a study of material:

a stone house in the arctic circle

Abigail Joanne McKinley

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of:

Master of Architecture

May 4, 2011
Blacksburg, Virginia

Hans C. Rott

Patrick A. Doan

William U. Galloway

keywords: material, stone, arctic circle, norway
a study of material: a house in the arctic circle
nigel john mckee

abstract:
the work that follows is a study in material and the nature of its
construction.
I chose a site rich in tradition of building but chose not
to choose a house, of local stone and wood, the extreme conditions of
the environment posed the challenges in design and construction.
I did not use the stones of the stone, but let the stone do what is
natural to it. I chose not to force the stone to be anything other
than itself and working with these natural tendencies to make the
decisions of construction.
acknowledgements:

hans rott, patrick doan and bill galloway:
your advice and critique has been worth more than you can imagine. i look forward to applying it to my architectural practice.

kay edge, scott gartner, margarita mcgrath, steve thompson and frank weiner.

my studiomates:
thank you for the opinions, thoughts, advice and all the laughter.

my friends:
thank you for always listening and understanding. you’ve always made me smile when i needed it most.

my brother:
who always pushes and inspires me personally.

most importantly, my parents:
thank you for always reminding me that you love me and how proud you are of me.
I find beauty in material, the texture it brings to a building, and its interactive play with light.

Materials allow us to ask so many questions: how do two materials meet? do we use a material to create a facade, or allow it to be the structure? how is this material finished: should it speak to the material or to the advancements of mankind? how does material allow a designer to reflect the place of a building?

I find joy in the questions and relish in the decision making that leads to their answer.

I seek an architecture that is humble, one whose presence is not forced upon us, but whose presence and secrets are revealed slowly.
“try to understand the character and peculiarities of your site, heighten what it may offer, never work against its inner grain and fiber.”

— richard neutra
roof structure:
beams and ceiling finish
a ceramic heating wall is a heating element that gives off radiant heat. It has a small door on one side to control a fire. Instead of going straight up like a traditional fireplace, the flue runs the course of the wall, heating its entirety. The mass of the wall allows it to radiate heat for 12-24 hours.
"When you have all the answers about a building before you start building it, your answers are not true. The building gives you answers as it grows and becomes itself."

- Louis I. Kahn
preliminary sunlight studies: blacksburg va. elevations
readings:

Juhani Pallasmaa. Encounters.

Peter Zumthor. Thinking Architecture.

Richard Neutra. Mystery and Realities of the Site.

Frank Lloyd Wright. The Natural House.