

6.8 Fire strategy

The following text has been provided by Hoare Lea Fire. For a full understanding of the fire strategy please refer to the separate fire statement submitted in support of this application.

"The proposed development will follow the principles of current guidance and meet the functional requirements of the Building Regulations (2010).

Apartment buildings will adopt a 'defend-in-place' evacuation strategy, where only the occupants of the apartment of the fire origin will evacuate initially. Occupants in other apartments will remain in place, separated by a high level of compartmentalisation, unless advised otherwise by the fire service. The standalone office unit facing Edwin Road will adopt a simultaneous evacuation strategy. It is proposed to provide all habitable areas within the residential premises in Block F with a residential sprinkler system, which should be designed and installed in accordance with BS 9251:2014. It is not proposed to provide the remaining apartment buildings or dwelling houses with sprinkler protection as they are below 11m in height. Furthermore, the industrial premises are not proposed to be provided with sprinkler protection due to their size. The sprinkler provision to the covered car park in Block F will be assessed in detail during the next design stage.

Travel distances in a residential common corridor should be limited to 7.5m, as per recommendations in BS 9991:2015. The travel distances from any apartment in Block F to the ventilated protected lobby door will be limited to a maximum of 7.5m based on the provision of a residential sprinkler system and a 1.5m² free area natural shaft to provide smoke ventilation to the common corridor. The individual apartments in Block F are designed to adopt an protected entrance hall design. If the apartments do not achieve the recommendations outlined in guidance, a fire engineered solution will be required, which may include Computational Fluid Dynamics (CFD) modelling. Blocks A & E are proposed to be designed as small single stair buildings as per standard guidance. The flats in this arrangement are designed as to have a protected entrance hall. The covered car park will be designed to achieve 2.5% minimum aggregate free vent area on the walls of the car park, split equally across two opposing walls. Travel distances within the car park should be limited to 18m and 45m for single direction and multiple directions respectively. Final exits and protected escape routes should be located such that these distances are maintained. The standalone industrial building is proposed to be designed as a two-storey premises, with a mezzanine level on the upper level accessed via open accommodation stairs. The travel distances will be limited based on the hazard classification of the industrial unit with 25m in single direction and 45m where escape in more than one direction is possible for a normal hazard and 12m in single direction and 25m where escape in more than one direction is possible for a higher hazard. As Blocks F, A & E in the proposed development are more than 5m but less than 18m in height loadbearing elements of structure are required to achieve 60 minutes fire resistance. Every wall separating individual dwelling houses should be separated by 60 minutes fire resistance.

The industrial building is less than 5m in height, that elements of structure should be 60 minutes in accordance with ADB for an unsprinklered industrial unit. Initial assessment of the external fire spread conditions of the proposed development appears to satisfy the necessary conditions. Where protection is required on external façades the protection should achieve the same fire resistance as the elements of structure. Façades that are adjacent to the site boundary should be constructed of fire resisting material achieving the same resistance as the elements of structure.

The buildings do not have a storey that exceeds 18m in height. Either the external walls should satisfy the performance criteria described in BRE report BR135 or the external wall surface should be in accordance with Diagram 40 of Approved Document B for surface spread of fame classification. In addition, cavity barriers in

any external wall cavity are required in accordance with Section 9 of the Approved Document.

In practice, it may be necessary for external surfaces to achieve a Class 0 (National Classification) or Class B-s3, d2 or better (European Classification) surface spread of fame classification to avoid the walls contributing to the space separation (unprotected areas) calculations. As Block F is less than 18m in height it is not proposed to install a firefighting shaft, but to install a dry rising fire main in each of the staircases in Block F as to ensure all points on the floor plates are within 45m, on a route suitable for laying hose.

Where dry riser inlets are provided, the Fire Service should have access within 18m and sight of the inlet port.

Blocks A & E, the car park, dwelling houses and the standalone industrial building are proposed to be accessible by emergency service vehicles. All points on the floor plates of the respective buildings should be maintained within 45m of pump appliance access or provide sufficient perimeter access. Existing hydrants should be available within 100m of the buildings or alternatively new ones should be provided within 90m of the development and located not more than 90m apart."

6.9 Cleaning & maintenance

The current proposal is for all windows and doors to be cleaned from ground or podium level via long reach pole, or cleaned by residents from the inside via balconies or tilt and turn openings. The maximum height of the buildings is below 25 meters, well inside the reach of a long reach pole system.

In Building F large 13 person lifts are provided to facilitate plant replacement. Safe access is provided into the pitched roof of the taller building via a stair and coffin style hatch.

The health and safety aspects of maintaining the building will be planned to ensure the risks involved are managed from start to finish and this information is communicated effectively to those who need to know.



Example of long reach pole system

6.10 Acoustics

The following summary is provided by Paragon Acoustic Consultants Ltd. For a full understanding of the acoustics please refer to the separate acoustic reports 'Environmental Noise Survey and Limiting Noise Levels' and 'Environmental Noise Assessment' submitted alongside this application.

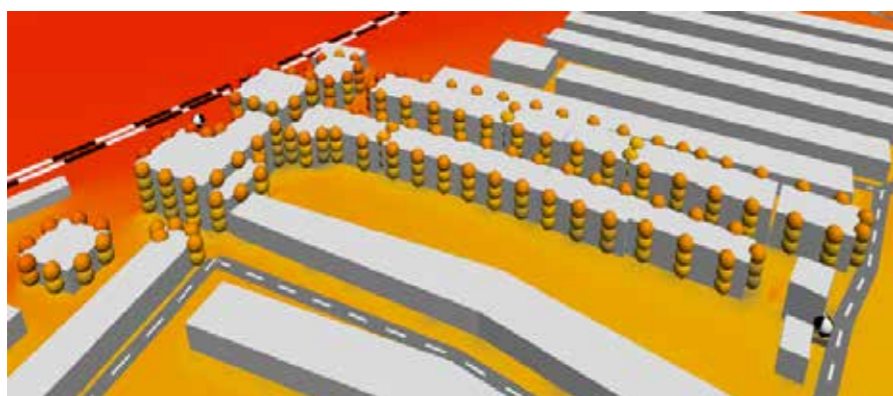
"Environmental noise surveys have been undertaken at the site to assess the noise climate around the proposed development due to transportation noise sources that include events such as train noise, neighbouring uses, aircraft overflights and vehicular traffic.

Using the noise data acquired at the site an acoustic 3D model has been produced to allow quantification of the noise impinging on the façades of all proposed properties.

Internal noise criteria for the proposed dwellings has been established based on sources of guidance such as World Health Organisation (WHO) document "Guidelines for Community Noise" and BS 8233:2014: "Guidance on sound insulation and noise reduction for buildings" both for the daytime and the night-time periods.

Using the predictions of noise impinging on the façades of proposed dwellings the broadband façade and glazing acoustic performance has been established for living areas and bedroom areas. In addition, the LAFmax events of transient noise during the night have been considered.

In addition to the background noise levels impacting on the proposed development an assessment has been made of limiting noise levels that will be required for any new mechanical plant associated with the proposed site so as to protect the amenity of existing residential dwellings in the vicinity."



Example CadnaA Acoustic modelling software



Introduction

Context

Design process

Design response

Landscape

Technical design

7.0 Access

Appendices

7.1 Access principles

An inclusive environment considers people's diversity, having the capacity to break down barriers and mitigate exclusion. Moreover, inclusive environments often achieve superior solutions that are of benefit to everyone.

This section consists of the Access Statement that relates to the proposals for the Greggs Bakery site and supports the drawings prepared for this planning scheme. The aim is to provide a clear description of how the users of the proposed development will access, and be guided through the building and the site, without discrimination or limitation.

It considers, but is not limited to, the access and circulation needs of a wide range of people including parents with children, the elderly and disabled people.

The term 'inclusive design' relates as much to the design process as to the final product and just as equally to management, operation and information, bonding user experience with professional expertise. An Access Statement is work in progress and as such evolves throughout the design and construction period. This Access section deals with the design, up to planning, and the aspirations of the design for its development and final realisation through the construction process.

11 of the residential dwellings have been identified as wheelchair user M4(3) units in accordance with the requirement of a 10% provision (2 of these are three-bedroom houses along the mews street; the other 9 are apartment units at a variety of floor levels). All accessible apartments at first floor and above are served by two lifts. These units are designed specifically for ease of use for visually impaired people, ambulant disabled people and wheelchair users, and provide a balanced mix of unit sizes and tenure.

7.2 Legislation, standards & guidance

Policies, legislation and guidance followed in the preparation of the Access Statement:

- London Borough of Richmond upon Thames planning policies on inclusive design and access and relevant housing policies including Design for maximum access (1999)
- Building Regulations, Approved Documents M 2015 and K 2013 (hereafter referred to as AD M and AD K)
- Part B/BS 9999:2017
- The London Plan 2021
- Supplementary Planning Guidance
- Technical Housing Standards- Nationally Described Space Standard March 2015
- Requirements and implications of the Equality Act 2010
- British Standards BS 8300-1:2018, BS 8300-2:2018, BS EN 81-70:2018
- CIBSE standards A3.1 - 7
- The Human Rights Act 1998
- Equality Act 2010

7.3 Consultation

A two-day public exhibition was held at the Crane Community Centre (3rd December 2018) and the Twickenham United Reformed Church (5th December 2018). Members of the design team were present to discuss the proposals and answer any questions. This included both the architectural team and transport consultant who were able to advise on access requirements.

Across both days, 105 residents, stakeholders and interested parties attended. The scheme presented was a mixture of 118 private and affordable houses and apartments, including 52 three bed houses and 66 apartments. It included many of the features presented in the final design such as a shared surface approach and the same access points.

A more recent public consultation of the revised scheme was held at the Twickenham United Reformed Church as detailed earlier in this report (19th March 2022). 71 local residents, stakeholders and interested parties attended.

The access arrangements were generally well received with provision for lifts, accessible/adaptable houses and flats, and a step free approach to all buildings were highlighted as positive. It was also mentioned that the move from an industrial use on the site to residential with a commercial element will improve the traffic issues within the area.

Some concern was raised on the traffic entrance points at Edwin Road and Crane Road and the potential for conflict with pedestrians. These have since been reviewed by our transport consultant and amendments have been made to ensure adequate visibility splays and sense of pedestrian priority including one way shared surface street system and changes in surface textures to encourage traffic calming.

7.4 Access philosophy

The development is easily accessible by foot, cycle, public transport and car.

Pedestrian approach

Located at the site of the now disused Greggs Bakery in Twickenham, the proposed scheme borders the River Crane and sits south of Craneford Way Recreation Ground; it forms a backland vacant industrial site behind houses on Crane Road, Gould Road and Norcutt Road.

The mixed-use scheme is composed of three character areas, with an industrial building and yard to the south, mews houses along a new two-way street, and apartment buildings of differing heights along the riverside. Site access is maintained from existing access points, one from the junction of Crane Road/Gould Road for the residential elements, and the other from Edwin Road for the industrial element. This principle allows for the creation of a new neighbourhood street, along which the 27 mews houses are aligned, providing individual street-level residential entrances and passive security along the proposal's principle entrance, along with the creation of a new industrial yard and E use class industrial building benefiting from direct access off Edwin Road.

To the north of the site alongside the River Crane residential entrances are located at the bases of Buildings E and F in prominent and obvious locations. The proposals include residents' cycle and refuse stores, located adjacent to cores.

The site is well served by good footpath connectivity to the The Green, Twickenham Railway Station and Twickenham Centre. In addition to a range of public transport options, the site is also within walking distance of several local amenities and services, thus reducing the need for residents to travel by private car. The southern entry treatment and kerb radii will allow pedestrians on Edwin Road and the new street to cross safely between the footways.

Public transport

The site has PTAL rating of 2/3. Strawberry Hill Railway station is located approximately 950 metres to the south of the site (directly accessible by foot) on the South Western line serving destinations on the Kingston Loop and Shepperton Branch. Situated close by, 1.2km to the north east is Twickenham station, also serving the Hounslow loop. Through these two stations, Hounslow, Kingston, Twickenham, Clapham Junction, Wimbledon, Vauxhall, and Waterloo, among others, can be reached directly.

The nearest bus stops to the site are located on both sides of Twickenham Green (circa 4- 6 minute walk) which provide frequent services (every 10-13 minutes) to Heathrow Terminal 5, Hounslow, Richmond, Hammersmith, Hampton and Staines.

Vehicular access

There are currently two vehicular access points to the site: one to the south from Edwin Road for industrial and refuse vehicles and one to the north from the corner of Gould Road and Crane Road for residential and other general vehicles. The former was primarily used to accommodate larger operational HGVs associated with the sites former industrial use and the latter generally used for staff and visitor parking.

The proposed scheme retains the two existing access points in broadly the same locations, however these would be divided into residential and industrial elements, connected only through a gate that provides a vehicular link for permitted vehicles, such as refuse and emergency vehicles, to pass through the site where required. The proposed residential street is expected to be a two-way street; but given the low speeds and residential nature of the site, the street narrows in areas i.e. along the river edge, where there is clear visibility for cars to pass and wait.

The residential access from Crane/Gould Road will lead directly to an area of formal car parking and landscaping for residents within apartment type dwellings which are planned to the north of the site. The road leads round to north-south orientated mews with a mix of driveway and garage parking serving the respective dwellings.

The scheme provides 8 accessible parking spaces (8.3% by unit) with the potential for 2 additional accessible parking spaces (2.1% by unit) demonstrating that 10% accessible provision can be delivered on site as required by the London Plan. Two of these are located on the drive-way of the accessible houses, two are located below the podium and the other four are located within the public realm. These will be allocated to the accessible/adaptable apartments as required. Five additional accessible parking space for staff of the industrial unit is provided in the industrial yard in the southern end of the site.

Emergency vehicles and refuse vehicles

The scheme has been tracked by the transport consultant to ensure safe movement for a refuse and fire tender vehicle through the scheme. Entrances have been reviewed to ensure adequate splays are provided when turning into the site. The schemes design incorporate a permitted access through route which means refuse and emergency vehicles are not required to turn on site or perform difficult manoeuvres. This increases the sites usability and safety. Further, the landscaping design has incorporated traffic calming features such as the planting elements in the north of the scheme which create a gentle zig-zag in the road, forcing drivers to take extra care and drive slowly through the site.

Emergency vehicles and refuse vehicles are be able to access through the industrial access and into the residential street via a controlled access gate.

Public realm

The public realm will be accessible to all as part of an inclusive design philosophy. Users with disabilities are not segregated and are able to move through the public realm and the buildings. They will use the same entrance, corridors and rooms as everyone else without detour. The raised 1.5m wide pavements with curbs to define the road edge throughout the residential element of the site provides a safe route for pedestrians, particularly for the blind and partially sighted. The industrial element will have a gated boundary wall to clearly define between the private and public realm.

Entrances

The entrances to all buildings and apartments have been designed and located in such a manner as to make them obvious and easily accessible for both the residential and industrial elements.

The main residential lobby entrances are designed to provide level access from the public realm, as required by Part M, with a clear open space in front of the doors. This accessible approach leads to a level entry threshold and to the internal lobby. A slip resistant material for this walkway will be provided. The routes to the entrance, from the public footpath, will be well lit. A similar approach is applied to the entrances of the industrial building.

Recessed doorways and timber panelling is used to denote entrances to the mews houses, with principle entrances to apartment buildings featuring recessed doorways. These easily read openings are designed to be obvious on the elevation to ensure they are easy to find and are further highlighted by landscaping. The reception aesthetic is separated from the main body of the building by the use of contrasting materials, making identification easier for the visually impaired.

The industrial building has multiple entrance points to enable the building to be

divided into smaller units. Each unit is designed to have access to larger recessed doors for delivery and smaller scale doors on the front facade as well as rear access doors to the back yards. This provides flexibility for the marketability of the units. All these entrances will be step free and level access.

Hard and soft landscaping

The hard and soft landscape design is based on a strategy to ensure ease of long-term maintenance and management. Practical considerations will include the use of durable, non-slip hard landscape materials, benefiting not only disabled people, but older people and children too.

The provision of direct routes between well-used locations, the utilising of the adjacent River Crane as an amenity for a riverside walk with regular placement of seating and resting points, the use of quality tactile and textured surfaces, contrasting colours, appropriate lighting and signage, will be utilised to aid navigation around the site. Visual clutter and obstructions will be minimised, where possible. See the Landscape section of this document for all details regarding hard and soft landscaping materials and design.

Surface materials

The entire public realm will be accessible as a two-way street with raised pavements selected in order to balance the needs of wheelchair users (who require a low resistant surface) and crutch and stick users (who require more purchase during wet weather) with the needs of the blind and partially sighted (who require distinct surface textures and curb heights).

The key principles for the palette of considered surface materials will include the following:

- A visual contrast in colour between the pedestrian and vehicular access
- Tactile and raised pavement defining pedestrian and vehicular areas
- Surfacing designed to aid way-finding

Surface textures

Manual wheelchairs require smoother surfaces to move across. The more tactile the surface, the harder it is for the user. Counter to this is the need for ambulant disabled people to gain some purchase for their sticks or crutches.

With the blind and partially sighted in mind footpaths are raised above road surfaces, as flush transitions would cause guide dogs difficulty in sensing the change in condition. Careful consideration of the transition between the two is also an important factor.

Width/gradient to footways

Pedestrian routes will follow desire lines as much as possible; street furniture such as directional signs, lighting and seating will be located just off the perimeter of the access routes to minimise obstructions. All signage will be colour contrasted.

Where required, ramps have been used in favour of steps when changes in level are required, avoiding segregation of users with disabilities and allowing access for wheeled vehicles. All external ramps within the public realm are of a gradient no steeper than 1:30.

Landings will be provided along all long lengths of steps or ramps to allow resting points. Hand rails are provided to all ramps and steps where required to provide support and guidance. They will: be colour-contrasted to make them easily visible; be easy and comfortable to grip without sharp or protruding edges; be located at the correct height (900mm); and extend 300mm, in line with building regulations.

Cross falls to footpaths

Cross falls are important on footpaths to move standing water to the edges and stop ice from forming on cold days. The need for this surface drainage must be balanced with the difficulty a manual operated wheelchair has moving across a cross fall. The design of the footpaths around the site have minimal cross fall to balance both needs.

External street lighting & CCTV

A balanced level of lighting has been considered. This will be designed to avoid strong contrasting pools of light and silhouette and be sensitive to the site's proximity to the River Crane. The lighting design will assist access, improve security, be of a safe and comfortable illumination levels, and comply with SBD guidance received.

Routes across the site will be lit in accordance with BS 5489 and CIBSE Standards, subject to planning. The spread of light will be even and the lamp type chosen will provide a light with good colour rendering properties. Timing controls will be introduced to allow the switching off of certain parts of the lighting at key times to save energy and discourage use at night close to residential areas. Key entrances to the buildings will remain illuminated.

All open spaces on upper floors such as the podium and other accessible areas within the development will be illuminated at low levels at the appropriate lux figure for their contextual setting and so as not to disturb or negatively affect wildlife.

Access to roof terraces and podium amenity

All apartment buildings are provided with lifts and apartments in Building F have direct level access to a communal roof terrace at third floor level. Selected apartments have direct level access to the podium at first floor suitable for disabled people.

7.5 Building environment

The buildings are set within a landscaped environment at street level. There is a level change across the site of approximately 650mm from the highest point at the Edwin Road entrance to the lowest point at the River Crane riverside, 189m to the North. This will be accommodated at street level by stepping the first four houses closest to Edwin Road to adjust to the levels across the site, and using ramps of very shallow gradients integrated into the landscape design. A level threshold is provided to the industrial building.

Level access is provided to all residential apartments and each building has its own entrance with level access from the street. Podium and roof level external amenity space is provided, which is only accessible by residents. The podium will include hard and soft landscaped environments that are fully accessible. Level access is provided to the podium.

7.6 Building & structures

7.6.1 Materials

The proposed materials have been specified in accordance with Approved Document M of the Building Regulations to contrast tonally with the ground finishes, enabling people with visual impairments to identify building boundaries.

7.6.2 Construction

The design follows a simple concept based on the clarity of the overall structure of the building. Slab levels have been set to ensure that the structure will not impose restraints upon individuals using and moving through the building, including ensuring obstructions are avoided in pedestrian/common areas and that level access can be provided throughout.

7.6.3 Internal floor surfaces

The floor finishes will contrast tonally with the walls and will be of a non-slip material. Finishes will be contrasting in the vertical and horizontal situations. Floor surfaces will not be overly resistant to wheelchair users, but will aid crutch users in gaining purchase. As well as this, floor finishes will be of a robust and durable nature.

7.6.4 Entrances

Each building provides a clear transition from outer spaces to inner spaces to all users. The approach to the buildings will be well lit and obvious. Covered entrances are provided in accordance with building regulations M4(2) and M4(3).

7.6.5 Transition to internal

The entrances will be designed so as to be easily identifiable, and the frames will be of a strong tone or colour to visually separate them from the surroundings. Entrances will be appropriately lit. The main entrance doors are designed to comply with relevant legislation in terms of minimum width opening and closing and the thresholds will be level.

7.6.6 Opening windows and projections on public routes

Obstructions at head height can be dangerous to the visually impaired. All opening windows and projections have been minimised within the design. Where they can't be removed completely, vegetation has been provided at ground floor to distance people from locations where there are any outward opening windows. Where possible, outward swinging doors are avoided and, where required due to fire escapes, they will be clearly demarcated.

7.6.7 Steps and ramps

All steps, stairs and ramps have been designed to comply with Approved Document M 2015 and BS 8300:2009. This includes tread, risers, handrails, lighting and nosings.

7.6.8 Door design

All doors of the scheme, both manually operated or automated, are compliant with Approved Document M 2015 and BS 8300:2018 according to different uses and users of the buildings, specifically in relation to vision panels, weight, colour, door ironmongery and materials.

To meet the requirements of Approved Document M, door closer tensions will be set to a maximum of 20N. The clear opening widths of all doors in common areas are a minimum of 850mm and there will always be 300mm nib on the leading edge of a door.

7.6.9 Movement within buildings

This key subsection relates to the internal circulation within each building, considering specific needs of disabled people.

The buildings are accessed via horizontal corridors. Vertical circulation is via Part M compliant ambulant disabled staircase and lifts in the cores.

Provision of lifts:

All lifts, in all buildings, are designed to comply with Approved Document M and BS 8300:2018, including: size, internal materials, door opening width, and operating apparatus.

Stairs:

Stairs comply with Approved Document M and BS 8300:2018 in terms of widths, treads, risers, hand rails, nosings, top and bottom surfaces, landings and finishes.

They have also been designed for ambulant disabled people, including the fire escape stairs.

Corridor and lobby design:

All corridors within the buildings comply according with their specific uses and with Approved Document M in terms of size, lighting, materials, signings, doors and colours.

There are no changes in level to any corridors and width is consistent. Vision panels in corridor doors will be designed to allow people both seated or standing to be seen.

Pull handles will only be fitted on the pull side of doors and fingerplates will be fitted on the push side. This assists all users, but especially people with learning difficulties and people with visual impairments. Handles will not extend down to floor level since this type of handle can become caught in the wheels or footplates of a wheelchair.

7.7 Means of escape

7.7.1 Design for independent means of escape

All features and materials comply with Approved Document B (2018). In addition, a management plan will be prepared for the evacuation of the buildings together with the preparation of a Personal Egress Emergency Plan.

With residential buildings it is encouraged that, in the case of fire, inhabitants stay in their apartments. Each apartment has a 60 minute fire rated compartment surrounding it, to ensure that residents are protected from the source of the fire. Sprinklers are also provided to all residential units in building F.

7.7.2 Facilities for physical evacuation

The escape routes, horizontal and vertical, meet the minimum widths to comply with requirements for ambulant disabled people. Escape stairs meet requirements for goings and risings for ambulant disabled people. At upper residential levels no refuge has been allowed for, as the fire strategy is for people to remain in their apartments while the fire brigade deal with the fire.

Together with the Fire Alarm System and the Personal Egress Emergency Plan, the buildings are designed to provide, according with their different uses, safe evacuation routes in the case of emergencies.

7.8 Signs & wayfinding

7.8.1 External signage

The signage strategy for the development will follow good practice guidelines, such as the "Sign Design Guide". All signage will be designed for those with learning difficulties or visual impairments.

7.8.2 Internal signage

All the buildings according to their uses are designed to enable clear signposting and a messaging system complying with the Sign Design Society Guidance.

All internal signs to communal areas will be clear, with contrasting symbols to help the visually impaired. All signage will be located in obvious locations and will be well-lit.

7.8.3 The use of differing tactile materials

A palette of tactile handrails/support rails showing directions of travel to the nearest fire exit has been considered through the design of each building.

7.8.4 The layout of the buildings

The clear layout of each building, generally arranged with a sequence of entrance/lobby/lift/stair core/corridors, allows a simple circulation throughout and between the floors. The massing of each building has been designed to be distinguishable and readable, with shapes that provide an easy indication to distinguish different uses within the site.