Reflection

To fully reflect on the last years’ work, I would like to start with the day that I wrote my application to study at TU Delft. The reason that I had the desire to move to the Netherlands and study at a technical university stemmed from my passion of living with water. During my bachelor project I investigated how we can protect our built environments around the world from the threat of rising sea-levels and explored the opportunities that this research created – integrating Architecture into water. For my master’s project I explored this topic the other way around and wanted to go further – How can we collect, use and recycle water sustainably? How can it be used aesthetically? How can it help in keeping the climate of the built environment comfortable? – integrating water into Architecture. Keeping in mind that I come from a region that has very scarce water resources and relies primarily on fossil fuels to cool its buildings, this topic carries with it a great potential to take back with me should I return.

I quickly realized that the use of water in architecture is incredibly vast and tremendously understated. This becomes evident when we think that the only relation to water that we have is through the tap. For all its potential to make our built environments more healthy, lively and beautiful, the scope of this research quickly became very vast and I found myself struggling to keep an overview. With so much literature, courses and systems available on water collection, purification, recycling, natural water-cycles, water used for evaporative and active cooling, thermal energy storage etc. and the fact that the result had to be a (approximately) 3,000 word essay, quickly narrowed down the depth of my research so that in many topics I could only scratch the surface. Having said that, I’m very pleased with the results – a toolbox of applications for water in architecture which I’m positive will be of great value for my future career. I also feel, however that the research doesn’t stop there. Ideally, I would have liked to test in a controlled environment the effect of cooling that water has through evaporation and record this data numerically. This is something I see myself delving deeper into in the near future (to satisfy my own curiosity and possibly to develop a one of the applications of my toolbox).

Finally, the final semester allowed me to implement my research into an architectural design. To be honest, I knew from the beginning that I wanted to do my master’s course in the Architectural Engineering studio because this was the only one in which my technical fascination could be researched and implemented. And so I went through several different ideas for buildings (water research facility in Utrecht, high-rise tower in Rotterdam) before I ended up with a building and context where water – as the precious resource that it is would have the biggest impact (a stadium in Qatar). I am particularly relieved about this choice because it’s fully in line with my original intent stated above –providing beautiful, sustainable solutions to water-use in the built environment of the middle-east.

The design of the stadium itself has been my favourite part of the entire 2-year course and it’s a pleasure being at the stage when I’m seeing the final results. Highly unusual in comparison to many of my previous projects, this design has been much less of a struggle than I expected. If it wasn’t for the countless hours of drawing and modelling I would almost be tempted to say that the stadium
designed itself and I think that’s because I’ve had many ideas in my head (also through the results obtained through my research) particularly dew-water collection, thermal energy storage reservoirs and evaporative cooling/fog harvesting facades that literally shaped the stadium into what it is now. Furthermore, the design of a stadium is in itself rather restrictive due to regulations of pitch dimensions, programme, stand inclinations etc. that any questions that emerged during the process were answered by the climatic, geographic and spiritual context of the place such as the orientation of the stadium deriving from the prevailing wind direction, the shape of the roof from the need to minimize the cooling loads of the stadium, the façade pattern was dictated by the long tradition of Islamic art which was represented on the site by the adjacent Museum of Islamic Architecture. Although I am convinced that a different designer would have made different design decisions, I have been relatively convinced by my choices and my overall design concept from a very early stage. Personally I would say that this has been a successful project because I’m convinced that the implementation of the water-systems indeed provide sustainable solutions to a region with scarce water resources that over-relies on its fossil fuels but more than that, they shape the architecture and make the overall design richer and more meaningful. They say that you learn more from your failures than from your successes, so what did I learn from this project? Well, I believe that it strengthened my idea of how a sustainable design addresses its context and that there are actually many forms of context. But most of all, I believe this design opened up a set of tools – how water can be used sustainably and aesthetically that I’m determined to one day ‘bring to life’.

Lastly I would like to take this opportunity to thank my tutors, Anne (Snijders), Leo (Gommans) and Maarten (Meijs) who have been nothing but supportive throughout this process. Dank je well!

_Osama Naji_