VR220 Artifact: Preliminary modelling of built environment for use in Virtual reality.

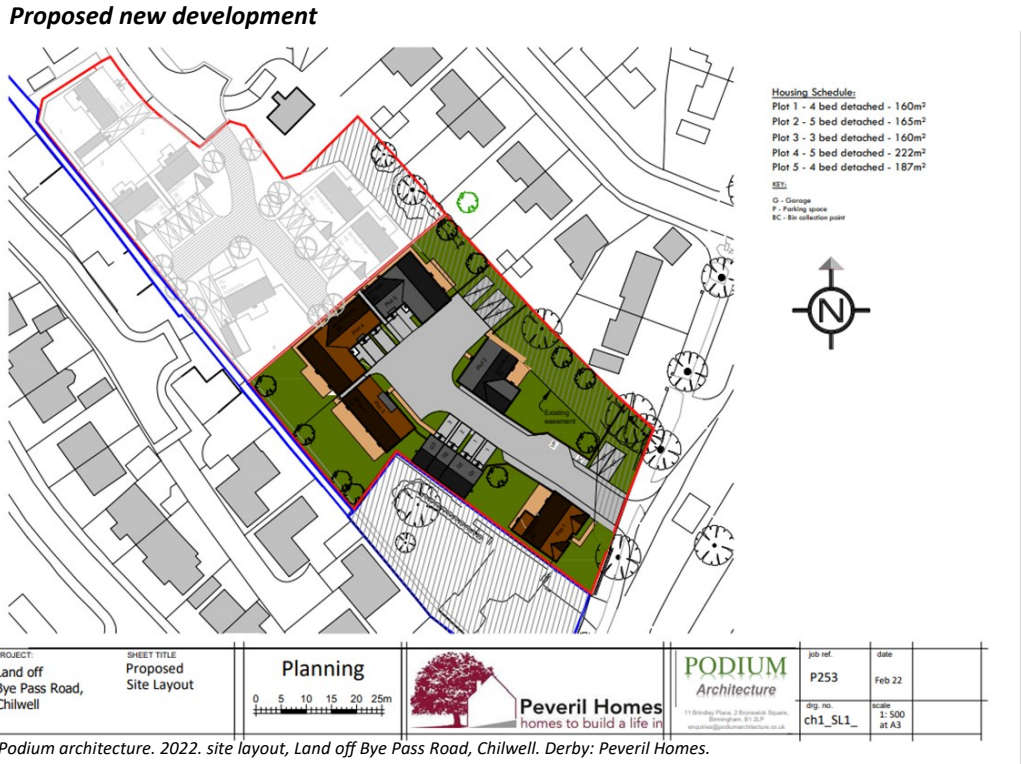
Proposal

My proposal is for a VR experience showcasing an upcoming housing development which is still at the initial design stage, with the intention of it being used for design and reference considerations by the company that has assisted me with this brief (Peveril Homes). I feel this proposal best aligns with my specialism as the project involves the creations of environments for use in VR specifically which combines both my work with environment art over the past few years and my continued drive to progress the use of VR in sectors that haven't yet adopted widespread use of this new technology. In this case it is my intention that the artifact will be used to enable the current designers to fully appreciate the impact of their work and external organisations to better understand the massing and spacing of buildings in a format that is clear and simple to understand. Historically this required an element of specialist knowledge, to understand the traditional method of conveying upcoming projects, that being CAD (Computer Aided Design) models or 2D technical drawings. The project will require the acquisition and breakdown of technical data into format that can be easily moved into VR, It will require the use of multiple CAD and 3D modelling programs and a multitude of file types. This will include both recreating existing structures of plans and references and the visualising of structures that have yet to be built. I believe that the project is sensibly scoped as it does not require production quality textures or lighting so although the scale of the project is fairly large the workload required to reach the desired finish is realistic.

Existing site

Google earth,2022

Proposed new development



Podium architecture. 2022. site layout, Land off Bye Pass Road, Chilwell. Derby: Peveril Homes.

Core design

The core design of my artifact will be a VR experience showcasing an upcoming housing development, for design and reference purposes. The project will be formed of a combination of low poly, low detail recreations of surrounding existing structures and the creation of higher fidelity depictions of the proposed new development itself, as well as any structures or objects that will aid in visualising the new developments place in its surroundings. One of the key aspects of the project is attention to detail with accuracy being critical to the project with all models needing to be made within strict tolerances to ensure the final result is an accurate representation of the proposed scheme. The choice to make the project in VR was made because the technology offers easy virtual access to the site prior to project completion and is a simple and comprehensive method of communicating the designers intentions for the site outside of there company whilst still providing the scope for live alterations and changes if needed. There are alternative methods to showcase the project in the development stages such as CAD drawings and models, However these are often overly technical and require a degree of specialist knowledge which makes them significantly less friendly to users. An alternative method of displaying upcoming developments is to make physical models of the site which eliminated the specialist requirements associated with CAD models. Physical models do have significant downsides as despite being made to scale the size limitations of physical models mean that it is hard to gauge the massing of upcoming buildings and its overall impact on the surroundings as it is hard to view models from realistic viewpoints. The main software that I will be using will be: the Autodesk suite, predominantly - Maya, Revit and AutoCAD, Sketchup, Unreal engine 4 and Blender. The majority of my data will be received from the architectural firm themselves however there are still large amounts of data such as terrain maps that I will need to source myself. Owing to the different standard file types present in the built environment sector compared to VR development it is likely I will encounter files in more specialised formats that I will need to adjust to work well within game engines and to be able to extract the relevant data from large amounts of technical information. A large portion of my practice-based research will be formed of ascertaining the best ways to turn raw architectural data such as drawings into 3D assets that can be used in a VR context. There are multiple ways I can think to do this, and it will be a matter of working out which one is the most efficient and yield the best results.

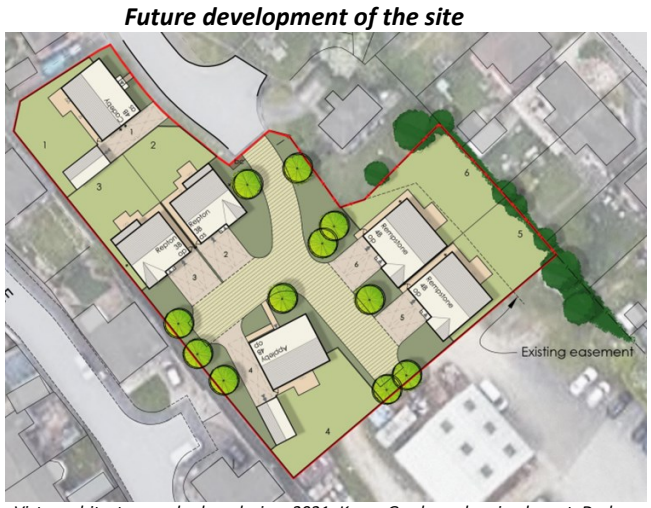
Example of proposed residence

Podium architecture. 2022. Plot one, Land off Bye Pass Road, Chilwell. Derby: Peveril Homes.

The site

The plot itself is as a piece of land located off the A6005 in Beeston, Nottingham. The site used to be the head quarters of a housing company by the name of Westerman Homes. In November 2021 the land was sold to Peveril Homes who intend to redevelop the brownfield land into a residential development. Due to planning policy it is intended that Peveril will build 5 separate private properties, as any more than this would require the creation of an adopted road within the scheme. The site is what is known as an infill site which means it is overlooked from three sides, this is why Peveril were keen to have incorporate VR into there design process as it will allow them to better determine the massing of building, impact on lighting and overlooking views of both the new builds and existing structures. Property prices in the area will dictate the size and maximum property value of the new plots. The scheme will not utilize the entire plot as the rear third of the land is being developed under another scheme at a later date.

Future development of the site



Vista architecture and urban design. 2021. Karen Gardens planning layout. Derby: Peveril Homes.

Additional References

Google Maps. 2022. 158 Bye Pass Road, Chillwell. Google Maps [online]. Available at <https://www.google.co.uk/maps/place/Westerman+W+Ltd/@52.9145009,-1.2327023,108m/data=!3m1!1e3!4m5!3m4!1s0x4879e9b2fbcab281:0x762161a7a25061dc!8m2!3d52.9144014!4d-1.2323974> [Accessed 23/02/22].