

FL-Hex Active House

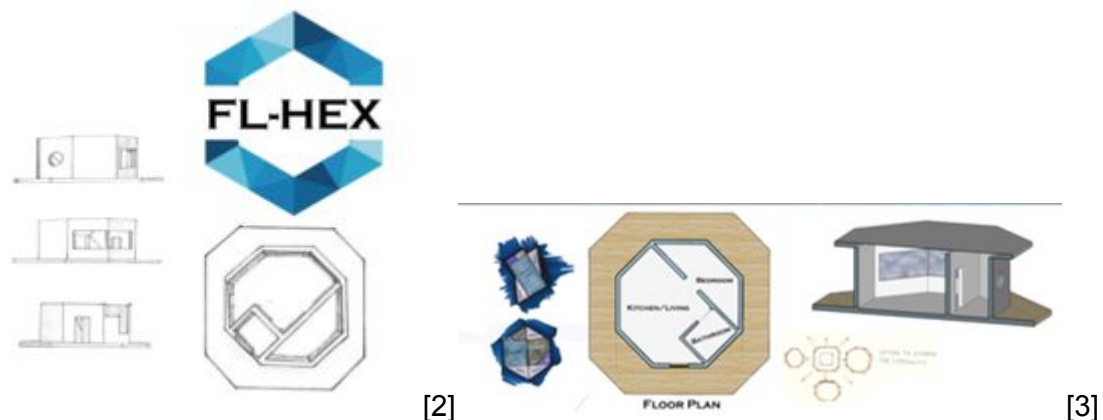
We firstly visited Swansea University's Bay Campus to have an introduction to active housing from Dr Joanna Clarke. Dr Clarke handed us the opportunity to witness techniques and components that demonstrate ways of reducing the global impact of the building. Once we returned we were given the task of coming up with a scheme of producing our own active houses for the 'House of 2030' competition. Our group consisted of Myself, Hollie Parsons, Aneurin James and Steffan Phillips and as a group we came up with the scheme of FL-Hex.

As a team the first thing we did was come together and try to discuss the basics of our scheme, Where we wanted it to be located? How big do we want our house to be? What shape our house would end up in etc. After a brief discussion we came up with the answers, The main feature with our scheme is the building will be on water, after recent flooding within surrounding areas we decided if the house was able to float on top of water this would minimise the risk of losing your belongings within the house. We didn't come with a shape from the start however we decided it will be a geometric shape. This was because it would mean we can construct prefabricated planes and construct the house this way. This is a positive because if any problems occur within the houses structure we will be able to just change a single plane or however many needed, it also gives our clients the chance to personalise their house and give it their own touch with colours and layout.

It was mine and Steffans role to then go and do research on the form and structure of the house. The form of our scheme was to be able to have a house that powers itself and will remain sustainable and have a positive effect on the planet. We decided the water idea was a good idea as we won't be using any of our countryside up meaning no greenery will be going to waste. By having it on water also means we would be able to expand and build a complex of houses, they can be connected with gantries and walkways from one another, this way we could also include communal spaces, our structure would be prefabricated planes constructed to become an octagon shape, we felt this would create enough space for studio living however if more residents were needed another tier would be very easily inserted or multiple single tier are able to combine to create a honeycomb style housing. While looking how we would construct this we were looking at houses in the maldives that were floating and we looked into Richard Iowa island and how we could make essentially this island of floating houses. As you can see from Pg[1] of our presentation below, we used several different stems of research into different items that fitted in our criteria.

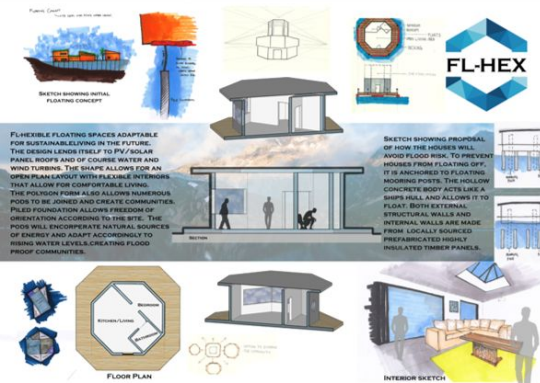
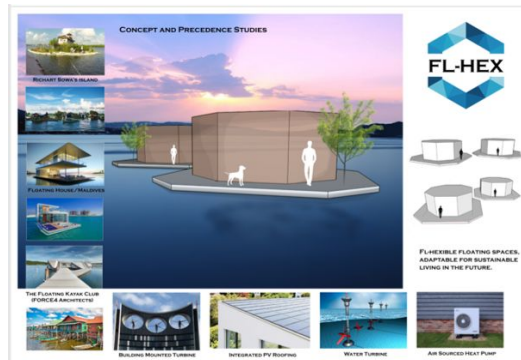


Once we finished constructing our research we handed it over to Hollie and Aneurin to do some designs and sketches so we could develop a concept idea. We had already decided the shape of the building however as a pair they came up with some designs with the layout becoming more detailed to be made into a studio living. They also came up with the idea of leaving a platform overhanging the house so there were possibilities of including garden space and movement space around 360 degrees of the house. They also made the design suitable for multiple living by keeping it a flat roof so we will be able to add additional tiers for larger families that require more space. This was quite a difficult task as because we have decided to place our scheme on water there was lots of tasks we had to consider, the weight is a huge factor as if it is deemed as too heavy the house is just going to sink and collapse, we also needed it to be a very stable structure to endure the coastal weather. All these are displayed below [2][3] in the image that displays the design we settled for as a group.



Now we had the shape and function of our scheme we now had the duty to make this scheme compatible for the 'House of 2030' competition. This is where having Dr Clarke working with us was very convenient, while on our tour of bay campus active buildings we were shown a variety of different techniques we could have implied. Dr Clarke also gifted each team with an 'active housing' guide on what creates a working active house. Within the book given there was a demonstration of active housing coming together on the project Dr Clarke personally worked on called 'Active Classroom'. [6] We considered some of the techniques which were on display however we encountered some more while in our research phase. It was a group decision to include integrated PV roofing, this is because these can be stuck to any planes, or even on the roof, this will contribute to powering the whole complex, this will be a positive as having electricity wires coming from land into water there will be a large hazard. We also considered using water turbines which will be placed on stilts holding the walkways to the pods, these are another way of powering energy for the complex, these may be more needed with areas of the complex being shaded or for pods which have been located in a area which does not receive much sun. Our way of reducing electricity bills is designing the houses with a large window being located on one plane which will be angled to face the sun so our pods can soak up as much sun as possible. Furthermore we considered looking at building mounted turbines for larger pods which will be communal areas, this is because these will be requiring more power to keep active.

Finally a presentation was made courtesy of Aneurin[1][4][5] and then we presented our scheme to Dr Clarke and Mr Standern. We expressed the structure and process behind our scheme. My personal output on the task was overall very positive, i learnt a lot from Dr Clarke on different aspects of active housing and what i can in my own home to reduce the global impact i have on the planet. In my view the project went very well, we worked well as a team and we have come up with a scheme that has potential to grow further allowing us to enter the 'House of 2030' challenge.



[1] James, A., 2020. Pg 1. *FL-Hex Active House*. UWTSD.
 [2] James, A., 2020. Pg 2. *FL-Hex Active House*. UWTSD.
 [3] James, A., 2020. Pg 3. *FL-Hex Active House*. UWTSD.
 [4] James, A., 2020. Pg 2. *FL-Hex Active House*. UWTSD.
 [5] James, A., 2020. Pg 3 *FL-Hex Active House*. UWTSD.

[6] Clarke, J., 2020. *Worked Example - The Active Classroom*. 1st ed. Swansea, PP.5-41.