

**LAND AT CHANNEL VIEW, GRANGETOWN
CARDIFF**

ENVIRONMENTAL STATEMENT

VOLUME 2

CHAPTER 8: LANDSCAPE AND ARBORICULTURE

INTRODUCTION

- 8.1 Tetra Tech (formally WYG) is instructed by Cardiff Council to prepare this Landscape and Arboricultural chapter which relates to the redevelopment of the site at Channel View, Grangetown, Cardiff. Reference has been made to the Arboricultural Report, October 2020, prepared by Stephen Lucocq of ArbTS - Arboricultural Technician Services Ltd.

- 8.2 This chapter provides an assessment of the effects of the proposed development, on the landscape and arboriculture of the site. The design of the proposed development and the identification of mitigation measures incorporated within the design to minimise adverse effects, is informed by the findings of the landscape appraisal of the site and arboricultural survey.

LEGISLATIVE AND POLICY CONTEXT

National Policy

Future Wales: The National Plan 2040

8.3 Future Wales sets out the development plan for Wales, influencing “all levels of the planning system in Wales and will help shape Strategic and Local Development Plans.”¹ The plan promotes development that enhances our wellbeing and our quality of life”² and embeds the principles of the Well-being of Future Generations (Wales) Act 2015.

8.4 The key policy that is of relevance to the landscape and arboriculture of the proposed development include:

- **Policy 9 – Resilient Ecological Networks and Green Infrastructure** aims “To ensure the... provision of green infrastructure, the Welsh Government will work with key partners to:
[...]
 - identify opportunities where existing and potential green infrastructure could be maximised as part of placemaking, requiring the use of nature-based solutions as a key mechanism for securing sustainable growth, ecological connectivity, social equality and well-being.

... In all cases, action towards securing the maintenance and enhancement of... green infrastructure assets must be demonstrated as part of development proposals through innovative, nature-based approaches to site planning and the design of the built environment.”

Planning Policy Wales

8.5 Planning Policy Wales (PPW) Edition 11, February 2021, sets out the land use planning policies of the Welsh Government. Its primary objective is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation and resultant duties such as the Socio-economic Duty.”³

8.6 The key policies that are of relevance to the proposed development include:

- **Chapter 2 People and Places**, paragraph 2.1 states that “Everyone engaged with or operating within the planning system in Wales must embrace the concept of placemaking... in order to achieve the creation of sustainable places and improve the well-being of communities.” The Placemaking Wales Charter is presented and lists the six placemaking principles.

¹ <https://gov.wales/future-wales-national-plan-2040-0>

² Page 4, Future Wales The National Plan 2040

³ Paragraph 1.2, Planning Policy Wales, Edition 11, February 2021

Figure 4 states “Natural, historic and cultural assets must be protected, promoted, conserved and enhanced.”

Paragraph 2.17 states ... the creation of sustainable places and in recognition of the need to contribute to the well-being of future generations in Wales through placemaking, development plans and development proposals must seek to deliver developments that address the national sustainable placemaking outcomes.”

Paragraph 2.27 states “Planning authorities should ensure that social, economic, environmental and cultural benefits are considered in the decision-making process... to implement the Well-being of Future Generations Act and the Sustainable Development Principle.” A key factor is environmental considerations, which are listed as:

- “will important features of the natural and built environment be protected and enhanced;
- are the environmental impacts of development on... amenity limited to acceptable levels...;
- is environmental protection for people and natural resources, property and infrastructure maximised and environmental risks prevented or appropriately managed;
[...]
- will the causes and impacts of climate change be fully taken into account through location, design, build, operation...
[...]

- **Chapter 3 Strategic and Spatial Choices** paragraph 3.8 states “Landscape and green infrastructure considerations are an integral part of the design process.”
paragraph 3.9 goes on to state “The special characteristics of an area should be central to the design of a development. The layout, form, scale and visual appearance of a proposed development and its relationship to its surroundings are important planning considerations.”
Paragraph 3.10 goes on to state “In areas recognised for their particular landscape... or historic character and value, it can be appropriate to seek to promote or reinforce local distinctiveness. In those areas, the impact of development on the existing character, the scale and siting of new development... will be particularly important.”
In relation to healthier places, paragraph 3.23 states “Green infrastructure can be an effective means of enhancing health and well-being, through linking dwellings, workplaces and community facilities and providing high quality, accessible green spaces.”
Paragraph 3.55 states “Previously developed (also referred to as brownfield) land should, wherever possible, be used in preference to greenfield sites where it is suitable for development.
- **Chapter 4 Active and Social Places**, section 4.5 recreational spaces, paragraph 4.5.1 states “Recreational spaces are vital for our health, well-being and amenity, and can contribute to an area’s green infrastructure... Networks of high quality, accessible green spaces and recreation spaces will also promote nature conservation, biodiversity and provide enjoyable opportunities for residents and visitors...”

Paragraph 4.5.3 states “Formal and informal open green spaces should be protected from development, particularly in urban areas where they fulfil multiple purposes.”

- Paragraph 4.5.4 goes on to state “All playing fields whether owned by public, private or voluntary organisations, should be protected from development except where:
 - facilities can best be retained and enhanced through the redevelopment of a small part of the site;
 - alternative provision of equivalent community benefit is made available locally, avoiding any temporary loss of provision;[...]”
- **Chapter 6 Distinctive & Natural Places**, paragraph 6.0.2 states “The special and unique characteristics and intrinsic qualities of the natural and built environment must be protected in their own right, for historic, scenic, aesthetic and nature conservation reasons.”
Section 6.2 Green infrastructure, paragraph 6.2.5 states “The quality of the built environment should be enhanced by integrating green infrastructure into development through appropriate site selection and use of creative design.”
Section 6.3 Landscape, paragraph 6.3.3 states “All the landscapes of Wales are valued for their intrinsic contribution to a sense of place, and local authorities should protect and enhance their special characteristics, whilst paying due regard to the social, economic, environmental and cultural benefits they provide, and to their role in creating valued places.”
Paragraph 6.3.4 goes on to state “Where adverse effects on landscape character cannot be avoided, it will be necessary to refuse planning permission.”
Section 6.6 Water and flood risk, paragraph 6.6.18 states “The provision of SuDS must be considered as an integral part of the design of new development and considered at the earliest possible stage when formulating proposals for new development.” Paragraph 6.6.19 goes on to state “Design for multiple benefits and green infrastructure should be secured wherever possible...”

Technical Advice Notes

- 8.7 Planning Policy Wales is supplemented by Technical Advice Notes (TAN), of which the key elements of relevance to the landscape and visual aspects of the development are set out below:

TAN 5 Nature Conservation and Planning

- 8.8 In preparing planning applications, “all relevant information” should be included and “all material considerations addressed in the layout, design and related access, drainage and infrastructure. Landscaping proposals should be included together with any measures designed to avoid, mitigate or compensate for potential adverse effects on nature conservation. Any proposals for enhancement of nature conservation interests should also be included”.
- “The conservation and enhancement of locally designated sites is an important contribution to the implementation of Biodiversity Action Plans and to the management of features of the landscape of major importance for wild flora and fauna. Developers should avoid harm to those interests where possible” (5.5.3).

TAN 12 Design

8.9 TAN 12 advocates a holistic approach to design, to meet the objectives of good design, set out in Figure 1, which include:

- Access: Ensuring ease of access for all;
- Character: Sustaining or enhancing local character; Promoting a successful relationship between public and private space; Promoting innovative design; Promoting legible development; Promoting quality, choice and variety;
- Community Safety: Ensuring attractive, safe public spaces; Security through natural surveillance;
- Environmental Sustainability: Achieving efficient use and protection of natural resources; Enhancing biodiversity; Designing for change;
- Movement: Promoting sustainable means of travel.

8.10 “Understanding the site and its immediate and wider context is the basis for a meaningful and sustainable design response”, including appraising “character”, including landscape character, skylines and vistas, prevailing uses, natural and cultural resources and locally distinctive features (4.3 - 4.8). The TAN makes reference to the information available in LANDMAP and the Register of Landscapes of Historic Interest in Wales, in addition to detailed site appraisals. In relation to legibility and of relevance to this site, it advises concentrating on landmarks such as key buildings or landscape features, views and vistas, the coherence and connectivity of the footpath network (4.14).

8.11 At 5.5.2, the TAN recognises that “good design will almost always be dependent on working within the natural constraints and the historic character of the landscape ... The aim should be to achieve good design solutions which maximise the natural landscape assets and minimise environmental impact on the landscape. It is particularly important that proposals to amend or create new landscape are not considered as an afterthought and that the long-term impact of development on the landscape is fully understood. The quality of implementation and the long-term management of changes implicit in planting schemes are fundamental to a scheme’s success”.

Local Policy

8.12 The site lies within the boundaries of Cardiff. Local planning policy relevant to the proposed development of the site is provided by the **Cardiff Local Development Plan 2006 – 2026**, adopted January 2016. Relevant policies relating to the proposed development are outlined below.

Cardiff Local Development Plan 2006 - 2026

8.13 Key **Policy KP4: Masterplanning approach** states that “major development should accord with the following masterplanning general principles (6) The masterplanning process effectively **responds to the local context and the context of climate change**, to create new well designed neighbourhoods with a **distinctive character** which residents will be proud of... (9)

Sympathetically integrate existing landscape, biodiversity and historic features of the site into the development taking opportunities to protect, enhance and manage important features along with mitigation... measures...”

- 8.14 Policy **KP5: Good quality and sustainable design** states “...all new development will be required to be of a high quality, sustainable design and make a positive contribution to the creation of distinctive communities, places and spaces by:
- i. Responding to the local character and context of the built and landscape setting so that layout, scale, form, massing, height, density, colour, materials, detailing and impact on the built and natural heritage are all addressed within development proposals;...”
 - Policy KP16: Green Infrastructure states “Natural heritage assets are key to Cardiff’s character, value, distinctiveness and sense of place. They include the City’s:
 - iii. Strategically important river valleys of the... Taff (EN4)...”
 - v. Trees (including street trees)... (EN8).
 - vi. Strategic recreational routes, cycleways, and the public rights of way network.
 - vii. Parks, playing fields, green play areas and open spaces (C4 and C5)...”
 - Part of the site that includes The Marl park is located in the area defined as River Corridor.
- 8.15 Policy **EN8: Trees, woodlands and hedgerows** states “Development will not be permitted that would cause **unacceptable harm to trees**, woodlands and hedgerows **of significant public amenity**, natural or cultural heritage value, or that contribute significantly to mitigating the effects of climate change.”
- 8.16 Policy C4: Protection of open space states “Development will not be permitted on areas of open space unless:
- i. It would not cause or exacerbate a deficiency of open space in accordance with the most recent open space study; and
 - ii. The open space has no significant functional or amenity value; and
 - iii. The open space is of no significant quality; or
 - iv. The developers make satisfactory compensatory provision...[...].”
- 8.17 Policy **KP16: Green Infrastructure** states
- “Cardiff’s distinctive natural heritage provides a network of green infrastructure which will be protected, enhanced and managed to ensure the integrity and connectivity of this multi-functional green resource is maintained.
 - ... Proposed development should therefore demonstrate how green infrastructure has been considered and integrated into the proposals. If development results in overall loss of green infrastructure, appropriate compensation will be required.
 - Natural heritage assets that are key to Cardiff’s character, value, distinctiveness and sense of place. They include the City’s:
 - [...]

- iv. **Biodiversity interests** including designated sites and the connectivity of priority habitats and species (EN5, EN6 and EN7);
- v. **Trees** (including street trees), woodlands and hedgerows (EN8);
- vi. **Strategic recreational routes**, cycleways and the public rights of way network (T5, T6 and T8);
- vii. **Parks, playing fields, green play areas and open spaces** (C4 and C5); and
- viii. **Growing spaces** including allotments, community orchards and larger gardens; and
- ix. **Holistic integrated surface water management systems** (EN10).”

Cardiff Green Infrastructure SPG

- 8.18 The Cardiff Green Infrastructure Supplementary Planning Guidance (SPG) was published in November 2017 and provides further guidance to Policy KP16: Green infrastructure. The SPG comprises of 7 documents: The Cardiff Green Infrastructure SPG, and 6 Technical Guidance Notes on the individual elements that make up green infrastructure: Ecology and Biodiversity TGN; Protection and Provision of Public Open Space TGN; Public Rights of Way and Development TGN; River Corridors TGN; Soils and Development TGN; and Trees and Development TGN.
- 8.19 **Figure 2** provides the definition for green Infrastructure: “Green infrastructure is a network of multi-functional, connected green spaces that make the best use of land and provide green open space for all, helping wildlife to flourish, and delivering a wide range of economic, health and community benefits.”
- 8.20 **Table 1** defines the Willowbrook North proposed development as “Major Development: more than 10 houses are provided as defined in article 2 of the Town and Country Planning (Development Management procedure) (Wales) Order 2012”. **Section 2.1.5** states for “Major Developments:
- New major developments should include a Green Infrastructure Statement which should be appropriate to the scale of the development
 - The Green Infrastructure Statement should take account of all of the elements of green infrastructure as set out in Policy KP16
 - [...]
 - Green infrastructure should be considered in terms of the phasing of the development and in conjunction with adjacent developments to achieve connectivity”
- 8.21 **Section 2.2.1** states “For all major developments, the existing green infrastructure resource in and around the site...must be described and assessed.” **Section 2.3.1** goes on to state “The likely impact of the proposals upon green infrastructure features must be assessed. This should include a holistic assessment of all of the elements of green infrastructure, including the synergies and trade-offs between them.”

8.22 **Section 3.1.1** states “Where the green infrastructure resource at a site has been identified, and the impacts of a proposed development have been assessed, the subsequent mitigation approach should take into account all relevant elements of green infrastructure.”

BASELINE CONDITIONS

The Landscape of the site

- 8.23 The site is located in Grangetown, Cardiff, occupying land immediately to the west of the River Taff on the north periphery of Cardiff Bay. The site covers residential areas, associated residential roads, and the south and central part of The Marl park.
- 8.24 Adjacent to the southeast boundary of the site is the Cardiff Bay Trail, which runs along the banks of the River Taff. Here, the River Taff is close to the mouth of the river, near its widest point, before the watercourse flows into Cardiff Bay to the southeast. The Sand Wharf apartments are located adjacent to the northeast of the site. The apartments are comprised of a mix of 4 – 7 storey apartment blocks, which are orientated towards the river. The taller blocks of apartments are located alongside the River Taff with lower height blocks located alongside the site. Further to the north there are 4 storey apartment blocks orientated towards the river and the residential area around Avondale Gardens is comprised of 2 storey semi-detached houses.
- 8.25 On the east side of the River Taff, opposite the site, is Hamadryad Park. The park is comprised of grassland with sports pitches and includes the Cardiff Bay Trail adjacent to the banks of the River Taff. The trail connects to the Cardiff Bay Wetlands Reserve to the east of the park. Above and between Hamadryad Park and Cardiff Bay Wetlands Reserve is the A4232 Cardiff Bay Link Road, which heads southwest over the River Taff.
- 8.26 To the south of the site is residential development comprised of a mix of up to 4 storey blocks of flats with 2 storey housing and 3 storey townhouses, which are set around a central linear area of public open space perpendicular to the River Taff. The southern edge of the residential development is defined by the A4232 Cardiff Bay Link Road.
- 8.27 Adjacent to the north of the site, The Marl park extends further north to Ferry Road. The park contains grass sports pitches with a children's playground in the northeast and along the west a section of the park contains areas of tree and shrub planting with an informal footpath. A Multi Use Games Area (MUGA) is located to the south. The north boundary of The Marl is lined by mature trees, which separates the park from Ferry Road. Terraced 3 storey Victorian townhouses are orientated towards Ferry Road. To the north of Ferry Road is a dense residential area of Grangetown, mainly comprised of rows of 2 storey Victorian terraces.
- Site Character Zone 1: Channel View tower block - The main feature of the zone is the 14 storey tower block in the southwest of the site, which is viewed from the surrounding townscape extending above existing features. The appearance of the tower block could be considered typical of the circa 1960s tower blocks with exposed concrete broken up by sections of brick. Surrounding the tower block is associated hard landscape, parking areas and garages to the south, and maintained amenity grass with scattered semi-mature ornamental trees.

- Site Character Zone 2: Radburn housing layout – In the west and south of the site is residential housing consisting of 2 storey redbrick terraces with low pitched roofs set out in a rigid geometric pattern. The houses are backed on to the Marl with the front of the properties orientated towards car parking areas or small areas of public open space comprised of amenity grass with occasional trees. Straight footpaths connect the housing, car parking areas, and public open spaces with a straight footpath around the perimeter of The Marl.
- Site Character Zone 3: The Marl park – In the eastern and central area of the site is the south and central area of The Marl public open space. The Marl is comprised of amenity grass with a rugby pitch, tree and vegetation groups in the south, and an informal footpath around the perimeter and a central path transecting the park in a west to east direction. Adjacent to the east of the park is the Cardiff Bay Trail along the River Taff.
- Site Character Zone 4: Residential roads – In the most west extent of the site are the residential roads consisting of part of Channel View Road, Beecher Avenue, and small sections of South Clive Street that includes some properties. The roads are lined by 2 storey post-war properties with small front gardens. South Clive Street is also lined by mature trees. The east side of Channel View Road is adjacent to the north part of The Marl and the Radburn housing layout to the south.

Tree Survey

- 8.28 The tree survey was conducted by Stephen Lucocq BSc (Hons), Tech Cert (ArborA), MArborA on 20th and 21st October 2020. Trees over 75mm were tagged where appropriate with numbered metal identification tags at around 2.0 metres above ground level.
- 8.29 All observations were made from the ground with the aid of an acoustic sounding hammer. No invasive decay detective instruments were used. The survey was carried out in accordance to **British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations**. This standard gives a systematic, consistent and transparent evaluation method to tree surveying.
- 8.30 The survey was conducted with the aid of a topographical tree survey.
- 8.31 **Preliminary management recommendations:** The survey has identified preliminary management recommendation for the trees on or adjacent to this site. Details regarding these identified operations are given in this report (See Appendix 1 - Tree Survey Data). Where work priority is stated to be H – High due to safety reasons these operations should be carried out as soon as practically possible. Where work priority is stated to be M/H – medium/high or higher these operations should be undertaken before commencement of any works on site.
- 8.32 **Limitations of the tree survey:** Whilst every effort is made to ensure an accurate assessment of the tree's condition is made during survey, no responsibility can be taken for resultant damage or

injury occurred by a failing tree. The survey only gives a snap shot of what is visible and is not obscured on the day of the survey. The survey identifies trees of varying quality and there above ground/below ground constraints. This survey does not constitute to a full tree condition/tree risk assessment of the site and this report is only valid for 12 months from the date of the tree survey.

8.33 The full tree survey data can be found within the Arboricultural Report, Tree Survey Data. Tree Survey Summary Table 8.1 below summarizes the findings of the tree survey:

Table 8.1 Summary of Tree Survey data

<i>BS5837:2012</i> Quality Category	Total Number of Individual Trees Surveyed	Total Number of Tree Groups Surveyed	Total Number of Tree Areas Surveyed	Total Number of Woodland Areas Surveyed	Total Number of Hedgerows Surveyed	Total
A (High - Most desirable for retention)	2	0	0	0	0	2
B (Moderate - Desirable for retention)	40	6	0	0	0	46
C (Low - Optional for retention)	15	13	1	0	0	29
U (Poor - Unsuitable for retention)	0	0	0	0	0	0
Total A,B,C,U	57	19	1	0	0	77

POTENTIAL IMPACTS

- 8.34 Details of the proposed development are provided on the planning application drawings and the Planning Statement/ Design and Access Statement accompanying the application. This section describes the main aspects of the proposed development which could potentially affect townscape and/or visual amenity.
- 8.35 The redevelopment of the site is based on a green infrastructure / Landscape led approach. The landscape strategy is integral to the foundation principles and 4 themes of the Vision for the redevelopment of the site:
- Urban Green Connectivity – wider green infrastructure network linking the city and connect the 3 parks: Grangemoor, Heol Ferry and Hamadryad.
 - Identity – the “greening” of Channel View to improve the estate’s connection with The Marl.
 - “Living Streets” – life between buildings to create a greener more sustainable neighbourhood
 - Sustainable, Flexible and Biophilic Living –a “place” to foster a healthy, balanced and cohesive community.
- 8.36 Within The Marl park, the existing groups of trees and vegetation within the south of the park would be removed. This encroachment onto the existing west and southwest extent of The Marl public open space is mitigated by enhancement proposals for the Marl. Proposals for The Marl include re-orientating the existing rugby pitch in a northwest to southeast direction, which would be surrounded by retained trees, proposed trees, raised landform areas for play, SuDs features, and species rich grassland. To the south of the re-orientated rugby pitch, new pedestrian footpaths would connect the new residential development to the Cardiff Bay Trail. Formal tree planting in The Marl would create vistas between the new residential development and the River Taff.
- 8.37 Within the development the built form would be separated by residential roads in the form of green / living streets that would be lined by new tree planting, soft landscape, informal play and would incorporate SuDs features.
- 8.38 Tree Loss would occur within the existing estate and The Marl. Table 8-1 provides details of the trees that are required to be removed to facilitate the construction of the proposed development design:

Table 8.1 Summary of Tree Survey data

Tree ID loss (T – Individual Tree, G – Tree Group), species and description	Overall BS 5837 Category Quality Tree Loss (A – High, B- Moderate, C- Low, U – Poor)	Adverse impact onto the surrounding amenity (H -High, M - Medium, L- Low)	Adverse Arboricultural Impact (H -High, M - Medium, - L - Low)	Required Level of Landscape Mitigation (H - High, M -Medium, -L - Low)
T8 - Lime – Small tree adjacent to Channel View Road	C	M / L	M / L	M / L
T7 – Hornbeam – medium sized tree adjacent to Channel View Road	B	M	M	M
T6 – Lime – medium sized tree adjacent to Channel View Road	B	M	M	M
T9- Lime - medium sized tree adjacent to Channel View Road	B	M	M	M
T10 – Lime – medium sized tree adjacent to Channel View Road	B	M	M	M
T11- Lime – medium sized tree adjacent to Channel View Road	B	M	M	M
T12- Cherry – medium sized tree adjacent to Channel View Road	B	M	M	M
T13 Lime – medium sized tree adjacent to Channel View Road	B	M	M	M
T56- Leyland Cypress – small tree adjacent to Channel View Road	C	L	L	L
T17 - Lime – medium to large sized tree adjacent to South Clive Road. Forms first tree in avenue of trees along both side of road.	B	M / H	M / H	M / H
T14 - Sycamore – medium sized tree within grounds of flats	B	M	M	M
T57 - Sycamore – small sized tree within grounds of flats	C	L	L	L
T19 - Hornbeam – small / medium sized tree alongside cut though footpath	B	M / L	M / L	M / L
T31 - Hornbeam – small / medium sized tree alongside cut though footpath	B	M / L	M / L	M / L
T32 - Hornbeam – small / medium sized tree alongside cut though footpath	B	M / L	M / L	M / L
T33 - Hornbeam – small / medium sized tree alongside cut though footpath	B	M / L	M / L	M / L
T34 - Cherry – medium sized tree within park area	B	M / L	M	M
T35 - Cherry – medium sized tree within park area	B	M / L	M	M
T36 - Cherry – medium sized tree within park area	B	M / L	M	M
T37 - Cherry – medium sized tree within park area	B	M / L	M	M
T38 - Ash – medium to large sized tree within park area	B	M	M	M
T39 - Ash – medium to large sized tree within park area	B	M	M	M
T40 - Ash – medium to large sized tree within park area	B	M	M	M

T41 – Norway Maple – medium to large sized tree within park area	B	M	M	M
T42 – Aspen – small tree on edge of park area	C	L	L	L
G6 – 77 m2 small group of mainly short cherry trees in grounds offlat	C	M / L	M / L	M / L
G13 – Small group of three trees - birch and ash	C	M / L	M / L	M / L
G12 – Small group of Leyland cypress trees	C	L	L	L
G11 – Two Norway Maples forming a whole located on edge of park area and footpath	B	M	M	M
G1 – 440m2 Tree group of a mixture of species, overgrown, sprawling with little recent management noted	C	M	M / L	M / L
G9 - 140m2 Tree group of a mixture of species, overgrown, sprawling with little recent management noted	C	M / L	M / L	M / L
G7 - 110m2 Tree group of a mixture of species, overgrown, sprawling with little recent management noted	C	M / L	M / L	M / L
G3 - 400m2 Tree group of a mixture of species, overgrown, sprawling with little recent management noted	C	M	M / L	M / L
G2 – 20 metre Tree group of a mixture of species, overgrown, sprawling with little recent management noted	C	M / L	M / L	M / L
G14 – 20 metre Tree group of hawthorn, overgrown, sprawling with little recent management noted	C	M / L	M / L	M / L
G4 – 480m2 Tree group of a mixture of species, overgrown, sprawling with little recent management noted	C	M / L	M / L	M / L

8.39 A number of trees are identified to be removed to facilitate the construction of the proposed development design. 21 B (moderate quality) category trees and 1 B (moderate quality) category tree group are required to be removed to facilitate the construction of the proposed design. In addition, 4 C (low quality) category trees and 10 C (low quality) category tree groups are also required to be removed to facilitate the construction of the proposed design. The total number of trees lost is 36.

MITIGATION MEASURES

- 8.40 Mitigation measures incorporated into the scheme design has considered the following:
- The removal of existing trees is mitigated for through a proportional compensatory tree planting scheme as part of the landscape strategy.
 - Root Protection Area (RPA) potential damage is managed through the installation of temporary ground protection, arboricultural watching brief, excavation method statement and tree protective fencing to make sure that no significant long term adverse impact will occur to any of the retained trees' root system or associated soil structure.
 - Tree surgery work and general minor maintenance tree pruning could be carried out to the British Standard 3998:2010 tree work recommendations. Adhering to this standard will ensure no adverse impact on the long term health or visual amenity of the trees will occur.
 - Mitigative tree, hedgerow and shrub planting is proposed through a combination of different diverse tree/shrub species and varied nursery aged stock.

The Proposals: Landscape Strategy

- 8.41 The landscape strategy for Channel View integrates landscape, drainage and biodiversity into a green infrastructure framework. Urban green connectivity will create a Green Infrastructure network with a landscape strategy for 'Living Streets' focused on SuDS features: amenity value, drainage, biodiversity. The Marl will be enhanced as high quality City Park and the setting for the regeneration of Channel View. The design principles laid out in Cardiff Green Infrastructure SPG: Protection and Provision of Open Space in New Developments - Technical Guidance Note (TGN) Table 7, have informed the design of the enhanced Marl open space. In addition, the proposals have integrated green infrastructure throughout the street and spaces within the development.
- 8.42 New street trees will green' the arrival and create a strong landscape character to the Main Avenue. Principle and incidental public open spaces will contribute to legibility and character along this main route through the site. The grain of the proposed development extends through the 'The Marl', 'pulling' the green space and its influence through the development.
- 8.43 The site-wide landscape proposal has been developed to provide enhance to existing green infrastructure, currently focused within the Marl, but also create a greener and more sustainable neighbourhood. The landscape strategy for the Marl, Living Streets, Communal Gardens and Residents' Gardens for the over 55's development within Phase 1 is set out below.

The Marl

- 8.44 The Marl is physically connected into the development via a permeable park edge. Visual connections between Channel View, The Marl and the Taff are formed by vistas through the landscape. These vistas also provide the movement framework for pedestrians and cyclists. The Marl would include a range of landscape features, elements and structures, focusing on planting

and grassland types. Trees would be positioned in avenues to reinforce the vistas from within the development and out into the Marl, and back into the development from within the Marl. Drainage features would also be provided within the Marl to add to amenity and biodiversity value. These would include planting, specimen shrubs and information boards.

- 8.45 Depressions within the Marl would attenuate runoff at the surface with gentle 1:3 / 1:4 sides. Shallower depressions would be in isolated areas to create standing water / wetland features for aquatic plants / biodiversity enhancement. Footpaths adjacent to the SuDS would include timber structures / information boards, such as information about SuDS, or Wreck of Louisa.
- 8.46 Tree planting species associated with SuDS features would include Honey Locust (*Gleditsia triacanthos* Draves Street Keeper) and Spaeth Alder (*Alnus spaethii*). The trees would be positioned in rows to provide those vistas. Prominent trees would include Purple Norway Maple (*Acer platanoides* 'Crimson King'), London Plane (*Platanus x hispanica*), Oak (*Quercus robur*), Field Maple (*Acer campestre*) and Small-leaved Lime (*Tilia cordata*).
- 8.47 Trees would also be positioned at nodes / entry points into the Marl, and to provide an 'end feature' of the vistas which extend outwards from the development. Species could include visually distinct species such as Wild Cherry (*Prunus avium*), Crab Apple (*Malus sylvestris*), and Sweetgum (*Liquidambar* sp.).

Living Streets

- 8.48 Living streets are a key element of the biophilic design approach designed to bring green space through the development from the Marl, providing access to nature and space for SuDS, play and outdoor social interaction. These are pedestrian focused environments with direct access to the Marl and connecting the estate with the wider neighbourhood. The linear connections between the Marl and Channel View Road will draw green space through the estate, creating a sense of place for the neighbourhood and the wider community.
- 8.49 Structure planting along roads and junctions would be provided to incorporate a mixture of evergreen and deciduous, robust and low-maintenance shrubs. Architectural foliage would be provided to carry the design theme of the Marl into the development. Amenity around the proposed buildings would incorporate a mixture of shrubs, herbaceous plants and grasses. A colour pallet would be established to reflect the orientation of the proposed buildings. Focal/ feature plants to be provided as appropriate.
- 8.50 Rain gardens within and around the development would incorporate features for play, boulders/ steppingstones, landform, 'bridges', and a variety of planting. Information boards could be positioned within the rain gardens throughout the site. Specimen shrubs within rain gardens could include hazel coppice and/or other cobnuts and filberts. Other species could include golden-twig dogwood and Siberian dogwood for rich yellow and red stems during the winter months.

Communal Gardens

- 8.51 The Communal Gardens are designed to offer outdoor amenity space specifically for residents living within the adjacent flats. The spaces extend components of green infrastructure into the development offering a visual connection with nature for all residents of the estate. Rain gardens extending into these spaces will add to the amenity value and biodiversity of the spaces. Each garden will include spaces which encourage outdoor social interaction with different spaces for growing vegetables and fruit. Opportunities for outdoor play in the gardens are based on interaction with nature and imaginative play.

Residents' Gardens for the over 55's

- 8.52 The Phase 1 development incorporates resident's gardens for the over 55s at ground level and as rooftop terraces at the floor 5. These will be private communal spaces for residents with space for social interaction, seating, growing vegetables and planting. Green walls on adjacent facades will combine with plant supports and pergolas within the garden spaces to create green garden spaces where plants create the visual interest. Hedge planting within the courtyards would provide footpath route delineation and enclose the growing space. The arrangement of paths in continuous loops with no dead end roots creates opportunities for safe walking routes suitable for older residents.
- 8.53 Low-level shrub planting / SuDS features would include a variety of shrubs, herbaceous plants and grasses. Sensory planting would be provided where possible throughout. Specimen plants positioned within the planting scheme will provide interest and height. Plant species to include Phormium sp. (phormiums), Aralia elata (Japanese angelica tree), and Viburnum x bodnantenses 'Dawn' (Viburnum Dawn).

RESIDUAL IMPACTS

- 8.54 The site has a number of Arboricultural constraints that have been considered in the development design phase. In total 36 trees are identified to be removed to facilitate the construction of the proposed development design. This includes 21 B (moderate quality) category trees and 1 B (moderate quality) category tree group. Many of the other trees to be removed are low quality that should not present a constraint on developing the site. Through suitable and proportional compensatory tree planting the loss has been offset to an acceptable level.
- 8.55 Within the development and the enhanced Marl park there are 112 trees proposed including a range of species suitable for each location. While a newly planted tree is not a direct replacement for a mature tree a proportion of the proposed trees would be advanced nursery stock in excess of 6m tall at the time of planting. There are three times more trees being planted than being lost as a result of the development.
- 8.56 Species diverse grassland and SuDS features are proposed through the development and these would improve the amenity value of the existing Marl park. Linkages to adjacent neighbourhoods and park are also enhanced resulting in further improvements to the landscape amenity locally.
- 8.57 The proposal will not cause a long term adverse impact on the local amenity of the area through tree loss. The construction of the proposed development whilst complying to a suitable scheme for tree protection will ensure that no significant long term adverse Arboricultural impact occurs onto the health of any retained trees on or adjacent to this site or to the long term amenity of the area.
- 8.58 A Tree Protection Plan and Arboricultural Method Statement to the British Standard 5837:2012 (Trees in relation to design, demolition and construction. Recommendations), dated 13th November 2020, has been prepared for the proposed development. The plan provides a method for Preconstruction, Construction and Post Construction. It concluded that by adhering to the tree protection details within the plan, the proposed development could be constructed without any significant long-term adverse impact on the retained trees or the amenity of the area.

SUMMARY AND CONCLUSIONS

- 8.59 The design principles laid out in Cardiff Green Infrastructure SPG: Protection and Provision of Open Space in New Developments - Technical Guidance Note (TGN) Table 7, have informed the design of the enhanced Marl open space. In addition, the proposals have integrated green infrastructure throughout the street and spaces within the development.
- 8.60 A Tree Protection Plan and Arboricultural Method Statement to the British Standard 5837:2012 (Trees in relation to design, demolition and construction. Recommendations), dated 13th November 2020, has been prepared for the proposed development. The plan concluded that by adhering to the tree protection details within the plan, the proposed development could be constructed without any significant long-term adverse impact on the retained trees or the amenity of the area.
- 8.61 Within the development and the enhanced Marl park there are 112 trees proposed including a range of species suitable for each location. While a newly planted tree is not a direct replacement for a mature tree a proportion of the proposed trees would be advanced nursery stock in excess of 6m tall at the time of planting. Compensatory tree planting to the extent proposed would offset the loss of 36 trees to an acceptable level.