

Lessons Learnt Bishopsgate bullet point format:

1. Structural Steelwork contractor employing direct rather than through a sub-contract to avoid safety incidents and employed on price.
2. Edge protection system which considers minor tolerances, user friendly and a locking mechanism.
3. Handrail pots to be secured safely to the handrail panels via means of mechanical locking system to reduce risk when carrying out lifting operations
4. Vertimax fan base design and fixing detail based on simply supported system is not sufficient in extreme wind loading, more complex design of a fixing bracket at deck level should be enforced.
5. A standard layout of steel 'shake out' laydown areas within a temporary works approval.
6. To prevent fall of material into public interfaces both primary and secondary protection is required.
7. Bolt and nut tethers are not a realistic method of primary drop protection
8. Exclusion zones should always be in place when working on a high rise project
9. Repetition of load plans should be adopted, however consideration that this may not always be applicable, and management and review should take place.
10. Steel contractor should not rely too heavily on Tekla and should consider site constraints and logistics when delivering materials.
11. Nylon banding is stronger in tension but does not deter sharp edges when compared to steel banding on decking.
12. Comflor metal decking to arrive to site pre-sling to reduce crane time and for efficiency
13. Programme consideration for removal of steel temporary beams and bracings and limited use of crane.
14. Propping of long spanning composite deck caused MEP disruption and delay
15. Logistics hoist could only supply materials to concreted floors, early consideration for sequencing and chance of adaptability of hoist manufacture to serve unconcreted floors
16. Sequence and programme consideration to reduce return visits for painting perimeter steel, should be carried out prior to concreting.
17. Design fire protection should consider 'coat back' where fire rated materials interface with intumescent painted members. Preventing heat transfer to the primary steel and creating hot localised points.
18. Coat backs specifically relate to façade-related bracketry and those which interface with primary steel members. Steelwork contractor has primary responsibility for warranty.
19. Corrosion protections/ galvanising should be considered within the specifications and categories are correct to BS.
20. Tenderers should be queried on what has been allowed for with regard to intumescent paint, dispute painting top flange
21. The structural steelwork contractor should model steel-to-concrete connection for adequate clash detection to be carried out by structural engineer, to be included in PCSA.
22. Grouting of steel members should be brought with structural steel contractor and subcontracted to concrete contractor.
23. Average steel rate to be included in pricing schedule of the steelwork trade contract
24. Emphasis should be placed on securing fair and reasonable daywork rates with trade contractors. Rates are difficult to negotiate post tender.

25. Alinea were not aligned with Arup when producing the cost plan. Need to understand whether castellations are accounted for in Arup's tonnage estimate before finalising the cost plan
26. Focus on 'people's culture' for operatives and safety culture during tender
27. Focus for the supply chain to employ competent labour for works which are considered high risk, scaffold, Working from height etc.
28. Consider how exclusion zones will limit crane usage at tender stage.
29. Delivery of reinforcement to site should be bundled correctly, standard lengths configurations and diameter.
30. Clear temporary core stability behavioural understanding throughout the entire construction phase.
31. Delay in commencement of lift shaft works to follow on trades (lift installation) due to the use of temporary formwork hoist bases causing risk to the programme.
32. Division of the programme for normal vertical and horizontal construction of the north core and south core for removing formwork rig. Further consideration for productive use of crane allocation.
33. Exclusion zones set up below when high risk activities were being carried out caused disruption to other trades and claiming for delay. Re-sequencing required to ensure continuity of their works.
34. Adverse weather and ensuring continuity of works from concrete contractor when working on Rig should be included in scope of works.
35. Technical submittal was raised by Concrete contractor proposing Dextra Rolltec couplers however only CARES approved for use in tension rather than compression, as such status C.
36. Working decks and protection decks should have a caveat relating to building the shaft at highest levels possible based on structure.
37. Ground floor slab should always be considered to be waterproofed with water-bars to create a watertight seal.
38. Waterproofing scope gap where additional builders work holes are added in ground floor, rates should be added to the schedule of rates to consider this.
39. Temporary waterproofing scope should consider the temporary openings in concrete slabs.
40. The contract documents and the design intent within need to be clear on where the waterproofing membrane terminates vertically
41. Scope should clearly define who is responsible for provision of puddle flanges in vertical areas of basement.
42. Scope of works clarity on responsibility for casting sleeves into secant wall for services and waterproofing of them.
43. Kone's jumplift requires weather protection, Keltbray failed to properly weather proof the working deck, scope between each contractor must be clearly stated as where responsibilities lie.
44. Keltbray poured concrete onto the site's lateral sewer which was engineered required and not strong enough to hold concrete and collapsed.
45. There should be adequate scope for damage and protection to metal stairs through logistics walk ways.
46. Tenderers should be asked to price this 'below-the-line' at tender stage under the trade contracts.
47. Scope of works should have been clearer regarding the responsibility of who was to provide fixings for the handrail to the stairs, including dispute over stem bracket.

48. Wording should be added to Scope of works that protects from claims against UKPN which may disrupt normal working hours
49. Scope of works should account for trade contractor not being able to claim 'time' due to works stopping on safety grounds or critical incidents.
50. Crane supervisors to be brought as part of the hire contract, EDR's does not should requirement for the role
51. Understanding and scheduling at tender the requirement and quantity of 'Independent Category 3 Design checks'.
52. Scope of work should cover the time allowed for associated with the submittal of method statements.
53. Trade Contractors should be obligated to provide their early audited management accounts to Lendlease regularly.