

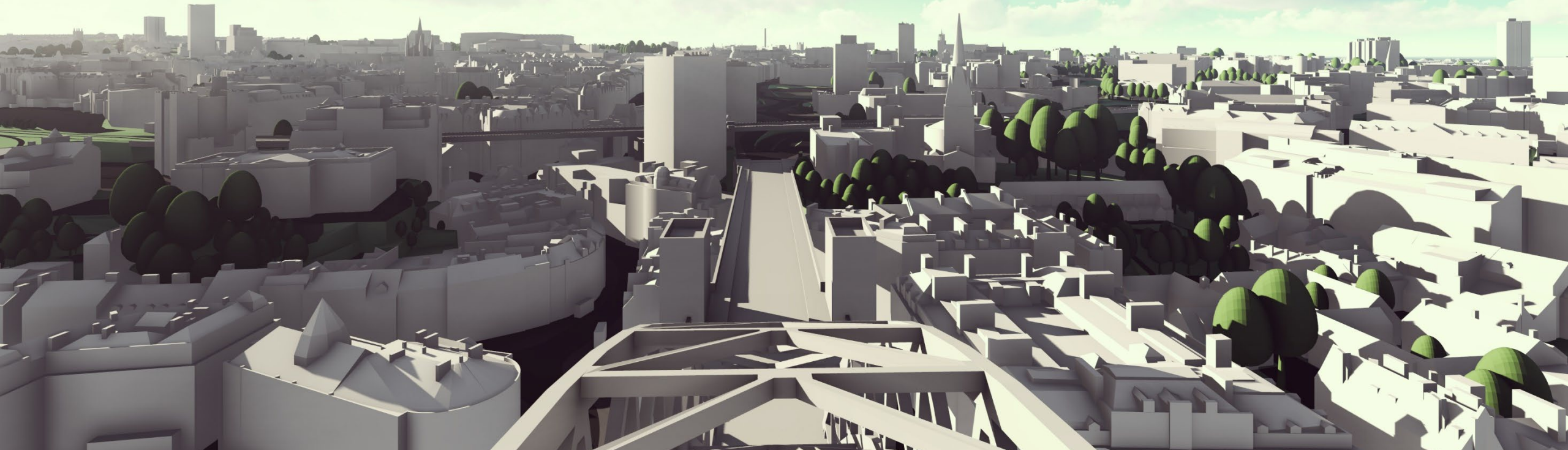
Virtual NewcastleGateshead



Northumbria
University
NEWCASTLE



Gateshead
Council



Collaborative 3D digital model of the urban core areas of both Newcastle and Gateshead.



Virtual NewcastleGateshead (VNG) is a 3D digital city model of the urban core areas of Newcastle and Gateshead, developed in partnership with the two local authorities.

Started in 2008 the project has aimed to provide a definitive, accurate, interactive city model, as an effective stakeholder communication and decision tool for a cost-effective way of understanding the wider implications of planning applications. VNG is helping to streamline and increase the transparency of the planning process, and providing a flexible, interoperable dataset to support city scale research and assessment.

Primarily created using stereo aerial photogrammetry data, the resulting mass model contains detailed roof information, but no façade features, and is split into layers via spatial objects (bridges, buildings, fences, grass, hedges, parking, pavement, rail, roads, terrain, trees, walls and water). In addition, terrestrial laser scanning technology is used to capture details of the iconic landmarks from the ground to provide a greater level of detail and sense of place within the virtual model. The need to capture and model the landmarks is due to their iconic status and important role within the image and assessment of the city. Furthermore, their permanence regarding their design and features, allows for this data to be used within future versions of VNG.

2016 Limits:



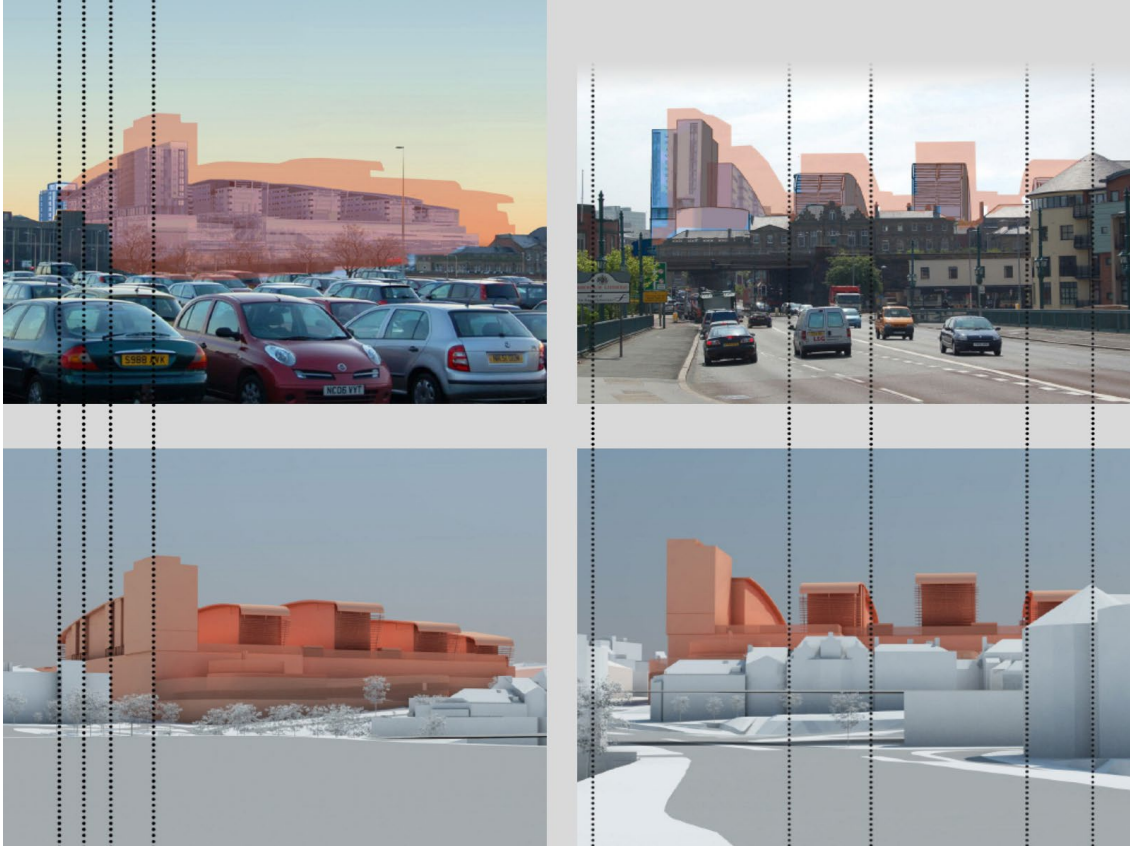
Base: 100sqkm Entirety



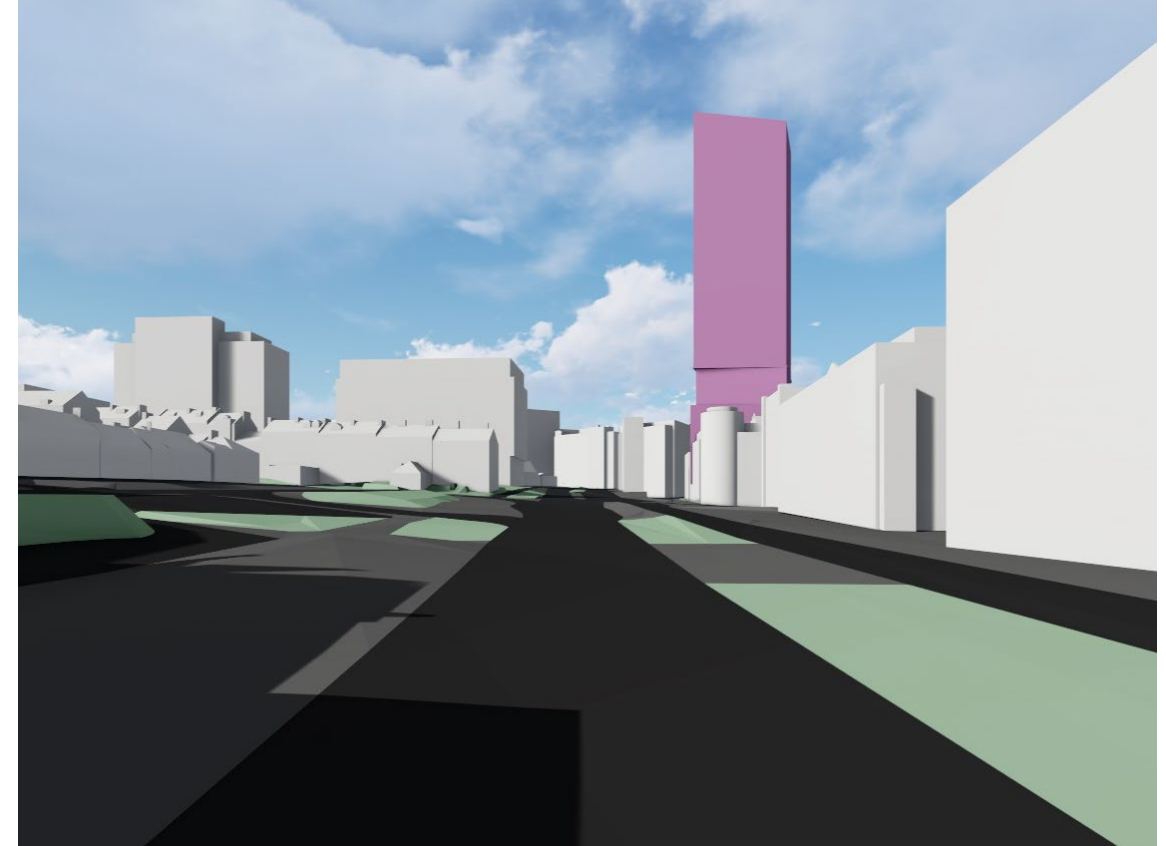
Workshop Model: 16sqkm

Updated to include major schemes recently approved

Planning Proposals:

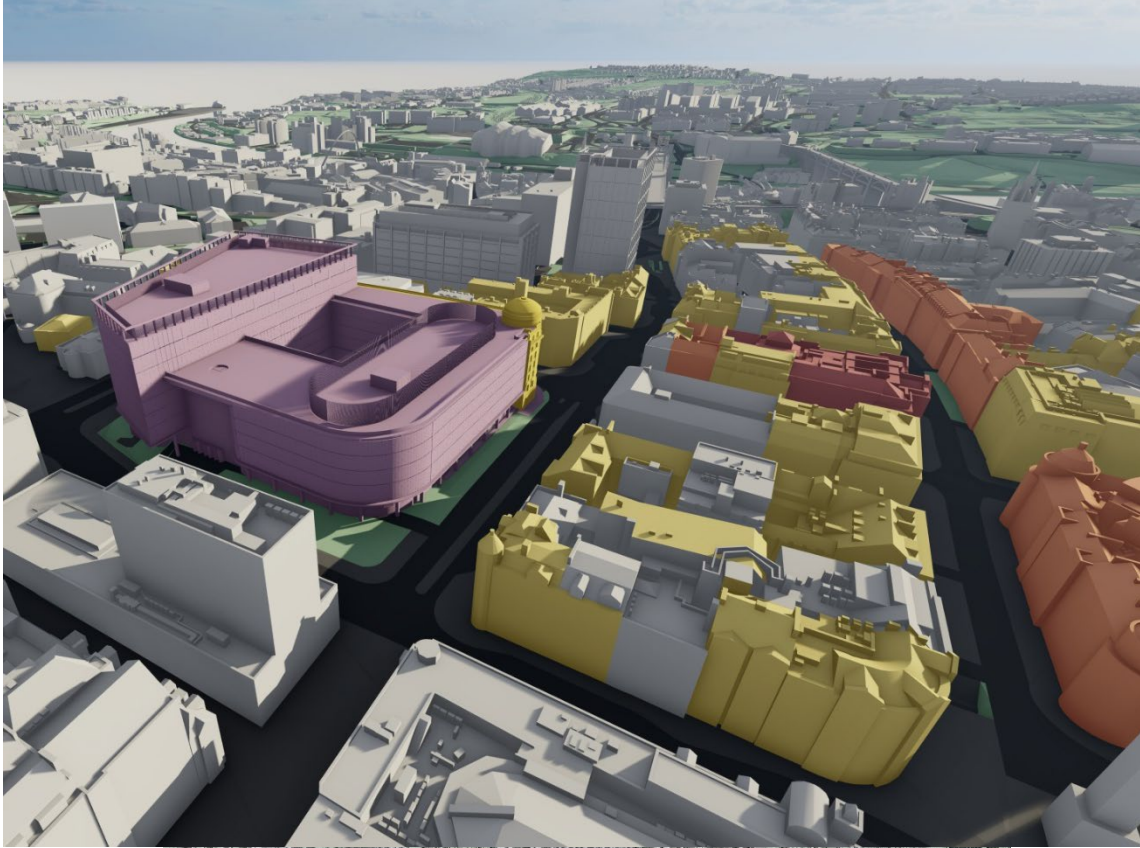


Problem: In accurate views



Solution: Virtual Digital Twin

Interactive Workshops:



Heritage Assessment



Student Insertions: Great Exhibition of the north

Future and Campus Assessment

FUTURE OF VNG

- **Improved data integration:** Improving the intelligence of the model and continue development of VNG towards a “smart” city platform
- **Better accessibility:** Strengthen access across and beyond planning processes, i.e. public engagement, web portals, etc.
- **Diversity of use:** Develop VNG to be an asset for Newcastle and Gateshead, for all, not just planning, via new uses and partnerships.

CHALLENGES

- **“Buy in”:** Best results come from a symbiotic relationship.
- **The Terraced House:** Data integration at finer scales within joining geometry.
- **Sustainability:** Maintaining and supporting data and processes over time.
- **Development:** Opportunities vs Time

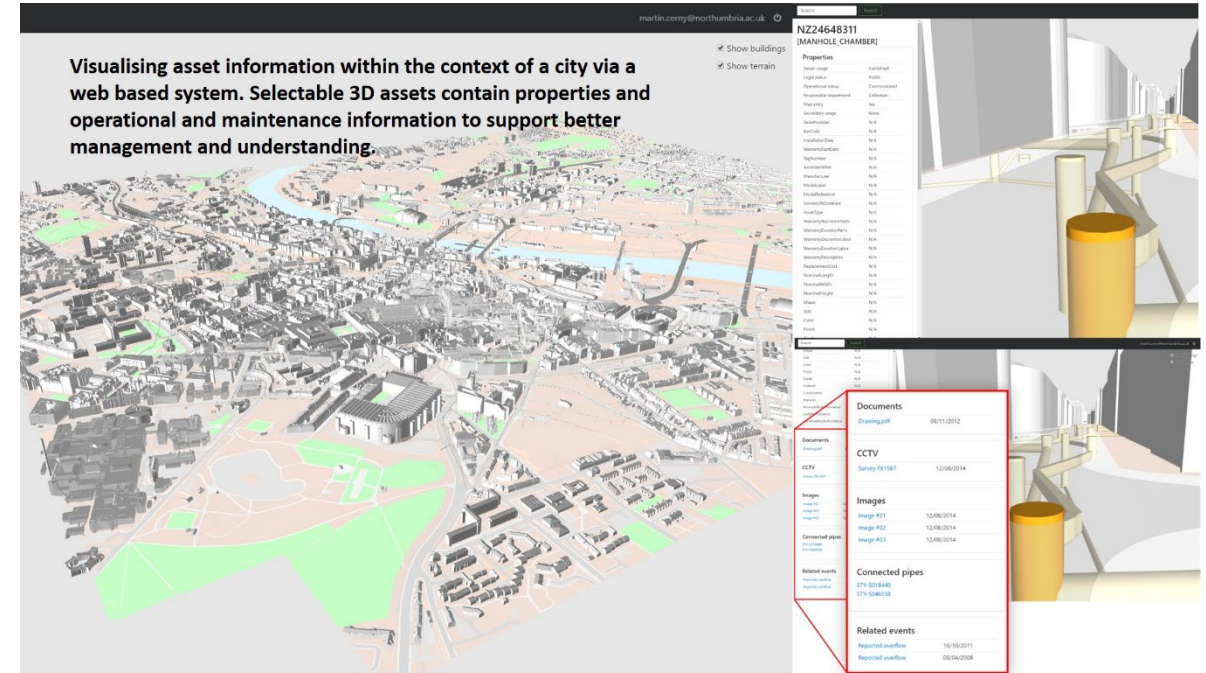
Proof of concepts

Other applications of VNG

“Smart”:

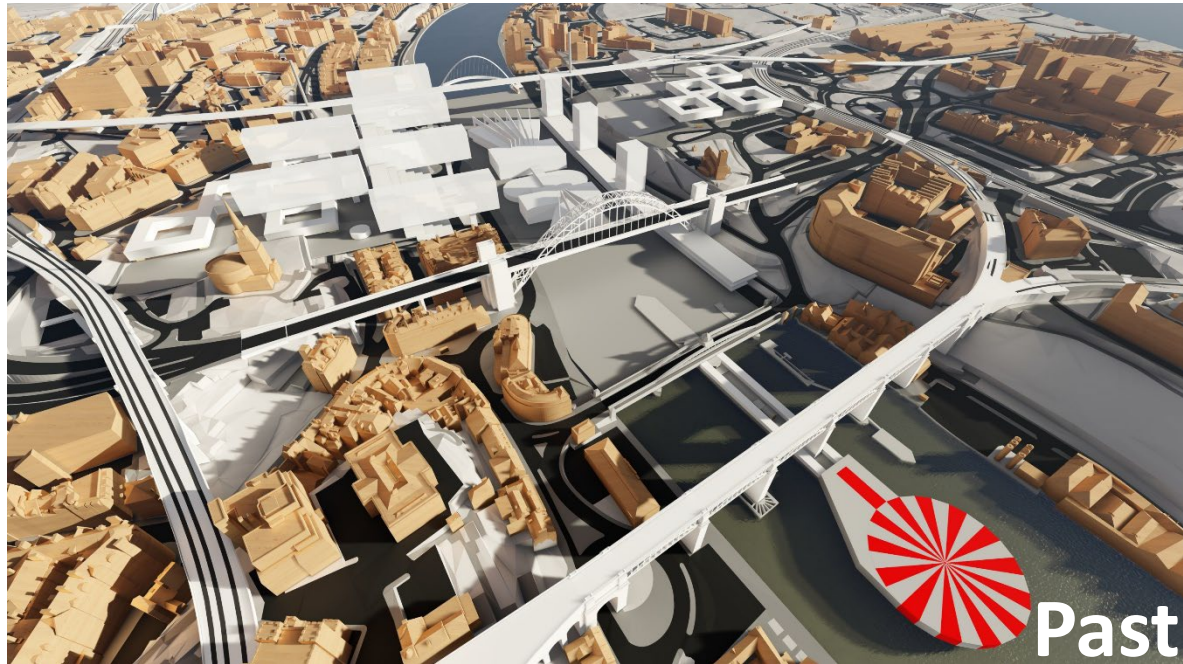


City Sensors



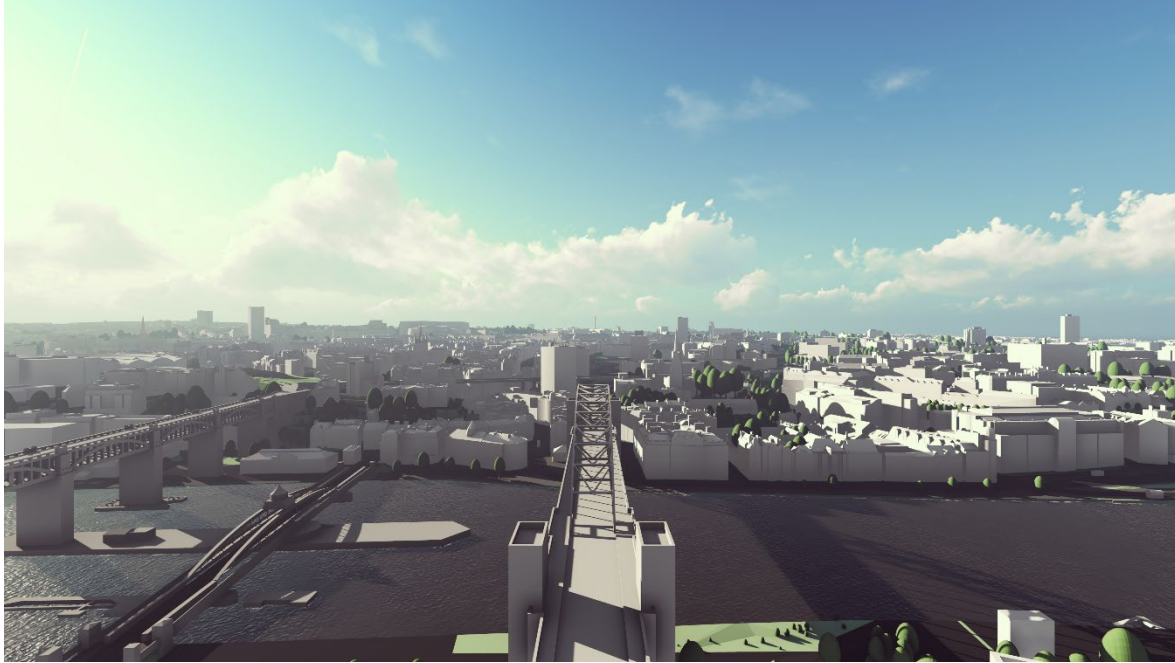
Web applications

Visions:

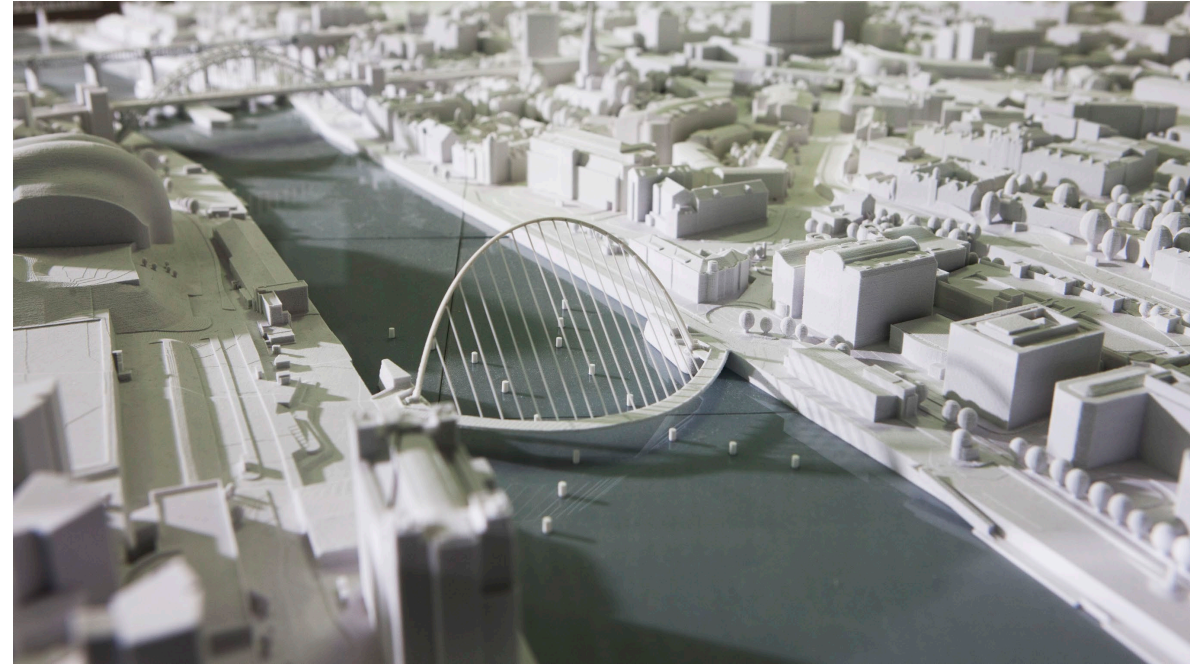


<https://www.youtube.com/watch?v=5FOXf3SgQUY>

Models:



Digital



Physical

Thank you!
Any Questions?

