1. Introduction

1.1. This Technical Note considers the design of the access ramp to the car and cycle parking areas at Kensington Row. The ramp, which has been designed by Peter Taylor Associates Ltd (PTAL), would be located to the west of the site, at the western extent of the parallel access roads that will connect the ramp to Warwick Road.

1.2. The ramp will be used by vehicles and cyclists taking access to and from the Lower Ground and Basement levels at both phases of the Kensington Row residential development.

1.3. A ramp in this location has been consented as part of an extant scheme. This Note constitutes a technical review into the proposed operation of the ramp and it's suitability for its intended use.

2. Ramp Design

2.1. The ramp assessed within this Technical Note was prepared by PTAL Architects under drawing number B0-90-604 Revision P1, dated 04 September 2014. This drawing is enclosed in Appendix A.

2.2. This ramp will accommodate traffic accessing the basement car park via a staggered junction arrangement with the principal entry route. This movement is proposed in order to encourage a low speed environment particularly at the entrance to the ramp.

2.3. The ramp comprises two lanes to accommodate segregated two way working. Each lane is 3.65m wide, with a median strip measuring 500mm. A 330mm wide strip is proposed adjoining the inner wall of the ramp, and a 300mm strip is provided at the outer wall, in order to provide allowance for car door mirrors and sufficient clearance beyond this so that no damage to vehicles would occur.

2.4. The entry to the ramp at ground level has a covered area, of 3.49m width, which is provided at a 1:50 gradient towards the street. This entry area is designated as shared surface with footway.

2.5. The ramp has a gradient of 1:12 throughout its length. The Institution of Structural Engineers guidance entitled ‘Design recommendations for multi-storey and underground car parks (Fourth Edition), contains guidance that recommends that gradients steeper than 1:10 are accompanied by transition lengths. In the case of the ramp at Kensington Row, such transitions would not be necessary in accordance with the guidance as a shallower gradient is proposed.

<table>
<thead>
<tr>
<th>Ramp</th>
<th>Fall</th>
<th>Ramp Length</th>
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<tbody>
<tr>
<td></td>
<td>4.1m</td>
<td>49.2m</td>
</tr>
<tr>
<td>Ground to Lower Ground</td>
<td>1:12</td>
<td>37.2m</td>
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<tr>
<td>Lower Ground to Basement</td>
<td>1:12</td>
<td>1:12</td>
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2.6. It is proposed that the ramp will operate without the need for signals or barriers to be due to the presence of two way lanes, and the low level of traffic flow levels as outlined in the Transport Assessments for the redevelopment of the Telereal and Homebase sites. During the AM peak hour, a car would use the ramp twice per minute on a two way basis.
3. Ramp Swept Path Analysis

3.1. WSP has carried out tracking of the long wheelbase variant of the Jaguar XJ (X351) using AutoTrack software. In addition to vehicle tracking, the exercise included verifying the measurements and gradients stated within the drawing and checking ramp profile and resulting clear heights. The results of the swept path analysis are included in Appendix B.

3.2. The swept path analysis demonstrates that the ramp will operate with sufficient space provision for the large luxury vehicle. The ramp design also provides adequate height clearance above the car, at 874mm between the roof of the car and the lowest portion of the ramp roof level. This clearance is considered to sufficiently provide allowance for lighting units or corresponding service facilities. There is also adequate vertical clearance below the vehicle, demonstrating that the transition between the ramp gradient and the basement level will accommodate a large vehicle without the risk of contact with the undercarriage.

4. Comparison with Extant Ramp Design

4.1. As referred to earlier in this technical note, a ramp design for this location has an extant planning consent as part of the Homebase redevelopment application. The Homebase site has consent, with subsequent minor amendments, the most recent being under reference PP/13/06787.

4.2. The extant ramp design had an entrance which would have been located in between Block A of the Telereal Site and Block 5 of the Homebase Site, which comprise the two Kensington Row phases. This ramp would have comprised a series of straight and curved sections leading from street level towards the lower ground level. This ramp design did not include segregation by direction.

4.3. The initial gradient of the ramp would have been 1:20, with following gradients provided at 1:10 on straight sections and 1:12 on curved sections. In comparison, the proposed design provides a gentler and more consistent gradient and manoeuvre than the previous ramp design for this site.

4.4. The proposed design also ensures that inbound and outbound flows are separated by a central island in order to improve safety vehicles and cyclists.

5. Summary and Conclusions

5.1. This note provides a design review of the proposed ramp design which has been designed by PTAL architects.

5.2. The ramp would comprise a broadly circular design with a consistent 1:12 gradient, thus allowing for less onerous manoeuvres for vehicles and cyclists accessing the basement car park.

5.3. The design includes segregated lanes to allow for two way working, and will operate without the need for barriers or signals. Each lane is 3.65m wide and swept path analysis demonstrates that this provision allows for the movement of a large luxury car (Jaguar XJ X351).

5.4. In terms of comparison with the ramp design under the extant scheme, it is considered that the design outlined in PTAL drawing B0-90-604 Revision P1 represents a significant improvement in terms of consistency of gradient, movement and the encouragement of lower speeds when accessing the access routes at street level.
Appendix A – PTAL Drawing B0-90-604 Rev P1
Appendix B – Swept Path Analysis