



Vito Construction

Document 1_Vito_Construction_Pre_Construction_

Project_Summary

**By Nathan Daniel and Contribution from Other Members of
Vito Construction**

P144299

Integrated Group Project:

Construction Cohorts: Project A

2019 / 2020

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1.0 Introduction

Vito Construction are a team of upcoming industry professionals, who are keen to be working with UWTSD on the Regeneration of the industrial land in SA1 Area of Swansea. We believe that with the combined ambition of ourselves at Vito Construction, UWTSD and Swansea Council we can assist in the growth of the university and Swansea by embarking on our proposed development of Student Halls of Residence.

1.1 The Need

Following the migration of UWTSD's Mount Pleasant and Townhill campuses' down to their new location on SA1 Waterfront Swansea. Since the closure of Townhill Student Accommodation in 2018 the only UWTSD owned student accommodation is Lllys Glas, contains 80 single occupancy rooms. It would only be righteous to provide suitable accommodation closer to campus and the exciting lifestyle of Swansea City Centre which is ever growingly encouraging overseas students to take the leap to embark on their studies here in Swansea.

We at Vito Construction believe that constructing a purpose build hall of residence inclusive of multifunction areas to include common spaces, restaurants, bars and shops would immerse its new residents in a friendly student lifestyle to encourage a good balance between education and enjoying student life on Swansea's waterfront. Additional to this we believe that in creating this new student hub in SA1 this will encourage students to move from the Expensive and not Fit for Purpose Mount Pleasant and Townhill HMO properties to a more comfortable, enjoyable and affordable life closer to campus.

1.2 Location

Following on from a Team Review of the SA1 Redevelopment Masterplan. [Appendix A]. We shortlisted a number of potential plots of land to accommodate our proposed Halls of residence. The plots that look most promising for the development are.

- B4
- C4
- E1
- E2
- E3



Figure 1 Map of Proposed Development

After internal deliberation between members of the Vito Construction team where visits to each of the plots was made along with a discussion on the advantages and disadvantages of each location were tabled we as a project team have come to the conclusion that the most beneficial location for our proposed development would be C4.

The reasons which assisted us to come to this conclusion are as follows.

Land at C4, SA1 Swansea, is the closest in proximity to UWTSD's Campus. This is great for overseas students to make the most of the campus' facilities including Library and IT Suites but additionally on the opposite side is a great dockside location which is perfect for multifunctional spaces to relax and socialise. As a team we feel that this location in comparison to the others is most suited due to the ease of access to University, City Centre, but also provides areas for other students of the university to use the multifunctional spaces we are looking to provide which will be ideal due to the lack of shops and eateries in close vicinity of the university. Rather than travelling back and forth from private accommodation students are in close proximity to the university, allowing for a more cost-effective university experience.

1.3 Constraints

Although C4 is a great location for the finished product of our proposed development, the construction in this location will no doubt be challenging. Reasons why this would be challenging are due to the built-up nature of the SA1 Area which would cause restrictions on storage, contractor parking facilities and material deliveries, these would need to be done within certain times along with smaller lorries to prevent causing more traffic than needed, In order to minimise the impact on the local area. Signs would need to be erected and a possible gates-man in place at all times to assist in deliveries and prevention of traffic jams.

Other constraints that could arise are the foundation types required, if piling is required this would need to be carefully planned to minimise the disruption caused from delivery of the piling rig, to vibrations and noise from the piling in progress. Excessive vibrations in this area could also cause damage to the dockside wall or basement parking facilities of nearby apartment complexes.

The proposed development is directly adjacent to the water on two sides and a road on another that the UWTSD IQ building requires access to for loading and unloading purposes. With only one side on which to really be able to access the site from this could prove to be the limiting factor when it comes to the progression of the development.

With the high wind, rain and humidity in the proposed area the materials able to be used in the construction of the development itself are rather limited. Some materials such as external render wouldn't be suitable for the development.

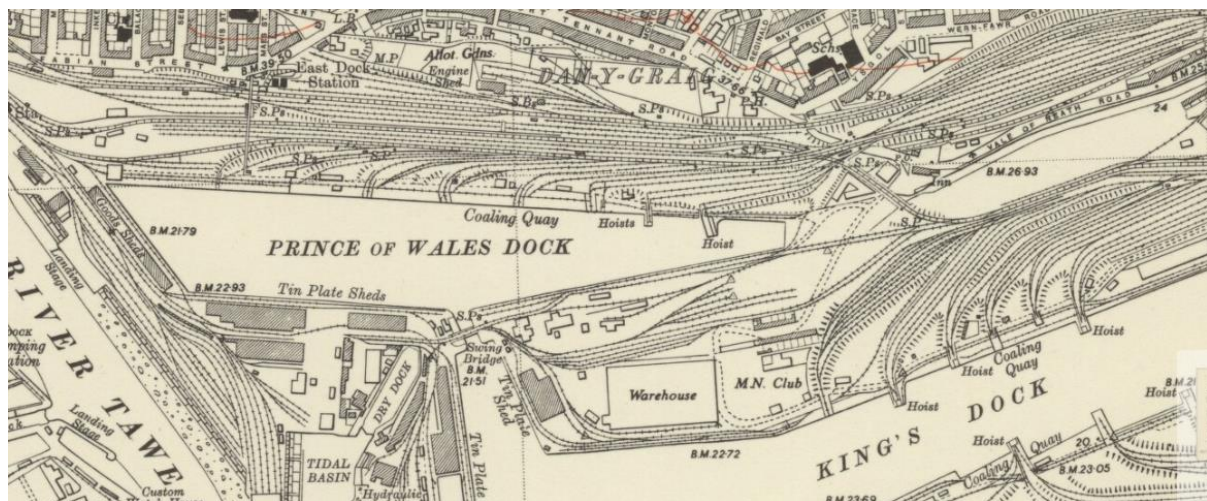
To get to the proposed development itself construction plant will have to go through domestic areas, we may therefore have to limit the size of lorries for deliveries or the number of deliveries within a certain time period. This may turn out to limit the amount of work which can occur in one day as the supply of materials may be the limiting factor for the progression of the development.

On initial visual inspection of the land it is assumed that the land at C4, SA1 has been remediated. Prior to construction begins on site further investigations will be carried out to ensure that the land is suitable for its proposed use. If excessive contamination is found remediation strategies will be completed to acceptable standards.

2.0 Site Investigation

2.1 Site Background & Location

The SA1 Development is a locally renowned brownfield development planned to rejuvenate life in to one of Swansea's most heavily industrialised areas. The proposed area has multiple land parcels up for sale to be redeveloped in to Commercial, Residential and Leisure facilities, situated on the former Docks of Swansea. As shown in *Figure 1.0* below. As mentioned above the area was heavily industrialised previously used as a large dock which exported large quantities of minerals such as Coal and Copper, sourced locally in the Vicinity of Swansea. In the mid to late 1800's the docks quickly expanded due to the increase in industrial exportation of Copper, Zinc, Iron, Tinplate and Coal, add this with the growth in transportation methods such as large steamships replacing smaller sailing vessels the docks grew along with supporting infrastructure such as Canal links and Multiple Railway lines which terminated in the current SA1 Area.



The SA1 Development is situated directly to the Southeast of Swansea City centre, and easily accessible from Fabian Way which is one of Swansea's main access roads, with great links to the M4 and remainder of South Wales. The Area is situated on the embankment of the River Tawe and around the Prince of Wales Docks.

Our chosen parcel of land within the development C4 is situated to the South of the SA1 Development on the edge of the Prince of Wales Dock. To the West of the proposed site are the existing residential high-rise apartments with basement parking facilities. To the South is the new UWTSD SA1 Campus, and to the East are road links to other undeveloped areas of the docks as well as live working docklands and warehousing facilities.

2.2 Ground Investigation

2.2.1 Archaeological Setting

Aforementioned above due to the history of Swansea and its increase in exportation this resulted in the South Wales coast being a main target during World War 2. Due to this known fact there is a high chance of explosives to still be deposited in the ground in this area.

As well as the risk mentioned above there is likely to be contamination due to previous industrial use, it is recommended that trial pits be incorporated into the ground investigation as this reveal contaminates better than any other ground investigation method.

Other than the above no other known risks are pertinent to the area.

2.2.2 Topography

Land at C4 SA1, Swansea from preliminary plans and brief site visit as a team on 23rd October 2019, has determined that the undeveloped area of land which lay approximately 5 metres from the edge of the water of the Prince of Wales docks is of compact gravel and concrete make up and of a relatively flat topographical arrangement.

2.2.3 Geology

Upon review of Site Investigation reports on the SA1 Area and data available from the British Geological Survey (BGS). The site lays on a complicated Geological make up. From historic records data of two boreholes from C4 are available through BGS.

- **Borehole 1: BGS Reference: SS69SE297**
- **Borehole 2: BGS Reference: SS69SE298**

Borehole 1.

This was situated on the northern edge of the land within close proximity of the edge of the Prince of Wales Dock, this borehole achieved a depth of 8.22M. The make-up of this borehole of varying quality ground, the initial findings were of small running gravel and dirty sand and further in-to the borehole the ground became more peat, clay and fine gravel.

Borehole 2

Data from borehole number two is fairly consistent to that found within Borehole number 1. With an achieved depth of 9.14M. it is clear to assume from the data available that the ground in this area would require piled foundations to ensure stability in the new structure.

More information in Appendices B, C & D.

2.2.4 Hydrology

South Wales has always been known for high tidal movement, having a low-lying site such as the land at C4, SA1, Swansea we have a high risk of hydrology influence.

Surface Water influence as mentioned above we are on the edge of the Prince of Wales docks and approximately 500-600m from the river Tawe to the West.

Below ground influence may differ, as data from historic bore holes provides evidence that the water table has been located at depths of 2.8m this cannot be discounted in this area to which is influenced by the

3.0. Designs

3.1 Proposal A – Preliminary Design

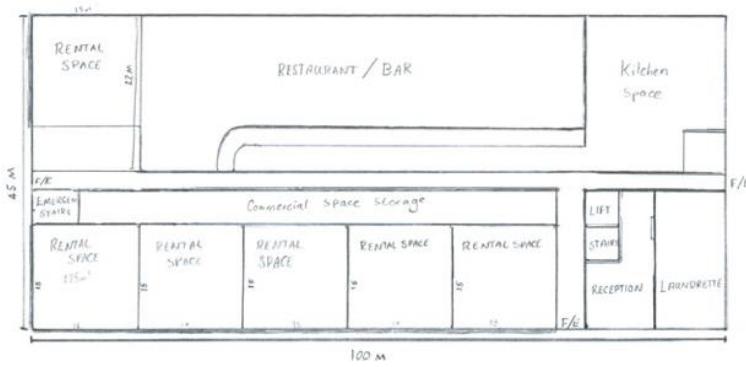


Figure 2 – Preliminary Design – Ground Floor

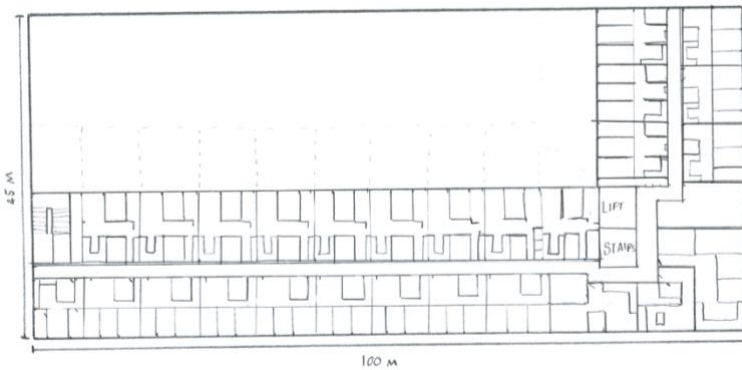


Figure 3 - Preliminary Design – Upper Floors

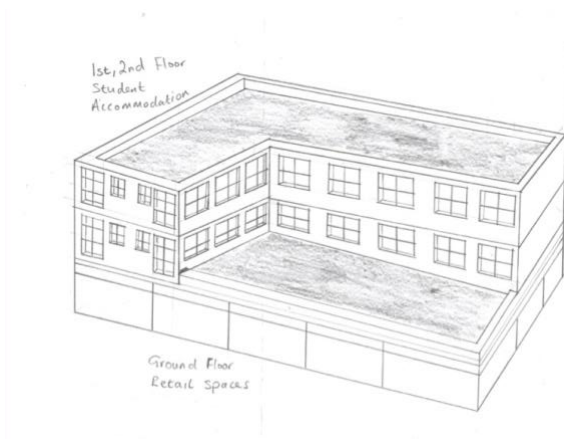


Figure 4 - Preliminary Design – Elevation 001

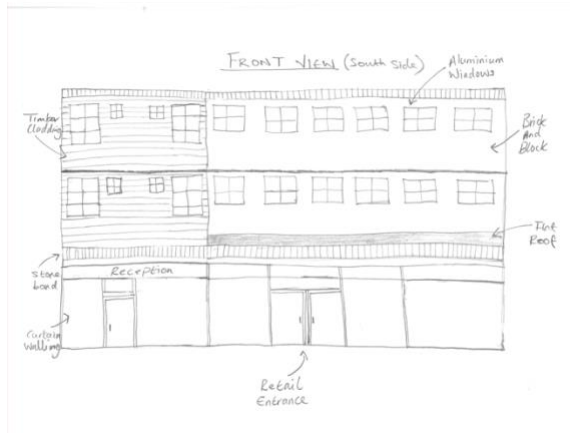


Figure 5 - Preliminary Design – Elevation 002

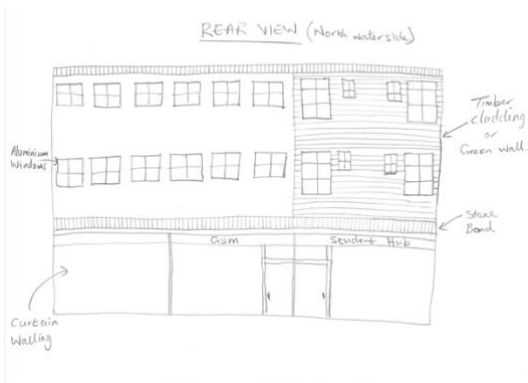
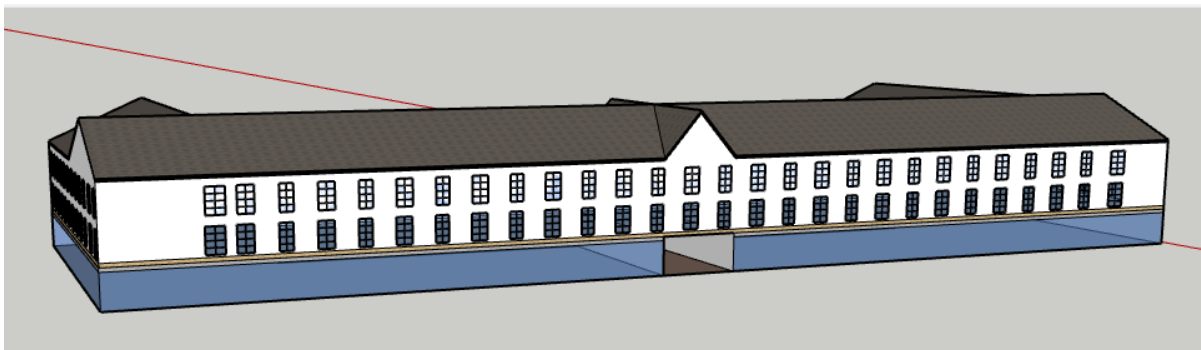


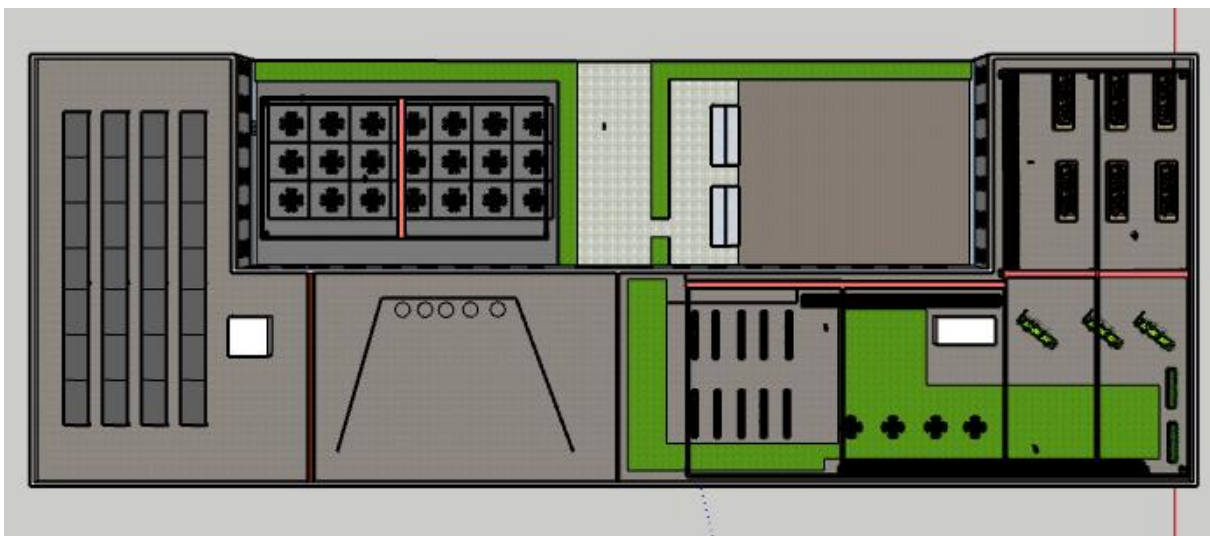
Figure 6- Preliminary Design – Elevation 003

3.2 Proposal B – Advanced Design



3.3 Proposal C – Final Design

Further information on the Final Design can be found in
Document2_Vito_Construction_Final_Design



4. Costings

4.1 Market Research

In the Swansea area there is a highly competitive Rental Market for Residential and Commercial Spaces.

University Owned Accommodation

University	Location	Room Type	Room Size	Rental Cost	Per Annum
UWTSD	Llys Glas	Standard	Medium	£ 125.00	£ 5,000.00
		Standard	Large	£ 133.00	£ 5,320.00
		Standard	Extra Large	£ 140.00	£ 5,600.00
Swansea University	Singleton - Cefn Bryn	Standard	Medium	£ 125.00	£ 5,000.00
		Standard	Large	£ 131.00	£ 5,240.00
	Singleton - Kilvey & Rhossili	Standard	Medium	£ 139.00	£ 5,560.00
		Standard	Large	£ 140.00	£ 5,600.00
	Singleton - Presli	Ensuite	Small	£ 130.00	£ 5,200.00
		Ensuite	Medium	£ 136.00	£ 5,440.00
		Ensuite	Large	£ 142.00	£ 5,680.00
	Singleton Caswell, Langland, oxford	Ensuite	Medium	£ 142.00	£ 5,680.00
		Ensuite	Large	£ 147.00	£ 5,880.00
	Singleton Penmaen & Horton	Ensuite	Medium	£ 147.00	£ 5,880.00
		Ensuite	Large	£ 152.00	£ 6,080.00
		Ensuite	Extra Large	£ 158.00	£ 6,320.00
	Bay Campus	Standard	Twin Room	£ 182.00	£ 7,280.00
		Ensuite	Medium	£ 148.00	£ 5,920.00
		Ensuite	Premium/Large	£ 154.00	£ 6,160.00
		Ensuite	1 Bed Flat	£ 202.00	£ 8,080.00
		Ensuite	1 Room 2 Bed Flat	£ 256.00	£ 10,240.00

Privately Owned Accommodation

PRIVATE	Location	Room Type	Room Size	Rental Cost	Per Annum
Student Roost	St. Davids	Ensuite	Bronze	£ 125.00	£ 5,000.00
		Ensuite	Silver	£ 139.00	£ 5,560.00
		Ensuite	Gold	£ 149.00	£ 5,960.00
		Ensuite	Platinum	£ 169.00	£ 6,760.00
Prime Student Living	Kingsway Swansea	Ensuite	Standard	£ 135.00	£ 5,400.00
		Ensuite	Classic	£ 143.00	£ 5,720.00
		Ensuite	Deluxe	£ 151.00	£ 6,040.00
		Ensuite	Premium	£ 155.00	£ 6,200.00
		Ensuite	Superor Ensuite	£ 163.00	£ 6,520.00
		Ensuite	Standard Studio	£ 185.00	£ 7,400.00
		Ensuite	Classic Studio	£ 189.00	£ 7,560.00
		Ensuite	Deluxe Studio	£ 195.00	£ 7,800.00
		Ensuite	Premium Studio	£ 199.00	£ 7,960.00
		Ensuite	Superior Studio	£ 209.00	£ 8,360.00
			Average Cost	£ 156.91	£ 6,276.47

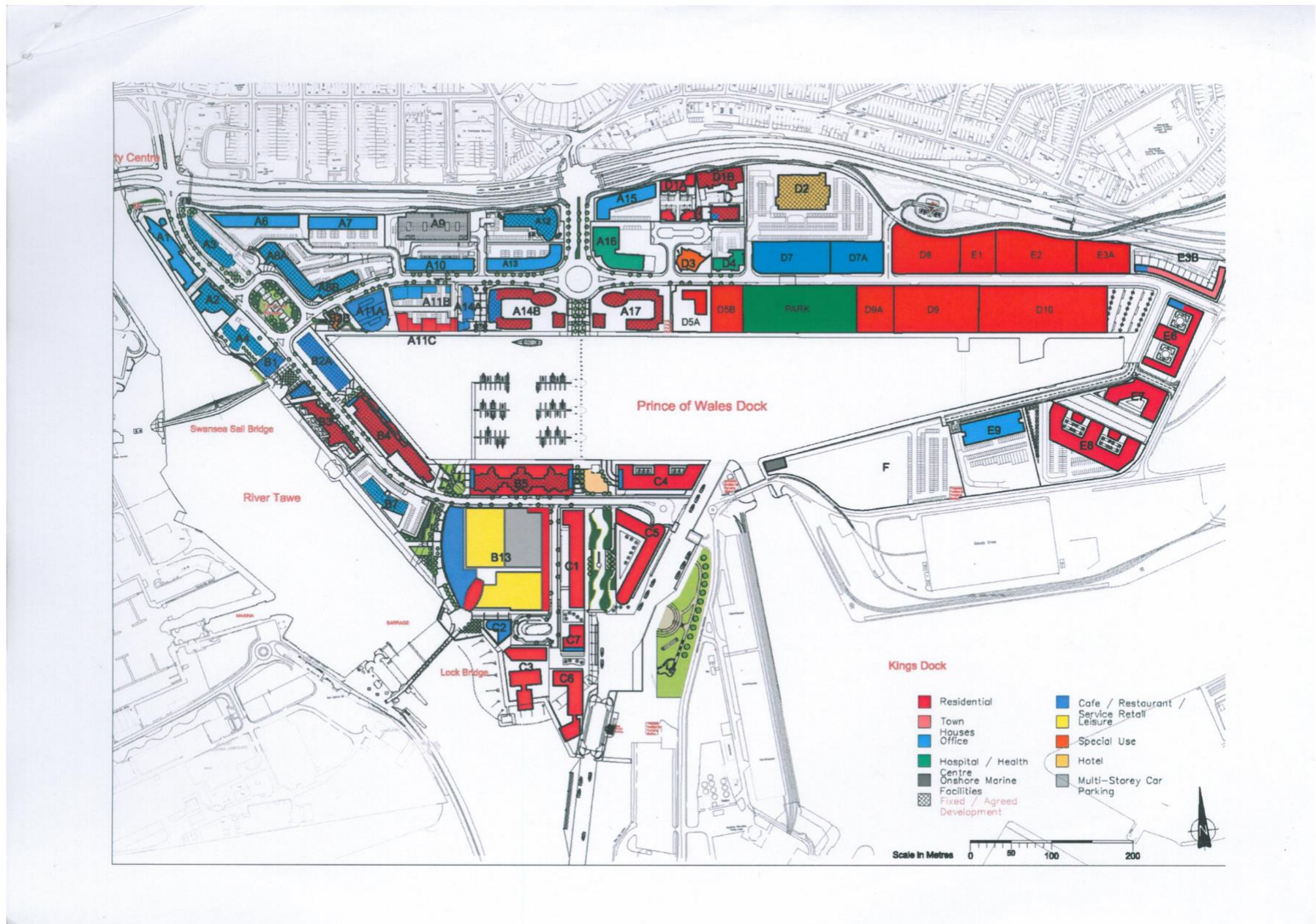
Commercial Rental Values in Swansea

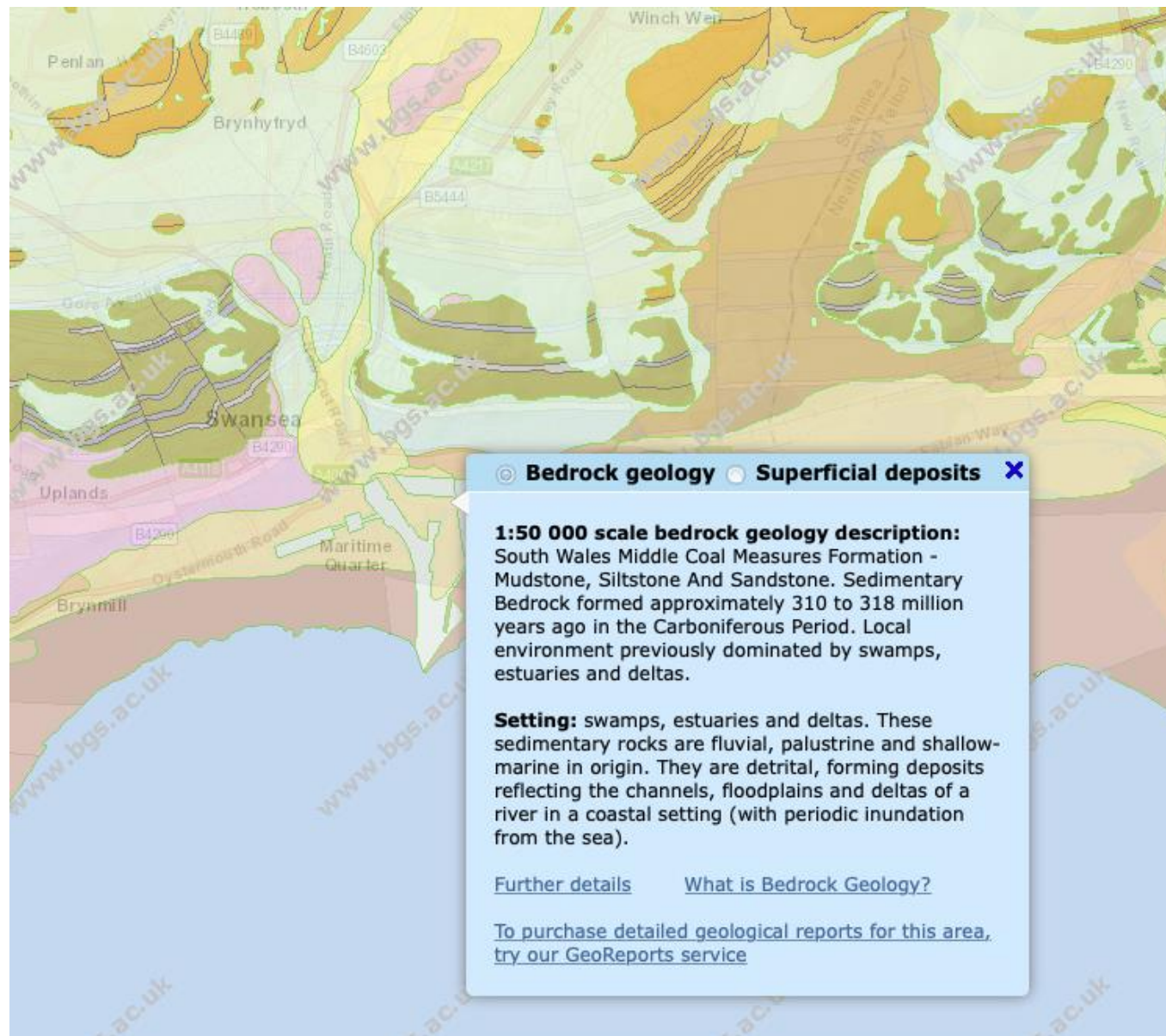
Location	Type	£ / Sq M	£ / Sq Ft	Per Annum
Parc Tawe	Kiosk Units	£ 405.41	£ 37.50	£ 15,000.00
Former Mariner Street Car Park	Mixed	£ 193.08	£ 10.75	£ 33,500.00
6 The J Shed, sa1	Mixed	£ 127.78	£ 11.87	£ 11,500.00

Average	£ 242.09	£ 20.04	£ 20,000.00
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Please see the following documents for more information;

Document 2_Vito_Construction_Final_Design







111121 11/11/2010 10:00 0:00 A.S.W.L.A.L. 0:00

RECORD OF ~~SHALLOW~~ BORES FOR MINERALS

County: Gloucestershire

Quarter Sheet: 24 NW

1" N.S. Grid Map: 247

1" O.S. Grid Map:

Name and Number given by owner (if different from above): Swansea Harbour, East Docks

Town or Village: Swansea

Exact site: see tracing

Purpose for which made: location of foundations for berths, etc.

Level at which bore commenced relative to O.D.: 88.00 If not down bore, state if horizontal or up

Made by: for Messrs.

Information from: Mr. McChewie (Resident Engineer)

Date received: 1/10

Specimens: Dip of strata:

Geological Classification	DESCRIPTION	Thickness	Dip
~~SS 69 SE/292~~	No 1 Bore 83.0 A.D. 66469 92921	4.0	1
	Small running dirty sand	8.50	12.50
	coarse sand with stones	9.50	23.00
~~SS 69 SE/293~~	No 2 Bore 85.97 A.D. 66635 92984	6.00	12.50
	mid. & gravel	6.00	12.50
	gravel	15.00	15.00
	clay	1.50	16.50
	gravel	7.50	24.00
	coarse sand & stones		
~~SS 69 SE/294~~	No 3 Bore 100.37 A.D. 66959 92950	15.00	10.00
	sand & stones	3.00	15.00
	peat & clay	13.00	25.00
	clay	2.00	27.00
	gravelly sand	5.00	34.00
	hard sandy clay with some stones	4.00	38.00
~~SS 69 SE/295~~	No 4 Bore 104.11 A.D. 67179 92834	7.00	7.00
	rippled ashes from works	12.00	19.00
	peat & sand	1.00	20.00
	hard sandy clay		
~~SS 69 SE/296~~	No 5 Bore 99.64 A.D. 67129 92827	1.50	1.50
	chalk & cinders	2.00	4.50
	cinders	2.00	9.50
	small gravel	7.50	16.00
	peat	2.00	18.00
	sand & blue clay	6.00	24.00
	clay & sand with some stones	5.00	29.00
	fine gravel	2.00	31.00
	clay & fine gravel	2.00	33.00
	clay & small gravel	4.00	37.00
	gravel		

Geological Survey and Museum, SOUTH KENSINGTON, LONDON, S.W.7.

G.S.M. Office File No. Site marked on 6" Map by Site marked on 1" Map by

111121 11/11/2010 10:00 0:00 A.S.W.L.A.L. 0:00

RECORD OF ~~SHALLOW~~ BORES FOR MINERALS

County: Gloucestershire

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Purpose for which made: location of foundations for berths, etc.

Level at which bore commenced relative to O.D.: 88.00 If not down bore, state if horizontal or up

Made by: for Messrs.

Information from: Mr. McChewie (Resident Engineer)

Date received: 1/10

Specimens: Dip of strata:

Geological Classification	DESCRIPTION	Thickness	Dip
~~SS 69 SE/297~~	No 6 Bore 74.82 A.D. 66891 92810	4.00	4.00
	clay	5.00	9.00
	peat	12.00	17.00
	fine clay	10.00	27.00
	clay & sand with stones		
~~SS 69 SE/298~~	No 7 Bore 81.60 A.D. 66744 92809	7.50	7.50
	clay	1.50	1.50
	sand & gravel	3.00	4.50
	gravel	2.00	6.50
	sand & gravel	10.00	16.50
	clay & sand with stones	6.00	22.50
	coarse sand with some stones		
~~SS 69 SE/299~~	No 8 Bore 82.60 A.D. 66731 92804	4.00	4.00
	clay	4.00	8.00
	clay & sand	1.00	9.00
	sand & gravel	3.00	12.00
	gravel	3.00	15.00
	sand & gravel	5.00	20.00
	coarse sand with some stones	10.00	30.00
~~SS 69 SE/300~~	No 9 Bore 81.12 A.D. 66643 92895	5.00	5.00
	clay	6.00	11.00
	gravel	3.50	14.50
	sand & gravel	12.00	26.50
~~SS 69 SE/301~~	No 10 Bore 84.60 A.D. 66822 92878	5.00	5.00
	clay	7.50	12.50
	sand & some gravel	14.00	26.50
~~SS 69 SE/302~~	No 11 Bore 77.58 A.D. 66710 92481	1.00	1.00
	sand & gravel	11.00	12.00
	sand with fine gravel	2.00	14.00
	gravel with some sand	2.00	16.00
	sand & gravel	1.00	17.00
	blue clay	2.00	19.00
	coarse sand with some stones	2.00	21.00
~~SS 69 SE/303~~	No 12 Bore 76.47 A.D. 66712 92455	3.00	3.00
	coarse gravel	2.00	5.00
	running sand	5.00	10.00
	gravel	4.00	14.00
	coarse sand & clay with stones	3.00	17.00
	sand & fine gravel	4.00	21.00
	good hard sandy clay		

SS69SE 292-305
County Glamorgan
Quarter Sheet 24 EW

DESCRIPTION	LOCAL	THICKNESS	DEPTH
No 13 Bore	74.68 a.p.d. 66757 92375	1.00	1.00
fine brown sand		2.00	3.00
fine sand		3.00	6.00
fine sand		2.00	8.00
fine sand		1.00	9.00
fine sand with some small stones		6.00	25.00
No 14 Bore	73.56 a.p.d. 66740 92314	1.00	1.00
fine brown sand		2.00	3.00
fine sand		3.00	6.00
fine clay		2.50	8.50
fine sand		1.00	9.50
fine sand and rock gravel		6.00	15.50
fine sand and clay		2.50	18.00
fine sand and fine gravel		2.00	20.00

SS69SE 292-305
Quarter Sheet 24 EW

Price of Wales Dock, Swansea

Best docks, Swansea.

(Admitted 1980) from Mr. Schenk.

DESCRIPTION	LOCAL	THICKNESS	DEPTH
No 1 Bore	83.00 O.D.	1.00	1.00
fine sand		2.00	3.00
fine sand		3.00	6.00
fine sand		2.00	8.00
fine sand		1.00	9.00
fine sand with some small stones		6.00	25.00
No 2 Bore	88.97 O.D.	1.00	1.00
fine brown sand		2.00	3.00
fine sand		3.00	6.00
fine sand		2.50	8.50
fine sand		1.00	9.50
fine sand and rock gravel		6.00	15.50
fine sand and clay		2.50	18.00
fine sand and fine gravel		2.00	20.00
No 3 Bore	100.37 O.D.	1.00	1.00
fine brown sand		2.00	3.00
fine sand		3.00	6.00
fine sand		2.50	8.50
fine sand		1.00	9.50
fine sand and rock gravel		6.00	15.50
fine sand and clay		2.50	18.00
fine sand and fine gravel		2.00	20.00
No 4 Bore	110.41 O.D.	1.00	1.00
fine brown sand		2.00	3.00
fine sand		3.00	6.00
fine sand		2.50	8.50
fine sand		1.00	9.50
fine sand and rock gravel		6.00	15.50
fine sand and clay		2.50	18.00
fine sand and fine gravel		2.00	20.00
No 5 Bore	119.64 O.D.	1.00	1.00
fine brown sand		2.00	3.00
fine sand		3.00	6.00
fine sand		2.50	8.50
fine sand		1.00	9.50
fine sand and rock gravel		6.00	15.50
fine sand and clay		2.50	18.00
fine sand and fine gravel		2.00	20.00
No 6 Bore	129.82 O.D.	1.00	1.00
fine brown sand		2.00	3.00
fine sand		3.00	6.00
fine sand		2.50	8.50
fine sand		1.00	9.50
fine sand and rock gravel		6.00	15.50
fine sand and clay		2.50	18.00
fine sand and fine gravel		2.00	20.00
No 7 Bore	134.60 O.D.	1.00	1.00
fine brown sand		2.00	3.00
fine sand		3.00	6.00
fine sand		2.50	8.50
fine sand		1.00	9.50
fine sand and rock gravel		6.00	15.50
fine sand and clay		2.50	18.00
fine sand and fine gravel		2.00	20.00
No 8 Bore	144.40 O.D.	1.00	1.00
fine brown sand		2.00	3.00
fine sand		3.00	6.00
fine sand		2.50	8.50
fine sand		1.00	9.50
fine sand and rock gravel		6.00	15.50
fine sand and clay		2.50	18.00
fine sand and fine gravel		2.00	20.00
No 9 Bore	154.24 O.D.	1.00	1.00
fine brown sand		2.00	3.00
fine sand		3.00	6.00
fine sand		2.50	8.50
fine sand		1.00	9.50
fine sand and rock gravel		6.00	15.50
fine sand and clay		2.50	18.00
fine sand and fine gravel		2.00	20.00
No 10 Bore	164.00 O.D.	1.00	1.00
fine brown sand		2.00	3.00
fine sand		3.00	6.00
fine sand		2.50	8.50
fine sand		1.00	9.50
fine sand and rock gravel		6.00	15.50
fine sand and clay		2.50	18.00
fine sand and fine gravel		2.00	20.00
No 11 Bore	173.76 O.D.	1.00	1.00
fine brown sand		2.00	3.00
fine sand		3.00	6.00
fine sand		2.50	8.50
fine sand		1.00	9.50
fine sand and rock gravel		6.00	15.50
fine sand and clay		2.50	18.00
fine sand and fine gravel		2.00	20.00
No 12 Bore	183.52 O.D.	1.00	1.00
fine brown sand		2.00	3.00
fine sand		3.00	6.00
fine sand		2.50	8.50
fine sand		1.00	9.50
fine sand and rock gravel		6.00	15.50
fine sand and clay		2.50	18.00
fine sand and fine gravel		2.00	20.00

SS69SE/1#
292-305

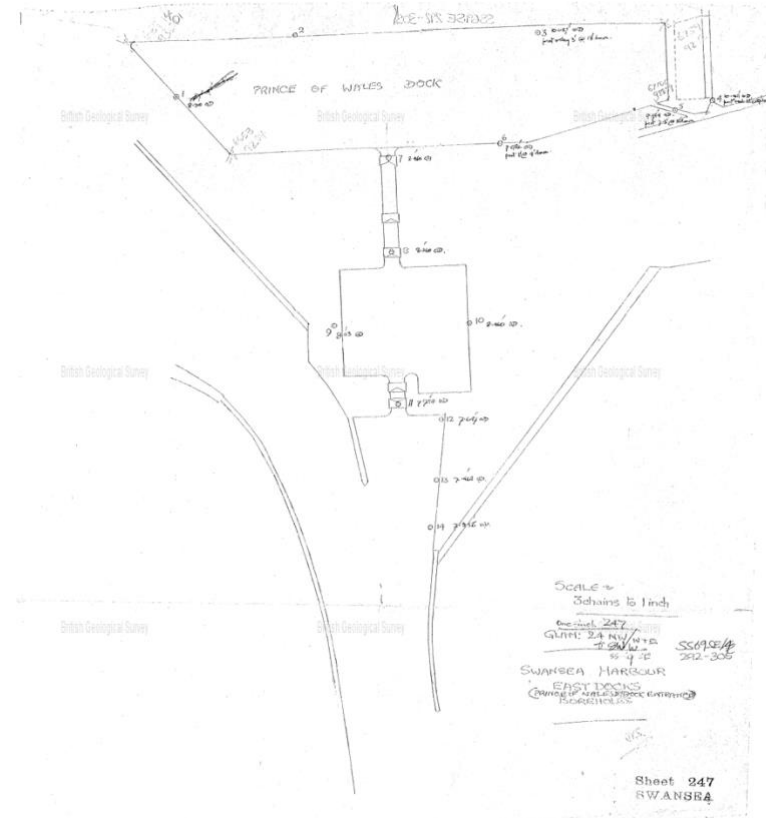
British Geological Survey Prince of Wales Dock, Swansea (continued)

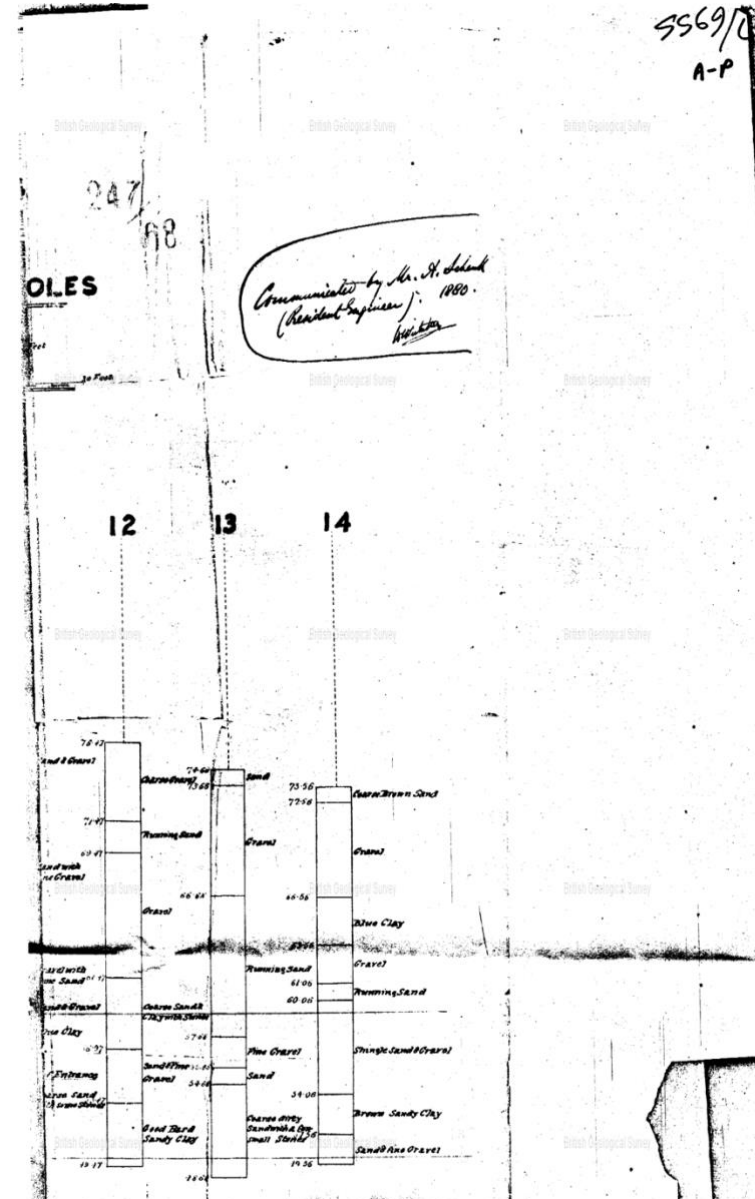
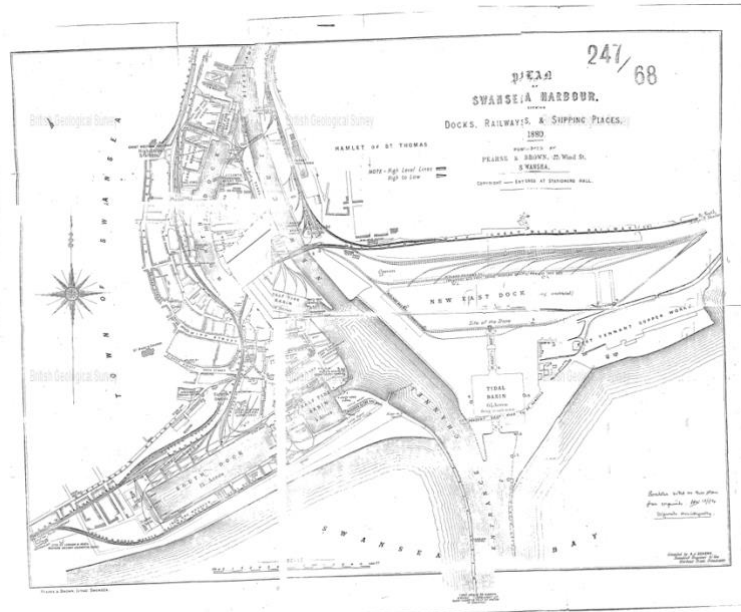
No. 13 Bore 74.68 OD. ? 7.468 OD.

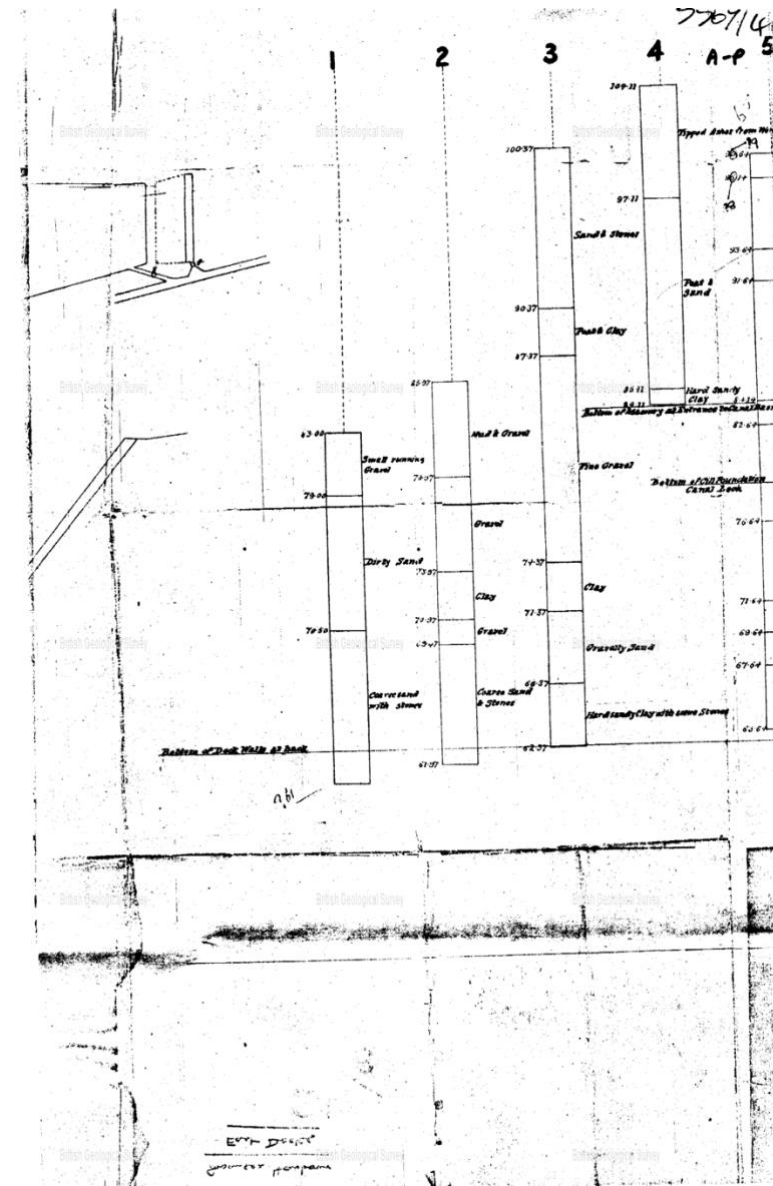
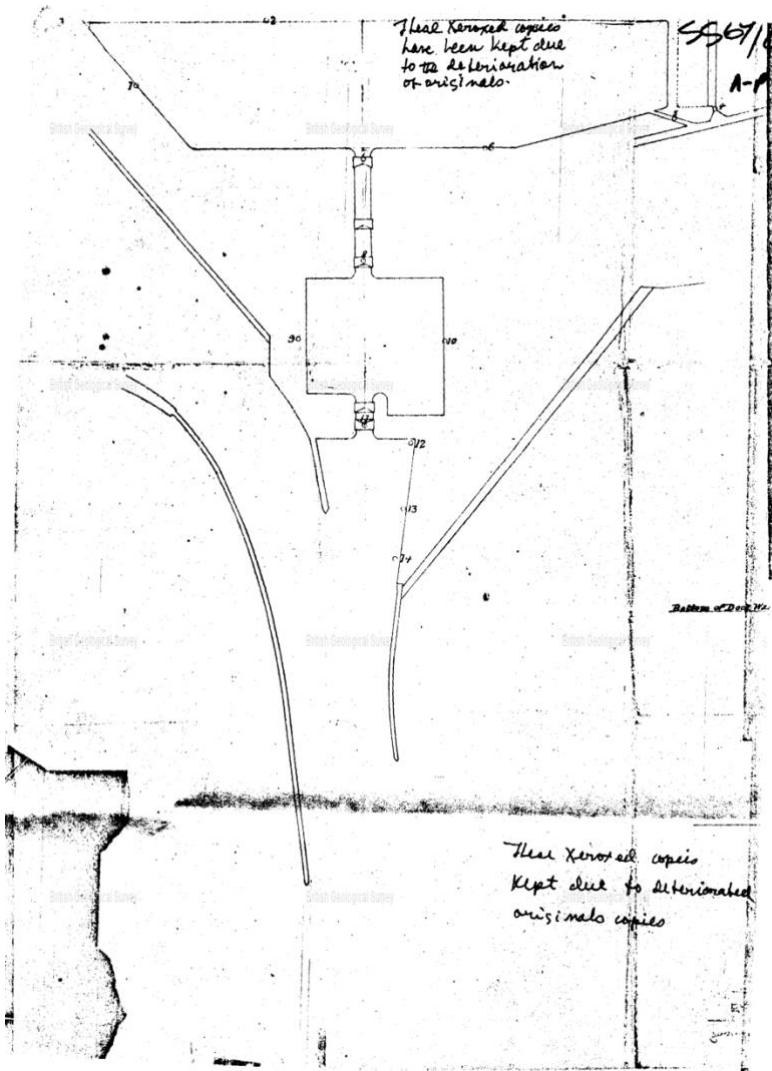
sd	1.0	1.0
gravel	7.0	8.0
running sd	9.0	17.0
fine gravel	2.0	19.0
sd	1.0	20.0
see disty sd in a few small btt.	6.0	26.0

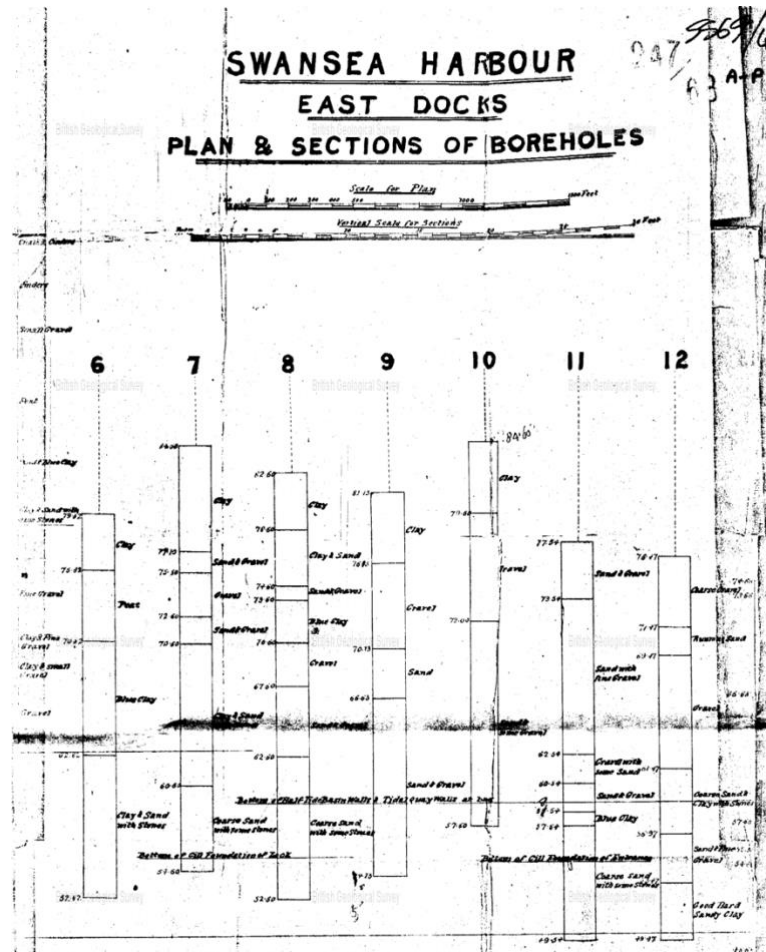
No. 14 Bore 73.56 OD. ? 7.356 OD.

see bore sd	1.0	1.0
gravel	6.0	7.0
blue clay	3.0	10.0
gravel	2.8	12.8
running sd	1.0	13.8
slightly sd gravel	6.0	19.8
brown clay clay	2.5	22.3
sd fine gravel	2.0	24.3











Vito Construction

Vito_Construction_Final_Design

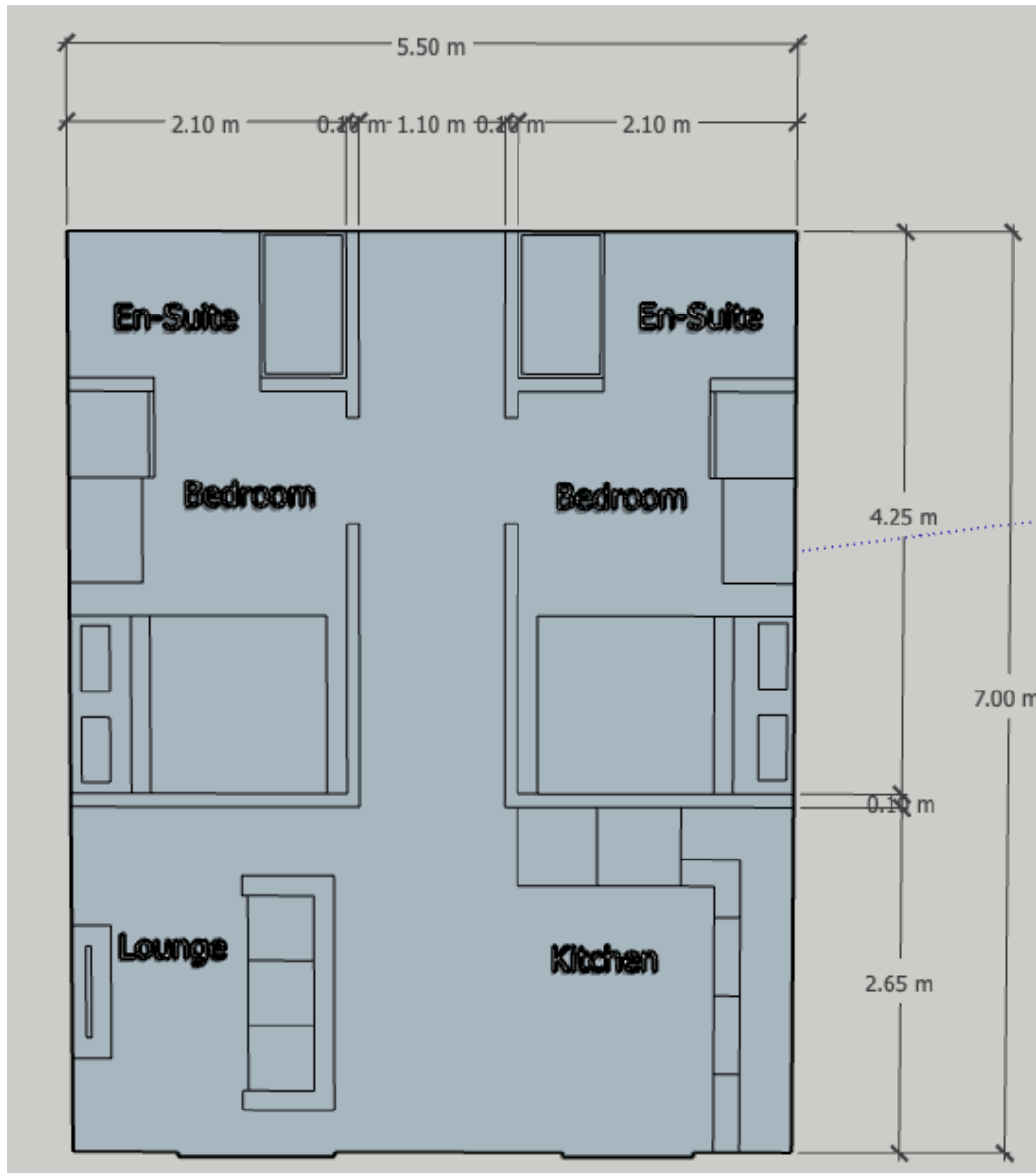
By Nathan Daniel

P144299

Integrated Group Project:

Construction Cohorts: Project A

2019 / 2020

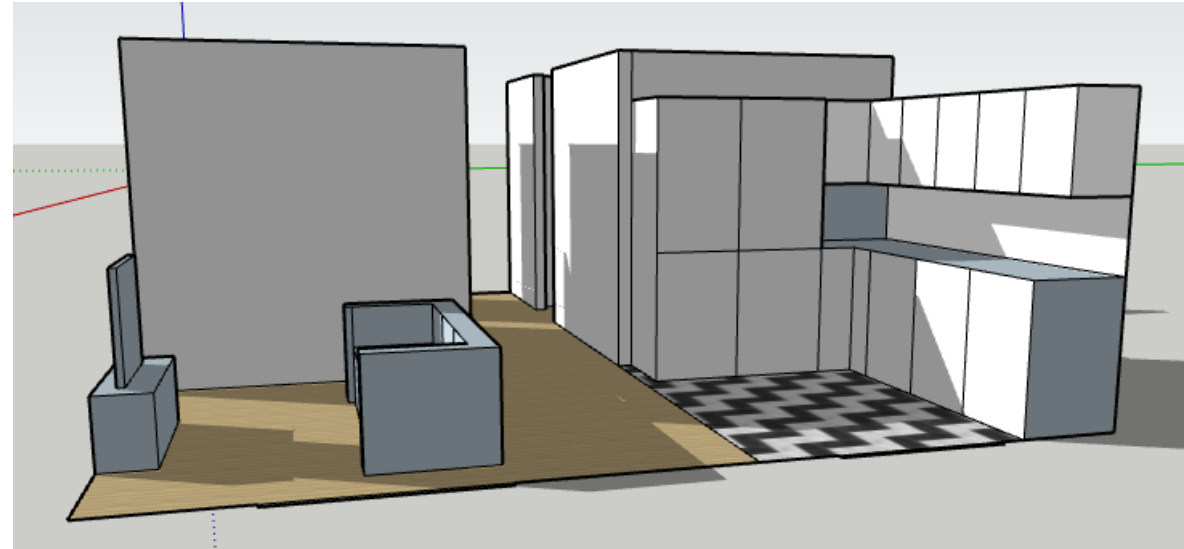
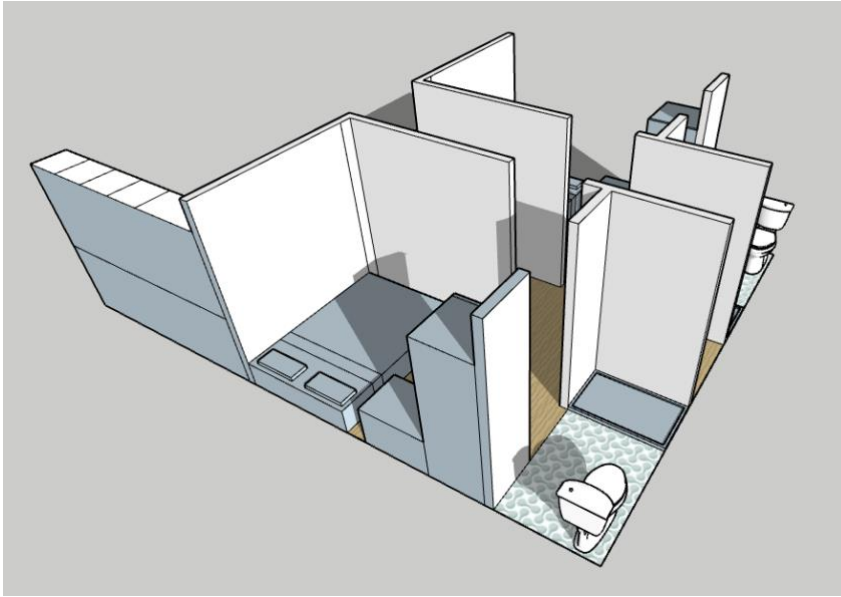


Individual Apartment Layout

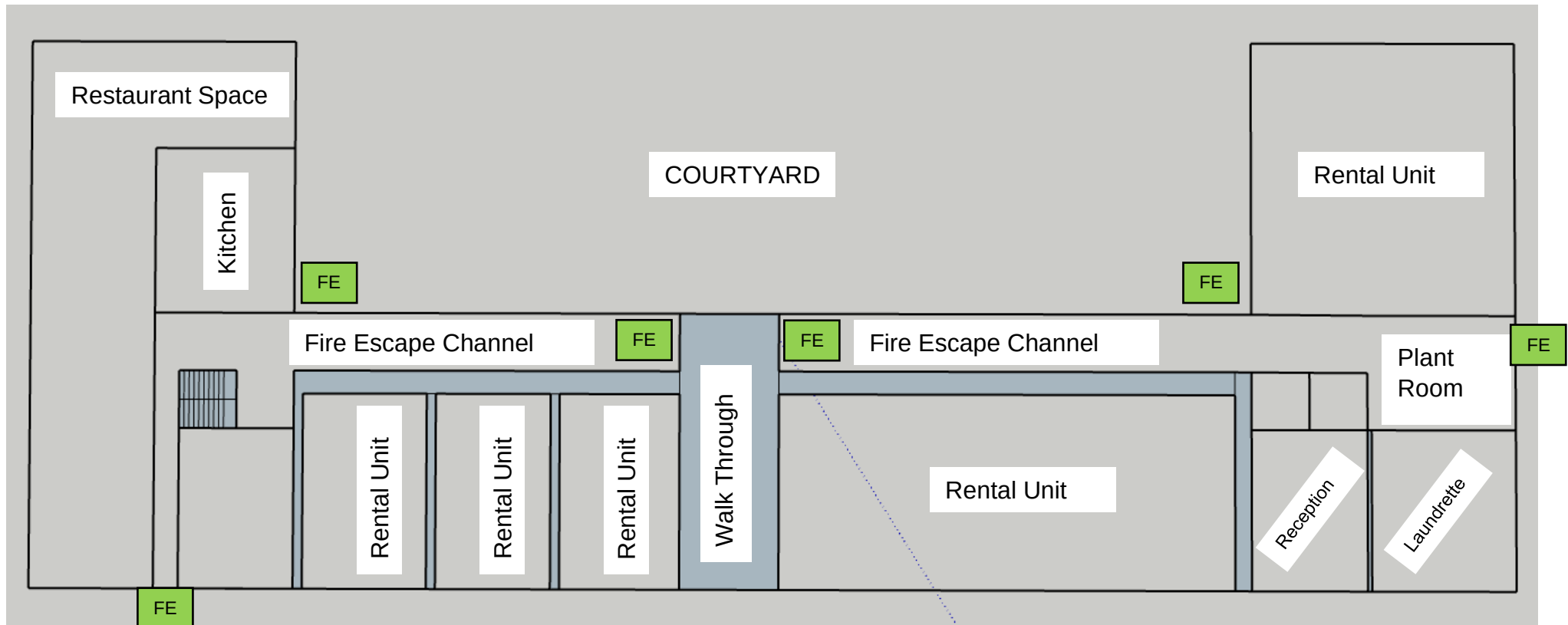
This design was utilised as it is design friendly for repetitive use in the use of Apartment/Student Living.

The design was worked around the use of pod type systems for the en-suite bathrooms and kitchens to enable more off-site construction to be used, in turn reducing build cost and the impacts on the local areas.

Title	Individual Apt Layout_001
Date	Feb_2020
Drawn By	ND
Scale	N T S



Title	APT_3D Model
Date	Feb_2020
Drawn By	ND
Scale	N T S



GF Layout

The ground floor is designed primarily around a number of fire exit locations and enabling the building to have a high volume of commercial space to increase the rental yield.

A compartmentalised fire channel has been designed, where all fire escapes from upper floors lead down to which lead to 3 fire exits on each end of the building.



DENOTES FIRE EXIT

Title	GF_Layout_001
Date	Feb_2020
Drawn By	ND
Scale	N T S



Upper Floor(s)

The upper floors are identically stacked. Each of which contain 41 individual apartments.

The corridors have windows at each end to allow natural light to flood in, but due to the size of the building, doors and segregation has to be introduced to ensure fire regulations are met by compartmenting sections of each floor.

Title	Upper Floors Layout 001
Date	Feb 2020
Drawn By	ND
Scale	N T S



Elevation Facing the Waterfront

A U Shape building seemed best fit to enable more apartments to have a view of the water and docks, whilst ensuring there was plenty of natural light entering the building.

The ground floor accommodates a walk-through from King's Road to the water side and also the buildings leisure facilities of restaurant and al-fresco dining areas at the waterside.

Title	Elevation_001
Date	Feb_2020
Drawn By	ND
Scale	N T S



Title	Elevation_002
Date	Feb_2020
Drawn By	ND
Scale	N T S



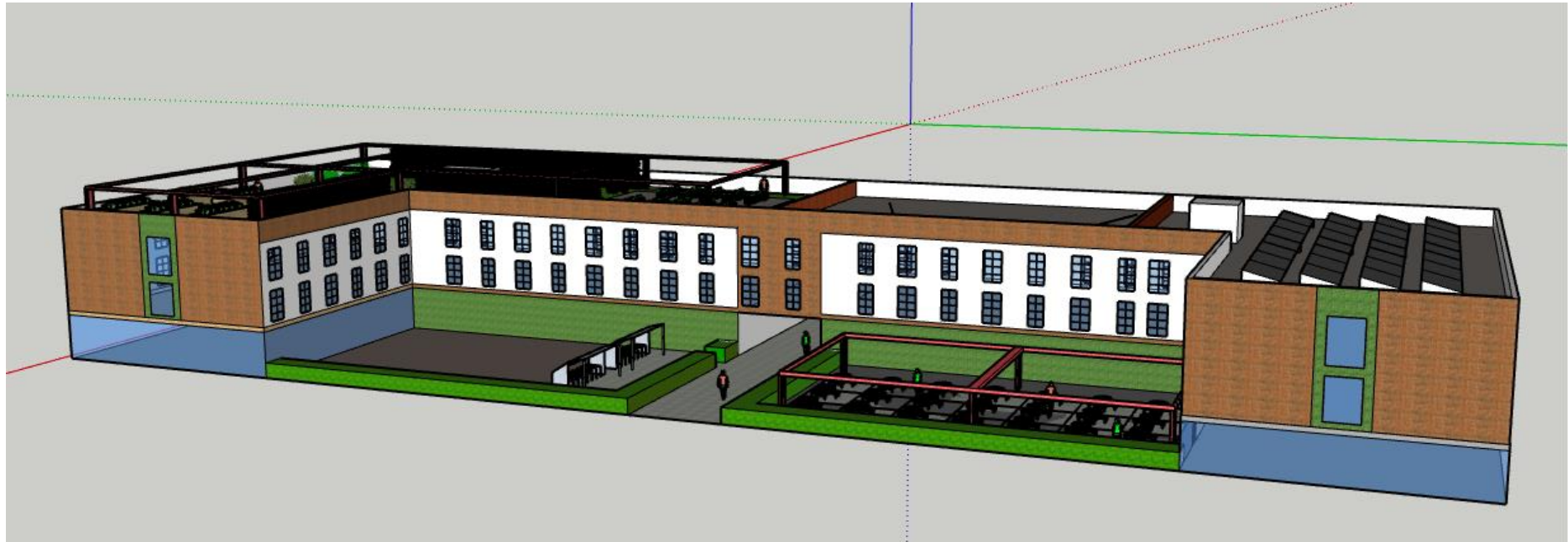
Elevational Treatments

Due to the sensitivity of the envisaged look on SA1 Area, it was important to ensure the elevational treatments were carefully considered upon the design of the building.

Curtain walling is the primary cladding for the ground floor to allow light to flood through and the views across the dock to be fully appreciated, in addition to this green walling has been used to soften the look and create a feature to the leisure spaces.

To divide the curtain walling and the upper storeys, a stone band is looking to be utilised to create a smooth transition in -o the brick and render finish. Due to the industrial heritage of the site it was important to keep this in mind with the design by utilising the same style brick as the local J-Shed Building and tall industrial styled windows.

Title	Elevation_003
Date	Feb_2020
Drawn By	ND
Scale	N T S

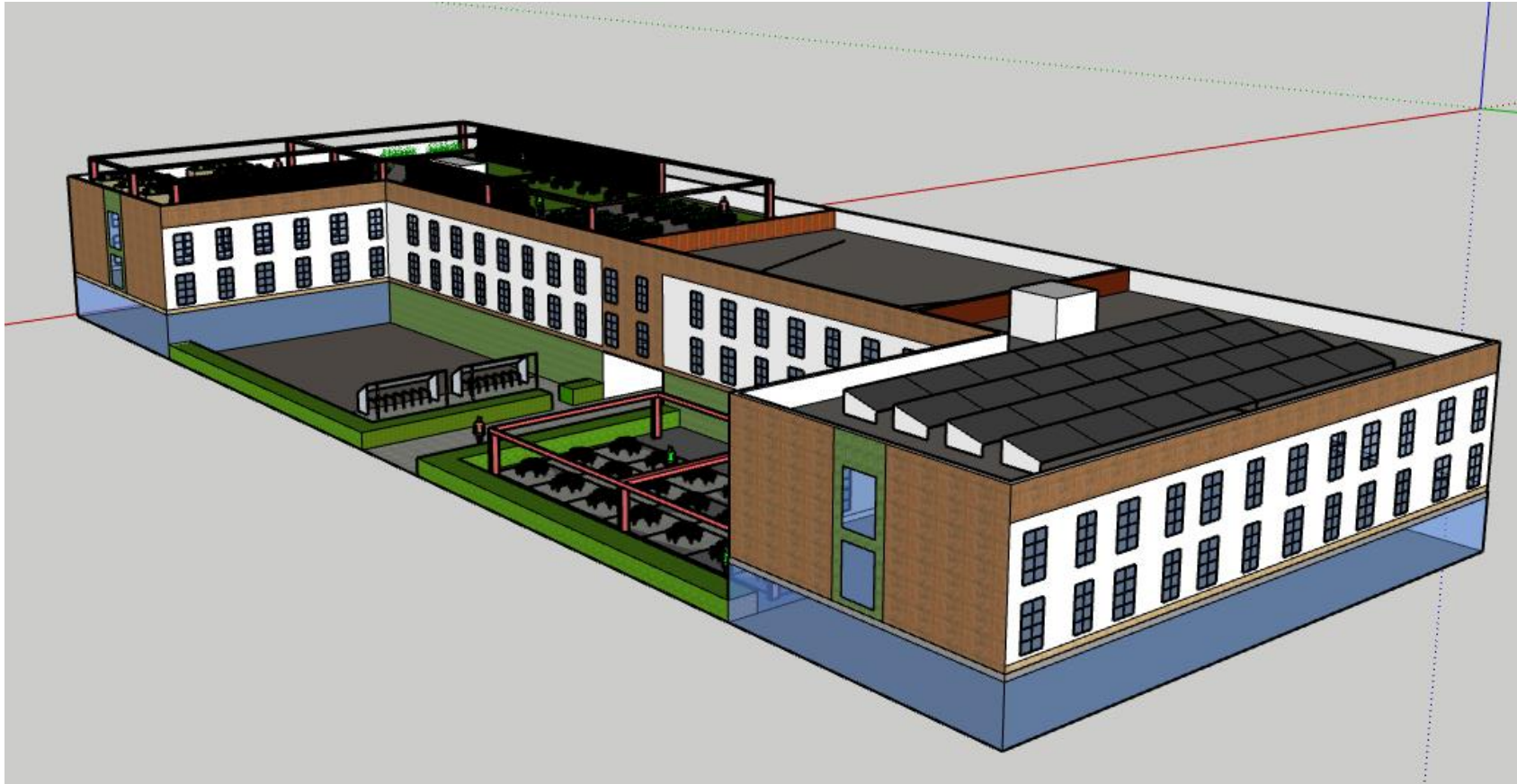


Ground Floor Courtyard

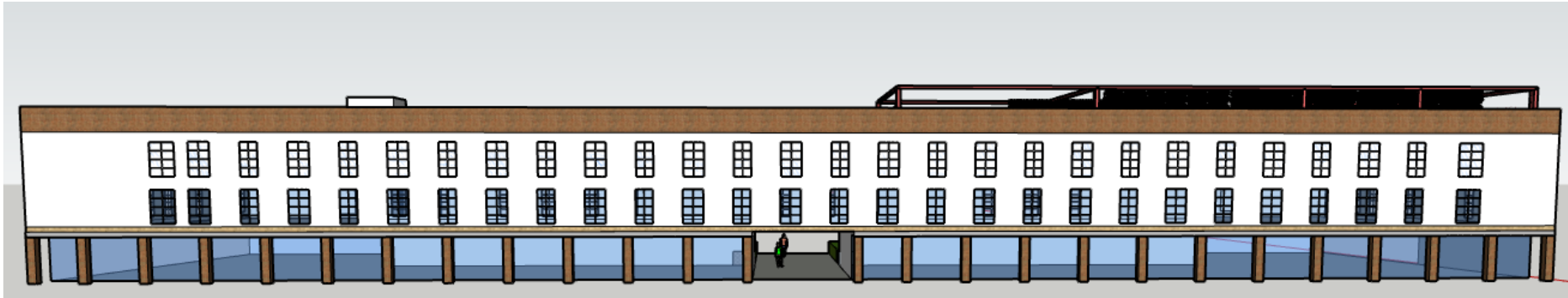
The area known and indicated as the courtyard as previously mentioned allows al fresco dining and encourages a connection between the UWTSD SA1 Waterfront Campus, the accommodation, leisure facilities and the waterfront itself.

The Courtyard includes outdoor seating for the restaurant facility available for rental, and space for students who reside in the complex to relax and spend time studying outdoors along with cycle storage facilities

Title	Elevation_004
Date	Feb_2020
Drawn By	ND
Scale	N T S



Title	Elevation_005
Date	Feb_2020
Drawn By	ND
Scale	N T S



Elevational Treatments

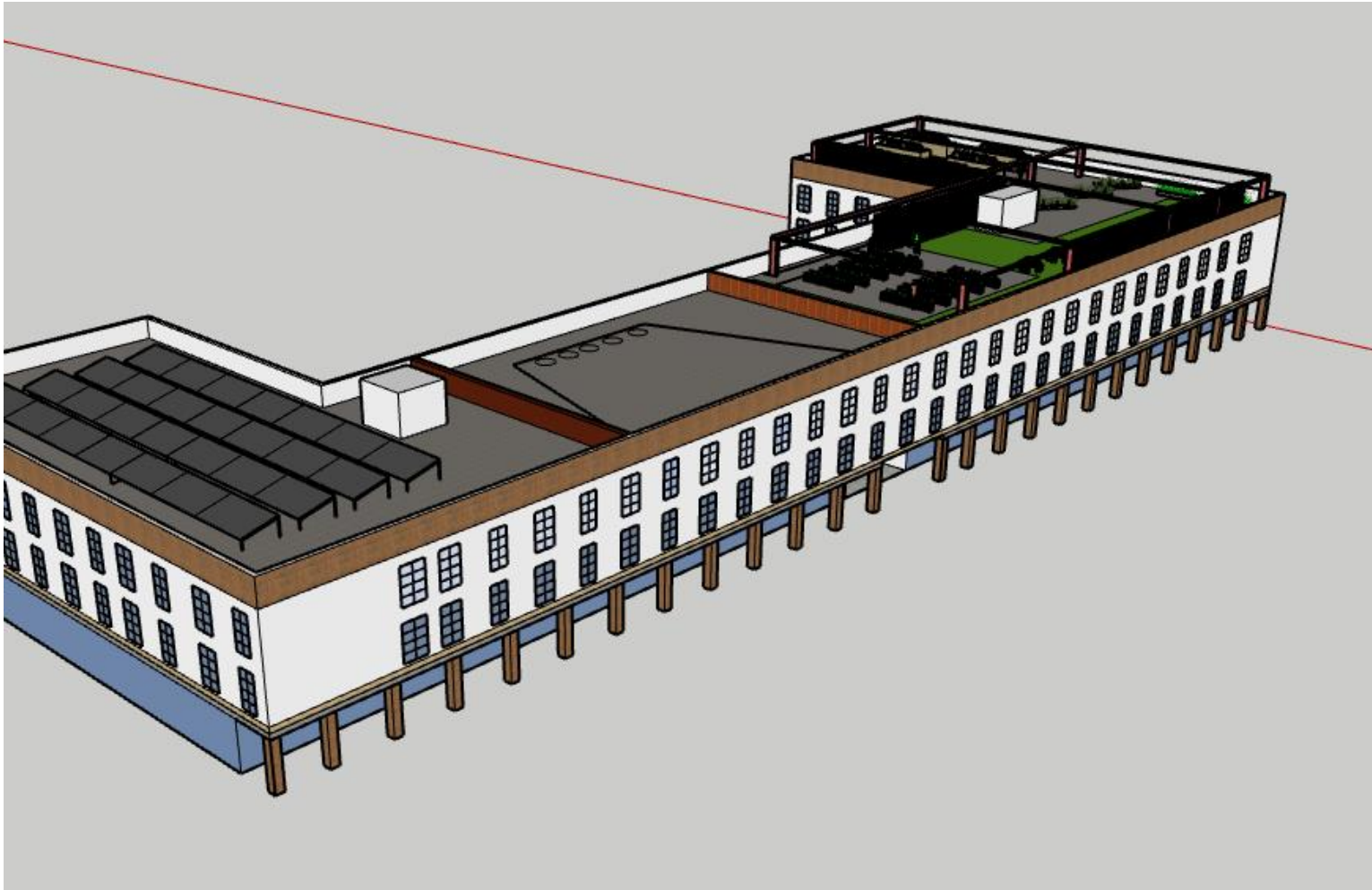
The South Elevation off Kings Road, SA1, has a softer combination of finished, a simple brick clad pillars give character to the building with curtain walling to the commercial spaces within.

As the rest of the building a stone band is used to separate the ground floor from the remaining storeys which will be finished in a white smooth finish render with industrial style windows.

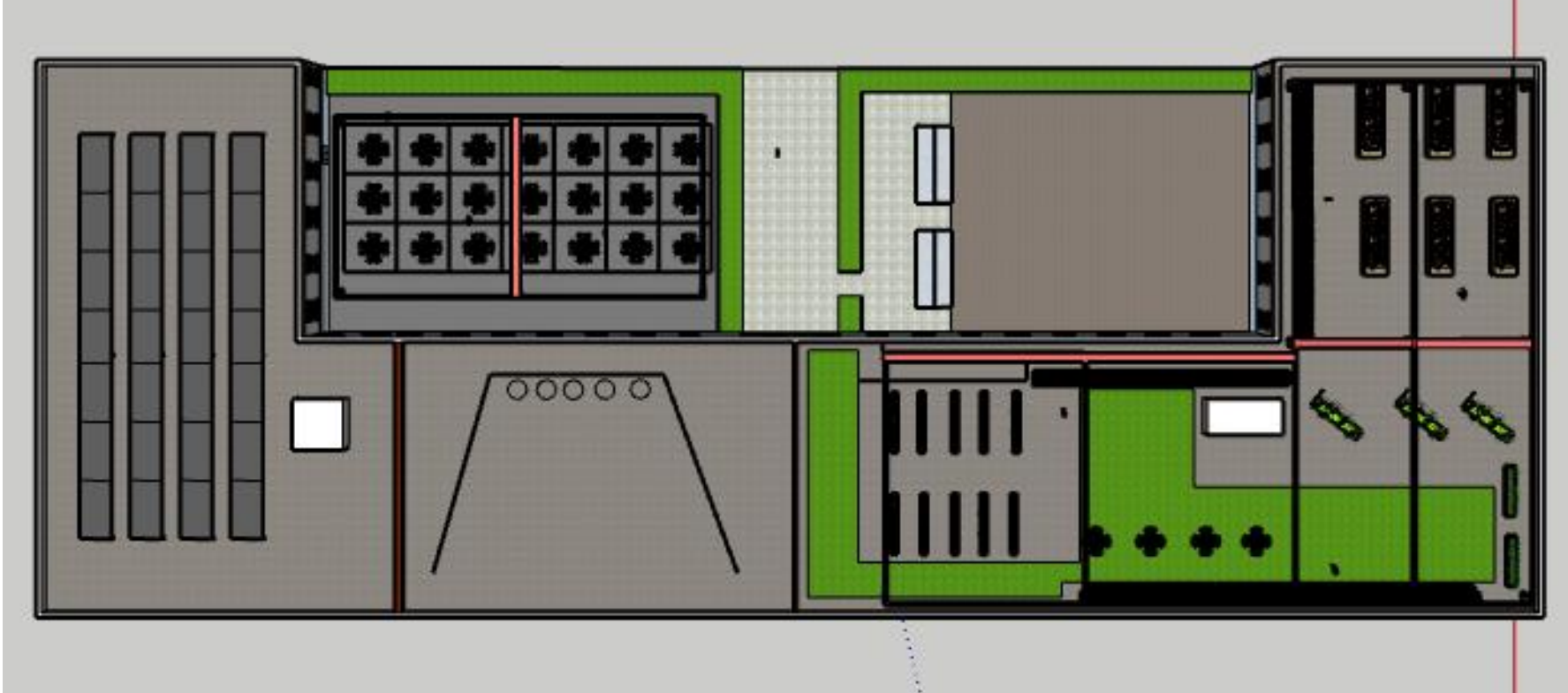
Title	Elevation_006
Date	Feb_2020
Drawn By	ND
Scale	N T S



Title	Elevation_007
Date	Feb_2020
Drawn By	ND
Scale	N T S



Title	Elevation_008
Date	Feb_2020
Drawn By	ND
Scale	N T S



Roof Plan

The roof has been designed not only to be a cover but to be a space that can be utilised in ways which make the building eco-friendlier and allow families who reside in the complex places to relax and keep busy.

This space is separated in to 3 sections, on the left of the above view are the Solar Panels which will assist in providing electricity to the building.

The centre will be designed as a drainage system to harvest rainwater which will be stored and recycled for use within the wastewater systems.

Finally, a garden space, allowing residents to spend time outdoors growing their own produce whilst creating a space where people can socialise together with the views across the SA1 Area.

Title	Roof_Plan_001
Date	Feb_2020
Drawn By	ND
Scale	N T S



Site Location

The above Site Location Drawing shows how the building will be orientated in amongst others within the SA1 area.

The land here at C4 SA1, seemed the most fitting for the student accommodation building due to its proximity to the university but for also introducing new commercial and leisure facilities for students and local residents to both enjoy whilst making the most of the local area.

Title	SITE_LOCATION
Date	Feb 2020
Drawn By	ND
Scale	N T S

Group Project - Vito Construction

Design Dimensions

Overall Building	Quant	Unit
Perimeter	278	M
Building Height	9	M
Façade Area	2502	M2
Total Area	2502	M2

GROSS Internal Floor Areas

GF Area	2042	M2
1st Floor Area	2042	M2
2nd Floor Area	2042	M2
Total GIF	6126	M2

NET/Usable Internal Floor Areas

GF Area - Commercial Space	1675.2	M2
1st Floor Area - Living Space	1578.5	M2
2nd Floor Area - Living Space	1578.5	M2
Service Spaces & Corridors	1293.8	M2

Apartments	Quant	Unit	
Total Number of Apartments	82	NR	41 Per Floor
Perimeter	25	M	
individual Apartment Floor Area	38.5	M2	

Design Aspects

The design of this new facility for UWTSD Student accommodation was designed to maximise the potential of the land at C4 SA1, but importantly fire safety was also a key factor.

As mentioned above, the ground floor is almost entirely made up of spaces for commercial use, these will be constructed to a shell and fit out will be completed by the tenants of each block. The Ground Floor will also house a reception area for the student accommodation above with facilities management, receptionist, lift and stair access to the upper floors and also direct access to a laundrette facility. The ground floor has a fire escape channel/corridor which runs the whole length of the building. As we can see on GF_Layout_001 above each end of the building has 3 fire escapes to allow quick escape from the building within an emergency.

The upper floors both share a replicated design of the apartment as shown in *Individual Apt Layout_001*. This has been utilised for ease of build and cost saving purposes by allowing Pod construction and more offsite manufacturing to be undertaken which will assist in the development due to the constraints of the land and having little storage space for materials. Each floor will have 41 Apartments each giving a total number of apartments of 82. To ensure the safety of the residents who will be houses here, the upper floors sprinkler systems will be installed in-to all corridors and individual apartments along with heat sensors in kitchen areas of the apartments and within the kitchen spaces of the ground floor restaurant. In addition to these protection measures fire alarm systems will be mains fed with generator back up in the plant room and battery back-up if required. Finally, due to the scale of the building fire compartmentalisation was introduced on each floor of the building in the form of introducing fire doors within the corridors to reduce the spread of fire if it occurs. The residential floors have been designed to allow the maximum natural light in-to the building as possible, and to maximise the buildings attraction by having the apartments facing the waterfront.

In addition to this it was felt that the roof space should have a purpose for more than protecting against the elements therefore it was decided to continue with the same floor make up on the roof and utilise this space for Solar PV Panels which will assist in providing energy for direct use within the building, in the centre will be rain water harvesting systems which will feed through in to storage tanks within the substructure which will feed the toilet systems within the whole building. This allowing the building to be as self-sufficient on energy usage as possible whilst having as little impact on the environment as possible. The roof space will also house a community garden area which allows for students and those with families to study and/or grow their own supplies in the forms of fruit and vegetables. This space can be versatile and used as an escape for the residents during the warm summer months to enjoy the local surroundings at the waterfront with views to the hills.

Construction Materials & Methods

Due to the ground make up in the SA1 Area, the land dictates a concrete piled foundation in-to a stable ground stratum. Sitting on the piles will be a reinforced concrete floor slab.

To allow for large open spaces within the commercial facilities on the ground floor a steel frame structure will be used for the shell of the building. As the design was required to feel large and bright open spaces, the decision was made to clad the majority of the ground floor in a glazed curtain walling system. Due to the exposure levels of the development being of a very severe grade, the materials used on the building are going to need to be tried and tested to ensure that the building can withstand. Therefore the curtain walling must be of a unitised system, as there is a large area of curtain walling considerations must be had in to the performance of the glazing to ensure that as well as providing a secure barrier to protect against water penetration, they must provide good thermal insulation, fire, smoke and acoustic separation to ensure that the building is as environmentally friendly as possible.

The upper floors will be formed using pre-cast concrete, this option of steel frame with precast concrete was decided upon due to the reduced impact this has on the local area. By being developed off site they can be shipped to site when required and installed immediately. The pre-cast floors will be finished with insulation and a screed to increase the thermal insulation properties of the building.

Each storey from underside of precast floor to finished floor level will be of 3m in height, within this space a void of 400mm will be introduced to house all service channels and a suspended ceiling beneath allowing a 2.6m space in all public areas of the building.

The upper floors will be clad in a traditional masonry construction, with a mixture of elevational treatments introduced to blend in with the current SA1 aesthetics, but also reflect the history of the docklands in doing so. Between the curtain walling and render finished a Cotswold stone band will be introduced to ease the transition between the storeys. Majority of the building will be clad in a white render with tall Anthracite Grey Windows to give an industrial feel to the finished building. It is important that due to the severe exposure levels to the weather and saltwater spray from the sea, that the glazing and frames are designed to withstand such penetration and corrosion. To ease the visual impact of the scale of the building the render will be split by the introduction of brickwork band around the public roof space and green walling. The idea of introducing brick and render has come from the other buildings around the sa1 area, a brick similar to that used on the J Shed building will be used.

The residential floors of the development will be segregated with timber stud walling filled with insulation to create a sound and thermal barrier. Party Walls between apartments will be finished with 15mm Fireline Plasterboard. At the areas of fire compartmentalisation, the timber stud wall will be replaced with blockwork to ensure the fire compartmentalisation runs the whole width of the building.

The apartment design allows for more use of off-site construction methods. The intention is to utilise pod like construction for bathrooms and kitchens of each apartment and these can be lifted in to position prior to each floor being fitted. This reducing the risk of damage, and health and safety concerns from manual handling items into the building. It would be beneficial to also utilise the crane and put other materials in-to the upper floors such as plasterboards and doors, this reducing damage from manual handling but also from incorrect storage and theft, which in return reduce the cost of damage and waste.

VITO CONSTRUCTION

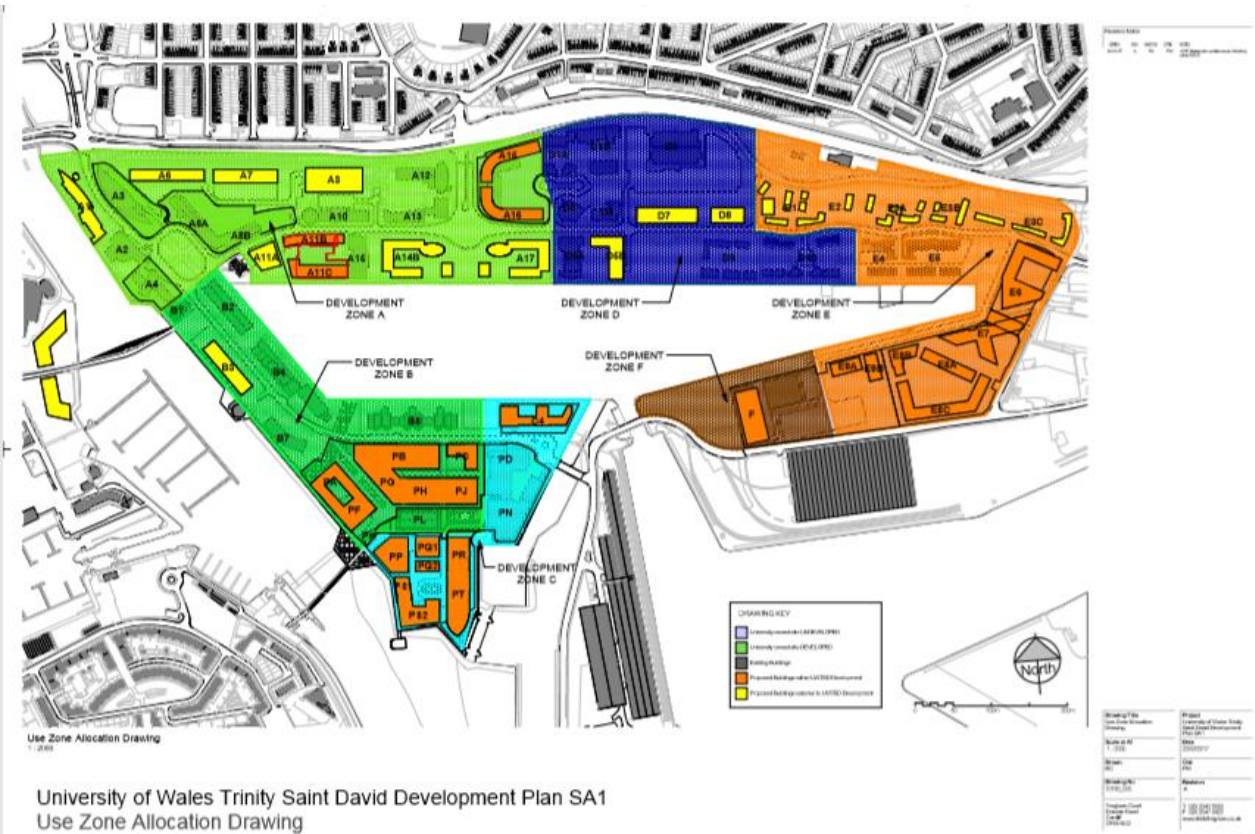
Construction Environmental Management Plan

By Nathan Daniel

P144299

SA1 Waterfront Student Living

Spring 2020



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1.0 Introduction

This Construction Environmental Management Plan (CEMP) has been prepared on behalf of Vito Construction to satisfy conditions as set out by University of Wales Trinity St Davids Swansea (UWTSD) and Swansea City Council and provides details on the requirements for the management of construction of the project, including details relating to construction access.

Vito Construction, as the Principal Contractor for the works will ensure that the actions contained in this CEMP are complied with.

Vito Construction will also place a requirement on any Contractors working at the site to comply with the actions set out in the CEMP.

2.0 Site Location & Plan

The Application site is known as Land at Area C4, SA1, Swansea. The land up for development sits off Kings Road, SA1, Swansea opposite the new UWTSD Waterfront Campus. The land is of brownfield status and was used for industrial purposes up to the late 1900's. Access to the site is through the SA1 via Langdon and Kings Roads, which are situated off the A483, Fabian Way.

The local vicinity is primarily residential area with high volumes of pedestrians and traffic attending the University Campus and/or the shops and restaurants that this area has to offer. Adjacent to the land at C4 lies the Prince of Wales Dock, which is now a disused dockland. It is assumed the site has been remediated and has now been enclosed in 2m high fencing for security reasons.

3.0 Site Set Up & Area

3.1 Site Set Up

Due to the building being the footprint of the land at C4 Site accommodation is a challenging factor, therefore the decision has been made to apply for permission from Swansea City Council to temporarily use the land next to the land at C4 which is currently an unused car park. Thus allowing the works to be completed uninterrupted.

3.2 Temporary Boundary Treatments / Means of enclosure

During construction at the land at C4, The current chain linked fence will be removed and a 2.4m high solid site hoarding to the perimeter of the site will be erected, with a gateman on site to sign in all deliveries and personnel to the development

3.3 Site Parking

Due to the constraints of the site, parking will be an issue therefore there will be allocated areas to the front of the site where subcontractors can offload materials and tools but will be required to use the parking facilities which are within the SA1 Area. Applications will be submitted to the UWTSD To request use of up to 50nr parking bays at their Waterfront Campus. Map indicating locality of these car parks shown below.

Appropriate Signage will be erected stating that parking on the main highways of SA1 is not prohibited and fines may be incurred.

3.4 Construction vehicular movements

Due to the constraints of the land and high volumes of vehicular and pedestrian traffic, the site construction vehicles will only be operated by those people who have received relevant training, and copies of their certification will be available with the project manager.

All vehicles on site will be inspected, tested and serviced at the appropriate intervals laid down by legislation and the manufacturer's instructions. All defects must be reported as soon as possible and, where necessary, the vehicle taken out of use. Records of maintenance inspection and tests must be produced to the site manager and visiting safety advisor.

Where construction vehicles are operating or being used on infrastructure roads or other areas where the public have access roof beacons and headlights must be used.

A tele handler will be used to transport superstructure materials around the site and a speed limit of 5mph will be strictly enforced.

Where specific hazards may produce additional risks to traffic movement on site they must be protected by a physical barrier, and high visibility plastic fencing, metal pedestrian barriers, or heras fencing. This will include scaffolding in close proximity to a roadway, and excavations. Excavations close to vehicle and pedestrian routes must be back filled as soon as practicable.

All movements to and from the public highway will be monitored by a suitably trained banksman.

3.5 Material and delivery storage

Storage of plant and materials will occur throughout the development site subject to the type of operation being undertaken at any specific time.

3.6 Terrain, location and height of proposed spoil heaps

The terrain of this site presents a no risk of vehicle overturning. It is intended that all excavation surplus will be moved off site as the operations are taking place, this also assisting in ensuring the site is clear of any obstructions.

3.7 High Visibility Clothing

All personnel and visitors will wear visibility vests/jackets at all times.

3.8 Monitoring and Control

This will be the responsibility of the site and visiting managers.

Supervisors appointed by sub-contractors will also ensure that persons working under their control comply with the requirements.

All personnel will be acquainted with the site traffic management requirements during their induction training. Personnel failing to comply with the requirements of this traffic plan, thus placing themselves or others at increased risk of injury, will be dealt with in accordance with normal disciplinary procedures which may result in them being removed from site.

Initially the Development will be secured by means of lockable security gates at the entrance to the site. Whilst the temporary access is in operation it will also be secured by means of a lockable gate. As work proceeds these gates will be repositioned and combined with Heras fencing in order to maintain the security of areas under construction.

3.9 Site Operation Hours

All works will be carried out in strict accordance with agreed working hours. These will be 08:00 to 18:00 Monday to Friday and 09:00 to 13:00 on Saturdays. All plant and equipment will be 'silenced' in accordance with the manufacturer's designs and will be regularly serviced / inspected to ensure ongoing compliance. Works will be carried out by trained and competent operatives using best practice techniques. No machine will be allowed to 'idle' when works are not in progress. The site will be securely locked outside of these hours.

3.10 Construction Lighting and Hours of Use

Lighting will be used in winter months to ensure that site is clearly lit to comply with H&S. There will also be floodlighting used to cover site entrances for security purposes.

4.0 Procedures to Manage Dust and Vibration

The local authority has the power under the Clean Air Act 1993, to limit the dust, emissions and odours generated by a site. Failure to comply with these limits can result in complaints being made. Complaints can be avoided by adopting good working practices:

- Identify sensitive receptors and inform the authorities of any likely nuisance that may occur
- Instigate control measures to mitigate any negative impacts
- Develop a daily monitoring regime to record dust conditions while noting weather conditions, construction activities, their location and duration on site.

4.1 Dust Suppression

Dust levels will be kept to a minimum by utilising high pressure hoses to deliver fine mist water sprays onto the working area as necessary.

With regard to earthworks, during periods of dry weather, when dust is likely to cause a nuisance, specific work areas will be 'damped down'. In relation to dust generated by plant movements this operation will normally be carried out by a suitably specified road brush. At

times when the works do not require the full-time attendance of a road brush, water will be introduced to the work area via other means i.e. hose pipe, water bowser, sprinkler etc. In addition, prior to disturbing any stockpile of soil or crushed material, consideration will be given to the introduction of water.

Limiting the speed limit to 5mph will generate less dust.

4.2 Water Damping

As aforementioned, the fine spraying of water is the most effective way of suppressing dust. This will be carried out with a water bowser and hose. Spraying will be repeated regularly during warm and sunny conditions. However, spraying will not be allowed to create excessive mud, which could cause run-off into drainage systems or water courses.

We will consider spraying:

- Areas of unpaved work subject to traffic or wind
- Sand, spoil and aggregate stockpiles
- During the loading and unloading of dust generating materials

4.3 Avoiding Dust Generation

The following measures will be employed to avoid dust generation:

Roads

- Construct and tarmac the site roads as soon as practicable after site commencement.
- Minimise the length and width of haul roads to reduce the surface area
- Pave heavily used areas and sweep regularly
- Limit vehicle speeds – slower speeds generate less dust
- Minimise vehicle movements
- Damp down.

Plant and Vehicles

- Ensure vehicle wheels are cleaned before leaving site- a wheel wash facility will be located adjacent to the site compound. A banksman will wash all vehicle wheels with a high power pressure washer before they leave the site
- Exhaust fumes should be directed upwards
- All lorries leaving the site will be fitted with sheet covers to contain dust
- Plant and vehicles should be maintained in good working order
- Drivers must observe site speed limits to minimise dust generation

Material Handling and Storage including crushing and screening materials

- Locate stockpiles out of the wind (or provide wind breaks) to minimise dust generation open storage
- We will keep stockpiles to a minimum height and use gentle slopes –
- (confirm location of proposed stockpiles here)
- Compact and bind stockpile surfaces if necessary
- Minimise the storage time for materials on site
- Store dusty materials away from site boundaries, main site access roads
- Ensure waste skips are enclosed or covered
- Damp down earthworks during dry weather

Cutting/Grinding/Grouting/Packing

- Minimise cutting and grinding on site where possible
- Use equipment with dust extraction and wet cut where possible
- Spray water during cutting of paving slabs
- Use block splitters

4.4 Site Waste Control & Material recycling.

Refuse & All other waste materials

Vito Construction operate a strict Waste Management Policy that involves the onsite segregation of waste to lessen the impact on landfill.

4.5 Wheel Washing Facilities

A designated operative is to carry out the wheel washing of construction vehicles leaving the site (via a hand held jet wash) to ensure that no mud is to be carried onto the public highway. The effectiveness of the wheel wash facilities will be monitored throughout the construction of the development. The first operation will be to install the access road to tarmac Binder level to reduce dust and mud.

This operation will be carried out within the development boundary, so that resulting water run-off is suitably controlled.

The wheel wash facilities will be repositioned accordingly as the construction of development progresses.

In addition to this a road brush will be in attendance when any 'cartaway' of arising relation to earth works takes place.

5.0 Managing Nuisance Noise

The Contractor and their sub-contractors should at all times apply the principle of Best Practicable Means as defined in Section 72 of the Control of Pollution Act 1974 and carry out all work in such a manner as to reduce any disturbance from noise and vibration to a minimum.

All plant brought on to site should comply with the relevant EC/UK noise limits applicable to that equipment or should be no noisier than would be expected based on the noise levels quoted in BS 5228-1:2009. Plant should be properly maintained and operated in accordance with manufacturers' recommendations.

Electrically powered plant should be preferred, where practicable, to mechanically powered alternatives. All mechanically powered plant should also be fitted with suitable silencers, as appropriate.

Items of plant on-site operating intermittently should be shut down in the intervening periods between use.

Where feasible, all stationary plant should be located so that the noise effect at all occupied commercial and residential properties is minimised and, if practicable, every item of static plant when in operation should be sound attenuated using methods based on the guidance and advice given in BS 5228.

Use of pneumatic breaking should be limited or, better still, alternative techniques should be investigated and utilised; and crunchers should be used in preference to pneumatic breakers; and where breakers are used, they should be of a suitable size for the job.

Whenever possible, deliveries should be programmed to arrive during daytime hours only and care should be taken when unloading vehicles to minimise noise. Deliveries should be routed so as to minimise disturbance to local residents and delivery vehicles should be prohibited from waiting within or near the site with their engines running.

6.0 Preventing Emissions and Odours

The following measures will be employed to prevent emission and odours:

6.1 Plant and Vehicles

- Plant and vehicles will be maintained in good working order
- Control deliveries to minimise queuing
- Ensure engines are switched off when not in use
- Refuelling areas will be sited away from the public in open storage with a fuel overspill bund and kit provided.
- No burning of waste materials is to occur on site

6.2 Waste Storage

- Containers will be covered and removed frequently

6.3 Chemicals on Site

- Will take account of wind conditions when planning activities likely to emit aerosols, fumes, odours or smoke
- Position site toilets with effluent tanks away from residential areas

6.4 Nuisance Issues

i) Dust

- We will ensure that all roads are kept damp in dry spells
- We will ensure that all grinders and cutters are used as a last resort
- Vehicle wheels will always be washed before leaving the site

ii) Emissions

- Generator exhausts to point up
- Generators to power plant and tools to be used sparingly

iii) Odours

Consideration will be taken to neighbours when painting, and adhesive operations take place, to where venting will be located.

iv) Noise

All works will be carried out in strict accordance with agreed working hours. These will be 08:00 to 18:00 Monday to Friday and 09:00 to 13:00 on Saturdays. All plant and equipment will be 'silenced' in accordance with the manufacturer's designs and will be regularly serviced / inspected to ensure ongoing compliance. Works will be carried out by trained and competent operatives using best practice techniques. No machine will be allowed to 'idle' when works are not in progress.

v) Vibration

Vibration monitoring stations will be set up on each corner of the site to track the volumes on site.

Vibrating rollers only to be used for short duration where possible, and to be turned off when not in use.

7.0 Ground Contamination Control / Surface Run Off Control

In order to control potential ground contamination the following measures will be employed:

- All road gullies and drainage will be protected from any ground water run off to prevent contamination.
- The groundworks contractor has been provided with the following Environment Agency Guides relating to best practice.
- EA PPG1 General Guide to the Prevention of Pollution o EA PPG2 Above Ground Oil Storage Tanks o EA PPG5 Works and Maintenance in or near Water o EA PPG6 Working and Construction and Demolition Sites o EA PPG13 Jet Washing
- The Ciria/dti/E.A. Guide to Good Practice on Site is also provided.
- (Any particular site-specific surface water run off to adjacent land / watercourses / highways and their prevention measures to be listed here)

8.0 Managing Complaints

Prior to commencement of each phase/stage of the works, all residents likely to be affected by construction shall be contacted and advised of the type and duration of the works that may affect them.

Regular site meetings and community engagement events will be held to update the local community on the progress of the build and to answer any queries from residents

8.1 Principle Contractors Contact Details:

TBC

8.2 Emergency Contact Details

TBC

Name.

Contact No.

Alternate Name.

Contact No.

The Contract Manager / Site Manager shall be nominated to receive any complaints for the duration of the construction works and this person shall either be on site or available by telephone as above.