

Regnier Traveling Fellowship

Monthly Report: September, 2006

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SUMMARY

Right now I'm on a train headed for The Netherlands. The two and a half weeks I've been traveling have flown by and it's been such a whirlwind of meeting new people, seeing great buildings and learning the mass transit systems of 5 different cities.

I'm really enjoying this period of traveling on my own. There have been a more than a few times I've had to dive into the last subway car leaving for the night to get to my lodgings on the other side of town. I've also had my share of jumping on a subway car only to find that it's going in the wrong direction... usually the first metro ride in each city.

So far, I've been able to stay with all friends or people I have met through Hospitality Club, an online traveler exchange program where you request lodging from folks who want to host travelers and be hosted when they travel. I'm meeting really great people who are able to help me with directions, show me great local hangouts and non-touristy parts of town, and share meals and conversations. Of course I'm encouraging all my new friends to visit me and take advantage of my hospitality when I have a place in Barcelona.

THE CITIES

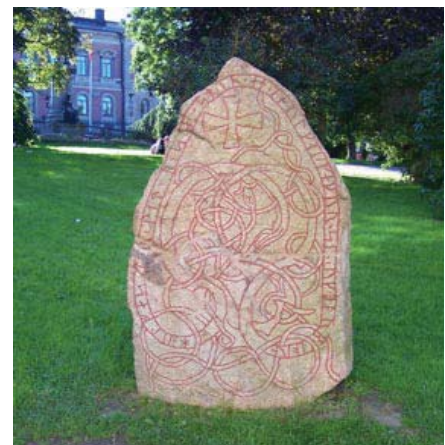
Stockholm

I couldn't have asked for better weather in Sweden, I got off the plane to blue skies and a breeze. It was too warm for the wind-breaker I had on. My first meeting of the trip was with Per Wikfeldt at White Architecture's headquarters building: The Katsan Building.

Immediately getting into the central station of Stockholm, I jumped on a metro to the Katsan building and met with Per around 5 p.m. He told me about the building, the goal for energy efficiency, a simple exterior and a technologically advanced interior. The building takes advantage of seawater cooling, krypton filled Low-e windows that are triple glazed for energy efficiency. A preliminary case study is up on www.greenbuildingworldwide.com and will contain more information when I follow up on the case study from Spain.

I spent the weekend in Uppsala with a buddy from Burning Man who is working around the world for a Swedish company. It just happened that he'd be in town the weekend I was arriving. We biked out to an old Viking burial ground and saw some rune stones.

On Monday, Sept. 18th, I spoke with Stellan Fryxell, a principal at Tengbom Architecture and a consultant on the sustainable neighborhood development project of Hammarby Sjöstad. Tuesday I visited the environmental center of Hammarby Sjöstad, GlashusEtt.



As well as being a community information center on environmental issues, constantly displaying eco exhibits, this building also tests different sustainable technologies. More on the actual technologies utilized can be found in the case study on my website, however it employs a rooftop garden, solar cells that convert electricity into hydrogen, a fuel cell to use that hydrogen power, biogas production from wastewater which is used for heating and cooking in 1,000 homes in the community. GlashusEtt acts as a laboratory of new building technologies which can be evaluated for use on a larger scale.

Göteborg

The afternoon of the 19th, I traveled to Göteborg. I arrived in the evening and after a little confusion found the HC club member's apartment. Maria and her roommate, Erkin, were great people. The days in Göteborg were jam-packed.

The morning after arriving, I met with Anders Lund at the Ekocentrum, an ecological building center that features exhibits on everything from recycling and composting to zero-energy passive houses. They're floor in the building is full of sustainable technologies. The list includes urine-separating toilets, which harvests urine for local distribution to farmers as fertilizer, No VOC interior paints, a bit of FSC certified flooring, energy efficient glazing, rain water re-use, a monitored solar panel that is really more to display the technology than to offer a significant source of power to the building. The building materials are PVC free. More can be found in the case study.

The afternoon was spent visiting the Universeum Science Center, a zoological museum where children from all around Sweden go to learn about animals, habitats, and the environment. The operations manager, Martin Skarhall, who gave me the tour, told me the first thing you don't do if you want to be sustainable is create a rainforest in Sweden. Obviously since the climate is so much different, lots of energy needs to be spent to recreate that atmosphere. Nonetheless, Universeum has employed many sustainable technologies, which at least offset the amount of non renewable and unsustainable energy they use.

The building employs geothermal heating, derived from an array of sinkholes dug into the side of the hill on which the museum is built. The materials are natural where ever possible and one facade of the building is made out of rock baskets which contain rock that was excavated from the hill to create the foundation of the building.

The museum also has urine separating toilets and treats the water on site in its own aquarium systems.



Comparison between normal house wall insulation and passive house wall insulation.



Rock basket wall



Solar water heaters

The next day, Thursday, I spent the morning with the architect, Gunilla Murnieks, and two coordinators on the university side talked with me about the Chabo Student Apartments on the Chalmers University campus. There was a definite goal to keep energy use lower than building standards mandate. The building looked well built. It just didn't seem like it had everything a truly sustainable building might. One nice feature was the fact that because of the concrete thermal mass and the heat generated by refrigerators, heat wasn't calculated to be added until it reached 5C below outside. Then heat pumps are used.

That afternoon I went to a Museum and saw an exhibit on globalized Africa and the slave-trade. There was a very interesting documentary on Bob Marley playing.



Lund & Malmö

Friday afternoon I headed to Lund, where I stayed with a friend from Berkeley. We had dinner with two of his friends in civil engineering master's students who were working on a mechanical vent closure system using just nylon adjusted to open or close depending on the amount of humidity in the air.

On Saturday I visited the Western Harbor in Malmö, a neighborhood designed to be run entirely off on site, renewable energy sources. It is also the neighborhood of the Turning Torso.

This was a really cool tour. It was self-guided and one cool building after another.



On Monday I took a bike tour of the Augustenborg public housing neighborhood. It was being retrofitted into a sustainable neighborhood. All new buildings with green roofs, biogas production being tested and used. A significant source of solar power and water heating. On site rain water treatment through wetlands. Community recycling and garden efforts. These are all part of an vast program to reduce the energy usage of these buildings. This is going to be a fun case study to write.



Copenhagen

After seeing the Augustenborg neighborhood I headed out to Copenhagen. There I stayed with another HC member. I visited Christiania the next day for sustainable examples, but it was hard to find someone who was involved with green building. No one I asked knew. There was a birthday party going on for the 37th birthday of the free-city. People were handing out free cookies and soda. Pretty cool little parade, too.



On Sept. 27th, I visited the Copenhagen Energy building, which wasn't really that sustainable. They have a few features for display, like the solar panel facade, but it's east facing and two out of five columns of solar panels in each bay is just a photostat, since the panel is usually in shadow. The solutions felt like they were applied after the design, not integrated, and the building is only 2 years old. I would like to include a decent lessons learned section from Copenhagen Energy on this case study because it seems like there were many places it could have been more sustainable.



On my last day in Copenhagen, a Thursday, I interviewed Peter Qvist, an architect working on hydrogen based solutions to energy needs. He worked on a project which is supposed to be started in 2007 to develop a hydrogen city in Denmark where all the cities fuel for houses and cars will be hydrogen produced from sun and wind electricity. It's a very interesting project.



In the afternoon, I visited Det Okologiske Inspirationshus. A combination of low embodied energy and natural materials, and high technology solar panel systems, mixed with passive, plant assisted ventilation systems. Also there was composting of both organic food waste and composting toilets. This, similar to the Ekocentrum, was an exhibit house for children as well as adult visitors interested in eco-design. The costs for the house couldn't be calculated as much of the materials and labor in the rehabilitation of the old structure and construction of the new structure were donated and sponsored. I'm hoping for monitored results of energy use.



Hamburg

I took an overnight train from Copenhagen to Hamburg. I got little sleep, but took a good nap once I got to Hamburg. I stayed with another HC member. She showed me the nightlife of Hamburg, which is ample.

While there, I visited the Dockland building and Deichtor building. There are a number of other interesting buildings in that harbor area.

I'm looking forward to visiting Rotterdam, and other projects in the Holland countryside, as well as Dusseldorf, Hannover, and Freiburg.

The project is going really well. Expect some more cool adventures in the next monthly update. Take care.

