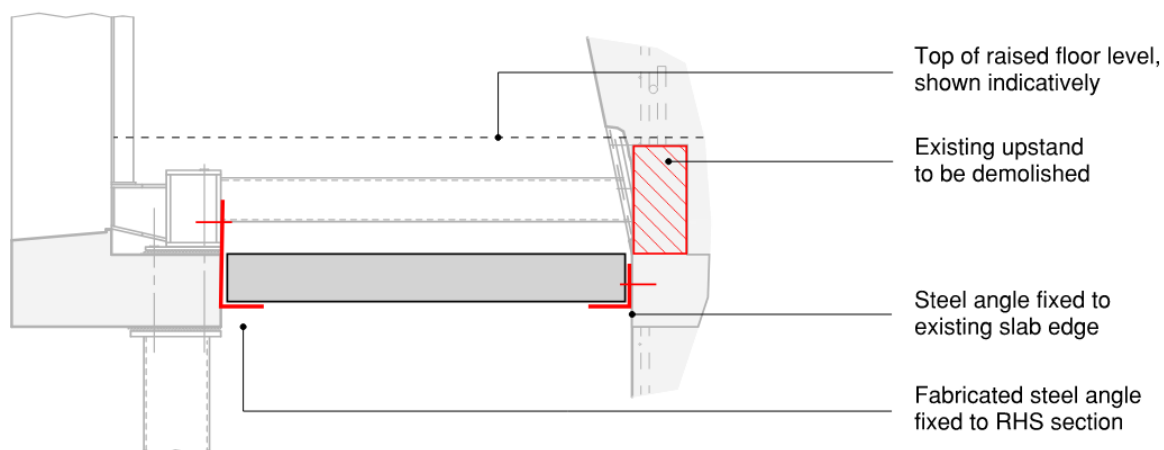


## Technical note TN03

This Technical Note is written to demonstrate progress on structural issues related to change of use of R05 Retail Unit previously fitted out and occupied by Vapiano. R05 on first floor and part of ground floor is proposed to be converted into an office.

### Slab infill Level 1 gridlines LW1-T/6-9

The remaining reinforced concrete element on the perimeter of the building along the Western edge of existing void has very limited remaining capacity and drilling into it should be avoided as it would likely damage closely spaced existing reinforcement. A feasible option is fixing steel angles into existing perimeter box girder to provide a line of support for precast slab panels. On the other side the precast panels would be supported by post-fixing steel angles to existing upstand. At this point, for the purpose of initial structural checks, 175 mm thick solid precast slab has been assumed, based on typical recommended span/depth ratios for simply supported one-way slabs.



### Fabricated box girder

Fabricated box girder beams running along the façade have been installed recently as part of Centre Point redevelopment in order to provide horizontal restraint to façade via steel angles fixed to mullions, because of the original mezzanine level demolition. Therefore, there are significant torsional loads applied to the box section when full wind loads are applied on Centre Point House elevation.

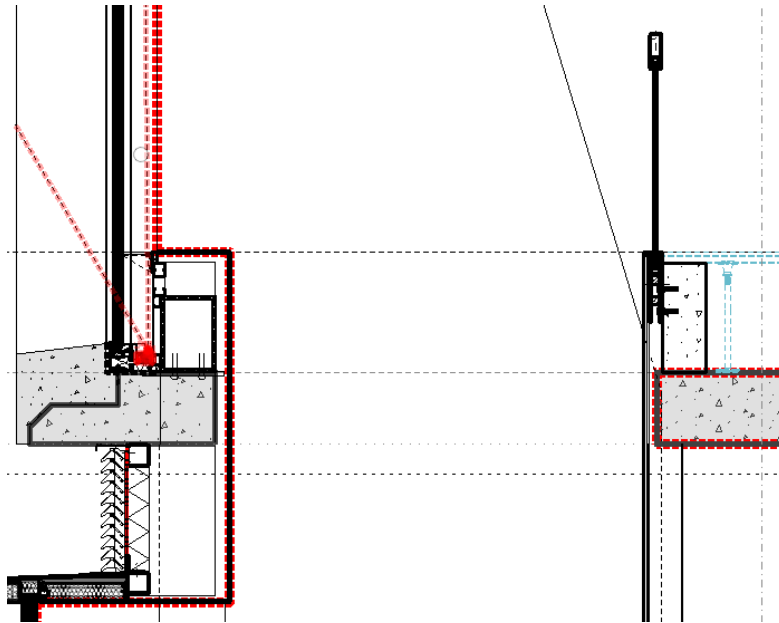
With the new precast slab infill supported on steel angles, additional vertical load will be applied eccentrically, causing additional torsion on the box girder, which was the primary concern.

Box girder checks have been carried out using the original structural analysis model of the steel frame, with additional loads applied due to new precast slab. It is confirmed that the box girder has enough extra capacity to resist the loads.

Further checks on structural members were carried out to consider a full load transfer system, including checking bolts, baseplates and concrete supporting the RHS, all of which passed without notable concern.

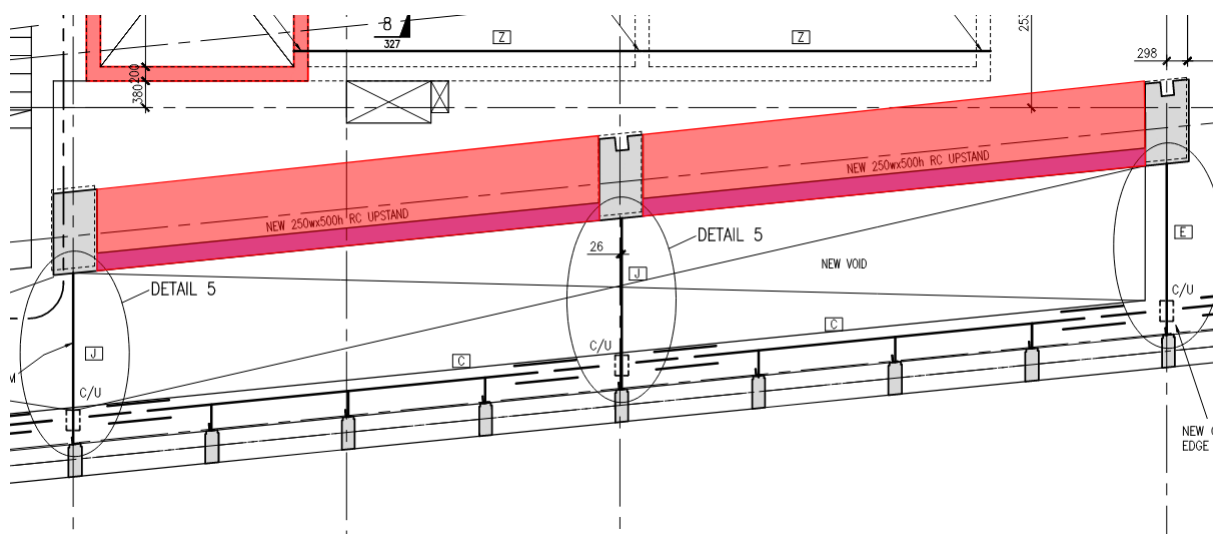
## Concrete upstand

Concrete upstand on the opposite side of the slab void was cast as part of Centre Point redevelopment works and was designed to support the balustrade, transferring all the loads to the original first floor slab structure.



To allow access for raised floor services within new infilled floor, it was proposed to remove the upstand. Since the upstand is not utilised for supporting floor loads, it is considered to be redundant once the balustrade is removed, therefore there are no implications on the building structure.

To assess the capacity of slab edge, historical building drawings were used to determine existing reinforcement within a slab strip between RC columns. It was justified that the slab has sufficient capacity for vertical load from a new precast infill.



## Mezzanine Floor

The current Vapiano mezzanine structural frame was designed as 'independent' frame to avoid drilling into existing RC columns, therefore bracing was added for stability, which may now affect the flexibility for the new space below mezzanine floor

There is an opportunity for reducing the required bracing if the mezzanine steel frame can be tied into the existing column positioned roughly in the middle of mezzanine floor. This would involve a detail requiring drilling into existing concrete columns.



## Façade upstand on Ground floor

Pell Frischmann drawing A12504/VAA/345 shows a new RC upstand along ground floor edge for façade support. Note that although there is a continuous upstand along the façade, the upstands at current door positions are 175 mm higher, which is what Seele may require if the same door threshold details are kept. Also there appear to be little upstand nibs framing existing door openings.

It is proposed that the upstands are extended by casting additional 175 mm of concrete within new door opening width. To accommodate new cast-in baseplates for the door frames, some of the concrete will have to be locally broken out before casting the RC base back with Seele's details cast-in.

