

Repurposing fiberglass boats.

The journey through this past academic year was driven by my stumbling across an image of the “Wikado Playground” by “Superuse Studio”. This group of Dutch architects used old windmill blades in order to create a landscape of play for children in Rotterdam. But behind the image of kids jumping up and down between the large fiberglass blades, one finds a darker truth. These windmill blades are only few of the many windmill blades and many other fiberglass items which, after being used, seem impossible to recycle. They end up on graveyards, creating landscapes of waste.



Wikado Playground by Superuse Studio

Fiberglass was invented in the 1960s as a result of the search for strong and lightweight material. Its composition of resin and woven glass gave birth to a strong material which revolutionized certain industries, such as the boat industry. Replacing wood with fiberglass made boats cheaper and lighter, but at the same time drastically changed the coastal landscape. While walking along the coast of Portsmouth, one can see hundreds of fiberglass boats, most of them abandoned. As one has yet to develop a standard way to recycle fiberglass, most boats end up abandoned. . Another option is to pay for boat disposal, putting the fiberglass into landfills, which in fact results in using the landfills as a wasteland.



Boatgraveyard on Portsmouth coast.

The problem with derelict boats in the sea, is that once they become brittle, the fiberglass can go to the ocean and remain there as debris. Furthermore, a boat that sinks is dangerous for sailors, as they can't see it and risk crashing into it, causing preventable accidents. Since the 1960s, boats have been built with fiberglass and as most of them haven't been disposed of properly, the wastelands have only kept growing.

So how can one react to this problem? While in Portsmouth I met Luke who works for "the boat breakers", a company trying to face this problem. They dismantle boats from head to toe, trying to resell all parts which still have value and can be reused in another boat. The only unusable part is the fiberglass.

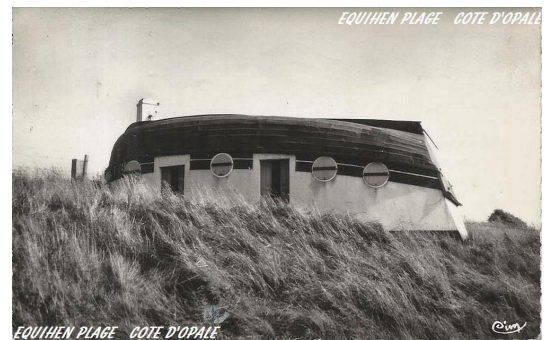
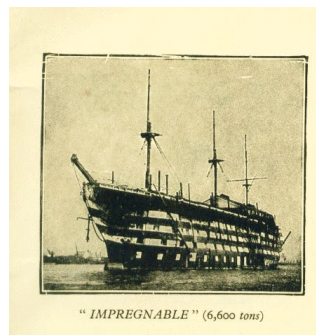


Boatfragments to be reused.

Studying at the "architectural association", taught by "Rotor architects", a Belgian firm focussing on the reuse of building materials, I began investigating how we could possibly find a better use for derelict fiberglass boats. The use of boats as architectural elements was very common while boats were still built out of wood. End of life boats would go to a dismantling yard and be turned into fire logs, façade elements or furniture. Furthermore, around the coast of England and France, one can find villages like "Equihen sur mer" where a typology was created in which entire boats were turned upside down and used as roofs.



Wood covering the liberty's facade harvested from the 'Impregnable' royal naval.



Huttypology in "Equihen sur mer"

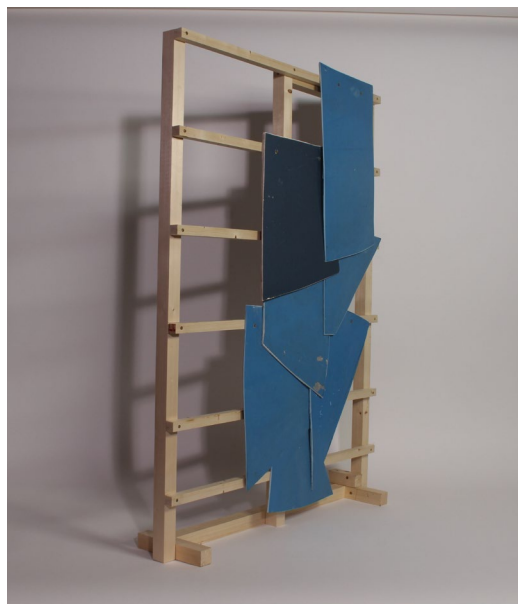
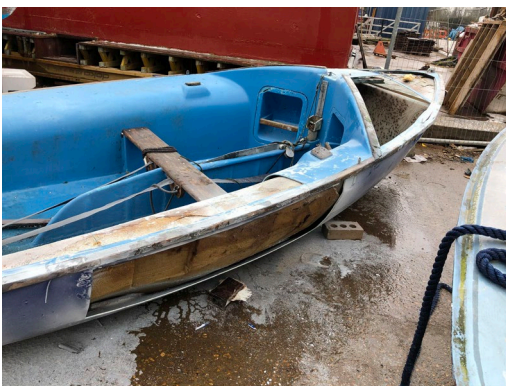
Furthermore, fiberglass has often been used in architecture, due to its good water resistance. Therefore, the only argument against re-using previously used fiberglass would be that harvesting materials from boats is a manual job and it is hard to find a systematic approach. One would have to consider working on a very large scale, in order to find similar typologies and one would need to start cutting the fiberglass in a systematic manner.



harvesting tiles from boats at the boatbreakers yard

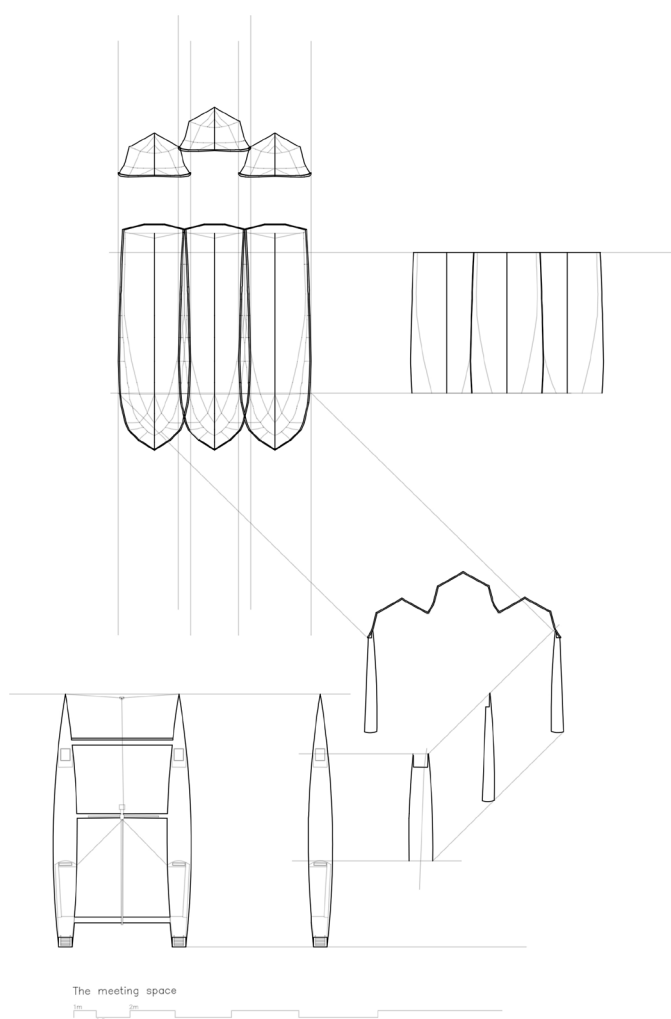
During this year, I developed two different methods:

In one of them, I only harvested flat parts from boats in order to use them as façade tiles. This would be the easiest way to reuse boats. Unfortunately, few parts of boats are flat, thus through this option, there would still be a lot of unused parts.

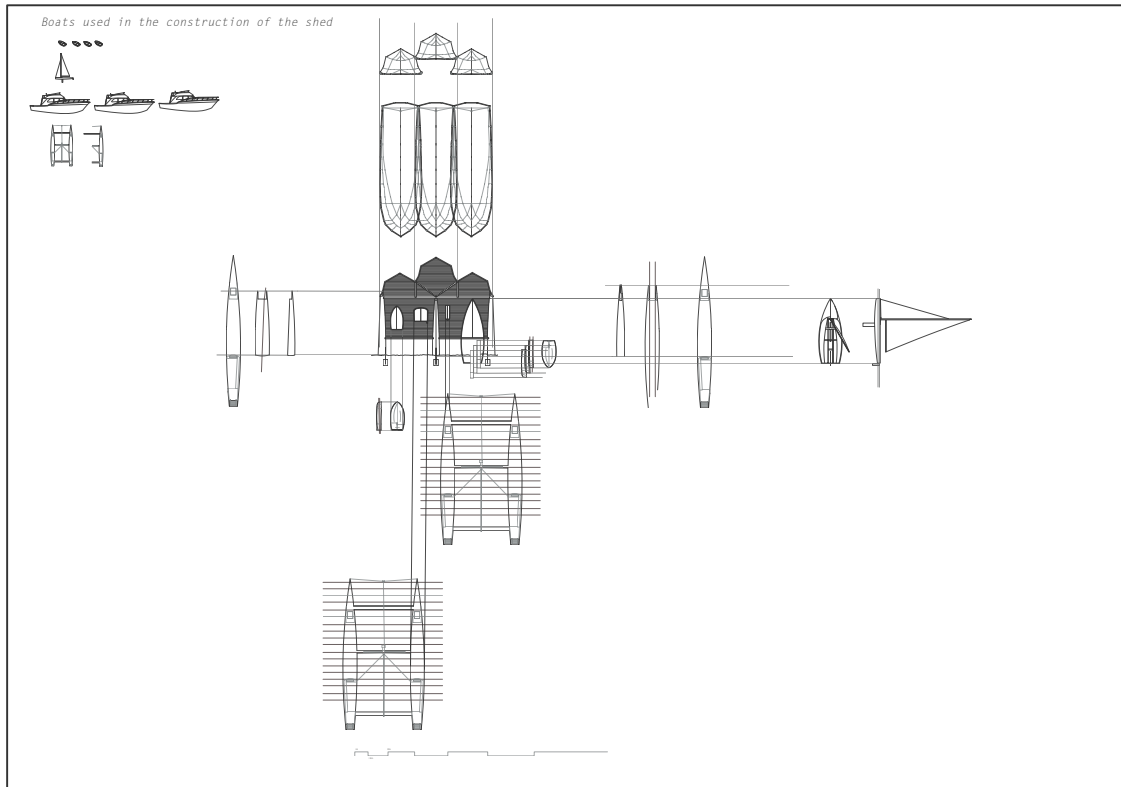


Facadefragment built with boattiles.

If one was to use entire boats as roofs, the fact of them being made from fiberglass could create far more diversity, as it is easy to attach 2 pieces of fiberglass together, using extra fiberglass in the same manner one uses glue. A roof could be composed of parts from a few boats, giving way to larger spaces and unlike the roofs in “Equihen sur mer”, it could become a typology which would be larger than just huts.

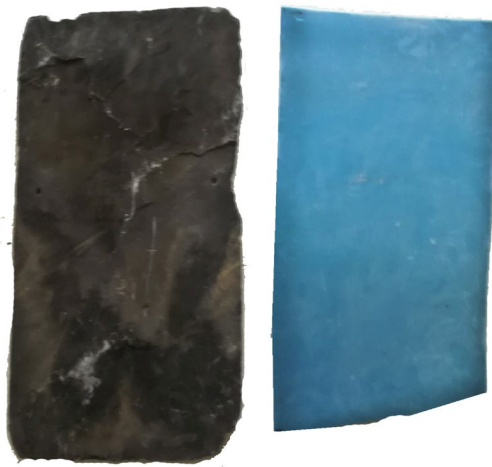


recomposition possibilities given through fiberglass.



Boat decomposition in order to build a hut.

As a result of a yearlong research, many ideas started to develop and there is definitely room for refinement and reinforcement. In a way, it proved to me that architects can choose to have a power far beyond creating: they can help reduce waste through creation.



Slate tile versus Fiberglass tile