

In short, my graduation project is about the re-use of oil tanks in a post-oil world. It is common knowledge that the peak of oil will come soon, and oil and therefore oil products will become scarce. It is safe to assume that the oil industry will get in decline, so we should think about the heritage that the oil industry will leave behind. An iconic element of the petrol industry is the oil storage tank. We can knock these tanks down, but what if we could repurpose them. In my graduation project I have set an example by repurposing an oil tank into multiple dwellings.

## The relationship between research and design

During my research I did research into the repurposing of an oil tank into multiple dwellings. I did this via the method of research by design. By sketching and model making I tried to find the problems and solutions which came with the design process. The result of this research is a guide about designing dwellings in an oil tank.

In this guide I defined multiple problems which make designing dwellings in an oil tank more challenging from standard dwellings. And for these defined problems I defined some possible solutions. In this way I could use my research as a guide for my design.

For example, in my design I had trouble with daylight. There wasn't enough daylight coming into the dwellings. So I went back to my research and looked to the different solutions I defined. And then I could try these solutions in my design to test which fitted my design the best. In this way the research guided my design.

## The relationship between my graduation topic and my master track

During my masters I did the Heritage studio and the Complex studio, and during these studio's I came to the conclusion I wanted to graduate on a wider social and sustainable topic linked with heritage. I couldn't find this in the general studio's and therefore I applied for the studio of Explore Lab, where you are free to create your own project.

My graduation project on repurposing oil tanks is about this wider social and sustainable field. Heritage of industry is quite often neglected, while this heritage is often very iconic for an era. At the moment we live in an oil-based industry, in a world of plastic. However, everyone agrees this won't last forever.

In our master we get a lot about sustainability, but oil and plastics are rarely mentioned. The same for heritage, we always look to buildings which are already heritage, but not for what is to come. Therefore, I found that a

future based design and research would fit the master track. The design, multiple dwellings in an oil storage tank is based on the social factor of re-use, is energy neutral and highly sustainable. And the design is already set in a post-oil world, where we have to think beyond oil, and use other materials.

### Research method and approach in relation to the scientific relevance of the work

During my research I used the method of research by design. This method is relatively new and has therefore no strict guidelines. However according to sources (see research) this method should not be alarming, as long as the research is done systematically and new insights are communicated and expressed in a way that is useful to others.

However, one can discuss if my research was done systematically enough. Designing is a creative process, which sometimes doesn't fit in a systematic system. I tried to keep track of every step I took in my diary, nevertheless some decisions and conclusions I made were not expressed in drawings or models, but were for example the result of shower thoughts.

It is hard to report your whole design process step by step, because we all have different backgrounds and therefore a different frame we design in. Some decisions I made were so obvious to me that I did not need to make a drawing or a model, then again for others due to a different background and working frame, it might not make sense at all.

However, with my research I gave an example of how research by design can be done, and how you could come to conclusions which are scientific relevance, via this method. Therefore, my research was not only scientific relevant to set an example of the repurposing of oil tanks. It is also scientific relevant as an example for the method of research by design.

### The relationship between the graduation project and the wider social, professional and scientific framework

When looking into the heritage of the oil industry, I chose the oil storage tank on purpose, because all over the world oil tanks are similar to each other. Oil tanks might differ in size and a bit in construction, but in core they are all the same, namely steel cans to hold oil. Therefore, by making a guide for the repurposing of oil tanks, I made a guide that is applicable all over the world. And with my design project I wanted to set an example for the repurposing of oil tanks, for the whole world.

This was also the reason that I chose to repurpose the oil tanks into dwellings. Dwellings have the strictest laws and requirements, therefore when it is possible to repurpose an oil tank into dwellings, it is possible to repurpose them into anything.

## Ethical issues and dilemmas I have encountered

One ethical dilemma I faced was the re-use of the oil tank, because why should an element of an industry which polluted the world be kept as heritage. Don't we want to get rid of this era as soon as possible and quickly wipe out all the traces it has left.

Nevertheless, oil wasn't all bad, it gave us a kick-start in our innovative era, full of plastic. It was the engine of our industries and economies, so shouldn't we remember this era, even when it is only as a reminder of what not to do in the future.

Another ethical dilemma was the housing type. My design is based on big houses, with multiple bedrooms, in size comparable with villa's. However, is it not weird if you design the future housing, which is highly sustainable, to make such large dwellings. However, this design is just an example to show it is possible to build dwellings in an oil tank. As already shown in the design, the houses can be split in smaller dwellings. And this flexibility is a very important factor for sustainable housing.