



## **HANOVER & PRINCESS COURT REDEVELOPMENT**

### **BUILDABILITY ASSESSMENT**

#### **1. INTRODUCTION**

- 1.1. The Hill Group Delivery Team have been commissioned to provide an early Buildability Assessment in relation to the proposed development site known as Hanover and Princess Courts located in Cambridge near to the city centre, a short distance from Hills Road.
- 1.2. We have been provided with scaled architectural layouts depicting a proposed residential scheme of 138 and 165 units respectively.
- 1.3. The principle focus of this assessment relates to the construction logistics that need to be considered to facilitate the demolition of the existing buildings and the construction of the new buildings.
- 1.4. A site visit was undertaken on Friday 2nd of June 2023.

#### **2. SITE CHARACTERISTICS**

- 2.1. Hanover and Princess Courts are located on a constrained inner-city site bordered on all sides by narrow access roads. Union Road is located to the north, George IV Street to the east, Coronation Street to the south and Bentinck Street to the west.
- 2.2. The existing residential buildings are pattern style blocks constructed in brickwork, with hollow pot floors and cross bracing walls. The buildings are finished with a facing brick facade with a presumed block inner skin and partitioning. Access is via a system of corridors that run the length of one side with external staircases providing access from ground level to the upper floors. Service lifts also exist to the north of both blocks.
- 2.3. The existing garage block is a mass concrete structure with reinforced concrete bearer caps on brick cross walls supporting a reinforced concrete deck structure with an external facing brick façade. Brickwork walls separate a complex of garages arranged over 3 levels. The lower-level entrance is accessible to the north end of Bentinck Street which provides access into a past basement. Secondary access is available via George IV Street and pedestrian circulation is afforded by a range of internal concrete staircases.
- 2.4. Neighbouring buildings provide a mix of residential and commercial premises including schools, care facilities, office accommodation.

- 2.5. The site accommodates an electricity substation to the southeast corner, located amongst a number of existing trees that line the eastern boundary. A further row of trees is present to the western boundary. Within a central courtyard formed by Hanover Court to the east, the car park to the north and Princess Court to the west, a cluster of large trees are positioned adjacent to the southern wall of the car park, and there is also an isolated tree adjacent to the southern boundary along Coronation Street.

### **3. GENERAL & DEMOLITION CONSIDERATIONS**

- 3.1. To provide a visual graphic of how we see construction operations being implemented we have prepared a Management Plan, which is included at Appendix A. Reference is made to this Management Plan throughout the report.
- 3.2. Having carefully assessed the challenges presented by this site we have developed the Management Plan on the basis of the 165 scheme, given that the overall positioning of the proposed residential units is broadly similar, and the gaps present between the east/west blocks and the northern block in the smaller 138 scheme do not provide any overall significant logistical benefits. It is also important that we highlight a workable strategy that could be applied to either scheme.
- 3.3. Given the presence of narrow access roads we have commissioned a tracking analysis by Consultant Engineers extending from Hills Road towards and around the site to inform the type of vehicles that will be able to access the construction site safely and without the potential to cause damage to pavements etc. This exercise has highlighted that arctic lorries will not have sufficient access and turning circles, and consequently, all construction activities will be reliant upon rigid axel smaller vehicles which will naturally increase the volume of vehicle movements due to lower storage capacities.
- 3.4. The existing car park abuts the northern pavement and consequently a partial road closure, and associated traffic management, will be required to undertake the demolition of the car park building. This will necessitate suitable hoarding provisions to protect the public and provide a safe working area.
- 3.5. An assessment of neighbouring land uses and a traffic survey will be undertaken to review busy periods. Construction traffic will be co-ordinated with quieter periods acknowledging any other local restrictions in terms of working hours.
- 3.6. It is noted that there are no available satellite facilities that could be used for off-site but nearby welfare and/or storage, that ideally would be explored, given the limited space available onsite once construction activities commence.

- 3.7. Given the limited space available car parking cannot be accommodated and alternative arrangements will be required. There will also be restricted provision for on-site delivery vehicles, as only a single point of access will be available for deliveries and the unloading of materials to designated storage areas.
- 3.8. Planned construction traffic management will be required given that a no waiting policy on local roads is strongly anticipated, and accordingly suitable space must be available within the site boundaries. Allocated space for vehicle deliveries, material unloading, and a wheel wash area is highlighted by the green box by the site entrance of Coronation Street on the Management Plan.
- 3.9. The trees to the eastern and western boundaries will have root protection areas broadly matching the overground tree canopies. These areas will be cordoned off to general construction activities apart from perhaps use of the existing hard standing parking areas off George IV Street.
- 3.10. The existing on street parking bays to Bentick Street may not be able to be retained in use given the one-way traffic system around the site and the proposed size of vehicles, albeit restricted below normal sizes, will still be relatively large for the road in question which is narrow.
- 3.11. Despite best endeavours to avoid complete road closures we would highlight that this is likely to be necessary infrequently to facilitate the delivery of very large plant including, for example, the large demolition plant and a tower crane for the construction phase.
- 3.12. In the interests of safety and in compliance with best practice, the boundaries will be fully solid hoarded with the hoarding abutting adjacent pavements. It may be necessary for scaffold to be erected beyond the general hoarding line in connection with the demolition of the southern elevations of Hanover and Princess Courts, to suitably control and provide necessary restraint to the demolition in these areas which are near the public pavements/roads.
- 3.13. During demolition the central courtyard is likely to be used as a recycling processing area given the restrictions to the eastern and western boundaries presented by existing trees. The arisings resultant from demolition will form large spoil piles of separated materials which will warrant quite significant footprints in the central area.

#### **4. CONSTRUCTION CONSIDERATIONS & CHALLENGES**

- 4.1. The Management Plan at Appendix A highlights how the site will be set up to facilitate the construction phase and the key principles are as follows:

- 4.1.1. The perimeter edges of the site will be hoarded and the tree protection areas will be cordoned.
- 4.1.2. Pedestrian access will also be around the perimeter of the site linking to a fire assembly point to the northeast and site accommodation and welfare to the northwest.
- 4.1.3. Along or near to the northern boundary, lightweight material storage areas will be designated for manual handling.
- 4.2. The large red circle on the Management Plan which extends across the majority of the site identifies the crane oversailing area. The new buildings will not be able to be constructed unless a tower crane is utilised. This will require a central position and we have allowed an approximate 9m x 9m base for the crane.
- 4.3. Practically lifting stored materials from the centrally allocated storage areas will necessitate large material lifts from ground level, up to the upper floors of the new development. Given the necessity for these lifting operations the central trees will require removing.
- 4.4. Without the use of a tower crane, the central storage facilities and unfettered lifting areas, the scheme will be unbuildable.
- 4.5. The alternative methodology to a tower crane positioned centrally would use multiple mobile cranes positioned around the site. This would result in continuous road closures and presents the risk of damage to the public highway, in addition to health and safety concerns with neighbouring properties, schools and residents and in close proximity.
- 4.6. Due to the proposed height of the buildings and logistic constraints, it will be unserviceable to utilise telehandlers.
- 4.7. The only feasible access point into the site unfortunately coincides with an existing tree along the southern boundary. It was noted that this tree extends completely across the road and has some relatively low-level branches.
- 4.8. We iterate our advice that the central trees will warrant removal to facilitate construction.

## 5. CONCLUSIONS

- 5.1. In summary, we would advise that:
  - 5.1.1. The eastern and western trees can be protected.
  - 5.1.2. Suitably sized vehicles and associated traffic management can be adopted.
  - 5.1.3. Material storage and transportation is practicable via the use of a central construction zone, accommodating a tower crane.



5.1.4. Pedestrian health and safety can be safeguarded by the use of perimeter walkways linking to relevant accommodation and welfare.

5.2. We foresee no options to avoid the felling of the central trees given the importance of the central area of the site for construction activities. The Management Plan within Appendix A graphically highlights the proposals that have been considered.

Date of report: July 2023

Revision: V1

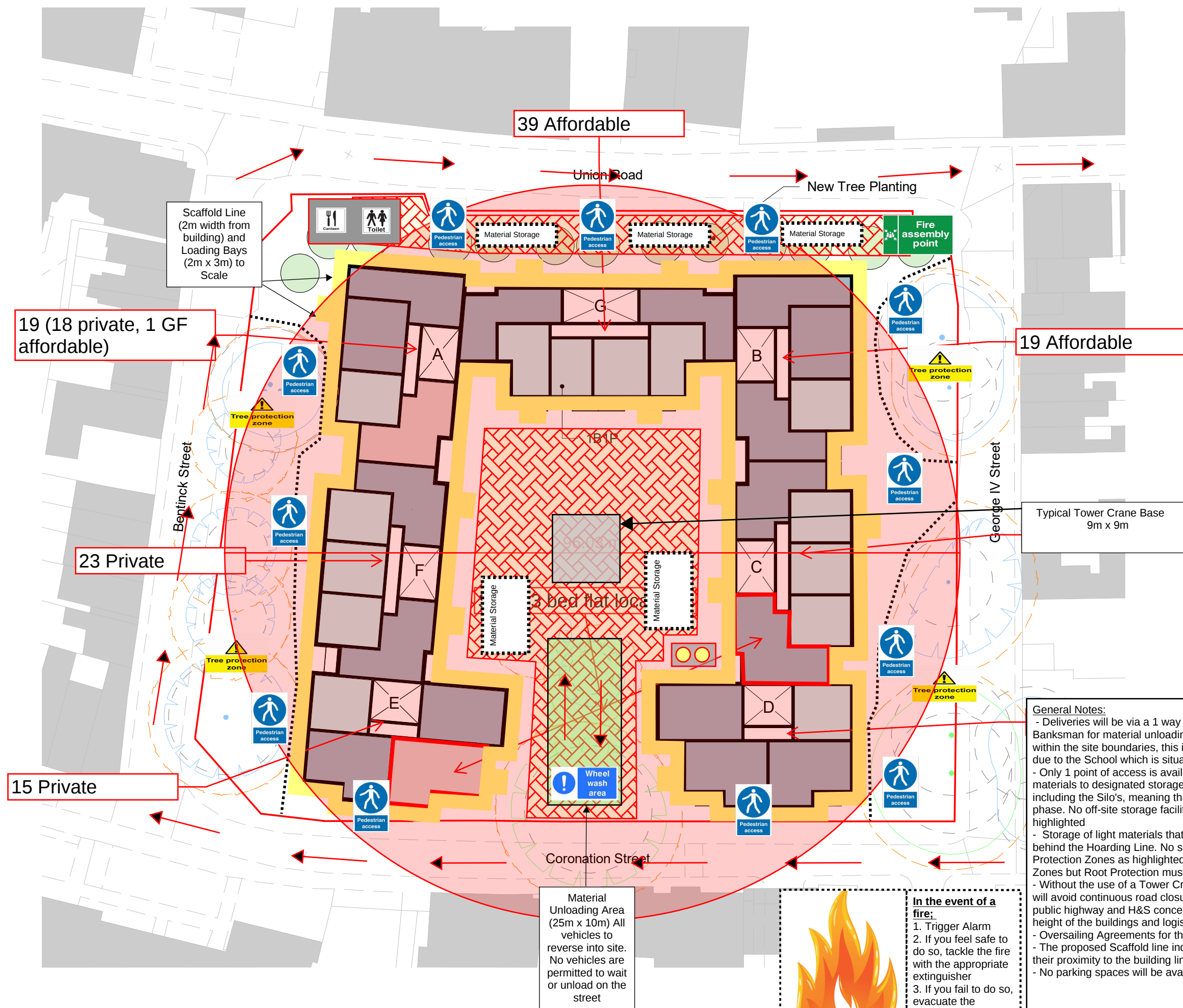
Prepared by: The Hill Partnership - Delivery Team



## **APPENDIX A**

### **Hanover & Princess Management Plan**

# Hanover & Princess Management Plan



Key:

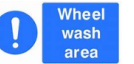
Site Offices & Welfare  
(40ft x 20ft)



Fire Point



Wheel Wash



Material Storage



Pedestrian Walkway



Pedestrian Crossing Point



Traffic Access Route  
(1 Way system)



Temporary Hardstanding for Access



Pedestrian Access



Fire Assembly Point



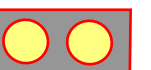
First Aid Point



Tree Protection



Silos/Mixing Area



Tower Crane and Base



## General Notes:

- Deliveries will be via a 1 way system around the site, reversing into the scheme under the control of a Banksman for material unloading. No deliveries can be unloaded from the road and must be done from within the site boundaries, this is not possible from any other area of site. Time restrictions will also apply due to the School which is situated on the Northern Boundary.
- Only 1 point of access is available for the development to accommodate deliveries and unloading materials to designated storage areas. The central space will be utilised for holding all bulk materials including the Silo's, meaning that this will also require a temporary hardstanding during the construction phase. No off-site storage facilities are available, so the only adequate space is the central location highlighted
- Storage of light materials that can be moved by hand will be situated along the Northern Boundary, behind the Hoarding Line. No storage is available to both the Eastern and Western Boundaries due Tree Protection Zones as highlighted. Only Pedestrian Access will be allowed through the Tree Protection Zones but Root Protection must be in place
- Without the use of a Tower Crane and the Central Storage location the scheme will be un-buildable. This will avoid continuous road closures for multiple Mobile Crane visits and remove the risk of damage to the public highway and H&S concerns with the neighbouring properties and school. Due to the proposed height of the buildings and logistic constraints, it will be unserviceable through the use of a Telehandler.
- Oversailing Agreements for the Crane will need to be arranged with relevant parties
- The proposed Scaffold line indicates that some work will also be required to the surrounding trees due their proximity to the building line.
- No parking spaces will be available on site for Sub - Contractor and Staff parking.

## In the event of a fire;

1. Trigger Alarm
2. If you feel safe to do so, tackle the fire with the appropriate extinguisher
3. If you fail to do so, evacuate the building.
4. Go to the Assembly point

