Green Infrastructure Statement

Cardiff Sixth Form Community Hub

29 07 22

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Section 1.0

Introduction

Cardiff Sixth Form College (CSFC) is currently located in leased accommodation at Trinity Court. The College's overarching aim is to provide a permanent new home for the College's teaching space and boarding accommodation across the two chosen sites. (see Fig1.7)

CSFC intend to sensitively convert and restore the Grade II listed buildings at Merchant Place and Cory's Buildings (Site 1) to provide accommodation that meets the teaching needs, whilst also retaining and preserving the building's heritage significance.

The aim at this site is to provide high quality teaching accommodation for the learners including sports facilities, amenity space, an exam hall and other ancillary facilities. The teaching accommodation will be for a total of 500 pupils of which 400 boarders and 100 will be day pupils. The Applicant is also proposing an innovatively designed auditorium on the roof of the new building which will add interest and provide a landmark for the College.

The land at Plot 5 (Site 2) will be developed to deliver architecturally well designed new build accommodation for 400 boarders, ancillary parking and other facilities to support the education use. The college accommodation buildings will seek to maximise their development potential, whilst responding to the site constraints and wider context. This project will be brought forward under a separate planning application.

The Sites are located in Cardiff Bay.

Site 1 comprises of two adjacent buildings on a rectangular site. The first building is Merchant's Place which fronts on Bute Place and is the former Post Office Building and the second is Cory's Building which fronts on to Bute Street. Both properties were built in the late 1800s. The two buildings are Grade II Listed and form an L shape. They total circa 39,000 sqft GIA of floorspace. To the rear of the buildings is vacant and undeveloped land, which also forms part of the Site.

Section 1.1 Purpose

The purpose of this document is to develop a full and achievable Green Infrastructure Statement. This strategy will form a framework for the delivery of the statement and drawings which will inform the planning process.

This document aims to identify the current green infrastructure around the site and develop meaningful ways that the new proposal can enhance this whilst integrating within the tapestry of positive elements

within the city.

'Green infrastructure is about multi-functional, connected green spaces that make the best use of land - at the same time providing green open space for all, helping wildlife to flourish, and delivering a wide range of economic, health and community benefits. This is as important to the city as its 'grey' infrastructure of roads, buildings and power lines (CABE 2009), and helps to address many of the social and environmental issues linked to urban life.'

(Wildlife Trust Wales 2016).

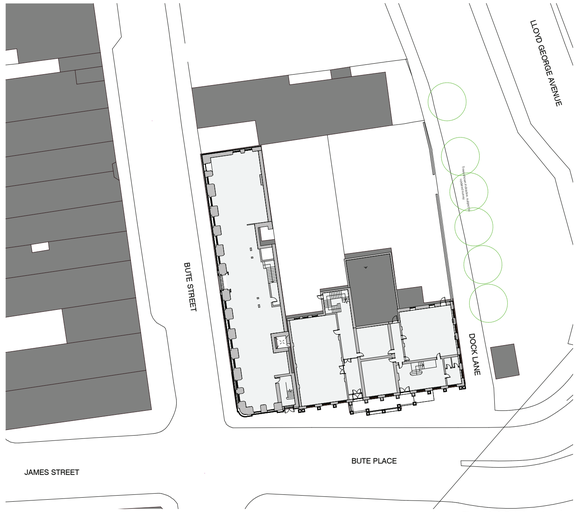


Figure1.0 Existing site plan

Section 1.2 Statutory Context

The key documents which are pertinent to this Green Infrastructure Strategy are :

City of Cardiff Council
Green Infrastructure Supplementary Planning Guidance
(SPG)
November 2017

Cardiff Biodiversity and Resilience of
Ecosystems Duty Forward Plan

Key Policy KP16 (LDP)

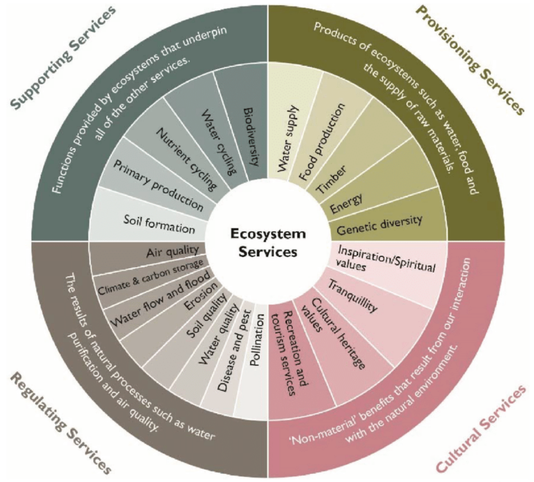


Figure1.1Ecosystem diagram

Section 1.3 Background

Expedite has been commissioned by Duke Education Group to produce a Green Infrastructure Strategy (GIs) to support proposals for a new sixth form education facility located at Merchants Place and the Cory's Building site, Bute Street, Cardiff Bay.

The site is situated between Docks Lane and Bute Street, to the north of Bute Place (A4119) and the Wales Millennium Centre.

The proposed site will be supported by a new build accommodation development at Pierhead Street which will provide lodging for a significant proportion of future students. Cardiff Sixth Form College is currently located in leased accommodation at Trinity Court, 21-27 Newport Rd .

Historically the site was originally a meadow and marshland area called Sourey and was part of Cardiff's south moors until its development in the 1820s when it formed part of the docks expansion. As identified in the supporting heritage statement for this development Both Cory's Building and Merchant Place possess considerable significance, historically and architecturally, located within a setting also of considerable heritage significance. Both buildings were designed in the Italian Renaissance style of Architecture much-loved at the time. Merchant Place is a high quality essay in pure restrained and ordered Italian Renaissance architecture, whilst Cory's Building presents the more dynamic, ornate and showy Mannerist style.

Both buildings are protected by a grade II listing and are identified as 'Landmark Buildings' within the Mount Stuart Square Conservation Area, an area little changed since its late Victorian hey-day, when Cardiff and the Docks were an economic power house.

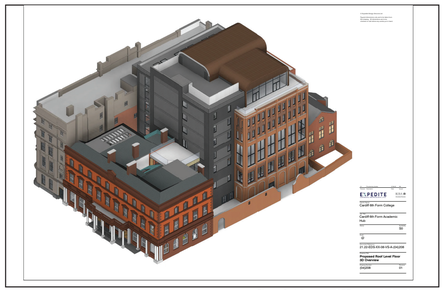


Figure1.4 Proposed 3D view of development

Figure1.5 1830 Map Cardiff

Figure1.3 Pippistrelle Bat

Figure1.6 historic photograph of site

Section 1.4 High Level View

This document will concentrate on the existing green infrastructure around the site. Due to the constraints of the historical dense built form the proposed development can have the most meaningful impact in the following ways:

1. Sustainable Transport
One of the sites greatest assets is it's location in the center of the busy city which provides opportunities for sustainable transport. These include walking, cycling, buses trains and car parking (as part of an integrated travel network).

2. Water Management
The design team has developed a comprehensive sustainable urban drainage strategy including 'Blue roof ' and an area of permeable paving to mitigate the sites drainage.

3.Re purposing Historic buildings
Careful consideration has been given to the sites existing architecture and its grade 2 listed status which makes it a green infrastructure asset in its own right. The re purposing and refurbishment has developed a strong sustainable strategy breathing new life into existing structures

4. Biodiversity and ecological systems
A Phase 1 habitat survey has been undertaken on the derelict site which has identified the existing flora and fauna found there and around the site. Carefully designed landscape interventions are proposed to aid biodiversity and improve the setting of the academy.

5. Existing Open Space
The strategy aims to utilize existing green open space to achieve integration that benefits the environment and the social wellbeing of the students and staff.

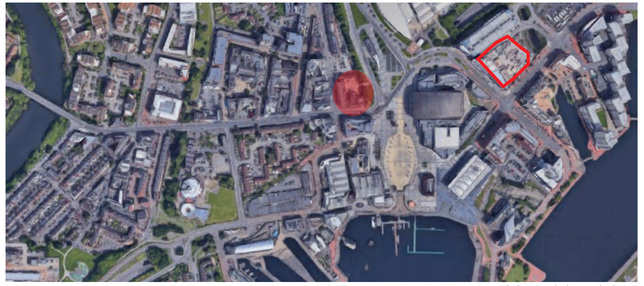


Figure1.7 Aerial photograph showing both sites

Section 1.5 Macro /Micro

The design for the Green Infrastructure works at two levels.The macro level deals with forging and enhancing connections to existing green assets such as the open green spaces (inparticular those within walking distance see fig 3.6) and the micro level of considered on-site strategies , including the renewal of listed buildings and the planting of species of plants which will aid biodiversity and bat foraging . This will aim to increase the green assets by creation of eco-habitats and knitted these into providing sustainable urban drainage and complying to new SAB legislation.

Figure1.8 Bat Meadow Bute Park

Section 1.6 Resources

As outlined in the document "Cardiff Biodiversity and Resilience of Ecosystems Duty Forward Plan", there are a range of assets that can be identified and utilized as Green Infrastructure within this strategy. A key part of the strategy of this document has been to identify these key elements and explore how they can be enhanced. Through this process it helps to identify the areas of overlap where the enhancement can aid the college staff, students, the environment and wider community going forward.

Green infrastructure elements

- Parks and Gardens*
- Allotments and orchards
- Open countryside
- Rivers, lakes, ponds and streams
- Woodland, hedgerows and scrub
- Roadside verges and street trees**
- Green roofs and walls**
- School and hospital grounds**
- Cemeteries and churchyards
- Golf courses
- Sustainable Drainage Systems (SuDS)**
- Railway embankments
- Footpaths and bridleways
- Open mosaic habitat on previously developed land (Brownfield sites)**
- Historical sites *
- Headlands and set-aside areas around agricultural fields

Wider elements pertinent to the development *
Elements immediately pertinent to the development **

Figure1.9 Public consultation event for development

Section 1.7 Existing Site Conditions

At present the site is empty and boarded up. Both buildings appear to be structurally sound with the fabric generally in a reasonable condition and therefore suitable for repair and restoration.

The fabric of the site is completely hard in nature with any existing vegetation being of limited value. All the current drainage is taken through the sewers.

There is little biodiversity or environmental quality within the site and its greatest potential assets is the mature avenue of lime trees growing adjacent to the site along Dock Lane.

Figure 2.1 Future transport development around the site

Section 1.8 Assessment of site and proposals

1.Sustainable Transport

As part of the development of the college, a comprehensive travel plan has been developed which forms a key part to the sustainable vision. The proposals for the site do not provide car parking and as such will have no vehicular access. The design of the site also aids better pedestrian links and permeability by tying into existing foot paths, cycleways and is located within walking distance from residential areas. The key objectives are set out as follows in the travel plan:

- Reduce the dependence of staff, students and visitors on travel by private car
- Promote alternative modes of travel to the car
- Promote means of travel that are beneficial to the health of staff, students and visitors to the site
- Increase awareness of the advantages of more sustainable travel
- Comply with relevant policies and guidance in terms of reducing vehicle use, vehicle emissions and congestion, and promoting sustainable travel
- Ensure that the sustainable travel objectives of the plan are reflected in the daily travel patterns of all staff, students and visitors over the long term
- Generate fewer vehicle trips than would otherwise have been the case

The benefits of this plan are as follows

- To an individual by improving their health, reducing everyday stress and cost savings
- To the staff and students through improved access to the college and a healthier and more motivated environment
- To the community by everyone involved in the preparation and implementation of the plan demonstrating their commitment to sustainability and minimizing the impact on local residents
- To the environment by enhanced local air quality with less noise, dirt and fumes brought about by fewer vehicular trips
- It will provide potential road safety benefits through a reduction in vehicular traffic, which in turn can lead to an increase in dedicated infrastructure for vehicles and a reallocation of space for active travel, public transport and green spaces
- Numerous households have no regular access to private vehicles and therefore the use of public transport, cycling and walking can play a significant role in improving accessibility and reducing social exclusion thus ensuring the viability of public transport services for those that need it
- The burning of fossil fuels is widely considered to be altering the climate, with carbon dioxide emissions from transport being a key contributor. The implementation of Travel Plans can assist in reducing the adverse impact of transport on climate change

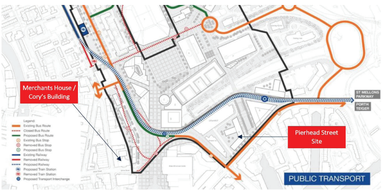


Figure 2.1 Future transport development around the site

Figure 2.2 Walking distances 5 min intervals

Figure 2.3 Cycle distances 5 min intervals

Assessment of site and proposals

2.Water Management

The water management statement complies with 'Statutory Standards for Sustainable Drainage Systems' and states:

1. **Surface water runoff is collected for use**
The scheme involves the implementation of a blue roof system. There is no intended use at the current development stage, however, the podium type construction would allow the use to be changed more easily in the future with a potential for planting (green roof) in the future. As there are no proposed planted areas within the building footprint, further reuse techniques are not considered.

2. **Surface water runoff is infiltrated to the ground**
The development proposal covers the whole red line boundary except for a very small area which is to be paved at the entrance. There are no spaces which are located a suitable distance from the building which would be suitable for infiltration without having a detrimental effect upon ground stability at the location of the foundations.

3. **Surface water runoff is discharged to a surface water body**
The closest surface water body is The Flourish to the east of the site. There is a surface water sewer adopted by DCWW which passes in closer proximity to the site that discharges to this location. A direct connection would involve the crossing of third-party land.

4. Surface water runoff is discharged to a surface water sewer highway drain, or another drainage system
There is a SW sewer located to the east of the application site, where the site will discharge at a controlled rate of 1.6l/s for all events up to the Q100 + 40% Climate Change event. This connection will be subject to a S106 application with DCWW.

5. Surface water runoff is discharged to a combined sewer
Not applicable.

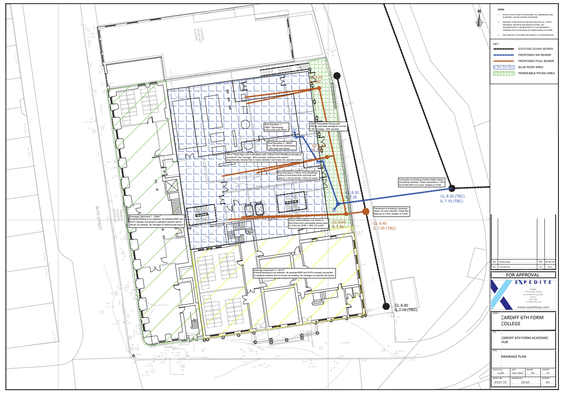


Figure 2.5 Drainage plan

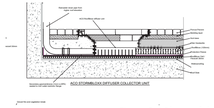


Figure 2.4 Blue roof detail

Figure 2.6 Permeable paving

Assessment of site and proposals

3.Biodiversity and ecological systems

As part of the application a bat and ecological survey has been undertaken on the site. This has identified that Pippistrelle bats use the site as a day time roost site and also that the bats forage over the site and along the trees on Dock Lane. The report found that in general the site being predominantly hard in nature was of low environmental value.

Through the sites development there will be some impact on the bats and to offset this the development will install the crevice and Bat boxes identified in fig.3.0. Careful consideration will be given to lighting in certain areas of the building and external environment in order to negate the impact on bat habitats.

At present overgrown areas will need to be removed which is a loss. To offset this it is proposed that the areas within the red line, fig 2.7 will be replanted.

This replanting will include climbing species such as Lonicera and other pollinating species to increase both the biodiversity and also include those identified as beneficial to local wild life. These will be encouraged to grow up the existing wall and metal structure on the boundary to Dock Lane. In this vein, low growing species will be incorporated within the area of permeable paving.

Figure 2.7 Landscape plan

Figure 2.8 Lonicera nitidia

Figure 2.9 Sedums

Figure 3.0 Bat boxs

Figure 3.1 Buddleja species

Biodiversity continued...

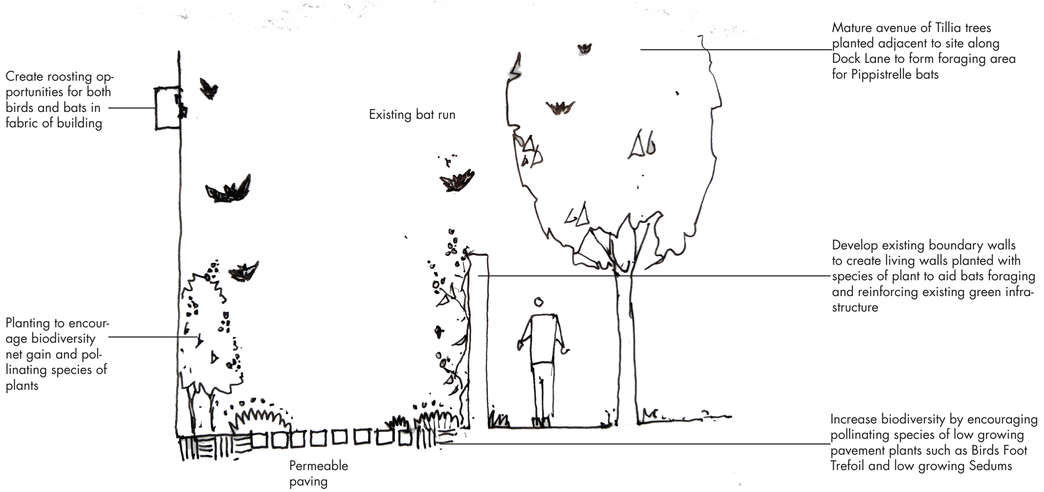


Figure 3.2 Landscape interventions

Assessment of site and proposals

4.Re-purposing Historic Buildings

As the supporting Heritage Statement identifies:

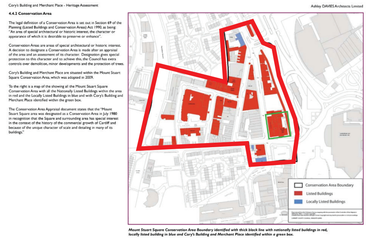
"Both Merchant Place and Cory's Building have been unused and left to dereliction for a long time. They have, subsequently, been on the market for a long time, with no commitment, to date, to bringing them back into use. Whilst their condition is still reasonable; with repair, restoration and adaptation very much a viable option, they are showing signs of degradation and dilapidation; signs which might suggest that their condition will worsen more quickly in the future if not addressed soon."

This development will set a precedent for future projects through sensitive restoration and refurbishment of the historic buildings.

"Dukes Education / Cardiff Sixth Form College have made a significant commitment to repair and restore these historic buildings and bring them back into use. The primary use will be education and teaching. Whilst this is, in itself, significant progress, the use to which they wish to put the buildings is a very positive one from a community and a heritage perspective."

The sensitive redevelopment of the prominent Merchant Cory building helps improve the conservation area . The conservation area forms a network of green infrastructure assets and by improving part of it aids the overall improvement of the city.

The reuse of existing buildings and regeneration of the site is positive in its approach to sustainability and carbon neutral design. It will also aid the development of community and sustainable investment in the area.



Mount Stuart Square Conservation Area Boundary identified with thick black line with nationally listed buildings in red, locally listed building in blue and Cory's Building and Merchant Place identified within a green box.

Figure 3.3 Conservation area plan

Figure 3.4 Post card 1907 Merchant Place

Assessment of Site and Proposals

5.Existing Open Green Space & Public Realm

Cardiff has historically been known as th 'Green City' and the surrounding area of the city around the site does have a large number of green and public open spaces (see fig 3.6) These have been identified in the Transport Statement as being within easy walking distance which the college aims to utilize. Through this approach the green spaces will benefit from the visual policing and active use bringing them to life and help limit anti social behavior taking place.

There are also areas of incidental green space and avenues of tree planting which form a network around the college. These are highlighted in the Green Infrastructure Strategy (see fig 3.9).

The existing historic form and proposed site requirements mean that there is very little opportunity to create green space with in the site it self. However, we have maximized opportunities where they do exist to increase soft landscaped areas and biodiversity.

A central area within the development has been identified for ornamental planting which will be advantageous to birds, bees and bats. Additional native 'pavement' planting is proposed in the small space adjacent to Dock Lane, this will be integrated into the permeable paving. The planting here will also comprise green walls along the site boundary and existing structure. These will be supplemented with native and pollinating species to achieve a simple robust green wall, that will also encourage bat foraging.

Figure 3.4 Low level pollinating species

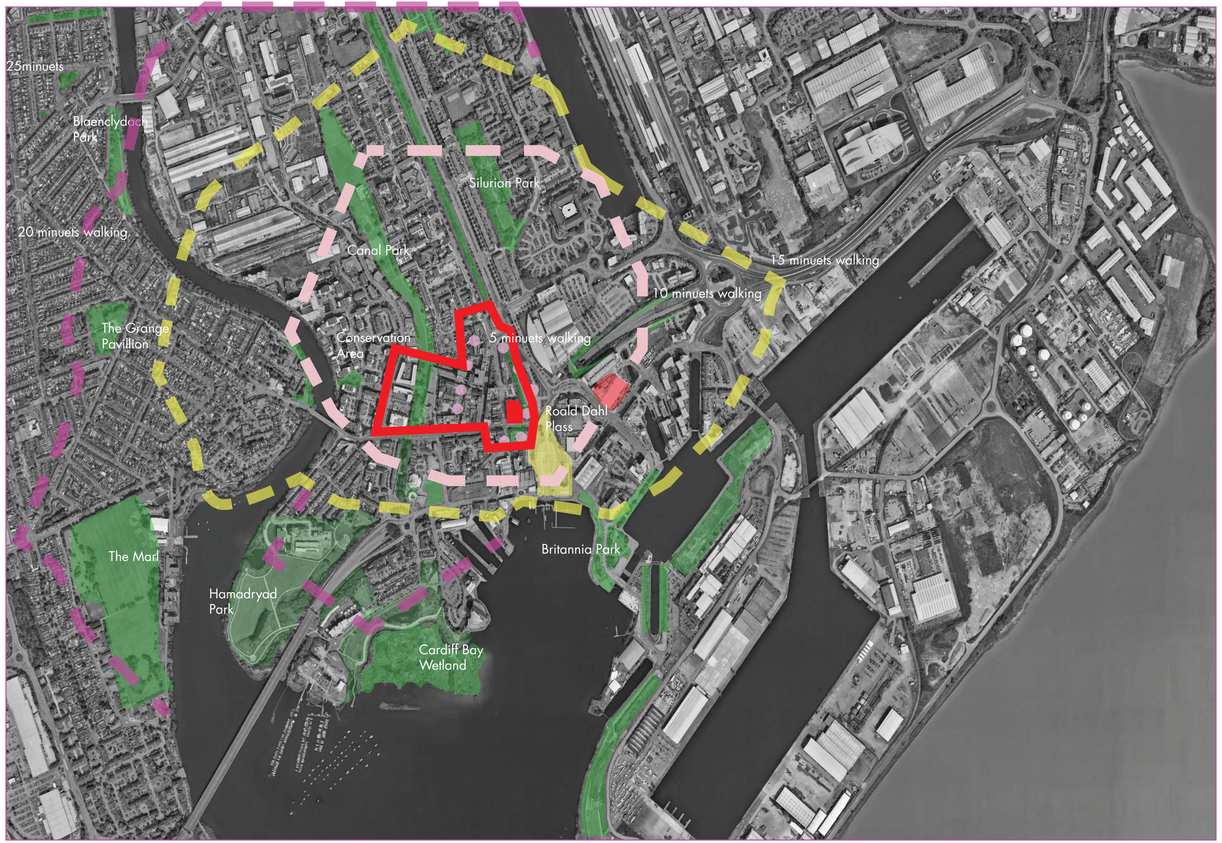


Figure 3.6 Green Infrastructure Master plan

1.9 Conclusion

When considering this development in relation to the wider impact on green infrastructure we have measured its success in light of the following

- The existing green infrastructure on the development site, and the potential impacts upon it have been adequately considered
- The benefits of green infrastructure are reconciled with benefits of the development
- Green infrastructure is integrated into proposals (see fig 3.6)
- Opportunities for enhancement of green infrastructure, for the benefit of the community, have been taken as far as is reasonably possible

These have been achieved by

- Extensive surveys have been undertaken to establish the existing green infrastructure resources, in particular an exemplar Heritage Statement and visionary Transport Statement which propose sound approaches and investment in the future of the site and Cardiff
- Assessments have been undertaken to establish the mitigation measures of the proposed scheme upon drainage and wider water management. Likewise the impact on the ecology has been identified and suitable mitigation measures undertaken, these include planting of species to aid existing foraging runs and replacement roosts for disturbed bats
- We anticipate that this strategy will form part of a pre-application process and by doing so limit the need for numerous planning conditions
- Through careful consideration to the site's listing and other assets, ie. the students, Cardiff Sixth Form College is showing a clear desire to invest in the Green infrastructure and is capitalizing on the best the site has to offer. It is also setting the bar high in relation to best practice of its delivery of historic conservation
- Ensuring that management arrangements for green infrastructure will be in place before development commences__

Figure 3.7 Cgi of finished development from Dock lane

CARDIFF SIXTH FORM COLLEGE CARDIFF

EXPEDITE