ARUP

Newcombe House and Kensington Church Street

Structures Planning Addendum

July 2018

1.0 Structures Planning Summary

A structural engineering review has been undertaken to assess the Proposed Amendments. The proposed structural amendments required are considered minor, and are summarised as follows:

1.1 Western Perimeter Building 1 (WPB1)

The structural impacts comprise of a minor rearrangement to the internal column layouts to suit the updated apartment layouts. The void areas to Level 2 (as part of the original double height living room areas) have now been filled in with structural slabs, which simplifies the structural arrangement.

The column layout has been further optimised through to basement Level 2 and reduces the impacts of the vertical structure on the basement car-parking circulation.

1.2 Kensington Church Street Building 1 (KCS1)

The increased loading due to an additional storey has been reviewed and is within the capacity of the vertical structure as shown in the September 2017 Application. Although the building height and subsequent lateral forces have increased, horizontal stability provided through core walls and diaphragm action of the structure remains within capacity of the existing scheme.

A communal area and play space is to be provided at 4th floor with a cut away provided in the roof slab. Arup have provided conceptual framing advice and outline member sizes to aid design development of this space.

Further simplifications have been made to the structural scheme through the revision to a PV deck on a brown roof build up. This is expected to result in a lower loading demand than the public roof garden specified within the September 2017 Application.

1.3 Kensington Church Street Building 2 (KCS2)

The structural implications relating to updated apartment layouts are minimal. Minor structural revisions are limited to slight updates to column layouts (to suit apartment layouts), and revised slab detailing to suit the accommodation of additional winter gardens and their interfaces with revised apartment layouts.

Further simplifications to the structural scheme are achieved at roof level, through the removal of slab ‘pop-ups’ in favour of a level roof slab and ceiling soffit at 4th floor.

1.4 Western Perimeter Building 3 (WPB3) and the Corner Building

The inclusion of two additional floors has minimal structural implications. The supporting transfer structure grillage located at the underside of Level 1 was initially designed based on a taller West Perimeter Building considered in a previous design iteration. The building height was subsequently reduced prior to making the September 2017 Application. The supporting transfer structure for the updated scheme will fit within the original zone allocated.

The additional lift serving the surgery floors can be accommodated by inclusion of an additional RC core framed into the original core walls. The supporting structure can align vertically through to foundation level. A suspended lift pit can be hung below the Ground Floor level with minimal impact to the architecture of the scheme, and without affecting the Step Free Access structure to the west of this area.

The addition of two storeys in height to the building increases the wind loading the structure is exposed to. However, as noted above, a previous iteration of the scheme allowed for a taller structure, therefore horizontal loading is within capacity of the original stability system. The additional core enclosing the evacuation lift, with vertical structure to foundation level, provides a further enhancement to the lateral stability system.

Further updates to this building include minor column re-positioning and alterations to suit the revised room layouts and fenestration of the building, and provides efficiencies in the omission of minor transfer structures where columns previously did not line through.

1.5 Site-wide and Basements

With the exception of minor column positioning updates to revised layouts above ground, the basement scheme remains as per the previous application. The construction methodology will not be affected.

The above-mentioned amendments do not impact on the LUL station or SFA proposals.

There are no other site wide structural changes to note.

1.6 Conclusions

Our structural assessments of the proposed amendments confirm that the above noted proposals appear feasible, and opportunities to rationalise structures to enhance buildability have been adopted where possible.