

Reflection

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Reflection on project

Global concerns towards environmental issues have induced growing demand for new approaches in the built environment because of its considerable impact on the environment and use of natural resources. Therefore, innovating and developing strategies that prepares the built environment for 2050 when the built environment must be completely CO₂ neutral and circular is of significant importance.

All these global issues and the urge for a sustainable future intrigued my attention in which I decided to focus my graduation research on. As the future generation, it is necessary that we make a significant impact on the world in order to contribute to a sustainable and future-proof built environment. With my graduation, my aim is to solve the energy performance gap in retrofitted buildings, whereas the main guideline to achieve a positive outcome is through a Building Management System (BMS) implementation. In order to gain an in-depth understanding about the concept of smart design, I got the opportunity to make my design guideline more tangible with the MOR project and put all my knowledge as an MBE master student. Not only was it possible for me to find out on how to implement smart technologies in retrofitted buildings, but also to work with a multi-disciplinary team from the design phase until the construction phase of the prototype.

From homes to smart homes

The concept of smart homes has been introduced to offer better system integration, services and quality of life promising to create more efficient and sustainable buildings. However, we should be aware that with the use of smart technology, a number of data security and data privacy issues arise where the citizen can be harassed. Together with a building management system, which is the brain of the house, a database of everything from our energy usage to our movements throughout the day arise. Actually, this flow of information can help to improve future designs in the built environment; but on the other hand, it can also be tempting for hackers and even offer governments an amount of power to monitor every single citizen. Therefore, homes integrated with a BMS design should provide energy efficiency and comfort without undermining the privacy of its end-users. Only then, it might have a positive impact on what the future built environment will look like.

Reflection on research design and process

Throughout the whole process of my master study, honours projects and MOR project, I learned the importance of having an integrated design approach and interdisciplinary team. It is not always easy to work with people and certainly, when everyone has different backgrounds. Many difficulties and communication problems occurred, but from these mistakes, you get the opportunity to learn what went wrong and why. One core aspect of interdisciplinary working is trying to understand each other, trying to determine why certain solutions are chosen. As a result, you get a more clear view how you influence each other and what co-benefits there are.

Having an interdisciplinary team advanced the achievement towards an integrated and holistic design. However, the decision-making procedures went not always as smooth as possible. For the BMS implementation process, the engineering committee mainly gave decisions. Additionally, other committees were giving inputs about budget, time, design of the prototype and feasibility. Albeit, several barriers were hindering. In order to implement BMS in an efficient way, these barriers had to be overcome. Most of the actors still had a difference in interest. Thus focusing more in their own field. In addition, since BMS implementation is a quite recent process, knowledge in certain aspects was lacking. These problems could only be solved through recognition of stakeholder's interests and priorities, and by helping each other to grow and improve for the sake of the project's success. The realization of this project and thus my thesis could only be possible with a strong collaboration of the different committees that strived to produce solutions that were "best for the project" within a "no blame" culture.

I would say, this group project was very intense and at the same time, it was an incredible experience. It is important to remind yourself the bigger goal and remain open minded to how things will align. Once we understood to give the time, energy and attention to the right thing, incredible outcomes were closer than we thought.

Personal evaluation and lessons learned

From not knowing how to realize my goal as a manager, this long journey taught me a lesson: to embrace the uncertainty and to trust the process. This master thesis gave me the opportunity to be uncomfortable so that I could grow beyond what I thought was possible. Not only did I learn from my experience, but I also did learn from reflecting on my experience. What did I achieve today and how can I improve myself tomorrow? It was not always easy but everything I went through now is leading me towards something greater.