RAPID – Rapid Prototyping In 3D

Lead partner
PixelMill Ltd - Manchester, UK
A VR/AR[1] studio, developing multi-platform digital tools using cutting-edge technology.

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Project description
RAPID uses rapid prototyping in 3D to support city decision making and citizen engagement around changes and interventions to the built environment. It provides the possibility to explore new urban designs in response to changing behaviours. RAPID uses a library of 3D city assets with associated rules to allow the investigation of different options and will include the ability to view citizen behaviours through the use of agents.

For a given spatial area within a city we can produce RAPID 3D models like the ones previously produced for Copenhagen as an indoor area and Sabadell as an outdoor area. (video link1 and link2)

Rapid Prototyping 3D: Images and Screenshots from Copenhagen and Sabadell

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[1] VR/AR: Virtual Reality/ Augmented Reality

Timeline, milestones, and deliverables

Timeline:
4 months (01.09.2021 – 31.12.2021)

Milestones:
1. Spatial area and issues for that area agreed (September)
2. Data sourcing, iterative consultation and 'As-Is' model development by PixelMill and City (September- October).
3. As-Is RAPID 3D model created (October)
4. Optioneering and 'To-Be' model development, including engagement with stakeholders (October- November)
5. To-Be options created built upon As-Is model (November)
6. Consultation or workshops completed, if appropriate (December)

Deliverables:
RAPID 3D model for the spatial area that can be used by the city.

Requirements to cities
1. The agreed spatial area should be a public urban space but restricted in size, preferably with a focus on key junctions or specific areas identified for possible improvements e.g., new cycle lanes. For example, in Copenhagen we focused on all indoors and only pedestrian movements within the Copenhagen Central Station to improve the public´s confidence in public transport during the pandemic and to consider options to reconfigure the station using the 3D model. In Sabadell, we focused on an outdoor area with planned improvement to cycling conditions, including movements of cars, bicycles, pedestrians, and electric scooters, to encourage more cycling in an area as part of wider active travel programme.
2. CAD data for the agreed spatial area if available. RAPID 3D models are not accurate to the mm, but they do need to be recognizable and fit for purpose.
3. The city needs to provide a contact who will act as a 'virtual client.' This person will provide feedback on the 3D model as it develops. For example, there may be features that are important that are not recorded in CAD data.

4. The city will take responsibility for the engagement and any workshops with local stakeholders e.g., citizens.

Further links and information
*   RAPID Copenhagen - Version 0
*   RAPID Copenhagen - Version 1
*   RAPID Prototyping in 3D - Portfolio