LAND AT CHANNEL VIEW, GRANGETOWN CARDIFF

ENVIRONMENTAL STATEMENT

VOLUME 1
NON-TECHNICAL SUMMARY

INTRODUCTION

1.1 This Non-Technical Summary (NTS) summarises the findings of an Environmental Statement (ES) that has been prepared on behalf of Cardiff Council in support of a hybrid planning application for the redevelopment of Land at Channel View, Grangetown, Cardiff. The description of development is as follows

> *"Hybrid planning application for the comprehensive redevelopment of the site. Outline planning permission is sought for the demolition of existing buildings and hard-standing and redevelopment of the site to provide: up to 321 residential apartments and houses (Use Class C3); up to 285 sq.m of commercial floorspace (Use Class A1); new and improved vehicular, cycle and pedestrian links; upgrade works to The Marl public open space; landscaping; drainage infrastructure; associated works; with all matters except access reserved for future consideration. Full planning permission is sought for a first phase of development comprising of new tower blocks (8-12 storeys) providing 79 elderly-persons accommodation units, a 115sq.m community cafe, together with landscaping, drainage infrastructure, highways and footpaths, and other associated works."*

Fig 1.1 Site Location Plan

EIA SCOPE AND METHODOLOGY

1.2 The development proposals were subject to screening and scoping during 2019 and 2020. This confirmed that the development proposals would represent EIA Development and the following scope for the Environmental Statement:

Technical ES Chapter	**Informed By**
Townscape and Visual Impact	Townscape and Visual Impact Assessment
	Townscape Visually Verified Views
Traffic and Transportation	Transport Assessment
	Transport Implementation Strategy
	Travel Plan
Air Quality	Air Quality Assessment
	Traffic Flow Data (latest complete year)
	Meteorological Data
Ecology	Phase 1 Habitat Survey (inc. building inspection survey for bats)
	Targeted Species Surveys (as required)
Landscape and Arboriculture	Soil Resource Survey
	Soil Resource Plan
	Tree Survey
	Tree Constraints Plan
	Tree Protection Plan
Contamination	Site Investigation Report
Flooding and Drainage	Flood Consequences Assessment
	Drainage Strategy
Utilities and Energy	GPR Scan
	Services Appraisal

1.3 In addition to the issues identified by the LPA the following issues are also considered important and will be dedicated a chapter of ES:

- Socio- Economic Considerations

1.4 The ES has been prepared in accordance with the requirements of the 2017 EIA Regulations and with reference to best practice including that published by the Institute of Environmental Management and Assessment (IEMA). All information required to identify the significant environmental effects of the development, as defined by Schedule 4 of the Regulations has been provided. The ES also complies with the requirements of Paragraph 17(3) and 17(4) which define what comprises an ES.

1.5 The effects of the individual environmental matters have been assessed against a common list of significance criteria (unless there are specific reasons for using other criteria which are addressed within individual chapters)

Significance	**Definition**
Substantial (beneficial/adverse)	considerable effects (by extent, duration or magnitude) or of more than local significance or breaching identified standards or policy
Moderate (beneficial/adverse)	limited effects which may be considered significant
Minor (beneficial/adverse)	slight, very short or highly localised effects
Neutral/negligible	barely perceptible or nil significance of effect

1.6 The following significance matrix has then been utilised to determine the overall magnitude of effects (unless there are specific reasons for using other criteria which are addressed within individual chapters)

Sensitivity of Receptor	**Magnitude of Impact**			
	Substantial	**Moderate**	**Minor**	**Negligible**
Substantial	Substantial	Substantial	Moderate	Minor
Moderate	Substantial	Moderate	Minor	Negligible
Minor	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

1.7 Consideration has been given to potential cumulative effects with existing and/or approved projects in accordance with an appropriate methodology. This concluded that there were not likely to be any cumulative effects arising from the Proposed Development.

SITE AND SCHEME DESCRIPTION

1.8 The Site comprises of a 8.02ha area of land around Channel View Road, in the Grangetown area of Cardiff, encompassing existing residential properties, including an elderly person tower-block, along Channel View Road and South Clive Street, part of the neighbouring parkland known as 'The Marl', a small area of Ferry Road Park, as well as existing roads and footpaths

1.9 The application seeks a Hybrid planning permission. The Outline element of the application seeks planning permission for the following:

- The redevelopment and extension of part of the existing Channel View Estate to provide up to 321 residential apartments and houses (Use Class C3), up to 285 sq.m of retail floorspace (Use Class A1), communal gardens incorporating allotments and picnic areas, formal and informal children's play space, landscaping, cyclepaths/footpaths, drainage infrastructure, roads and parking
- The regeneration of the Marl public open space to include new/improved sports pitches, children's play space, a new 'beach', water features, landscaping, and cyclepaths /footpaths
- The provision of a new bus/cycle/pedestrian link between Channel View Road and South Clive Street and a new cycle/pedestrian link between South Clive Street and Ferry Road
- The provision of a new parking area

1.10 A masterplan has been prepared for the Outline application, based around a series of principles and concepts. The scale of the Outline scheme varies between 2 and 6 storeys in height, responding to design, amenity, legibility, density and other considerations.

1.11 Full planning permission is sought for a first of development, comprising of two tower blocks (8-12 storeys) providing 79 elderly-persons (over 55s) accommodation units, a 115sq.m community cafe, communal gardens incorporating allotments and picnic areas, landscaping, drainage infrastructure, footpaths, roads, parking and associated works.

1.12 It is anticipated that work on site will commence in 2021 and be completed in 2033 (a total programme of circa 144 months). Demolition and construction work will be undertaken on a phased basis, staggered to ensure a sequential process of demolition and construction, and having careful regard to the following requirements:

- Minimising disruption to existing residents as much as practicable.
- Ensuring that as many residents as possible are offered the opportunity to relocate within the development without the need for an intervening relocation.
- The requirement for the new build phases to tie-in with existing infrastructure.
- Ensuring no unacceptable amenity conflict between existing and new build dwellings during the phase construction works.

1.13 The Proposed Development is being promoted on the basis of the following primary objectives:

- The replacement of dated housing stock with new homes which are designed for modern living and to contemporary, environmentally efficient, standards.
- A scheme which better responds to its parkland setting, providing a positive frontage to, and natural surveillance of, the park as a means of discouraging anti-social behaviour and encouraging its use by residents as well as the wider public.
- Making best use of the land to both contribute towards the sustainability agenda and generate additional funding for Cardiff Council to contribute towards the delivery of a new pedestrian and cycle bridge over the River Taff.

1.14 With regard to alternatives, it is evidenced that the environmental impacts of a 'do nothing' scenario would be significantly adverse compared to the implementation of the proposed development, having regard to the environmental benefits of the Proposed Development. The primary objective of replacing the dated housing stock on the site with modern homes means that it has not been appropriate to consider alternative locations or uses in respect of the Site.

1.15 With regard to the design alternatives, the design process for Channel View Regeneration has taken place over several years and has followed the circular approach advocated within TAN 12: Design of 'Appraising Policy context – Vision – Appraisal – Assessing Design Issues – Detailed Design'. The proposals have evolved through discussions with Cardiff Council, and with reference to its LDP and Residential Design Guide. They have also been refined through discussions with other stakeholders including DCFW and through public consultation.

TOWNSCAPE AND VISUAL IMPACT

1.16 The Townscape and Visual Impact chapter has been prepared by Emma Hayes of Tetratech, a chartered landscape architect.

1.17 The Townscape and Visual Impact chapter has been prepared on the back of a Townscape and Visual Impact Assessment (TVIA), which has considered the likely effects of the proposed development on the townscape/ landscape character and visual amenity within a 3km study area.

1.18 The findings of the TVIA are based on the proposed redevelopment of the Channel View site in Grangetown that would comprise the demolition of 188 residential units, including the 14 storey tower block. The construction of up to 400 new residential dwellings is proposed, including over 55s living accommodation. The proposed buildings on the site would range from 2 – 12 storeys high. Other proposals include the provision of commercial space; improvements to vehicular, cycle, and pedestrian routes; as well as improvements to The Marl park and sports pitches, proposed areas of public open space, and proposed SUDs features and associated works.

1.19 The methodology used for assessing the potential effects on townscape/landscape character and visual amenity were based on the recommendations in GLIVA3. The application of the guidance document established an appropriate scope for this assessment to be undertaken. Cardiff Council were also consulted on the methodology and the initial viewpoint selection.

Townscape/Landscape Assessment

1.20 The townscape/ landscape assessment assessed the potential impact on landscape/ townscape receptors during the various and overlapping demolition, construction, and occupation of the proposed development for a timeframe of circa 10 years.

1.21 LANDMAP assessments were referred to, which identified the key characteristics of the site and surrounding area, of relevance includes: the area is built on the coastal plain with low hills on the edge of the Vale of Glamorgan; the area is mainly residential with dense streets in Grangetown, which was largely development before 1945; there are areas of commercial development; and there are some area of open green space and wooded areas.

1.22 A site-specific appraisal was also carried out identifying the townscape/ landscape features, characteristics, and aesthetics. The site appraisal confirmed the site's location in Grangetown, Cardiff, occupying land immediately to the west of the River Taff on the north periphery of Cardiff Bay. The site is within a residential setting comprised of post-war housing, modern apartments orientated towards the River Taff, and mixed residential development of comprised of houses, townhouses, and blocks of flats. The edges of residential areas are defined by the Ferry Road Retail Park to the west and the A4232 Cardiff Bay Link Road over the River Taff. Site Character Zones of the site include: a 14 storey tower block; Radburn housing layout; The Marl park; and residential roads. Alongside the site is a short section of the Cardiff Bay Trail and there are a number of nearby

public open space including Hamadryad Park on the east side of the River Taff, Ferry Road Park to the northwest of the site; and to the west on an elevated area is Grangemoor Park.

1.23 The assessment of townscape/landscape effects considered the effects of the proposed development on Site Character Zones (areas within the site), the residential setting of the site, the Cardiff Bay Trail adjacent to the site, the River Taff to the east of the site, as well as effects on the landscape context of the site beyond the immediate setting of the site. The findings of the assessment concluded that effects on the townscape/ landscape features within the site would be **moderate adverse** or **moderate – major adverse** during Period 1 and 2. **Significant** effects were concluded where the degree of effects were assessed as moderate – major adverse with no mitigation proposals. However, following completion and occupation of the site during Period 3, effects would reduce **moderate neutral** or may be regarded as **beneficial** for some Site Character Zones due to the redevelopment of the residential areas with public open spaces, increase pedestrian connectivity throughout the site, increase green infrastructure elements throughout the site, improvements to the rugby pitch on The Marl, and improvements to the residential layout, materials, and quality that would integrate into the surrounding townscape context.

1.24 Within the immediate context of the site, effects on the Cardiff Bay Trail and the River Taff were assessed as **moderate adverse**, **not significant** during Period 1 which would reduce to minor neutral during Period 2 and 3. For the residential setting, effects were assessed as **moderate – major adverse**, **significant** with no mitigation proposals during Periods 1 and 2, which would reduce to **moderate beneficial during** Period 3.

1.25 Beyond the immediate context of the site, effects on the surrounding townscape/ landscape would be restricted to indirect effects. The assessment considered effects on Cardiff Bay and the elevated slopes of the Southern Ely Valley, which were concluded to be **minor neutral** during Periods 1 and 2. Following completion of the proposed development, during occupation, effects would reduce to **negligible** as any indirect effects of the proposed development would alter the characteristics of each area.

1.26 The redevelopment of the site would change the character of the residential areas within the site and remove features of the site including the 14 storey tower block, the Radburn housing layout, 3no. properties along South Clive Street, and some existing trees and vegetation. However, the majority of these features contribute little in terms of townscape/ landscape to value of the area, a sense of place, and placemaking. During demolition and construction, activity on the site would increase and is likely to change some perceptual qualities during these phases within the townscape context. However, once the proposed development is completed and occupied, some changes to the site are considered to be beneficial due to the proposed increase of green infrastructure elements, connectivity throughout the site, improvements to the rugby pitch, and increase of public open spaces, and enhancements to the residential layout and form. Beyond the immediate context of the site, the proposed development is unlikely to have any indirect effects on the surrounding townscape/ landscape.

Visual Assessment

1.27 To confirm the baseline studies of designations, landscape character, and ZTV mapping, a total of 11no. views were photographed. 6no. of the view locations were carried forward to the viewpoint assessments.

1.28 The visual assessment concluded that for **residents** close to the site with filtered, oblique or partial views visual effects were assessed as **moderate – major adverse** and **significant** with no mitigation proposals during Periods 1 and 2. Following the completion of the proposed development, adverse and significant visual effects would reduce to **beneficial** and **not significant**. As distance increases from the site, visual effects would further reduce to **moderate beneficial**. Beyond 750m of the site, visual effects for residents were assessed as **minor adverse** during Periods 1 and 2, but visual effects would reduce to **minor neutral** during Period 3 following completion of the proposed development.

1.29 For **users of public open space** within and close the site, visual effects were also concluded to be **moderate – major adverse** and **significant** with no mitigation proposals during Periods 1 and 2, reducing to **beneficial** and **not significant** during Period 3. Beyond 500m of the site from elevated locations, visual effects for users of public open space was concluded to be **moderate neutral** during Periods 1 and 2, reducing to **minor beneficial** during Period 3 due to the removal of the 14 storey tower block with the proposed development integrating into the townscape backdrop. Beyond 1.25km of the site, visual effects of the proposed development in the distance for users of public open space was concluded to be **minor neutral** throughout the 3 Periods of assessment.

1.30 Visual effects for **users of public rights way and National Cycle Route 8** with open and unobstructed views towards the site and with 250m of the site were mostly concluded to be **moderate adverse** during Periods 1 and 2, although within 200m of the site, during Period 2, visual effects were concluded to be **moderate – major adverse** and **significant** with no mitigation proposals. Following completion of the proposed development, visual effects would all reduce to **moderate neutral**. Beyond 750m of the site, visual effects for **users of National Cycle Route 8** were concluded to be **minor adverse** during Periods 1 and 2, reducing to **minor neutral** after completion during Period 3. For **users of the Wales Coast Path** within the townscape context and beyond 1.25km of the site, visual effects were concluded to be **minor neutral** throughout all assessment periods.

1.31 For **road users** beyond 200m of the site, the visual effects were concluded to be **minor adverse** during Periods 1 and 2, reducing to **minor neutral** during Period 3 after completion. Road users would typically have oblique or partial views towards the proposed development that would be short in duration with the proposals viewed in context to the surrounding townscape.

1.32 Overall, adverse visual effects would mainly occur during assessment Periods 1 and 2, which coincides with demolition and construction activities on the site. Tall cranes and structures are likely to puncture the skyline from the surrounding townscape/ landscape and add movement to the view. Following completion of the proposed development, during assessment Period 3, adverse visual effects would reduce to either neutral or beneficial effects as the proposed

development is likely to integrate into the surrounding townscape context. Large scale and significant visual effects would occur for visual receptors close to the site, but as distance increases from the site, the significance and degree of visual effects would reduce.

1.33 Weather conditions, as described in paragraph 1.4 above would further limit visibility for receptors as conditions that limit visibility occur on average 51% of the year.

Designated landscapes

1.34 The TVIA concluded that there are no designated landscapes that would be adversely affected by the proposed development. This is due to a combination of factors, including: the distance from the site to any designated landscapes; the character of the proposed development is similar to the baseline conditions; the proposed development would be integrated into its setting overtime; and no significant long term adverse effects were identified either on the landscape or on visual amenity.

Conclusions

1.35 The Townscape and Visual Impact Assessment concludes that there is an opportunity to redevelop the Channel View site without adverse impacts to the townscape/ landscape character and visual amenity within the site and surrounding area following its completion. During demolition and construction activities, adverse and significant impacts to townscape/ landscape character and visual amenity within and in close proximity to the site would occur, but they are not considered to be unacceptable. The redevelopment of the site is likely to be beneficial in relation to the townscape/ landscape character of the site with enhancements to connectivity, green infrastructure, public open space, and residential layout, visual connections to the surrounding townscape, which would contribute to the sense of place and key characteristics of the site. Some visual benefits may also be created with the removal of the 14 storey tower block and its awkward juxtaposition within the residential area, visual improvements between the proposed development and surrounding residential setting are also like to be created.

TRAFFIC AND TRANSPORT

1.36 The Traffic and Transport chapter has been prepared by Alun Rees of Cambria Consulting. The chapter describes the assessment methodology; the baseline conditions at the Site and surroundings; the potential impacts related to traffic and access; the mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely effects after these measures have been employed.

Baseline Conditions

1.37 **Trip Generation –** Assuming the Policy KP8 of a 50:50 modal split between journeys by car and journeys by walking, cycling and public transport that this target will be met it is calculated that the existing 188 dwellings have the potential to generate some 607 daily vehicle movements with around 56 to 60 movements occurring during the traditional highway network peak hours (8am-9am and 5pm-6pm).

1.38 **Footways -** The site is accessible to pedestrians via the footways that run alongside Channel View Road that link with the wider footway network. Pedestrian access is also available via The Marl and Cardiff Bay Trail that lie to the north and east of the site. The application site is within a 30-minute walk of the whole of Grangetown and extends to Cardiff Bay to the east

1.39 **Cycleways** - There is an extensive and growing cycle network in and around Cardiff, with the Cardiff Bay Trail, that passes adjacent to the site, providing a high quality and traffic free route for cyclists.

1.40 **Bus Links** - There are bus stops with frequent bus services located on Channel View Road, within the application site.

1.41 **Train Links**- Grangetown Railway Station is located some 1.4km walk to the north of the site that provides access to regular services.

1.42 **Aquabus** - There is an Aquabus pier on the eastern side of The Marl that provides access to a scheduled, hourly, river bus service between Cardiff Bay and the city centre (Bute Park).

Potential Impacts

During Construction

1.43 **Driver delay** –Construction traffic could potentially impact on driver delay if the construction traffic coincides with peak traffic hours. The potential magnitude of impact of construction traffic on driver delay is moderate, adverse and the significance of these impacts would be slight.

1.44 **Severance** - Severance can be caused by the flow of traffic impacting on the ability to move within or between communities and facilities. The impact affects receptors directly and would be continuous but short-term during construction. The potential magnitude of impact of construction traffic on severance is minor, adverse and the significance of these impacts would be slight.

1.45 **Pedestrian delay** - Pedestrian delay can be caused by the flow of construction traffic impacting on the ability of pedestrians to walk along or across roads. The potential magnitude of impact of construction traffic on pedestrian delay is negligible, adverse and the significance of these impacts would be slight.

1.46 **Fear and Intimidation** - HGV's passing others, particularly vulnerable road users, may result in fear and intimidation. The potential magnitude of impact of construction traffic in terms of fear and intimidation is moderate, adverse and the significance of these impacts would be slight.

1.47 **Accidents and road safety** - The increase in the number of HGV movements on the surrounding network could result impact on road safety. The potential magnitude of impact of construction traffic in terms of accidents and road safety is negligible, adverse and the significance of these impacts would be slight.

During Operation

1.48 Vehicle Trip Generation - The trip generation of the 282 standard residential units have been based on the typical trip rates of privately-owned apartment developments and the 77 elderly persons units are based on typical trip rates for sheltered housing. The TRICS data suggests that, typically, the standard accommodation will generate some 6.7 people trips by per dwelling per day and the elderly persons accommodation will generate 4.9 people trips by per dwelling per day.

1.49 Based on that modal split it is calculated that the proposed development will generate a total of 1,265 daily vehicle movements with some 116 to 117 movements occurring during the traditional highway network peak hours (8am-9am and 5pm-6pm). This is an increase of some 524 daily vehicle movements – 56 to 62 peak hour movements - compared to the existing traffic generation of the site.

1.50 It is predicted that the development will result in an additional 31 vehicle movements during the am peak hour and 42 vehicle movements during the pm peak hour at the Channel View Road / Ferry Road junction.

1.51 **Driver delay** - The additional number of traffic movements, at up to 42 during the busiest hour, is relatively modest and represents, on average, one additional movement every 1½ minutes or so throughout that hour. The potential magnitude of impact of development traffic on driver delay is moderate, adverse and the significance of these impacts would be slight.

1.52 **Severance** – The additional number of traffic movements will not have a measurable impact on the ability of people to move within the community. The potential magnitude of impact of development traffic on severance is minor, adverse and the significance of these impacts would be slight.

1.53 **Pedestrian delay** - The additional number of traffic movements will not have a measurable impact on the ability of people to move along or across the street. The potential magnitude of impact of development traffic on pedestrian delay is negligible, adverse and the significance of these impacts would be slight.

1.54 **Fear and intimidation** - The development's traffic will consist primarily of light vehicles that will be consistent with the type of traffic experienced under baseline conditions. The potential magnitude of impact of development traffic on fear and intimidation is negligible, adverse and the significance of these impacts would be neutral.

1.55 **Accidents and road safety** - The additional number of traffic movements will not have a measurable impact on accidents and road safety. The potential magnitude of impact of development traffic on accidents and road safety is minor, adverse and the significance of these impacts would be slight.

Mitigation Measures

1.56 The following mitigation measures will be incorporated into the design of the scheme:

- Proposed Layout - The proposed development has been informed by the design of the scheme prioritises the needs of pedestrians, cyclists and public transport users over those of the car, improvements that increase the choice and viability of sustainable transport travel for users of the development and the surrounding community and Integration with the surrounding community. Public realm improvements will provide a more pleasant environment for walking and cycling.
- Bus Link - Creation of a new bus link between Channel View Road and South Clive Street. Bus services will no longer need to undertake a U-turn at the current Channel View.

1.57 The mitigation measures proposed during construction include:

- Construction and Environmental Management Plan (CEMP)- The CEMP will control, amongst other things, access Arrangements for Vehicles, Access Route, Vehicle Size and Schedule of Use, A Travel Plan, Necessary Highway Works, Parking and Loading Arrangements.

1.58 The mitigation measures proposed during operation include:

- Travel Plan - The Proposed Development will be accompanied by a Travel Plan that includes a package of measures to encourage residents to use alternatives to single-occupancy car use.

Residual Impacts

1.59 The residual effects in relation to flooding can be summarised as follows:

- During construction - Following the application of appropriate mitigation measures all residual effects during the construction phase of the development will negligible.

- During operation - Following the application of appropriate mitigation measures most of the residual effects during the operational phase of the development will negligible/beneficial.

AIR QUALITY

1.60 The Air Quality chapter has been prepared by WYG/Tetratech .

Baseline Conditions

1.61 Traffic Emission Sources - Desktop assessment has identified that traffic movements are likely to be the most significant local source of pollutants affecting the Site and its surroundings

1.62 Meterology - Meteorological conditions have significant influence over air pollutant concentrations and dispersion.. The meteorological data used in the assessment is derived from Cardiff Airport Met Station, which is considered representative of the development site conditions, with all the complete parameters necessary for the ADMS model.

1.63 Sensitive Receptors for Traffic Air Quality - Receptors that are considered as part of the air quality assessment are primarily those existing receptors that are situated along routes predicted to experience significant changes in traffic flow as a result of the Proposed Development. Proposed receptor locations on the Proposed Development Site have also been considered within the assessment as well.

1.64 Ecological Sensitive Receptors – The Cwm Cydfin SSSI was identified as being within a 2 km radius of the Site.

Future Baseline

1.65 The number of petrol/diesel cars are predicted to reduce as a result of initiatives to combat air pollution and so emissions associated with vehicles will reduce over time. This would be as a result of greater numbers of electric vehicles making up the fleet and there being fewer older more polluting vehicles on the road. This change has been calculated using Defra's Emissions Factor Toolkit. The change is shown between the 'Baseline' results and the 'Do Minimum' results. However, as a worst case, the assessment considered that background concentrations will not improve between the baseline year and the assessed future years, and the same background concentrations were utilised.

Potential Impacts

Construction

1.66 The potentially significant effects during the construction phase are predicted with regard to the potential for dust nuisance complaints and surface soiling events due to deposition, as opposed to the risk of exceeding any AQOs. It should be noted that, in accordance with IAQM Guidance12, the methodology outlined above determines a Risk Factor, rather than an Impact Description, prior to the implementation of mitigation measures. The risk factor for the Construction phase assessment is determined to be "high".

1.67 All dust impacts are considered to be direct, temporary, short-term and reversible in nature. The impacts are determined to be direct as they occur as a result of activities associated with the

Development, temporary as they will only potentially occur during the construction phase, short-term because these will only arise at particular times when certain activities and meteorological conditions for creating the level of magnitude predicted combine, and reversible as conditions will return to baseline upon cessation of construction phase activities.

Operation

1.68 The following potential impacts were identified during the operational phase:

- The potential effect of vehicle emissions on NO2 concentrations is considered negligible at all receptors assessed and so not significant.
- The potential effect on annual mean PM10 concentration from the Development traffic flows is predicted to be negligible at all existing sensitive receptors that were modelled.
- The potential effect on annual mean PM2.5 concentration from the Development traffic flows is predicted to be negligible at all existing sensitive receptors that were modelled.

Mitigation Measures

1.69 The report identifies mitigation measures in respect of the following during Construction in respect of the following:

- Communications
- Dust Management
- Demolition
- Earthworks
- Trackout

Residual Effects

1.70 The residual effects in respect of air quality can be summarised as follows:

- During Construction - Following the implementation of the recommended mitigation measures, the risk of adverse effects due to emissions from the construction phase will be **negligible**.
- During Operation - The significance of the effects of changes in traffic flow as a result of the Proposed Development, with respect to NO2, PM10 and PM2.5 exposures, is determined to be **'negligible'** at all identified receptor locations as shown in table. All future residential receptor locations within the Site are predicted to be below the AQO for NO2, PM10 and PM2.5.

LANDSCAPE AND ARBORICULTURE

1.71 The Landscape and Arboriculture chapter has been prepared by WYG/Tetratech.

1.72 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.

1.73 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.

1.74 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

CONTAMINATION

1.75 The contamination chapter has been prepared by Cambria Consulting to assess the ground conditions and potential contamination of the Proposed Development.

Baseline Conditions

1.76 The baseline ground conditions show can be summarised as:

- The site is brown field site and underlain by rocks of the Mercia Mudstone Group, which are Triassic in age.
- Made ground associated with the reclamation of land from the sea may be present and any fill materials are likely to be highly variable.
- There is a recorded historical landfill site called The Marl situated within the site boundary.
- The historical data reviewed shows the site to have had past industrial or commercial use as a Landfill (The Marl) and deposited waste included inert, industrial, commercial, household and special waste. There is likely, therefore, to be a Medium to High risk of contamination.
- The site lies in a lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level).

1.77 All samples from the ground investigations which took place contained one or more contaminants which were above the residential with plant uptake threshold. All samples contained one or number of leachable contaminants which were above the guidelines. The results of contaminants of concern recorded are detailed in the tables below.

Contaminants of Concern

Sample	Depth (m)	Contaminant	Concentration (mg/kg)	Threshold (mg/kg)	Comments
CP01	1.00	Chromium (trivalent)	16	11	Made ground
CP01	2.50	Arsenic Lead, Chromium (trivalent), Naphthalene, Benzo[b]fluoranthene, Benzo[a]pyrene, Dibenz(a,h)Anthracene	43 570 27 5.1 3.2 3.1 0.91	37 200 11 2.3 2.6 2.2 0.24	Made ground
CP02	3.00	Cyanide Arsenic Lead Chromium (Trivalent)	38 53 2200 240	8 37 200 11	Made ground

		Dibenz(a,h)Anthracene	0.50	0.24	
CP02	4.50	Cyanide Lead Chromium (Trivalent)	18 660 62	8 200 11	In-situ deposits just below made ground
CP03	2.00	Arsenic Beryllium Lead Chromium (Trivalent) Dibenz(a,h)Anthracene	38 1.8 1200 58 0.28	37 1.7 200 11 0.24	Made ground
WS01	3.00	Lead Chromium (Trivalent)	62 23	200 11	Made ground
WS02	0.50	Chromium (Trivalent) Benzo[b]fluoranthene Benzo[a]pyrene Dibenz(a,h)Anthracene	23 3.3 3.2 0.77	11 2.6 2.2 0.24	Made ground
WS02	1.50	Chromium (Trivalent) Benzo[b]fluoranthene Benzo[a]pyrene Dibenz(a,h)Anthracene	15 6.6 4.5 0.89	11 2.6 2.2 0.24	Made ground
WS03	0.30	Lead Chromium (Trivalent) Aromatic TPH >C21-C35 Pyrene Benzo[b]fluoranthene Benzo[a]pyrene Dibenz(a,h)Anthracene	500 47 1200 13 13 12 2.0	200 11 1100 7.2 2.6 2.2 0.24	Made ground
WS04	1.80	Beryllium Lead Chromium (Trivalent) Dibenz(a,h)Anthracene	1.8 280 22 0.71	1.7 200 11 0.24	Made ground

Leachable contaminants of Concern

Sample	Depth (m)	Contaminant	Concentration (mg/kg)	Threshold (mg/kg)	Comments
CP01	2.50	Copper (Dissolved)	1.5	1.0	Made ground
CP02	3.00	Copper (Dissolved) Zinc (Dissolved) Cadmium (Dissolved) Lead (Dissolved) Nickle (Dissolved)	1.9 110 0.12 5.8 7.1	1.0 10.9 0.08 1.2 4.0	Made ground
CP03	2.00	Copper (Dissolved) Zinc (Dissolved) Chromium (Dissolved)	2.5 21 5.4	1.0 1.09 4.7	Made ground

Groundwater Contaminants of Concern

Sample	Contaminant	Concentration (mg/kg)	Threshold (mg/kg)	Comments
CP01	Copper (Dissolved) Chromium (Dissolved)	3.6 & 2.0 12.0	1.0 4.7	Made ground
CP02	Copper (Dissolved) Chromium (Dissolved)	3.6 9.7	1.0 4.7	Made ground
CP03	Copper (Dissolved) Chromium (Dissolved)	2.0 5.1	1.0 4.7	Made ground

Future Baseline

1.78 Should the proposed development not progress the site would remain a combination of existing housing and open field (The Marl) with the levels of contamination and risks associated continuing to be present.

Potential Impacts

1.79 During Construction

- **Hazard to Workers** - The excavation of predominantly made ground materials and as such hazardous materials are likely to be disturbed during construction. During the proposed development construction workers are likely to come into direct contact with the site soils. The exposure period for these receptors is short term (acute) since they will only be exposed during the construction phase via the following pathways. Construction workers will be subject to short term exposure of potential contaminants only. The impact is considered to be **moderate adverse**.

- **Contamination Pathways** - Development of the site has the potential to disturb and mobilise contamination present within the made ground and groundwater. Site works may introduce preferential pathways for contamination to migrate particularly during any excavations works whether temporary or permanent. During the construction works there is a risk of contaminants mobilisation and downward migration in an event of increased rainwater infiltration in the eastern/south-eastern area. Construction of the piled foundation will require core excavation of the made ground layer or contaminant migration along the shaft of the auger. Due to localised works of foundations, probability of a consequence occurring is likely to be Low Likelihood and therefore the impact **moderate adverse.**

- **Groundwater Contamination -** Groundwater contained within the bedrock and gravels underlying the site may be at risk of pollution as a result of the construction activities. These may include contamination resulting from accidental spillages of oil, fuel or chemicals, refuelling activities or leaks in hydraulic systems, cement and/or concrete particularly in areas which may have pathways to the River Taff. There is a risk of encountering unexpected, localised contamination during the construction works even in areas previously covered by intrusive investigations, particularly within the made ground. The impact of these is minor adverse however due to previous site use as landfill there is a highly likely probability of unexpected contamination, therefore the risk is **moderate adverse.**

1.80 During Operation

- **Exposure of Contaminants** - Future site users could be exposed to contaminants through dermal contact, ingestion and inhalation of soil/soil dust, or the inhalation of asbestos fibres. Future site residents (any their visitors) may similarly be at risk from consumption of vegetables/fruit grown in contaminated soils and through ingestion of potable water distributed on site through plastic pipes. The consequence of this has been assessed as moderate adverse.

Mitigation Measures

1.81 The mitigation measures proposed **during construction** include:

- **Site Remediation** – The site will be capped, by the proposed buildings and hard standings. In gardens and landscaped areas 600mm of suitable clean imported subsoil/topsoil material to BS:3882. At the base of the capping layer, a double no dig barrier should be placed to provide a barrier between the clean imported soils and contaminated made ground soils.
- **Importation of Soil** - Any imported soils should be tested at source to confirm that the soils are clean and suitable for use. The soils should also be tested in-situ whilst confirming the capping thickness and presence of the no dig barrier. The remainder of the site will be capped by buildings and hard standings.
- **Good Site Management** - Construction workers should adhere to good site management, COSHH, good standards of hygiene and appropriate health & safety on site, with personal protection equipment (PPE) and dust suppression where appropriate.
- **Unexpected ground conditions** – If unexpected ground conditions are discovered during construction, inspection by a geo-environmental engineer should be made.

1.82 The mitigation measures proposed **during operation** include:

- **Site Remediation** -As previously stated, the site will be capped in order to minimise residential access to contaminated made ground.
- **Surface Water Drainage Protection** - All surface water drainage, SUDS features, will be lined with an impermeable membrane to prevent surface water runoff infiltrating into the made ground material below the site and upon SAB approval and project handover surface water drainage will be adopted by the Local statutory body.

Residual Effects

1.83 The residential effects in relation to ground conditions can be summarised as follows:

- Following the application of appropriate mitigation measures all residual effects during the construction phase of the development will be **negligible**.
- Following the application of appropriate mitigation measures all residual effects during the operational phase of the development as all risks have been designed for during construction/ as part of operational maintenance with **negligible residual effects**

FLOODING AND DRAINAGE

1.84 The Flood and Drainage Chapter has been prepared by Cambria Consulting to assess the drainage and flooding characteristics of the proposed development of the land east of Channel View Road, Cardiff.

Baseline Conditions

1.85 **Flood Risk -** The TAN15 Development Advice Map site is within 'Zone B' with small pockets of Flood Zone C1 present on the site along the western boundary through to the north western corner of the Marl, and small sections within the south eastern corner of the site. The residential development is classified as 'highly vulnerable' development within TAN 15 and an FCA has been produced for the site outlining justification for developing in this area. There are no known historic flooding incidents on the site.

1.86 **Watercourses** - The nearest watercourse to the site is the River Taff which is approximately 16m away from the south eastern boundary of the site.

1.87 **Drainage Infrastructure** - DCWW sewerage records shows a 450mm diameter Surface Water sewer running north to south, east of the Channel View Road kerbline. The sewer moves into Channel View Road near the tower block and outfalls into Cardiff Bay in the south eastern corner of the site. Also, a 225mm combined sewer which runs north south, within the western portion of the Marl. Properties to the north west of Channel View Road are served by a separate 225mm diameter public combined sewer which runs within the front gardens of the properties and heads west along Beecher Avenue. A potable water 4" main runs within the eastern and western footway of Channel View Road.

1.88 **Future Baseline** - The level of flood risk in the future is unknown. The baseline conditions in relation to watercourses and drainage infrastructure on site would likely remain the same in the future.

Potential Impacts

During Construction

1.89 **Flood Risk** - Construction activities on site will include earthworks and sections of impermeable surfaces. The earthworks could potentially alter the existing storm water flow paths across the site. The creation of impermeable surfaces is likely to result in increased runoff during rainfall events. **The** construction impacts on flood risk are considered to be **negligible.**

1.90 **Watercourses -** The River Taff will be at risks runoff during earthworks, leachate of harmful substances used on site, accidental spillages and increased run off altering catchments. The impact arising from construction activities albeit temporary is considered to be **moderate adverse.**

1.91 **Surface Water Drainage** - Construction activities will result in a small reduction in the quantity of storm water runoff entering the combined sewer and the significance of this impact is considered to be **minor adverse**.

1.92 **Foul Water Drainage** - Construction activities will generate a limited quantity of wastewater which if not conveyed appropriately, may cause pollution. The significance of the impact on the existing foul drainage network arising from construction activities is therefore considered to be **moderate adverse.**

1.93 **Potable Water** -The contractor requires a temporary water supply during construction. The significance of the impact on the existing water supply network arising from construction activities is therefore considered to be **minor adverse.**

During Operation

1.94 **Flood Risk** - The majority of the site is at low risk of fluvial and tidal/coastal flooding and, therefore, the likely impact once operational is considered to be n**egligible**.

1.95 **Surface Water Drainage** - The impermeable area of the development will increase, however, the discharge rate of surface water run-off will decrease by 30%. The run-off from the developed area will be discharged directly to the River Taff. This will increase in the volume of discharge into the River Taff will be **negligible** in relation to the overall flow in the River Taff.

1.96 **Foul Water Drainage** - The proposed development will generate an additional volume of foul sewage and the impact arising after construction from the proposed development is considered to be **minor adverse**.

Mitigating and Monitoring

1.97 The mitigation measures proposed **during construction** include:

1.98 **Flood Risk** - Flood waters during construction will be discharged via ground infiltration and if necessary, pumping to the appropriate sewer network or into the River Taff.

1.99 **Watercourses -** Standard good practice would be followed during construction to be secured through a Construction Environmental Management Plan (hereafter referred to as the CEMP) which are to be agreed with NRW, SAB & DCWW prior to any excavations works.

1.100 **Surface Water Drainage -**Surface water runoff from the proposed construction works will be disposed of by means to be agreed in the CEMP.

1.101 **Foul Water Drainage** - Toilet and welfare facilities will need be provided for the construction workforce in line with the Health and Safety at Work Act 1974.

1.102 **Potable Water-** It has been assumed that a potable water supply can be made available from existing DCWW public water supply networks.

1.103 The mitigation measures proposed **during operation** include:

1.104 **Flood Risk –** A minimum finished floor level of 8.8m AOD is to be adopted through the site to provide a 600mm freeboard above extreme flood levels. Other mitigation measures to deal with flood include:

- The occupiers of the site should sign up to the NRW flood warning service.
- A Flood Action Plan
- Flood Resilient design measures
- A SUDS design solution

1.105 **Surface Water Drainage** - The proposed storm drainage network will be adopted and maintained by the SAB.

1.106 **Foul Water Drainage** - The development will include a network of adoptable sewer

1.107 **Potable Water** – Modify existing water system if needed.

Residual Effects

1.108 The residual effects in relation to flooding can be summarised as follows:

1.109 **During construction** - Following the application of appropriate mitigation measures all residual effects during the construction phase of the development will **negligible**.

1.110 **During operation** - Following the application of appropriate mitigation measures all residual effects during the operational phase of the development will **negligible**

ENERGY

1.111 This chapter of the ES has been prepared by McCann and Partners to assess the potential effects of the proposed development upon he local Statutory Undertakers service supplies and any associated impacts associated with the provision of the additional services, which maybe required.

Baseline Conditions

Existing Services

1.112 The site currently has existing below ground gas, water, electricity and telecom services in the areas of the new development which currently serve the existing properties.

Future Baseline

1.113 The future baseline without development will likely remain the similar to the current situation.

Potential Impacts

During Construction

1.114 **Gas Supply** – existing gas supply needs to be disconnected and exact location of gas infrastructure is unknown. The adverse impacts associated with the laying of utilities on these receptors of medium sensitivity with no mitigation are likely to be local, temporary, of substantial magnitude, and overall of **moderate significance**.

1.115 **Electricity Supply** – The majority of existing services are likely to be able to remain, depending on the depth of the cables. The Southern end of Channel View Road is being amended, and therefore the existing services will need to be diverted as these now clash with the new development. Some of the services will be isolated as part of the demolition works, and will not require diverting. The adverse impacts on the nearby receptors of low sensitivity with no mitigation is likely to be local, temporary, of minor magnitude, and overall of **minor –negligible significance**.

1.116 **Water Supply** - The construction works could affect the existing water infrastructure which runs down Channel View Road. Due to the uncertainty of its depth, construction work could breach this infrastructure which could affect supply to surrounding dwellings. Breaching the water main could also affect supply to fire hydrants in area. Also, the water main and connections to existing properties will need to be disconnected during construction from the main infrastructure in Channel View Road by DCWW. If this isn't phased it could result in the supply to existing properties being disrupted. The adverse impacts on the nearby receptors of medium sensitivity with no mitigation is likely to be local, temporary, of moderate magnitude, and overall of **moderate-minor significance**.

1.117 **Telecommunications** – the majority of telecommunication cables may not require diverting as may be utilised for the future development. At the Southern end of the development, the existing Channel View Road is being amended, all of the existing telecom services will need to be isolated and/or diverted to suit the proposed development. The adverse impacts on the nearby receptors of

medium sensitivity with no mitigation is likely to be local, temporary, of moderate magnitude, and overall of **moderate-minor significance.**

1.118 **Generalised Impacts During Construction** -Potential impacts during the construction phase will be associated with accidental damage of services infrastructure may cause disruption. The construction noise, vibration and dust generating activities in close proximity to existing and proposed properties during works associated with the provision or alteration of services could cause disruption. The laying of utilities underground requires clear working space which varies depending on the type and size of apparatus. To provide access there is potential for the clearance of vegetation including trees and shrubs, which may impact on local wildlife. The adverse impacts associated with the construction phase on these receptors of medium sensitivity, with no mitigation, are likely to be local, temporary, and affect a small number of the population and be of moderate/substantial (gas) magnitude and of **moderate significance**.

During Operation

1.119 **Gas Supply** - The CO2 released to the atmosphere from burning gas will contribute to global warming. The adverse impact of additional CO2 generated by the burning of fossil fuels on the environment (atmosphere) of medium sensitivity, with no mitigation, is likely to be national (global), permanent, of slight magnitude and **minor significance.** No issues with capacity has been been raised by WWU and, therefore, the extension or enhancement of the existing services provision will facilitate the demands of the proposed development. In this case, since there are no plans to enhance the capacity supply the likely significant effect without any mitigation is considered to be **negligible**.

1.120 **Electricity Supply** - Power is generated from a variety of sources but primarily through the combustion of coal, oil and gas, with nuclear generating much of the remainder. The adverse impact of additional CO2 generated by the burning of fossil fuels on the environment (atmosphere) of medium sensitivity, with no mitigation, is likely to be national (global), permanent, of slight magnitude and **minor significance.** The development site's electricity supply will be served via the local HV network although some reinforcement works will be required. This is likely to result in short term loss of supplies whilst connections are made. As a result, the adverse impact anticipated on existing and proposed properties will to be local, temporary, of slight magnitude and overall, **minor significance.**

1.121 **Water Supply** - No issues with capacity has been been raised by WWU and, therefore, the extension or enhancement of the existing services provision will facilitate the demands of the proposed development. In this case, since there are no plans to enhance the capacity supply the likely significant effect without any mitigation is considered to be **negligible**.

1.122 **Telecommunications**- No issues with capacity has been been raised by Open Reach and, therefore, the extension or enhancement of the existing services provision will facilitate the demands of the proposed development. In this case, since there are no plans to enhance the capacity supply the likely significant effect without any mitigation is considered to be **negligible**. New properties will be

served by gigabit capable internet infrastructure which is considered to have a **minor beneficial impact**.

Mitigation Measures

1.123 The following mitigation measures were incorporated into the **design:**

- **Masterplan** - Design of Masterplan layout to accommodate existing Primary Distribution Networks in order to minimise services diversions and also to accommodate existing easements and safety zones associated with Primary Distribution Networks. Design of on-site services distribution systems such that services routes will generally be under or adjacent to principal access roads and design of existing services diversions and new services infrastructure on a phased basis.

1.124 The mitigation measures proposed **during construction** include:

- **Gas, Electricity, Water and Telecoms** - During the construction phase protocols would need to be put in place to ensure that the existing services infrastructure would not be accidentally damaged by the construction works. The agreed construction protocols would be included as part of the Construction Management Plan which would be approved prior to the commencement of construction works and in conjunction with discussions with the relevant Service Providers to ensure existing infrastructure is located on site and protected during construction.
- **Vegetation Clearance** -Ensure vegetation clearance is undertaken in accordance with precautionary measures outlined in the Ecology Chapter of this ES (Chapter 7) to avoid harm to important biodiversity features.
- **Service Enhancements** - The existing network may need enhancements to accommodate the proposed development. Where enhancements are proposed to the services distribution systems these works will be included in the scope of the contract works. The provision of the enhancements would be monitored by the contractor and client at point of installation. The impact during construction, with the mitigation measures identified, would result in the likely impact on services during construction being **minor beneficial.**
- **Existing Surrounding Properties** - Occupiers of existing properties to be informed in advance if there are to be minor disruptions to services to ensure they can prepare accordingly.

1.125 The mitigation measures proposed **during operation** include:

- **Energy Strategy** – The proposed development will be designed to be energy efficient to achieve a Low Carbon or Net Zero Carbon targets which with the aim to assist climate change but also address fuel poverty and affordability for the future occupiers. This will include measures such as:
    - Building Regulations AD L1A compliance building fabric;
    - Ground source heat pumps; and
    - PV arrays and battery storage.

Residual Effects

1.126 The residential effects in relation to services can be summarised as follows:

- **During construction** - Following the application of appropriate mitigation measures all residual effects during the construction phase of the development will **negligible**.
- **During operation** - Following the application of appropriate mitigation measures all residual effects during the operational phase of the development will **negligible**

SOCIO-ECONOMIC IMPACT

1.127 The Socio-Economic chapter of the Environmental Statement analysis the socio-economic effects of the Proposed Development. The socio-economic topic areas considered within the chapter include:

- Land Use
- Access to the Site
- Population
- Economic and Employment Profile
- Deprivation
- Healthcare Services
- Education
- Recreation and Tourism
- Crime
- Potential for Adverse Reaction
- Wider Area of Influence

1.128 The chapter identifies the following community stakeholders who would likely be affected by the project:

- existing occupiers of properties within Channel View Road, Beecher Avenue and South Clive Street, which would be directly impacted upon, along with those within the immediately adjacent properties in Constant Close, Seager Drive, Chatterton Drive and Jim Driscoll Way;
- Users of The Marl; and
- Future residents

1.129 The chapter identifies the impact area of the Proposed Development as follows:

- The development site – Channel View, The Marl, Beecher Avenue and South Clive Street;
- The direct area of influence – The ward of The Grangetown; and
- The wider area of influence – the wider catchment area of Cardiff.

1.130 The chapter identifies the following socio-economic impacts of the development In respect of the identified topic areas:

Impact on Land Use

1.131 The chapter identifies that the loss of existing public open space and disruption to the public right of way network as a result of the Proposed Development has potential to have a moderate adverse environmental impact. The significant enhancement of the retained open space areas, improvements to footpaths and cycleways, and provision of new open space areas within the development would however negate this impact such that the overall impact would be minor adverse.

Impact on Access

1.132 The Proposed Development has potential to have a minor adverse impact on access during the construction phase as a result of temporary disruptions to rights of way/highways and construction traffic. These temporary impacts however can be managed through a Construction Environmental Management Plan and, together with the improvements to the highway, footpaths and cycleways, would result in a substantial beneficial impact by the operational phase.

Impact on Local Residents

1.133 A minor adverse impact is expected as a result of construction impact, however by the operational phase the enhancements to the area and housing stock would have a moderate beneficial impact on local residents.

Impact on Population Change

1.134 The Proposed Development would have a Negligible impact on population change as a result of the slight increase in permanent population.

Impact on Economic Base

1.135 The Proposed Development would provide construction employment opportunities during the construction phase, as well as provide permanent employment opportunities in housing management, maintenance and security, as well as within the commercial units within the development. The overall impact of this will be major beneficial.

Impact on Healthcare Services

1.136 The chapter identifies that, whilst there is potential for the Proposed Development to have a minor adverse impact on healthcare provision as a result of increased population, this would be mitigated to a neutral impact through additional revenue generated from residents.

Impact on Education

1.137 Whilst the Proposed Development has potential to increase pressure on school capacity as a result of an increase population of school ag children, the overall impact would be neutral once mitigation measures in the form of financial contributions have been accounted for.

Housing Provision

1.138 The Proposed Development would result in an increased provision of affordable housing, which would represent a substantial beneficial impact in this regard.

Impact on Community Facilities and Groups

1.139 The Proposed Development would have a moderate beneficial impact upon community facilities and groups as a result of anticipated increased patronage of facilities and groups.