

## 7 Reflection

The following document is a reflection on graduation report. First the relationship between the theme of the graduation lab (sustainable sport venue design) and the research methodologies are discussed. Secondly the findings of the research are placed in social context.

The graduation theme this research started with is *Sustainable sport venue design*. Sport venues can be roughly divided in two categories, according to their size. Early in the research process a decision had to be made which kind of venue the research would focus on. At that time media attention was directed at the legacy of the Rio Olympics of 2016. Many venues had turned into 'white elephants', which is the definition for large abandoned buildings.

After more research was done by studying case studies the scale of the problem became evident. Many examples of a negative legacy of the Olympic Games created by abandoned sport venues can be found. This problem is currently recognised by the *International Olympic Committee* (IOC), which is why a *legacy plan* is now required for future Olympic Games.

One way to avoid white elephants is by building temporary instead of permanent venues. These have become increasingly more common in Olympic Games since the Sydney held the Olympics in 2000. Although less visible, this research highlighted the negative impact of such temporary structures if it is not built towards reuse. In relation to the theme of the graduation lab this aspect was in my opinion a lesser known aspect to temporary sport venues.

Another methodology used in this graduation is research by design. A parametric design has been used to generate multiple configurations of a steel construction for a design. Different constructions could therefore be easily documented and compared. Also by combining the literature research on reuse with the documentation of these construction they could be rated. In relation to the graduation lab this is a step towards computational design, where construction is analysed early on in a design process by algorithms.

To *reuse architecture* and to build *circular constructions* is a well-discussed topic, but articles refer mainly to the demolition of the current built environment. This complicated the search for scientific literature research. A large portion of this research tried to bring building temporary structures & reusing structures together.

When this project is put in a wider social context there is a very direct relationship with the public that visits or follows the Olympics. The venue will attract much media attention from all over the globe, and will reach many people. It should therefore also represents the idea of reusing architecture, which can be done with many more steel structures that are currently reused.

Although this design is quite unique because only a small amount of steel constructions are built for such a short lifetime, it can still contribute to a more sustainable building process for contemporary steel construction. A portion of the research is focussed on the difference between optimization towards minimal material use and optimization towards reuse. In other words, unique elements that fit the requirements precisely, or standardization of elements that not always match the requirements precisely. It is a tradeoff that influences any design process depending on what strategy is chosen.