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Designer's Hazard and Environmental Assessment Record

Project Title:	**Station Approach, West Byfleet**
Project code:	**BA9010C**
Document Reference	**BA9010C DHEAR.DOC**
Purpose of issue:	Stage 5
CDM Principal Designer	MGAC – Duncan Cruikshanks duncan.cruickshanks@mgac.com

18 October 2023

Revision **C01 – Construction**

Project description: Redevelopment to provide mixed use Retirement Village, Retail, Community.

Demolition of existing buildings and construction of 197 units of C2 living accommodation along with up to 1,500m2 of additional shared amenities and back of house areas, accessible to the general public or via a membership arrangement. Private parking of around 97 spaces will be provided plus a minimum of 67 spaces for use by the public.

A full Design Team is engaged by the client including Civil, Structural, Drainage, Highways, Services Engineers and Fire Engineer

Designers must regularly consider all the sections below throughout the design process.

This Assessment Record requires identification of all environmental risks, opportunities and significant other hazards & COSHH issues that have environmental consequences, throughout the life of the project. **Refer to Hazard Assessment Guidance Notes Appendix 22/j**

On Site Construction Works – hazards associated with constructing the development			
Item	Activity	Hazard	Action taken to design out risk
1.	Site access off busy main road.	Conflict with vehicles and pedestrian's movement on and off site.	All site vehicles to leave site in a forward direction. Clear signage to indicate entry and exit points and fencing etc. Avoid deliveries and vehicle movements during school drop off and pick up times. Close liaison with neighbours and client to ensure residents unaffected. Contractors full site set up plan and access arrangements to be agreed & approved.
2.	Construction activity and change in levels/ excavation	Disturbance, damage and risk of over-turning of vehicles/plant and Subsidence of excavations.	Contractor's method statement to be in place prior to construction. Safe vehicular/ plant selection and access to be agreed and clearly fenced off/marked on site. Temporary works design required.

3.	Removal of waste material/ site fill	Debris spread on to neighbouring highways and site.	Contractor method statement for wheel-washing regime to be agreed & approved
4.	Dust creation	Inhalation of dust by residents of adjacent properties or people using adjacent public footpath. Dust forming visual obstruction to passing traffic.	Construction method statement for dust suppression to be agreed and approved, along with low dust construction methods etc.
5.	Below ground services unknown	Disruption of services, gas leak, water leak etc. Protection of existing service runs and sewers. Contact with live services or drains.	Contractor to provide method statement to cover survey of existing services. Arrange for the isolation / termination of existing redundant services and protection of existing and new services with clear markings / signage etc. Refer to M&E and Structural engineer for further information.
6.	Construction phase risk of fire	New build construction catches fire due to accident/ arson before fully protected to building regulations standard.	Contractor to refer HSE document 'Fire Safety in Construction' Consider pre-applied fire protection to panels, temporary fire breaks, enhanced security on site, additional onsite firefighting measures and early meetings with Fire Brigade/HSE/Fire Engineer etc.
7.	Existing tree with RPZ's encroaching on site area	Root and stability damage, Effect on Proposals, RPZ's, Structural Design etc.	Refer to arboricultural survey including details of 'root protection area' and recommendations for construction in close proximity to tree.
8.	Foundations/basement construction	Risk to adjacent properties due to excavations Risk of falling from top of retaining walls Risk of excavations close to public footpaths	Contractor to monitor condition of existing properties and provide ground stabilisation methods in accordance with SE recommendations Contractor to provide guarding to top of retaining walls during construction Contractor to liaise with SE
9.	Possible use of large format construction items, pre-cast components etc.	Transport to site, use of crane on site & risk of dropping, possible damage to new construction / neighbouring properties.	Contractor method statement, sequencing of the works, review of fixing methods and design agreement with structural engineer, and M&E engineer on plant size as required. Installation to be reviewed with supplier and MC to ensure safe movement to correct position. Window supports to be reviewed with Russell Timbers and Stanmore SFS designer
10.	Voids in risers/ lift shafts during construction.	Falling from height down shafts or debris falling from height onto those below.	Contractor to ensure that adequate barriers/ cast in floor grids are provided during the construction phase

			to prevent people, materials or tools being dropped down the shafts.

Post Contract Maintenance – hazards associated with maintaining the development

Item	Activity	Hazard	Action taken to design out risk
11.	Flat Roof Access	Falls from heights from main roof spaces for maintenance/ inspections	Main plant areas have been located inside the central roof wells which have protected sides formed by a vertical louvred planting screening. The PV panels are located outside of the main plant screening areas. Man-safe will be provide when parapets are less than 1100mm high with dedicated routes to be identified around the roof mounted plant to provide min 750mm clear between obstructions. Limited access will be required to the flat perimeter for cleaning/ inspection of rain water outlets. Access to the main roof is via a vertical ladder through roof light, refer to roof plan for location. A suitable early fire alarm notification likely to be required. Maintenance contractors to provide method statement for approval before works on the roof commence. Access via scaffolding stages will be required for larger maintenance works as per the M&E plant replacement strategy.
12.	Future replacement of large format curtain wall glazing to stairways etc. Similarly, the replacement or maintenance of roof finishes and rainwater goods.	Falls from heights, cuts, collision.	Damaged sheets of glass to be replaced by professional glass specialists from the internal. All necessary specialist handling and moving equipment including cranes etc to be used under the supervision of trained operatives. Refer to selected specialist subcontractor method statement.
13.	Window and balcony cleaning / maintenance.	Risk of falling.	Windows cleanable from the inside or from terraces some areas may require secure points internally to lean out of openable windows. Routine cleaning via internal access

			via flats as confirmed by the client with goal of development to routinely engage with and support the residents
14.	Window opening restrictors	Security and falls from height.	The integral window opening restrictors should not be adjusted to allow full window opening. If they are opened for maintenance purposes they should be immediately re set afterwards.
15.	Maintenance of secret gutters and roofs.	Risk of falling	Any Hoppers/ gutters above safe ladder height to be cleaned by means of cherry picker. Access pathway to be provided to all elevations with gutter / eaves. Ensure pathways are wide enough and sufficient specification to carry scissor lifts.
16.	Access to substations and plant rooms and services.	Safe access to services and plant rooms, traffic clash.	Management plan required. layouts provide are in accordance with Power on Requirements
17.	Provision of low-level glazing.	Risk of occupants falling against, or falling through when windows are open.	Specialist is to provide toughened glass in affected areas in accordance with Part K of the Building Regulations. Landscape design includes planting where windows open close to pedestrian routes. Lockable window restrictors are to be fitted to windows. Guarding to be provided to suit B-Regs where transoms set lower than 800mm.
18.	Balcony/Terrace Guarding	Falls from height of vulnerable residents	Guarding to communal terraces to provide non-climbable protection to a height of 1.2m
19.	Access around the site	It is important to enable frail elderly resident's maximum access around the site.	Access controlled by management team and designated pedestrian routes designed to maximum 1 in 20 ramps or an alternative stepped route. Steps guarded with handrail/balustrade.

Demolition/Refurbishment – hazards associated with any future works at the development			
Item	Activity	Hazard	Action taken to design out risk

20.	RC frame with PT slabs	Risk of collapse	Prior to demolition the sequence and method statement from a specialist demolition contractor should be reviewed and approved by a suitably qualified SE

Environmental Opportunities that can be exploited during the life of the development			
Item	Activity	Environmental opportunities	Opportunity Exploitation Measures
21.	BREEAM Assessment	Client driven aspiration for the building to achieve sustainable approaches to design and construction	Please refer to HL BREEAM report with a target of Excellent (70%).
22.	Net Zero	Client driven aspiration for a first net zero carbon development	Net zero targeted please refer to specialist report by HL.
23.	Detail Design	Protecting and Conserving Water	Specification of plumbing fittings to suit low flow rates to M&E design & BREEAM. Rainwater held in tanks prior to expelling into main sewer connection as per MNP drainage design.
24.	Working Drawings	Using Environmentally Preferable Products	Specification and use of environmentally benign materials in accordance with BREEAM requirements. Interior designer to review finishes schedule accordingly.
25.	Working Drawings	Optimising Operational and Maintenance Practices	Detailed description of maintenance regime within O+M Manuals to ensure efficient running of all plant and equipment.
26.	Installation of lightweight Internal partitioning	Re-use and reconfiguration of building	Building can change use and layout within proposed shell. Proposed structural frame of concrete with lightweight metal external walls & internal walls allowing for reconfiguration of flat layouts

Design– Outstanding elements of design progression			
Item	Activity	Hazard	Action taken to design out risk
27.	Coordination between building control and Fire Engineer required	Design of stair cores and provision of refuge areas and length of corridors. Egress strategy	We are still waiting for HL's CFD analysis to be approved by SWECO
28.	Change to sprinkler tank requirements	Additional plant space required	Specialist to advise, please refer to HL M&E report.

Notes:

- This designer's hazard and environmental assessment records significant hazards that are particular to this site.
- This designer's hazard and environmental assessment record must be read in conjunction with ALL current drawings and specifications on the project.
- This designer's hazard and environmental assessment record must be read in conjunction with the hazard and environmental assessments prepared by the other consultants on the project.

Revisions:
Revision letter /authors initials / date /description
e.g. A / trb / 01 Jan 10 / items 1, 2 & 5 updated to accord with revised design to fenestration following structural input.

Initially prepared by:	SA	Date:05.11.20	Signed: SA
Checked by:	TC	Date:18/10/23	Signed: TC
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