



Thursday 7 December 2017

Bill Price, Strategic Growth Director, WSP presented the opportunities identified for building 250,000 homes in London arising from his report:

“Out of Thin Air - Building above London’s rail lines”

The Opportunities - Bill Price, Strategic Growth Director at WSP.

This afternoon is about Rail, but there are very interesting examples of building over water, of building over many other areas that is done more in France and Europe. In Sweden they are putting a lid on top of the sewage works – this allows the odours to be cleaned and made acceptable in order for the town to move further nearer to the area, instead of moving the sewage works. This is an example of thinking differently. Lots can be overcome with engineering and collaboration which are both key to solutions in this area. I am sensing a shift in people looking to exploit situations for the better, and in reducing the transport costs.

Some background of the need ‘Building our way out of a crisis’:

http://www.wsppb.com/Globaln/UK/Whitepapers/WSP%20Housing%20Whitepaper_2014.pdf

We are all aware of social infrastructure that is dysfunctional. WSP did a survey – what people wouldn’t mind living over – *See presentation or pdf link above.*

We looked at the areas by Borough – *See presentation or pdf link above.*

This led to the unprompted work on the ‘Out of Thin Air’ report using GLA data. This has generated more interest in its first two weeks of release than any other report in Bill’s career.

www.wsp-pb.com/PageFilesn/84222/Out%20of%20thin%20air%20report.pdf

The data does not take into account any planning restrictions – rights to light etc. Only 10% of the potential is included to ensure the 250,000 home potential is conservative.

There are 5 Key benefits

- Creates new land for development
- Makes communities more pedestrian friendly
- Financial benefits for rail infrastructure owners
- Value uplift for existing assets (no-longer impacted by noise)
- Densification of London – without losing green space

Analysis was carried out by fare zones – then looked at a few sites. Victoria – all this track, network rail land alongside it

2 images of Victoria: Before and after creation of a deck above the main line approach track.

Insurance market – no conversations had yet. There is low risk – appealing to Network Rail as an additional source of income. Look at examples:

- Network Rail - Clapham Junction looking at over railway lines. As one of London's major rail exchanges it is very unfriendly and inaccessible – an opportunity to link communities.
- Hudson Yards, NYC online- Different methods used, massive scale.
- Gunnersbury. Plans for another station overbuild: Existing plans and examples below – *see presentation*.
- East Croydon.
- Wimbledon.
- Royal Mint Gardens. Complex overbuild.

Further Examples:

- Tube and CrossRail Stations – new tube entrance: Bond Street.
- Tottenham Court Road not seen as a good example of Overbuild: missed opportunity.
Paddington Cube will involve new Bakerloo ticket hall and step free access
- Elephant and Castle.
- Southbank Place.
- The Place – next to the Shard.
- Newfoundland in Docklands.
- Principal Place
- Stamford Bridge

The presentation prompted enthusiastic and lively discussion of the potential for the concept and exploration of approaches that this group could accelerate the realisation of projects.

The discussion is summarised below (after an introduction to the participants).

Key aspects are as follows:

- The idea has multiple advantages and must be worthy of further investment of time and thought
- Collaboration is essential – no one organisation can deliver the concept.
- Traditional procurement is unlikely to deliver the best 'whole systems' solution
- There are major challenges; but they are not all technical / engineering
- Planning, social attitudes, commercial contracting and utilities integration are all crucial

Welcome from Nigel Fraser, Buildoffsite.

This workshop is very timely; soon after the launch of the report and relevant to the Autumn Statement's housing focus and the Mayor's GLA Housing Strategy.

(Welcome & Introductions were made at the outset, but being the core of the session: the precis of the report / presentation has been shared as the first item of these notes)

Introductions

Tim Hall, Buildoffsite: The voice of the clients is crucial to Buildoffsite – Clients make up 25% of our membership and we are asking them to come to us with their challenges. One of those we hear often is 'we need to build more homes' and today is looking in to supporting London's particularly acute need to shift from 29,000 homes per year (2015-16) to the Mayor's target of 66,000.

We have a representation here today from those who can show well thought through architecture and design solutions that manufacturers and contractors can deliver. Our goal is to verify and validate that an offsite & DfMA approach can deliver additional housing capacity and become highly cost-effective. No single organisation can deliver projects of this complexity – the power of the Buildoffsite Membership Network is to collaborate and present the client with superior outcomes than they would be able to procure traditionally.

David Harris, Premier Modular – Have delivered major projects for Hinckley Power station, hotels, education, healthcare and growing in housing: medium and high-rise would be ideal applications.

Ross Burrell, Premier Substructures – Guest of Bernard Williams, they have an offsite below ground system – we feel it is a great, robust unit and it is a valuable contrast to precast concrete foundations – here to see if we are an alternative for projects.

Bernard Williams, Ifpi Ltd – developer of a programme called Comparator to compare cost and implications of offsite – here to see if this model can be adapted to support the additional requirements of complex rail civil engineering integrated with housing and public space above

David Atkinson, Metsec – Supply Metframe pre-panellised loadbearing system, their rapidly growing solution. Supply chain of interest and could be a highly applicable lightweight and scalable option.

Nigel Fraser, Buildoffsite – leading the Rail Hub – formerly a client at British Airports Authority where he met Bill. Has worked widely on implementing offsite and lean construction.

Adrian Campbell, Changebuilding – Independent engineer – specialise in structures sustainability, CLT and a bit of previous having input on the White Paper with TfL. Really interested to see how it has moved on.

Alan Clucas, LOR - with main contractor hat on today – in the process of completing their modular housing factory and the solutions should fit well with over-rail developments.

Royston Young, Design Automation Systems: DASYS – have had success capturing engineering knowledge in construction and automate the process of adapting proven structural and other complex designs. Love to use Buildoffsite membership to come and see what's going on and learn.

Mike Powell, Arup – Has worked on rail decking previously, including with Adrian Campbell. Arup very interested in participating in the approach.

Terry Devery, Vision Modular – Manufacture flats, hotels with heavy concrete system floors & walls – we have two companies (manufacturing and Donban Construction) we work with developers and direct clients. Interested to see how we can get clients buying-in to modular systems – we want to give them a product that they want.

Tim Ryan, Bryden Wood – multidisciplinary: architects, engineers, mathematical modellers. Defining the problem is at the core of what we do – clients bring us challenges and we develop clear problem statements and requirements, then deliver. Across all sectors: airports infrastructure, data centres, MOJ prisons. Massive pieces of work – sometimes clients have no choice but to genuinely innovate.

Brendan Geraghty, Geraghty Taylor – Design, property development and ensuring solutions have a strong brand. About 10 years ago designed an offsite project – knows it can be a challenge. Focussed on the user/occupant perspective for great buildings.

Steve Hough – Balfour Beatty – rail, road, housing, interested in all these for this. Our ambition is to remove 25% of site labour content from what we do. Projects like this fit well with the goal.

Aftab Rafiq, KIER – property – have a joint venture with Network Rail called Solum, we are developing on the SE corridor on railway lines to take back things from them to apply – can we apply it for residential moving forward?

Dennis Seal – Buildoffsite Housing Hub – previous life, used to work with Kier, low and high rise. Solum use traditional methods – when Dennis Seal left the ambition was to see if they could adapt.

Craig Liddell – Legal & General – beginning of our journey to move thorough to manufacture – the opportunities of this type of magnitude are of great interest to the company.

Liam McGovern, Shay Murtagh – interested in rail platforms/bridges using their precast solutions and innovations which are already proven in rail. An opportunity to collaborate more widely.

Mark Catterick, Graham Construction – find out what the opportunities are going forward, has worked on about half a dozen of these projects with Network Rail. London residential is a focus.

Graham O'Docherty, McAvoy – principal contractor, work on many hybrid areas – completed many schools this year and now looking at housing using their hybrid solutions.

Graeme Jones - CProbe – provides products for the management of the whole life performance of concrete structures. Ideal applications for critical bridge piers and platforms.

Discussion

Terry Devery – Holloway Road station, they are building student flats near there and were not allowed to build on top of the station due to LUL restrictions.

Bill Price: Graham Craig, Head of property at TfL – more heat being applied to planners and Local Authority housing people to actually build things. The will seems to be building positively.

Dennis Seal – It's all about costs – huge amount of capital locked up in these schemes. You may have to pay NR for their bit upfront. Viability becomes critical. Certainly in housing sector it is a boom or a bust market. The science of this is there, the technical ability is wonderful. It is more about how you assemble the costs, and who would be pumping the money in to it. Very positive to hear that developers want the job, but wanting it and doing it are very different.

Bill Price – we could drive the costings down. We have to start somewhere.

Nigel Fraser – how flexible does it have to be/what build systems are needed?

Bill Price – to make the deck efficient you need to know what is going on top of it. If TfL build their own red box, it would take the risk away.

Bernard Williams – What concerns me is the resi development, other than in high value – this won't work for affordable housing.

Tim Hall – It may be feasible. We need to set a target cost for viability and demonstrate that it can be met in delivery at scale.

Nigel Fraser – What Network Rail or TfL need to know is what we want to put on it so we can specify the deck design without over-engineering. Standard decking solutions. Could be a hybrid.

Liam McGovern – red boxes that Network Rail have already – need to extend that innovation.

Tim Ryan – It needs an efficient whole system process – be it a means of getting piling rig access or lighter design. From that set parameters – e.g. transfer structure requirements for 6 storey housing

Nigel Fraser – France has built over their motorways e.g. outside the Paris city centre.

Brendan Geraghty - what else can go there (On the deck, over the railway) ie retail, hotel, student accom etc If you are into putting the money in to creating the deck, then leasing or renting the space is less risky.

Aftab, Kier - Planning is the elephant in the room – it puts at risk the development finance.

Brendan Geraghty – there are certain buildings that want to be close to railway hubs. Silver bullet – if we or this group could come up with how much this would cost?

Bernard Williams – A lot of Network Rail land is not what you would use for usual housing, but for low value, affordable rent. Possibly give them a ground rent and they pay a far lower percentage for land here.

Tim Ryan – How much can we de-risk this land? What to compare it to. i.e. where does it stand on an attractiveness pecking order: Green belt/land at top, brownfield, toxic land etc.

To encourage living above a railway – we need to get the marketing right. Huge advantage of walking to the station – Major Tokyo station has **200** entrances from surrounding offices, malls, roads, etc.

Statement from TfL needed. There is no consistent message from them. No strategy – this is a great idea, but where are they sitting on this? Accelerated construction – GLA pushing.

Ask TfL what would it be to release the land – what would unlock it?

Find some straight track and an LA that would be up for this>use that as an example / pilot.

How can we create a hybrid of public and private with its own business model?

Northern Line development – it is the overground development that has set things back a year – what goes in it etc. not under, or the construction.

Dennis Seal – still got to get same issues to overcome: sewage to drain away, where is the existing services drainage etc. It is expensive but partly because these were bespoke detailed solutions.

Key questions and ideas:

- What is the problem? Not enough housing, or how do we build over railway lines?
- Offsite – is quicker, lighter – but where will offsite be more attractive than traditional?
- Housing: politically more appealing than retail or other uses for this space
- Example of valuable mixed use – Residential led, but lower ground could be a library, a school – it needs to accommodate the people coming in to it.
- Fire & Acoustics can become a problem when going lightweight.

The Challenges and Potential Solutions: From flipcharts

Particular Challenges

- Technical
 - Systems Integration
 - Collaboration
 - Commercial
 - Heavy capital from Day 1 > Viability, Scale & Time & 3-5 year lead in.
 - Anxiety of selling public land at less than maximum price vs land value cost inflation.
 - Public land needs to be sold not developed/rented
 - Lack of cost evidence
 - Bespoke detailed services engineering
 - Large site community building
- Possible Project Work Packages:
- Local authority & planning requirements

- Rail owner value proposition
- Red Box technical product/solution development
- Above deck options Housing/Student/Retail/Hotel
- Systemisation :
 - Service integration
 - Pre engineered flexibility
- Wider option overlays: drainage, value proposition
- Collaboration and shared risk investment

Opportunities

- For innovation
- For collaboration
- Scale and time and lead in
- Separate major packages
- Red Box – Utilities
- Platform – Public Realm & connectivity
- Residential – Mixed Use
- Consider future phase: Logistics, access, delivery
- Rail delivery of major elements
- Performance specification standards – level 1 = low rise, 2 = 6-12 storeys, level 3 >12 storey
- Affordability will unlock access planning
- Heat map of 'Thin Air' potential
- Social/Human Factors;
 - Marketing the idea
 - Perception vs Reality

Going Forward

This group needs the voice of:

- | | |
|----------------|--------------|
| • TfL | • Boroughs |
| • Network rail | • Developers |
| • GLA | |

Next Steps

- Buildoffsite summarise the notes and propose a next step session
- Include in the circulation ~ those unable to attend today
~ client voices above
- Participants to propose; ~ their key areas of interest
~ level of commitment to further 'at risk' workshops
~ suggestions for the approach to starting a meaningful project