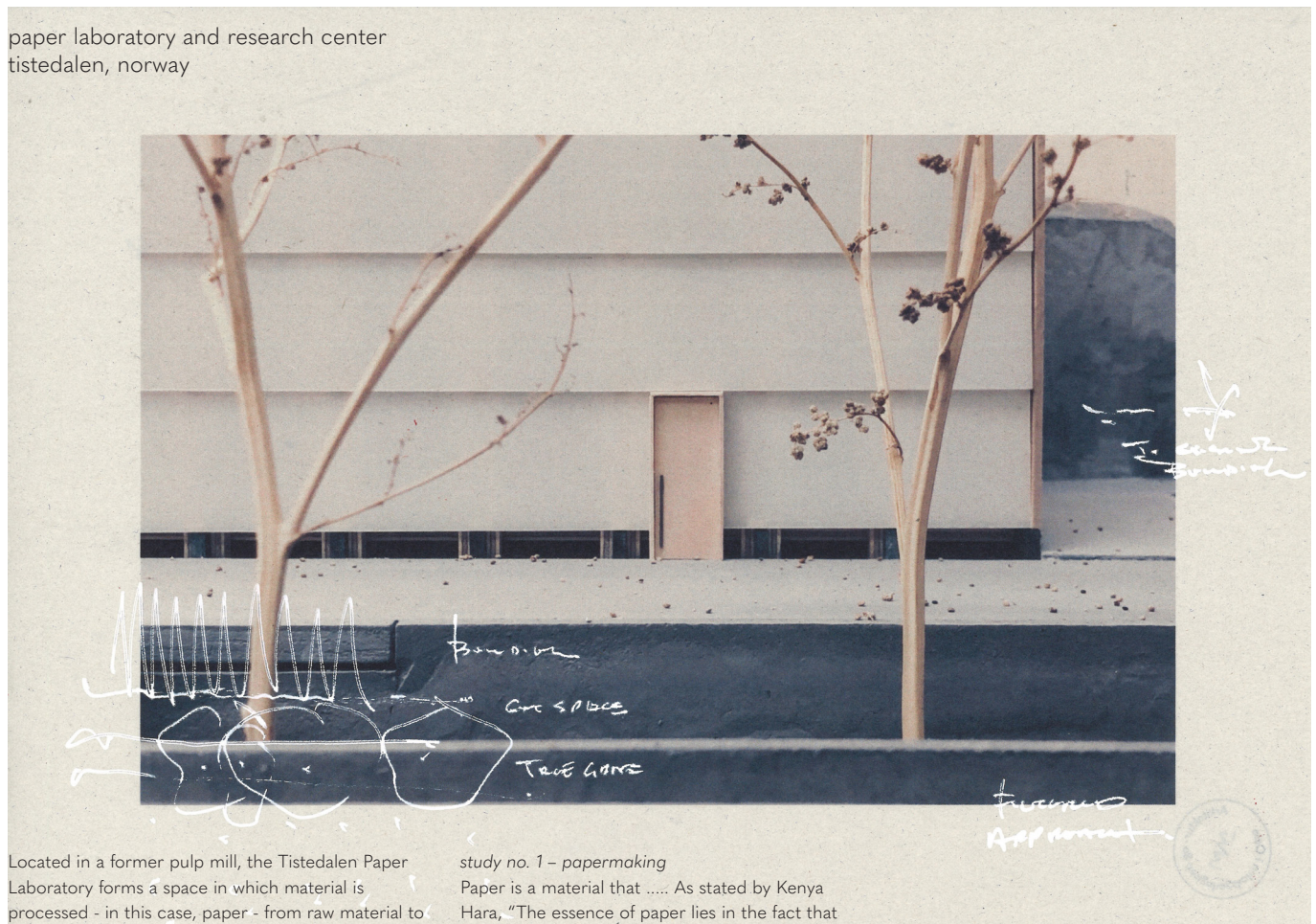


a space for processing

paper laboratory and research center
tistedalen, norway



Located in a former pulp mill, the Tistedalen Paper Laboratory forms a space in which material is processed - in this case, paper - from raw material to resultant product. Through investigations of material, time, and place, this diploma forms a study of the role in which continual processing and reprocessing has the capacity to form the foundation of an architectural investigation - one that coexists with physicality, fragmentation, and memory.

As a laboratory for experimentation, the project forms a space that can tie into the current paper mill downstream. Norske Skog Saugbrugs AS is located approximately two kilometers down the Tista River and is the owner of the site. As it is one of Norway's few remaining paper mills, the mill stays relevant in such a highly competitive industry due to its specialization - something that must be continually tuned throughout the years. Focusing primarily on supercalender (SC) magazine paper, the Norske Skog produces approximately 550,000 tonnes of paper per year in Halden, with most of it being shipped abroad for use in a variety of publications and media types. The proposed paper laboratory will allow for small scale testing and experimentation, assisting with new breakthroughs and methods in the production of paper.

The project frames itself as a search for the discovery of the fiber. From initial material studies to later investigations of site and program, the continual search to uncover the underlying essence has been at the forefront. The following text will discuss two of the studies undertaken during the semester and how these uncovered and crafted a method of approach for the architectural investigation.

study no. 1 - papermaking

Paper is a material that As stated by Kenya Hara, "The essence of paper lies in the fact that it is easily dirtied and easily damaged. Indeed, paper's charm is its ephemeral nature; with its thinness and tautness it seems to be barely holding on to existence, and, its tensile delicacy heightens our senses." (100 Whites, Kenya Hara, 2019, p. 6-7)

This robust delicacy is something that starts to hint at this fiber - composite relationship. In order to investigate paper further, I undertook the process of creating my own paper sheets to physically test, experiment, and experience.

In the papermaking process, wood (or other materials such as cotton, bamboo, and jute) are physically ground and turned into a pulp slurry. In the case of wood, lignin must be removed so that the fibers can break down. This is achieved through either chemical or physical means, but since I didn't want to use harsh chemicals in my experiment and didn't have access to large mechanical grinding equipment, I made my pulp from recycled process material from the semester.

After a pulp slurry is made, a screen is dipped into the mixture and with the excess water filtering out until a sheet of paper emerges. It is then transferred out of the screen with the water being pressed out and the resulting paper being left to dry. The process is simultaneously tedious and quick, but through the process of making paper, I started to experience the essence of paper that Kenya Hara was referring to. The physical dipping

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fig. 1
Photograph, Proposed Building
Filtered Approach

the resulting artifact. This process became second nature, with each subsequent move or gesture forming one more thread of inquiry into a particular topic, facet, or moment.

processed nature

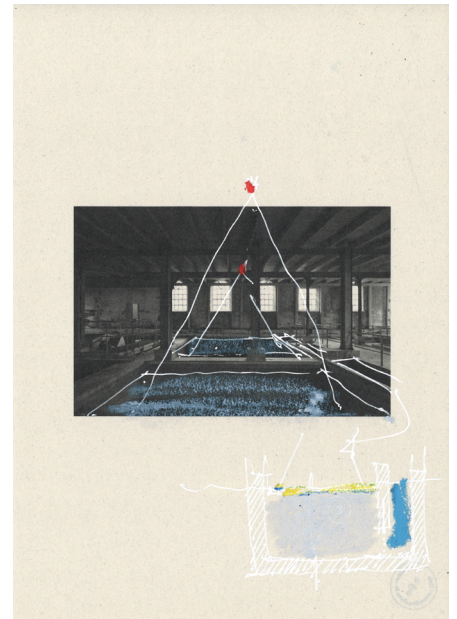
The architectural project situates itself within the remnants of former site infrastructure. These come in the form of both unused or decommissioned machinery and water works, as well as a spatial vessel that stands more or less abandoned. Every moment of the site has been physically altered in some way throughout its many occupations, and this emerging 'landscape' forms the site for the architecture.

Two areas of the site form the basis for the primary architectural investigations: the former water intake for the pulp mill and the existing building itself, a modified and adapted structure from 1888 that shows traces of every occupation and use over the past 130 years.

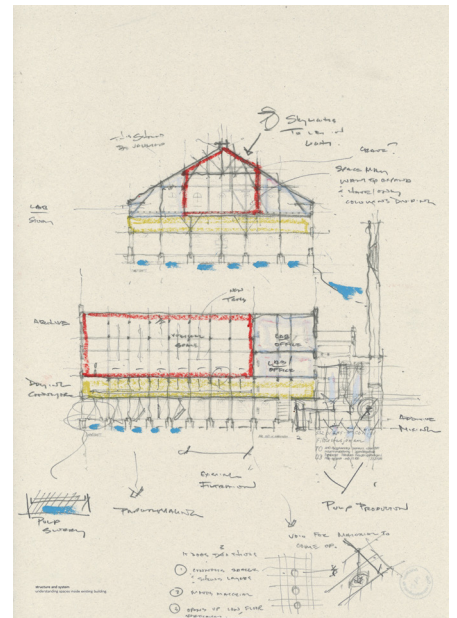
In both, the architecture has sought to both establish and reestablish the flow on site. This takes place through the movement of material throughout the site, as well as in creating the ways in which the human experience of the various remnants can take place. Dramatic moments such as the cut rock faces that once formed the water intake juxtapose the delicate and precise architectural insertions. Together, a new whole is created – one that will undoubtedly be processed and re-calibrated over the next 130 years.

experiencing material

In the architecture, the paper physically modifies and forms its surrounding spaces, showcasing the various phenomena that are present within such a rich media. In one moment, the space for drying, its thinness allows it to flutter in the breeze, with



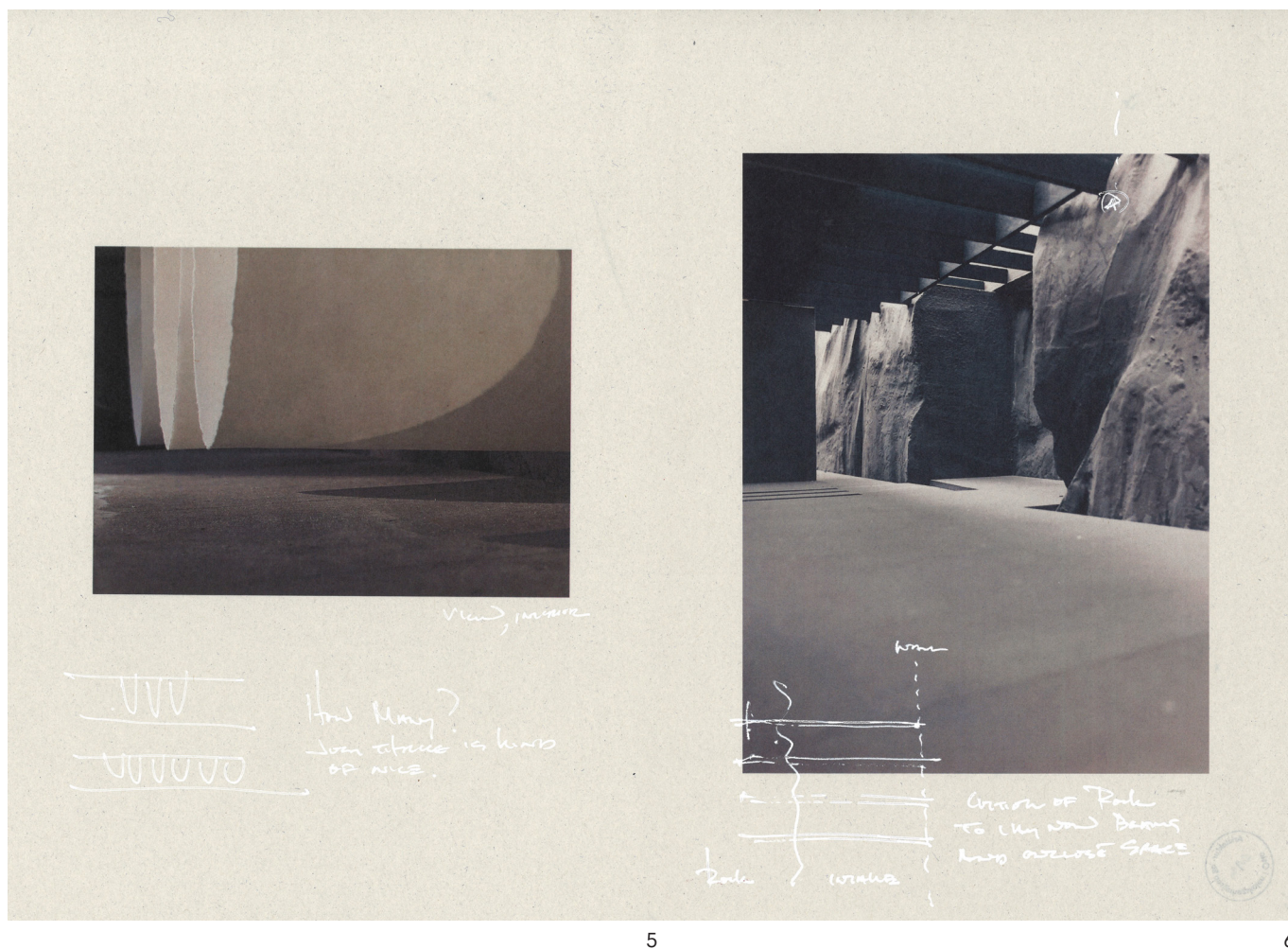
3



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fig. 3
Sketch, Existing Building
Reinterpreting Existing Moments

fig. 4
Sketch, Existing Building
Understanding Structure and Space



5

6

the ways in which it hangs showing the strength and mass of something that is simultaneously robust and solid. The coexistence of these opposites, much like that of the new and existing architecture, searches for that delicate tension inherent within their composition. It's through this discovery of the fiber, as well its resultant structure and composition, that I can uncover layers of memory, mystery, and place. It's simultaneously isolated yet part of a larger totality.

This study has served as a way in which I have personally sought to understand various moments – from material, to process, to site – uncovering their fiber and finding the ways to express these occurrences. In a similar manner, the architecture exposes and celebrates these moments, allowing for a space in which a bodily experience of material can take place – a space in which we truly process – both in terms of material production but also through human perception.

fig. 5
Photograph, Proposed Building
Physical Experience of Paper

fig. 6
Photograph, Proposed Building
Inhabiting Remnants