

1. How you bring all the different land holdings together?

Marko: That is a complex process that has to do with early stakeholder consultation and looking at what sort of added value a land assembly model can provide. At the heart of it needs to be a masterplan. For some sites there needs to be more public space because of where it is and for some have more density built in them. Therefore, the land assembly model needs to recognise shared burdens and benefits and find a way of creating equal share of the benefits for that model to work.

Ian: At Clapham the land ownership is about 80% within Network Rail. The majority of works required is on land owned by the rail operator therefore Network Rail has the option for compulsory purchase of adjacent land. The risk is that plots of land around the rail station are built on because they are easy wins – some sites owned by supermarkets and some by local authority. The land assembly package with suitable compensation to all stakeholders and with an agreed funding model for all the upper infrastructure is key.

2. Who could fund all this? Who drives this? Council, Developer, NR.....?

The oversite development generates a substantial pot of money that can contribute towards enabling infrastructure and land. In the case of Clapham, the infrastructure is a new station and the land needed to accommodate the enlarged footprint. The funding is generated by surrounding homes for sale, retail and commercial spaces as well as government grants.

Ian: It's worth keeping in mind that the window for these projects is longer. Rail infrastructure works take 5-15 year programmes. Minor works take 2 -3 years. It's imperative to get value out of the sites.

Bill: Yes, at Clapham the vision is of a new mixed-use cluster of buildings positioned over the station and rail tracks. Both TfL and Network Rail have housing targets so the provision of affordable, social and market priced homes is a major factor in this space.

3. As an MMC Housing provider until land is assembled what do you see as the role of the MMC providers in this discussion about land assembly.

Nigel: Buildoffsite has several hubs and one is looking at residential. We'll look at how we can take time, mass and cost out of these projects - we'll have another webinar that looks at this in two week's time.

Marko: MMC housing providers and the industry need to make sure the supply chain is robust enough.

4. In terms of Sustainability, the offsite construction, new materials of low carbon intensity, and reduced energy consumption can be achieved in all new builds. It doesn't have to be an Overbuild. What are the benefits that actually an overbuild will offer in terms of sustainability? I believe that in terms of energy it will be worse,

because you will have to rely on mechanical ventilation due to noise from the railway, and probably cooling will be needed as well.

Nigel: It depends on the building solution used. Subsequent observation, baffled vents may be used on the rail facing end(s) of a development to reduce the noise issue there.
Bill: Biggest contribution to sustainability: you won't be driving a car because you are on a transport node. The minimum building sustainability would not be affected, the advantage is that you're encouraged to use public transport and not to drive.
Subsequent observation: much of these sites is away from the noise of the railway, which is encapsulated underneath, so this will not be a constraint.

5. Civils enabling works (encapsulation, separation of rail corridor/built environment) are usually the most costly and time consuming, and the engineering design assurance most difficult. Is it feasible to separate civils enabling with the "oversite development" by completing civils enabling works and selling oversite works at a higher cost/m² to developer partners?

Nigel: We've discussed in the guide in the procurement section.

Ian: There are different ways to approach the construction of the deck and who pays for it. Probably the most efficient in cost terms is where the deck is designed to support the proposed overbuild. More flexible scenarios enabling different overbuild configurations are likely to cost more although all solutions must effectively provide separation to the railway.

There is an argument for simpler solutions where you don't provide the deck for the developer but you provide the separation from the railway. Minimise the weight of the deck to minimise infrastructure cost.

Bill: In France the locations of the buildings were pre-set and orchestrated around rail constraints. It does achieve that separation. The city built the deck and developers took plots of land.

6. How do you deal with safety issues emerging from heavy train presence (fire protection, smoke, evacuation, traffic safety, protection of structures, etc.) vs. the strong urban integration, and residential/office focus of the development?

TfL provide requirements that you must meet – one is related to fire safety and there are clear rules on what you have to do depending on the size of the tunnel.

7. How will the offsite fabrication work for overbuild in terms of structure? Will it be timber or steel structure?
Once the rail is safely encapsulated (typically in reinforced concrete) a full range of overbuild approaches are entirely viable ranging from a continuation of concrete, pre cast, steelwork and hybrids involving timber and modular methods.

Nigel: For the civil engineering, precast concrete structures tend to be the main focus at the moment. In large scale projects (in New York) there's a lot of steel. In terms of the

superstructure on top we're looking at a number of different ways and that's going to be the subject of the next webinar. There's an interest of reducing weight on top of the deck and is important that modular concepts are introduced before the planning stage.