

Domestic construction today- Design and performance

A modern House, most commonly known as a post-and-beam structure with a flat or broad low-pitched roof, with expressive use of modern materials and the incorporation of landscaped areas, creating an architectural character. (Modern 360,2014)

This project and competition was introduced to students mainly in the architecture field, looking at the different aspects of new technology to create more efficient houses due to the rise of global warming, in which the household contributes to about 20% of those harmful emissions that add to our global warming issues. Creating a great opportunity for students all over the UK to partake in dealing and reducing this issue, also making it a fun experience with a group task called the 'Home of 2030'.

Ultimately addressing the issue of how we live today compared to how it will be like in the future with the new technologies we will have and therefore potentially environmentally friendly homes all around the world.

To introduce us to this project we were invited to visit Swansea Uni. and see their newest technologies they are testing to find out the best ways to save energy resources among other things, that made it very useful to consider in our design for our 2030 home. Main thing we were challenged with first was to create well organised groups that we were comfortable working in.

Within the first week of our group work, we set the basic roles and responsibilities of each of us to make it clear what direction we were going in. This was conducted

by planned out meetings we arranged to do every week just to see

where we were at with the speed and direction our project was going at.

Our first meeting was the startup to gather and list ideas for the expectations of a 2030 home, this was to see the direction our project was going to work towards.

We came up with a lot of brainstorm ideas which needed to be considered within the 2030 home.

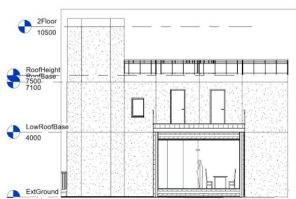
We discussed the location and orientation of our potential design which was important to mention because of the solar gain and how we wanted to implement that into our future design.

We also looked at a variety of renewable services and appliances that would be very useful and more environmentally friendly than other things. Also looking at the construction materials, the decomposition of household waste and how that could be minimised also considering the different types of services that we may consider within our 2030 home.

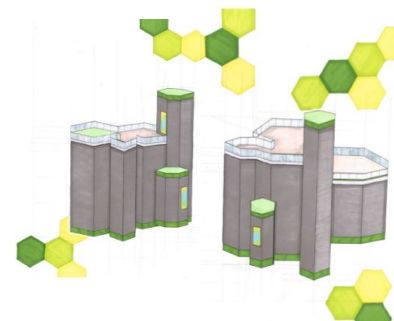
Few examples include things like:

- Electricity and how different technologies help reduce costs etc.
- Sewage systems which collect rain water and how that could be reused for things like plant watering.
- Internet and connectivity, mentioning new ideas that may work in the future for example Li-fi.

The second week we decided to allocate each other roles to research different topics we were going to concentrate on. We agreed that I will look at the materials/construction and the services. From these two topics I have been given, I looked at and researched smart materials, 3d printing in construction. I also researched into the heating and insulation, hot/cold water, electricity, thermal systems and the internet technologies.



(Roberts B., 2020)



(Padilla C. 2020)



(Own image, 2020)

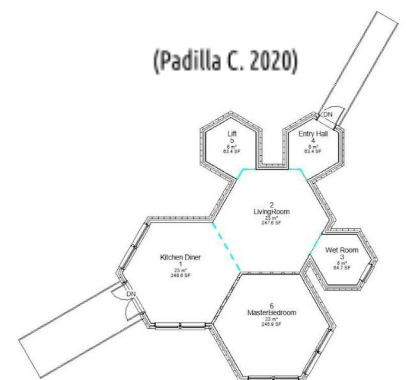
In order to create a suitable and livable home we also had to consider the accessibility, entailing the disability access, door sizes, ramps, lifts and toilets. Meaning we had to look at the suitable measurements for each of these making sure they were the right length and width size of door sizes etc.

As an inspiration for our design concept we looked at different precedent studies, our main one that we looked at was the “hivehaus”, which had very similar features to our initial design, which was a simplistic idea of a “getaway” house.

Making our design concept as a honeycomb and a pod-like structure which we decided to take forward and implement as our idea. Finishing our research in deciding on a name for our home 2030, calling it ‘PolyPods’, naming it so because the function of movable walls hence a movable pod, creating the function to add and remove rooms depending on how big you want this house to be, making it very flexible for people to decide on.



After considering the design aspect and the aesthetic of our home we then had to focus on the functions and layouts of our rooms. Deciding on the sizes for the appropriate family sizes, we decided to look at the different sizes of each pod which would all depend on the size of the family. Mainly focusing on making the space available for mid-size kitchen, bedroom, living room and toilet, however it would be depending on the size they require if it is a 6+ family would need to be made a lot bigger compared to rooms that would be occupied by couples.



(Padilla C. 2020)

Also considering the colour scheme for our building on the outside and on the inside to make it a more natural and a “honeycomb” colour scheme alongside with the nature aspect that surrounds it as well. As we are looking at reducing the 20% margin the household contributes to global warming, our aim was to not only make it in the most sustainable way but also make it look a lot more natural and environmentally friendly.



In the process of group work and the issues raised while looking at our 2030 home, I have learned a lot of valuable things I can use when working in the next group projects that mainly include teamwork , setting roles which then have to meet the responsibilities given, planning skills, when making time to have meetings. Also widening my

knowledge about the different criterias that need to be met, which I can use in my future designs,in terms of materials that are more environmentally suitable.

If I was to re-do anything within this project I would definitely try and improve our design concept and develop it further. I would also put more effort into presenting our work towards the end, even though not mandatory, I would still next time try and present or add on a few comments since that is the main area I struggle in.

References

- Modern 360, 2014, What is a modern home, <http://blog.360modern.com/what-is-a-modern-home-2/2011/05/> ,[accessed, 12/02/20, 9:30].
- Author,2020,[file:///C:/Users/User/AppData/Local/Packages/microsoft.windowscommunicationsapps_8wekyb3d8bbwe/LocalState/Files/S0/130/Attachments/Project%20proposal\[424\].pdf](file:///C:/Users/User/AppData/Local/Packages/microsoft.windowscommunicationsapps_8wekyb3d8bbwe/LocalState/Files/S0/130/Attachments/Project%20proposal[424].pdf) [accessed, 13/03/20, 12:50].