Section 5 - The Proposals

Typical Accessible Care Unit Design Standards

General

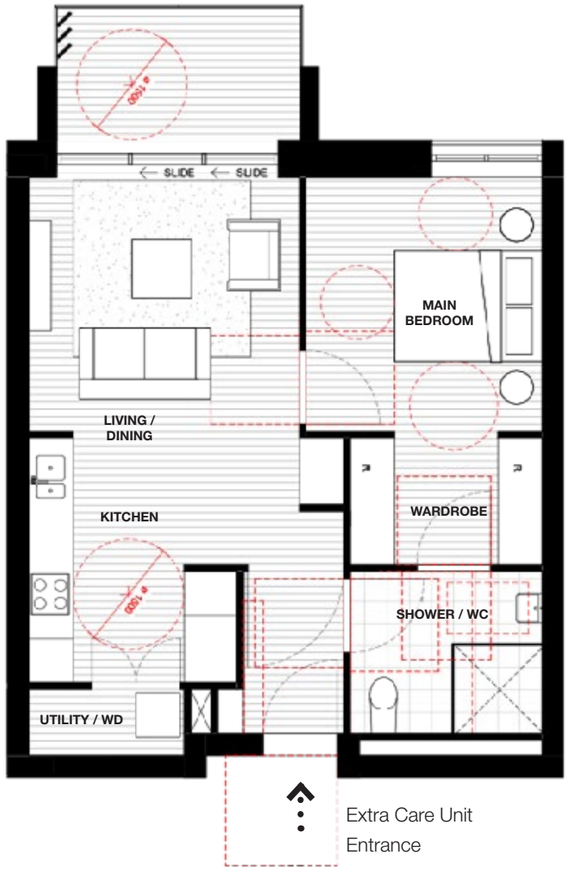
- Simple plan form and layout to aid way finding
- All units to be single story
- Entrances maximise legibility and security
- Sliding doors are used in specific locations to improve accessibility
- Easy to use ironmongery
- Electrical sockets and switches located at an appropriate height
- Colour schemes which use contrasting tones to highlight locations and features within the building

Apartments

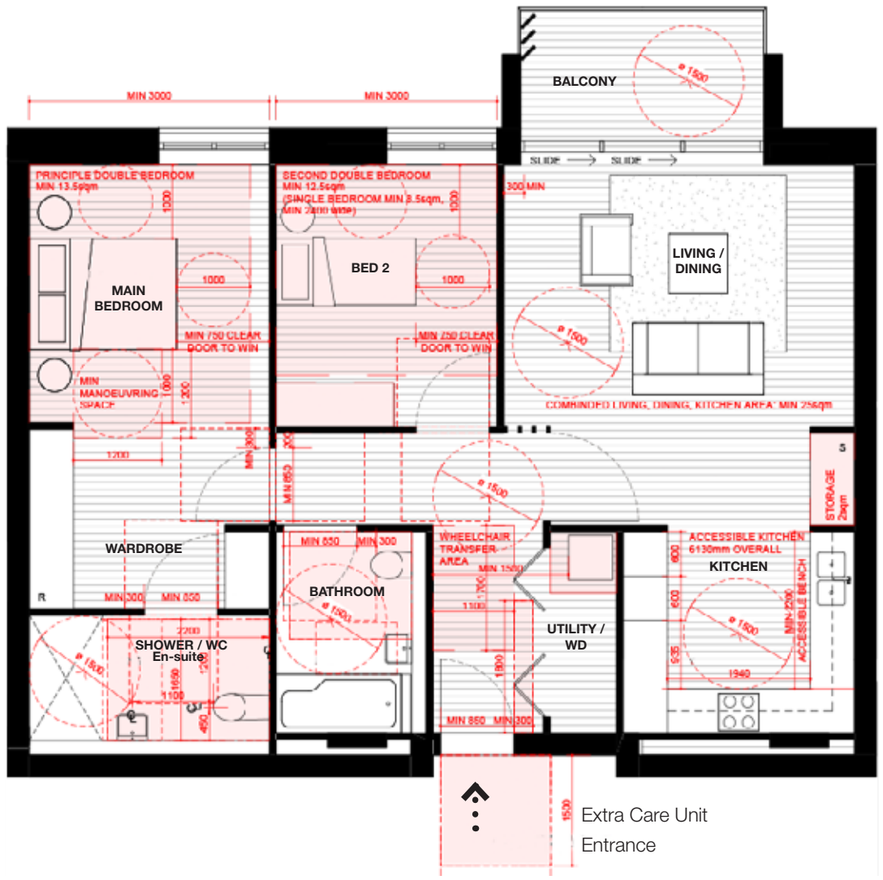
- Master bedroom layout provides direct connection to the ensuite to allow a hoist to be used
- Shower rooms comprise level threshold wet rooms
- Provision of telecare systems, alarms, also ability to install bed and floor sensors
- Design to accommodate, anti-scald/burn safety measures, fire detection and integrated hand rails
- Environmental control will include mechanical ventilation, underfloor heating and openable windows

Bathrooms

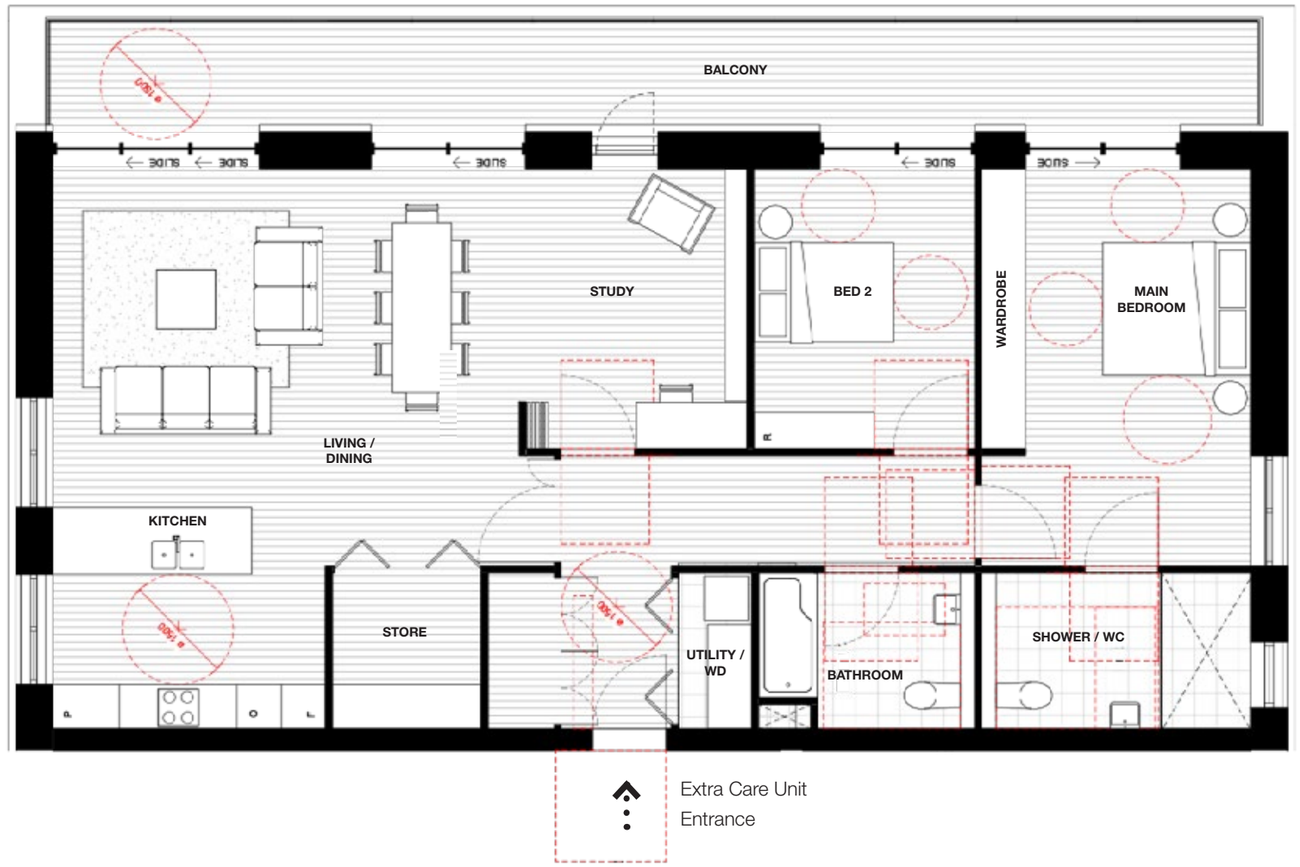
- Walk-in shower/wet rooms which accommodates a wheelchair and carer
- Easily adaptable bathroom which includes a bathing hoist and shower seat
- Anti-slip flooring
- Basins/vanity units at 800 – 850 mm high, to accommodate a wheelchair and is safe to lean on
- Mixer taps with lever or cross handles
- Shower head rail which can double as a grab rail
- Safety plugs for the sink and bath to avoid flooding



Typical 1 Bed Care Unit



Typical 2 Bed Care Unit



Typical 2 Bed + Study Care Unit

Kitchens

- Corner base units with pull out carousel fittings
- Glazed or open shelves for item identification
- Drawer and cupboard pulls that are easy to grab
- Tall fridge freezer rather than under counter
- Smaller high level dishwasher with drawers

Comfort and Security

- Carefully considered lighting e.g. colour options to replicate daylight, uplift mood or promote rest
- Low level sensor lighting which can be turned on by carers when entering at night
- Mix of overhead and wall lighting
- All lighting to be dimmable

Specific User Group Requirements

Visual Impairment

- A colour scheme with good contrast between the floors, walls and ceilings
- No glossy or shiny surfaces, particularly on floor coverings
- No highly patterned floors and worktops since it is harder to pick out objects against them
- Contrast between doors and their handles

Hard of Hearing

- Ensure large spaces have a high acoustic absorbency to reduce echo
- Install an induction loop system in all communal area
- Ensure door bells, smoke alarms and telephony provide flashing lights and/or vibrate

Part M Unobstructed Access Zone

Wheelchair Movement Requirement

Section 5 - The Proposals

Built Form Analysis

Urban Planning

In response to the analysis, constraints and opportunities provided by the site, the building responds by closely reflecting the existing built form and typology of the surrounding properties.

The footprint is broken down into three building wings, and this is articulated further in the facade, by cutting into the built form at the internal corners. All wings are therefore of a similar size, footprint and orientation to the surrounding properties - particularly those to the north of the Thames Water site, and allows for the maximum number of specialist extra care units to have river views, whilst minimising the number solely facing north.

This articulation in plan, also benefits the scheme by providing much needed space for the entrance courtyard along Melliss Avenue; enabling level access to a ground floor level higher than the surrounding buildings, and the proposed garden courtyard fronting the MOL and River Thames.

Building Heights

As illustrated opposite, there are a range of building heights and scales in the locale, and whilst the proposed building height varies between 4 and 6 storeys, it carefully responds to the surrounding built form with its varying articulation in height and facade alignment.

Setbacks at upper levels provide reductions in built form, maximising daylight and sunlight, whilst providing a gentle transition in height to the adjacent buildings of Melliss Avenue and Saffron house.

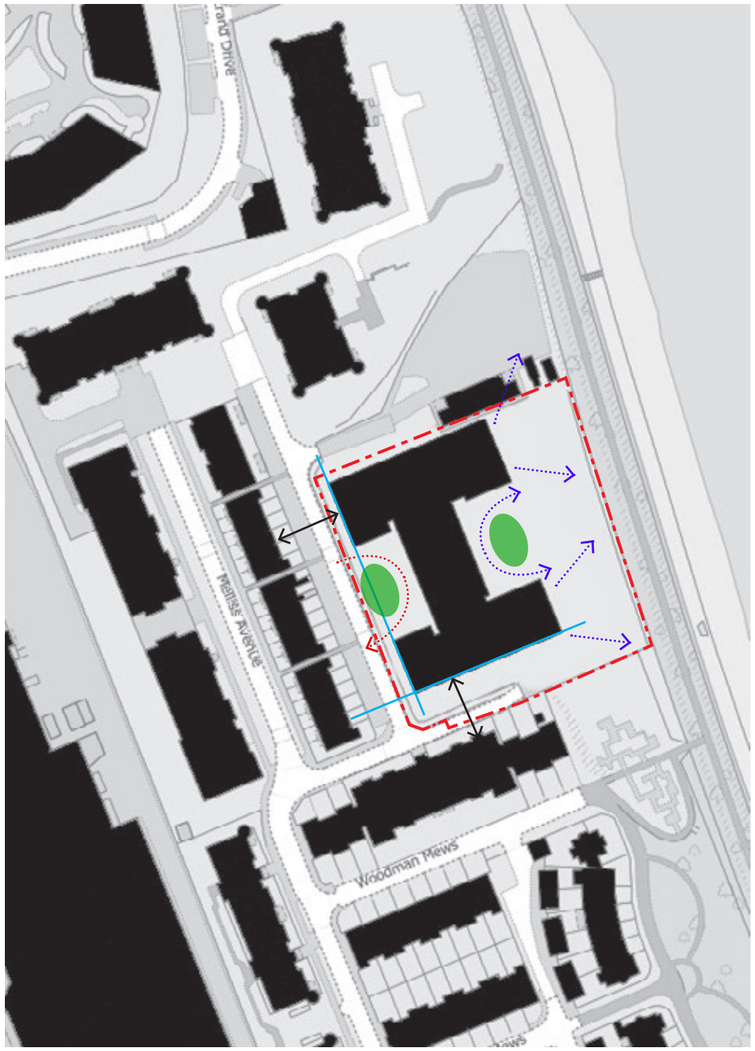


Figure Ground Plan - Proposed

Key

- Site Boundary
  Site Area: 7128 m²
- Building Setback Line
- 20m Setback Requirement
- Access Requirement
- Courtyard / Garden
- Views

Comparative Building Heights - Proposed

Summary Appraisal of Layout and Scale

The layout and scale have been informed by the following key factors:

- Creating an arrival space and entrance experience for residents and visitors to the building, whilst providing level access to a higher than normal ground floor level, agreed with the Environment Agency as a means of minimising potential flood risk.
- Environment Agency direction with regard to the proposed floor levels and types and accommodation use at ground floor
- Sensitivities to neighbouring buildings, particularly the town-houses to Melliss Avenue, Saffron House and Terrano house to the north
- Requirement to achieve 20m setbacks to the adjacent buildings
- Reinstatement of the MOL, and the creation of garden spaces at ground level and green spaces at roof level
- The requirement to ensure orientation and massing of the buildings allows for the maximum number of specialist extra care units to have access to direct sunlight, cross ventilation and river views - all key attributes for longevity - whilst minimising units facing north
- The requirement to provide level access from the car park
- A desire to activate the MOL with new public uses
- A desire to ensure public access is provided from the towpath

KEY

- 7 Storeys
- 6 Storeys
- 5 Storeys
- 4 Storeys
- 3 Storeys
- Site Boundary

Section 5 - The Proposals

Materiality and Facade Precedents

A simple palette of beautiful and sensitive materials is proposed for the façades of the buildings.

Materials, colours, textures and details have been chosen to take reference from the context and to harmonise with buildings in and around Kew Riverside, and as specified in the Kew Village Local Plan.

The materials have an attractive grain and colour and are associated with warmth, comfort and domestic architecture, and are applied in bands (generally) to define building levels/accommodation type. This concept also hints at the use of ‘banding’ in the local buildings to articulate the facade and built form.

The building will be inviting to residents and visitors alike, whilst being dignified and unostentatious. Its relationship to nearby buildings being respectful and of a complimentary nature.

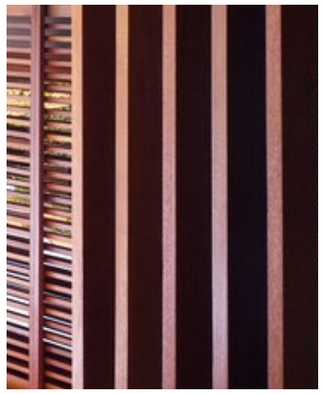
The design of the Melliss Avenue elevation has been developed through extensive consultation with Point 2 (Daylight and Sunlight Consultants) so that it is respectful to neighbouring buildings, and sits sensitively in the context of views north and south along Melliss Avenue.

With the ground floor utilising a warm, textured brick, the main residential floors will be clad in a reconstituted stone picking up the palette of the surrounding buildings. Glazed balustrades provide views for residents, and visual connectivity to the ground level, where activity provides interest.

The upper 2 levels step back in plan and are of a recessive nature, toned down in detail and texture using a light zinc cladding to reduce the perceived scale of the building, whilst the windows are highlighted and shaded with the use of an expressed frame.

Zinc Cladding

Framing



Stone Cladding

Timber Features

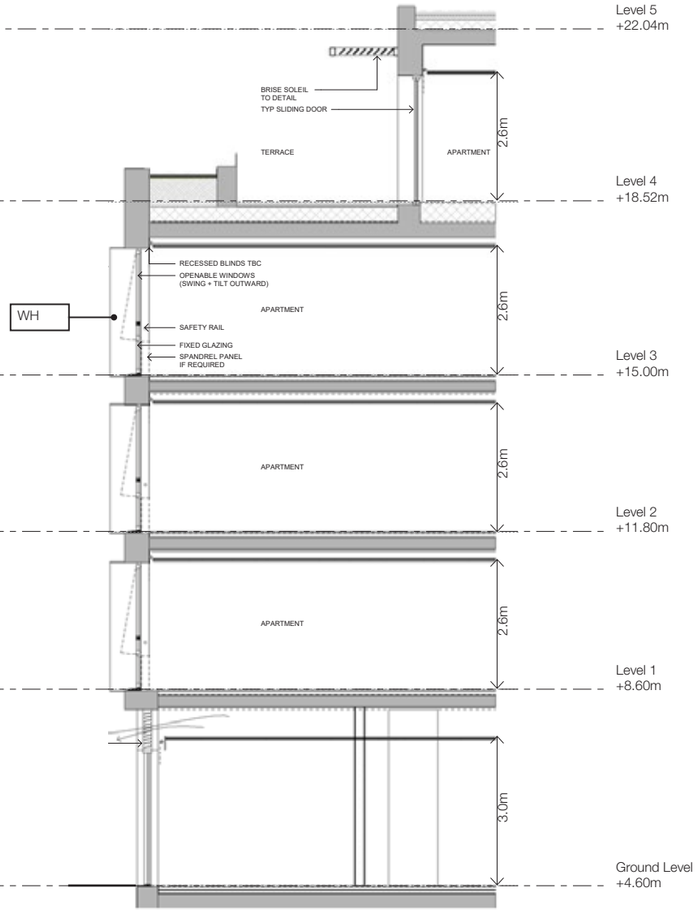
Brickwork Proposal for Ground Floor

Design Response

The Proposals - Typical Facade Study

AFG	Aluminium Framed Glazing - Mid Grey
BS	Brise Soleil with Louvre Infill
BW	Brickwork - Mid Brown
CL01	Reconstituted Stone Cladding
CL02	Horizontal Zinc Cladding - Mid Grey
CL03	Bronze finish Cladding
GB	Frameless Glass Balustrade with SS Toprail
ML02	Aluminium Louvre - Mid Grey
TM3	Timber Look Louvre Screen
WH	Window Hoods - Bronze

Typical Facade Study



Typical Facade Section

Section 5 - The Proposals

Accommodation Schedule

	1 Bed	2 Bed	2 Bed +	2 Bed ++	2 Bed + Study	Total	Communal Area (Inc. in GIA)	NSA (sqm)	GIA (sqm)
Ground Floor							1,424	0	2,178
First Floor	2	1	11	5	1	20		1,690	2,160
Second Floor	2	1	11	5	1	20		1,690	2,160
Third Floor	2	1	11	5	1	20		1,690	2,160
Fourth Floor	3	1	9	3	1	17		1,413	1,866
Fifth Floor	2	2	3	2	3	12		1,064	1,409
Total	**11**	**6**	**45**	**20**	**7**	**89**	**1,424**	**7,547**	**11,933**
Unit Mix Ratio	12%	7%	51%	22%	8%	100%			

Red Yellow | marchesepartners

Section 5 - The Proposals

Site Access and Transport

Access and Transport
The design proposals have been developed with careful consideration to the efficient operational needs of the development together with site constraints, feedback from the LB Richmond Highways department and the local community. One of the first key moves is to improve access into and through the site. Consideration is given to the design of pathways which are accessible for wheelchairs and mobility scooters.

Routes into the site from Melliss Avenue and the Thames towpath will be developed so that they are accessible. The front of the site will become more open and welcoming.

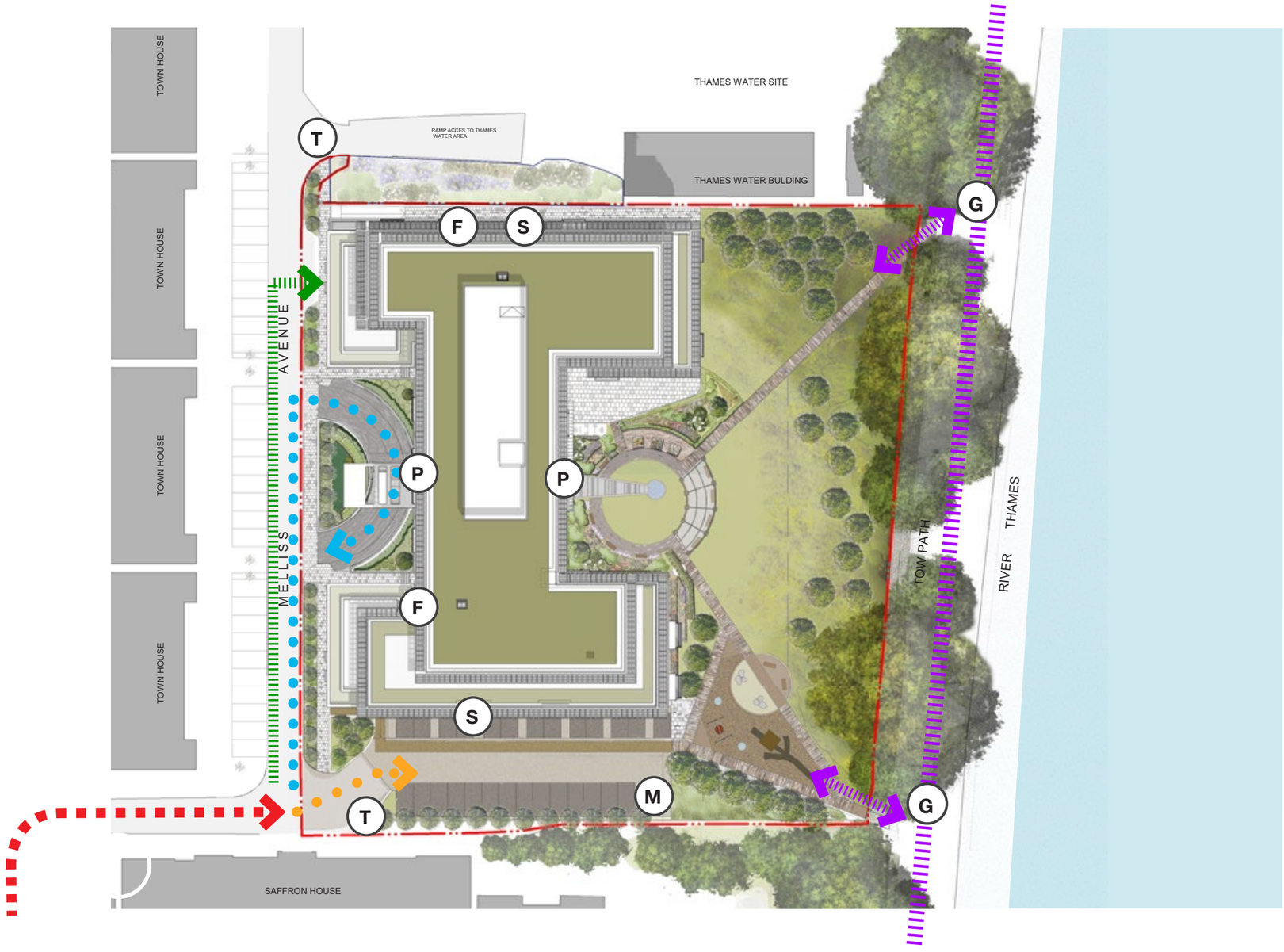
Car Parking
Car parking levels for an elderly specialist extra care facility with core age residents between 75-85yrs, and with long term conditions, is considerably lower than conventional residential. Circa 30 spaces are therefore proposed with a high proportion of disabled access spaces.

A dedicated mini bus will be provided and managed by R&Y to provide transport for residents to local facilities and collect/drop off residents and staff to and from local transport hubs. Also under consideration is the provision of a chauffeur driven car service to further reduce parking.

Servicing the Facility
A dedicated service yard remote from the car park has been designed, whilst refuse collection will be co-ordinated with the LA and Kew Riverside existing service. The majority of service vehicles will be transit type vans, avoiding any larger vehicles unless required for exceptional needs.

Validating the Proposals
A comprehensive traffic study has been conducted in consultation with the LBR Highways department. Data has been collected on site, approaches to the site and surrounding roads with particular emphasis on the Townsmead Road Waste recycling facility.

Key
- Site Boundary
- Main vehicular access from Melliss Avenue (South)
- Main Car Drop-off adjacent entrance, below Porte Cochere
- Servicing Vehicle Access
- Car Park Access
- Thames Towpath
- Pedestrian and Cycle Access to/from Towpath
- (P) Primary Building Entrance
- (S) Secondary Building Entrance
- (F) Fire Escape
- (T) Vehicle Turning Location
- (G) Gated Access
- (M) Minibus Parking


TOWN HOUSE
TOWN HOUSE
TOWN HOUSE
THAMES WATER SITE
RAMP ACCES TO THAMES WATER AREA
THAMES WATER BULDING
T
F
S
G
P
P
F
S
M
T
G
AVENUE
MELLISS
TOW PATH
RIVER THAMES
SAFFRON HOUSE

Section 5 - The Proposals

Site Accessibility

The Equality Act 2010 prohibits discrimination against people with the protected characteristics that are specified in section 4 of the Act. Disability is one of the specified protected characteristics. Protection from discrimination for disabled people applies to disabled people in a range of circumstances, covering the provision of goods, facilities and services, the exercise of public functions, premises, work, education, and associations.

The Access & Accessibility strategy is based on standards set out in Approved Document M: Access to and use of Buildings, 2004 Edition, Incorporating 2010 and 2013 amendments and the British Standard 8300:2009 - Design of buildings and their approaches to meet the needs of disabled people. If there are any discrepancies between the two documents, the more stringent guideline will be used.

Access & Accessibility Aim

The aim is to achieve the following as part of the design process:

1. To maximise access to all parts of the proposed development, its facilities and services for people who are residents, visitors and members of staff regardless of disability and as required by local, regional and national policy;
2. To ensure that appropriate standards for accessibility are met at the outset and as part of mainstream inclusive design wherever possible;
3. To design inclusively, which means designing beyond the minimum requirements of the Building Regulations Part M to ensure that all people, regardless of age, sex or ability can use and enjoy the built environment;
4. To address the anticipated, substantial increase of older people in proportion to the working-age population in the near future and their needs;
5. To meet the aims of the Equality Act (2010), where applicable; and
6. To follow design guidance given in relevant British Standards and other currently published good practice guidance about meeting the needs of disabled people.

Travel to Site and Public Transport

Local overground and underground services run from Kew Gardens station and bus services run from Townmead Road. Both are within walking distance of the site, but a minibus is also proposed to enable residents and staff alike better access to local amenities and connection to transport services.

Walking and Cycling

The immediate pedestrian environment provides good access for residents, staff and/or visitors to access Kew retail Park and nearby facilities. A number of pedestrian crossing points exist in the immediate area to the Thames towpath, with a further two proposed within the new development.

With the towpath being used regularly by both pedestrians and cyclists, secure storage and access to those on bicycles will be provided on site and adjacent the new play area and restaurant/cafe.

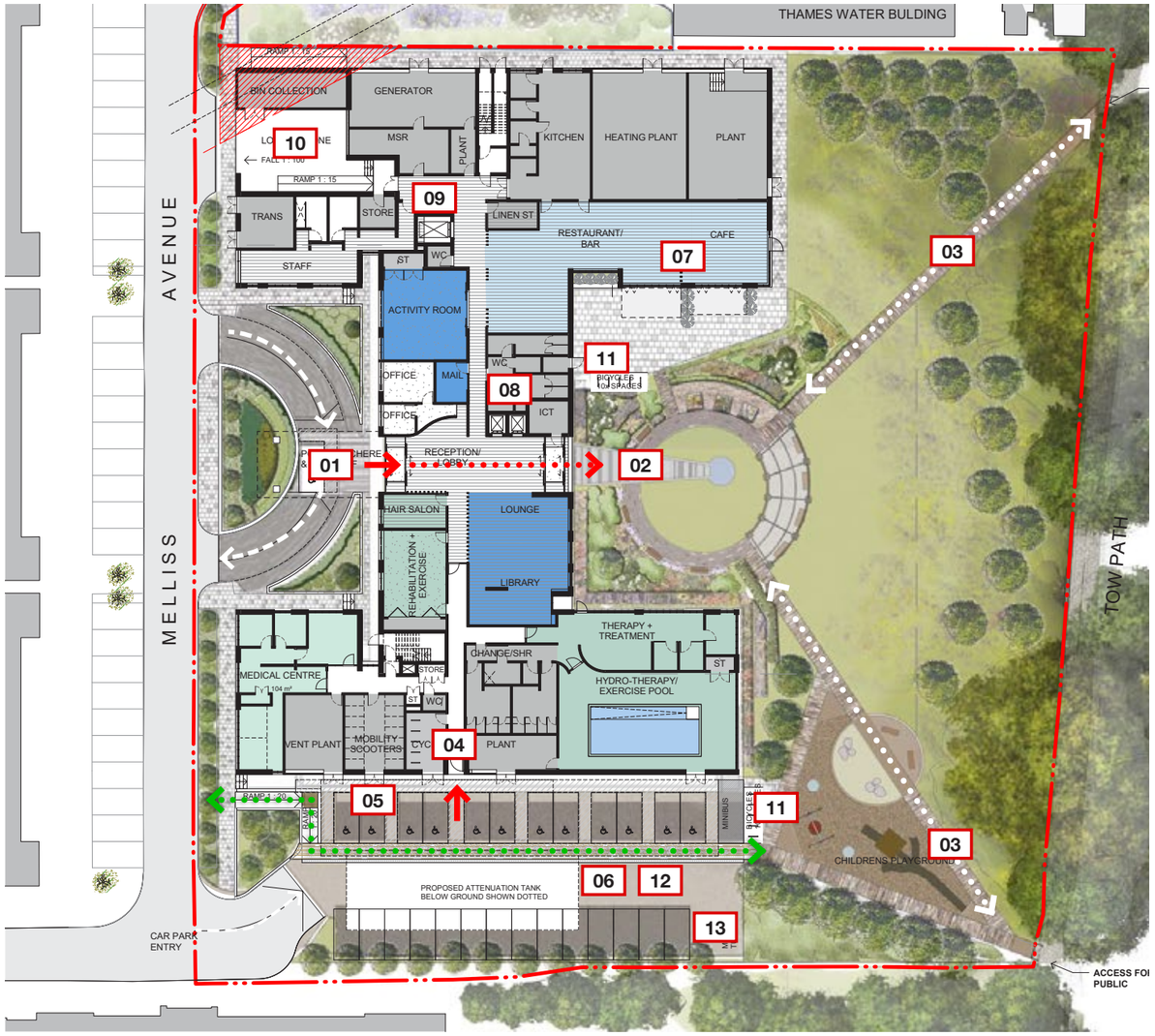
Existing Access and Highways

As previously identified, the site currently has one vehicular access to Townmead Road, via Melliss Avenue.

A grade level car park is proposed, providing circa 30 car parking spaces and 1 for the minibus. As with current legislative requirements, a number of parking spaces will be provided with electrical charging stations.

External Approach & Building Entrances

1. The principle entrance to the development is from Melliss Avenue, with a Porte Cochere located directly in front of the entrance to provide a covered area for disabled people to exit vehicles. Due also to the requirement to provide level access to the building and achieve Part M, an access ramp is provided within the entrance courtyard, providing disabled access from the external pavement to interior of the building, without the need for assistance
2. This entrance is mirrored on the opposite side of the building, similarly providing level access to the MOL garden courtyard beyond
3. Ramped hard landscaping provides further disabled access to the towpath beyond



4. A secondary resident access is provided to the south, allowing direct level access from the car park to the building. With level 1 extending out above the ground level in this area, cover is also provided from the weather

Accessibility

5. Access for mobility scooters is provided directly to the car park
6. A landscaped route to guide residents and public from Melliss Avenue to the MOL Garden is also included within the landscape design of the car park.
7. Level access will be provided directly from the cafe / restaurant area to the terraced area outside, providing the ability for residents and visitors to enjoy full access of the dining facilities.

Vertical Circulation

8. Lifts are provided centrally to the building and each residential floor, to allow centralised control of the movement of residents, and a single point of access to all floors
9. A service lift provides access for staff to enable servicing of specialist extra care units, the ability to move people via stretcher when required, and mobility scooter use throughout the building

Vehicular & Cycle Access

10. The service area is designed to allow a large box van access, allowing direct servicing to and from vehicles within the building, and the ability to park an ambulance when required, in a safe and private location
11. External cycle storage areas are provided to allow people accessing the facilities from the towpath to secure their cycles
12. The car park is designed to provide direct level access to the building, and will be paved throughout to provide a level surface for wheelchairs, and no trip hazard for people with walking or visual impairment
13. A wheelchair friendly minibus will be provided to enable residents and staff to access local transport, shopping and care services without the need to provide their own transportation

Section 5 - The Proposals

Care Unit Accessibility

Access to/within Units
All the specialist extra care units have been designed to Part M and Lifetime Homes guidelines in order to meet Building Regulations and a key aim: to enable older residents to 'age in place'. 62% of units are compliant with Part M4(2) and the remaining 38% compliant with Part M4(3).

Where possible, the interiors will be designed to exceed Part M standards to suit the needs of the residents, with all master bedrooms having wheelchair accessible en-suites.

Some aspects have come from the design team's work with Red & Yellow, for example the wish for a direct visual link between the entrance and external vistas. Similarly, the need to provide direct visual connection between the master bed and en-suite wc, to limit disorientation in residents with dementia.

Materials and Surfaces
All adjoining floor finishes are flush with one another and all thresholds level inside the buildings. For general circulation, the palette of floor finishes is to be kept as simple as possible with a durable and easily maintainable floor surface. Selectively and where appropriate, it is our ambition to accentuate public spaces with different materials or finishes.

There will be an area of wheelchair suitable entrance matting to all communal entrances. All floor finishes will be specified to be wheelchair compatible, with minimum changes in materials to avoid slips, trips and falls.

General points regarding surfaces:
- Colour and tonal contrast to be provided between the floors and walls. To be designed to not cause confusion
- The presence of doors, whether open or closed, to be apparent to visually impaired people through careful choice of colour and material for the door and its surroundings
- Contrast is to be provided between the ironmongery and the door, as well as clear delineation of vision panels and safety signage
- All glass doors, glass screens, fixed panels etc to be provided with the appropriate manifestation at two levels (where necessary) in a contrasting colour
- All disabled grab rails (WCs and showers) to be provided in a contrasting colour with the surrounding walls
- WC / sanitary ware fittings to have the appropriate visual contrast from its surrounds. For example, white sink set in a visually contrasting vanity top

Vertical and Horizontal Circulation
Lifts will be provided in the main cores of the building. Circulation routes will be sufficiently wide to allow two wheelchairs to pass.

Landscaping
The landscaping concept centres on creating a beautiful, safe and functional public environment suitable for all users. A family of materials will be used that blend with the surroundings whilst complying with Part M and BS8300.

Please also refer to the Landscape report in Section 7.

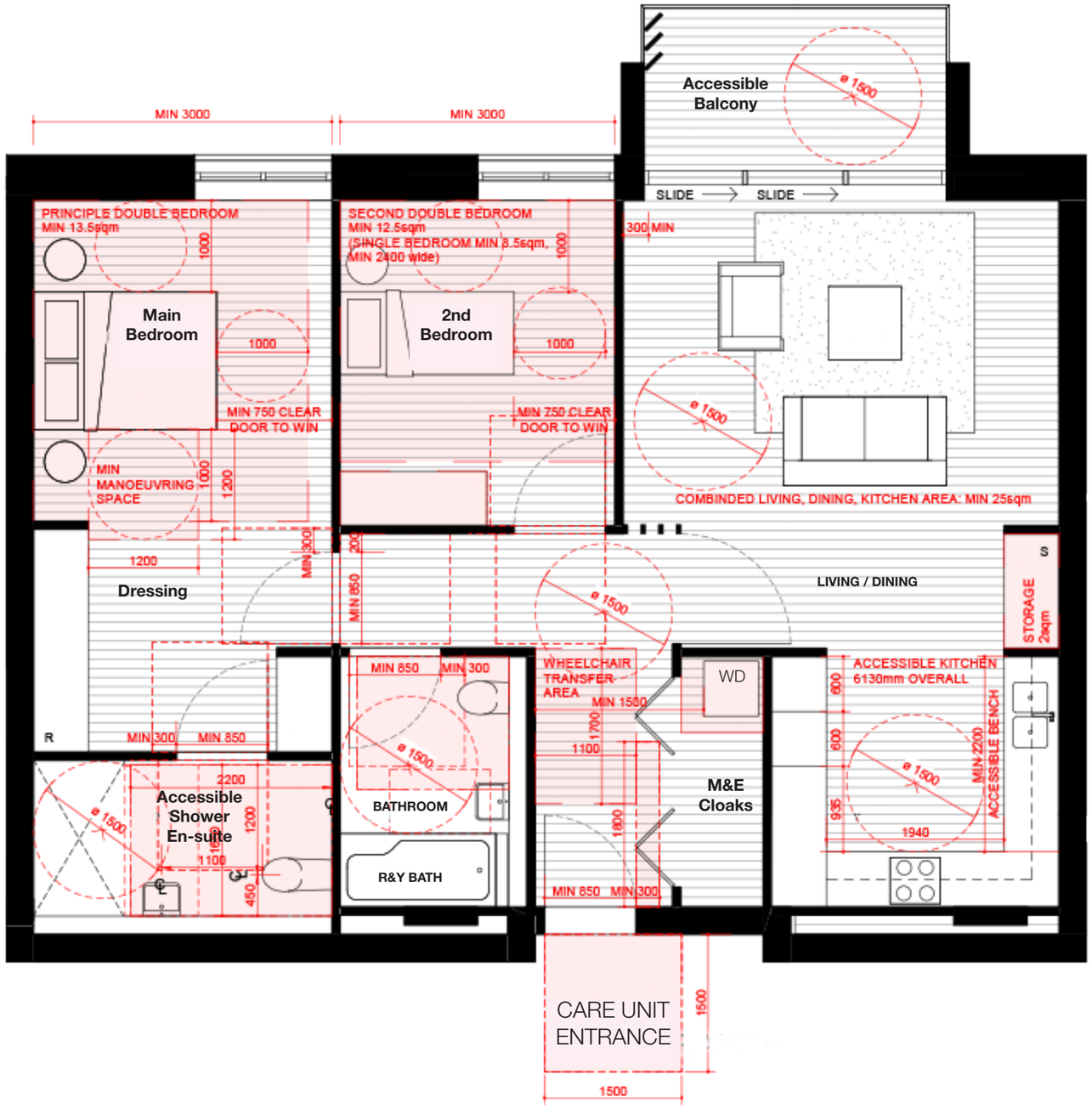
Bedroom and Living Room / Kitchen Furniture
Consideration will be given to the specific design of joinery in the next stage of the project, in particular bathroom and kitchen fit-out.

All master bedrooms will have wheelchair accessible en-suites.

Escape in the Event of Fire
In the event of fire, wheelchair users on the ground level can evacuate directly out of the building, without any changes in level to a place of safety. A management strategy for monitoring and ensuring the safe evacuation of all disabled people within the buildings will need to be developed with Red & Yellow. Secure areas will need to be provided to ensure the safety of all the residents.

Unobstructed Access Zone

Wheelchair Movement Requirement



Section 5 - The Proposals

Care Unit Design

Design Approach

Many residents will spend significant time in bed. This could be the bed in the master bedroom or one of the secondary / day bedrooms in larger care units.

In the process of evolving the brief, there are key views from the bed which have been incorporated in the design

- View to the WC from the master bed
- View to the outside and nature.
- View through from the entrance to the outside

The designs facilitate views into the street and spaces outside from residents' units. This is developed from insights from the ESRO research, which has resulted in our interest in creating 'happenings' - activities which happen around residents, allowing them to spectate or interact with events around them.

In addition to allowing for future care and physiological requirements (e.g. provisions for hoists), the interiors will also take the psychological needs into consideration. For example, each specialist extra care unit entrance can be personalised by a 'memory' wall with an alcove for storing and displaying personal items by the door, serving as an identifier and memory aid for people living with dementia.

Units are designed to provide generous natural light and a relationship with the external environment. This is considered an important design element and each unit is provided with an external terrace or balcony.

Each care unit has been designed to Lifetime Homes and Part M4(2)/(3) where required, and adaptability and accessibility is a key element to the design of each care unit. Lifetime home standards are applied as a minimum, with level floors, no steps and flush junctions at door thresholds and balconies.

Ironmongery, fixtures and fittings will be designed to be easy to grab and operate. The interiors will be designed with no sharp edges and mitigate opportunities for falls.

Designing for cognitive impairment also needs consideration in relation to way finding, the use of materials, textures and colours and necessary slip ratings. In contrast to conventional residential developments, specific modifications and design elements will be required to ensure that the units enable the provision of support and services to the older residents; that is to ensure the units are adaptable, allowing the residents to age in place. One example of such provisions would be the installation of solid plywood sheeting behind bathroom walls to ensure readiness to receive grab rails and other special fittings in the future.

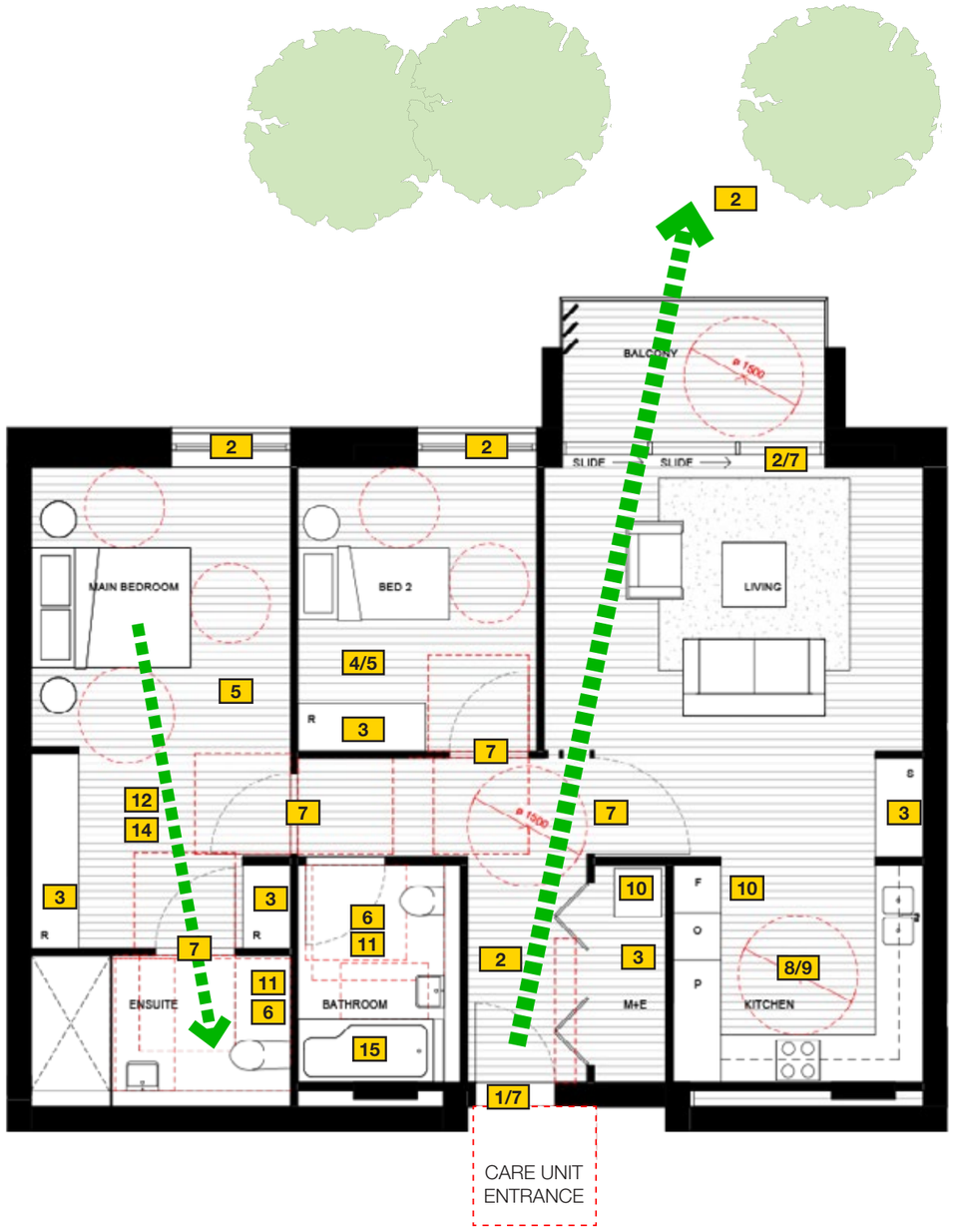
Base Architectural Fit-out

The following will be allowed for in each specialist extra care unit:

- Designed to Lifetime Homes Criteria and Document M4(2)/(3)
- Underfloor heating with sensors to detect falls
- A nurse call alert system, IR and WIFI
- Infrastructure for market leading assisting technologies
- Walk-in showers with demountable shower screens
- Baths designed specifically for the elderly and disabled in partnership with Ideal Standard
- Reinforced bathroom walls for grab rails and space for a seat to be installed in the future.
- Hallway storage, walk-in cupboards.
- Accessible fitted wardrobes to all bedrooms.
- Storage in addition to wardrobes, such as laundry rooms and broom cupboards.
- Kitchens with easy to reach overhead cupboards and shelving ergonomically designed
- Master en-suite bathroom. including accessible walk in wet room shower.
- Provision in the ceiling for a hoist track from master bedroom to the bathroom.
- Floor to ceiling heights of 2.6m in living and bedroom areas.
- Lowered ceilings to bathrooms and bulkheads to kitchens at approx. 2.5m

Key Design Considerations

Internal doors should be solid core and wide enough for use by somebody using a wheelchair or assistance frame and allow access for stretchers and ambulance beds, in accordance with lifetime homes. The quality, weight and closing mechanism of the door



is very important. Hinges will be selected appropriately to reduce the weight of the doors for elderly residents, allowing them to be easily operated with one hand.

Floor finishes will be non-slip and avoid glossy, shiny or highly patterned surfaces, and level thresholds will be provided between all rooms. Wall finishes will provide good contrast between the floors, walls and ceilings to aid the visually impaired

Taps with lever handles, no sharp edges and smooth profiles will be specified, as these are easier to use for people with arthritis and pose less risk in case of fall.

key

1. Recessed front door creates interest and highlights entry
2. Views to the outside are key to creating space and light within the specilaist extra care unit
3. Plenty of local storage is paramount
4. Flexibility is preferred - the ability to turn a bedroom into a study or extend the living area, provides the resident options in living arrangements
5. Separated bedrooms with a living area barrier are desired
6. Large adaptable bath/shower rooms which comply with lifetime homes and Part M4(2)/(3)
7. Level thresholds throughout provide accessible, non-trip environments
8. Fixtures, fittings and materials are considered and designed with the resident in mind, such as ergonomically designed door handles and kitchen hardware
9. Down-lights placed to not cast shadows on the residents' faces in bathrooms or in kitchen areas are key
10. Washing machines, ovens and microwaves are provided at an accessible height, and where possible adjacent worktops
11. Bathroom walls are lined internally with ply to allow for retro-fitting grab rails when required
12. Views, where possible, should be provided directly from the bed to the WC (this is advocated by Elderly Living research, and very much opposite to typical residential schemes)
13. The heights and locations of light switches and power points are considered, along with their style, so that they are easily accessed and clearly defined
14. Ceilings are reinforced to allow retro-fitting of hoists
15. Bathrooms with baths will be designed for the elderly in collaboration with Ideal Standard Extra Care

Section 5 - The Proposals

MEP Strategy

Design Standards

As a minimum, the MEPH design is required to meet the requirements of all current and relevant British Standards, Building Regulations and Codes of Practice, with the design of the specialist extra care units adhering to NHBC 2018 Standards. The MEPH design will also abide to Local and Regional planning policies. In addition to these, the following dementia specific guidance/research papers have been used to influence the design:

- Indoor Environment in Relation to People with Dementia (Joost van Hoof et Al.)
- Hearing, Sound and the Acoustic Environment for People with Dementia (University of Stirling)
- Light and Lighting Design for People with Dementia (University of Stirling)

Local Policy Requirements

The Energy Strategy and CO2 savings for the development are driven by the GLA (Greater London Authority) and The London Borough of Richmond's planning policies, with the specific requirement to achieve BREEAM 'Excellent' for this type of development.

The new building will be submitted for planning under the C2 "Residential Institutions" use class, which therefore requires that all major residential schemes achieve zero carbon, with a minimum 35% reduction below the maximum threshold set in Building Regulations Part L 2013.

The Energy Statement, submitted within the suite of documents for this application, demonstrates that at least a 35% reduction on the baseline building emissions rate (BER) has been achieved on site, through reducing demand through passive means, supplying & using energy efficiently, considering decentralised energy and employing on-site renewable energy technologies.

A pre-assessment under BREEAM Multi-residential 2014 has been undertaken to identify a strategy to achieve a score > 70% and the mandatory credits for an excellent rating.

Heating

The final recommended heating strategy and its suitability for the new facility will be determined by a number of factors, including, but not limited to:

- Availability of utilities and associated connection cost
- Site resources (water/ground/air)
- Energy efficiency
- Carbon emissions
- Planning policies
- Cost (running and installation)
- Acoustics
- Maintenance burden

Heating plant, associated pumps, pressurisation unit and other ancillary equipment will be located in the ground floor heating plantroom, with pipework being distributed from the plantroom to each care unit. Heating plant will be provided on an n+1 basis to provide full capacity if one boiler or heating appliance is off-line.

The elderly are characterised as being vulnerable to the cold and liable to be burned by hot surfaces, therefore, heating systems and their associated heat emitters must be carefully considered. Underfloor heating has a heat profile that closely matches BSRIA ideal heat profile, allows the greatest flexibility for furniture layout and works well with LZC technologies reducing energy consumption by using lower water temperatures.

To comply with the domestic compliance guide and meet BREEAM Hea04 Thermal controls and zones, the specialist extra care units will be split into heating zones to allow for local control within the unit.

The correct heating controls will allow the resident/communal areas to be kept at a comfortable temperature without wasting fuel or heat, and need to be suitable for the elderly and those suffering from dementia. This includes, but is not limited:

- Simple user interface
- Large buttons / screen for people with impaired vision

- User temperature controller that allows for some override function limited to within the optimal thermal comfort range to prevent occupants selecting too high or too low temperature, resulting in extreme indoor conditions (particularly when specifying slow response heat emitters)
- Room temperature controlled to decrease during the night, to help strengthen natural circadian rhythms and promote better sleep

Cooling

There are no mandatory requirements to provide cooling within a domestic environment in the UK. However, there are relevant guidance and policy documents which are considered appropriate to the specialist extra care units within this development and should be considered:

London Borough of Richmond Upon Thames Local Development Framework Core Strategy April 2009

CP3 Climate change – Adapting to the Effects. 'Development will need to be designed to take account of the impacts of climate change over its lifetime including: … The need for summer cooling'.

Recommends introducing natural cooling through siting, orientation landscaping and design to minimise the urban heat island effect, passive design, natural ventilation and vegetation on buildings.

GLA London Plan Policy (December 2017)

'Reduce the risk of overheating as well as minimising carbon emissions by reducing energy demand.'

'Design of a development should provide sufficient daylight to new housing that is appropriate for its context, whilst avoiding overheating ….'

'Single aspect dwellings …. must demonstrate how they will avoid overheating without reliance on energy intensive mechanical cooling systems.'

CIBSE Guidance

CIBSE Guide A (2006) defines "overheating" for residential accommodation as internal temperatures of 28°C for living areas and 26°C for bedrooms being exceeded for more than 1% of the occupied period. More recent CIBSE guidance - CIBSE TM52 (2013) "The limits of thermal comfort: avoiding overheating in European buildings" - recommends an adaptive approach. This approach is based on the evidence that the comfort temperature that is acceptable to building occupants varies depending on the outdoor temperature – i.e. people adapt during warm spells and accept higher internal temperatures accordingly. Thus, there is no one temperature at which a room "overheats", but instead there is a range of acceptable internal temperatures throughout the year.

Main building cooling plant will supply ventilation and, where required, local in-room cooling systems, operating at times of high ambient temperatures. Cooling plant, associated pumps and other ancillary equipment will be located in the external plant enclosure on the roof.

All cooling plant pumps (primary/secondary) will need to be provided on an n+1 basis, duty/standby. Fan coil units are suggested for the ground floor cooling units either to be served by a water-based or refrigerant-based system.

Currently there is no intention to provided cooling to the specialist extra care units, and as such, the central cooling plant is not currently proposed to have capacity to serve each care unit.

Extra Care Unit Cooling Strategy

A desire to avoid having to provide cooling to each unit has informed the initial façade design, with a target of 40:60 ratio (glazed:solid) for façade areas to each room being employed.

Other passive cooling measures that have been considered in the emerging architectural and MEP design to minimise overheating including:

MEP Strategy

- Reducing the amount of heat entering a building in summer (e.g. low U-value construction, beneficial external shading (where possible), solar-controlled glazing, green roofs)
- Minimising internal heat generation through energy efficient design (e.g. low energy lighting, good insulation to heating and hot water pipework)
- Passive (natural) ventilation (e.g. via single sided openings)
- Mechanical ventilation (e.g. bathroom, kitchen extract rate boosted to assist airflow)

In order to comply with the Building Regulations Part L overheating criteria and the GLA London Plan requirements to avoid overheating (or excessive cooling), every single occupied room has been studied to ensure none are at risk of overheating.

Due to the temperature-sensitive nature of the residents it is proposed that the most onerous adaptive temperature range is adhered to for the specialist extra care units, with overheating limited to less than 3% of occupied hours.

Extra Care Unit Ventilation Strategy

The requirement for ventilation of residential accommodation is covered by Building Regulations Part F, is that a ventilation system must be provided that, 'under normal conditions, is capable of limiting the accumulation of moisture, which could lead to mould growth, and pollutants originating within a building which would otherwise become a hazard to the health of people in the building.' Ventilation is required for one of the more of the following reasons:

- Provision of outside air for breathing
- Dilution and removal of airborne pollutants, including odours
- Control of excess humidity
- Provision of air for fuel-burning appliances

Ventilation can also provide a means to control thermal comfort and prevent overheating, but this is not the primary purpose. Within specialist extra care units ventilation can be provided using manually/automatically openable windows, louvres (natural ventilation) or using ducted supply and/or extract connections. Thermal comfort in the flats and domestic corridors will be maintained via high efficiency Mechanical Ventilation with Heat Recovery (MVHR) units and openable windows for natural ventilation. Windows will partly open allowing blinds/curtains to be drawn across the remainder of the glazed areas, minimising solar gains. MVHR systems comprise of a small supply and extract fan with an air intake and exhaust ducted to the façade and has the additional benefit of heat recovery. Each flat will have its own MVHR ventilation unit located in the designated M+E cupboard.

Extra Care Unit Lighting Strategy

Lighting can play an important role in relation to the additional health benefits that can be provided to the residents of the new development. Utilising daylight within the specialist extra care units can reduce the effects of seasonal affective disorder, with the 24 hour cycle of light and dark providing improved sleep quality.

Good quality of 'Artificial' Light is another important element. Guidance from the University of Stirling publication 'Improving the Design of Housing to Assist People with Dementia' recommends that the typical lighting levels within the specialist extra care units could be doubled to help balance the effects of poor eyesight and reduce hallucinations that may be induced from not being able to see their surroundings.

It is proposed that light fittings within the care unit should incorporate some level of dimming control, which is detailed in the next section, to allow for the lighting levels be adjusted to suit the resident prior to them taking occupation of the flat.

Uniformity is also an important element in lighting design for people with dementia. Other design elements include the following:

- Avoiding sudden changes in light level
- Colour rendering of luminaires should be 85 or higher
- Glare should be reduced and reflective floor surfaces should be avoided

It is proposed that the specialist extra care units could utilise a combination of ceiling recessed down-lights, pendants, wall lights and low level wall mounted perimeter lighting to be used as a form of way finding. The specialist extra care units are to be used as homes and should not mimic hospital or care home wards, so the colour temperature of luminaires will not exceed warm white of 3000K.

A lighting control system will be in place within the new development to enhance energy usage management and allow for scene setting within defined areas within the site.

Automatic controls such as Daylight Dimming, DALI scene selection, Passive Infra-Red (PIR) Presence/Absence Detection, Photocells and Timer clocks will be utilised as part of this system.

Daylight dimming will be used in perimeter areas on the ground floor in line with Part L of the Building Regulations. All areas should include manual switching in line with BREEAM credit HEA01, detailing the need for occupant control.

Facilities for the Disabled

Building services within the new development will be installed in accordance with the requirements of Part M of the Building Regulations; these systems will include but not limited to the following:

- Lifts
- Electrical Outlet positions – including Light Switches
- Audible and Visual Fire Alarms
- Audible and Visual Alarms within Disabled Refuges and Toilets/Changing Areas

Disabled WC / Changing Alarms

Within disabled toilets and changing rooms in the new development a disabled call alarm system will be installed. This system is to notify staff in the event of an accident or where the occupant is encountering difficulties.

The system will include both local indication and interconnections to the building nurse call system. The components of the system will include:

- A Ceiling Mounted Alarm Pull Switch with Reassurance Light and Red Pull Cord
- Wall Mounted Reset Button(s)
- High Level Lamps / Buzzer Units Mounted External to the WC / Changing Area
- Control Unit Mounted within the Celling Void of the WC / Changing Area – With Connections Reporting to the Nurse Call System

Audio Induction Loops

Audio induction loops for the hard of hearing will be installed in specific areas of the building, as required by Part M of the Building Regulations to be confirmed in the next design stages. Provisions for portable units will also be considered as required.

Disabled Stair Refuges

Provisions for disabled 2-way intercom units will be provided in disabled refuge areas, located within the protected stairways as detailed within the AECOM Fire Strategy. The intercoms shall be wired back to a specific emergency voice communications panel located in a central location.

Nurse Call System

With the vision of the new development to include therapy and treatment packages being made available to the occupants, it is anticipated that a nurse call system will be required throughout the ground floor, in addition to systems installed within the individual specialist extra care units.

The scope of this system will be confirmed as the scheme design progresses. However, it is likely the system could be expected to comprise of:

- Staff – Staff Call
- Patient – Staff Call
- Staff Emergency Call

Provision of ancillary equipment such as panic alarm systems and drug cupboard alarms will be included in the system as deemed necessary by the architect and the client. Suitable bed head and patient remote connections could be included, which would report to the nearest staff base.

Safety, Security and Lighting

Through the very nature of developing the site, and the active control of security once the development is operational, there will be an increase in the general safety and security of the existing residents in the locale.

The layout of the building is designed to create open views and passive surveillance within the site, and with active uses such as the cafe and other ground floor amenities, operational for long periods of the day, and staff reviewing and monitoring CCTV during the evening and night-time, activity in and around the site will be monitored both actively and passively by on-site staff 24 hours a day.

With the building fronting on to Melliss Avenue and with the profile of new residents, the existing residents of Saffron House, Terrano House and Town-houses are likely to receive a greater sense of safety and security.

With the requirement for visitors to book parking spaces prior to arrival, parking will be monitored, and although the new MOL garden will be publicly accessible, it is proposed that outside normal operational hours of the cafe/restaurant, gated access is provided from the towpath, to provide additional security control to publicly accessible areas.

External lighting for pedestrian areas and car parking will be sympathetic to the safety of residents, the environment and ecology of the site.

Measures compatible with safety requirements include:

- Use of low-level lighting and ‘intelligent’ sensors
- Directional and down-cowled lighting

Attention will be given to night-time lighting to avoid direct light spill. Low-level lighting will be used where appropriate.

Key

Site Boundary

Main vehicular access from Melliss Avenue (South)

Main entrance drop-off, servicing and deliveries monitored throughout the day by staff and CCTV

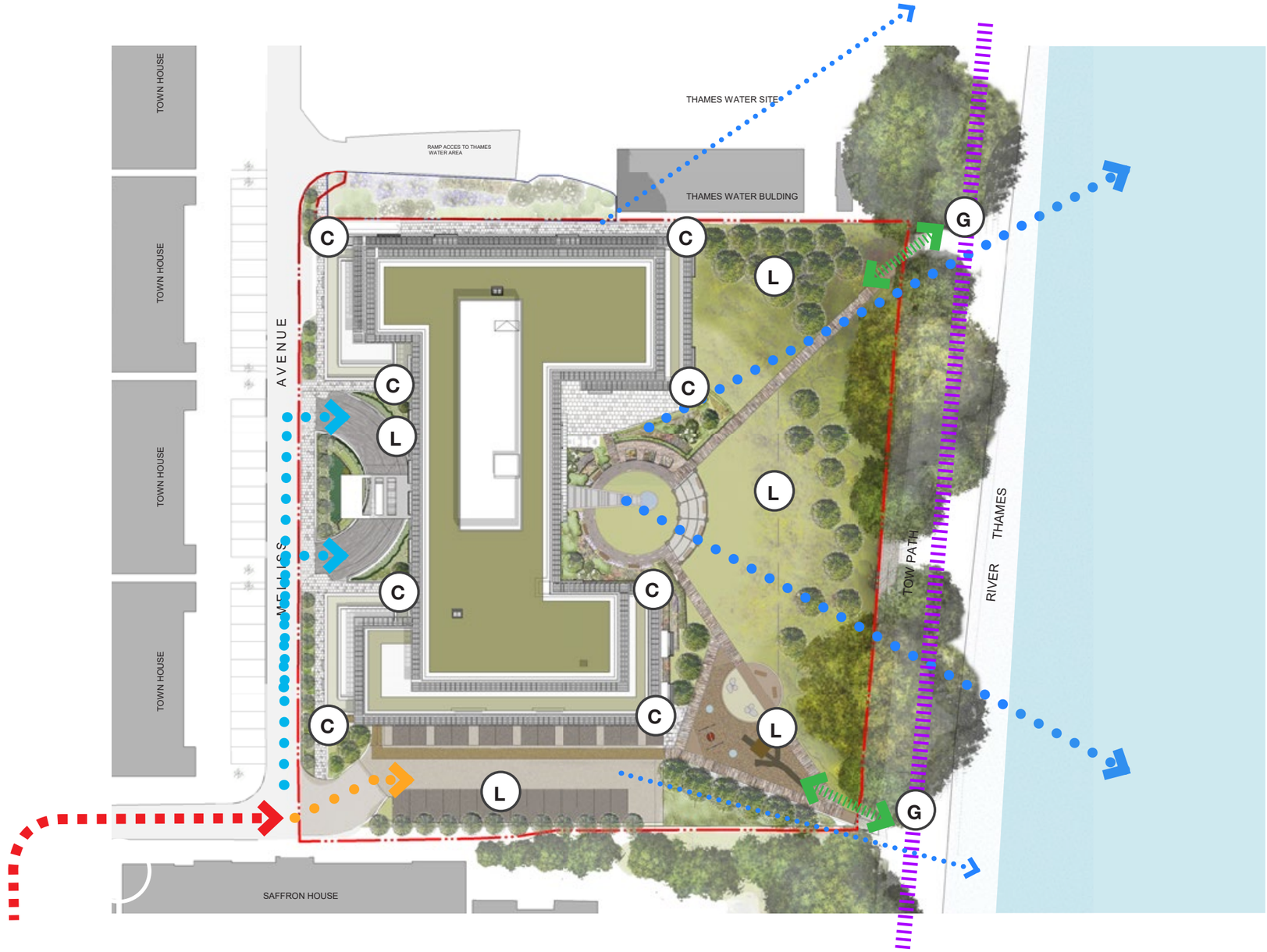
Car parking area and access monitored by CCTV

Clear views from the ground floor cafe, and residents properties above, ensure access to and from the towpath is regularly overseen - additional use of CCTV to support

(L) Landscaped areas will be well lit during night time hours to provide better security and a feeling of safety

(C) CCTV

(G) Gated Access


TOWN HOUSE
TOWN HOUSE
TOWN HOUSE
TOWN HOUSE
SAFFRON HOUSE
RAMP ACCES TO THAMES WATER AREA
THAMES WATER SITE
THAMES WATER BULDING
AVENUE
MELLISS
TOW PATH
RIVER THAMES
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Cleaning & Maintenance Access

General Cleaning Maintenance

All maintenance and cleaning will require suitably trained personnel. Training may be required and will vary according to the equipment, various techniques required to access various building elements, and the individual experience and training of personnel.

Installation of fall arrest and hoist equipment will require personnel trained and competent in roped access techniques. Inspections of building elements can be scheduled into, and combined with the cleaning programme for the building.

Demarcation and signage at pavement and floor levels are required at all times during operation.

The cleaning and maintenance of the items listed below can either be undertaken by:

1. The in-house R&Y FM team or
2. Contracted out - although certain access equipment will be integrated to the building
3. A combination of the above; Access that requires the use of integrated items to be used by trained in house team whilst access that requires mobile equipments i.e. genies will be used by specialist cleaning and maintenance contractors.

The current proposal is as follows:

1. Reach and wash systems used to access all windows without balcony access. Indicative product: Ionic System Glyder Plus 40 - pole has a maximum reach of 12m.
2. Windows accessed from balconies where possible.
3. Windows accessed internally through the use of tilt and turn units.
4. For harder to reach areas: a small genie unit e.g. GR20 Genie Runabout by Rapid Platforms.
5. Harnessed access for maintenance to the building roofs externally i.e. from latchway systems with dedicated access routes and extendable poles for cleaning where necessary.

Replacement of Parts

Although the detailed design will be progressed at a later stage, the strategy for the replacement of most building elements i.e. balustrade glass / cladding panels etc. will be from the floor plates.

Replacement of larger building elements e.g. solar panels / MEP equipment, may require temporary scaffolding or the use of a crane. We envisage that this will be infrequent, however it will need to be developed in detail with the specialist sub-contractor at a later stage.

Access to all plant levels is required for maintenance and replacement of parts. The level of access required e.g. lift / crane / stairs access, will need to reviewed and determined at the next work stage. The current design intent is for no step-overs once inside the plant rooms.

Building users manual, as required by BREEAM, and Operation & Maintenance manuals will be submitted at the end of the project.

Genie Type Platform

Reach & Wash System

Waste, Recycling, Laundry and Delivery

Laundry
Each specialist Extra Care Unit will have a utility cupboard or room with provision for a washing machine and tumble dryer. In addition, an external laundry service will be provided off-site.

Deliveries
The reception desk will be used as a drop off point for all large packages and residents' deliveries point. This will be located close to the main entrance and will be a point of call for all residents to collect / arrange the delivery of larger items.

Deliveries by Royal mail will be to the reception desk. Red & Yellow staff will then deliver mail to individual specialist extra care units.

Deliveries for Community Support facilities (e.g.. restaurant) will be scheduled at agreed times and limited to 7.5tn rigid vehicles. No articulated vehicles will be allowed on the site.

Waste and Recycling
Each specialist Extra Care unit will have a multi-part bin in the kitchen which will enable separation of general waste from food waste (for composting and use on site) and other materials such as cardboards, glass and plastics for recycling. This enables the site to maximise its recycled and re-used content thereby reducing land fill waste as much as possible.

Bags are will be collected by Red & Yellow staff and taken to a storage room in the service area adjacent Melliss Avenue.

Resident and general operating waste and recyclables will be separated from Kitchen/ cafe waste.

Recycling and waste will be collected regularly by private waste collection services.