

Section 12
Facade maintenance

Proposed Facade Maintenance areas A-D

Tilt and turn windows will be provided as a good and efficient solution to window cleaning and will be the primary choice across the site where possible. BMU and Monorail options were originally considered but as a number of the facades would be impeding on the 3m zone of the live wires above the railway line, where eventually abandoned.

The use of site wide tilt and turn windows will minimise the need for regular external access. As a result it is expected that regular/frequent window cleaning and maintenance will be performed from within the building, whereas non-frequent (expected every 12months+) activities such as cladding maintenance and cleaning will be performed via abseiling subject to confirmation of access for cleaning lead by the warranty.

Possible access:

| Detail | Method | Frequency |
|--|-------------------------------|----------------------------------|
| Clean glazing – Tilt and Turn windows | From within the building | 3 monthly |
| Clean Metal Panels | Abseiling | 12 monthly (TBC by manufacturer) |
| Clean Glazing Low level | Reach and Wash (up to 15 m) | 6 monthly |
| Clean Glazing High level | Reach and Wash (up to 18 m) | 6 monthly |
| Facade replacement | Mobile Crane | Infrequently |
| Facade replacement (in particular track side panels) | Scaffolding | Infrequently |
| Pavilion Cleaning | Fall restraint system on roof | Infrequently |

Further System detail:

| System/Issue | Detail |
|-----------------------------|--|
| Abseiling | <ul style="list-style-type: none">- To be used only in the event that there is no other possible alternative access strategy and where frequent access is not required- Restraint points expected every 2to3m both horizontally and vertically to ensure abseilee does not obstruct live wires. |
| Tilt and Turn Windows | <ul style="list-style-type: none">- Cleanliness of the windows will rely on the residents /owners cleaning the windows or hiring an appropriate individual to do so. Little control over the track side facade condition- Track side facade will be affected the most by the fumes from the diesel trains.MEWP access - Pedestrian areas will have to be cleared and secured to ensure safe access to the appropriate facades |
| Reach and Wash system | <ul style="list-style-type: none">- Reach and wash systems are most effective up to approx 12m.- Between 15 and 18m the reach and wash system is appropriate for metal cladding but becomes significantly less effective on glazing.- A reach and wash system requires a ratio between height of facade: distance from base of facade of approximately √3:1- Therefore cleaning heights:<ul style="list-style-type: none">- of 18m requires - approx9m- of 12m requires - approx6m |
| Breach of 3m exclusion zone | <ul style="list-style-type: none">It is expected that the abseiling will breach the recommended safety zone.- Through the use of restraint points along the facade this will be minimised, reducing the risk of operatives reaching any cables. |

Access details

Tilt and Turn window detail

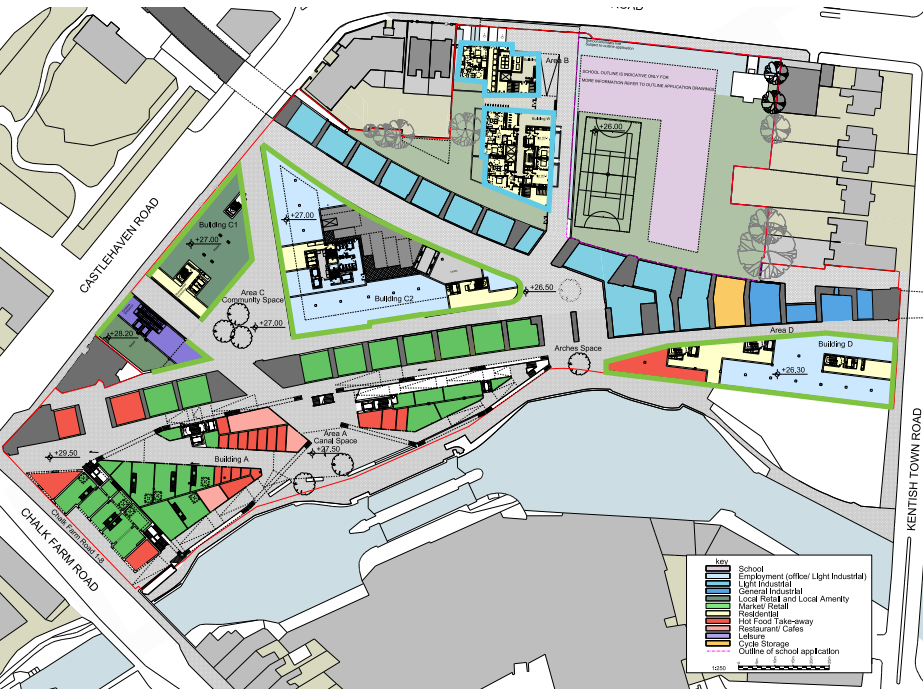
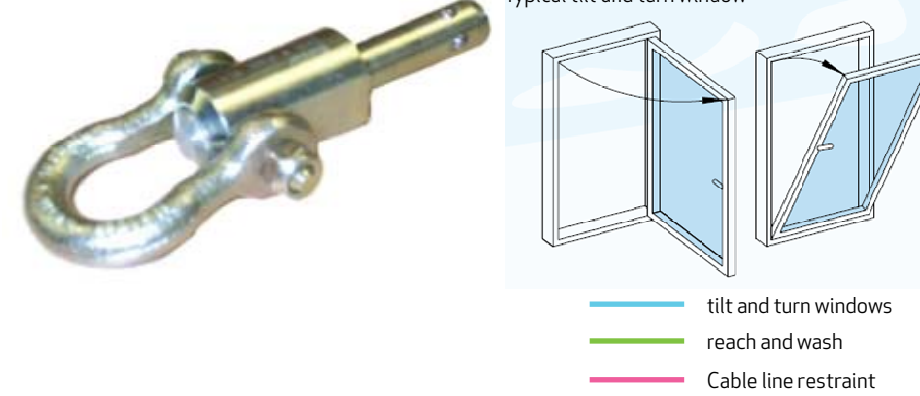
External access for window cleaning can be solved practically by the introduction of inward opening windows (tilt and twist) which can be cleaned while remaining in the safety of the building. It is expected that tilt and turn windows will be introduced for all facades. The exclusion of the BMU options stems from the client requirements not the issues identified with the 3m zone. This minimises the need for regular access externally provided by abseiling or MEWPs, although limited external access will be required for cleaning and maintenance of the metal cladding (frequency expected every 12months). As mentioned above, this access is likely to be carried out via abseiling for minor maintenance and cleaning or via scaffolding for the more high maintenance tasks. Abseiling restraint points will be required at interval of 2 to 3m (unless scaffolding is used).

Where abseiling is used along the railway zones, restraint points at each floor level at spacings of around 2-4 m would be advisable to ensure that suspended cables are kept close to building and not allowed to stray out towards the life over head cables.

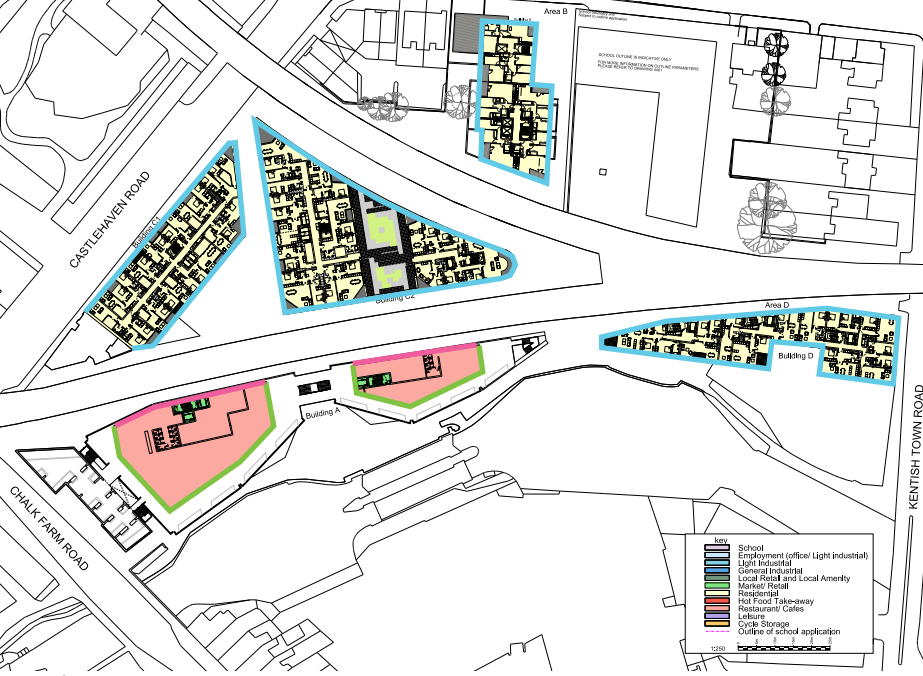
To ensure this design works correctly, the following should be noted:

1. Furniture should be located away from opening windows to ensure access is not restricted for cleaning.
2. Operatives need to be restrained by means of fixing points adjacent to window openings If they are expected to lean out and/or the window is less than 1100mm from finished floor level.
3. Windows should be key operated to ensure no improper use.

Alternative abseiling fixing point



Lower floors masterplan drawing



Upper floors masterplan drawing