https://www.teknologisk.dk/_/media/40199_High%20Technology%20Production%20Methods%20in%20the%20Construction%20Sector.pdf

Simon Eltayar

000734478

seltayar@ltu.edu

(519) 977-4870

CONCRETE ARCHITECTURE

Understanding process

Dear Pellerin Fellowship Committee,

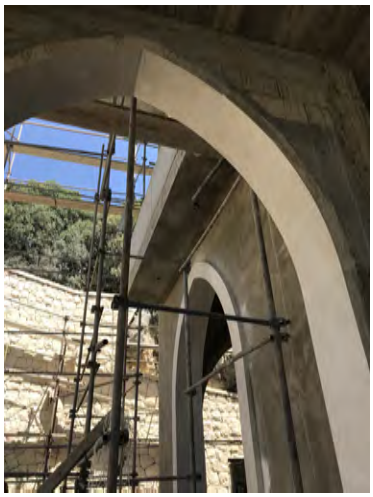
To all that know me, I am sure it is no surprise that concrete architecture is the intent of my study if awarded this prestigious fellowship. For those that do not know me (or for those who want to know more) I have included a small background section as to why my intent of study would be well placed if awarded.

I want to thank you for the nomination, the opportunity to plea my case, and for the time you may have and will spend considering all nominated Fellow's proposals.

Background:

Concrete runs in my DNA, as you can see below (Images 1 and 2) I get that from my paternal side of the family. However, curiosity, drive, exploration, and experimentation also runs within my code. While I may have experience (Images 3, 4 and 5) in building concrete homes halfway across the world in Lebanon, I also have experience experimenting with it within the LTU campus through Jim Steven's Makelab Project in the Fall of 2018 semester (Images 6, 7 and 8), the above mentioned factors do not allow me to stop here, the pursuits for more is made clear in the next section.








Intent:

It is my intent to explore and understand some of the implications of technologies onto the way concrete construction takes place today, and its affect on the labour force. I will explore this topic through studies in Canada, Denmark, and the Netherlands. The reason I have chosen those European countries, is that due to the fact that they have similar cold weather climates to Ottawa (where I call home).

In search for this topic, I have already reached out to Eric Ward (LTU Faculty) to explore the impacts of the changes within the concrete building method of making. Some of those impacts to understand are geared towards regional economies, labour forces, and effects of technologies on making. Furthermore, I have met with Mike Arnold, from Stubbe's Precast (in Ontario) to further discuss the validity of the idea, and set up a tour of the facilities for the future, he also confirmed that many of their processes, and equipment come from the selected locations

Topics of study:

1. Precast concrete
2. Cast in place concrete
3. 3D printed concrete
4. Labour shift
5. Architectural culture in North America
6. Architectural culture in Europe
7. Affects on regional economies.

Travel plans:

Leg 1 Canada - 1 Day (May 2019):

Travel to Harley Ontario to meet with Mike Arnold at Stubbe's Precast

Leg 2 Denmark - 8 Days (June 2019):

Day 1 (Saturday) - Travel to Denmark

Day 2 (Sunday) - The Tietgen Residence Hall and surrounding area.

Day 3 (Monday) - Danish Technological Institute Concrete Lab*

Day 4 (Tuesday) - Ordrupgaad Museum and area

Day 5 (Wednesday) - Danish Maritime Museum (Helsingor) or Projects suggested by Danish Technological Institute.

Day 6 (Thursday) - Enghave Park's Arne Jacobsen's Pavilion
Travel to Aarhus.

Day 7 (Friday) - Aarhus University* and Sonnesgade 11

*To be confirmed

Day 8 (Saturday) - Overflow day for Aarhus area

Leg 3 Netherlands - 4 Days (June 2019):

Day 1 (Sunday) - Travel to Amsterdam

Day 2 (Monday)- Meet with Allard Architects* to talk about Matchbox precast project
Explore Mama Makan restaurant

Day 3 (Tuesday) - Travel to Eindhoven and meet with Eindhoven University of Technology*
Explore the Milestone 3D printed homes project
Travel to Gemet to explore 3D printed cyclist bridge
Travel back to Amsterdam

Day 4 (Wednesday) - Overflow of day 3 as well as explore Amsterdam

Leg 4 Travel home

Day 1 (Thursday) - Travel back to Toronto

Continuous - Update presentation
Use new knowledge for development of better architecture

Total: 1 Local (Canada) Day, 2 Travel days, 10 Days split between Denmark and Netherlands.

Budget:

Local - Meeting with Stubbe's Precast:

Transportation to Harley from Ottawa: $100 (Gas for own vehicle)

Accommodations: Free (Family in Toronto)

International

Train: $80 Ottawa - Toronto (return)

Flights: $1,300 (Toronto to Copenhagen, Aarhus to Amsterdam, Amsterdam to Toronto, price checked)

Accommodations: $ 814 (5 Nights in Copenhagen, 3 Nights in Aarhus, 4 Nights in Amsterdam price checked)

Bus and Train: $280 (Bus in Copenhagen, Train to Aarhus, Bus in Amsterdam, and Train to Eindhoven and back, price checked)

Food: $720 ($60 a day for 12 days, estimate)

Total: $3,114.

Presentation:

It is my intent to come back and share my findings through continuous research after my travels which helps better outlines the comparisons between the cultures of making of both places.

Topics of Presentation:

Standard ways of making

1. Precast concrete
    Findings from Stubbe's Precast concrete.

2. Cast in place concrete
    Examples found and contrast between precast
        Cost, quality, and finish difference

Atypical

1. 3D printed concrete
    Examples found, what does this shift mean?

2. Labour shift
    Shift from labour shift within the site to warehouse production
    Labour requires certain training for machinery and manufacturing process

3. Affects on regional economies
    How does the labour shift effect the economy on a micro (labourer) and macro scale (construction industry)

Cultural diversity

1. Architectural culture in North America
    Regional ways of making and building

2. Architectural culture in Europe
    Regional ways of making and building

Lessons learned