

APPENDIX 4-6

MOOR PRELIMINARY DESIGN REPORT

PRELIMINARY DESIGN REPORT

MAYNOOTH OUTER ORBITAL ROAD

Sky Castle Ltd **S665** 29 August 2022



OCSC o'CONNOR | SUTTON | CRONIN

Multidisciplinary Consulting Engineers

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1 INTRODUCTION & DESCRIPTION

APPOINTMENT

O'Connor Sutton Cronin & Associates (OCSC) have been appointed by Sky Castle Ltd to carry out the design of the civil engineering services associated with the development of the proposed Maynooth Outer Orbital Road (MOOR) on lands at Moygaddy, Co. Meath, which is located northeast of the town of Maynooth, Co. Kildare.

SETTING

Maynooth environs is a large growth area, category II Town status located in south County Meath, and is an economically vibrant area with high-quality transport links to larger towns/cities. The Meath Development Plan 2021-2027 outlines the social, economic, and planning context for the Maynooth environ lands, setting the framework for the plan's policies and objectives. It has a core strategic vision that seeks to ensure that future growth is based on principles of sustainable development that meet the needs of residents per National and Regional guidelines. The environs of Maynooth is a Core Economic Area included in the Gateway Core Economic Area located on the M4 corridor. The wider Maynooth Environs Lands proposed land-use zoning includes A2 – New Residential, E1 – Strategic Employment Zones, G1 – Community Infrastructure, D1 – Tourism and H1 – High Amenity.

The delivery of the Maynooth Outer Orbital Route (MOOR) is critical to facilitating residential, high-end employment, tourist, and leisure development in the Maynooth environ lands and fulfilling the transport infrastructure needs in proximity to Maynooth University and Maynooth town.





ADMINISTRATIVE JURISDICTION

The proposed development is located primarily in the jurisdiction of Meath County Council (MCC), and therefore the Maynooth Outer Orbital Route design and the associated civil engineering services were carried out with reference to the following:

- Meath County Development Plan 2021-2027;
- Maynooth Environs Local Area Plan 2014 (incorporated into adopted MCDP);
- Regional Spatial and Economic Strategy for the Eastern and Midland Region (2019);

Even though Maynooth Environs is situated in the Meath County Council administrative area, the Maynooth Environs Local Area Plan contains an objective to liaise with Kildare County Council in the identification, design, reservation and delivery of the section of the Maynooth Outer Relief Road located within the administrative area of Meath County Council. The administrative area of Kildare County Council is located immediately adjacent to the LAP environs lands and some infrastructure improvements will be located within the Kildare County Council (KCC) administrative area. Therefore, the design will also be conducted with due regard to:

- Maynooth LAP
- Kildare County Development Plan
- Maynooth Traffic Management Plan

PURPOSE OF THE DESIGN REPORT

This report sets out to:

- Coalate all of the work done to date and in particular the preliminary design of the Maynooth Outer Orbital Road
- 2. Validate the need for the scheme
- 3. Examine the implications and impacts of the scheme
- 4. Ensure that appropriate design standards will be applied.





STUDY AREA

The subject site is located on the southernmost extent of County Meath, as shown in Figure 1, aligning with the county boundary to Co. Kildare. It is approximately 1.5km north of the town of Maynooth, Co. Kildare, which forms part of a larger strategic landbank on zoned lands known as Maynooth Environs. The site is immediately bound by:

- R157 Maynooth Dunboyne Road, to the east;
- Agricultural lands, to the north and west; and
- River Rye Water, to the south;







Figure 1: Development Locality Plan

The above image highlights the location of the overall road area and there are small areas of incidental works outside of that for elements such as attenuation facilities, demolition of existing roads, etc.

EXISTING SITE OVERVIEW

The overall total site area is **c.95.7-hectares** and is zoned by Meath County Council for various uses including employment and residential.





The site is currently greenfield and used for agricultural purposes, and can be accessed from the L6219, L2214 and R157 roads that bisect the site.

Ground levels across the site typically fall gently across the site, with a sharp decline at the southern boundary and in the centre of the site, both locations bound the River Rye Water and Blackhall Little Stream respectively.

DEVELOPMENT DESCRIPTION

Planning Permission is sought by Sky Castle Ltd. for the development of the Maynooth Outer Orbital Road (MOOR) in the townland of Moygaddy, Maynooth Environs, Co. Meath.

The proposed road development will consist of the following:

- 1. Provision of approximately 1,700m of new distributor road (MOOR Arc) comprising of 7.0m carriageway with turning lane where required, footpaths, cycle tracks and grass verges. All associated utilities and public lighting including storm water drainage with SuDS treatment and attenuation.
- 2. Proposed road improvement and realignment works including:
 - (i) realignment of a section of the existing L6219 local road, which will entail the demolition of an existing section of the road which extends to circa 2,500 sqm.
 - Provision of pedestrian and cycle improvement measures along the L6219 and L22143 which abuts the boundary of Moygaddy House which is a Protected Structure (RPS ref 91558).
 - (iii) Provision of pedestrian and cycle improvement measures along the R157 which abuts the Carton Demense Wall which is a Protected Structure (RPS Ref 91556).
 - (iv) Realignment of a section of the existing L22143 local road and R157, which will entail the demolition of an existing section of the road which extends to circa 3,200 sqm.





- (v) Provision of a new signalised junction at the realigned junction between the L22143 and R157.
- (vi) Provision of a new signalised junction between the L2214 local road and the MOOR with right-turn lanes on approaches.
- (vii) Reconfiguration of the L2214 section within the MOOR arc to a one-way from north to south with right-turn lanes, where applicable.
- (viii) Reconfiguration of the northbound lane of the L2214 within the arc to a shared facility for use by pedestrians and cyclists.
- (ix) Addition of chicanes on the L6219 and L22143 local road to reduce traffic flow and encourage utilisation of the MOOR.
- 3. Provision of 4 no. bridge structures comprising:
 - (i) an integral single span bridge at Moyglare Hall over the River Rye Water to connect with existing road infrastructure in County Kildare and associated floodplain works and embankments.
 - (ii) a new pedestrian and cyclist bridge at Kildare Bridge which will link the proposed site with the existing road network in County Kildare.
 - (iii) a new pedestrian and cycle bridge across Blackhall Little Stream on the L22143 adjacent to the existing unnamed bridge.
 - (iv) an integral single span bridge on the north-eastern section of the MOOR arc, over the Blackhall Little Stream, and associated floodplain works and embankments.
- 4. Provision of site landscaping, public lighting, site services and all associated site development works.
- 5. A Natura Impact Statement (NIS) and Environmental Impact Assessment Report (EIAR) has been included with this application.





MASTERPLAN CONTEXT

The various masterplan development applications will be submitted on the basis that the MOOR will be delivered in phases, linked to individual planning applications which form part of the wider Masterplan for the Maynooth Environs/Moygaddy lands.

The colour of the first three columns links to the figure on the next page. Specific road infrastructure upgrades will be required depending on the timetable when each phase is constructed. The last column of the table indicates in which scenario year the trip generation of that section of the development will be relevant.

Item	Linked Road Infrastructure	Trip Generation Year				
Medical Phase						
Primary Care Centre & Nursing Home	Upgrade the R157 from the roundabout in the south up to the access to medical facility	Opening Year (2025)				
Medical Research Campus	Full MOOR already operational	Design Year (2040)				
Public Hospital	Full MOOR already operational	Design Year (2040)				
	Office Phase					
	Upgrade the R157 north of medical facility access up to the junction between the R157 and the L6219	Opening Year (2025)				
Office Buildings Phase 1 x2	Upgrade R157/L6219 junction to 3- leg signalised junction	Opening Year (2025)				
	Upgrade R157 east of junction towards Dunboyne	Opening Year (2025)				
Office Buildings Phase 2 x1	Construct the first section of the eastern leg of the MOOR (northern leg of junction) up to the stream	Opening Year (2025)				
Office Buildings Phase 3 & 4 x6	Full MOOR already operational	Design Year (2040)				
Residential Phases						
Residential Phase 1A, Park & Creche	Construct link road in the west and upgrade road up to junction with R157	Opening Year (2025)				
Residential Phase 1B	Full MOOR already operational	Opening Year + 5 (2030)				
Residential Phase 2	Full MOOR already operational	Design Year (2040)				
Residential Phase 3	Full MOOR already operational	Design Year (2040)				
Other Phases						
Tourism and Sports Campus	Full MOOR already operational	Opening Year + 5 (2030)				
Hotel	Full MOOR already operational	Design Year (2040)				

Table 1: Moygaddy Masterplan Phasing









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NEED FOR SCHEME

The provision of the Maynooth Outer Orbital Route (MOOR) is an objective of the Meath County Development Plan 2021-2027 within the Maynooth Environs Written Statement objective CER OBJ 1 that states:

"It is an objective of the Planning Authority to require the submission with any application for development of lands at Moygaddy a Master Plan for the written agreement of the Executive of the Planning Authority which shall address the following:

- Proposals for accessing of lands which shall adhere to the permitted Part VIII realignment of the junction of the R157 Regional Road and Moygaddy Road.
- Proposals providing for the delivery of the Maynooth Outer Relief Road in tandem with development."

It is an objective within the Maynooth Local Area Plan to provide the Outer Orbital Route to ease traffic congestion and to improve quality of life in Maynooth. This plan notes strategic transport improvements are required and the Maynooth Local Area Plan has a critical role in ensuring the needs of the future population are planned for, this includes the delivering of strategic transport improvements particularly the completion of the Maynooth Outer Orbital Route.

CONSULTATION

OCSC held discussions with Kildare County Council (KCC) and Meath County Council (MCC) on this scheme, as detailed below:

 OCSC met with MCC on 19 July 2021 to open preliminary discussions on the design of the MOOR. In attendance were Martin Murry (Director of Services for Infrastructure) and Nicholas Whyatt (Senior Engineer Transportation). Since this meeting, a Traffic Modelling Scoping Report has been issued to MCC. It should be





noted that KCC specifically requested a Dynamically Assigned traffic model for this scheme. The Developer opted to request OCSC to utilise the PTV Vissim microsimulation software package to prepare the requested model, which could then be incorporated into the wider KCC transport study for Maynooth as a whole.

- As noted previously, although the scheme is planned within the MCC jurisdiction, a separate application will be made to KCC for infrastructure within the County. It is however noted that as the largest nearby urban centre is within KCC jurisdiction, they have been consulted as a stakeholder. OCSC met with KCC on 9 August 2021, and 23 September 2021. In attendance were Brigette Rea, Daragh Conlan, George Willoughby, Jonathan Hennessy, and Lisa Kirwan, all from KCC. The same Traffic Modelling Scoping Report has also been issued to KCC.
- OCSC met with MCC on 20 June 2022. In attendance were Michael Costelloe, Joe McGarvey and Paul McNulty. This meeting aimed to establish the outstanding design requirements of the MOOR. Several comments were received, which were included in the design.

In addition, the following submissions were made as part of the proposed development:

- A submission was made on the Maynooth Transport Strategy as part of public consultation no. 1 on the 12th of November 2021. This submission outlines the proposed plans for the area and noted that it should be considered as part of the future Transport Strategy (Appended as Annexure D).
- A submission was made to BusConnects on the 15th of November 2021 noting the upcoming proposals as part of the MOOR that noted the BusConnects project should take cognisance of the upcoming works.





2 CHARACTERISTICS OF THE DEVELOPMENT

DEVELOPMENT & SITE OVERVIEW

The MOOR will be a single carriageway road connecting the Maynooth environs between the east and west. A portion on the western side will be constructed in County Kildare and tie in with existing infrastructure by means of a new bridge and road section. This can be seen in the figure below.



Figure 2: MOOR Western Kildare Tie-In





On the eastern side, the road will again tie in in County Kildare, just north of the roundabout on the R157. A separate cycle and pedestrian bridge will be constructed alongside the existing bridge to allow for continuation of this infrastructure, tying in with existing infrastructure in County Kildare. The tie-in location has been agreed with Kildare and on review of planning compliance submission made by Cairn Homes. This can be seen in the figure below.



Figure 3: MOOR Eastern Kildare Tie-In





The rest of the MOOR will form an arc through the Maynooth Environs, connecting the western and eastern ends. A portion of the L6219 on the western side will be realigned to accommodate the arc. This section in the shown in the figure below.



Figure 4: Road Section to be Realigned





The current L2214 (Kilcloon Road) will change to a north-to-south one-way road within the arc. The current south-to-north lane will be converted to a shared facility which can be used by pedestrians and cyclists. The new northern junction between the MOOR and the L2214 will be constructed as a signalised junction. The is shown in the figure below.



Figure 5: Center of Arc (L2214 - Kilcloon Road)





The junction between the R157, L6219, MOOR and Dunboyne Road on the eastern side of the arc will be realigned and constructed as 4-leg signalised junction, as shown below.



Figure 6: Realigned Signalised Junction on Eastern





For the construction of this junction, a portion of the existing R157 and Dunboyne Road will be realigned, as shown in the figure below.



Figure 7: Existing R157/Dunboyne Road Realignment





Four different bridges will be constructed as part of the MOOR. These are highlighted in the figure below.



Figure 8: MOOR Bridges

Road bridges 1 and 2 will be new bridges which will be constructed as part of the MOOR. Pedestrian bridges 1 and 2 will be additional structures constructed adjacent to the existing bridge structures to accommodate pedestrian and cycle permeability. More information on these bridges is available in OCSC report "Bridge Options Report" submitted separately.





3 TRAFFIC IMPACT

A traffic assessment was carried out, paying due consideration to the following guidelines below, in order to ensure that the orbital route is designed accordingly to cater for all future development in the nearby lands.

- *Traffic* & *Transport Assessment Guidelines (2014)* as published by the former National Roads Authority (NRA) now Transport Infrastructure Ireland (TII);
- *Guidelines for Traffic Impact Assessment (1997)* as published by the Chartered Institute of Highways & Transportation;
- Meath County Council Development Plan 2021-2027.
- Project Appraisal Guidelines for National Roads Unit 5.3 Travel Demand Projections, TII (October 2016)
- Project Appraisal Guidelines for National Roads Unit 16.1 Expansion Factors for Short Period Traffic Counts, TII (October 2016)
- TA 79/99 "Traffic Capacity of Urban Roads" from the DMRB

The Traffic Impact Assessment was done by means of a Dynamically Assigned Vissim Micro-Simulation model, as requested by Kildare County Council, with the overall aim of defining each junction along the MOOR and detailing the required size of each junction including number of lanes, requirements of turning lanes etc. This document has been submitted as part of this application, under separate cover.





4 COLLISION HISTORY

OCSC interrogated the Road Safety Authority (RSA) website https://www.rsa.ie/en/RSA/Road-Safety/RSA-Statistics/ in order to ascertain the number, location, date, and severity of collisions in the area in recent years. The site provides details of all accidents by year between 2005 and 2016 (latest available statistics). Collisions/accidents are categorised by severity i.e. fatal, serious, and minor. The statistics also identify what the collision type was i.e. vehicle only, pedestrian, cyclist/motorcyclist etc. In that regard the dataset provides a host of information that can be used to identify the requirements for, and potential benefits of, any road upgrade. The figure below shows an extract from the dataset for the MOOR environs.



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Figure 9: Collision History





OCSC collated the raw collision data into a table in order to assist in the assessment of same. This is shown in table below. The table summarises only those recorded accidents which took place along the L6219 & L2214 that directly relate to the provision of the Maynooth Outer Orbital Route.

RSA Collision History					
Year	Fatal	Serious	Minor		
2005	0	0	0		
2006	0	0	0		
2007	0	0	0		
2008	0	0	0		
2009	0	0	0		
2010	0	0	0		
2011	0	1	2		
2012	0	0	0		
2013	0	0	0		
2014	0	0	1		
2015	0	0	0		
2016	0	0	1		
Total	0	1	3		

Table 2: RSA Collision Data MOOR Study Area

While there were no fatal accidents over the period, 1 no. serious accidents, and 3 no. minor accidents occurred. There is, therefore, potential safety benefits accruing from completing the remaining section of the MOOR. The provision of the Maynooth Outer Orbital Route will also help alleviate traffic congestion with the centre of Maynooth itself.





5 GEOMETRY & DESIGN STANDARDS

APPLICABLE TECHNICAL STANDARDS

The scheme has been designed in accordance with the Design Manual for Urban Roads and Streets (DMURS) and the following standard documents:

- DMURS;
- National Cycle Manual;
- TD 36/93;
- Report of the Study Group on Dimensions of Agricultural Bridges and Underpasses (UK Dept. Transport; Oct 1985);
- NRA TD 19/13;
- Traffic Signs Manual 2010 with Amendments (July 2013);
- HD 26/06;
- Greater Dublin Strategic Drainage Study (GDSDS);
- Greater Dublin Code of Practice for Drainage Works;
- The SUDS Manual CIRIA 2007;
- The Flood Studies Report (1975) and Supplementary Reports;
- HD 19/12;
- NRA Design Manual for Roads and Bridges (NRA DMRB);
- NRA IAN 02/11 Interim Requirements for the Use of Eurocodes for the Design of Road Structures Amendment No. 1.

ROAD CLASSIFICATION

The movement function of a street is described on DMURS using a hierarchy system that classifies streets into the following categories, as shown in Figure 10:

- Arterial Streets
- Link Streets





Local Streets



Figure 10: DMURS Hierarchy of Streets

The proposed MOOR will be classified as a **Link Road**. Table 3.1 of DMURS illustrates how this road hierarchy relates to other relevant documents, shown in the table below.





DMURS Description	Roads Act/NRA DMRB	Traffic Management Guidelines	National Cycle Manual		
Arterial	National	Primary Distributor Roads	Distributor		
Link	Regional (see note 1)	District Distributor Local Collector (see Notes 1 and 2)	Local Collector		
Local	Local	Access	Access		
Notes					
Note 1: Larger Regional/District Distributors may fall into the category of Arterial where they are the main links between major centres (i.e. towns) or have an orbital function.					
Note 2: Local Distributors may fall into the category of <i>Local</i> street where they are relatively short in length and simply link a neighbourhood to the broader street network.					

Table 3.1: Terminology used within this Manual compared with other key publications.

Table 3: DMURS Road Terminology

This designation is appropriate as the nearby M4 serves as a primary distributor road. The proposed link road will provide high quality infrastructure to serve local traffic and cyclists and cater for the future development in the study area.

ROAD DESIGN SPEEDS

The design speed is the maximum speed at which it is envisaged/intended that the majority of vehicles will travel under normal conditions.

The current speed limits within the Study Area are as follows:

- Moyglare Road Speed Limit 50 km/h;
- L6219 Speed Limit 80 km/h;
- R157 North of Roundabout Speed limit 80km/h;
- R157 South of Roundabout Speed limit 50km/h;
- L2214 Speed Limit 80 km/h.





The proposed speed limits, which have been workshopped with Meath County Council and ties in with existing speed limits, are shown in the figure below.



Figure 11: MOOR Proposed Speed Limits





ROAD CROSS SECTIONS

INTRODUCTION

The proposed MOOR is considered as consisting of four main elements. The carriageway, the verge, the footpath, and a cycle track. The proposed cross section is shown below.



Figure 12: MOOR Cross Section

CARRIAGEWAY

The carriageway cross-section is 7.00m wide (DMURS 4.4.1) as the road will be classified as a Link Road with low to moderate Design Speeds (60 km/h), and will be frequently used by large vehicles, i.e. buses. This carriageway width is selected from Figure 4.55 of DMURS, which is shown overleaf.







Figure 13: DMURS Carriageway Widths

The selection of this width of carriageway is considered appropriate by OCSC and is in line with the previous Part VIII for the MOOR and also in line with the recently approved Maynooth Eastern Ring Road.

Upgrade works to the R157 will also utilise a 7.0m carriageway width to comply with the MOOR and MERR design.





FOOTPATHS

The width of the footpaths is determined by reference to DMURS Section 4.3.1. with a minimum required width of 1.8m based on the space needed for two wheelchairs to pass each other.



Figure 14: SMURS Figure 4.34 Width

It is determined that the Link Road is defined as suburban in character and as such OCSC regard 2.0m as an appropriate provision given the expected demand. This is in line with the previous Part VIII application.

A minimum of a 2.0m footpath will also be provided along the R157 including pedestrian infrastructure adjacent to the Kildare Bridge to the junction of the R157 & Dunboyne Road.

CYCLE TRACKS

The cycle lanes and crossings were designed in accordance with the National Cycle Manual (NCM). All cycle facilities along the MOOR are off-road and segregated facilities.





Based on the Cycle Width Calculator in the NCM, the estimated appropriate cycle path width is 1.75m, giving room for a single file lane with overtaking room. These cycle paths are one-way and will be located on both sides of the proposed road. The cycle paths are separated from traffic by a kerb and there will be a horizontal separation on the inside, between the cycle path and footpath.



Figure 15: NCM Width Calculator

It should be noted that Meath County Council have indicated that they wish the design of the MOOR to be consistent and tie into the already completed section at Maria Villa, this may change the requirements set out above from 1.75m in line with the NCM to 2.0m. Further consultation will be required with Meath County Council to clarify this requirement.





Cycle facilities will also be provided along the R157 from the masterplan lands to the Junction of the R157 with the Dunboyne Road. Cycle facilities will also be provided adjacent to the Kildare Bridge. The design of cycle infrastructure along the R157 will be in line with the proposed MOOR design and will take cognisance of the current design of the Maynooth Eastern Ring Road (MEER).

All priority T-Junctions and signalised junctions have been designed in order to achieve the requirements of the National Cycle Manual.

PLANTED VERGE

OCSC have considered the requirements of the width of the planted verge as set out in section 4.3.1 of DMURS and have determined that a minimum of 1.5m is appropriate. Consideration was given to the use of space for a SUDS design that will complement the drainage design of the MOOR. Consideration has also been given to the requirements of the ESB HV wayleave so that the width of the footpath, cycle track and verge could potentially accommodate this service. In addition, the verge can accommodate road signage, lighting columns and other street furniture in order to reduce clutter in the footway.

HORIZONTAL AND VERTICAL GEOMETRY

The alignment of the MOOR was designed so that the geometric elements, including horizontal and vertical curvature, super elevation and sight distance are in line with DMURS, having values consistent with the design speed of 60 km/h.

The relevant horizontal and vertical geometric design values are highlighted in DMURS Table 4.3 overleaf for the 60 km/h Design Speed. A standard carriageway cross fall of 2.5% was adopted throughout with super elevation applied if necessary, noting that adverse camber is allowable under DMURS designs in accordance with Table 4.3. A cross fall of 2.5% was also used for footpaths and cycle facilities.



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HORIZONTAL CURVATURE													
Design Speed (km/h)	10	20	30	40	50	60							
Minimum Radius with adverse camber of 2.5%	-	11	26	56	104	178							
Minimum Radius with superelevation of 2.5 %	-	-	-	46	82	136							
		VERTICAL	CURVATURE										
Design Speed (km/h)	10	20	30	40	50	60							
Crest Curve K Value	N/A	N/A	N/A	2.6	4.7	8.2							
Sag Curve K Value	N/A	N/A	2.3	4.1	6.4	9.2							

Table 4.3: Carriageway geometry parameters for horizontal and vertical curvature.

Figure 16: DMURS Carriageway Geometric Parameters

Upgrade works to the R157 also follows the horizontal and vertical geometry set out in DMURS, for the applicable speeds shown in Figure 11. A standard carriageway cross fall of 2.5% and a cross fall of 2.5% was also used for footpaths and cycle facilities.

BRIDGE STRUCTURES

All of the bridges to be constructed as part of the scheme share a number of key characteristics. They all have:

- Piled foundations;
- Cast in situ abutments;
- Precast deck elements;
- On deck cast in situ slabs or screeds;
- Post-fix parapets.

The bridges will be constructed both over and adjacent to the live water courses as shown in the figure overleaf.





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Figure 17: Location of Bridges on the MOOR

A separate "Bridge Options Report" has been prepared and submitted as part of this application under separate cover. More information on the design of the bridges are detailed therein.





6 JUNCTION STRATEGY

The primary principle in the design of junctions along the route was to provide junctions that are safe and consistent with existing layouts in order to present a uniformity of approach to drivers. In addition, junctions will have sufficient capacity to accommodate design year peak traffic flows thus optimising network capacity. The primary junction strategy objectives were:

- To optimise road safety by ensuring adequate visibility and consistency;
- To ensure capacity for the design year;
- To function as traffic calming measures;
- To provide safe crossing facilities for pedestrians and cyclists;
- To provide an economic solution, so that the cost of implementing the design will be, to the maximum possible extent, offset by the economic benefits derived;
- To optimise road construction costs;
- To minimise environmental impacts, such as air pollution and engine noise, by minimising fuel consumption through reductions in the number of speed changes and the number of stop/starts required.

Section 4.4.3 of DMURS Junction Design states that priority junctions should be applied where Local streets meet Link streets. In addition to the aforementioned, after discussions with Meath County Council it was decided that priority type T-Junctions should be applied throughout the scheme where possible as priority type T-Junctions are typically more cost effective and require less space than other solutions such as large roundabouts or signalised junctions.

The junction of the MOOR and the R157 under the approved R157 realignment under Meath County Council planning refence P8/10011 was shown as a roundabout. Meath County Council have indicated to OCSC that a signalised junction would be in line with their current preferences and this solution should be explored. The provisions of a signalised junction at this location would significantly reduce the current footprint required by the Part VIII roundabout. This junction has been designed as a signalised junction.





Furthermore, the junction between the L2214 and the MOOR has also been designed as a signalised junction, with the remainder of junctions operating as priority T-junctions. All junctions on the MOOR also includes right-turn lanes. This was not shown as a requirement as per the traffic analysis, however MCC have indicated that this is required for traffic management.

The following Figure 18 indicates the location and operations of junctions along the MOOR.



Figure 18: Junctions Along MOOR



Project: S665 Issued: 29 August 2022



JUNCTION 1

Realigned junction of the L6219 and the MOOR. This junction takes the form of a priority type junction with a right-turn lane from the MOOR into the L6219.

JUNCTION 2

Access to Phase 1 & 2 residential lands. This junction takes the form of a priority type junction with a right-turn lane from the MOOR into the L6219.

JUNCTION 3

Junction of the MOOR & L2214. This junction takes the form of a signalised junction. It should be noted that south-to-north lane on the L2214, within the arc, will be repurposed to a shared pedestrian and cyclist facility. This means that the portion of the L2214 within the arc will change to a one-way north-to-south lane. Right-turn movements on the western approach will be prohibited, which means that this road can only be accessed by a through movement on the L2214, or a left-turn movement on the eastern approach.

JUNCTION 4

Junction of the L6219 & L2214. This junction takes the form of a priority T-junction. It should be noted that south-to-north lane on the L2214, within the arc, will be repurposed to a shared pedestrian and cyclist facility. This means that the portion of the L2214 within the arc will change to a one-way north-to-south lane.

JUNCTION 5

Junction of the MOOR and R157. This junction takes the form of a four-legged signalised junction with accompanying right-turn lanes on all approaches.





7 GROUND INVESTIGATIONS, SOIL CLASSIFICATION & EARTHWORKS BALANCE OPTIMISATION

OCSC instructed Site Investigations Ltd (SIL) to complete a ground investigation at the site. The report presents the factual geotechnical data obtained from the field and laboratory testing with interpretation of the ground conditions.

The full Site Investigation report has been included as Appendix A of this report.





8 DRAINAGE, STRUCTURES & PAVEMENT

SURFACE WATER DRAINAGE OVERVIEW

The general principals behind the drainage design will be as follows:

- The proposed road will cross existing watercourses, namely the river Ryewater and the Blackhall Little stream. These crossings have been designed so as not to interfere with the surface water drainage regime of the area through which the road passes, nor cause any adverse flood impact;
- Existing overland flows which the proposed road crosses and may block, will be intercepted and discharged to a suitable outfall;
- The drainage of the proposed road will be designed such that surface water drainage and sub-grade drainage will be provided for the mainline carriageway and all new sections of minor roads. This discharge will be directed to the existing watercourses and discharged properly, following attenuation and treatment through fuel separators;
- The maintenance or improvement to the quality of the existing drainage network;
- The application of Sustainable Drainage Systems (SuDS) to the surface water drainage system where possible.

The road drainage for the scheme has been designed in accordance with the GDSDS. The elements of the drainage to be constructed will be constructed in accordance with the *Greater Dublin Region Code of Practice for Drainage Works,* and Traffic Infrastructure Ireland's (TII) *RCD 500 series* and *Drainage Design for National Road Schemes.* Any SuDS elements incorporated into the scheme will be designed in accordance with The SuDS Manual, C753 (published by CIRIA, 2007). All drainage designs have been carried out with regard to both Meath and Kildare County Council's respective Development Plans and Frameworks.

All rainfall runoff on the new MOOR is the be captured by adequately spaced trapped road gullies, which connect to a main carrier drain under the road. The rainfall runoff on the aligning footpath and cycle-track shall be intercepted by the dividing tree-lined grass verge, with excess runoff only being collected by the road's gully network.





Surface water attenuation will be used to control surface water runoff rates from all hard surfaces in accordance with the GDSDS, with these being restricted to a maximum flow rate of 5.5 l/s/ha, which is less than the calculated greenfield runoff equivalent.

The rate of discharge from the storage facility will be controlled by means of a flow restricting device at the outfall i.e., vortex Hydrobrake, or similar approved. The level of discharge will be restricted to that of the natural catchment and the remainder of the flow will be attenuated upstream of the flow restriction. The size and volume of storage facilities will in general be based on the 1 in 100-year storm event. For flows in excess of the 1-in-30-year storm event up to the 1-in-100-year storm event, attenuated runoff will be retained within the site of the road. Where feasible, this will be stored in areas such as landscaped areas and carriageway surfaces, and returned to the drainage system to be discharged through the flow control device following the storm event. Where storage of this volume in surface areas is not feasible, the attenuation facilities will be increased in size to accommodate the 1-in-100-year storm event. For larger events (i.e., in excess of the 1-in-100-year storm event), excess runoff will be directed overland to receiving watercourses via designated routes.

The attenuation systems are to largely comprise enclosed vegetated ponds, and shall be preceded by a Class 1 bypass fuel separator.

SURFACE WATER DESIGN CRITERIA

The proposed surface water network is to be designed in accordance with the GDSDS, using MicroDrainage Network Design package, by Innovyze Inc., which simulates the performance of the integrated drainage network for varying rainfall return periods and storm durations.

The MicroDrainage Network Design software applies the Flood Studies Report (FSR) methodology for analysis of the rainfall profiles. However, the input design parameters that were used, as part of this design, were based on the available Flood Studies Update (FSU) data, i.e., the return period rainfall depths for sliding durations, which determine





the M5-60 and R values, and the standard annual average rainfall (SAAR); as sourced from Met Éireann. The primary design parameters used in design are as follows:

Parameter	Value
Annual Average Rainfall (AAR) Value	799mm
Rainfall 'M5-60' Value	15.70mm
Ration R	0.281
Impermeability Factor for paved areas	1.0
Time of Entry	minutes
Smallest pipe diameter to use for carriageway drainage	225mm
Roughness Coefficient	0.6
Minimum permissible velocity (self-cleansing velocity)	1.0 m/s
Maximum velocity	2.99 m/s
Minimum cover to pipes (unprotected)	1200mm
Line up pipe soffits at connection	YES
Return Period for carriageway drainage	2 years
Return period for culvert design	100 years
Return period for bridge design	1000 years

SURFACE WATER CATCHMENTS & ATTENUATION

The proposed surface water network is to be split into a 4nr. catchments, in order to optimise the network based on the natural topography of the site, and therefore replicating natural discharge rates and volumes.

The new road and associated footpath and cycle track is to discharge the treated and attenuated rainfall runoff from each catchment to the existing watercourse along its southern and eastern boundaries, namely the river Ryewater and the Blackhall Little stream.

The discharge rates are to be restricted to a maximum flow rate from each catchment of **5.5 l/s/ha**, which is *less than* the current greenfield equivalent runoff rate. Refer





to the image below for details of the existing greenfield runoff rate, which has been calculated using the ICPSuDS Input, (Flood Studies Report, FSR).

🚔 Rural Runoff Ca	lculator					_		\times					
a 🛍 🖄													
	ICPSUDS												
Micro	ICP SUDS Input (FSR	Method)				Re	sults						
eren ege	Return Period (Years)	2	Partly l	Jrbanised Ca	tchment (QBA	R) (BAR rural (),	/s)					
	Area (ha) 1	.000	Urban		0.000		5.6						
	SAAR (mm)	799	Region	Ireland East	~	Q	BAR urban (/s)					
	Soil).470					5.6						
	Growth Curve		(None)		Calcul	ate							
IH 124													
ICP SUDS	Return Period Flood												
ADAS 345		OBAR	O(2yrs)	Q (1 yrs)	Q (30 yrs)	O (100 yrs)		~					
FEH	Region	(l/s)	(l/s)	(l/s)	(l/s)	(l/s)							
ReFH2	Ireland East	5.6	5.4	4.8	9.2	10.7							
Greenfield Volume	Ireland South	5.6	5.4	4.8	9.0	10.4							
Greenfield Volume	Ireland West	5.6	5.4	4.8	8.7	10.0							
(ReFH2)		5.0	5.2	4.0	12.0	14.7		~					
	OK Cancel Help												
	I	Enter Return Pe	riod between 1	and 1000									

Attenuation ponds are to be provided upstream of the outfall location from each catchment. Each of the attenuation systems have been designed to attenuate the design 1% AEP event, with an additional 20% factor for Climate Change projections, and shall comprise a grassed / vegetated pond, with protected headwalls.

An overview of the surface water catchment boundaries, along with the attenuation zones and outfall locations are illustrated on the following image.





O'Connor Sutton Cronin & Associate Multidisciplinary Consulting Engineers



A summary of the attenuation strategy is as follows:

Attenuation A: 765m³ – discharge to River Ryewater;
Attenuation B: 125m³ – discharge to Blackhall Little stream;
Attenuation C: 120m³ – discharge to Blackhall Little stream;
Attenuation D: 140m³ – discharge to new filter drain that discharges to river Ryewater.

As note previously, each drainage network is to discharge at a flow rate of 5.5 l/s/ha, which is less than the calculated greenfield equivalent rate.

While catchment areas A, B and C comprise all new road infrastructure, and are do discharge treated and attenuated runoff to the watercourse immediately adjacent, Catchment D is to discharge its attenuated and treated flows to a new filter dreain that





is to replace an existing open drain as part of the upgrade of the R157 road, which is to form part of the MOOR. This section of the proposed MOOR, on the eastern side of the Maynooth Environs, is to consist of realigned and upgrade of the existing R157road infrastructure, with rainfall runoff to be directed to the new filter drain via repositioned road gullies (along with some new ones).

A non-return valve is to be fixed to the headwall of each outfall to watercourse.

FLOOD RISK ASSESSMENT

JBA Consulting have carried out a detailed Flood Risk Assessment (FRA) on the masterplan area foe the Maynooth Environs. This FRA included a detailed update to the model of the river Ryewater and its local tributaries, based on a recent detailed topographic survey. The new model also included the new bridge structures that have been discussed elsewhere within this report.

The results of the FRA, and its associated output flood extent mapping, confirmed that there was no adverse impact on existing lands in the vicinity of the study area, with no additional nuisance flooding caused as a result of the proposed new road or associated developments.

Refer to JBA Consulting's Masterplan Flood Risk Assessment Report, submitted under separate cover for further details.

SECTION 50 APPLICATION

A Section 50 application to the Office of Public Works (OPW) is to be submitted following grant of planning permission, for each of the proposed bridge structures.

It is noted that an assessment on potential flood risk, in line with OPW's Section 50 specific requirements, have been assessed as part of JBA consulting's flood study and risk assessment for the Maynooth Environs, with no adverse impact noted.





WASTEWATER DRAINAGE OVERVIEW

OCSC and the applicant have had continued detailed discussions with Irish Water in relation to the delivery of a new strategic wastewater pumping station, which is to be sited on Applicant owned lands within Maynooth Environs, as part of a separate planning application. New wastewater drainage infrastructure is to be installed along the route of the proposed MOOR, which is to facilitate new development in the Maynooth Environs by allowing for a connection to the new WWPS. All new wastewater infrastructure shall be in accordance with Irish Water's requirements.

POTABLE WATER OVERVIEW

New watermain infrastructure is to be installed along the route of the proposed MOOR, which is to facilitate new development in the Maynooth Environs. These are to be routed along the footpath / cycle track on both sides of the carriageway, and shall be in accordance with Irish Water's requirements.





9 CONCLUSIONS & RECOMMENDATIONS

CONCLUSIONS

Having completed the preliminary design of the scheme, the following conclusions can now be made:

- The need for the scheme has been established.
- The scheme will also relieve pressure at certain key junctions within the existing road network.
- The new bridge on the western side will provide a second river crossing for traffic from Moyglare Road to Maynooth environs and eastwards.
- The scheme will bring a reduction in the frequency and severity of road collisions
- The design of the scheme has been carried out in accordance with DMURS.

RECOMMENDATIONS

It is recommended that the Maynooth Outer Orbital Road as described in this Preliminary Design Report be approved by Meath County Council so that it will form the basis for the detailed design and construction of the Road.





10 VERIFICATION

This report was compiled and verified by:

Wian Marais BE (US), BE (Hons) (UP), Professional Engineer (ECSA) Civil Engineer O'Connor Sutton Cronin & Associates







Appendix A SITE INVESTIGATION REPORT



Project: S665 Issued: *29 August 2022*



S.I. Ltd Contract No: 5863

Client:Sky Castle LtdEngineer:OCSCContractor:Site Investigations Ltd

<u>Moygaddy,</u> <u>Maynooth, Co. Meath</u> <u>Site Investigation Report</u>

Prepared by:

Stephen Letch

Issue Date:	12/08/2021
Status	Final
Revision	2

Cont

<u>tents:</u>		Page No.
1.	Introduction	1
2.	Site Location	1
3.	Fieldwork	1
4.	Laboratory Testing	4
5.	Ground Conditions	4
6.	Recommendations and Conclusions	5

Appendices:

- Cable Percussive Borehole Logs 1.
- 2. Rotary Corehole Logs and Photographs
- 3. Trial Pit Logs and Photographs
- 4. Soakaway Test Results
- 5. Dynamic Probe Logs
- Geotechnical Soil Laboratory Test Results 6.
- 7. Geotechnical Rock Laboratory Test Results
- 8. Survey Data

1. Introduction

On the instructions of OCSC, Site Investigations Ltd (SIL) was appointed to complete a ground investigation at Moygaddy, Maynooth, Co. Meath. The investigation was completed for the residential development on the site and was completed on behalf of the Client, Sky Castle Ltd. The fieldworks were started in June and completed in July 2021.

This report presents the factual geotechnical data obtained from the field and laboratory testing with interpretation of the ground conditions discussed.

2. Site Location

The site is located to the north of Maynooth with the Kildare-Meath border running to the south of the site with Maynooth in Kildare and the site in Meath. Carton Demense is to the east of site with Dublin city further to the east. The first map below shows the location of the site to the east of Dublin and the second map shows the location of the site to the north of Maynooth town.





3. Fieldwork

The fieldworks comprised a programme of cable percussive boreholes, rotary coreholes, trial pits and dynamic probes. All fieldwork was carried out in accordance with BS 5930:2015, Engineers Ireland GI Specification and Related Document 2nd Edition 2016 and Eurocode 7: Geotechnical Design.

The fieldworks comprised of the following:

- 18 No. cable percussive boreholes
- 16 No. rotary coreholes
- 21 No. trial pits with soakaway tests
- 84 No. dynamic probes

3.1. Cable Percussive Boreholes with Rotary Coreholes

Cable percussion boring was undertaken at 18 No. locations using a Dando 150 rig and constructed 200mm diameter boreholes. The boreholes terminated at depths ranging from 3.00mbgl (BH10) to 6.80mbgl (BH15 and BH16) after 1.5hrs chiselling with no further progress. It was not possible to collect undisturbed samples due to the granular soils encountered so bulk disturbed samples were recovered at regular intervals.

To test the strength of the stratum, Standard Penetration Tests (SPT's) were performed at 1.00m intervals in accordance with BS 1377 (1990). In soils with high gravel and cobble content it is appropriate to use a solid cone (60°) (CPT) instead of the split spoon and this was used throughout the testing. The test is completed over 450mm and the cone is driven 150mm into the stratum to ensure that the test is conducted over an undisturbed zone. The cone is then driven the remaining 300mm and the blows recorded to report the N-Value. The report shows the N-Value with the 75mm incremental blows listed in brackets (e.g., BH01 at 2.00mbgl where N=16-(2,3/3,4,4,5)). Where refusal of 50 blows across the test zone was encountered was achieved during testing, the penetration depth is also reported (e.g., BH01 at 1.00mbgl where N=50-(3,4/50 for 85mm)).

The cable percussive borehole logs are presented in Appendix 1.

3.2. Rotary Coreholes

At 16 No. locations, rotary coreholes were completed to investigate the depth and type of bedrock. After the investigation started, RC01, RC02, RC03 and RC15 were cancelled but the numbering remained as scheduled so these numbers are missing in the sequence of rotary coreholes. The rotary drilling was carried out using a Sondeq SS71 top drive rig. Open hole drilling techniques were used to advance through the overburden where encountered and bedrock was recovered at 10 No. locations and the bedrock was then cored with the corehole terminated when 3m of core was recovered. At 6 No. locations, no bedrock was encountered when the corehole reached 8mbgl and the corehole was terminated and backfilled.

Once the coreholes were completed, the rock cores were returned to SIL, where they were logged and photographed by a SIL geotechnical engineer. Provided on the logs are engineering

geological descriptions of the rock cores with details of the bedding/discontinuities and mechanical indices for each core run, i.e., TCR, SCR, RQD and Fracture Index.

The rotary corehole logs and photographs are presented in Appendix 2.

3.3. Trial Pits with Soakaway Tests

21 No. trial pits were excavated using a wheeled excavator. The pits were logged and photographed by SIL geotechnical engineer and representative disturbed bulk samples were recovered as the pits were excavated, which were returned to the laboratory for geotechnical testing. Groundwater ingresses and pit wall stability were also recorded as the excavations progressed.

At the base of the trial pits, soakaway tests were completed and logged by SIL geotechnical engineer. BRE Special Digest 365 stipulates that the pit should be filled three times and that the final cycle is used to provide the infiltration rate. The time taken for the water level to fall from 75% volume to 25% volume is required to calculate the rate of infiltration. However, if the water level does not fall at a steady rate, then the test is deemed to have failed and the area is unsuitable for storm water drainage.

The trial pit logs and photographs are presented in Appendix 3 and soakaway test results are presented in Appendix 4.

3.4. Dynamic Probes

At 84 No. locations, dynamic probes were completed using a track mounted Competitor 130 machine. The testing complies with the requirements of BS1377: Part 9 (1990) and Eurocode 7: Part 3. The configuration utilised standard DPH (Heavy) probing method comprising a 50kg weight, 500mm drop height and a 50mm diameter (90°) cone. The number of blows required to drive the cone each 100mm increment into the sub soil is recorded in accordance with the standards. The dynamic probe provides no information regarding soil type or groundwater conditions.

The dynamic probe results can be used to analyse the strength of the soil strata encountered by the probe. 'Proceedings of the Trinity College Dublin Symposium of Field and Laboratory Testing of Soils for Foundations and Embankments' presents a paper by Foirbart that is most relevant to Irish soil conditions and within this paper the following equations were included:

> Granular Soils: DPH N₁₀₀ x 2.5 = SPT N value Cohesive Soils: $C_u = 15 \times DPH N_{100} + 30 \text{ kN/m}^2$

These equations present a relationship between the probe N_{100} value and the SPT N value for granular soils and the undrained shear strength of cohesive soils.

The dynamic probe logs are presented in Appendix 5.

3.5. Surveying

Following completion of all the fieldworks, a survey of the exploratory hole locations was completed using a GeoMax GPS Rover. The data is supplied on each individual log along with a site plan in Appendix 8.

4. Laboratory Testing

Geotechnical soil laboratory testing was completed on representative soil samples in accordance with BS 1377 (1990). Testing included:

- 10 No. moisture contents
- 10 No. Atterberg limits
- 10 No. particle size gradings
- 21 No. California Bearing Ratio tests
- 8 No. pH, sulphate and chloride content

Geotechnical rock testing was also completed on the core samples and consisted of the following:

• 20 No. point loads

The geotechnical soil laboratory test results are presented in Appendix 6 with the rock laboratory tests provided in Appendix 7.

5. Ground Conditions

5.1. Overburden

The natural ground conditions in the boreholes and trial pits are consistent with brown overlying black slightly sandy gravelly silty CLAY with cobbles and boulders. These natural soils are overconsolidated lodgment till which is encountered across the North Leinster region with several papers discussing the engineering characteristics of the soil. The brown and brown grey soils are the weathered surface of the underlying black clays and the gravel and cobbles are generally angular to subrounded and predominantly limestone in origin. The SPT N-values range from 7 to 15 at 1.00mbgl and increase to between 12 and 21 at 2.00mbgl although BH14 did record a value of 7 at this depth. The values then continue to increase with depth as the very stiff black CLAY is encountered.

Laboratory tests of the shallow cohesive soils recorded CLAY soils with low and intermediate plasticity indices of 12% to 18% recorded. The particle size distribution curves were poorly sorted straight-line curves with 21 to 53% fines content.

5.2. Bedrock

Bedrock was recovered from depths ranging from 2.80mbgl (RC10) to 7.80mbgl (RC20) and was greater than 8m deep at 5 No. locations to the east of the site. The core recovered shows that bedrock is strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with pyrite crystals, occasional fossils and calcite veins. The core showed a fresh to slightly weathered state. The discontinuities are generally smooth to rough, planar to slightly undulating, tight to open, dip angles ranging from sub-horizontal to sub-vertical and the surfaces are clean with some grey stained, calcite crystals on the surface and some clay infill.

5.3. Groundwater

Groundwater details in the boreholes and trial pits during the fieldworks are noted on the logs in Appendices 1 and 2. Groundwater ingresses were recorded in five boreholes, at 1.90mbgl at BH07 and between 3.20mbgl and 3.60mbgl in BH05, BH14, BH16 and BH17. All ingresses were sealed off by the casing as the drilling advanced and therefore indicates perched water lenses. There were water ingresses into 10 No. trial pits across the site, at depths ranging from 1.50mbgl (TP12) to 2.60mbgl (TP21) with ingresses logged as seepages to medium rates

6. Recommendations and Conclusions

Please note the following caveats:

The recommendations given, and opinions expressed in this report are based on the findings as detailed in the exploratory hole records. Where an opinion is expressed on the material between the exploratory hole locations or below the final level of excavation, this is for guidance only and no liability can be accepted for its accuracy. No responsibility can be accepted for adjacent unexpected conditions that have not been revealed by the exploratory holes. It is further recommended that all bearing surfaces when excavated should be inspected by a suitably qualified Engineer to verify the information given in this report.

Excavated surfaces in clay strata should be kept dry to avoid softening prior to foundation placement. Foundations should always be taken to a minimum depth of 0.50mBGL to avoid the effects of frost action and possible seasonal shrinkage/swelling.

If it is intended that on-site materials are to be used as fill, then the necessary laboratory testing should be specified by the Client to confirm the suitability. Also, relevant lab testing should be specified where stability of side slopes to excavations is a concern, or where contamination may be an issue.

6.1. Shallow Foundations

Due to the unknown depth of foundation and no longer-term groundwater information, this analysis assumes the groundwater will not influence the construction or performance of these foundations.

The borehole encountered firm brown slightly sandy slightly gravelly silty CLAY at 1.00mbgl and the SPT N-value at this depth generally ranges from 9 to 15. Two holes, BH14 and BH17, recorded lower values of 7 and 8 respectively but the value of 9 has been chosen for analysis of the soils.

Using a correlation proposed by Stroud and Butler between SPT N-values and plasticity indices, the SPT N-value can be used to calculate the undrained shear strength. With the low to intermediate plasticity indexes recorded in the laboratory for the soils encountered on site, this correlation is C_u =6N. Therefore, using the lower value of 9, this indicates that the undrained shear strength of the CLAY is 54kN/m². This can be used to calculate the ultimate bearing capacity, and this has been calculated to be 295kN/m². Finally, a factor of safety is applied and with a factor of 3, an allowable bearing capacity of 100kN/m² would be anticipated using the lower SPT values.

The soils recorded values of 12 to 21 at 2.00mbgl. This SPT N-value of 12 indicates a C_u of 72kN/m², an ultimate bearing capacity of 405kN/m² and finally an allowable bearing capacity of 135kN/m².

The dynamic probes confirm that the soils are firm to stiff with values of 2 or greater recorded across the site and would correlate with the SPT N-values.

The following assumptions were made as part of these analyses. If any of these assumptions are not in accordance with detailed design or observations made during construction these recommendations should be re-evaluated.

- Foundations are to be constructed on a level formation of uniform material type (described above).
- The bulk unit weight of the material in this stratum has a minimum density of 19kN/m³.
- All bearing capacity calculations allow for a settlement of 25mm.

The trial pits indicate that excavations in the cohesive soils should be stable for a short while at least although TP05 did record pit wall instability. Therefore, all slopes should be evaluated upon excavation and regular inspections should be completed during construction to ensure that all slopes are stable. Temporary support should be used on any excavation that will be left open for an extended period.

6.2. Groundwater

The caveats below relating to interpretation of groundwater levels should be noted: There is always considerable uncertainty as to the likely rates of water ingress into excavations in clayey soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water.

Furthermore, water levels noted on the borehole and trial pit logs do not generally give an accurate indication of the actual groundwater conditions as the borehole or trial pit is rarely left open for sufficient time for the water level to reach equilibrium.

Also, during boring procedures, a permeable stratum may have been sealed off by the borehole casing, or water may have been added to aid drilling. Therefore, an extended period of groundwater monitoring using any constructed standpipes is required to provide more accurate information regarding groundwater conditions. Finally, groundwater levels vary with time of year, rainfall, nearby construction and tides.

Pumping tests would be required to determine likely seepage rates and persistence into excavations taken below the groundwater level. Deep trial pits also aid estimation of seepage rates.

As discussed previously, groundwater was encountered in five boreholes and ten trial pits at depths ranging from 1.50mbgl to 3.60mbgl.

There is always considerable uncertainty as to the likely rates of water ingress into excavations in cohesive soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water. Based on this information at the exploratory hole locations to date, it is considered likely that any shallow ingress (less than 2.00mbgl) into excavations of the CLAY will be slow to medium. If granular soils are encountered in shallow excavations, then the possibility of water ingressing into an excavation increase.

If groundwater is encountered during excavations then mechanical pumps will be required to remove the groundwater from sumps. Sumps should be carefully located and constructed to ensure that groundwater is efficiently removed from excavations and trenches.

6.3. Soakaway Tests

At 10 No. locations, the soakaway tests failed the specification as water ingressed into the pits. This indicates that the soils are already saturated and therefore, unsuitable for soakaway design.

At the remaining locations, the soakaway tests failed the specification as the water level did not fall sufficiently enough to complete the test. The BRE Digest stipulates that the pit should half empty within 24hrs, and extrapolation indicates this condition would not be satisfied. The tests were terminated at the end of the first (of a possible three) fill/empty cycle since further testing would give even slower fall rates due to increased soil saturation. The unsuitability of the soils for soakaways is further suggested by the soil descriptions of the materials in this area of the site where the soakaway was completed, i.e., well compacted clay soils.

6.4. Pavement Design

The CBR test results in Appendix 4 indicate CBR values ranging from 4.1% to 11.6%.

The CBR samples were recovered from 0.50mbgl and inspection of the formation strata should be completed prior to construction of the pavement. Once the exact formation levels are finalised then additional in-situ testing could be completed to assist with the detailed pavement design.

6.5. Aggressive Ground Conditions

The chemical test results in Appendix 4 indicate a general pH value between 8.59 and 8.80, which is close to neutral and below the level of 9, therefore no special precautions are required.

The maximum value obtained for water soluble sulphate was $127mg/l as SO_3$. The BRE Special Digest 1:2005 - Concrete in Aggressive Ground' guidelines require SO₄ values and after conversion (SO₄ = SO₃ x 1.2), the maximum value of 152mg/l shows Class 1 conditions and no special precautions are required.

Appendix 1 Cable Percussive Borehole Logs

Contra 580	ct No: 63	Cable Percussion		Bo	Borehole No: BH01						
Contrac	et:	Moygaddy	Easting	:	693986	6.514		Date Started:	30/06	/2021	
Locatio	n:	Maynooth, Co. Meath	Northin	g:	739217	7.399		Date Completed:	30/06	/2021	
Client:		Sky Castle Ltd	Elevatio	on:	56.45			Drilled By:	G. Ma	acken	
Engine	er:	OCSC	Boreho Diamet	le er:	200mm	ו		Status:	FINA	L	
Depth	n (m)	Stratum Description	Legend.	Level	(mOD)	Sam	nples	and Insitu Tes	ts	Water Strike	Backfill
0.5 –	0.20	TOPSOIL. Firm brown sandy slightly gravelly silty CLAY with low cobble content.		Scale 	56.25	Depth	Туре	Result			
1.0 — — — 1.5 —	1.60	Ctiff hypers and calightly group like oith of AV with high		55.5 — 	54.85	1.00 1.00	B C	GM75 50 (3,4/50 85mm)	for		
2.0		cobble content.		54.5 — 54.5 — 54.0 —		2.00 2.00	B C	GM76 N=16 (2,3/3,	4,4,5)		
3.0	2.80	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.			53.65	3.00 3.00	B C	GM77 50 (8,11/50 200mm) for		
3.5				53.0 — 52.5 — 		4.00 4.00	B C	GM78 N=48	,		
4.5			52.0 — - - 51.5 —		5.00	D	(12,13/11,14 1)	12,1			
5.5	5.40 5.50	Obstruction - possible boulders. End of Borehole at 5.50m			51.05 50.95	5.00 5.00 5.50	Б С С	50 (25 fo 135mm/50 125mm 50 (25 fo	or) for) or		
6.0				50.5				5mm/50 for	0mm)		
6.5				50.0	-						
7.0				49.0							
8.0				48.5 —							
8.5				48.0 — 							
9.0				47.5 —							
9.5				47.0							
		Chiselling:Water Strikes:Water Details:From:To:Time:Strike:Rose:Depth SealedDate:Hole Depth:Water Depth:For Depth:1.301.5001:001.5001:0020/075.50Dry6.206.3001:301.5001:301.5001:30	Install From: To	ation: b: Pipe	E From: 7	Backfill: To: Type 5.50 Arisin	e: Br gs to	Remarks: orehole terminated obstruction.	d due	Legend: B: Bulk D: Disturb U: Undistur ES: Enviro W: Water C: Cone S S: Split sp	ed Irbed onmental PT oon SPT

Contra	ict No: 63	Cable Percussio	n E	30 1	reł	nole	e Lo	bg		B	orehole BH0	No: 2
Contrac	ot:	Moygaddy	East	ing:		69392	26.010		Date Started:	29/06	6/2021	
Locatio	n:	Maynooth, Co. Meath	North	hing:		73929	94.840		Date Completed:	29/06	6/2021	
Client:		Sky Castle Ltd	Eleva	ation	1:	56.95			Drilled By:	G. Ma	acken	
Engine	er:	ocsc	Bore Dian	hole neter	:	200m	m		Status:	FINA	L	
Depth	h (m)	Stratum Description	Lege	nd L	evel	(mOD)	5	Samples	and Insitu Tes	sts	Water	Backfill
Scale	Depth		3 -	S	Scale	Depth	Dept	h Type	e Result		Strike	
0.5	0.20	Firm brown sandy slightly gravelly silty CLAY with low cobble content.			56.5 –	56.75						
1.0					56.0 —		1.00) В	GM70			
1.5	1.20	Stiff brown sandy slightly gravelly silty CLAY with high cobble content			- - 55.5 —	55.75	1.00		N=9 (2,1/1,2	2,3,3)		
-				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-							
2.0					55.0 — _ _		2.00) B) C	GM71 N=21 (5,6/6,	4,5,6)		
2.5	2.60		<u>x</u> <u>x</u>	<u>ं</u> 	54.5 —	54.35						
30-		Very stiff black slightly sandy gravelly slity CLAY with low cobble content.			 54.0 —		3.00) B	GM72			
-					-		3.00		N=47 (6,9/9,12,12	2,14)		
3.5 —					53.5 — — —					. ,		
4.0					53.0 —		4.00	В	GM73			
4.5					52.5 — -		4.00		(8,8/12,12,1	3,13)		
5.0 —			0 X 0 X		52.0 —		5.00) В	GM74			
5.5 -	5.20	Obstruction - possible boulders. End of Borehole at 5.20m		<u>×</u>	51.5 —	51.75	5.00 5.20		50 (25 fo 95mm/50 10mm)	or for		
6.0-				Ę	 51.0 —				50 (25 fc 5mm/50 for	or 5mm)		
				Ę								
0.5				E	50.0							
7.0												
7.5 — — —					49.5 — - -							
8.0				4	49.0 —							
8.5 —				4	48.5 -							
9.0				4	48.0							
9.5 —				2	47.5 _							
					-							
		Chipolling: Mates Strikes, Mates Det 1	les :	tollet'	iori		Dealist		Domente		Locard	
a		From: To: Time: Strike: Rose: Sealed Date: Dettails: Det	From:	To:	Pipe	: From:	To:	г. Гуре: Е	Remarks: Borehole terminate	d due	B: Bulk D: Disturb	ed
S		3.70 3.80 00:45 19/07 5.20 Dry 5.20 5.20 01:30 19/07 5.20 Dry				0.00	5.20 A	risings t	o obstruction.		U: Undist ES: Enviro W: Water C: Cone S S: Split sr	urbed onmental SPT

Contra 586	ct No: 63	Cable Percussion	Cable Percussion Borehole Log										
Contrac	et:	Moygaddy	Easting	:	694117	.023		Date Started:	22/07	/2021			
Locatio	n:	Maynooth, Co. Meath	Northin	g:	739155	5.527		Date Completed:	22/07	/2021			
Client:		Sky Castle Ltd	Elevati	on:	55.01			Drilled By:	G. Ma	acken			
Enginee	er:	OCSC	Boreho Diamet	le er:	200mm	ı		Status:	FINA	L			
Depth	n (m)	Stratum Description	Legend	Level	(mOD)	Sam	ples	and Insitu Tes	ts	Water Strike	Backfill		
Scale 0.5 1.0 1.5 2.0 2.5 3.0 4.0 5.5 6.0 6.5	Depth 0.20 1.50 2.80 4.90 5.00	TOPSOIL. Firm brown sandy slightly gravelly silty CLAY with low cobble content. Firm brown sandy slightly gravelly silty CLAY with high cobble content. Very stiff black slightly sandy gravelly silty CLAY with low cobble content. Very stiff black slightly sandy gravelly silty CLAY with low cobble content. Qbstruction - possible boulders. End of Borehole at 5.00m		Scale	Depth 54.81 53.51 52.21 50.11 50.01	Depth 1.00 1.00 2.00 2.00 3.00 3.00 3.00 4.00 4.00 5.00	B C B C B C C C	GM66 N=10 (2,2/3, GM67 N=12 (4,5/3, GM68 N=49 (6,6/11,12,1 GM69 N=50 (8,11/5 255mm 50 (25 fc 5mm/50 for 5	2,3,2) 3,3,3) 3,13) 50 for) 5mm)	Strike			
7.0				48.0									
7.5 -				47.5 _									
8.0				47.0									
8.5				46.5 —									
9.0				46.0 —									
-													
9.5 -				45.5 — - -									
		Chiselling: Water Strikes: Water Details:	Install	- ation:		Backfill		Remarket		Legend.			
		From: To: Time: Strike: Rose: Depth Sealed Date: Hole Depth: Water Depth: Image: Depth: Water Depth: Image: Depth: Water Depth: Image: Depth: Image: Depth: <td>From: To</td> <td>b: Pipe</td> <td>: From: 1 0.00 5</td> <td>To: Type</td> <td>e: B gs to</td> <td>orehole terminated</td> <td>d due</td> <td>B: Bulk D: Disturb U: Undistu ES: Enviro W: Water C: Cone S S: Split sp</td> <td>ed irbed onmental PT oon SPT</td>	From: To	b: Pipe	: From: 1 0.00 5	To: Type	e: B gs to	orehole terminated	d due	B: Bulk D: Disturb U: Undistu ES: Enviro W: Water C: Cone S S: Split sp	ed irbed onmental PT oon SPT		

Contra	ct No: 63	Cable Percussion	n B	orel	nole	Lo	g		Bo	orehole BH04	No: 1				
Contrac	ct:	Moygaddy	Eastir	ıg:	693732	2.812		Date Started:	02/07	/2021					
Locatio	n:	Maynooth, Co. Meath	Northi	ng:	739457	7.539		Date Completed:	02/07	/2021					
Client:		Sky Castle Ltd	Eleva	tion:	56.85			Drilled By:	G. Ma	acken					
Enginee	er:	ocsc	Boreh Diame	ole eter:	200mm	n		Status:	FINA	L					
Depth	n (m)	Stratum Description	Legen	Level	(mOD)	Sar	nples	and Insitu Tes	ts	Water	Backfill				
Scale	Depth	TOPSOIL		Scale	Depth	Depth	Туре	Result		Strike					
0.5	0.20	Firm brown sandy slightly gravelly silty CLAY with low cobble content.		전 종 종 종 종 종 종 종 종 종 종 종 종 종 종 종 종 종 종 종	56.65										
1.0				56.0 —	-	1.00	в	GM86							
- - 1.5 -	1 50			55.5 -	55 35	1.00	С	N=15 (3,4/4,	5,3,3)						
	1.00	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.		× • • • • • • • • • • • • • •			_								
2.0				× 545 -		2.00 2.00	B C	GM87 N=17 (4,4/3,	5,5,4)						
2.5 -				· · · · · · · · · · · · · · · · · · ·	-										
3.0	3.10	Very stiff block slightly condy grovelly silty CLAV with	x ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	54.0 — ×	53.75	3.00	B	GM88							
3.5 —		low cobble content.		× 53.5 - × 53.5 -	-	5.00	U	(5,8/8,12,14	4,15)						
4.0				53.0 -		4.00	R	GM89							
+.0			<u>x ~ ~ 0</u>	52.5 -	-	4.00	C	50 (9,12/50 200mm) for)						
4.5				* * * * * * * * * * *											
5.0				× 52.0 *e *e	-	5.00 5.00	B C	GM90 50 (12,13/5	0 for						
5.5 -			<u>x o</u>	51.5 - 51.5 -				110mm)						
6.0			x	51.0 —	-	6.00	В	GM91							
6.5	6.20 6.30	.20 .30 Obstruction - possible boulders. End of Borehole at 6.30m		20 30 Obstruction - possible boulders. End of Borehole at 6.30m		Obstruction - possible boulders. End of Borehole at 6.30m			50.65 50.55	6.00 6.30	C C	50 (15,10/5 100mm 50 (25 fc	0 for) or		
7.0				50.0	-			5mm/50 for \$	5mm)						
				49.5 -											
7.5 -				49.0 -	-										
8.0				48.5 -											
8.5 -				-	-										
9.0				48.0											
9.5 –				47.5 -											
				47.0											
		Chiselling: Water Strikes: Water Details:	Insta	Illation:		Backfill:		Remarks:		Legend:					
		From:To:Time:Strike:Rose:Depth SealedDate:Hole Depth:Water Depth:If6.206.3001:30Image: Comparison of the compa	From:	To: Pipe	e: From: ⁻ 0.00 6	To: Typ 5.30 Arisir	e: B ngs to	orehole terminated o obstruction.	d due	B: Bulk D: Disturb U: Undistu ES: Enviro W: Water C: Cone S	ed urbed onmental				

Contra	ict No: 63	Cable Percussion	n Bo	oreł	nole	Lo	g		B	orehole BH0	No: 5
Contrac	ot:	Moygaddy	Easting	j:	693928	3.844		Date Started:	21/07	/2021	
Locatio	n:	Maynooth, Co. Meath	Northin	g:	739604	1.500		Date Completed:	21/07	/2021	
Client:		Sky Castle Ltd	Elevati	on:	58.72			Drilled By:	G. Ma	acken	
Engine	er:	ocsc	Boreho Diamet	le er:	200mm	ı		Status:	FINA		
Depth	n (m)	Stratum Description	Legend	Level	(mOD)	Sar	mples	and Insitu Tes	sts	Water Strike	Backfill
Scale	0.20	TOPSOIL. Brown sandy slightly gravelly silty CLAY with low cobble content.		58.5 - 	58.52	Deptn	Туре	Result			
1.0	1.10	Firm becoming stiff brown sandy slightly gravelly silty CLAY with high cobble content.		58.0 — - - 57.5 —	57.62	1.00 1.00	B C	GM61 N=9 (1,1/2,2	2,3,2)		
1.5				57.0 — 		2.00	В	GM62			
2.5	2 90			56.5 - - - 56.0	55.02	2.00	С	N=20 (3,5/5,	6,4,5)		
3.0	2.00	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		- - - 55.5 -	55.92	3.00 3.00	B C	GM63 N=43 (5,8/8,9,12	.,14)		
3.5				- 55.0 —	-	4.00	D	CM64			
4.0				54.5 -		4.00	C	N=48 (8,10/10,11,1	13,14)		
5.0	5 10		x x x	54.0	53 62	5.00	В	GM65			
5.5	5.20	Obstruction - possible boulders. End of Borehole at 5.20m		53.5	53.52	5.00 5.20	C C	50 (25 fc 60mm/50 15mm)	or for		
6.0				53.0 — - - 52.5 —				5mm/50 for	5mm)		
6.5				52.0							
7.0				- - 51.5 —	- - -						
7.5 -				51.0	-						
8.0				50.5 – 	- - -						
9.0				50.0	-						
9.5				49.5 - - - 49.0 -							
				-							
		Chiselling:Water Strikes:Water Details:From:To:Time:Strike:Rose:Depth SealedDate:Hole Depth:Water Depth:Mater Depth:Mater Depth:Mater Depth:Final Sealed5.105.2001:303.202.903.6015/075.20DryInclusion	Install From: To	ation: p: Pipe	E From: 7	Backfill: To: Typ 5.20 Arisi	pe: B ngs to	Remarks: orehole terminate obstruction.	d due	Legend: B: Bulk D: Disturb U: Undistu ES: Enviro W: Water C: Cone S S: Split sp	ed Irbed onmental PT oon SPT

Contra 58	ict No: 63			Ca	ble	P	erc	us	sio	n E	Вс	orel	nole	e L	.0(9			Bo	orehole BH0	No: 6
Contrac	ct:	Moygaddy								Eas	sting	:	69392	27.32	6		Date Star	ted:	20/07	/2021	
Locatio	n:	Maynooth, C	Co. Me	eath						Nor	thin	g:	73942	21.93	0		Date Complete	d:	20/07	/2021	
Client:		Sky Castle L	_td							Elev	vatio	on:	57.55				Drilled By	:	G. Ma	acken	
Engine	er:	OCSC								Bor Dia	eho mete	le er:	200m	m			Status:		FINAI	_	
Depth	า (m)		S	Stratu	n Des	scripti	on			Lege	end	Level	(mOD))	San	nples	and Insitu	ı Test	S	Water	Backfill
Scale	Depth 0.20	TOPSOIL.										Scale	Depth 57.35	n De	pth	Туре	Re	esult		Suike	
0.5		Firm brown s cobble conte	sandy ent.	slight	ily gra	velly	silty C	LAY v	vith lov	N 2000	* 0.1 * 0.1 X 0.1	57.0 —									
10-													-	1	00	в	G	M57			
	1 40										X	56.5 -	56 15	1.	00	C	N=10 (1	,2/2,2	2,3,3)		
1.5	1.40	Stiff brown s cobble conte	andy s ent.	slightl	y grav	velly s	ilty Cl	_AY w	ith hig	h x x		56.0 —									
2.0												55.5 -	-	2.	00	В	GI	M58	5 G F)		
2.5											-0	55.0	-	Ζ.		C	N-20 (3)	,4/4,0	5,0,5)		
-	2.90									× • • • ×			54.65								
3.0		Very stiff blac low cobble c	ck slig ontent	ihtly s t.	andy	grave	elly silt	y CLA	Y with			54.5 -		3. 3.	00	B C	GI N:	M59 =50			
3.5 _										0 0 0 0 0	201×101×	54.0 -	-				(6,8/9,1	12,14	,15)		
4.0												53.5 -	-	4.	00	В	GI	M60			
											<pre></pre>	-	-	4.	00	С	50 (9,1 210	12/50)mm)	for		
4.5	4.70	Obstruction -	- poss	ible b	oulde	ers.						53.0 —	52.85	4	80	С	50 (25 for		r		
5.0	4.80	~	E	nd of E	lorehole	e at 4.80	Dm					52.5 -	52.75			Ū	5mm/50	for 5	imm)		
5.5												52.0 —	-								
60-												-	-								
0.0												51.5 -	-								
6.5												51.0 —	-								
7.0												50.5 -	-								
7.5 —												50.0	-								
												50.0	-								
8.0												49.5 -	-								
8.5 _												49.0 —	-								
9.0												48.5 -	-								
													-								
9.5 -												48.0	-								
								1									<u> </u>				
a		Chiselling From: To:	g: Time: S	VVat Strike:	er Stri Rose:	Kes: Depth Sealed	Wa Date:	ter De Hole Depth:	Water Depth:	In: From:	stalla To	ation: : Pip	e: From:	Back To:	till: Type	e: B	Rema lorehole term	arks: iinated	due	Legend: B: Bulk D: Disturb	ed
(Second		4.70 4.80 01:30 14/07 4.80 Dr											0.00	4.80	Arisin	igs to	o obstruction.			U: Undistu ES: Enviro W: Water C: Cone S S: Split sp	irbed onmental PT oon SPT

Contra	ict No: 63				Ca	ble	e P	erc	us	sio	n I	Bc	ore	nol	e I	Lo	g		Bo	orehole	No: 7
Contrac	ct:	Moygad	dy								Eas	ting	:	6942	41.2	70		Date Started:	19/07	/2021	
Locatio	n:	Maynoo	th, C	o. M	eath						Nor	thin	g:	7394	11.79	96		Date Completed:	19/07	/2021	
Client:		Sky Cas	stle L	.td							Elev	/atic	on:	58.99)			Drilled By:	G. Ma	acken	
Engine	er:	ocsc									Bor Dia	ehol mete	e er:	200m	m			Status:	FINA	_	
Depth	h (m)				Stratu	m De	scripti	on			Leg	end	Level	(mOD)	Sa	mples	and Insitu Tes	sts	Water	Backfill
Scale	Depth												Scale	Dept	h D	epth	Туре	Result		Strike	
0.5	0.20	TOPSOIL. Firm brown sandy slightly gravelly silty CLAY with low cobble content.											58.5 -	58.79)						
1.0											20 20 20 20 20 20		58.0 -		1	.00	B	GM53	3 3 3)		
1.5 —											8	* 0 - 1 * 0 - 1 * 0 - 1	57.5 -			.00	C	IN-II (1,2/2,	3,3,3)		
20	1.60	Firm brown sandy slightly gravelly silty CLAY with high cobble content.											57 0	57.39) 	00	в	CM54			
2.0													57.0	-	2	2.00	С	N=13 (2,3/3,	4,3,3)		
2.5 —	2.60	Very stif	fblad	ck sli	ghtly	sandy	grave	lly silt	y CLA	Y with	x_0	,	56.5 -	56.39	9						
3.0		IOW CODI		onter	11.							× • • • • • • • • • • • • • • • • • • •	56.0 —		3 3	5.00 5.00	B C	GM55 N=50 (8,8/5	50 for		
3.5 —						20 20 20 20 20 20		55.5 -	-				255mm)							
4.0													55.0 -	-	4	.00	В	GM56	o (
4.5 -	4.40 4.50	Obstruc	tion -	- pos	sible I End of	ooulde Borehole	e rs. e at 4.50)m					54.5 -	54.59 54.49	4	.50	c	50 (11,11/5 200mm 50 (25 fc 5mm/50 for	0 for) or 0mm)		
5.0													54.0 —	-							
5.5 _													53.5 -								
6.0													53.0 -								
6.5 —													52.5 -								
													50.0	-							
7.0													52.0 -								
7.5 — — —													51.5 -								
8.0													51.0 -								
8.5 —													50.5 -	-							
9.0													50.0 —								
9.5 —													49.5 -	-							
			all:		1.47	tor OL.	1.0	14/		ail		ot - ''	-			slef:U		Demost		Logand	
a		From: 1	o:	Time:	vva Strike:	Rose:	Depth Sealed	Date:	Hole Depth:	Water Depth:	From:		: Pip	e: From:	То:		be: B	Remarks: orehole terminate	d due	B: Bulk D: Disturb	ed
S		1.70 1 4.40 4	.90 (0 .50 (0	00:45 01:30	1.90	1.70	2.10	13/07	4.50	Dry				0.00	4.50	Arisi	ings to	o obstruction.		U: Undistu ES: Enviro W: Water C: Cone S S: Split sp	irbed onmental PT oon SPT

Contract No: 5863		Cable Percussion Borehole Log										Borehole No: BH08		
Contract:		Moygaddy	East	ing:	g: 694331.307				Date Started:	16/07/2021				
Location:		Maynooth, Co. Meath	Northing:			739691.333			Date Completed:	16/07	/2021			
Client:		Sky Castle Ltd	Elevation:		61.30		Drilled By: G. M		Macken					
Engineer:		OCSC	Bore Diarr	hole heter	:	200mm			Status:	FINA	L			
Depth (m)		Stratum Description	Lege	nd_L	.evel	(mOD)	S	amples	and Insitu Tests		Water	Backfill		
Scale	Depth	TOPSOIL		S	Scale	Depth	Depth	Туре	e Result		Surke	;		
0.5	0.40	Firm brown sandy slightly gravelly silty CLAY with low cobble content.		6	61.0 — - - -	60.90								
1.0			× 0 × 0		60.5 — — — —		1.00 1.00	B C	GM48 N=11 (1,1/2,	2,3,4)				
1.5														
2.0	1.70	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.	x x		59.5 — 	59.60	2.00	В	GM49					
2.5 —					59.0 — 		2.00	C	N=19 (3,3/4,	6,5,4)				
30-	2.90	Very stiff black slightly sandy gravelly silty CLAY with			58.5 — 	58.40	3.00	В	GM50					
		low cobble content.					3.00	C	N=35 (5,6/8,8,10),9)				
3.5					57.5 —									
4.0			0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		57.0 —		4.00	C	GM51 50 (10,11/5 225mm	0 for)				
4.5					- - 56.5 —					,				
5.0					- - - 56.0		5.00 5.00	B C	GM52 50 (25 fc	or V for				
5.5 -	5.70	Obstruction - possible boulders	0 2 2 2 2 2 2			55.60	5 80		100mm))				
6.0	5.80	End of Borehole at 5.80m			55.5	55.50	5.00		5mm/50 for	5 5mm)				
6.5					5.0 — - - -									
7.0				Ę	54.5 — - -									
7.5 —				Ę	54.0 — _ _									
8.0				5	53.5 — - - -									
8.5				Ę	53.0 —									
9.0				ŧ	52.5 — 									
9.5				5	52.0 —									
				Ę	51.5 — 									
		Chiselling: Water Strikes: Water Details:	Installation:		ion [.]		Backfill		Remarks		Legend:			
		From: To: Time: Strike: Rose: Depth Sealed Date: Hole Depth: Water Depth: 2.80 3.00 00:45 12/07 5.80 Dry 5.70 5.80 01:30 12/07 5.80 Dry	From:	To:	Pipe	: From: 0.00	To: T 5.80 Ar	ype: B sings to	Borehole terminated	d due	B: Bulk D: Disturb U: Undistu ES: Enviro W: Water C: Cone S	ed irbed onmental		

Contract No: 5863		Cable Percussion Borehole Log								Borehole No: BH09			
Contract:		Moygaddy	Easting:		694598.661			Date Started: 14/0)7/2021			
Location:		Maynooth, Co. Meath	Northing:		739652.377			Date Completed:	14/07/2021				
Client:		Sky Castle Ltd	Elevation:		61.68			Drilled By:	G. Macken				
Engineer:		ocsc	Borehole Diameter:		200mm		Status:	FINAL					
Depth (m)		Stratum Description	Legend.	Legend Scale		Samples		and Insitu Tes	ts	Water Strike	Backfill		
Scale	Depth	TOPSOIL.		Scale	Depth	Depth	Туре	Result		ounto			
0.5	0.20	Firm brown sandy slightly gravelly silty CLAY with low cobble content.		61.5 — - - 61.0 —	61.48								
1.0						1.00	В	GM41	2 2 2 2				
- - 1.5 -				60.5		1.00	C	N=10 (2,2/2,	3,2,3)				
-	1.80	Stiff brown sandy slightly gravelly silty CLAY with high		60.0	59.88		-						
2.0		cobble content.		59.5 — 		2.00 2.00	В С	GM42 N=21 (3,3/4,	5,5,7)				
2.5	2.70	Very stiff black slightly sandy gravelly silty CLAY with		59.0	58.98								
3.0		low cobble content.		58.5 _		3.00 3.00	B C	GM43 N=39					
3.5 _			×					(4,7/9,9,11	,10)				
4.0						4.00 4.00	B C	GM44 50 (6,9/50	for				
4.5								200mm)				
5.0				57.0 - -		5.00	В	GM45					
5.5 -	5.30 5.40	Obstruction - possible boulders.		56.5 — — —	56.38 56.28	5.00 5.40	C C	50 (9,12/50 100mm 50 (25 fc) for) or				
6.0				56.0				5mm/50 for	5mm)				
6.5				55.5 — 									
7.0				55.0									
75				54.5 — 									
				54.0									
8.0				53.5 —									
8.5 — — — —				53.0									
9.0				52.5									
9.5				52.0 —									
		Chiselling:Water Strikes:Water Details:From:To:Time:Strike:Rose:Depth SealedDate:Hole Depth:Water Depth:F5.305.4001:3001:3008/075.40Dry	Install From: To	ation: p: Pipe	Backfill: Remarks: 2: From: To: Type: 0.00 5.40 Arisings to obstruction.		Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT						
Contra 58	ict No: 63	No: Cable Percussion Borehole Log											
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Contrac	ot:	Moygaddy	Eastin	g:	69444	6.855		Date Started:	15/07	/2021			
Locatio	n:	Maynooth, Co. Meath	Northi	ng:	73946	6.694		Date Completed:	15/07	/2021			
Client:		Sky Castle Ltd	Elevat	ion:	59.25			Drilled By:	G. Ma	acken			
Engine	er:	ocsc	Boreh Diame	ole ter:	200mn	n		Status:	FINA	_			
Dept	h (m)	Stratum Description	Legend	Level	(mOD)	Sam	ples	and Insitu Tes	ts	Water Strike	Backfill		
Scale _	Depth	TOPSOIL.		Scale	Depth	Depth	Туре	Result		Ounce			
0.5	0.30	Firm brown sandy slightly gravelly silty CLAY with low cobble content.		59.0	58.95								
1.0				58.0 -	-	1.00 1.00	B C	GM46 N=11 (2,2/3,	3,3,2)				
1.5 —	1.50	Stiff brown sandy slightly gravelly silty CLAY with high cobble content		57.5 -	57.75								
2.0				57.0 —	-	2.00 2.00	GM47 N=20 (5,4/5,	5,4,6)					
2.5 _	2.40	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.			56.85								
3.0	3.00	Obstruction - possible boulders. End of Borehole at 3.00m		56.0	6.5 56.45 56.25 3.00 C			50 (25 fc 5mm/50 for	or 0mm)				
3.5 -				- - - 55.5 -	-								
4.0				55.0	-								
4.5 _				- - 54.5 -	-								
5.0 —				54.0	-								
5.5 _					-								
6.0				53.0	-								
6.5				- - - 52.5 —	-								
7.0				52.0	-								
7.5 —				- - - 51.5 -	-								
8.0				51.0	-								
8.5 _				- - - 50.5 -	-								
9.0				50.0	-								
9.5 _				49.5 -	-								
		Chiselling: Water Strikes: Water Details:	Insta	llation:		Backfill:		Remarks:		Legend: B: Bulk			
		From: To: Time: Strike: Rose: Deptile Date: Prove peptile Water of the peptile 2.80 3.00 02:00 09/07 3.00 Dry	From:	Γο: Pipe	e: From: 0.00 \$	To: Type 3.00 Arising	: B _{IS} to	orehole terminate	d due	D: Disturb U: Undistu ES: Enviro W: Water C: Cone S S: Split sp	ed irbed onmental PT		

Contra 58	ict No: 63	Cable Percussion	n B	Borehole I BH11		No: 1				
Contrac	ct:	Moygaddy	Eastin	g:	694790).229	Date Started:	13/07	/2021	
Locatio	n:	Maynooth, Co. Meath	Northi	ng:	739307	7.430	Date Completed:	13/07	/2021	
Client:		Sky Castle Ltd	Elevat	ion:	59.88		Drilled By:	G. Ma	acken	
Engine	er:	ocsc	Boreh Diame	ole ter:	200mm	ı	Status:	FINA	L	
Depth	n (m)	Stratum Description	Legend	Level	(mOD)	Sample	es and Insitu Tes	sts	Water	Backfill
Scale	Depth	TOPSOIL		Scale	Depth	Depth Ty	pe Result		Strike	
0.5	0.20	Firm brown sandy slightly gravelly silty CLAY with low cobble content.			59.68					
1.0				역 59.0 — -	-	1.00 E	GM36	2 1 2)		
1.5			0 × 0		-	1.00 C	, IN-13 (2,2/3,	3,4,3)		
	1.70	Stiff brown sandy slightly gravelly silty CLAY with high	<u>x</u>	- - - - - - - - - - - -	58.18					
2.0		cobble content.			-	2.00 E 2.00 C	GM37 N=21 (4,4/5,	5,6,5)		
2.5				- 57.5 –	-					
3.0	2.90	Very stiff black slightly sandy gravelly silty CLAY with	α 	57.0	56.98	3.00 E	GM38			
		low cobble content.			-	3.00 C	N=43 (5,5/9,10,1	1,13)		
3.5 —			X 0	 	-					
4.0			x	56.0 -		4.00 E	GM39	50 for		
4.5				55.5 - - -			275mm)		
5.0				55.0 —		5.00 E	GM40	0 for		
5.5 -				54.5 –			175mm)		
6.0	5.70 5.80	Obstruction - possible boulders. End of Borehole at 5.80m		54.0 -	54.18 54.08	5.80 C	50 (25 fc 5mm/50 for	or 5mm)		
6.5 -				53.5 -	-					
7.0				53.0 -						
7.5				52.5	-					
8.0				52.0 -	-					
85 -				51.5 -						
				51.0	-					
				50.5 -						
9.5				-						
				50.0	-					
		Chiselling: Water Strikes: Water Details:	Insta	llation:		Backfill:	Remarks:		Legend: B: Bulk	
	ľ)	From: To: Time: Strike: Rose: Sected Date: Depth: Depth: <thdepth:< th=""></thdepth:<>	-rom:	IO: Pipe	e: From: 5	Io: Type: 5.80 Arisings	Borehole terminated due to obstruction.		D: Disturb U: Undistu ES: Enviro W: Water C: Cone S	ed urbed onmental

Contra 580	ct No: 63	Cable Percussion	Percussion Borehole Log Borel B										
Contrac	ct:	Moygaddy	Eastin	g:	694615	5.966		Date Started:	12/07	/2021			
Locatio	n:	Maynooth, Co. Meath	Northi	ng:	739002	2.198		Date Completed:	12/07	/2021			
Client:		Sky Castle Ltd	Elevat	ion:	56.86			Drilled By:	G. Ma	acken			
Engine	er:	ocsc	Boreh Diame	ole eter:	200mm	า		Status:	FINA	L			
Depth	ר (m)	Stratum Description	Legen	Level	(mOD)	Sa	mples	and Insitu Tes	ts	Water	Backfill		
Scale _	Depth	TOPSOIL		Scale	Depth	Depth	Туре	Result		Strike			
0.5	0.20	Firm brown sandy slightly gravelly silty CLAY with low cobble content.			56.66								
- - 1.0				56.0 —	-	1.00	В	GM30	2 2 2 2				
1.5 —	1.30	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.			55.56	1.00	C	N=10 (1,1/3,	3,2,2)				
2.0				55.0 - - -	-	2.00	В	GM31	655)				
2.5 —				54.5 - - -	-	2.00	0	10-21 (0,0/0,	0,0,0)				
3.0	3 20			전 54.0 — - - - -	53.66	3.00 3.00	B C	GM32 N=47					
3.5 —	0.20	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		বিশি 53.5 – - - -			-	(5,4/9,9,14	,15)				
4.0				53.0		4.00 4.00	B C	GM33 50 (9,13/50) for				
4.5 -				बार्ट्रा 52.5 – 	-			175mm)				
5.0				52.0 —	-	5.00 5.00	B C	GM34 N=50 (7,9/5	i0 for				
5.5				× 51.5 – - - - -	-			250mm)				
6.0	6.30			전 51.0 — - - - - - - - - - - - - - - - - - - -	50.56	6.00 6.00	B C	GM35 50 (10,13/5	0 for				
6.5 -	6.40	Obstruction - possible boulders. End of Borehole at 6.40m		50.5	50.46	6.40	С	50 (25 fc 5mm/50 for 0) or Omm)				
7.0				50.0	-								
7.5 -				49.0	-								
8.0				48.5 -	-								
8.5				48.0	-								
9.0				47.5 -	-								
9.5				47.0	-								
					1								
		Chiselling: Water Strikes: Water Details: From: To: Time: Strike: Rose: Depth Sealed Date: Hole Depth: Mater Depth: F 6.30 6.40 01:30 Image: Comparison of the sealed 06/07 6.40 Dry F	Insta From:	Ilation: To: Pipe	E: From:	Backfill: To: Typ 5.40 Arisi	pe: B ings to	Remarks: orehole terminated o obstruction.	Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split snoon SPT				

Contra 58	ict No: 63	Cable Percussion Borehole Log										
Contrac	ct:	Moygaddy	Eastir	g:	69465	9.374		Date Started:	08/07	/2021		
Locatio	n:	Maynooth, Co. Meath	Northi	ng:	73876	3.773		Date Completed:	08/07	/2021		
Client:		Sky Castle Ltd	Eleva	ion:	52.09			Drilled By:	G. Ma	acken		
Engine	er:	ocsc	Boreh Diame	ole eter:	200mr	n		Status:	FINA	L		
Dept	า (m)	Stratum Description	Legen	Level	(mOD)	Sar	nples	and Insitu Tes	sts	Water	Backfill	
Scale	Depth	TOPSOIL		Scale 52.0	Depth	Depth	Туре	Result		Suike		
0.5	0.20	Firm brown sandy slightly gravelly silty CLAY with low cobble content.		 51.5 −	51.89							
1.0						1.00	В	GM18				
				<u>भूर</u> ाका		1.00	С	N=9 (2,2/2,7	1,3,3)			
	1.70	Firm brown sandy slightly gravelly silty CLAY with	<u>x _ 0,</u>	× 50.5 – 	50.39							
2.0		high cobble content.	<u>x o</u>	50.0 —		2.00 2.00	B C	GM19 N=14 (4,4/3,	3,4,4)			
2.5	2.50	Very stiff black slightly sandy gravelly silty CLAY with		49.5 –	49.59							
3.0				ू 	- - -	3.00 3.00	B C	GM20 N=45				
3.5 —			80×0	48.5 –				(8,8/11,11,1	0,13)			
4.0				48.0 —	- - -	4.00	В	GM21				
4.5				47.5 –		4.00	C	(7,9/9,10,1	1,11)			
5.0			x x x x x x x x x x x x x x x x x x x	्राङ्ग 		5.00	в	GM22				
5.5					-	5.00	С	50 (8,10/50 210mm	0 for)			
				46.5 – 	- - -	0.00	P	CMOD				
0.0	6.10 6.20	Obstruction - possible boulders. End of Borehole at 6.20m		46.0	45.99 45.89	6.00 6.20	С С С	50 (26 fo 85mm/50	or for			
6.5				45.5 -				10mm) 50 (25 fo 5mm/50 for) or Omm)			
7.0				45.0	-				onninj			
7.5 —				44.5 -	- - - -							
8.0				44.0								
8.5 —				43.5	-							
9.0				43.0								
9.5				42.5 -								
				-								
		Chiselling: Water Strikes: Water Details:	 Insta	llation:	n: Backfill: Remarks		Remarks:		Legend:			
	I)	From: To: Time: Strike: Rose: Depth Seeled Date: Hole Depth Depth. Water Details: 3.70 3.80 01:00 0 02/07 6.20 Dry 6.10 6.20 01:30 01:00 0 02/07 6.20 Dry		To: Pipe	Ion: Backfill: Re Pipe: From: To: Type: Borehole to 0.00 6.20 Arisings to obstruct		orehole terminate	d due	B: Bulk D: Disturb U: Undistu ES: Enviro W: Water C: Cone S	ed irbed onmental		

Contract N 5863	No: Cable Percussion Borehole Log											
Contract:		Moygaddy	Easting	:	694546	6.422	I	Date Started:	06/07	/2021		
Location:		Maynooth, Co. Meath	Northin	g:	738784	1.570		Date Completed:	06/07	/2021		
Client:		Sky Castle Ltd	Elevatio	on:	53.46			Drilled By:	G. Ma	acken		
Engineer:		ocsc	Boreho Diamet	le er:	200mm	1	;	Status:	FINA	L		
Depth (m	n)	Stratum Description	Legend	Level	(mOD)	Samp	oles	and Insitu Tes	ts	Water Strike	Backfill	
Scale Deg 0.5 0.2 0.5 0.2 1.0 1.10 1.5 2.0 2.5 2.1 3.0 3.2 3.5 3.2 3.5 6.0 5.5 6.2 6.0 6.2 6.5 6.3 7.0 7.5 8.0 8.5	20 10 20 20 20 30	TOPSOIL. Soft brown sandy slightly gravelly silty CLAY with low cobble content. Soft brown sandy slightly gravelly silty CLAY with high cobble content. Very stiff black slightly sandy gravelly silty CLAY with low cobble content. Very stiff black slightly sandy gravelly silty CLAY with low cobble content. Obstruction - possible boulders. End of Borehole at 6.30m		Scale 53.0 52.5 52.0 51.5 51.6 50.6 49.0 49.0 44.5 44.0 44.5 44.5	Depth 53.26 51.36 50.26 47.26 47.16	Depth T 1.00 1 2.00 2 3.00 1 3.00 1 4.00 1 5.00 1 6.00 1 6.500 1 6.500 1	BC BC BC BC C	GM07 N=7 (1,1/2,1 GM08 N=7 (2,1/2,1 GM09 N=48 (2,3/9,11,13 GM10 50 (9,9/50 225mm GM11 50 (7,10/50 210mm GM12 50 (8,10/50 175mm 50 (25 fc 5mm/50 for 5	I,3,1) I,1,3) for) for) for) for) for) for	Strike		
9.5				44.0								
)	Chiselling: Water Strike: Water Details: Installation: Backfill: Remarks: From: To: Time: Strike: Rose: Depth. Date: Depth. Prom: To: Pipe: From: To: Type: Borehole terminate 1.70 1.80 00:45 3.40 3.10 3.70 30/06 6.30 Dry 0.00 6.30 Arisings to obstruction. 6.20 6.30 01:30 01:30 0.00								KS: ated due Legend: B: Bulk D: Disturt U: Undist ES: Envir W: Water C: Cone S S: Split sp		

Contra 58	ct No: 63	Cable Percussion Borehole Log									
Contrac	ot:	Moygaddy	Easting	J:	694458	8.907		Date Started:	09/07	/2021	
Locatio	n:	Maynooth, Co. Meath	Northin	g:	738814	.666		Date Completed:	09/07	/2021	
Client:		Sky Castle Ltd	Elevatio	on:	54.44			Drilled By:	G. Ma	acken	
Engine	er:	OCSC	Boreho Diamet	le er:	200mm	ı		Status:	FINA	L	
Depth	n (m)	Stratum Description	Legend	Level	(mOD)	Sar	nples	and Insitu Tes	ts	Water	Backfill
Scale	Depth	TORSOIL		Scale	Depth	Depth	Туре	Result		Ounce	
0.5	0.20	Firm brown sandy slightly gravelly silty CLAY with low cobble content.		54.0 —	54.24						
1.0				53.5 — 		1.00 1.00	B C	GM24 N=10 (2,2/3,	2,2,3)		
1.5 _	1.80			53.0	52.64						
2.0	1.00	Firm brown sandy slightly gravelly silty CLAY with high cobble content.		52.5 — 	02.04	2.00 2.00	B C	GM25 N=14 (3,2/4,	3,3,4)		
2.5 _	2.30	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		52.0	52.14						
3.0				51.5 — - -	-	3.00 3.00	B C	GM26 N=50 (8.7/5	0 for		
3.5 —				51.0 — 				255mm)		
4.0		1 1 1 전 1 전 1 전 1 전 1 1 1 1 1 1 1 1 1 1		50.5 — 		4.00	B	GM27	0 for		
4.5				50.0 —	50.0		0	210mm)		
5.0				- - 49.5 — -		5.00	В	GM28	0 for		
5.5				49.0 —		5.00	C	190mm)		
6.0				- - 48.5 — -		6.00	В	GM29	0 fee		
6.5				48.0		0.00	C	140mm)		
7.0	6.70 6.80	Obstruction - possible boulders. End of Borehole at 6.80m		47.5 –	47.74	6.80	С	50 (25 fc 5mm/50 for (or Omm)		
7.5				47.0							
8.0				- - 46.5 —							
8.5				46.0							
9.0				- - 45.5 —							
9.5				45.0 —							
				-							
		Chiselling: Water Strikes: Water Details:	Inetall	ation:		Backfill		Remarke		Leaend.	
		From:To:Time:Strike:Rose:Depth SealedDate:Hole Depth:Water WaterHole Depth:Water WaterHole Depth:Water Depth:Hole Depth:H	Installation: From: To: Pipe		e: From: 1 0.00 6	To: Typ .80 Arisir	e: B ngs to	orehole terminated	d due	B: Bulk D: Disturb U: Undistu ES: Enviro W: Water C: Cone S	ed urbed onmental SPT

Contra 580	ct No: 63	No: Cable Percussion Borehole Log									
Contrac	et:	Moygaddy	Easting	J:	693655	5.329	Date Started:	01/07	/2021		
Locatio	n:	Maynooth, Co. Meath	Northin	g:	739258	8.288	Date Completed:	01/07	/2021		
Client:		Sky Castle Ltd	Elevati	on:	49.53		Drilled By:	G. Ma	acken		
Enginee	er:	ocsc	Boreho Diamet	le er:	200mm	1	Status:	FINA	L		
Depth	n (m)	Stratum Description	Legend	Level	(mOD)	Samp	les and Insitu Tes	sts	Water	Backfill	
0.5 –	0.20	TOPSOIL. Firm brown sandy slightly gravelly silty CLAY with low cobble content.		Scale 	49.33		ype Result				
1.0 — - - 1.5 —				48.5		1.00 1.00	B GM80 C N=9 (1,2/2,3	3,2,2)			
2.0	1.80	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.		47.5	47.73	2.00 2.00	B GM81 C N=16 (2,3/3,	5,4,4)			
3.0	2.50	Stiff becoming very stiff black slightly sandy gravelly silty CLAY with low cobble content.		47.0	47.03	3.00 3.00	B GM82 C N=24 (4,4/5,	6,6,7)			
4.0				46.0 — 45.5 — 45.0 —		4.00 4.00	B GM83 C N=34 (5,6/6,8,9	,11)			
5.0				44.5		5.00 5.00	B GM84 C N=48 (5,8/11,11,1	2,14)			
6.0			24 - 1 24 - 1 24 - 1 24 - 2 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2	43.5 - 43.0		6.00 6.00	B GM85 C N=50 (7,8/5 275mm	50 for 1)			
7.0	6.70 6.80	Obstruction - possible boulders. End of Borehole at 6.80m		42.5 — 	42.83 42.73	6.80	C 50 (25 fo 5mm/50 for	or 5mm)			
7.5				42.0 — - 41.5 —							
8.5				41.0							
9.0				40.5 — 							
9.5				40.0							
		Key Water Strikes: Water Details: Installation: Backfill: Remarks: From: To: Time: Strike: Rose: Deeph Date: Deeph Deeph Deeph To: To: Type: Borehole terminate 2.80 2.90 01:00 3.60 3.40 4.00 21/07 6.80 Dry Image: Strike: 0.00 6.80 Arisings borstruction.									

Contra 580	ct No: 63	Cable Percussion Borehole Log										
Contrac	ot:	Moygaddy	Easting	:	694518	8.865		Date Started:	05/07	/2021		
Locatio	n:	Maynooth, Co. Meath	Northin	g:	738836	6.591		Date Completed:	05/07	/2021		
Client:		Sky Castle Ltd	Elevatio	on:	54.89			Drilled By:	G. Ma	acken		
Engine	er:	OCSC	Boreho Diamet	le er:	200mm	1		Status:	FINA	L		
Depth	n (m)	Stratum Description	Legend	Level	(mOD)	Sar	nples	and Insitu Tes	ts	Water Strike	Backfill	
Scale		TOPSOIL.		Scale	54 60	Depth	туре	Result				
0.5	0.20	Firm brown sandy slightly gravelly silty CLAY.	×× ××	54.5 — 								
1.0			×× ××	54.0		1.00	В	GM01				
1.5				53.5 –		1.00	С	N=8 (1,2/2,1	1,2,3)			
1.0				- - 53.0								
2.0	2.20	Stiff brown sandy slightly gravelly silty CLAY with low	×		52.69	2.00 2.00	B C	GM02 N=14 (2,5/3,	3,4,4)			
2.5 _		cobble content.		52.5 — 								
3.0				52.0		3.00	В	GM03				
3.5 —			0 × 0	51.5 —	5 5 00 C			N=16 (3,3/3,				
	3.80	Very stiff black slightly sandy gravelly silty CLAY with	x 		51.09	4.00	_	0.404				
4.0		w cobble content.				4.00 4.00	C	GM04 N=47 (8.6/9.10.12	3 15)			
4.5 -				50.5 — - -				(0,0/0,10,10	5,10)			
5.0			x _ 0 _ X	50.0 —	-	5.00 B		GM05	32)			
5.5				49.5 —		5.00	C	50 (7,15/10)	,52,,)			
60-				49.0		6.00	в	GM06				
0.0				- - 48.5		6.00	C	50 (25 fc 100mm/50	or) for			
6.5	6.50	Obstruction - possible boulders. End of Borehole at 6.50m			48.39	6.50	С	20mm) 50 (25 fc	or		\$\$772\$\$772\$	
7.0				48.0				5mm/50 for	5mm)			
7.5				47.5 -								
8.0				47.0								
85				46.5								
-				46.0								
9.0												
9.5 —				45.5								
				45.0 —								
		Chiselling: Water Strikes: Water Details: From: To: Time: Strike: Rose: Depth Seeled Date: Hole Depth: Water Depth: 3.60 3.80 00:45 3.60 3.40 3.90 29/06 6.50 Dry 5.50 5.70 01:00 Image: Strike in the strike	: Installation: Backfill: Rem ater ptr: From: To: Pipe: From: To: Type: Borehole term ry 0.00 6.50 Arisings to obstruction				Remarks: orehole terminated obstruction.	d due	Legend: B: Bulk D: Disturb U: Undistr ES: Envirr W: Water C: Cone S S: Split sp	ed urbed onmental SPT boon SPT		

Contra	ict No: 63	Cable Percussion Borehole Log										
Contrac	ct:	Moygaddy	Eastir	ıg:	69456	2.423		Date Started:	07/07	/2021		
Locatio	n:	Maynooth, Co. Meath	North	ng:	73877	0.148		Date Completed:	07/07	/2021		
Client:		Sky Castle Ltd	Eleva	tion:	52.93			Drilled By:	G. Ma	acken		
Engine	er:	ocsc	Boreh Diame	ole eter:	200m	m		Status:	FINA	L		
Depth	h (m)	Stratum Description	Legen	Level	(mOD)	Sa	mples	and Insitu Tes	sts	Water	Backfill	
Scale	Depth	TOPSOIL		Scale	Depth	Depth	Туре	e Result		Strike		
0.5	0.20	Firm brown sandy slightly gravelly silty CLAY with low cobble content.		52.5 –	52.73							
1.0			0 × 0	52.0 —	-	1.00	В	GM13				
15 -					-	1.00	С	N=9 (1,1/3,2	2,2,2)			
-	1.80				51.13							
2.0		Firm brown sandy slightly gravelly silty CLAY with high cobble content.	x <u>0</u>	51.0 — 	-	2.00 2.00	B C	GM14 N=13 (3,3/2,	3,4,4)			
2.5 —	2.50	Very stiff black slightly sandy gravelly silty CLAY with		50.5 – - -	50.43							
3.0				50.0 —	-	3.00	B	GM15 N=50 (8 8/5	50 for			
3.5 —)			
4.0				× 49.0 –	-	4.00	В	GM16				
45				48.0 C		N=50 (8,9/5 230mm	50 for)					
5.0						5.00	СВ	50 (10,13/5 135mm	0 for)			
5.5	5.70 5.80	Obstruction - possible boulders.			47.23	5.80	С	50 (25 fe	or			
6.0	0.00	End of Borehole at 5.80m		47.0				5mm/50 for	0mm)			
6.5				46.5 -	-							
7.0				46.0	-							
7.5 —				45.5 -	-							
8.0				45.0								
8.5 —				44.5 -	-							
9.0				44.0	-							
9.5				43.5 -	-							
				43.0								
		Chiselling: Water Strikes: Water Details:	 Insta	Illation:		Backfill:		Remarks:		Legend:		
		From: To: Time: Strike: Rose: Depth Sealed Date: Hole Depth: Water Depth: 4.70 4.80 01:00 01/07 5.80 Dry 5.70 5.80 01:30 01/07 5.80 Dry	From:	To: Pipe	e: From: 0.00	To: Tyj 5.80 Aris	pe: E ings to	Borehole terminate o obstruction.	d due	B: Bulk D: Disturb U: Undistr ES: Envir W: Water C: Cone S	ed urbed onmental	

Appendix 2 Rotary Corehole Logs and Photographs

Contra 58	act No 63	Rotary Corehole Log											
Contrac	ct:	Moygaddy	Eastir	ng:	6	93637.963	Date	e Start	ed:	19/07/2	021		
Locatio	n:	Maynooth, Co. Meath	North	ing:	7	739436.766	Date Corr	e nplete	d:	19/07/2	021		
Client:		Sky Castle Ltd	Eleva	tion:	5	56.84	Drille	ed By:	:	MEDL			
Engine	er:	OCSC	Rig T	/pe:	s	Sondeq	Stat	us:		FINAL			
Depth ((m)	Stratum Description	Legend	Leve (mOI	 el D)	Samples			Rock	Indices		Backfill	
Scale D	epth	Oratum Description	Logona	Scale D)ept	th		TCR/%	SCR/9	% RQD/%	FI/m	Dackiii	
0.5	c	ELAY with cobbles.		56.5									
1.0				56.0									
1.5				55.5 — — —									
2.0				55.0									
				- - 54.5 -									
2.5													
3.0													
3.5				53.5									
40-			2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	53.0									
				52.5									
4.5 -													
5.0			0 ×0 ×0	52.0									
5.5				51.5 — — —									
60				51.0									
			0 × 0 × 0	- - 50.5 -									
6.5 - 6	6.70 s	trong to very strong light grey fine grained argillaceous		- 5	50.14	4							
7.0	L ¢	IMESTONE interbedded with moderately strong dark grey alcareous MUDSTONE with occasional fossils and calcite		50.0		6 70 - 7 70		96	57	12			
7.5	Ψ	eins (2mm thick). Fresh to slightly weathered. Discontinuities - smooth to rough, planar to slightly undulating, tight to open, sub-horizontal and 45° dip, clean with occasional grey staining and occasional		49.5		0.10 1.10		00	07	12	14		
8.0				49.0							14		
				48.5		7.70 - 8.70		97	77	36			
8.5 — — —	1	Discontinuities - smooth to rough, planar to undulating, tight to open, sub- horizontal and sub-vertical dip, clean with occasional grey staining and		48.0									
9.0						8.70 - 9.70		97	68	0	19		
9.5				47.5 —	_								
	9.70 └─	End of Corehole at 9.70m		47.0 - 4	17.14	4							
		Installation: Backfill: F	Remar	ks:									
		From: To: Pipe Type: From: To: Type: 0.00 9.70 Bentonite											

Contract 5863	: No: 3	Rotary Corehole Log											No: 5
Contract:		Moygaddy	Eastir	ng:		693	3935.222	Date	Start	ed:	15/07/2	021	
Location:		Maynooth, Co. Meath	North	ing:		739	9548.071	Date Com	e Iplete	d:	15/07/2	021	
Client:		Sky Castle Ltd	Eleva	tion:		58.0	60	Drille	ed By:	:	MEDL		
Engineer:	:	ocsc	Rig T	ype:		Sor	ndeq	Stati	ls:		FINAL		
Depth (m	1)	Stratum Description	Legend	Le (m(vel DD)		Samples			Rock	Indices		Backfill
Scale Dep	oth Op	en hole drilling - driller reports returns of sandy gravelly silty	<u>x ^ </u>	Scale	De	pth			TCR/%	SCR/9	% RQD/%	Fl/m	
0.5 —	CL	AY with coddles.											
				58.0									
1.0				57.5 —									
1.5				57.0									
-													
2.0				56.5 —									
25 -				-									
				56.0									
3.0			<u>x</u> °×°										
-													
3.5 —				55.0									
40-				-									
			α α	54.5 —									
4.5				54.0 —									
-				-									
5.0				53.5 — 									
5.5													
5.70	0 \$tr	ong to very strong light grey fine grained argillaceous		53.0	52.	.90 -							
6.0	LIN cal	/IESTONE interbedded with moderately strong dark grey careous MUDSTONE with occasional fossils, pyrite crystals										11	
	and	d calcite veins (2mm thick). Fresh to slightly weathered. Discontinuities - smooth to rough, planar, tight to open, sub-horizontal dip,		_			5.70 - 6.70		96	83	28		
6.5	C C S	lean with occasional grey staining. Discontinuities - smooth to rough, planar to slightly undulating, tight to open, ub-horizontal and sub-vertical dio. clean with occasional arev staining.		52.0									
7.0		<u></u>										14	
				51.5 —			6.70 - 7.70		96	52	16	14	
7.5 —				51.0									
80		Discontinuities - smooth to rough, planar, tight to open, sub-horizontal, ccasional sub-vertical dip, clean with occasional grey staining.		-									
0.0				50.5 —			7.70 - 8.70		92	88	22	11	
8.5 _													
- 8.70	0	End of Corehole at 8.70m		-	49.	.90 -							
9.0				49.5									
9.5				-									
				49.0									
						+							
		Installation: Backfill: F	Remar	ks:								I	
(\$		0.00 8.70 Bentonite											

Contract No: 5863	Rotary Corehole Log											
Contract:	Moygaddy	Eastii	ng:		694	4016.492	Date	Starte	ed:	15/07/2	021	
Location:	Maynooth, Co. Meath	North	ing:		73	9390.864	Date Com	e ipleted	I:	15/07/2	021	
Client:	Sky Castle Ltd	Eleva	ition:		57.	.65	Drille	ed By:		MEDL		
Engineer:	ocsc	Rig T	ype:		So	ndeq	Statu	us:		FINAL		
Depth (m)	Stratum Description	Leaend	Le (m	vel OD))	Samples		F	Rock	Indices		Backfill
Scale Depth			Scale	De	pth	Campico		TCR/%	SCR/9	% RQD/%	FI/m	Daoran
0.5 1.0 1.5 2.0 3.0 4.0	LAY with cobbles.		57.5									
4.5 5.0 5.5 6.0	trong to very strong light grey fine grained argillaceous IMESTONE interbedded with moderately strong dark grey alcareous MUDSTONE with occasional fossils and calcite eins (3mm thick). Fresh to slightly weathered. Discontinuities - smooth to rough, planar to slightly undulating, tight to open, 10-20° and sub-vertical dip, clean with occasional grey staining and occasional clay infill.		53.5 	52.	.35	5.30 - 6.30		93	70	47	10	
6.5	Discontinuities - smooth to rough, planar, tight to open, 10-20° and sub- horizontal dip, clean with occasional grey staining, calcite crystals and occasional clay infill.			50	15	6.30 - 7.30		98	75	39	10	
8.0 - 00 - 8.30 - 00 - 8.30 - 00	trong to very strong light grey fine grained argillaceous IMESTONE interbedded with moderately strong dark grey alcareous MUDSTONE with frequent pyrite crystals, ccasional fossils and calcite veins (3mm thick). Fresh to ightly weathered.		50.0	49.	.15	7.30 - 8.30		80	76	32	_	
8.5 9.0 9.5			49.0									
	Installation: Backfill: F	Remar	ks:	·								
	From: To: Pipe Type: From: To: Type: - 0.00 8.30 Bentonite											

Contr 58	ract No 863	Rotary Core			Cor F	ehole {C0 7	No: 7					
Contra	act:	Moygaddy	Eastii	ng:		694142.350	Date	e Start	ed:	14/07/2	2021	
Locati	on:	Maynooth, Co. Meath	North	ing:		739365.230	Date Con	ə npletec	d:	14/07/2	2021	
Client	:	Sky Castle Ltd	Eleva	ition:		57.84	Drill	ed By:		MEDL		
Engin	eer:	ocsc	Rig T	ype:		Sondeq	Stat	us:		FINAL		
Depth	n (m)	Stratum Description	Legend	Le (m0	vel CD)	Samples			Rock	Indices		Backfill
Scale	Depth	Open hole drilling - driller reports returns of sandy gravelly silty	<u></u>	Scale	De	pth		TCR/%	SCR/9	6 RQD/%	FI/m	
		CLAY with cobbles.										
			<u>x</u>	57.0								
1.0 -				-								
-				 56.5								
1.5 —				-								
20-				56.0 — —								
2.0				-								
2.5 —				55.5 —								
-			<u>x ~ c</u>	55.0								
3.0 -			<u>x</u> <u>x</u> <u>x</u> <u>x</u> <u>x</u> <u>x</u> <u>x</u> <u>x</u> <u>x</u> <u>x</u>									
-												
3.5				-								
				54.0 —								
4.0				-								
				53.5 — -								
4.5			<u>x</u> <u>x</u> <u>o</u> <u>x</u>									
5.0				53.0								
5.5	5 60			52.5 - 	52	24						
-	5.00	Strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey		52.0	52.							
6.0 -		alcareous MUDSTONE with occasional fossils and calcite				5.60 - 6.60		97	97	66	10	
		Discontinuities - smooth, occasionally rough, planar, tight to open, sub- horizontal occasional sub-vertical din clean with occasional grey staining		51.5 —							12	
6.5 —				-								
	-	Discontinuities - smooth to rough, planar to slightly undulating, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining and		51.0								
7.0 -		_occasional clay infill.				6.60 - 7.60		99	65	41	11	
7.5 —				50.5								
	-	Discontinuities - smooth to rough, planar, tight to open, sub-horizontal and sub- vertical dip, clean with occasional grey staining.										
8.0 -				50.0		7 60 - 8 60		90	75	53	8	
-				49.5 —		7.00 - 0.00		30	75	55	0	
8.5 _	8.60	End of Corobole at 8.60m		-	49	24						
				49.0								
9.0				-								
				48.5 —								
9.5 -				-								
			<u> </u>	48.0								
		Installation: Backfill: F	∣ Remar	ks:								
		From: To: Pipe Type: From: To: Type: -										
		0.00 8.60 Bentonite										
	E											

Contr 58	act No 363	Rotary Core		Cor F	ehole RC08	No: B						
Contra	act:	Moygaddy	Easti	ng:		694212.597	Date	e Start	ed:	16/07/2	2021	
Locatio	on:	Maynooth, Co. Meath	North	ing:		739630.304	Date Corr	e npleteo	d:	16/07/2	2021	
Client:	:	Sky Castle Ltd	Eleva	ition:		60.48	Drille	ed By:		MEDL		
Engine	eer:	OCSC	Rig T	ype:		Sondeq	Statu	us:		FINAL		
Depth	n (m)	Stratum Description	Legend	Le (m0	vel DD)) Samples			Rock	Indices		Backfill
Scale I	Depth	Open hole drilling - driller reports returns of sandy gravelly silty		Scale	De	epth		TCR/%	SCR/	% RQD/%	Fl/m	
	Ċ	CLAY with cobbles.	00	-								
0.5 —				60.0								
10-				- - 59.5 -								
			x	-								
1.5 _			0 0 0 0 0 0	59.0								
-				-								
2.0				58.5 —								
				-								
2.5 -				58.0 -								
3.0				 57.5 —								
				-								
3.5 _				57.0								
4.0			56.5									
45				56.0								
4.5			<u>x ^ c</u>	-								
5.0 —				55.5 —								
-				-								
5.5				55.0 —								
-			<u>x o × c</u>	-								
6.0				54.5 —								
6.5 -				 54.0 —								
-	6.60	Strong to very strong light grey fine grained argillaceous		-	53.	.88					Ni	
7.0	¢	alcareous MUDSTONE with frequent calcite veins (3mm		53.5 — -		6 60 - 7 60		98	63	23		
	l	hick). Fresh to slightly weathered. Discontinuities - non-intact.		-		0.00 7.00		00	00	20	11	
7.5 —		horizontal and sub-vertical dip, clean with occasional grey staining, calcite crystals and occasional clay infill.		53.0								
- -		Discontinuities - non-intact.		- 52.5							NI	
0.0	H	Discontinuities - smooth to rough, planar to slightly undulating, tight to open,		-		7.60 - 8.60		100	69	32		
8.5 —	 	sub-horizontal and sub-vertical dip, clean with occasional grey staining, calcite crystals and occasional clay infill.		52.0							13	
		Discontinuities - non-intact.									Ni	
9.0		Discontinuities - smooth to rough, planar to slightly undulating, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining, calcite crystals and occasional clay infil		51.5 —		8.60 - 9.60		98	75	21		
-	ſ			-							17	
9.5 —	9.60	End of Corehole at 9.60m		51.0 —	50.	.88						
							\square					
		Installation: Backfill: F	 Remar	ks:								
		From: To: Pipe Type: From: To: Type: -										
C		0.00 9.60 Bentonite										

Contract No: 5863	Rotary Core			Core F	ehole RCOS	No:					
Contract:	Moygaddy	Eastir	ng:	6	694497.168	Date	e Starte	ed:	13/07/2	021	
Location:	Maynooth, Co. Meath	North	ing:	7	739610.386	Date Com	e npleted:	:	13/07/2	021	
Client:	Sky Castle Ltd	Eleva	tion:	6	61.10	Drille	ed By:		MEDL		
Engineer:	ocsc	Rig T	ype:	5	Sondeq	Stat	us:		FINAL		
Depth (m)	Stratum Description	Legend	Lev (mO	vel)D)	Samples		R	Rock	Indices		Backfill
Scale Depth	non hole drilling driller reports returns of sandy gravelly sitty	<u></u>	Scale I	Dept	th		TCR/% S	SCR/9	% RQD/%	Fl/m	
C 0.5 1.0 1.5 2.0 2.5 3.0 4.0 4.5 5.0	_AY with cobbles.	다. '해나, '해나, '해나, '해나, '해나, '해나, '해나, '해나,	60.5 60.0 59.5 59.0 58.5 58.0 57.5 57.0 56.5 56.5 56.5								
5.5 6.0 6.30 6.5	trong to very strong light grey fine grained argillaceous		56.0	54.8	0						
7.0 -	MESTONE interbedded with moderately strong dark grey ilcareous MUDSTONE with some pyrite crystals and calcite sins (2mm thick). Fresh to slightly weathered. Discontinuities - smooth, occasionally rough, planar to undulating, tight to open, sub-horizontal, occasional sub-vertical dip, clean with occasional grey staining.		54.5		6.30 - 7.30		94	85	50	9	
8.0	Discontinuities - non-intact.		53.5		7.30 - 8.30		95	69	33	Ni	
8.5	Discontinuities - smooth to rough, planar to slightly undulating, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining and calcite crystals.		52.5	54.0	8.30 - 9.30		99	75	12	14	
9.5	End of Corehole at 9.30m		51.5 —	51.8							
	Installation: Backfill: F	Remar	ks:								
	Promi Io: Prpe Promi Io: Type: - 0.00 9.30 Bentonite - - <										

Contract N 5863	Rotary Core		Cor	rehole RC10	No:)						
Contract:	Moygaddy	Eastii	ng:		694428.449	Date	e Starl	ted:	13/07/2	2021	
Location:	Maynooth, Co. Meath	North	ing:		739378.834	Date Con	e nplete	d:	13/07/2	2021	
Client:	Sky Castle Ltd	Eleva	ition:	:	57.86	Drill	ed By:	:	MEDL		
Engineer:	OCSC	Rig T	ype:		Sondeq	Stat	us:		FINAL		
Depth (m)	Stratum Description	Legend	Le (m0	vel)	Samples	I		Rock	Indices	;	Backfill
Scale Depth	Open hole drilling - driller reports returns of sandy gravelly silty	<u>x</u>	Scale –	Dep	oth		TCR/%	SCR/	% RQD/%	Fl/m	
	CLAY with cobbles.		57.5								
0.5 —			_								
1.0		<u>x</u>	57.0								
			-								
1.5 _			56.5 -								
		<u>x ~ ~</u> ~	56.0								
2.0 —			-								
		8 <u>0</u> ×c	55.5 —								
2.5			-								
3.0-2.80	Strong to very strong light grey fine grained argillaceous		55.0	55.0							
-	calcareous MUDSTONE with occasional calcite veins (1mm				2 80 3 80		01	95	29		
3.5 —	thick). Fresh to slightly weathered. Discontinuities - smooth, planar, occasionally stepped, tight to open, 10-30°		54.5 —		2.00 - 3.00		91	05	20		
	dip, clean with occasional grey staining and occasional clay infill.									10	
4.0			54.0 -								
					3.80 - 4.80		95	70	55		
4.5	Discontinuities - non-intact.									Ni	
	Discontinuities - smooth, planar, occasionally stepped, tight to open, 10-20°		53.0								
5.0	olp, occasionally sub-vertical, clean with occasional grey staining and occasional clay infill.		-							9	
55	Discontinuities - non-intact.		52.5 —		4.80 - 5.80		96	60	31		
- 5 80				52 (26					Ni	
6.0 - 5.80	End of Corehole at 5.80m		52.0	52.0							
6.5											
			51.0								
7.0			-								
			50.5 —								
7.5 -			-								
8.0			50.0								
			-								
8.5			49.5 —								
			49.0								
9.0											
			48.5 —								
9.5 —			_								
-			48.0								
	Installation: Backfill: [20mar	ke:								·
A	From: To: Pipe Type: From: To: Type: -	Veniai	кэ. 								
	0.00 5.80 Bentonite										

Contract No: 5863	Rotary Core			Cor F	ehole RC11	No:					
Contract:	Moygaddy	Eastir	ng:		694711.726	Date	e Starte	ed:	12/07/2	021	
Location:	Maynooth, Co. Meath	North	ing:		739248.236	Date Corr	e npleted	ł:	12/07/2	021	
Client:	Sky Castle Ltd	Eleva	tion:		59.49	Drille	ed By:		MEDL		
Engineer:	ocsc	Rig T	ype:		Sondeq	Stat	us:		FINAL		
Depth (m)	Stratum Description	Legend	Lev (mC	vel DD)	Samples		F	Rock	Indices		Backfill
Scale Depth	oen hole drilling - driller reports returns of sandy gravelly silty	<u> </u>	Scale	Dep	oth		TCR/%	SCR/%	6 RQD/%	FI/m	
0.5 -	LAY with coddies.		- - 59.0								
			-								
1.0			58.5 — — —								
1.5			 58.0 —								
			-								
2.0			57.5								
25			57.0								
2.5			-								
3.0			56.5 —								
			-								
3.5 —		56.0 — 56.0 — 56.0 —									
4.0		55.5 -									
			-								
4.5			55.0								
5.0											
5.0			-								
5.5			54.0								
			-								
6.0			53.5								
6.5 6.50	rang to yony strong light grow find grained argillosooyo		53.0	52.9	99						
	MESTONE interbedded with moderately strong dark grey		-								
7.0 - th	ick). Fresh to slightly weathered.		52.5		6.50 - 7.50		97	83	43	9	
7.5	clean surfaces.		52.0								
7.80			-	51.0	69						
8.0 - LI	MESTONE interbedded with moderately strong dark grey		51.5 —		7.50 - 8.50		97	89	50		
	Icareous MUDSTONE with occasional calcite veins (1mm ick). Fresh to slightly weathered.										
	Discontinuities - smootn, pianar to sligntly undulating, tight to open, 30-50° alp, clean surfaces		51.0							7	
9.0			50.5		8.50 - 9.50		95	91	71		
			-								
9.5 - 9.50	End of Corehole at 9.40m		50.0	49.9	99						
			_								
	Installation: Backfill: F	l Remar	ks:								
	From: To: Pipe Type: From: To: Type: - 0.00 9.40 Bentonite - -										

Contract No 5863	Rotary Core		Cor F	ehole RC1 2	No: 2						
Contract:	Moygaddy	Eastii	ng:	6	94562.423	Dat	e Start	ed:	08/07/2	2021	
Location:	Maynooth, Co. Meath	North	ing:	7	38770.148	Dat Cor	e nplete	d:	08/07/2	2021	
Client:	Sky Castle Ltd	Eleva	ition:	5	2.93	Drill	led By:	:	MEDL		
Engineer:	ocsc	Rig T	ype:	5	Sondeq	Stat	tus:		FINAL		
Depth (m)	Stratum Description	Legend	Lev (mO	vel)D)	Samples			Rocl	k Indices		Backfill
Scale Depth	pen hole drilling - driller reports returns of sandy gravelly silty	<u>x - 0</u> ,	Scale	Dept	h		TCR/%	SCR/	% RQD/%	Fl/m	
	LAY with cobbles.	0 × 0	- - 52.5 -								
0.5			-								
1.0 —		×~~~~	52.0								
		x_0	-								
1.5 _		× × •	51.5 —								
-		<u>~~~</u>	-								
2.0			51.0 -								
		× × ×	 50.5								
2.5 -			-								
3.0			50.0								
		× × •	-								
3.5 _		<u>x ~ ~ c</u>	49.5 —								
-		0 0 0 0 0	-								
4.0			49.0								
-			48.5 -								
4.5 —			-								
5.0			48.0 —								
-			-								
5.5 —		× × ×	47.5 —								
-			-								
6.0 -			47.0 —								
		200 × c	46.5								
6.5 —		<u>x</u>	40.5		50 (4,5/50 for 30m	חm)					
			46.0								
-			-								
7.5 —			45.5 —								
-		20 × c	-								
8.0 - 8.00 -	End of Corehole at 8.00m		45.0	44.9	³ N=41 (3,6/8,9,10,	14)					
-											
8.5 —			44.5								
			44.0								
9.0			-								
9.5 —			43.5 _								
-			-								
			43.0 —				$\left - \right $		+		
	Installation: Backfill: F	Remar	ks:		1						
	From: Io: Pipe Type: From: To: Type: - 0.00 8.00 Bentonite - -										

Contract No 5863	Rotary Core		Cor F	ehole RC1:	No: 3						
Contract:	Moygaddy	Easti	ng:	e	694473.806	Date	e Start	ed:	07/07/2	2021	
Location:	Maynooth, Co. Meath	North	ing:	7	738837.204	Date Con	e npletec	d:	07/07/2	2021	
Client:	Sky Castle Ltd	Eleva	ition:	Ę	55.00	Drill	ed By:		MEDL		
Engineer:	ocsc	Rig T	ype:	ę	Sondeq	Stat	us:		FINAL		
Depth (m)	Stratum Description	Legend	Le ^r (mC	vel DD)	Samples			Rocł	< Indices		Backfill
Scale Depth	pen hole drilling - driller reports returns of sandy gravelly silty	<u>x - 0</u> ,	Scale	Dep	th		TCR/%	SCR/	% RQD/%	Fl/m	
	LAY with cobbles.	× × •	- - -								
0.5			54.5 -								
1.0 —		×~~~	 54.0 —								
		x	-								
1.5 _		× × •	53.5 —								
		<u>~~~</u>	-								
2.0			53.0 —								
		×~~~~									
2.5 -			52.5 —								
3.0			 52.0 —								
		8 <u>0</u> , × c	-								
3.5 _			51.5 _								
		× × ×									
4.0		2 0 2 0 2 0	51.0								
-											
4.5 -			50.5 _								
5.0			50.0 —								
		× × ×									
5.5		x 0 × 0	49.5 _								
			-								
6.0			49.0								
6.5					50 (4 5/50 for 05m)					
0.5 -			40.5 -		50 (4,5/50 101 9511)					
7.0 —			48.0								
			-								
7.5 —		<u>x</u> ~ ~ ~	47.5 —								
			-								
8.0 8.00	End of Corehole at 8.00m	0,	47.0 —	47.0	0 N=39 (5,5/7,9,10,	13)					
85 -			46.5 -								
			-								
9.0			46.0 —								
-			-								
9.5			45.5 —								
			-								
	Installation: Dest-20.		kai								
A	From: To: Pipe Type: From: To: Type: -	vemar	KS:								
	0.00 8.00 Bentonite										

Contract No: 5863	Rotary Core	Cor F	ehole	No: 1							
Contract:	Moygaddy	Easti	ng:		694269.076	Date	e Start	ed:	07/07/2	2021	
Location:	Maynooth, Co. Meath	North	ing:		739051.513	Date Con	e nplete	d:	07/07/2	2021	
Client:	Sky Castle Ltd	Eleva	ition:	;	55.61	Drill	ed By:		MEDL		
Engineer:	ocsc	Rig T	ype:		Sondeq	Stat	us:		FINAL		
Depth (m)	Stratum Description	Legend	Le (m0	vel OD)	Samples			Rocł	k Indices		Backfill
Scale Depth	en hole drilling - driller reports returns of sandy gravelly silty	<u>x - 0, -</u> 0	Scale 55.5 -	Dep	oth		TCR/%	SCR/	% RQD/%	Fl/m	
	AY with cobbles.	x o X o	-								
			55.0								
1.0											
		<u>x</u> <u>x</u> <u>x</u> <u>x</u> <u>x</u> <u>x</u> <u>x</u> <u>x</u> <u>x</u> <u>x</u>	-								
1.5 —		X 0	54.0								
2.0			-								
		× × ×	53.5 —								
2.5 _		<u>x o x o</u>	53.0								
-			-								
3.0		x	52.5 — -								
3.5 —		0 × 0	-								
		α <u>_</u>	52.0								
4.0											
			-								
4.5 -			51.0 — –								
5.0 —			-								
		x	50.5 — — —								
5.5											
			-								
6.0			49.5 — -								
6.5		0 0 0 0 0 0 0 0	-		N=39 (3,5/7,9,10,	13)					
			49.0			,					
7.0											
			-								
7.5 -		x 0 x 0	48.0								
8.0 - 8.00 -	End of Corehole at 8.00m	<u>x % (</u>	47.5 —	47.6	61 N=40 (3,4/6,10,10	,14)					
8.5 —											
			47.0								
9.0			46.5 —								
9.5 —											
			46.0 -								
	Installation: Backfill: F From: To: Pipe Type: From: To: Type:	kemar	KS:								
	0.00 8.00 Bentonite										

Contract No 5863	Rotary Core		Cor F	ehole RC10	No: 6						
Contract:	Moygaddy	Eastii	ng:	6	694648.959	Date	e Start	ed:	08/07/2	2021	
Location:	Maynooth, Co. Meath	North	ing:	7	738608.023	Date Con	e nplete	d:	08/07/2	2021	
Client:	Sky Castle Ltd	Eleva	tion:	4	15.96	Drill	ed By:	:	MEDL		
Engineer:	ocsc	Rig T	ype:	ę	Sondeq	Stat	us:		FINAL		
Depth (m)	Stratum Description	Legend	Le (m0	vel DD)	Samples			Rocl	< Indices		Backfill
Scale Depth	Open hole drilling - driller reports returns of sandy gravelly silty	<u>x - 0 - 0</u>	Scale	Dep	th		TCR/%	SCR/	% RQD/%	Fl/m	
	CLAY with cobbles.	<u>x o × o</u>	- 45.5 —								
			-								
1.0 -			45.0								
		<u>x ° ×</u> c	-								
1.5 —		x	44.5 — -								
20			- 44.0								
2.0			-								
2.5 —			43.5 —								
		× × •	-								
3.0		× ~ ~ ~	43.0								
		× × ×	-								
3.5 —		x	42.5 —								
40-			42.0								
4.0		<u>x o × c</u>	-								
4.5 —			41.5 —								
			-								
5.0			41.0 —								
5.5 -		<u>x o × c</u>	40.5 —								
60-			40.0								
-			-								
6.5 —			39.5 —		N=37 (3,3/5,8,11,	13)					
		200 200 200 200	-								
7.0			39.0 —								
			20 5								
7.5 —											
8.0 - 8.00			38.0	37.9	6 N=43 (3 6/8 9 12	14)					
	End of Corehole at 8.00m		-			,					
8.5 —			37.5 —								
			-								
9.0			37.0 —								
			-								
9.5 —			-								
	Installation: Backfill: F	l Remar	ks:								
	From: To: Pipe Type: From: To: Type:										
9.0	Installation: Backfill: F From: To: Pipe Type: From: To: Type: - 0.00 8.00 Bentonite -	Remar	37.5								

Contrac 586	ct No: 33	Rotary Core		Cor F	ehole RC17	No: 7						
Contract	t:	Moygaddy	Eastii	ng:	6	93707.911	Date	e Start	ed:	19/07/2	021	
Location	ו:	Maynooth, Co. Meath	North	ing:	7	39303.990	Date Com	e npleteo	d:	19/07/2	021	
Client:		Sky Castle Ltd	Eleva	ition:	5	64.78	Drille	ed By:		MEDL		
Enginee	er:	ocsc	Rig T	ype:	s	Sondeq	Stati	us:		FINAL		
Depth (r	m)	Stratum Description	Legend	Lev (mO	el D)	Samples			Rock	Indices		Backfill
Scale De	epth			Scale [Dept	th		TCR/%	SCR/%	% RQD/%	FI/m	Daoran
0.5	CI	_AY with cobbles.	2012 2012 2012 2012 2012 2012 2012 2012	54.5 — - - - - - - - - - - - - - - - - - - -								
1.5 — — — 2.0 —				- - - 53.0								
2.5				52.5								
3.0				- - - 51.5 - -								
4.0				51.0								
4.5 -				50.5 — — — 50.0 —								
5.0				49.5								
6.0				49.0								
6.5	20			40.5	47.00							
7.0	. ⁰⁰ St Lli ca thi	rong to very strong light grey fine grained argillaceous MESTONE interbedded with moderately strong dark grey Icareous MUDSTONE with occasional calcite veins (2mm ick). Fresh to slightly weathered.		40.0	47.98	6.80 - 7.80		98	57	45	Ni	
7.5 -		Discontinuities - non-intact. Discontinuities - smooth to rough, planar to slightly undulating, tight to open, 30-50° dip, occasionally sub-horizontal and sub-vertical, clean with occasional clay infill.		47.0								
8.0				46.5		7.80 - 8.80		98	66	43	9	
9.0				46.0		8.80 - 9.80		97	69	59		
9.5 9.1	.80	End of Corobala at 0.90		45.0	44.98	8						
		Ena of Corenole at 9.80m		-								
A		Installation: Backfill: F From: To: Pipe Type: From: To: Type:	Remar	ks:								
(S		0.00 9.80 Bentonite										

Contract No: 5863	Rotary Core		Cor F	ehole	No: 3						
Contract:	Moygaddy	Easti	ng:	(693667.400	Date	e Start	ed:	20/07/2	2021	
Location:	Maynooth, Co. Meath	North	ing:	-	739242.451	Date Con	e npleter	d:	20/07/2	2021	
Client:	Sky Castle Ltd	Eleva	ition:	4	49.86	Drill	ed By:	:	MEDL		
Engineer:	ocsc	Rig T	ype:		Sondeq	Stat	us:		FINAL		
Depth (m)	Stratum Description	Legend	Le (m(vel OD)	Samples			Rocl	k Indices		Backfill
Scale Depth	en hole drilling - driller reports returns of sandy gravelly silty	<u> </u>	Scale	Dep	th .		TCR/%	SCR/	% RQD/%	FI/m	
	AY with cobbles.		- 49.5 —								
0.5 —		0 <u>×</u> 0	-	-							
1.0			49.0								
-		x									
1.5 _		0 <u>~</u> 0	40.5 -								
-		<u>~~~</u>		-							
2.0		x	-								
25 -			47.5 —								
-			-								
3.0 —			47.0								
		<u>~~~</u>	465 -								
3.5 —		α 									
			46.0								
4.0			-								
4.5		<u>x o × c</u>	45.5 —								
-			-								
5.0 —			45.0								
-			- - 44.5 -								
5.5			-								
			44.0								
6.0			-								
6.5			43.5 —		N=45 (5.7/9.11.12	.13)					
			-			,,					
7.0			43.0								
			42.5 —								
7.5 —			-								
8 0 8 00			42.0	41 0	N-45 (6 6/0 10 12	14)					
0.0 0.00	End of Corehole at 8.00m			41.c	N=45 (0,0/9,10,12	,14)					
8.5 —			41.5 —								
			-								
9.0			41.0 -	-							
			40.5 —								
9.5 —			-	1							
			40.0					L			
	Installation: Backfill	Remar	ks:								
A	From: To: Pipe Type: From: To: Type: -	unal									
	0.00 8.00 Bentonite										

Contract No: 5863	Rotary Core		Core F	ehole	No:						
Contract:	Moygaddy	Easti	ng:	65	94613.822	Date	e Starte	ed:	12/07/2	:021	
Location:	Maynooth, Co. Meath	North	ing:	73	39485.171	Date Corr	e npleted	J:	12/07/2	:021	
Client:	Sky Castle Ltd	Eleva	ition:	58	8.39	Drille	ed By:		MEDL		
Engineer:	OCSC	Rig T	ype:	S	ondeq	Stat	us:		FINAL		
Depth (m)	Stratum Description	Legend	Leve (mQE		Samples		F	Rock	Indices		Backfill
Scale Depth	nen hole drilling - driller reports returns of sandy gravelly silty		Scale D	epth	1		TCR/%	SCR/%	% RQD/%	Fl/m	
0.5 1.0 1.5 2.0 3.0 4.0 	LAY with cobbles.		58.0 57.5 57.5 57.0 56.5 56.0 56.0 55.5 55.0 55.5 55.0 55.5 55.0 55.5 55.0 5								
4.5 - 5.0 - 5.5 - 6.0 - - 6.0 - - -	trong to very strong light grey fine grained argillaceous IMESTONE interbedded with moderately strong dark grey alcareous MUDSTONE with occasional pyrite crystals and alcite veins (5mm thick). Fresh to slightly weathered. Discontinuities - smooth to rough, planar, occasionally stepped, tight to open, sub-horizontal dip, occasionally 60° dip and sub-vertical, clean.		53.5 - 5 53.0 - 5 52.5 5 52.0	3.29	5.10 - 6.10		98	97	45	11	
6.5	Discontinuities - smooth to rough, planar, occasionally stepped, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining.		51.5		6.10 - 7.10		100 94	98	53	18	
8.5 9.0 9.5	End of Corehole at 8.10m		49.5 48.5 48.5	0.29							
	Installation: Backfill: F From: To: Pipe Type: From: To: Type: - 0.00 8.10 Bentonite	Remar	ks:								

Cont 5	ract No 863	Rotary Core	Corehole No: RC20								
Contr	act:	Moygaddy	Easti	ng:		694717.266 D		e Started:	09/07/2021		
Location:		Maynooth, Co. Meath	Northing:			739392.581	Date Completed:		09/07/2021		
Client:		Sky Castle Ltd	Elevation:			59.02	Drilled By:		MEDL		
Engin	ieer:	OCSC	Rig Type:			Sondeq	Stat	tus:	FINAL		
Dept	h (m)	Stratum Description	Legend	Level) Samples		Roc	k Indices	Backfill	
Scale	Depth C	h		Scale	De	pth .		TCR/% SCR	/% RQD/%	Fl/m	
-	C	LAY with cobbles.		-							
0.5 —				58.5 —							
			<u>~~~</u> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-							
1.0			0 0	58.0							
1.5 -			× × ×	575 —							
-				-							
2.0				57.0 —							
-			×	-							
2.5 _			8 <u>0</u> × 0	56.5 —							
=			<u>x ~ ~ ~</u>	_							
3.0			0 	56.0							
-			×~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-							
3.5 —				55.5 —							
				-							
4.0 -			<u>x 0 x 0</u>	55.0							
45			<u>x 0 × 0</u>	-							
-			<u>x ~ ~ ~</u>								
5.0 —				54.0							
-			× × ×	-							
5.5											
=				-							
6.0 -			<u>x ° × °</u>	53.0							
-			20. X. C	-							
6.5 _			<u>x</u>	52.5 —							
				-							
7.0			× ° × °	52.0							
75 -				515 -							
-	7 90		000 00 00 00 00 00 00 00 00 00 00 00 00		51	22					
8.0	^{7.80} C	ppen hole drilling - driller reports returns of limestone bedrock.		51.0	51.	22					
				-							
8.5 —											
=				-							
9.0				50.0							
-	9.30 —	End of Corehole at 9.30m			49.	72					
9.5 —				49.5 —							
_											
		Installation Deskelle		kc:							
1	(T)	From: To: Pipe Type: From: To: Type:	vernar	KS:							
(0.00 9.30 Bentonite									

RC04 Box 1 of 1



RC05 Box 1 of 1



RC06 Box 1 of 1



RC07 Box 1 of 1



RC08 Box 1 of 1



RC09 Box 1 of 1



RC10 Box 1 of 1



RC11 Box 1 of 1



RC17 Box 1 of 1



RC19 Box 1 of 1



Appendix 3 Trial Pit Logs and Photographs

Contra 5	act No: 863	Trial Pit Log										Trial Pit No: TP01			
Contra	act:	Moygaddy			Easting	:	693958	Date:		16/06/2021					
Locati	ion:	Maynooth, Co. Meat	th		Northing	g:	739151.571 Exc			Excavato	or:	JCB 3CX			
Client	:: Sky Castle Ltd Elevation:					55.32			Logged I	Зу:	M. I	M. Kaliski			
Engin	eer:	ocsc			Dimens (LxWxD	ions)) (m):	4.30 x	0.60 x	2.10	Status:		FINAL			
Level	(mbgl)		Stratum Description	on		I	Legend	Level	Level (mOD)		ples /	/ Field Tests		Water Strike	
Scale:	Deptn	TOPSOIL.						Scale:	Deptr		i	pe	Result		
	0.10	Stiff grey brown slight cobble and low boulde ine to coarse, angular boulders are angular diameter). Obstruction - boulders	own sandy slightly gr nt. Sand is fine to co prounded of limeston one.	elly silty CLA elly silty CLA ne to coarse. nestone. Cob estone (up to m	AY with s fine to e angula	ar to ar an	21 중 1 중 1 중 1 중 1 중 1 중 1 중 1 중 1 중 1 중	55.0 — - - - - - - - - - - - - - - - - - - -	55.22	2 0.50 1.00 2 2.00	B	BR 3	MK14 MK15 MK16		
		Termination:	Pit Wall Stability:	Groundwater	Rate:	Remar	ks:		1	Key:					
		Obstruction - boulders.	Pit walls stable.	Dry	•	-				B = D = CBR ES =	Bulk Sma = Uno Envir	c dist all dis distu ronm	urbed sturbed rbed CBR ental		

Contra 5	act No: 863	Trial Pit Log											Trial Pit No: TP02			
Contra	act:	Moygaddy			Easting:		693988	3.420		Date:		16/06/2021				
Locat	cation: Maynooth, Co. Meath Northing:				g:	739286	6.118		Excavato	or:	JC	JCB 3CX				
Client	ent: Sky Castle Ltd Elevation:				n:	57.37	Logged I	Зу:	M.	M. Kaliski						
Engineer:		OCSC Dimensions (LxWxD) (m):				4.00 x 0.60 x 3.00			Status:		FIN	FINAL				
Level	(mbgl)	Stratum Description					Legend	Level	Level (mOD		Samples /		ld Tests	Water Strike		
Scale.	Deptil	TOPSOIL.						Scale.	Depti		Iy	pe	Result			
	0.10	Firm becoming stiff gr CLAY with high cobble coarse. Gravel is fine tobbles and boulders for becoming stiff gr CLAY with high cobble coarse. Gravel is fine Cobbles and boulders	ndy slightly gravelly s to coarse. Gravel is fi one. Cobbles are ang tly sandy slightly grav is fine to coarse. Gra d of limestone. Cobbl one.	ilty CLAY with ne to coarse, jular to subrou velly silty CLA vel is fine to o les are angula ndy slightly gra ntent. Sand is subrounded ounded of lime	h low cob angular unded of AY with hi coarse, ar to avelly silt s fine to of limesto estone (u	gh gh up to the test of the test of the test of test o	ទំហិនហិនំហិនហិនំហិនហិនំហិនហិនំហិនហិនំហិនហិនំហិនហិនំហិនំ		57.27	0.50 1.00 2.00	E	BR	МК07 МК08 МК09			
_						e, C.										
3.0	3.00		Pit terminated at 3.00	m				-	54.37	3.00	E	3	MK10			
								54.0 —								
35_								-								
3.5								-								
								-								
								-								
								53.5 -								
		Termination:	Pit Wall Stability	Groundwate	r Rate [.]	Remar	ks:			Kev	:					
		Scheduled dopth	Pit wells stable	Dn/		.emul				R –	Rull	(die	turbed			
C		Scheduled depth. Pit walls stable. Dry -					D = Sr D = Sr CBR = U ES = En [•]						n disturbed nall disturbed ndisturbed CBR ironmental			

Contra 5	act No: 863	Trial Pit Log										Trial Pit No: TP03				
Contra	act:	Moygaddy			Easting:		693767	Date:		16/06/2021						
Locati	ion:	Maynooth, Co. Meat	th		Northing	:	739286.781 Ex			Excavator:		ЈСВ ЗСХ				
Client	:	Sky Castle Ltd Elevation:					55.26		Logged By:		M. Kaliski					
Engin	ngineer: OCSC Dimensions			4.20 x	0.60 ×	(1.40	Status:		FINAL							
Level	(mbgl)	Stratum Description						Level	(mOD) Sam	ples /	Fie	ld Tests	Water		
Scale:	Depth							Scale:	Depth	n: Depth	epth Typ		Result	Strike		
	0.10	TOPSOIL. Firm brown slightly sa and boulder content. S angular to subrounder angular to subrounder boulder and medium b s fine to coarse, angu- boulders are angular to diameter). Qbstruction - boulders	ndy slightly gravelly s Sand is fine to coarse d of limestone. Cobbl d of limestone (up to oulder content. Sand lar to subrounded of lime s. Pit terminated at 1.40	silty CLAY wit e. Gravel is fir les and bould 300mm diam silty CLAY wit is fine to coa limestone. Co estone (up to	h low cok ne to coal ers are eter). h high irse. Grav obbles ar 300mm	/el		55.0	55.16	0.50 0.50 0.50	B	3 3R 3	МК01 МК02 МК03			
-								-]							
		Transfer (1									
1		Destruction	Pit Wall Stability:	Groundwate	r Rate: F	kemar	KS:			Key		(dia	turbod			
C		Obstruction - Pit walls stable. Dry -					В = В D = S CBR = l ES = Er						nall disturbed nall disturbed ndisturbed CBR <i>i</i> rronmental			

Contra 5	act No: 863	Trial Pit Log											No: 4
Contra	act:	Moygaddy			Easting:	6936	82.930		Date:		17/	17/06/2021	
Locat	ion:	on: Maynooth, Co. Meath Northing:							Excavato	or:	JCB 3CX		
Client	lient: Sky Castle Ltd Elevation:					56.9	5		Logged I	By:	M.	M. Kaliski	
Engin	Engineer: OCSC Dimensions (LxWxD) (m):				4.20	x 0.60 x	× 2.40	Status:		FINAL			
Level	(mbgl)		Stratum Descripti	on		Leger	d Level	(mOD) Sam	oles /	Fie	ld Tests	Water
Scale:	Depth	TOPSOIL					Scale:	Deptr	Depth	Iy	pe	Result	Ounce
	0.10 0.50 2.30 2.40	TOPSOIL. Soft brown slightly sar cobble content. Sand angular to subrounded subrounded of limesto Firm grey brown sligh cobble and low boulde fine to coarse, angula boulders are angular to diameter). Stiff grey slightly sand and medium boulder of coarse, angular to sub are angular to subroun Obstruction - boulders	ndy slightly gravelly s is fine to coarse. Gra d of limestone. Cobb one. tly sandy slightly gra er content. Sand is fine to subrounded of lime to subrounded of lime by slightly gravelly silf content. Sand is fine prounded of limestone (u s. Pit terminated at 2.40	silty CLAY with avel is fine to a les are angula velly silty CLA ne to coarse. The mestone. Cob estone (up to ty CLAY with h to coarse. Gra- le. Cobbles ar p to 500mm d	h medium coarse, ar to Y with high Gravel is bles and 500mm	- 상책 상책 -	56.5 - 56.7 - 56.0 - 55.5 - 55.0 - 55.0 - 55.0 -	56.85	5 0.50 1.00	E	3R	МК43 МК44	
								-					
							53.0	-					
		Termination	Pit Wall Stability	Groundwater	Rate: Dom	arke:			Kor				
		Obstruction - boulders.	iai 1\ ə .			B = D = CBR ES =	Bulk Sma = Une Envir	c dis all di distu ronm	turbed isturbed ırbed CBR nental				
Contra 5	act No: 863		1	rial Pi	t Log						Т	rial Pit I	No: 5
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Contra	act:	Moygaddy			Easting:	693971	1.792		Date:		17/06	6/2021	
Locat	ion:	Maynooth, Co. Meath			Northing:	739656	6.168		Excavato	r:	JCB :	3CX	
Client	:	Sky Castle Ltd			Elevation:	58.70			Logged B	sy:	M. Ka	aliski	
Engin	eer:	ocsc			Dimensions (LxWxD) (m)	3.90 x	0.60 >	(2.60	Status:		FINA	L	
Level	(mbgl)		Stratum Description	on		Legend	Level	(mOD) Samp	oles /	Field	Tests	Water
Scale:	Depth		-			-	Scale:	Depth	n: Depth	Тур	be F	Result	Sunke
	0.10	Firm brown slightly sand subrounded of limeston	dy slightly gravelly s fine to coarse. Gra of limestone. Cobbl e. dy slightly gravelly o to coarse, angular	ilty CLAY with vel is fine to o es are angula clayey SILT. S to subrounde	n medium coarse, ar to Band is fine ed of			58.60	0.50	ICB	BR I	MK39 MK40	
	1.50	Firm grey brown slightly cobble and low boulder ine to coarse, angular to boulders are angular to diameter).	y sandy slightly grav content. Sand is fir to subrounded of lin subrounded of lime	Y with high Gravel is bles and 500mm	과 강제 난해 : 승제 강제 난해 : 승제 · 상제 · 상제 · 순제 · 유제 · 가지 · 가		57.20	2.00	В		MK41		
	2.40	Stiff black slightly sandy and medium boulder co coarse, angular to subro are angular to subround Obstruction - boulders.	y slightly gravelly sil ontent. Sand is fine ounded of limestone ded of limestone (up Pit terminated at 2.60	ty CLAY with to coarse. Gra e. Cobbles ar o to 500mm d	high cobble avel is fine to id boulders iameter).			56.30	2.50	В	. r	МК42	
										<u> </u>			
		Termination: P	Pit Wall Stability:	Groundwater	Rate: Rema	arks:			Kev:				
		Pit wall instability. W	Valls collapsing between 1.50mbgl and 2.40mbgl.	1.70 Slow	-				B = D = CBR ES =	Bulk Sma = Unc Envir	distur all distu disturb	bed urbed bed CBR ntal	

Contra 58	act No: 863		٦	Frial Pi	t Log						1	Frial Pit I	No: 6
Contra	act:	Moygaddy			Easting:	69398	9.839		Date:		17/06	6/2021	
Locati	ion:	Maynooth, Co. Meat	th		Northing:	73943	7.563		Excavato	r:	JCB	3CX	
Client	÷	Sky Castle Ltd			Elevation:	57.88			Logged B	sy:	M. Ka	aliski	
Engin	eer:	OCSC			Dimensions (LxWxD) (n	4.40 >	0.60 >	2.50	Status:		FINA	L	
Level	(mbgl)		Stratum Descripti	on		Legend	Level	(mOD) Samp	les /	Field	Tests	Water Strike
Scale:	Depth						Scale:	Deptr	Depth	Typ		Result	Ounto
-	0.10	Soft brown slightly sai coarse. Gravel is fine	ndy slightly gravelly s to coarse, angular to	silty CLAY. Sa subrounded	nd is fine to of limestone	· X · · · · X	-	57.78	3				
0.5	0.30	Firm grey brown sligh cobble and low boulde fine to coarse, angula boulders are angular t diameter).	tly sandy slightly gra er content. Sand is fil r to subrounded of lir to subrounded of lime	velly silty CLA ne to coarse. nestone. Cob estone (up to	Y with high Gravel is bles and 500mm		57.5 - - - 57.0	57.58	0.50	ICB	R	MK46	
1.0	1.30	Firm brown slightly sa cobble content. Sand	ndy slightly gravelly is fine to coarse. Gra	clayey SILT w	rith low coarse,		- - - 56.5 -	56.58	1.00	В		MK47	
1.5	2.00	angular to subrounded subrounded of limesto	d of limestone. Cobb one.	les are angula	ar to		- - - 56.0 —		1.50	В		MK48	•
-	2.40	Firm grey brown sligh cobble and low boulde fine to coarse, angula boulders are angular t diameter).	tly sandy slightly gra er content. Sand is fil r to subrounded of lim to subrounded of lime	velly silty CLA ne to coarse. nestone. Cob estone (up to	Y with high Gravel is bles and 500mm		- - 55.5 -	55.48	2.20	В		MK49	
2.5 — _ _ _	2.50	and medium boulder of coarse, angular to sub are angular to subrout Obstruction - boulders	content. Sand is fine prounded of limeston nded of limestone (u 5. Pit terminated at 2.50	to coarse. Gra e. Cobbles ar p to 500mm d	avel is fine to d boulders iameter).		-	55.38	3 2.50	В		MK50	
3.0							55.0 — -	-					
							- - 54.5 –	-					
3.5 —								-					
							-						
		Obstruction - boulders.	Pit walls stable.	2.00 Seepa	ge -				B = D = CBR ES =	Bulk Sma = Unc Envir	distur III distu listurb	rbed urbed bed CBR ntal	

Contra 5	act No: 863		1	Frial Pi	t Log						Trial T	Pit No: P07
Contra	act:	Moygaddy			Easting:	69417	6.647		Date:		17/06/20	21
Locat	ion:	Maynooth, Co. Meat	th		Northing:	73944	6.736		Excavato	r:	JCB 3C>	(
Client	:	Sky Castle Ltd			Elevation:	58.93			Logged B	y:	M. Kalisł	(i
Engin	eer:	ocsc			Dimensions (LxWxD) (m): 4.20 >	0.60 x	2.50	Status:		FINAL	
Level	(mbgl)		Stratum Description	on		Legend	Level	(mOD) Samp	les /	Field Tes	ts Water
Scale:	Deptn	TOPSOIL.					Scale:	Deptr		Тур	be Res	
	0.10	Soft brown slightly sai coarse. Gravel is fine Firm becoming stiff gr CLAY with high cobble coarse. Gravel is fine Cobbles and boulders 400mm diameter).	ndy slightly gravelly s to coarse, angular to ey brown slightly sar e and low boulder co to coarse, angular to are angular to subro	nd is fine to of limestone avelly silty of limestone estone (up to	. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		58.83	0.50	ICB	R MK	51	
	2.40	Stiff black slightly san and medium boulder of coarse, angular to sub are angular to subroun Dbstruction - boulders	dy slightly gravelly si content. Sand is fine prounded of limeston nded of limestone (u) 5. Pit terminated at 2.50	Ity CLAY with to coarse. Gra e. Cobbles ar p to 500mm d m	high cobble avel is fine to d boulders iameter).		56.5	56.43	2.50	В	MK	53
1		Iermination:	Pit Wall Stability:	Groundwater	Rate: Rem	arks:			Key:	D		
6		Obstruction - boulders.	Pit walls stable.	Dry	-				в = D = CBR : ES =	Bulk Sma Unc= Envire	disturbed all disturbe disturbed (onmental	d CBR

Contra 5	act No: 863		1	Frial Pi	t Log							Trial Pit I TP08	No: 3
Contra	act:	Moygaddy			Easting:	69419	9.733		Date:		17/	06/2021	
Locati	ion:	Maynooth, Co. Meat	th		Northing:	73971	2.642		Excavato	or:	JCI	B 3CX	
Client		Sky Castle Ltd			Elevation:	61.26			Logged E	Зу:	M.	Kaliski	
Engin	eer:	ocsc			Dimensions (LxWxD) (m	3.80 >	(0.60)	c 1.40	Status:		FIN	IAL	
Level	(mbgl)		Stratum Description	on		Legend	Level	(mOD) Sam	oles /	Fiel	ld Tests	Water
Scale:	Depth						Scale:	Depth	n: Depth	Ту	pe	Result	Suike
	0.10	FOPSOIL. Soft brown slightly sar cobble content. Sand angular to subrounded subrounded of limesto subrounded of limesto and medium boulder of coarse, angular to subround are angular to subround Obstruction - boulders	ndy slightly gravelly s is fine to coarse. Gra d of limestone. Cobbl one. tly sandy gravelly silt content. Sand is fine prounded of limeston nded of limestone (up 3. Pit terminated at 1.400	n medium coarse, ar to high cobble avel is fine to d boulders iameter).			61.10	0.50 0.50 1.00	B	BR	MK37 MK38		
_							-	-					
-							58.0 —	-					
							-	-					
3.5 —							-	_					
_							-	-					
_							57.5 -	-					
								-		<u> </u>			
		Termination:	Pit Wall Stability:	Groundwater	Rate: Rem	narks:	1	1	Key:				
(Obstruction - boulders.	Pit walls stable.	Dry	-				B = D = CBR ES =	Bulk Sma = Un Envir	k dist all di distu ronm	turbed sturbed irbed CBR iental	

Contra 5	act No: 863		1	Frial Pi	t Log							Trial Pit I	No: 9
Contra	act:	Moygaddy			Easting:	69450	3.798		Date:		17/	06/2021	
Locat	ion:	Maynooth, Co. Meat	h		Northing:	73970	1.821		Excavato	r:	JCI	B 3CX	
Client	:	Sky Castle Ltd			Elevation:	62.01			Logged E	3y:	M.	Kaliski	
Engin	eer:	ocsc			Dimensions (LxWxD) (m): 4.00 ×	0.60 x	1.60	Status:		FIN	IAL	
Level	(mbgl)		Stratum Description	on		Legend	Level	(mOD) Samp	oles /	Fiel	ld Tests	Water
Scale:	Depth -	TOPSOIL.					Scale:	Depth	n: Depth	Ту	pe	Result	Ounce
	0.10	Tim becoming stiff gr CLAY with high cobble coarse. Gravel is fine Cobbles and boulders 400mm diameter).	ey brown slightly san e and low boulder co to coarse, angular to are angular to subro s. Pit terminated at 1.60	m	avelly silty fine to of limestone estone (up to	144 274 144 44 274 144 274 144 144 274 144 144 144 144 144 144 144 144 144 1		60.4	1 0.50 1.20	B	3R	MK60 MK61	
1		Termination:	Pit Wall Stability:	Groundwater	Rate: Rem	arks:			Key:				
		Obstruction - boulders.	Pit walls stable.	Dry	-				B = D = CBR ES =	Bulk Sma = Un Envir	k dist all di distu ronm	turbed isturbed irbed CBR nental	

Contra 5	act No: 863		٦	Frial Pi	t Log							Trial Pit I	No:)
Contra	act:	Moygaddy			Easting:	69448	6.386		Date:		17/	06/2021	
Locati	ion:	Maynooth, Co. Meat	th		Northing:	739434	4.493		Excavato	or:	JCE	B 3CX	
Client	:	Sky Castle Ltd			Elevation:	58.96			Logged E	Зу:	M. I	Kaliski	
Engin	eer:	OCSC			Dimensions (LxWxD) (m): 4.30 ×	0.60 >	2.40	Status:		FIN	IAL	
Level	(mbgl)		Stratum Description	on		Legend	Level	(mOD) Samp	oles /	Fiel	ld Tests	Water
Scale:	Depth		-				Scale:	Depth	n: Depth	Тур	be	Result	Sinke
	2.40	TOPSOIL. Soft brown slightly sar cobble content. Sand angular to subrounded subrounded of limesto Firm becoming stiff gr CLAY with high cobble coarse. Gravel is fine Cobbles and boulders 400mm diameter).	ndy slightly gravelly s is fine to coarse. Gra d of limestone. Cobb one. ey brown slightly sar e and medium boulde to coarse, angular to s are angular to subro are angular to subro s. Pit terminated at 2.40	silty CLAY with avel is fine to o les are angula ndy slightly gra er content. San o subrounded of bunded of lime	a medium coarse, ar to avelly silty nd is fine to of limestone estone (up to	2.4% - 2% - 2% - 2% - 2% - 2% - 2% - 2% -		58.50	0.50 1.00 2.40	ICB B	BR	MK62 MK63 MK64	
							-	1					
							55.0 -						
	\sim	Termination:	Pit Wall Stability:	Groundwater	Rate: Rem	l arks:			Kev:				
		Obstruction - boulders.	Pit walls stable.	2.10 Seepag	ge -				B = D = CBR ES =	Bulk Sma = Uno Envir	dist all dis distu onm	turbed sturbed irbed CBR iental	

Contra 5	act No: 863		1	Frial Pi	t Lo	g							Trial Pit I TP11	No:
Contra	act:	Moygaddy			Easting	:	694739	9.889		Date:		17/	/06/2021	
Locati	ion:	Maynooth, Co. Mea	th		Northing	g:	739363	8.529		Excavat	or:	JC	B 3CX	
Client	:	Sky Castle Ltd			Elevatio	on:	59.42			Logged	By:	М.	Kaliski	
Engin	eer:	OCSC			Dimens (LxWxD	ions)) (m):	4.10 x	0.60 x	2.30	Status:		FIN	NAL	
Level	(mbgl)	I	Stratum Description	on			Legend	Level	(mOD) Sam	ples /	Fie	ld Tests	Water
Scale:	Depth							Scale:	Depth	: Depth	n Ty	pe	Result	Strike
	0.10	Soft brown slightly sa coarse. Gravel is fine Firm becoming stiff gr CLAY with high cobble coarse. Gravel is fine Cobbles and boulders 400mm diameter).	ndy slightly gravelly s to coarse, angular to rey brown slightly sar e and low boulder co to coarse, angular to s are angular to subro	silty CLAY. Sa o subrounded ndy slightly gra ntent. Sand is o subrounded ounded of lime	nd is fine of limest avelly sil fine to of limest estone (t	ty to to to the transmission of transmission of the transmission of the transmission of the transmission of transmission of the transmission of tr	장기상의 추위상의 중의 추위 수의 수의 수의 사회에 대해 1월	- - 59.0 - - 58.5 - - - - - - - -	58.92	2 0.50	ICE	BR	MK57	
	2.10	Stiff arou brown slight	ly condy clightly group	<mark>4</mark> 세고'에-그'에-그'에-그'에-그'에-그'에-그'에	해이다. 바이다 아이다 아이다 아이다 아이다 바이다 바이다 아이다 아이다 아이다 바이다 바이다 아이다 아이나 아이나 아이나	58.0 — - - 57.5 —	57.32	1.50	B	3	MK58	▼		
2.5 -	2.30	cobble and boulder co coarse, angular to sub are angular to subrou Obstruction - boulders	ontent. Sand is fine to prounded of limestone (uj s. Pit terminated at 2.30	e. Cobbles ar p to 400mm d	vel is find hd bould iameter)	e to ers		- 57.0 — - -	57.12	2.20	E	3	МК59	
3.0								56.5 — - - 56.0 —						
3.5								- - - 55.5 -						
		Termination:	Pit Wall Stability:	Groundwater	Rate:	Remar	ks:			Key	:			
	5)	Obstruction - boulders.	Pit walls stable.	1.80 Seepa	ge ·	-				B = D = CBF ES :	Bulł Sma R = Un Envii	k dis all di distu ronm	turbed isturbed urbed CBR nental	

Contra 5	act No: 863		٦	Frial Pi	t Log								Trial Pit TP1	No: 2
Contra	act:	Moygaddy			Easting:	6	694471	.269		Date	:	ŕ	17/06/2021	
Locat	ion:	Maynooth, Co. Meat	h		Northing:	7	739060	.502		Exca	vator	: .	JCB 3CX	
Client	:	Sky Castle Ltd			Elevation:	5	56.97			Logg	jed By	/:	V. Kaliski	
Engin	eer:	ocsc			Dimensions (LxWxD) (n	s n):	3.70 x	0.60 ×	2.30	Statu	IS:	F	FINAL	
Level	(mbgl)		Stratum Description	on		Le	egend	Level	(mOD) S	Sampl	es / F	Field Tests	Water Strike
Scale:	Depth	TOPSOIL.						Scale:	Deptr	I: De	epin	туре	e Result	
	0.10 0.50 1.60 2.20 2.30	TOPSOIL. Soft brown slightly sat subrounded of limesto imestone. Firm grey brown sligh cobble and low boulde ine to coarse, angula boulders are angular to diameter). Grey brown slity sand GRAVEL of limestone Sand is fine to coarse subrounded of limesto Firm grey brown sligh cobble and low boulde ine to coarse, angular to coarse, angular to sub and medium boulder of coarse, angular to sub are angular to subrou Dbstruction - boulders	ndy slightly gravelly s o coarse. Gravel is fi one. Cobbles are ang tly sandy slightly graver er content. Sand is fin to subrounded of lime by subrounded of lime to subrounded of lime to subrounded of lime to subrounded of lime to subrounded of lime dy slightly gravelly si content. Sand is fine prounded of limeston nded of limestone (u) s. Pit terminated at 2.30	silty CLAY with ne to coarse, jular to subrou velly silty CLA ne to coarse. (mestone. Cob estone (up to - d low boulder ers are angula ameter). velly silty CLA nestone. Cob estone (up to - to coarse. Gra e. Cobbles ar p to 400mm d m	n low cobble angular to inded of Y with high Gravel is bles and 400mm nded content. ar to Y with high Gravel is bles and 400mm high cobble avel is fine t id boulders iameter).	· · · · · · · · · · · · · · · · · · ·		56.5 - - - - - - - - - - - - - - - - - - -	56.87 56.47 55.47 55.37 54.67	2. ,	.00	B	R МК34 МК35 МК36	
								-	-					
-								- 53 0 —						
		1	I	I	I			50.0		1				
1		Termination:	Pit Wall Stability:	Groundwater	Rate: Ren	narks	s:			ŀ	Key:			
		Obstruction - boulders.	Pit walls stable.	1.50 Seepa	ge -					E C E	B = D = CBR = ES = E	Bulk (Smal Undi Enviro	disturbed I disturbed sturbed CBR nmental	

Contra 58	act No: 863		٦	Frial Pit	t Log								Trial Pit I	No: 3
Contra	act:	Moygaddy			Easting:	6	694562	2.423		Date:		16	/06/2021	
Locati	ion:	Maynooth, Co. Meat	h		Northing:	7	738770).148		Excava	ator:	JC	B 3CX	
Client	:	Sky Castle Ltd			Elevation:	5	52.93			Logge	d By:	M.	Kaliski	
Engin	eer:	ocsc			Dimension: (LxWxD) (r	s ; n): ;	3.90 x	0.60 x	2.10	Status		FI	NAL	
Level	(mbgl)		Stratum Description	on		Le	egend .	Level	(mOD) Sa	mples /	/ Fie	eld Tests	Water Strike
Scale: Scale:	Depth 0.10 1.20 0 1.60 0 2.10	TOPSOIL. Soft becoming firm browith high cobble contectors, angular to subsounded of limestors subrounded of limestors and is fine to coarse subrounded of limestors. Gravel is fine Cobbles and boulders 400mm diameter).	own slightly sandy sl ent. Sand is fine to co prounded of limeston one. y fine to coarse, ang with high cobble and . Cobbles and boulde one (up to 400mm dia ey brown slightly sar e and low boulder co to coarse, angular to s are angular to subro s. Pit terminated at 2.10	ightly gravelly barse. Gravel i e. Cobbles are ular to subrour d low boulder of ers are angula ameter). ndy slightly gra ntent. Sand is o subrounded of bunded of lime	silty CLAY s fine to angular to anded content. r to velly silty fine to of limestone stone (up t			Scale: 	52.83 52.83 51.73 51.33 50.83	1.0 0.5 1.0 1.5 2.0	tn Iy D IC D IC	BR B	MK27 MK28 MK29 MK30	
				_		49.0 —								
		Termination:	Pit Wall Stability:	Groundwater	Rate: Rer	nark	s:		1	Ke	ey:		1	<u> </u>
		Obstruction - boulders.	Pit walls stable.	1.80 Seepag	je -					B D CE ES	= Bul = Sm BR = Ur 5 = Envi	lk dis nall d ndistr ironr	sturbed listurbed urbed CBR mental	

Contra 5	act No: 863		1	rial Pi	t Log						Trial Pit TP1	No: 4
Contra	act:	Moygaddy			Easting:	69424	10.465		Date:		16/06/2021	
Locati	ion:	Maynooth, Co. Meat	h		Northing:	7390 ⁻	0.894		Excavator	:	JCB 3CX	
Client		Sky Castle Ltd			Elevation:	55.01			Logged B	y:	M. Kaliski	
Engin	eer:	ocsc			Dimensions (LxWxD) (m	3.90	x 0.60 >	¢ 2.00	Status:		FINAL	
Level	(mbgl)		Stratum Description	on		Legen	Level	(mOD) Samp	les /	Field Tests	Water
Scale: Scale: - - - - - - - - - - - - -	0.10 1.60 2.00	TOPSOIL. Soft becoming firm browith low cobble content coarse, angular to subsubrounded of limesto subrounded of limesto Stiff grey brown slight cobble and low boulde ine to coarse, angula coulders are angular to diameter). Obstruction - boulders	bown slightly sandy sli nt. Sand is fine to coa prounded of limeston one. ly sandy slightly grav er content. Sand is fin r to subrounded of lime s. Pit terminated at 2.000	elly silty CLAN nestone. Cobles estone (up to o	silty CLAY s fine to e angular to f with high Gravel is bles and 400mm		Scale: Scale: 54.5 54.6 53.5 53.5 53.6 53.7 53.8 53.0	53.0 ⁻¹	 Depth 0.50 1.00 1.80 1.80 	ICB B	R MK24 MK25 MK26	
		Termination:	Pit Wall Stability	Groundwater	Rate: Ren	arks:			Kev:			
		Obstruction - boulders.	Pit walls stable.	Dry	-				B = D = CBR = ES =	Bulk Sma = Unc Envire	disturbed Ill disturbed disturbed CBF onmental	2

Contra 5	act No: 863		1	Frial Pi	t Log	J						Tr	ial Pit I TP15	No: 5
Contra	act:	Moygaddy			Easting:		694131	.238		Date:		16/06/	2021	
Locat	ion:	Maynooth, Co. Meat	h		Northing:		739202	2.931		Excavate	or:	JCB 3	СХ	
Client	:	Sky Castle Ltd			Elevation:	:	55.37			Logged	By:	M. Kal	iski	
Engin	eer:	ocsc			Dimension (LxWxD)	ns (m):	4.20 x	0.60 x	1.60	Status:		FINAL		
Level	(mbgl)		Stratum Description	on		l	Legend	Level	(mOD) Sam	ples /	Field T	ests esult	Water Strike
Ocale.	Deptil	TOPSOIL.								, Deptil			coun	
	0.10	IOPSOIL. Soft brown slightly said content. Sand is fine to subrounded of limestor imestone. Firm becoming stiff gr with high cobble and I Gravel is fine to coars Cobbles and boulders 400mm diameter). Qbstruction - boulders		[1871] 승지		55.27	, 0.50 1.00	E	BR M	K22				
_								- 52.0 —						
3.5 —								-	-					
								-	-					
_								- 51.5	-					
								-						
	\sim	Termination:	Pit Wall Stability:	Groundwater	Rate: Re	emar	ks:			Kev	:			
		Obstruction - boulders.	Pit walls stable.	1.60 Mediur	n -					B = D = CBR ES =	Bulk Sma t = Una Envir	disturb all distur disturbe conment	ed bed d CBR al	

Contra 5	act No: 863		1	Frial Pi	t Log							Trial Pit N	No: 5
Contra	act:	Moygaddy			Easting:	69458).524		Date:		17/0)6/2021	
Locat	ion:	Maynooth, Co. Meat	th		Northing:	73920	5.916		Excavato	r:	JCB	3CX	
Client		Sky Castle Ltd			Elevation:	58.33			Logged B	sy:	M. k	(aliski	
Engin	eer:	OCSC			Dimensions (LxWxD) (m): 4.10 ×	0.60 x	2.20	Status:		FIN	AL	
Level	(mbgl)		Stratum Description	on		Legend	Level	(mOD) Samp	les /	Field	1 Tests	Water
Scale:	Depth	TOPSOIL	•				Scale:	Depth	n: Depth	Ту	be	Result	Strike
	0.10 2.10 2.20	Stiff black slightly san and medium boulders coarse, angular to subrou Qbstruction - boulders	ey brown slightly sar e and low boulder co to coarse, angular to s are angular to subro dy slightly gravelly si content. Sand is fine prounded of limeston nded of limestone (u) s. Pit terminated at 2.20	Ity CLAY with to coarse. Gra cobles ar p to 500mm d	high cobble avely silty of limestone. estone (up to high cobble avel is fine to d boulders iameter).	e 게 문제		58.23	3 0.50 1.00 2.20	B	BR .	MK55 MK56	
							-						
		Termination:	Pit Wall Stability:	Groundwater	Rate: Rem	l arks:			Key:				
		Obstruction - boulders.	Pit walls stable.	Dry	-				B = D = CBR ES =	Bulk Sma = Uno Envir	t distu all dis distur	urbed sturbed bed CBR ental	

Contra 58	act No: 863			Trial Pit No: TP17									
Contra	act:	Moygaddy			Easting:	693968	3.747		Date:		16/06/2021		
Locati	ion:	Maynooth, Co. Meath Northing:				739114	1.742		Excavator	: ,	JCB 3CX		
Client	:	Sky Castle Ltd Elevation:					54.52 Log				M. Kaliski		
Engineer:		OCSC Dimensions (LxWxD) (m):					4.20 x 0.60 x 1.70				FINAL		
Level	(mbgl)		Stratum Description	on		Legend	Level (mOD) Sampl	es / F	Field Tests	Water Strike	
Scale:	Deptn	TOPSOIL.					Scale:	Deptr	Deptn	тур	e Result	ounto	
	0.10	Obstruction - boulders	own slightly sandy sl ontent. Sand is fine to prounded of limeston one.	ightly gravelly o coarse. Gra e. Cobbles an	silty CLAY vel is fine to e angular to			52.82	2 0.50	B	R MK17 MK18		
		Termination	Pit Wall Stability:	Groundwater	Rate: Pom	arke:			Kov				
		Termination: Pit Wall Stability: Groundwater Rate: Remainstruction Obstruction - boulders. Pit walls stable. Dry -				ains.			B = D = CBR = ES = 1	Bulk Sma Und Enviro	disturbed Il disturbed isturbed CBR onmental		

Contra 5	act No: 863	Trial Pit Log											Trial Pit No: TP18		
Contra	act:	Moygaddy			Easting:	69	3940		Date: 16/06/20			/06/2021			
Locat	ion:	Maynooth, Co. Meat	th		Northing:	73	39224	.755		Excav	ator:	JC	JCB 3CX		
Client: Sky Castle Ltd					Elevation:	55.	5.98			Logge	d By:	M. Kaliski			
Engin	eer:	OCSC Dimensions (LxWxD) (m):					4.10 x 0.60 x 2.50			Status	:	FI	FINAL		
Level	(mbgl)	Stratum Description						Level	(mOD) Sa	mples	/ Fie	eld Tests	Water	
Scale:	Depth	TOPSOIL.						Scale:	Depth	i: Dep	Depth T	/pe	Result	Ounce	
	2.50	Firm becoming stiff gr CLAY with high cobble coarse. Gravel is fine Cobbles and boulders 400mm diameter).	avelly silty avelly silty fine to of limestone estone (up t	0 : 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	이 같은 같은 같은 것을 수 있는 것을 같은 것을 같을 것 같은 것을 것을 같은 것을		55.88	0.5 1.0 2.5	0 IC	BR B	MK11 MK12 MK13				
_								-	-						
3.5 —								52.5 —							
_								-	-						
_								-	-						
-															
		Termination	Dit Wall Stability	Groundwater	Pata: Bar	narka					21/1				
		Termination: Pit Wall Stability: Groundwater Rate: Remainstructure Strength of soil and boulders. Pit walls stable. Dry -								B D CI E	= Bu = Bu 3R = Ur 3R = Ur 3 = Env	lk dis nall d ndisti ironn	sturbed listurbed urbed CBR nental		

Contra 5	act No: 863	Trial Pit Log											Trial Pit No: TP19		
Contra	act:	Moygaddy			Easting:		693876	6.942		Date:		16/06/2021			
Locati	ion:	Maynooth, Co. Meat	h		Northing:		739296	6.996		Excavator:		JCB 3CX			
Client		Sky Castle Ltd		Elevation:			55.71		Logged B	y:	M. Kaliski				
Engin	eer:	OCSC Dimensions (LxWxD) (m):					4.00 x 0.60 x 1.90			Status:		FINAL			
Level	(mbgl)		Stratum Description						(mOD) Sampl	es /	Field Tests		Water Strike	
Scale:	Depth							Scale:	Depth	: Depth	Тур	be	Result	Strike	
	0.10 0.20	Stiff grey slightly sand and low boulder conte coarse, angular to subrou diameter).	ndy slightly gravelly s o coarse. Gravel is fi one. Cobbles are ang tly sandy slightly grav oulder content. Sand ilar to subrounded of lime to subrounded of lime to subrounded of lime tent. Sand is fine to co prounded of limestone (uj 3. Pit terminated at 1.90	ility CLAY with ne to coarse, jular to subrou- velly silty CLA is fine to coa limestone. Co estone (up to - estone (up to - y CLAY with h arse. Gravel i e. Cobbles an o to 400mm d m	angular to angular to inded of Y with high rse. Grave obbles and 400mm		ĬĿŎĸĨĿŎĸĨĿŎĸĨĿŎĸĨĿŎĸĨĿŎĸĨĿŎĸĨĿŎĸĨĿŎĸĨĿŎĸĨ	55.5	55.61	0.50	ICB B	R	МК05 МК06		
						+						_			
		Termination:	Pit Wall Stability:	Groundwater	Rate: Re	mar	ks:		I	Key:					
		Obstruction - boulders. Pit walls stable. 1.70 Seepage					B = BL D = Sr CBR = U ES = En					lk disturbed nall disturbed ndisturbed CBR rironmental			

Contra 5	act No: 863		1				Trial Pit No: TP20						
Contra	act:	Moygaddy			Easting:	694084	4.588		Date:		16/06/2021		
Locat	ion:	Maynooth, Co. Meat	th		Northing:	739079	9.517		Excavato	r:	JCB 3CX		
Client	Client: Sky Castle Ltd Elevation:					55.01			Logged B	y:	M. Kaliski		
Engin	eer:	OCSC Dimensions (LxWxD) (m):					0.60 x	1.90	Status:		FINAL		
Level	(mbgl)		Stratum Description	on		Legend	Level	(mOD) Samp	les /	Field Tests	Water	
Scale:	Depth	TOPSOIL.					Scale:	Depth	n: Depth	Тур	be Result	Ourice	
	0.10	Firm becoming stiff gr CLAY with high cobbles and boulders Coarse. Gravel is fine			54.91	1 0.50 1.00	ICB B	R MK19 MK20 MK21					
-	1.90	Destruction - boulders	5.					53.11					
			Pit terminated at 1.90	m			53.0						
1		Termination:	Pit Wall Stability:	Groundwater	Rate: Rem	arks:			Key:	<u> </u>			
6		Obstruction - Pit walls stable. Dry - boulders.							B = D = CBR = ES =	Bulk Sma Unc Envir	disturbed all disturbed disturbed CBR onmental	2	

Contra 5	act No: 863	Trial Pit Log											Trial Pit No: TP21		
Contra	Contract: Moygaddy				Easting:		694518.865 Date:						16/06/2021		
Location: Maynooth, Co. Meath					Northing:		738836.591 Excavator:					JCB 3CX			
Client	:	Sky Castle Ltd			Elevation:		54.89			Logged By:		M. Kaliski			
Engineer:		OCSC Dimensions (LxWxD) (m):					4.00 x 0.60 x 2.90			Status:		FINAL			
Level	(mbgl)		Stratum Description	on		L	_egend	Level	(mOD) Samples /		Fie	ld Tests	Water Strike	
Scale:	Deptn	TOPSOIL						Scale:	Deptr	Depth	Typ	be	Result	ounto	
	2.90	Soft becoming firm brwith low cobble contecorrections, angular to subsubrounded of limestors and the subrounded of limestors and the subrounded of limestors and the subrounded of limestors are angular to coarse, angula to coarse, angular to and the subrounders are angular to an ang	own slightly sandy sl nt. Sand is fine to co- prounded of limeston one.	elly silty CLA e. Cobbles ar elly silty CLA ne to coarse. nestone. Cob estone (up to	Y with high Gravel is bles and 400mm	· · · · · · · · · · · · · · · · · · ·	장기장기장기장기장기장기장기장기장기장기장기장기장기장기장기장기장기 %기		54.79	0.50 1.00 2.00	B	;	MK31 MK32 MK33	•	
											-				
		Termination	Pit Wall Stability	Groundwater	Rate: Po	marl	ks:			Kov					
		Termination:Pit Wall Stability:Groundwater Rate:RemainObstruction - boulders.Pit walls stable.2.90 Medium-								B = D = CBR ES =	:y. Bulk disturbed Small disturbed SR = Undisturbed CBR S = Environmental				

TP01 Sidewall



TP01 Spoil



TP02 Sidewall



TP03 Sidewall



TP03 Spoil



TP04 Sidewall



TP04 Spoil



TP05 Sidewall



TP05 Spoil



TP06 Sidewall



TP06 Spoil



TP07 Sidewall



TP07 Spoil



TP08 Sidewall



TP08 Spoil



TP09 Sidewall



TP09 Spoil



TP10 Sidewall



TP10 Spoil



TP11 Sidewall



TP11 Spoil



TP12 Sidewall



TP12 Spoil



TP13 Sidewall



TP13 Spoil



TP14 Sidewall



TP14 Spoil



TP15 Sidewall



TP15 Spoil



TP16 Sidewall



TP16 Spoil



TP17 Sidewall



TP17 Spoil



TP18 Sidewall



TP18 Spoil



TP19 Sidewall



TP19 Spoil


TP20 Sidewall



TP20 Spoil



TP21 Sidewall



TP21 Spoil



Appendix 4 Soakaway Test Results

		SOAKAWAY TEST	
Project Refere	nce:	5863	
Contract name	:	Movgaddy	
Location:	-	Maynooth, Co. Meath	
Test No:		TP01	
Date:		16/06/2021	
Ground Condit	tions		
Ground Condi			
	0.10	TORCOIL	
0.00	0.10	Cost has a firm brown slightly condy slightly grouply	
0.10	1.80	Son becoming initi brown slignly sandy slignly gravely	SILY GLAY WILL
1.00	0.10	Stiff grow brown glightly goody glightly grouply gifty CLA	V with high apphla
1.80	2.10	and low boulder content	r with high coople
Remarks:	10		
Obstruction at 2	. i Umbgl.		
Elapsed Time	⊢all of Water	Pit Dimensions (m)	_
(mins)	(m)	Length (m) 4.30 m	
0	1.20	Width (m) 0.60 m	
0.5	1.20	Depth 2.10 m	
1	1.20	Water	
1.5	1.20	Start Depth of Water 1.20 m	
2	1.20	Depth of Water 0.90 m	
25	1 20	75% Full 1 43 m	-
.3	1.20	25% Full 1 88 m	-
35	1.21	75%-25% 0.45 m	_
0.0	1.21	Volume of water (75%-25%) 1 16 m3	_
4	1.21	Area of Drainage 20 59 m2	_
4.3	1.21	Area of Drainage (75% 05%) 6.00 m2	_
5	1.21	Area of Drainage (75%-25%) 6.99 m2	-
6	1.21		_
7	1.21	75% Full N/A min	
8	1.21	25% Full N/A min	
9	1.21	Time 75% to 25% N/A min	
10	1.21	Time 75% to 25% (sec) N/A sec	
12	1.21		
14	1.21	0.00	
16	1.21	0.10	
18	1.22	0.30	
20	1.22	0.40	
25	1.22	0.60	
30	1.22	0.80	
40	1.22		
50	1.22	1.10	
60	1.22	1.20	
75	1.22	1.40	
90	1.22		
120	1.22	1.70	
.=		1.80	
		2.00	
		2.10 0 20 40 60 80	100 120
f =	Fail	or <u>Fail</u>	
	m/min	m/s	

		SOAKAWAY TEST		
Project Refere	nce:	5863		
Contract name	:	Movgaddy		40
Location:		Maynooth, Co. Meath		
Test No:		TP02		
Date:		16/06/2021		
Ground Condit	tions			
From				
0.00	0 10			
0.00	0.00	Soft brown slightly sandy slightly gravel	Ilv silty CLAV with	low cobble content
0.10	1.50	Firm grey brown slightly sandy slightly graver	aravelly eilty CLAY	with high cobble
0.00	1.00	content		with high cobbie
1.50	3.00	Firm becoming stiff arey brown slightly	sandy slightly grav	elly silty CLAY with
1.50	0.00	high cobble and low boulder content	ballay olightly grav	
Bomarke:				
Test completed	at hase of nit			
Flanced Time	Fall of Water	Pit Dimensions (m)		
(mine)		Longth (m)	4.00 m	4
(111115)	(111)		4.00 111	4
0	1.50	Width (m)	0.60 m	
0.5	1.50	Depth	3.00 m	4 1
1	1.50	Water		4
1.5	1.50	Start Depth of Water	1.50 m	4 1
2	1.50	Depth of Water	1.50 m	4
2.5	1.50	75% Full	1.88 m	4 1
3	1.50	25% Full	2.63 m	4 1
3.5	1.50	75%-25%	0.75 m	4 1
4	1.50	Volume of water (75%-25%)	1.80 m3	4 1
4.5	1.50	Area of Drainage	27.60 m2	
5	1.50	Area of Drainage (75%-25%)	9.30 m2	
6	1.50	Time		
7	1.51	75% Full	N/A min	
8	1.51	25% Full	N/A min	
9	1.51	Time 75% to 25%	N/A min	
10	1.51	Time 75% to 25% (sec)	N/A sec	
12	1.51			
14	1.51	0.00		
16	1.51	0.20		
18	1.51	0.40		
20	1.51	0.80		
25	1.51	1.00		
30	1.51	1.20		
40	1.51	1.40		
50	1.51			
60	1.51	2.00		
75	1.51	2.20		
90	1.51	2.40		
120	1.51	2.60		
	-	2.80		
		0 20 40	60 80	100 120
f _	Fail	or Fail		
'-				
	m/min	111/5		

		SOAKAWAY TEST	
Project Refere	nce:	5863	
Contract name	:	Movgaddy	
Location:	-	Maynooth Co Meath	
Test No:			
Data:		16/06/2021	
Dale.	lana	10/00/2021	
Grouna Conai			
From	10	T0000//	
0.00	0.10	TOPSOIL.	
0.10	0.90	Firm brown slightly sandy slightly gravelly silty CLAY	with low cobble and
		boulder content.	
0.90	1.40	Firm brown slightly sandy slightly gravelly silty CLAY	with high cobble and
		medium boulder content.	
Remarks:			
Obstructions at	1.40mbgl.		
Elapsed Time	Fall of Water	Pit Dimensions (m)	
(mins)	(m)	Length (m) 4.20 m	
0	0.50	Width (m) 0.60 m	
0.5	0.50	Depth 1.40 m	—
0.5	0.50		— I
1	0.50		
1.5	0.50	Start Depth of Water 0.50 m	
2	0.51	Depth of Water 0.90 m	
2.5	0.51	75% Full 0.73 m	
3	0.51	25% Full 1.18 m	
3.5	0.51	75%-25% 0.45 m	
4	0.51	Volume of water (75%-25%) 1.13 m3	
4.5	0.51	Area of Drainage 13.44 m2	
5	0.51	Area of Drainage (75%-25%) 6.84 m2	
6	0.51	Time	\neg
7	0.52	75% Full N/A min	
8	0.52		
0	0.52	Z5761 UII 10/A min	
9	0.52	Time 75% to 25% N/A IIIII	
10	0.52	11me 75% to 25% (sec) N/A sec	
12	0.52		
14	0.52	0.00	
16	0.52	0.10	
18	0.52	0.20	
20	0.52	0.30	
25	0.53	0.40	
30	0.53	0.50	
40	0.53	0.60	
50	0.53	0.70	
60	0.54	0.80	
75	0.54	0.90	
90	0.54	1.00	
120	0.54	1.10	
120	0.04	1.20	
		1.30	
		0 20 40 60 8	.0 100 120
	Fail	Eoil	
T =	rall	or <u>raii</u>	
	m/min	m/s	

Project Reference: 5863 Contract name: Maynooth, Co. Meath Location: TP04 Date: T706/2021 Ground Conditions Firm From To 0.00 0.10 TOPSOIL. 0.10 0.50 Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. 0.50 2.30 Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. 2.30 2.40 Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Water ingress at 2.00mbgl. 0.5 - Dist saturated and unsuitable for soakaway design. Elapsed Time Fall of Water m 1 - Year 2 - 2.5 - 3.5 - Time Time 3.5 - Time Time 3.5 - Time Time 3.6 - Time Time 3.6 -			SOAKAWAY TE	<u>ST</u>		1	
Contract name: Maynoth, Co. Meath Location: Maynoth, Co. Meath Test No: 17704 Date: 17/06/2021 Ground Conditions Ground Conditions From To 0.00 0.10 0.50 Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. 0.50 2.30 2.40 Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Obstruction at 2.40mbgl. Water ingress at 2.00mbgl - soils saturated and unsuitable for soakaway design. Elapsed Time Fall of Water m 1 - 2.5 - 3.5 - 3.5 - 75% Full m 75% Full NA min 112 - 12 - 12	Project Referen	nce:	5863				
Location: Maymouth, Co. Meath Test No: TP04 Date: 17/06/2021 Ground Conditions From 0.00 0.10 TOPSOIL. 0.10 0.50 Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. 0.50 2.30 Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. 2.30 2.40 Stift grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Stift grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Plit Dimensions (m)	Contract name	:	Moygaddy			50-/	
Test No: TP04 Date: 17/06/2021 Ground Conditions From From To 0.00 0.10 0.10 0.50 Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. 0.00 2.30 2.30 2.40 Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Obstruction at 2.40mbgl. Water impress at 2.00mbgl - soils saturated and unsuitable for soakaway design. Elapsed Time Fall of Water (mins) (m) 1 - 2.5 - 3 - 2.5 - 3.5 - 4.5 - 7 - 8 - 9 - 10 - 2.5 - 3.6 - 7 - 8 - 9 - 110 -	Location:		Maynooth. Co. Meath				
Date: 17/06/2021 Ground Conditions From To 0.00 0.10 TOPSOIL. TOPSOIL. 0.10 0.50 Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. 2.30 2.40 Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Wild grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Wild grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Wild grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Wild for young slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Wild for young slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Wild for young slightly gravelly slightly gravelightly slightly gravelly slightly gravelly slightly grave	Test No:		TP04				
Ground ConditionsFromTo0.000.10TOPSOIL.0.100.50Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content.0.502.30Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content.2.302.40Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content.Remarks:Obstruction at 2.40mbgl.Water ingress at 2.00mbgl - soils saturated and unsuitable for soakaway design.1-1.5-2-2.5-3-2.5-3.5-4-4.5-5-5-6-7-8-9-10-12-14-16-17-18-20-25-30-40-12-13-14-15-16-17-18-20-190-10-12-13-14-15-16-17-	Date:		17/06/2021	17/06/2021			
Prom To 0.00 0.10 TOPSOIL. 0.10 0.50 Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. 0.50 2.30 Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. 2.30 2.40 Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Materingress at 2.00mbgl. Vater ingress at 2.00mbgl - soils saturated and unsuitable for soakaway design. Image: state stat	Ground Condit	tions	,				
1.011.01.01.00.100.10TOPSOIL.0.100.50Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content.0.502.30Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content.2.302.40Stiff grey slightly gravelly silty CLAY with high cobble and medium boulder content.Remarks:Obstruction at 2.40mbgl.Water ingress at 2.00mbgl - soils saturated and unsuitable for soakaway design.Elapsed Time 1Fall of Water Length (m)102.533.54478778777777777777777777710-12- <td>From</td> <td></td> <td></td> <td></td> <td></td> <td></td>	From						
0:00 0:10 <th< td=""><td>0.00</td><td>0.10</td><td></td><td></td><td></td><td></td></th<>	0.00	0.10					
0.10 0.30 Solid bitwith startly saidly saidly say of ULAT with high cobble content. 0.50 2.30 Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. 2.30 2.40 Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Water ingress at 2.00mbgl - solid saturated and unsuitable for soakaway design. Elapsed Time Fall of Water 1 - 1.5 - 2.5 - 3.5 - 4 - 5.5 - 6 - 7 - 5.5 - 6 - 7 - 7.5 - 6 - 7 - 7.5 - 10 - 12 - 14 - 12 - 14 - 15 - 16 - 17	0.00	0.10	Soft brown slightly sandy slightly ar	avolly cilty (modium cobblo	
0.50 2.30 Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. 2.30 2.40 Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: Obstruction at 2.40mbgl. Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Remarks: (mins) (m) 4.20 m 0 - (mins) (m) 4.20 m 0.5 - (mins) (m) 4.20 m 0.5 - (mins) (m) 0.60 m 1 - Depth of Water m 1 2.5 - (month atter) m 1 3.5 - (month atter) m 1 4.5 - 75% Full m Marea of Drainage (75%-25%) m3 77 - - 75% for 25% m2 1 1 10 - -<	0.10	0.50	content	aveny Sity C			
0.30 2.30 2.30 2.30 and low boulder content. and low boulder content. Remarks: Obstruction at 2.400 mg/l soils saturated and unsuitable for soakaway design. Elapsed Time Fall of Water (mins) (m) 0 - 0.5 - 1 - 1.5 - 2.5 - 2.5 - 3.5 - 4 - 3.5 - 4 - 75 - 6 - 77 - 75 - 30 - 10 - 12 - 6 - 75% Full N/A min 18 - 20 - 30 - 14 - 16 - 75 - 30 - 30 - 30 - 30 - 30 - 30 - 30 - 30 - 30 - 30 - </td <td>0.50</td> <td>2 30</td> <td>Firm grov brown slightly sandy slight</td> <td>tly gravelly</td> <td>cilty CLAV</td> <td>with high cobble</td>	0.50	2 30	Firm grov brown slightly sandy slight	tly gravelly	cilty CLAV	with high cobble	
Length of Water metal Remarks: Obstruction at 2.40mbgl. Obstruction at 2.40mbgl. Satiff grey slightly gravelly slity CLAY with high cobble and medium boulder content. Elapsed Time Fall of Water (mins) (m) 0 - 0.5 - 1 - 1.5 - 2.2 - 2.5 - 3.5 - 3.5 - 4 - 4.5 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 8 - 9 - 114 - 12 - 144 - 16 - 18 - 20 - 25 -	0.50	2.00	and low boulder content	itty graveny		with high coopie	
2.30 2.40 Disting usy analysing yarded and yarded	2.20	2.40	Stiff grov slightly sandy slightly grav	velly silty CI	ΔV with hi	igh cobble and	
Inclusion collect content. Destruction at 2.40mbgl. Water ingress at 2.00mbgl - soils saturated and unsuitable for soakaway design. Elapsed Time Fall of Water (mins) 0 - 0.5 - 1 - 1.5 - 2.5 - 2.5 - 3.5 - 4 - 4.5 - 5 - 6 - 7 - 76 - 10 - 11 - 25 - 6 - 7 - 76 - 10 - 12 - 14 - 18 - 20 - 212 - 14 - 18 - 20 - 212 -	2.50	2.40	medium boulder content			Igh cobble and	
Intensional Sector 10 (mins) Water ingress at 2.00mbgl - soils saturated and unsuitable for soakaway design. Elapsed Time Fall of Water (mins) (m) A 0 -	Pomorko						
Construction at 2-forming. Water ingress at 2.00mbg1 - soils saturated and unsuitable for soakaway design. Elapsed Time Fall of Water (m) Image: model of the matrix of the	Obstruction at 0	40mbal					
Participant Participant Participant Elapsed Time Fall of Water Image fail of Water 0 - 0.60 m 0.5 - 2.40 m 1 - 1 1.5 - 2.40 m 2.5 - 2.40 m 3.5 - 2.40 m 4.5 - m 2.5 - 7% Full m 3.5 - - m 25 - - 7% Full m 7 - 75% -25% - m2 7 - 75% -25% - m2 7 - 75% Full N/A min 25% Full N/A min 10 - - - - 75% for 25% (sec) N/A sec 20 - - - - - -	Water ingress a	40111DYI. t 2 00mbal - a	oils saturated and unsuitable for ass	kaway daala	ar		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Flanced Time	L 2.0011Dgl - S		naway uesi(ун. Г		
(initial field of the second seco				4.00		-	
0 - 0.5 - 1 - 1.5 - 2 - 2.5 - 3 - 3.5 - 4 - 5 - 6 - 7 - 55 - 6 - 7 - 75%< Full	(mins)	(11)		4.20	m		
0.5 - 2.40 m 1 - 1.5 - 2 - 2.5 - 3 - 3.5 - 4 - 4 - 5 - 6 - 7 - 6 - 77 - 8 - 9 - 114 - 12 - 14 - 16 - 18 - 20 - 25 - 30 - 40 - 12 - 14 - 25 - 30 - 40 - 50 - 120 - 120 - 120 - 120 - 120 - 120 -	0	-	Width (m)	0.60	m		
1 - 1.5 - 2 - 2.5 - 3 - 3.5 - 4 - 4.5 - 5 - 6 - 7 - 8 - 75% Full - Mrea of Drainage - Area of Drainage - 76% Full N/A min 25% Full N/A min 25% Full N/A min 10 - 14 - 16 - 17% co 25% (sec) 14 - 16 - 25 - 30 - 40 - 50 - 90 - 120 - 120 - f F Fail m/min m/min m/s	0.5	-	Depth	2.40	m		
1.5 - 2 - 2.5 - 3 - 3.5 - 4 - 5 - 6 - 7 - 8 - 75% - 7 - 7 - 7 - 76% - 77 - 78 - 79% - 70 - 77 - 78 - 79% - 70 - 75% - 76% - 70 - 75% - 76% - 75% - 710 - 120 - 130 - 40 - 75% - 90 - 120 - 120 - 120	1	-	Water				
2 - 2.5 - 3 - 3.5 - 4 - 4.5 - 5 - 6 - 7.7 - 8 - 9 - 110 - 12 - 14 - 15 - 7.7 - 7.8% Full N/A min 75% Full N/A min 10 - 114 - 120 - 300 - 400 - 50 - 60 - 75 - 90 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 -	1.5	-	Start Depth of Water	-	m		
2.5 - 3 - 3.5 - 4 - 4.5 - 5 - 6 - 7 - 7% Full - 7 - 7% Full - 7 - 7 - 7% Full N/A 8 - 7% Full N/A 8 - 7% Full N/A 8 - 7% Full N/A 10 - 12 - 14 - 16 - 18 - 20 - 25 - 30 - 40 - 120 - 120 - 120 - 120 - m/min m/s	2	-	Depth of Water	-	m		
3 - m 3.5 - m 3.5 - m 4 - m 4 - m 4 - m 4 - m 4 - m 4 - m 4 - m 4 - m 5 - m3 Area of Drainage - m2 Area of Drainage (75%-25%) - m2 Time - m2 Time - m2 Time - m2 75 - - m 120 - - N/A min 120 - - - 75 - - - 90 - - - 120 - - - m/min m/s m/s -	2.5	-	75% Full	-	m		
3.5 - 4 - 4.5 - 5 - 6 - 7 - 8 - 9 - 10 - 12 - 14 - 16 - 12 - 14 - 16 - 12 - 14 - 16 - 30 - 40 - 50 - 75 - 90 - 120 -	3	-	25% Full	-	m		
4 - 4.5 - 5 - 6 - 7 - 10 - 112 - 114 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 -	3.5	-	75%-25%	-	m		
4.5 - 5 - 6 - 7 - 8 - 9 - 10 - 12 - 14 - 16 - 18 - 20 - 25 - 30 - 40 - 50 - 90 - 120 - 120 - f = f = Fail m/min m/s	4	-	Volume of water (75%-25%)	-	m3		
5 - m2 6 - 7 - 8 - 9 - 10 - 12 - 14 - 16 - 18 - 20 - 25 - 30 - 60 - 75 - 90 - 120 - 50 - 60 - 75 - 90 - 120 -	4.5	-	Area of Drainage	-	m2	1	
6 - 7 - 8 - 9 - 10 - 12 - 14 - 16 - 18 - 20 - 25 - 30 - 40 - 50 - 90 - 120 - 120 - f = f = Fail m/min or Fail m/s	5	-	Area of Drainage (75%-25%)	-	m2		
7 - 8 - 9 - 10 - 12 - 14 - 16 - 18 - 20 - 25 - 30 - 40 - 50 - 60 - 75 - 90 - 120 -	6	-	Time	Ì		1	
8 - 9 - 10 - 12 - 14 - 16 - 18 - 20 - 25 - 30 - 40 - 50 - 90 - 120 - f = Fail m/min m/min Fail m/s	7	-	75% Full	N/A	min	1	
9 - 10 - 12 - 14 - 16 - 18 - 20 - 25 - 30 - 40 - 50 - 90 - 120 - f = Fail m/min m/min Fail m/s	8	-	25% Full	N/A	min	1	
10 - 12 - 14 - 16 - 18 - 20 - 25 - 30 - 40 - 50 - 90 - 120 - f = Fail m/min or Fail m/s	9	-	Time 75% to 25%	N/A	min	1	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	10	-	Time 75% to 25% (sec)	N/A	sec	1	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	12	-				-	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	14	-	1				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	16	-	1				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	18	-	1				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	20	-	1				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	25	-	1				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	30	-	1				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	40	-	1				
$\begin{array}{c cccc} \hline & & & & \\ \hline \end{array} \\ \hline & & & \\ \hline \end{array} \\ \hline & & & \\ \hline \hline \\ \hline & & & \\ \hline \hline \\ \hline & & & \\ \hline \hline \\ \hline \\$	50	-	1				
$\begin{array}{c c} \hline 75 & - \\ \hline 90 & - \\ \hline 120 & - \\ \hline \end{array}$ $f = \underline{Fail}_{m/min} or \underline{Fail}_{m/s}$	60	-	1				
$f = \frac{Fail}{m/min} \text{ or } \frac{Fail}{m/s}$	75	_	1				
$f = \frac{Fail}{m/min} \text{ or } \frac{Fail}{m/s}$	90	-	1				
f = <u>Fail</u> or <u>Fail</u> m/min m/s	120	-	1				
f = <u>Fail</u> or <u>Fail</u> m/min m/s			1				
m/min m/s	f =	Fail	or Fail]			
		m/min	m/s				

		SOAKAWAY TES	<u>ST</u>		
Project Refere	nce:	5863			
Contract name		Movgaddy			
Location:	-	Maypooth Co. Meath			
Teet No:					
Dato:		17/06/2021			
Date.	lione	17/00/2021			
Grouna Conar					
From	10	TODOOIL			
0.00	0.10				
0.10	0.60	Soft brown slightly sandy slightly gra	avelly silty (JLAY with	medium cobble
	4 50	content.		0 H T	
0.60	1.50	Firm brown slightly sandy slightly gr	avelly claye	ey SILT.	
1.50	2.40	Firm grey brown slightly sandy sligh	tly gravelly	silty CLAY	Y with high cobble
		and low boulder content.			
2.40	2.60	Stiff black slightly sandy slightly gra	velly silty C	LAY with I	high cobble and
		medium boulder content.			
Remarks:					
Obstruction at 2	2.60mbgl.				
Water ingress a	<u>it 1.70mbgl - s</u>	oils saturated and unsuitable for soal	kaway desig	gn.	
Elapsed Time	Fall of Water	Pit Dimensions (m)			
(mins)	(m)	Length (m)	3.90	m	
0	-	Width (m)	0.60	m	
0.5	-	Depth	2.40	m	1 1
1	-	Water			
1.5		Start Depth of Water		m	
2		Depth of Water	_	m	-
25	-		-	m	
2.5	-		-		
 	-	25% FUII 75% 05%	-		
3.5	-	73%-23%	-	[]] m 0	
4	-	volume of water (75%-25%)	-	m3 0	
4.5	-	Area of Drainage	-	m2	
5	-	Area of Drainage (75%-25%)	-	m2	
6	-	Time			
7	-	75% Full	N/A	min	
8	-	25% Full	N/A	min	_
9	-	Time 75% to 25%	N/A	min	_
10	-	Time 75% to 25% (sec)	N/A	sec	
12	-				
14	-				
16	-				
18	-				
20	-				
25	-				
30	-				
40	-				
50	-				
60	-				
75	-				
90	-				
120	-				
1	Fail	E E E E E E E E E E E E E E E E E E E	1		
'=	<u>raii</u>				
	m/min	m/s			

|--|

			SOAKAWAY TES	ST		
Project Refere	nce:	5863				
Contract name		Μονα	addy			
Location:	•	Mavn	ooth Co Meath			
Tost No:		TPOG				
Dato:		17/06	/2021			
Date.	lione	17/00	/2021			
Ground Condi						
From	10	TOD				
0.00	0.10	TOPS	SOIL.		21.437	
0.10	0.30	Soft b	prown slightly sandy slightly gra	avelly silty (JLAY.	<u> </u>
0.30	1.30	Firm	grey brown slightly sandy sligh	tly gravelly	silty CLA	r with high cobble
		and lo	bw boulder content.			
1.30	2.00	Firm	brown slightly sandy slightly gr	avelly claye	ey SILT wi	th low cobble
2.00	2.40	Firm	grey brown slightly sandy sligh	tly gravelly	silty CLA	Y with high cobble
	-	and lo	bw boulder content.			
2.40	2.50	Stiff b	black slightly sandy slightly gra	velly silty C	LAY with	high cobble and
		mediu	um boulder content.			
Remarks:						
Obstruction at 2	2.50mbgl.					
Water ingress a	<u>t 2.00mbgl - s</u>	<u>oils s</u> a	turated and unsuitable for soal	<u>kaway desi</u> g	gn.	
Elapsed Time	Fall of Water		Pit Dimensions (m)			
(mins)	(m)		Length (m)	4.40	m	- 1
0	-		Width (m)	0.60	m	-
0.5	-		Depth	2.50	m	-
1			Water	2.00		-
1.5			Start Dapth of Water		-	-
1.5	-		Start Depth of Water	-	[[]	_
2	-		Depth of water	-	m	-
2.5	-		75% Full	-	m	-
3	-		25% Full	-	m	-
3.5	-		75%-25%	-	m	
4	-		Volume of water (75%-25%)	-	m3	
4.5	-		Area of Drainage	-	m2	
5	-		Area of Drainage (75%-25%)	-	m2	
6	-		Time			
7	-		75% Full	N/A	min	
8	-		25% Full	N/A	min	
9	-		Time 75% to 25%	N/A	min	
10	-		Time 75% to 25% (sec)	N/A	sec	1
12	-				•	-
14	-					
16	-					
18	-					
20	-					
25	-					
30	-					
40						
50	_					
60						
00	-					
90 100	-					
120	-					
f =	<u>Fail</u>	or	<u>Fail</u>			
	m/min		m/s			
				1		

		SOAKAWAY TEST	
Project Referer	nce:	5863	
Contract name	:	Movgaddy	4
Location:		Mavnooth, Co. Meath	
Test No:		TP07	
Date:		17/06/2021	
Ground Condit	tions		
From			
0.00	0 10	TOPSOIL	
0.00	0.10	Soft brown slightly sandy slightly gravelly silty CLAV	
0.10	2.40	Firm becoming stiff arey brown slightly sandy slightly ar	avally silty CLAV with
0.20	2.40	high cobble and low boulder content	aveny Sity OLAT With
2.40	2 50	Stiff black slightly sandy slightly gravelly silty CLAY with	high cobble and
2.40	2.00	medium boulder content	ingii cobbio ana
Romarke:			
Obstructions at	2 50mbal		
Flanced Time	Fall of Wator	Pit Dimensions (m)	
(mine)	(m)	Length (m) 4.20 m	
(111115)	(11)	Width (m) 0.60 m	_
0	1.40	Depth	_
0.5	1.40	Deptri 2.50 m	_
1	1.40		_
1.5	1.40	Start Depth of Water 1.40 m	
2	1.40	Depth of Water 1.10 m	_
2.5	1.40	75% Full 1.68 m	
3	1.40	25% Full 2.23 m	
3.5	1.40	75%-25% 0.55 m	_
4	1.40	Volume of water (75%-25%) 1.39 m3	
4.5	1.40	Area of Drainage 24.00 m2	
5	1.40	Area of Drainage (75%-25%) 7.80 m2	
6	1.40	Time	
7	1.40	75% Full N/A min	
8	1.40	25% Full N/A min	
9	1.40	Time 75% to 25% N/A min	
10	1.40	Time 75% to 25% (sec) N/A sec	
12	1.40		
14	1.40	0.00	
16	1.40	0.20	
18	1.40	0.40	
20	1.40	0.60	
25	1.40		
30	1.40		
40	1.40		
50	1.40	1.40	
60	1.40		
75	1.40		
90	1.40	2:00	
120	1.40	2:20	
			100 120
f =	<u>Fail</u> m/min	or <u>Fail</u> m/s	

		SOAKAWAY TEST	
Project Refere	nce:	5863	
Contract name	:	Movgaddy	40 /
Location:	-	Maynooth, Co. Meath	
Test No:		TP08	
Date:		17/06/2021	
Ground Condi	lione	17/00/2021	
Ground Condi			
	0.10	TORSOIL	
0.00	0.10	IOPSOIL.	
0.10	0.80	Solt brown slightly sandy slightly gravely slity CLAY w	Alth medium cobbie
0.00	1.40	CONTENT.	AV with high apphla
0.80	1.40	and modium boulder content	
Demeriker			
Nemarks:	1 10mb al		
Obstructions at			
Liapsed Lime	rall of Water		
(mins)	(m)	Length (m) 3.80 m	/
0	0.60	Width (m) 0.60 m	!
0.5	0.60	Depth 1.40 m	
1	0.60	Water	
1.5	0.60	Start Depth of Water 0.60 m	
2	0.60	Depth of Water 0.80 m	
2.5	0.61	75% Full 0.80 m	
3	0.61	25% Full 1.20 m	
3.5	0.61	75%-25% 0.40 m	
4	0.61	Volume of water (75%-25%) 0.91 m3	
4.5	0.61	Area of Drainage 12.32 m2	
5	0.61	Area of Drainage (75%-25%) 5.80 m2	
6	0.61		
7	0.61	75% Full N/A min	—
8	0.01	25% Full N/A min	—
9	0.01	Time 75% to 25%	
10	0.01	Time 75% to 25% (sec) N/A sec	
10	0.01	Time 7578 to 2578 (sec)	
14	0.61	0.00	
14	0.61	0.00	
10	0.61		
18	0.61	0.20	
20	0.61	0.00	
25	0.62	0.50	
30	0.62	0.60	
40	0.62	0.70	
50	0.62	0.80	
60	0.62	0.90	
/5	0.62	1.00	
90	0.62	1.10	
120	0.62	1.20	
		1.30	
		U 20 40 60 80	100 120
f	Fail	or Fail	
'=	<u>1 all</u>		
	m/min	m/s	

			SOAKAWAY TES	<u>ST</u>		(1	2
Project Referen	nce:	5863					
Contract name	:	Mova	addy			4	1) - J
Location:		Mavn	ooth. Co. Meath			19	
Test No:		TP09					
Date:		17/06	/2021				
Ground Condi	tions						
From	То						
0.00	0.10	TOPS	SOIL.				
0.10	1.60	Firm b high c	pecoming stiff grey brown sligh sobble and low boulder content	ntly sandy s	lightly grav	elly silty C	LAY with
Remarks [.]				•			
Obstructions at	1 60mbal						
Elansed Time	Fall of Water		Pit Dimensions (m)				
(mins)	(m)		Length (m)	4 00	m		
(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.60		Width (m)	00. - 0 80	m	1	
0.5	0.00		Denth	1 60	m	1	
1	0.00		Water	1.00		1	
15	0.00		Start Dopth of Water	0 60	m	1	
1.0	0.60		Dopth of Water	1.00	m		
25	0.00			0.95	m		
2.0	0.60		25% Full	1.00	m		
35	0.00		25% -25%	0.50	m		
3.5	0.60		$7570^{-2}25\%$	1.30	m3		
4	0.01		Area of Drainage	14.70	m0		
4.5	0.61		Area of Drainage	14.72	m2	4	
5	0.01		Area of Drainage (75%-25%)	7.00	1112	4	
6	0.61			N.I./ A			
/	0.61		75% Full	N/A	min		
8	0.61		25% FUII	N/A	min		
9	0.61		Time 75% to 25%		min		
10	0.01	ļ	Time 75% to 25% (sec)	N/A	sec		
12	0.61						
14	0.61		0.00				
10	0.61		0.10				
10 20	0.01		0.30				
20	0.60		0.40				
20	0.02		0.50				
30 70	0.02		0.60				
40 50	0.02		0.70				
60	0.02		0.80				
75	0.62		0.90				
90	0.02		1.00				
120	0.62		1.10				
120	0.02	•	1.20				
			1.30				
			1 50				
			1.60		1		
			0 20 40	60	80	100	120
f =	<u>Fail</u> m/min	or	<u>Fail</u> m/s				

		SOAKAWAY TEST	
Project Refere	100.	5863	
Contract name		Movgaddy	
Location:	•	Maynooth Co. Meath	
Tost No:			
Dato:		17/06/2021	
Date.	liono	17/00/2021	
Ground Condi			
	0.10	TORCOIL	
0.00	0.10	IUPSUIL.	with medium colololo
0.10	0.40	Solt brown slightly sandy slightly gravely slity GLAY	with medium coople
0.40	0.40	Content.	arovally ailty CLAX with
0.40	2.40	high cobble and medium boulder content.	graveny sity CLAT with
Remarks:			
Obstruction at 2	.40mbgl.		
Water ingress a	t 2.10mbgl - s	bils saturated and unsuitable for soakaway design.	
Elapsed Time	Fall of Water	Pit Dimensions (m)	
(mins)	(m)	Length (m) 4.30lm	
0	-	Width (m) 0.60 m	
0.5	-	Depth 240lm	
1	_	Water	
1.5		Start Dopth of Water	
1.5	-	Dopth of Water	
2	-		
2.0	-	75% Full - III	
3 2.5	-	25% FUII - III	
3.5	-	75%-25% - III	
4	-	Volume of water (75%-25%) - m3	
4.5	-	Area of Drainage - m2	
5	-	Area of Drainage (75%-25%) - m2	
6	-		
7	-	75% Full N/A min	
8	-	25% Full N/A min	
9	-	Time 75% to 25% N/A min	
10	-	Time 75% to 25% (sec) N/A sec	
12	-		
14	-		
16	-		
18	-		
20	-		
25	-		
30	-		
40	-		
50	-		
60	-		
90	-		
120	-		
f =	<u>⊢all</u> m/min	or <u>Fall</u> m/s	

		SOAKAWAY TEST	
Project Refere	nce:	5863	
Contract name		Movgaddy	
Location:	•	Maynooth Co. Meath	
Tost No:			
Dato:		17/06/2021	
Date.	liono	17/00/2021	
Ground Condi			
	0.10	TORSOIL	
0.00	0.10	Soft brown alightly condy alightly groupelly aity CLAY	
0.10	0.50	Firm becoming stiff grou brown slightly condy slightly group	volly oilty CLAV with
0.50	2.10	high aphble and low boulder content	Veriy Sitty OLAT With
2.10	2.20	Stiff grov brown clightly candy clightly grovely city CLAY	with high cobblo
2.10	2.30	and boulder content	with high coople
Demerikes			
Remarks:	20mbcl		
Obstruction at 2			
vvater ingress a		Dils salurated and unsultable for soakaway design.	
		Fit Dimensions (m)	-
(mins)	(m)		_
0	-	Width (m) 0.60 m	_
0.5	-	Depth 2.30 m	
1	-	Water	
1.5	-	Start Depth of Water - m	
2	-	Depth of Water - m	
2.5	-	75% Full - m	
3	-	25% Full - m	
3.5	-	75%-25% - m	
4	-	Volume of water (75%-25%) - m3	
4.5	-	Area of Drainage - m2	7
5	-	Area of Drainage (75%-25%) - m2	7
6	-	Time	1
7	-	75% Full N/A min	
8	-	25% Full N/A min	
9	-	Time 75% to 25% N/A min	
10	-	Time 75% to 25% (sec) N/A sec	
12	-		
14	-		
16	-		
18	-		
20	-		
25	-		
30	-		
40	-		
50	-		
60	-		
90	-		
120	-		
f =	Fail	or <u>Fail</u>	

|--|

		SOAKAWAY TES	<u>ST</u>		
Project Refere	nce:	5863			
Contract name	1	Movgaddy			40 /
Location:	-	Maynooth Co Meath			
Test No:		TP12			
Date:		17/06/2021			
Ground Condi	tiono	17/00/2021			
Ground Condi					
From 0.00	10	Торсоц			
0.00	0.10				
0.10	0.50	Soft brown slightly sandy slightly gra	velly slity C		
0.50	1.50	Firm grey brown slightly sandy slight	ly gravelly	SIITY CLAY	with high cobble
1 50	1.60	Grey brown silty sandy GRAVEL with	high cobb	e and low	houlder content
1.50	2.20	Firm arey brown slightly sandy slight	ly gravelly	eilty CLAV	with high cobble
1.00	2.20	and low boulder content.	iy ylaveliy	SILY ULAY	
2.20	2.30	Stiff black slightly sandy slightly grav	elly silty C	LAY with h	high cobble and
_		medium boulder content.			-
Remarks:		1			
Obstruction at 2	2.30mbgl.				
Water ingress a	t 1.50mbgl - s	oils saturated and unsuitable for soak	away desig	yn.	
Elapsed Time	Fall of Water	Pit Dimensions (m)			
(mins)	(m)	Length (m)	3.70	m	1
0	-	Width (m)	0.60	m	
0.5		Denth	2.30	m	
1	_	Water	2.00		
15	-	Waler Start Danth of Water			
1.5	-	Start Depth of Water	-	111 	
2	-	Depth of Water	-	m	
2.5	-	75% Full	-	m	
3	-	25% Full	-	m	4
3.5	-	75%-25%	-	m	4 1
4	-	Volume of water (75%-25%)	-	m3	4 1
4.5	-	Area of Drainage	-	m2	
5	-	Area of Drainage (75%-25%)	-	m2]
6	-	Time]
7	-	75% Full	N/A	min	J I
8	-	25% Full	N/A	min]
9	-	Time 75% to 25%	N/A	min]
10	-	Time 75% to 25% (sec)	N/A	sec	7 I
12	-				-
14	-	1			
16	-	1			
18	-	1			
20	-	1			
25	-	1			
30	-	1			
40	-	1			
50	-	1			
60	-	1			
90	-	1			
120	-]			
		_			
f =	Fail	or Fail			
	m/min	m/s			
		. .			

	SOAKAWAY TEST	(d)			
Project Refere	nce:	5863			
Contract name	:	Movgaddy	40 /		
Location:		Maynooth, Co. Meath			
Test No:		TP13			
Date:		16/06/2021			
Ground Condi	tions				
From	То				
0.00	0.10	TOPSOIL			
0.00	1 20	Soft becoming firm brown slightly sandy slightly gravelly	silty CLAY with high		
1 20	1.20	Grev brown silty sandy GBAVEL with high cobble and lov	v boulder content		
1.60	2 10	Firm becoming stiff grey brown slightly sandy slightly gra	velly silty CLAY with		
	2.10	high cobble and low boulder content.			
Remarks [.]					
Obstruction at 2	10mbal				
Water indress a	t 1 80mhal - e	nils saturated and unsuitable for soakaway design			
Flansed Time	Fall of Water	Pit Dimensions (m)			
(mine)	(m)	Length (m) 3 90 m	-		
(11113)	(111)	Width (m) 0.60/m	-		
0.5	-		-		
0.5	-	Deptit 2.10 III			
1	-				
1.5	-	Start Depth of Water - m			
2	-	Depth of Water - m			
2.5	-	75% Full - m			
3	-	25% Full - m			
3.5	-	75%-25% - m			
4	-	Volume of water (75%-25%) - m3	4		
4.5	-	Area of Drainage - m2	4		
5	-	Area of Drainage (75%-25%) - m2			
6	-	Time			
7	-	75% Full N/A min			
8	-	25% Full N/A min			
9	-	Time 75% to 25% N/A min			
10	-	Time 75% to 25% (sec) N/A sec			
12	-		_		
14	-				
16	-				
18	-				
20	-				
25	-				
30	-				
40	-				
50	-				
60					
90	-				
120	-				
f =	<u>⊢ail</u> m/min	or <u>Fall</u> m/s			

	SOAKAWAY TEST							
Project Refere	nce:	5863						
Contract name		Movgaddy	40/					
Location:	-	Maynooth Co Meath						
Test No:								
Date:		17/06/2021						
Cround Condit	liono	17/00/2021						
Ground Condi								
From	10							
0.00	0.10							
0.10	1.60	Soft becoming firm brown slightly sandy slightly gravely	SIITY CLAY WITH IOW					
		cobble content.	V with high schola					
1.60	2.00	Stiff grey brown slightly sandy slightly gravelly slity CLA	Y with high cobbie					
		and low boulder content.						
Remarks:								
Obstructions at	2.00mbgl.							
Elapsed Time	Fall of Water	Pit Dimensions (m)						
(mins)	(m)	Length (m) 3.90 m						
0	1.00	Width (m) 0.60 m						
0.5	1.00	Depth 2.00 m						
1	1 00	Water						
1.5	1.00	Start Dopth of Water 1 00 m	-					
1.5	1.00	Depth of Water 1.00 m						
2	1.00							
2.0	1.00	75% Full 1.25 III	_					
3	1.00	25% Full 1.75 m						
3.5	1.00	75%-25% 0.50 m	_					
4	1.00	Volume of water (75%-25%) 1.17 m3						
4.5	1.00	Area of Drainage 18.00 m2						
5	1.00	Area of Drainage (75%-25%) 6.84 m2						
6	1.00	Time						
7	1.00	75% Full N/A min						
8	1.00	25% Full N/A min						
9	1.00	Time 75% to 25% N/A min						
10	1.00	Time 75% to 25% (sec) N/A sec						
12	1.00							
14	1.00	0.00						
16	1.00	0.10						
18	1.00	0.20						
20	1 00	0.40						
25	1 00	0.50						
20	1.00	0.70						
40	1.00	0.80						
50	1.00	1.00						
50	1.00							
00 75	1.00	1.30						
/5	1.00	1.40						
90	1.00	1.60						
120	1.00	1.70						
		1.80						
		2.00	1					
		0 20 40 60 80	100 120					
f =	Fail	or Fail						
	m/min	m/s						
	111/111111	11// 3						

			SOAKAWAY TE	<u>ST</u>			
Project Refere	000	5863					
Contract name		Mova	addy			E	
	•	Mayn	Moygaddy Very Mosth				
Tost No:		TD15				9	
Dato:		16/06	3/2021				
Date.	liono	10/00	12021				
Ground Condi							
	0 10						
0.00	0.10	TOP	SOIL.			laur aakkla aantant	
0.10	0.50	SOIL	brown slightly sandy slightly gra	avelly slity (JLAY WITH	IOW CODDIE CONtent.	
0.50	1.60	FIIII biab (becoming still grey brown sign	hilly sanuy s +	aignity grav	Veny Silly GLAT With	
		nign d	content of boulder content	ι.			
Remarks:	<u> </u>						
Obstruction at 1	.60mbgl.	.,					
Water ingress a	t 1.60mbgl - s	oils sa	turated and unsuitable for soa	kaway desig	gn.		
Elapsed Time	⊢all of Water		Pit Dimensions (m)			4	
(mins)	(m)		Length (m)	4.20	m]	
0	-		Width (m)	0.60	m	_	
0.5	-		Depth	1.60	m		
1	-		Water]	
1.5	-		Start Depth of Water	-	m		
2	-		Depth of Water	-	m		
2.5	-		75% Full	-	m		
3	-		25% Full	-	m	1	
3.5	-		75%-25%	-	m		
4	-		Volume of water (75%-25%)	-	m3		
4.5	-		Area of Drainage	-	m2	1 1	
5	-		Area of Drainage (75%-25%)	-	m2	1	
6	_		Time				
7	_		75% Full	N/A	min		
8	_		25% Full	N/A	min		
9			Time 75% to 25%	N/A	min		
10	-		Time 75% to 25% (sec)	N/A	Sec	-	
10					000	-	
1/							
14							
18							
20	_						
25							
20	_						
40	_						
50							
50 60	-						
90							
120							
		•					
f =	<u>Fail</u> m/min	or	<u>Fail</u> m/s]			

		SOAKAWAY TEST	
Project Referen	nce:	5863	
Contract name	:	Movgaddy	- 40 - /
Location:		Mavnooth, Co. Meath	
Test No:		TP16	
Date:		17/06/2021	
Ground Condit	tions	,	
From			
0.00	0.10		
0.00	0.10	Firm boooming stiff grov brown slightly condy slightly gro	wolly cilty CLAV with
0.10	2.10	high apphile and low boulder content	aveny sity OLAT with
2.10	0.00	Stiff black slightly sandy slightly gravelly silty CLAY with	high cobble and
2.10	2.20	medium boulder content	nigh cooble and
Demeriker			
Remarks:	0.00mbal		
Costructions at		Dit Dimensione (m)	
Lapsed lime	rall of Water	PIT DIMENSIONS (M)	_
(mins)	(m)	Length (m) 4.10 m	_
0	1.10	Width (m) 0.60 m	
0.5	1.10	Depth 2.20 m	
1	1.10	Water	
1.5	1.10	Start Depth of Water 1.10 m	
2	1.10	Depth of Water 1.10 m	
2.5	1.10	75% Full 1.38 m	-
3	1.11	25% Full 1.93 m	-
3.5	1.11	75%-25% 0.55 m	
4	1 11	Volume of water (75%-25%) 1 35 m3	-
4.5	1 1 1	Area of Drainage 20.68 m2	
4.5 5	1.11	Area of Drainage (75%-25%) 763 m2	-
5	1.11		
0	1.11		-
/	1.11	75% Full IN/A min	
8	1.11	25% Full N/A min	4
9	1.11	Time 75% to 25% N/A min	_
10	1.11	Time 75% to 25% (sec) N/A sec	
12	1.11		
14	1.12	0.00	
16	1.12	0.20	
18	1.12	0.30	
20	1.12	0.50	
25	1.12	0.60	
30	1.12		
40	1.12	1.00	
50	1.12	1.10	
60	1.12		
75	1.12	1.50	
90	1.12	1.60	
120	1.12	1.80	
		2.00	
		2.10	
		0 20 40 60 80	100 120
f =	Fail	or Fail	
	m/min	m/e	
	111/11111	111/0	

			SOAKAWAY TES	<u>ST</u>		a	2
Project Refere	nce:	5863					
Contract name		Movo	addy			4	B_/
Location:	•	Mayn	Aavnooth Co. Meath				
Test No:		TD17				-	
Date:		16/06	3/2021				
Date.	lana	10/00	12021				
Ground Condi		1					
From	10	TOD					
0.00	0.10	TOPS	SOIL.				
0.10	1.70	Soft	becoming firm brown slightly sa	andy slightly	gravelly si	ITY CLAY V	Nith
		mean	um coddie content.				
Remarks:							
Obstructions at	1.70mbgl.						
Elapsed Time	Fall of Water		Pit Dimensions (m)				
(mins)	(m)		Length (m)	4.20	m		
0	0.80	1	Width (m)	0.60	m		
0.5	0.80	1	Depth	1.70	m		
1	0.80	1	Water				
15	0.80	1	Start Depth of Water	0 RU	m		
1.5 9	0.00	1	Denth of Water	0.00	m		
2 25	0.00			1 00	m		
2.0	0.80			1.03			
3	0.80		25% FUII	1.48	111		
3.5	0.80		75%-25%	0.45	m		
4	0.81		Volume of water (75%-25%)	1.13	m3		
4.5	0.81		Area of Drainage	16.32	m2		
5	0.81		Area of Drainage (75%-25%)	6.84	m2		
6	0.81		Time				
7	0.81		75% Full	N/A	min		
8	0.81		25% Full	N/A	min		
9	0.81		Time 75% to 25%	N/A	min		
10	0.81	1	Time 75% to 25% (sec)	N/A	sec		
12	0.81	1					
14	0.81		0.00				
16	0.82		0.10				
18	0.82	1	0.20				
20	0.82	1	0.30				
25	0.82	1	0.40				
30	0.82	1	0.50				—
40	0.82	1	0.60				
50	0.02						—
03	0.02		0.80				
75	0.02		1.00				
00	0.02		1.10				
120	0.02		1.20				
120	0.02		1.30				
			1.40				
			1.50				
			1.60				—
			0 20 40	60	80	100	120
f =	<u>Fail</u> m/min	or	<u>Fail</u> m/s				

			SOAKAWAY TES	<u>ST</u>		1	
Project Refere	nce:	5863					
Contract name	:	Mova	Movgaddy				
Location:	-	Mayn	ooth, Co, Meath			19	2/
Test No:		TP18					
Date:		16/06	(2021				
Ground Condit	lione	10/00/					
Ground Condi		1					
	0.10						
0.00	0.10	10PS	oOIL.				
0.10	1.00	Soft D	rown slightly sandy slightly gra	velly slity C	LAY WITH		e content.
1.00	2.50		she and low boulder content	liy sanuy s	ignity grav		
		nigh c	obble and low boulder content				
Remarks:							
Obstructions at	2.50mbgl.						
Elapsed Time	Fall of Water		Pit Dimensions (m)				
(mins)	(m)		Length (m)	4.10	m		
0	1.30		Width (m)	0.60	m		
0.5	1.30		Depth	2.50	m		
1	1.30		Water			1	
1.5	1.30	1	Start Depth of Water	1.30	m	1	
2	1.30		Depth of Water	1 20	m	1	
25	1.31		75% Full	1.20	m		
2.0	1.01		25% Full	2 20	m	-	
3.5	1.01		75%-25%	0.60	m	-	
5.5 1	1.31		Volume of water (75%-25%)	1.00	m3	-	
4	1.01		Area of Drainage	02.50	m0	-	
4.5	1.31		Area of Drainage	23.50	<u>1112</u>	-	
5	1.31		Area of Drainage (75%-25%)	8.10	m2		
6	1.31					_	
7	1.31		75% Full	N/A	min		
8	1.31		25% Full	N/A	min		
9	1.32		Time 75% to 25%	N/A	min		
10	1.32		Time 75% to 25% (sec)	N/A	sec		
12	1.32	ļĪ					
14	1.32		0.00				
16	1.32		0.20				
18	1.32		0.30				
20	1.32		0.50				
25	1.33		0.70				
30	1.33		0.80				
40	1.33		1.00				
50	1.33		1.20				
60	1.33	1	1.40				
75	1.33	1	1.50				
90	1.33	1	1.70				
120	1.33	1	1.90				
		•	2.10				
			2.20				
			2.40				
			0 20 40	60	80	100	120
f =	Fail	or	Fail				
	m/min		m/s				

		SOAKAWAY TEST	
Project Refere	nce:	5863	
Contract name	:	Movgaddy	
Location:		Maynooth, Co. Meath	
Test No:		TP19	
Date:		16/06/2021	
Ground Condit	tions		
From	To		
0.00	0.10	TOPSOIL	
0.00	0.10	Soft brown slightly sandy slightly gravelly silty CLAY	with low cobble content
0.10	1 70	Firm arey brown slightly sandy slightly gravelly sitty	CLAY with high cobble
0.20	1.70	and medium boulder content	OLAT WITH HIGH CODDIC
1 70	1 90	Stiff arev slightly sandy slightly gravelly silty CLAY w	vith high cobble and low
1.70	1.00	coulder content	
Pomarke			
Obstruction at 1	90mbal		
Water ingrees a	t 1 70mbal a	ile saturated and unsuitable for eackeway decian	
Flanced Time	Eall of Motor	Dit Dimensions (m)	
mine)			— I I
(mins)	(11)		
0	-	Width (m) 0.60 m	
0.5	-	Depth 1.90 m	
1	-	Water	
1.5	-	Start Depth of Water - m	
2	-	Depth of Water - m	
2.5	-	75% Full - m	
3	-	25% Full - m	
3.5	-	75%-25% - m	
4	-	Volume of water (75%-25%) - m3	
4.5	-	Area of Drainage - m2	
5	-	Area of Drainage (75%-25%) - m2	
6	-	Time	
7	-	75% Full N/A min	
8	-	25% Full N/A min	
9	-	Time 75% to 25% N/A min	
10	-	Time 75% to 25% (sec) N/A sec	
12	-		
14	-		
16	-		
18	-		
20	-		
25	-		
30	-		
40	-		
50	-		
60	-		
90	-		
120	-		
f =	<u>Fail</u> m/min	or <u>Fail</u> m/s	

	SOAKAWAY TEST							
Project Referen	nce:	5863						
Contract name	:	Movgaddy	40 /					
Location.	-	Maynooth Co Meath						
Test No:		TP20						
Data:		16/06/2021						
Date.	lione	10/00/2021						
Ground Condi								
From	10	70000						
0.00	0.10	TOPSOIL.						
0.10	0.40	Soft brown slightly sandy slightly gravelly silty CLAY.						
0.40	1.30	Firm grey brown slightly sandy slightly gravelly silty CLA	Y with medium					
		cobble content.						
1.30	1.90	Firm becoming stiff grey brown slightly sandy slightly gra	velly silty CLAY with					
		high cobble and low boulder content.						
Remarks:								
Obstructions at	1.90mbgl.							
Elapsed Time	Fall of Water	Pit Dimensions (m)						
(mins)	(m)	Length (m) 3.90 m	1					
0	1.00	Width (m) 0.60 m	-					
0.5	1.00		-					
0.0	1.00	Weter						
1	1.00		_					
1.5	1.01	Start Depth of Water 1.00 m						
2	1.01	Depth of Water 0.90 m						
2.5	1.01	75% Full 1.23 m						
3	1.01	25% Full 1.68 m						
3.5	1.01	75%-25% 0.45 m						
4	1.01	Volume of water (75%-25%) 1.05 m3						
4.5	1.01	Area of Drainage 17.10 m2						
5	1.01	Area of Drainage (75%-25%) 6.39 m2						
6	1 02	Time	-					
7	1.02	75% Full N/A min	-					
7 Q	1.02		-					
0	1.02	$\frac{25}{6} \frac{100}{100} \frac{100}{$	-					
9	1.02	Time 75% to 25% N/A IIIII	_					
10	1.02	Time 75% to 25% (sec) N/A sec						
12	1.02							
14	1.02							
16	1.02	0.20						
18	1.03	0.30						
20	1.03	0.50						
25	1.03	0.60						
30	1.03	0.70						
40	1.03	0.90						
50	1.03	1.00						
60	1.03	1.20						
75	1.03							
90	1.00	1.50						
120	1.00	1.60						
120	1.05	1.70						
		1.90	100 120					
f =	Fail	or <u>Fail</u> m/s						
		III/3						

		SOAKAWAY TEST
Project Referen	ice:	5863
Contract name	:	Movgaddy
Location:	•	Maynooth Co Meath
Tost No:		
Data:		16/06/2021
Dale.		10/00/2021
Ground Condi		I
From	10	70000
0.00	0.10	
0.10	1.80	Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with low
		cobble content.
1.80	2.90	Stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble
		and low boulder content.
Remarks:		
Obstruction at 2	.90mbgl.	
Water ingresses	at 2.60mbgl a	and 2.90mbgl - soils saturated and unsuitable for soakaway design.
Elapsed Time	Fall of Water	Pit Dimensions (m)
(mins)	(m)	Length (m) 4.00 m
0	-	Width (m) 0.60 m
0.5	-	Depth 2.90 m
1	-	Water
15	_	Start Depth of Water
1.5	-	Depth of Water m
2	-	
2.5	-	
3	-	25% FUII - M
3.5	-	75%-25% - M
4	-	Volume of water (75%-25%) - m3
4.5	-	Area of Drainage - m2
5	-	Area of Drainage (75%-25%) - m2
6	-	Time
7	-	75% Full N/A min
8	-	25% Full N/A min
9	-	Time 75% to 25% N/A min
10	-	Time 75% to 25% (sec) N/A sec
12	-	
14	-	
16	-	
18	-	
20	-	
25	-	
30	-	
40	_	
50	_	
60	-	
90 90	-	
120		
f =	<u>⊢all</u> m/min	or <u>Fall</u> m/s

Appendix 5 Dynamic Probe Logs

Contract No: 5863	Dynamic Probe Log								lo: 1
Contract:	Moygaddy		E	Easting:	694395.69	93	Date Started:	21/06/2021	
Location:	Maynooth, Co. Me	eath	1	Northing:	739790.4	16	Logged By:	E. Magee	
Client:	Sky Castle Ltd		E	Elevation:	62.17		Scale:	1:25	
Engineer:	OCSC		F	Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth	-		Pro	be				1	
0	5			0	25		35		(1100)
1	7								62.0 —
		9							-
0.5	<u>ع</u>	8							-
		13		20					01.5 —
1.0				20					-
		10							 61.0
		10							-
1.5 —	4	8							-
		13							60.5 —
		13							_
2.0		10							_
		12							60.0 —
2.5 -				22					-
_									- 59.5 —
-									-
3.0									-
-									59.0 —
-									_
3.5 —									-
									58.5 — _
-									-
4.0									- 58.0
-									-
- 4.5 —									_
-									- 57.5 —
	Te	ermination:	I	Probe Details	;	Remarks			
(A)	Depth:	Reason:	Туре:	Mass	Drop:				
	2.40m	Obstruction - boulders.	DPH	50kg	500mm				




















Contract No: 5863	Dynamic Probe LogProbe DP1								lo: 2
Contract:	Moygaddy		I	Easting:	693990.19	98	Date Started:	22/06/2021	
Location:	Maynooth, Co. Mea	th	1	Northing:	739586.78	39	Logged By:	E. Magee	
Client:	Sky Castle Ltd		I	Elevation:	58.63		Scale:	1:25	
Engineer:	ocsc		I	Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth		40 45	Pro	be		20	25	1	
0	5						35		(1100)
	4 6 5 4 3 4	10							58.5 — - - 58.0 — -
1.0	5	11							-
	5								57.5 — _
1.5	5 7 7 4 3								 57.0 —
	7						35		-
2.0 -									- 56.5 —
_									-
2.5 —									-
									56.0
-									-
3.0									- 55.5 —
									-
- 3.5 —									-
-									55.0 —
_									-
4.0 -									- 54.5 —
_									-
- 4.5 —									-
-									54.0 —
									_
	Terr	nination:		Probe Details	<u>.</u>	Remarka	 		
	Depth:	Reason:	Туре:	Mass	Drop:	i torriartă.			
	2.00m O	bstruction - boulders.	DPH	50kg	500mm				







Contract No: 5863	Dynamic P	robe L	og		Probe No: DP16
Contract:	Moygaddy	Easting:	694488.048	Date Started:	24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739589.540	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	60.82	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1
Depth (m)	P	robe	25 30	35	Level (mOD)
					60.5
1.0	9 6		25		
1.5	15 15 10 11 11 11 15 15 15 15 15 15 15	,			- 59.5 -
2.0	Image: state				
2.5 -				35	- - 58.5 - -
3.5 -					57.5 — - -
4.0					57.0
- - - 4.5 -					
	Termination:	Probe Details	Remarks	8:	
	Depth: Reason: Type: 2.20m Obstruction - boulders. DPH	Mass 50kg	Drop: 500mm		

Contract No: 5863	Dynamic Probe Log						
Contract:	Moygaddy	Easting:	694589.076	Date Started:	24/06/2021		
Location:	Maynooth, Co. Meath	Northing:	739587.354	Logged By:	E. Magee		
Client:	Sky Castle Ltd	Elevation:	60.73	Scale:	1:25		
Engineer:	ocsc	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1		
Depth	Г 40 4F	Probe	05 00	25	Level		
0		20		35	(1100)		
1					60.5 -		
	4				-		
0.5	5				-		
	<u>+</u> 6				60.0 —		
10-					-		
	7				-		
	17 12				59.5 -		
1.5	10				-		
	10				- 59.0		
	p 12				-		
2.0	10 10						
	13 15				- 58.5 –		
				35	; -		
2.5 —					-		
					58.0 —		
30					-		
-					-		
-					57.5 -		
3.5 —					-		
-					57.0		
-							
4.0							
					56.5 -		
					-		
4.5 —							
_					56.0 —		
					-		
	Termination:	Probe Details	S: Remar	<s:< td=""><td></td></s:<>			
	Depth: Reason: Typ 2.40m Obstruction - boulders DP	e: Mass H 50kg	Drop: 500mm				









Contract No: 5863	Dynamic Probe Log								lo: 2
Contract:	Moygaddy			Easting:	693990.0 ⁷	17	Date Started:	22/06/2021	
Location:	Maynooth, Co. Meath			Northing:	739487.25	50	Logged By:	E. Magee	
Client:	Sky Castle Ltd		I	Elevation:	58.16		Scale:	1:25	
Engineer:	OCSC			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth		40 45	Pro	be		00	1		
0			2		25		35		(1100)
	3								58.0 —
0.5	4								-
	3 3								- 57.5 —
2	5								-
1.0	5								-
	8								57.0 —
15	8	11							-
	8	10							- 56.5 —
	7 5								-
2.0							35		-
_									56.0
-									-
2.5 —									- 55.5
-									-
3.0									-
-									55.0 —
-									-
3.5 —									-
_									54.5 —
4.0									_
-									 54.0
_									-
4.5 —									-
									53.5 — -
	Termir	ation:	-	Probe Details	S:	Remarks:			
	Depth: 2.00m Obs	Reason: truction - boulders	DPH	Mass 50kg	Drop: 500mm				

Contract No: 5863	Dynamic Probe Log							Probe N	o: 3
Contract:	Moygaddy			Easting:	694089.76	64	Date Started:	22/06/2021	
Location:	Maynooth, Co. Mea	ith		Northing:	739487.20)8	Logged By:	E. Magee	
Client:	Sky Castle Ltd			Elevation:	58.44		Scale:	1:25	
Engineer:	ocsc			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth	5	40 15	Pro	obe	25	20	25	1	
									58.0 — - 57.5 — - 57.0 —
							35		- - - 56.5 - -
- - 2.5 - - -									- 56.0 — - -
3.0									- 55.5 — - - -
3.5									55.0 — – – 54.5 —
4.0									 54.0
									- - 53.5 —
	Terr	mination:		Probe Details	:	Remarks:			
	Depth: 1.70m O	Reason: Obstruction - boulders.	Type: DPH	Mass 50kg	Drop: 500mm				







Contract No: 5863	Dynamic Probe LogProbe No:DP27							
Contract:	Moygaddy	Easting:	694586.781	Date Started:	24/06/2021			
Location:	Maynooth, Co. Meath	Northing:	739491.852	Logged By:	E. Magee			
Client:	Sky Castle Ltd	Elevation:	58.59	Scale:	1:25			
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1			
Depth		Probe	25 20	25	Level			
0	11 10 10 10 10				58.5			
1.0	7 5 6 5 5 5 10							
1.5	14 14 14 14 12 3 10							
2.0	β	20						
2.5	11 12 12 12 10 12 10 12 11 12 10 14		28					
3.5 -	Image: constraint of the second sec	20 23		35	55.5 — - - - -			
-					55.0 — - -			
4.0					54.5			
4.5								
	Termination:	Probe Details:	Remarks:					
	Depth: Reason: Typ 3.40m Obstruction - boulders. DF	De: Mass PH 50kg	Drop: 500mm					



Contract No: 5863	Dynamic Probe Log								lo: 9
Contract:	Moygaddy			Easting:	694780.80)2	Date Started:	24/06/2021	
Location:	Maynooth, Co.	Meath		Northing:	739491.93	34	Logged By:	E. Magee	
Client:	Sky Castle Ltd			Elevation:	56.47		Scale:	1:25	
Engineer:	ocsc			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth	5	10 15	Pi	robe	25	20	25		
(m)			18				35		(mOD)
3.5									53.0 — _ _ _
4.0									52.5 — _ _ _
4.5									52.0 — - - -
	Donth	Termination:	Timer	Probe Details	S: Dron:	Remarks:	:		
	1.40m	Reason: Obstruction - boulders.	DPH	50kg	500mm				













Contract No: 5863	Dynamic Probe Log							Probe N	lo: 6
Contract:	Moygaddy			Easting:	694190.23	31	Date Started:	22/06/2021	
Location:	Maynooth, Co.	Meath		Northing:	739385.9	57	Logged By:	E. Magee	
Client:	Sky Castle Ltd			Elevation:	58.35		Scale:	1:25	
Engineer:	ocsc			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth	r	40 45	Pro	obe	05	20	25		
0	5		2			30	35		(1100)
1	5								-
	5								58.0 —
0.5	4 5								-
		10				30			- 57.5 —
1.0				20	25				-
				20					-
			19	20					 57.0
1.5					25		35	i	-
_									-
									56.5 — -
-									-
									-
- 2.5 —									
									-
-									- 55.5 —
3.0									-
-									-
-									55.0 —
3.5 —									-
									-
4.0									54.5 —
									-
									- 54.0 —
4.5 —									-
									-
									53.5 —
		Termination:		Probe Details	5:	Remarks			
	Depth:	Reason:	Туре: ПРН	Mass 50kg	Drop: 500mm				

Contract No: 5863	Dynamic Probe Log								lo: 7
Contract:	Moygaddy			Easting:	694288.45	56	Date Started:	22/06/2021	
Location:	Maynooth, Co. Me	eath		Northing:	739387.75	53	Logged By:	E. Magee	
Client:	Sky Castle Ltd			Elevation:	58.62		Scale:	1:25	
Engineer:	ocsc			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth		40 45	Pro	obe		20	25		
0	5		2						(IIIOD) =
1	3								
0.5	3								_
	6 5								
	6								-
1.0	4	8							-
		9	18						57.5 — -
				22	26				-
1.5			16	20					 57.0
			16				35	i	-
2.0									-
-									56.5 — _
									-
2.5 —									- 56 0
									-
3.0									-
-									55.5 —
									_
3.5 —									-
_									55.0
-									-
4.0									- 54.5 —
									-
4.5 —									-
									54.0 —
									-
	Те	ermination:		Probe Details	S:	Remarks:			
	Depth:	Reason:	Туре:	Mass	Drop:				
	1.90m	Upstruction - boulders.	DPH	SUKg	500mm				



Contract No: 5863	Dynamic Probe Log						
Contract:	Moygaddy	Easting:	694486.826	Date Started:	24/06/2021		
Location:	Maynooth, Co. Meath	Northing:	739390.243	Logged By:	E. Magee		
Client:	Sky Castle Ltd	Elevation:	58.25	Scale:	1:25		
Engineer:	ocsc	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1		
Depth	F 40 45	Probe	05 20	25	Level		
		20			58.0		
2.0	5 7 11 11 11 13 14			35	56.5		
2.5					- - - 55.5 - -		
3.5					 55.0 		
4.0					54.5		
- - 4.5 -					54.0		
	Termination:	Probe Details Mass	E Remarks	:			
	2.30m Obstruction - boulders. DPH	50kg	500mm				

Contract No: 5863		Dynamic Probe Log DP4								lo: D
Contract:	Moygaddy				Easting:	694569.04	43	Date Started:	24/06/2021	
Location:	Maynooth, Co.	Meath			Northing:	739386.6	11	Logged By:	E. Magee	
Client:	Sky Castle Ltd				Elevation:	54.78		Scale:	1:25	
Engineer:	ocsc				Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth				Pro	obe				1	Level
0	5	1	0 15	2		25	30	35		(1100)
2										
	3									
0.52										_
1.0	3									
										-
2										53.5 —
1.5	6									_
		8						35		_
_										53.0 —
2.0										
_										- 52.5 -
_										-
2.5 —										_
-										
3.0										
_										-
_										51.5 —
3.5 —										_
_										-
_										51.0
4.0										-
_										
-										_
4.5 -										_
										50.0 —
	Denth [.]	Termina	tion: Reason [.]	Type	Probe Detail	s: Drop:	Remarks			
(🐒)	1.80m	Obstru	uction - boulders.	DPH	50kg	500mm				

Contract No: 5863	Dynamic Probe Log						
Contract:	Moygaddy		Easting:	694691.616	Date Started:	23/06/2021	
Location:	Maynooth, Co. Meath		Northing:	739389.831	Logged By:	E. Magee	
Client:	Sky Castle Ltd		Elevation:	59.36	Scale:	1:25	
Engineer:	OCSC		Rig Type:	Competitor 13	30 Sheet No:	Sheet 1 of 1	
Depth	5 10	15	Probe	25	20 25	Level	
(m) 0 0 0.5 	5 10 4 5 10 10 10 11 11 11 11 11 11 11	15 16 16 17 3	20		30 35	(mOD) 	
	Itermination: Depth: Reason: 1.80m Obstruction - box	Ilders. DP	Probe Details e: Mass H 50kg	s: Rer Drop: 500mm	marks:		





Contract No: 5863	Dynamic Probe Log								Probe No: DP44	
Contract:	Moygaddy		Easting:	693788.258		Date Started:	18/06/2021			
Location:	Maynooth, Co. Meath			Northing:	739285.161		Logged By:	E. Magee		
Client:	Sky Castle Ltd			Elevation:	56.04 S		Scale:	1:25		
Engineer:	OCSC			Rig Type:	Competitor	130	Sheet No:	Sheet 1 of 1		
Depth	Pr			obe	05					
0	5		2		25	30	35		56.0	
0.5	3 5 6 4								- - - 55.5 -	
	3								-	
1.0	3								- 55.0	
2	5								-	
1.5	4								-	
	4	9				00			54.5 —	
				23	2	20			-	
2.0					25		35	i	54.0 — —	
_									-	
2.5 —									- 53.5 —	
_									-	
3.0									- 53.0	
_									-	
									-	
-									52.5 — _	
_									_	
4.0									52.0 —	
_									-	
- 4.5 —									- 51.5 —	
									-	
_										
		Termination:		Probe Details	: F	Remarks:			L	
	Depth:	Reason:	Туре:	Mass	Drop:					
	2.2011			JUNG	JUUIIII					



Contract No: 5863	Dynamic Probe Log								Probe No: DP46	
Contract:	Moygaddy			Easting:	694430.386		Date Started:	23/06/2021		
Location:	Maynooth, Co. Meath			Northing:	739324.235		Logged By:	E. Magee		
Client:	Sky Castle Ltd			Elevation:	53.90 Scale:			1:25		
Engineer:	OCSC			Rig Type:	Competito	or 130	Sheet No:	: Sheet 1 of 1		
Depth	Pr			obe	25 20 25					
	5 5 6 6 6 6 6 7 5 3	, ,								
			_				35	;	52.5 — - - 52.0 —	
2.5 -									- - 51.5 - - -	
3.0									51.0 — - - 50.5 —	
3.5									- - - 50.0	
4.5										
		Termination:		l Probe Details	:	Remarks:				
	Depth: 1.80m	Reason: Obstruction - boulders.	Type: DPH	Mass 50kg	Drop: 500mm					


Contract No: 5863		Dynamic Probe Log							Probe No: DP48	
Contract:	Moygaddy		I	Easting:	694590.1 ²	16	Date Started:	23/06/2021		
Location:	Maynooth, Co. N	Veath		Northing:	739288.6	13	Logged By:	E. Magee		
Client:	Sky Castle Ltd		I	Elevation:	59.21		Scale:	1:25		
Engineer:	ocsc		I	Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1		
Depth		10 45	Pro	obe	05	20	25			
0	5		2	0	25	30	35		(1100)	
0.5	5 5 5 3									
	4								58.5 — -	
1.0	[↑] 6									
	5	12							 58.0	
							35		-	
1.5 —									-	
-									57.5 —	
2.0									_	
									 57.0	
									-	
2.5 —									-	
									56.5 —	
3.0									-	
-									 56.0	
-									-	
3.5 —									-	
									55.5 —	
4.0									-	
									- 55.0 —	
-									-	
4.5 -									-	
									54.5 — -	
									-	
		Termination:	-	Probe Details	s:	Remarks				
	Depth:	Reason: Obstruction - boulders	Туре:	Mass 50kg	Drop: 500mm					





Contract No: 5863		Dynamic Probe Log							Probe No: DP51	
Contract:	Moygaddy			Easting:	693890.12	21	Date Started:	18/06/2021		
Location:	Maynooth, Co.	. Meath		Northing:	739187.5	54	Logged By:	E. Magee		
Client:	Sky Castle Ltd	I		Elevation:	55.56		Scale:	1:25		
Engineer:	OCSC			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1		
Depth (m)	5	10 15	Pr	obe	25	20	25			
1									55.5 -	
2									-	
	4	8							-	
0.5			17						55.0 —	
			10	20					-	
1.0				21	24				_	
					24		35		54.5 —	
_									_	
- 15 -									_	
-									54.0 —	
_									-	
2.0									-	
_									53.5 — –	
									-	
2.5 —									_	
_									53.0 —	
_									-	
3.0									-	
-									52.5 -	
_									_	
3.5 —									- 52 0	
-									-	
-									_	
4.0									- 51.5 —	
-									-	
-									_	
4.5 —									- 51.0 —	
									-	
									_	
		Termination:		Probe Details	5:	Remarks				
(A)	Depth:	Reason:	Туре:	Mass	Drop:	. ternanto.				
	1.20m	Obstruction - boulders.	DPH	50kg	500mm					

Contract No: 5863		Dynamic Probe Log						Probe N	lo: 2
Contract:	Moygaddy			Easting:	693984.69	93	Date Started:	18/06/2021	
Location:	Maynooth, Co. Mea	th		Northing:	739184.9	50	Logged By:	E. Magee	
Client:	Sky Castle Ltd			Elevation:	56.07		Scale:	1:25	
Engineer:	ocsc			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth		40	Pro	obe		00		1	
0	5		2	0	25	30	35		(IIIOD) 56.0 —
0.5	3 5								- - - 55 5
	3 3 4								-
1.0	7								 55.0
					26	28			-
							35		-
1.5 -									54.5 —
									-
2.0									
-									- 04.0
-									-
2.5 —									- 53.5 —
-									-
3.0									-
-									53.0 —
									-
3.5 —									- 52.5 —
_									-
									-
4.0 -									52.0 —
_									-
- 4.5 —									-
-									51.5 —
-									_
	Terr	mination:		Probe Details	3:	Remarks	<u> </u>		
(A)	Depth:	Reason:	Туре:	Mass	Drop:				
	1.40m C	bstruction - boulders.	DPH	50kg	500mm				





Contract No: 5863		Dynamic Probe Log						Probe N	lo: 5
Contract:	Moygaddy			Easting:	694250.67	76	Date Started:	18/06/2021	
Location:	Maynooth, Co. M	leath		Northing:	739180.87	73	Logged By:	E. Magee	
Client:	Sky Castle Ltd			Elevation:	51.64		Scale:	1:25	
Engineer:	ocsc			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth	-		Pro	obe					Level
			2		25	30	35		51.5 — -
0.5	3 4 5 4 4 4								- 51.0 -
1.0	3 3 4 5 6								- 50.5 — -
1.5	7 7 	9 10 11							 50.0
2.0		12	19						-
-							35	i	49.5 — _ _
2.5 — _ _									 49.0
3.0									
									40.3 -
3.5									 48.0 -
4.0									- 47.5 —
- - 4.5 -									-
									47.0 — - -
		ormination:		Proba Dataila		Derrer			
	Depth:	Reason:	Туре:	Mass	Drop:	Remarks:			
	2.20m	Obstruction - boulders.	DPH	50kg	500mm				

Contract No: 5863		Dynamic Probe Log							Probe No: DP56	
Contract:	Moygaddy			Easting:	694409.93	31	Date Started:	21/06/2021		
Location:	Maynooth, Co.	Meath		Northing:	739184.7	74	Logged By:	E. Magee		
Client:	Sky Castle Ltd			Elevation:	55.98		Scale:	1:25		
Engineer:	ocsc			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1		
Depth	г	10 15	Pr	obe		20	25	1		
0			2						(1100)	
	5								-	
0.5	6	10							- 55.5 —	
	6	9							-	
	6								-	
1.0	4 5								55.0 —	
	4								_	
		12							-	
1.5		12							54.5 — -	
		12					35	i	-	
- 20									- 54.0 —	
									-	
_									_	
2.5 —									53.5 —	
_									_	
-									-	
3.0 -									53.0	
_									-	
- 3.5 -									- 52.5 —	
_									-	
_									-	
4.0									52.0 —	
_									=	
_									-	
4.5 —									51.5 — -	
									-	
	Denth	Termination:	Truck	Probe Details	S:	Remarks				
(\$)	Depth: 1.80m	Reason: Obstruction - boulders.	DPH	Mass 50kg	Drop: 500mm					

Contract No: 5863		Dynamic Probe Log						Probe N	lo: 7
Contract:	Moygaddy			Easting:	694513.64	46	Date Started:	23/06/2021	
Location:	Maynooth, Co. Mea	ath		Northing:	739200.8	14	Logged By:	E. Magee	
Client:	Sky Castle Ltd			Elevation:	58.11		Scale:	1:25	
Engineer:	OCSC			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth	r.	40 45	Pro	obe		20	25	1	
0			2		25				58.0-
1	4								-
	4								_
0.52	3								
	4								-
1.0		9							-
	7	13							57.0 —
	7								_
1.5	7	14							-
	6								56.5 —
	5								-
2.0	5								- 56.0 —
	/	1	6						-
25				23			35	i	-
									55.5 —
_									_
3.0									_
_									55.0 —
_									-
3.5 —									
_									-
-									_
4.0 -									- 54.0 —
_									-
- 4.5 —									_
_									53.5 —
_									-
	T	rmination:		Proho Dotailo		Domanta			
	Depth:	Reason:	Туре:	Mass	Drop:	TREINALKS:			
	2.50m C	Dbstruction - boulders.	DPH	50kg	500mm				







Contract No: 5863		Dynamic Probe Log							lo: 1
Contract:	Moygaddy		I	Easting:	693991.06	61	Date Started:	18/06/2021	
Location:	Maynooth, Co.	Meath		Northing:	739083.75	55	Logged By:	E. Magee	
Client:	Sky Castle Ltd		I	Elevation:	53.29		Scale:	1:25	
Engineer:	ocsc			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth	E	10 15	Pro	obe	25	20	25		
		8 10 10 11					35		53.0 — - 52.5 — - -
1.0									- - 52.0
- 1.5 - - -									- - 51.5 -
2.0									 51.0
2.5 -									- - 50.5 -
- - - 3.5 -									 50.0
									_ 49.5 — _
									- 49.0 — -
+									- - 48.5 — -
		Termination:		Probe Details	6:	Remarks			
	Depth: 0.90m	Reason: Obstruction - boulders.	Type: DPH	Mass 50kg	Drop: 500mm				

Contract No: 5863		Dynamic Probe Log							lo: 2
Contract:	Moygaddy		I	Easting:	694185.44	43	Date Started:	18/06/2021	
Location:	Maynooth, Co. N	leath	I	Northing:	739087.74	12	Logged By:	E. Magee	
Client:	Sky Castle Ltd		I	Elevation:	49.21		Scale:	1:25	
Engineer:	OCSC		ł	Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth (m)	5	10 15	Pro	be	25	20	25		
				<u> </u>					49.0 — – – – –
	6 5								48.5 — - - - 48.0 —
1.5	3 3 	9 10 10 10							- - - 47.5 -
2.0				20			35		 47.0
- 2.5									- - 46.5 — -
3.0									- - 46.0
3.5									- 45.5 — -
4.0									 45.0 -
- U.U. 									
		Termination:	- I	Probe Details	S:	Remarks:			
	2.30m	Reason: Obstruction - boulders.	DPH	Mass 50kg	Drop: 500mm				

Contract No: 5863		Dynamic Probe Log							lo: 3
Contract:	Moygaddy			Easting:	694290.24	10	Date Started:	18/06/2021	
Location:	Maynooth, Co.	Meath		Northing:	739085.76	62	Logged By:	E. Magee	
Client:	Sky Castle Ltd			Elevation:	55.96		Scale:	1:25	
Engineer:	ocsc			Rig Type:	Competito	r 130	Sheet No:	Sheet 1 of 1	
Depth	5	10 15	Pro	obe	25	20	25		
(m)	5 				25	30 30 30	35		(mOD)
									54.0 — - - - - - - - - - - - - - - - - - - -
4.5									
	Denth:	Termination:	Type:	Probe Details	: Drop:	Remarks:			
	1.10m	Obstruction - boulders.	DPH	50kg	500mm				























Contract No: 5863		Dynamic Probe Log							lo: 5
Contract:	Moygaddy			Easting:	694691.10)1	Date Started:	22/06/2021	
Location:	Maynooth, Co.	. Meath		Northing:	738989.2	16	Logged By:	E. Magee	
Client:	Sky Castle Ltd	l		Elevation:	56.20		Scale:	1:25	
Engineer:	ocsc			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth		40 45	Pr	obe		20	25		
					25				(1100)
_									56.0 —
-									_
-									
_									55.5 —
1.0									_
_									55.0 —
_									_
1.5 —									_
_									54.5 —
2.0									_
-									
-									_
2.5 —									_
_									53.5 — _
3.0									_
_									 53.0
_									-
3.5 —									-
_									52.5 — _
4.0									-
_									- 52 0
_									-
4.5 —									-
_									51.5 —
	Dent	Termination:	T	Probe Details	: 	Remarks:	:		
(\$)	5.00m	Reason: Obstruction - boulders.	DPH	Mass 50kg	500mm				

Contract No: 5863		Dynamic Probe Log							lo: 6
Contract:	Moygaddy			Easting:	694188.86	62	Date Started:	18/06/2021	
Location:	Maynooth, Co. Meath			Northing:	738882.93	36	Logged By:	E. Magee	
Client:	Sky Castle Ltd			Elevation:	48.76		Scale:	1:25	
Engineer:	ocsc			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1	
Depth	I		Pro	obe		00		1	
	5 5 5 4 4 4 4 4 4 4 7 7 7 7 6 4 4 4 4 4 6 7								48.5
2.0	9 9 9 9	12			25		35		 47.0
- - - 2.5 -									- 46.5 — -
3.0									 46.0
									- 45.5 — -
4.0									 45.0 -
									- 44.5 — -
									 44.0
	Terminat	ion: Reason:	Type:	Probe Details	: Drop:	Remarks:	:		
	2.10m Obstru	iction - boulders.	DPH	50kg	500mm				



Contract No: 5863		Dynamic Probe Log							Probe No: DP78	
Contract:	Moygaddy			Easting:	694392.5	33	Date Started:	21/06/2021		
Location:	Maynooth, Co. Meath			Northing:	738890.20	01	Logged By:	E. Magee		
Client:	Sky Castle Ltd			Elevation:	54.87		Scale:	1:25		
Engineer:	ocsc			Rig Type:	Competito	or 130	Sheet No:	Sheet 1 of 1		
Depth			Pro	obe					Level	
0	5 10	15	2	20	25	30	35		(1100)	
0.5	5 4 4 3								 54.5 	
	3									
1.02	-								-	
2	3								-	
	-								53.5 —	
1.5									_	
		1	6						-	
2.0			17		25				53.0	
		14			23				_	
		14					35	5	- 52.5 —	
2.5 —									-	
-									-	
- 3.0									52.0 —	
_									-	
_									- 51.5 —	
3.5 —									-	
_									-	
									51.0	
4.0 -									-	
									- -	
- 4.5 —										
-									-	
-									- 50.0 —	
	Terminatio	on:		Probe Details	:	Remarke				
	Depth:	Reason:	Туре:	Mass	Drop:					
	2.40m Obstruc	ction - boulders.	DPH	50kg	500mm					







Contract No: 5863	Dynamic Probe Log								Probe No: DP82	
Contract:	Moygaddy			Easting:	694286.007		Date Started:	18/06/2021		
Location:	Maynooth, Co. Meath			Northing:	738783.740		Logged By:	E. Magee		
Client:	Sky Castle Ltd			Elevation:	47.18 Scale:		1:25			
Engineer:	OCSC			Rig Type:	Competitor 130 Sheet No:			Sheet 1 of 1		
Depth	Pr			obe	25 20 25					
0			2		23				(1102)	
									47.0 —	
0.5	6 6								-	
	4								- 46.5 —	
2	3								_	
1.02	3								_	
									46.0	
1	7								_	
1.5	7								-	
		10							45.5 — -	
2.0							35	5	-	
									- 45.0	
_									_	
2.5 —									_	
-									44.5 —	
-									_	
3.0									_	
									44.0	
- 35									_	
-									- 43.5 -	
									-	
4.0									_	
-									- 43.0 —	
-									-	
4.5 —									-	
_									42.5 — _	
_										
	Termination: Probe Details: Remarks:									
(\$)	Depth: 1.90m C	Reason: Dbstruction - boulders.	Type: DPH	Mass 50kg	Drop: 500mm					

Contract No: 5863	Dynamic Probe Log								Probe No: DP83	
Contract:	Moygaddy			Easting:	694396.549 Date St		Date Started:	21/06/2021		
Location:	Maynooth, Co. Meath			Northing:	738786.809 Logged		Logged By:	E. Magee		
Client:	Sky Castle Ltd			Elevation:	53.35		Scale: 1:25			
Engineer:	OCSC			Rig Type:	Competitor 130 Sheet No:			Sheet 1 of 1		
Depth		Pro	obe					Level		
(m) 0	5	10 15	2	0	25	30	35		(mOD) -	
1	3								-	
	7	13							53.0 —	
0.5			17	21					-	
		15							-	
1.0		11							52.5 —	
		11	18						-	
		14 13							 52.0	
1.5		12							-	
							35		-	
									51.5 —	
2.0									_	
_									_	
25									51.0 —	
-									-	
-									- 50.5	
3.0									-	
-									_	
-									50.0 —	
3.5 —									-	
_									-	
-									49.5 —	
4.0									_	
-									-	
4.5 —									49.0 —	
									_	
									- 48.5 —	
		mination		Droho Datalla		Daria				
	Depth:	Reason:	Type:	Mass	Drop:	Remarks:				
	1.70m O	bstruction - boulders.	DPH	50kg	500mm					


Appendix 6 Geotechnical Soil Laboratory Test Results

Classification Tests in accordance with BS1377: Part 4

Client	Sky Castle Ltd.
Site	Moygaddy
S.I. File No	5863 / 21
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie
Report Date	12th July 2021

Hole ID	Depth	Sample	Lab Ref	Sample	Natural	Liquid	Plastic	Plastic	Min. Dry	Particle	%	Comments	Remarks C=Clay;
		No	No.	Туре	Moisture	Limit	Limit	Index	Density	Density	passing		M=Silt Plasticity:
					Content	%	%	%	Mg/m^3	Mg/m^3	425um		L=Low; I=Intermediate;
					%				Ũ	C			H=High; V=Very High;
													E=Extremely High
TP01	1.00	MK15	21/856	В	17.6	32	18	14			47.3		CL
TP04	1.00	MK44	21/860	В	14.3	38	20	18			60.7		CI
TP06	1.00	MK47	21/863	В	15.6	37	20	17			63.5		CI
TP08	1.00	MK38	21/866	В	8.4	31	19	12			30.0		CL
TP10	1.00	MK63	21/869	В	14.6	35	18	17			55.7		CL/CI
TP11	1.00	MK58	21/871	В	18.0	34	18	16			62.3		CL
TP12	1.00	MK35	21/873	В	17.5	36	20	16			60.3		CI
TP13	1.50	MK29	21/875	В	11.5	32	18	14			37.9		CL
TP15	1.00	MK23	21/878	В	12.8	34	20	14			48.5		CL
TP19	1.00	MK05	21/883	В	12.2	34	19	15			51.9		CL

BS Sieve	Percent	Hydrometer	analysis															
size, mm	passing	Diameter, mm	% passing		100 T													
100	100	0.0630																
90	100	0.0200			90 -		+++					_	+++					
75	100	0.0060																
63	100	0.0020			80													
50	100				00													
37.5	100							Ш							V			
28	100				70 +										1			
20	98			5				Ш										
14	96.6			sin	60 +			╉┼┤						H/				
10	92.1			Pas				Ш										
6.3	86.3			ge	50 +		+++	╉╢					$\left \right $	1				
5.0	84			nta														
2.36	72.4			irce	10													
2.00	70.7			Pe	40							X						
1.18	63.5																	
0.600	52				30 +													
0.425	47.3										1							
0.300	43.2				20 +			╂┼┤					+++					
0.212	38.5							Ш										
0.150	34.6				10 +			╨				_						
0.063	26							Ш										
					0													
Cobbles, %	0				0.00)1		(0.01	-	0.1	-		- 1	-	10	-	100
Gravel, %	29				_											_		<u> </u>
Sand, %	45				AY	Fine		Medi	ium C	oarse	Fine	Medi	um	Coarse	Fine	Medium	Coarse	ple
Clay / Silt, %	26				С			S	SILT			SA	AND			GRAVE	Ĺ	Cob
Client :		S	Sky Castle Lt	d.							Lab.	No :	21/	856		Hole ID): T	P 01
Project :			Moygaddy								Sample	No :	MI	K15		Depth, m	n: 1	.00

Material description :	sandy slightly gravelly silty CLAY
Domarka :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour.
Kennarks .	Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve	Percent	Hydrometer	analysis																				
size, mm	passing	Diameter, mm	% passing		100																		
100	100	0.0630																					
90	100	0.0200			90 -	_			┛			\rightarrow											
75	100	0.0060																					
63	100	0.0020			80														\square				
50	100				00													\mathbf{Z}					
37.5	100																	1					
28	100				70 -																		
20	98.6			5																			
14	93.2			sing	60 -				╉┼┼						\mathbf{k}						-		1 + + + + 1
10	88.4			Pas										\nearrow									
6.3	84.5			ge	50 -	_															_		
5.0	83.1			nta									1111										
2.36	75.8			irce	40	_																	
2.00	74.2			Pe	40																		
1.18	70.1																						
0.600	64.5				30 -	_																	
0.425	60.7																						
0.300	58.5				20 -				╉┼┼										++-				
0.212	56.2																						
0.150	54.2				10 -																_		
0.063	48				-																		
		_			0																		
Cobbles, %	0				0.0	01	_		C).01	_		0.1				1	-		10			100
Gravel, %	26				_				-				-							-			
Sand, %	26					¥ L	Fine	1	Medi	ium (Coarse	F	ine	Med	ium	Coar	se	Fine		Medium	n	Coarse	ple
Clay / Silt, %	48				٤				5	SILT				S	AND					GRA	VEL		Cot
-																							
Client		c	la Costla I +	d						_		1	Loh N		21	1860		_		Uolo		т	'D 04
Droject :		د 	Movgaddy	u.								Sar	Lau. N nnle N	0.	 M	7000 KAA	-+			Depth	m ·		1.00
Floject :			woygaudy									Sal	iipie N	0.	11/1	1744				Depth	,		1.00

Material description :	slightly sandy slightly gravelly silty CLAY
Domorka .	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour.
KellialKS.	Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve	Percent	Hydrometer	analysis												
size, mm	passing	Diameter, mm	% passing		100										
100	100	0.0630												$V \mid \mid \mid$	
90	100	0.0200			90									1	
75	100	0.0060													
63	100	0.0020			80										
50	100				00										
37.5	100											1			
28	100				70										
20	92.8			5							1				
14	89.2			sing	60 —										
10	85.5			Pas											
6.3	82.4			ge	50										
5.0	81			nta											
2.36	75.9			rce	10										
2.00	74.7			Pe	40										
1.18	70.3														
0.600	66.8				30										
0.425	63.5														
0.300	60.6				20		+ + • • • • • • • • • • • • • • • • • •		+						
0.212	58.5														
0.150	56.2				10					_					
0.063	52				-										
					0										
Cobbles, %	0				0.001	_	0.0	01	0.1	-	- 1	-	10	-	100
Gravel, %	25				_										
Sand, %	23				AY	Fine	Mediu	m Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	ple
Clay / Silt, %	52				cr		SI	LT		SAND			GRAVEI	1	Cot
Client :		S	ky Castle Lt	d.					Lab. N	No: 2	1/863		Hole ID	: T	P 06
Project :			Moygaddy						Sample N	No: N	IK47		Depth, m	: 1	.00

Material description :	slightly sandy slightly gravelly silty CLAY
Bomarka :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour.
Kelliarks.	Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve	Percent	Hydrometer	analysis													
size, mm	passing	Diameter, mm	% passing		100											
100	100	0.0630														
90	100	0.0200			90 -											
75	100	0.0060]												
63	100	0.0020]	80											
50	100				80											
37.5	67.5															
28	56.9				70											
20	51.2															
14	48.3			sing	60											1
10	44.7			Pas												
6.3	43.1			ge	50										/	
5.0	42.4			nta												
2.36	39.3			rce	10									+		
2.00	38.5			P P	40								F			
1.18	36															
0.600	32.3				30											
0.425	30]												
0.300	28.2				20					+						
0.212	26.3															
0.150	24.6				10											
0.063	21]												
		1			0											
Cobbles, %	0				0.001			0.0	1	0.1		1		10		100
Gravel, %	62					1						1				
Sand, %	18				AY.	Fine	Ν	Aedium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	oble
Clay / Silt, %	21				D			SIL	.T		SAND			GRAVEL		S
Client :		S	Sky Castle Lt	d.						Lab.	No: 21	/866		Hole ID	: T	P 08
Project :			Moygaddy							Sample	No: M	IK38		Depth, m	: 1	.00
110,000			1.10 / guad y						L	Sumpre			I	20pm, m		

Material description :	slightly sandy gravelly silty CLAY
Domarka	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour.
Kennarks .	Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve	Percent	Hydrometer	analysis														
size, mm	passing	Diameter, mm	% passing		100 T	-											
100	100	0.0630														1	
90	100	0.0200			90 +	_	++										
75	100	0.0060															
63	100	0.0020			80												
50	100				00												
37.5	100																
28	100				70 +									1			
20	96.4			5													
14	91.7			sing	60 +												
10	88.5			Pas									11				
6.3	82.6			ge	50 +		+ +										
5.0	80.4			nta													
2.36	71.7			irce	10												
2.00	70			Pe	40												
1.18	66.3																
0.600	59.5				30 +												
0.425	55.7																
0.300	53.4				20 +								+				
0.212	50.7																
0.150	48.5				10 +												
0.063	43																
					0												
Cobbles, %	0				0.00)1		(0.01	_	0.1	-	- 1	-	10	-	100
Gravel, %	30				_						_				-		
Sand, %	27				AY	Fine		Medi	ium 🛛	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	ple
Clay / Silt, %	43				сГ			:	SILT			SAND			GRAVEI		Cob
				-								<u>.</u>				<u>.</u>	
Client :		S	Sky Castle Lt	d.							Lab. 1	No: 2	1/869		Hole ID	: T	P 10
Project :			Moygaddy								Sample I	No: N	AK63		Depth, m	: 1	.00

Material description :	slightly sandy slightly gravelly silty CLAY
Domorka :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour.
Kennarks.	Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve	Percent	Hydrometer	analysis															
size, mm	passing	Diameter, mm	% passing		100 T													
100	100	0.0630																
90	100	0.0200			90 -													
75	100	0.0060																
63	100	0.0020			80													
50	100				00													
37.5	100														1			
28	96.6				70 +													
20	96.6			5														
14	92.2			sin	60 -			+++										
10	89.7			Pas									1					
6.3	85.6			ge	50 -										_			
5.0	84.1			enta														
2.36	76.3			erce	40 -													
2.00	75			Å	10													
1.18	71.7																	
0.600	65.8				30 -													
0.425	62.3																	
0.300	59.7				20 +													
0.212	57.3																	
0.150	55.8				10 -													
0.063	53																	
		1			0													
Cobbles, %	0				0.0	01			0.0	1		0.1		1		10		100
Gravel, %	25													1				
Sand, %	22				LAY	F	line	Μ	ledium	1 Coarse	4	Fine	Medium	Coarse	Fine	Medium	Coarse	pple
Clay / Silt, %	53				0	Ĵ			SIL	Л			SAND			GRAVEL		Ŭ
Client ·			ky Castle I t	d								Lah N		1/871		Hole ID	· T	D 11
Project ·		ت ا	Movgaddy	u.					-		S	ample N		/K58		Depth m	· 1. · 1	50
110jeet.			moygaudy							ļ	3	ampier	NO. N	11120		Depui, III	• 1	.50
		r.																

Material description :	slightly sandy slightly gravelly silty CLAY
Bomorka :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour.
Kelliarks.	Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve	Percent	Hydrometer	analysis																
size, mm	passing	Diameter, mm	% passing		100														
100	100	0.0630																	
90	100	0.0200			90 -														
75	100	0.0060																	
63	100	0.0020			80														
50	100				00													\neg	
37.5	100																		
28	82.1				70 -											1+			
20	79.5			5															
14	78.8			sing	60 -				╉┼┼		1 + +				[-				
10	77.1			Pas															
6.3	75.6			ge	50 -		+						11						
5.0	74.8			nta															
2.36	71.9			irce	40														
2.00	71.1			Pe	40														
1.18	68.5																		
0.600	63.2				30 -														
0.425	60.3																		
0.300	58.4				20 -														
0.212	56.8																		
0.150	55.3				10 -														
0.063	51																		
					0														
Cobbles, %	0				0.0	01			(0.01			0.1		1		10		100
Gravel, %	29													1	1				
Sand, %	20					ξL	Fine	I	Medi	ium (Coarse	Fir	ne	Medium	Coarse	Fine	Medium	n Coarse	e ople
Clay / Silt, %	51				5	5			5	SILT				SAND			GRA	VEL	Co
Client :		S	Sky Castle Lt	d.								L	ab. No	b : 2	1/873	1	Hole	ID :	TP 12
Project :			Moygaddy									Sam	ple No): N	1K35]	Depth	, m :	1.00
										-									

Material description :	slightly sandy slightly gravelly silty CLAY
Domorka :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour.
Kennarks .	Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve	Percent	Hydrometer	analysis																
size, mm	passing	Diameter, mm	% passing		100 T							-							
100	100	0.0630																	
90	100	0.0200			90 -							_							
75	100	0.0060																\boldsymbol{k}	
63	100	0.0020			80														
50	100				00														
37.5	100																		
28	93.1				70 +												λ		
20	86.9			5															
14	76.4			sing	60 -		+ +				┼╏┼┼┼┼					\leftarrow			┨┼┼┼┤
10	72.3			Pas															
6.3	64.7			ge	50 -							_			4				
5.0	62.7			nta															
2.36	54			irce	10														
2.00	52.7			Pe	40														
1.18	48.3												1						
0.600	40.8				30 +														
0.425	37.9																		
0.300	35				20 -						I	-					+++		
0.212	32.1																		
0.150	28.6				10 -							_							
0.063	21																		
					0														
Cobbles, %	0				0.0	D1			0.01		0.1			1			10		100
Gravel, %	47								1						-			1	
Sand, %	32				AY	Fine		Med	dium C	oarse	Fine	Med	lium	Coarse	Fine	Μ	ledium	Coarse	bble
Clay / Silt, %	21				5				SILT			S	AND				GRAVE		Ĉ
															. .				
Client :		S	ky Castle Lt	d.					┥┝──		Lab.	No :	21	/875		-	Hole ID	: T	P 13
Project :	Moygaddy										Sample	No :	M	K29		D	epth, m	.: [1	.50

Material description :	slightly sandy gravelly silty CLAY
Domarka :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour.
Kennarks .	Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve	Percent	Hydrometer	analysis															
size, mm	passing	Diameter, mm	% passing		100													
100	100	0.0630																
90	100	0.0200			90 -		_									\square		
75	100	0.0060																
63	100	0.0020			80													
50	100				80													
37.5	100																	
28	100			1	70 —													
20	96.2																	
14	88.6			sing	60 —			+	$\mathbf{I} \rightarrow \mathbf{I}$	+								
10	81.9			Pas														
6.3	73.5			ge	50 -					+			1					
5.0	71.2			nta														
2.36	63			rce	10						\square							
2.00	61.2			Pe -	40													
1.18	57.4																	
0.600	51.9				30 —													
0.425	48.5																	
0.300	46.2				20 -													
0.212	43.9																	
0.150	42.2				10 -									_				
0.063	37				_													
					0													
Cobbles, %	0				0.00	1	(0.01	-	0.1	1		1		1	0		100
Gravel, %	39				_		 							_	_	-		
Sand, %	24				AY	Fine	Medi	ium C	Coarse	Fine	М	edium	Coarse	Fine	Medi	ium	Coarse	ple
Clay / Silt, %	37				5		5	SILT				SAND			GF	RAVEL		Cob
														•				
Client		C	Viru Cootla I 4	4			1			Lab	Nat	- 21	1070	1 —	II.	la ID -	т	D 15
Droject :		2	Movgaddy	u.					Sample No : MK23						$\begin{array}{c c} \hline \\ \hline $			
Project :			woygaddy							Sample	100:	IVI	N23		Dep	ui, iii :		1.00

Material description :	slightly sandy gravelly silty CLAY
Bomerice	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour.
Kelliarks.	Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve	Percent	Hydrometer	analysis															
size, mm	passing	Diameter, mm	% passing		100 —													
100	100	0.0630												- 1			$V \mid \mid \mid$	
90	100	0.0200		1	90 -									_			4	
75	100	0.0060																
63	100	0.0020			80													
50	100				00									- 1				
37.5	100																	
28	100				70 +										$\land \uparrow$			
20	94.1													\land				
14	87.6			sing	60 +					+				-+				
10	83.9			Pas														
6.3	78.6			ge	50 -							- //		_				
5.0	77			nta										- 1				
2.36	68.3			srce	10						\checkmark							
2.00	66.5			P P	40													
1.18	62.3													- 1				
0.600	55.8				30 +													
0.425	51.9																	
0.300	48.4				20 +									-				
0.212	45.4													- 1				
0.150	42.6				10 -									_				
0.063	38																	
					0													
Cobbles, %	0				0.00)1		0.01		0	.1	-	- 1	-		10	-	100
Gravel, %	34				_													
Sand, %	29				AY	Fine	Med	lium (Coarse	Fine	Μ	ledium	Coarse		Fine	Medium	Coarse	ble
Clay / Silt, %	38				cr			SILT				SAND				GRAVE	L	Cot
								,										
Client :		S	ky Castle Lt	d.						Lab	0. No :	21	/883	_		Hole II	D: T	'P 19
Project :			Moygaddy							Sample	e No :	M	K05			Depth, n	n:	1.00

Material description :	slightly sandy slightly gravelly silty CLAY
Domarka :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour.
Kennarks .	Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

California Bearing Ratio (CBR) In accordance with BS1377: Part 4: Method 7

Client	Sky Castle Ltd.
Site	Moygaddy
S.I. File No	5863 / 21
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie
Report Date	12th July 2021

CBR No	Depth	Sample	Sample	Lab Ref	Moisture Content	CBR Value (%)	Location / Remarks
	(mBGL)	No	Туре		(%)		
TP01	0.50	MK14	CBR	21/855	10.3	7.5	
TP02	0.50	MK07	CBR	21/857	14.8	5.2	
TP03	0.50	MK02	CBR	21/858	16.5	5.2	
TP04	0.50	MK43	CBR	21/859	8.8	9.7	
TP05	0.50	MK39	CBR	21/861	12.3	8.2	
TP06	0.50	MK46	CBR	21/862	10.4	9.5	
TP07	0.50	MK51	CBR	21/864	12.9	8.8	
TP08	0.50	MK37	CBR	21/865	17.0	4.3	
TP09	0.50	MK60	CBR	21/867	15.3	7.4	
TP10	0.50	MK62	CBR	21/868	10.1	10.9	
TP11	0.50	MK57	CBR	21/870	17.5	5.0	
TP12	0.50	MK34	CBR	21/872	14.8	8.9	
TP13	0.50	MK27	CBR	21/874	12.1	11.2	
TP14	0.50	MK24	CBR	21/876	9.1	11.6	
TP15	0.50	MK22	CBR	21/877	17.9	4.1	
TP16	0.50	MK54	CBR	21/879	17.6	5.2	
TP17	0.50	MK17	CBR	21/880	12.7	6.8	
TP18	0.50	MK11	CBR	21/881	10.8	9.3	
TP19	0.50	MK04	CBR	21/882	15.7	5.3	
TP20	0.50	MK19	CBR	21/884	12.6	11.4	
TP21	0.50	MK31	CBR	21/885	10.8	10.3	

Chemical Testing In accordance with BS 1377: Part 3

Client	Sky Castle Ltd.
Site	Moygaddy
S.I. File No	5863 / 21
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email:info@siteinvestigations.ie
Report Date	12th July 2021

Hole Id	Depth	Sample	Lab Ref	pН	Water Soluble	Water Soluble	Loss on	Chloride	% passing	Remarks
	(mBGL)	No		Value	Sulphate Content	Sulphate Content	Ignition	ion	2mm	
					(2:1 Water-soil	(2:1 Water-soil	(Organic	Content		
					extract) (SO ₃)	extract) (SO ₃)	Content)	(water:soil		
					g/L	%	%	ratio 2:1)		
								%		
TP01	1.00	MK15	21/856	8.59	0.120	0.085		0.26	70.7	
TP04	1.00	MK44	21/860	8.75	0.126	0.093		0.21	74.2	
TP06	1.00	MK47	21/863	8.80	0.126	0.094		0.23	74.7	
TP08	1.00	MK38	21/866	8.73	0.117	0.045		0.22	38.5	
TP10	1.00	MK63	21/869	8.66	0.122	0.085		0.24	70.0	
TP12	1.00	MK35	21/873	8.71	0.127	0.090		0.24	71.1	
TP15	1.00	MK23	21/878	8.73	0.123	0.075		0.24	61.2	
TP19	1.00	MK05	21/883	8.67	0.120	0.080		0.26	66.5	

Appendix 7 Geotechnical Rock Laboratory Test Results

Point Load Test Broch, E. & Franklin, J.A., IRSM Point Load Test Method

Uniaxial Compressive Strength in accordance with BS1881

Client	Sky Castle Ltd.
Site	Moygaddy
S.I. File No	5863 / 19
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email:info@siteinvestigations.ie
Report Date	22nd July 2021

Hole ID	Depth (m)	Lab Ref No.	Sample Type	Diameter / Height (mm)	Test Type	Is (MN/m ²)	Compressive Strength (MPa)	Strength Designation	Approx. Equivalent UCS Value (MPa)	Remarks
RC04	6.78	21/931	С	65	PL	4.73		Very Strong	119.5	Tested Diametrically
RC04	8.47	21/932	С	65	PL	3.79		Strong	96.0	Tested Diametrically
RC05	6.20	21/933	С	65	PL	4.50		Very Strong	114.0	Tested Diametrically
RC05	8.17	21/934	С	65	PL	2.13		Strong	54.0	Tested Diametrically
RC06	5.45	21/935	С	65	PL	3.43		Strong	87.0	Tested Diametrically
RC06	6.96	21/936	С	65	PL	4.50		Very Strong	114.0	Tested Diametrically
RC07	6.20	21/937	С	65	PL	4.50		Very Strong	114.0	Tested Diametrically
RC07	7.10	21/938	С	65	PL	4.26		Very Strong	108.0	Tested Diametrically
RC08	7.07	21/939	С	65	PL	1.70		Moderately Strong	43.0	Tested Diametrically
RC08	8.24	21/940	С	65	PL	2.96		Strong	75.0	Tested Diametrically
RC09	6.40	21/941	С	65	PL	5.21		Very Strong	132.0	Tested Diametrically
RC09	7.00	21/942	С	65	PL	1.23		Moderately Strong	31.0	Tested Diametrically
RC10	3.27	21/943	С	65	PL	4.38		Very Strong	111.0	Tested Diametrically
RC10	4.10	21/944	С	65	PL	2.60		Strong	66.0	Tested Diametrically
RC11	6.80	21/945	С	65	PL	4.38		Very Strong	111.0	Tested Diametrically
RC11	8.90	21/946	С	65	PL	3.79		Strong	96.0	Tested Diametrically
RC17	8.35	21/947	С	65	PL	3.55		Strong	90.0	Tested Diametrically
RC17	8.29	21/948	С	65	PL	4.50		Very Strong	114.0	Tested Diametrically
RC19	5.50	21/949	С	65	PL	4.14		Very Strong	104.5	Tested Diametrically
RC19	6.80	21/950	С	65	PL	4.62		Very Strong	108.0	Tested Diametrically

Appendix 8 Survey Data

Location	Irish Transve	erse Mercator	Elovation	Irish National Grid					
LOCATION	Easting	Northing	Elevation	Easting	Northing				
		Bore	holes						
BH01	693986.514	739217.399	56.45	294056.159	239192.090				
BH02	693926.010	739294.840	56.95	293995.641	239269.547				
BH03	694117.023	739155.527	55.01	294186.696	239130.205				
BH04	693732.812	739457.539	56.85	293802.400	239432.280				
BH05	693928.844	739604.500	58.72	293998.473	239579.274				
BH06	693927.326	739421.930	57.55	293996.956	239396.665				
BH07	694241.270	739411.796	58.99	294310.968	239386.531				
BH08	694331.307	739691.333	61.30	294401.022	239666.129				
BH09	694598.661	739652.377	61.68	294668.434	239627.166				
BH10	694446.855	739466.694	59.25	294516.597	239441.442				
BH11	694790.229	739307.430	59.88	294860.046	239282.145				
BH12	694615.966	739002.198	56.86	294685.748	238976.846				
BH13	694659.374	738763.773	52.09	294729.167	238738.369				
BH14	694546.422	738784.570	53.46	294616.190	238759.170				
BH15	694458.907	738814.666	54.44	294528.656	238789.272				
BH16	693655.329	739258.288	49.53	293724.902	239232.986				
BH17	694518.865	738836.591	54.89	294588.627	238811.202				
BH18	694562.423	738770.148	52.93	294632.195	238744.745				
		Rotary C	oreholes						
RC04	693637.963	739436.766	56.84	293707.531	239411.502				
RC05	693935.222	739548.071	58.60	294004.853	239522.833				
RC06	694016.492	739390.864	57.65	294086.142	239365.593				
RC07	694142.350	739365.230	57.84	294212.027	239339.954				
RC08	694212.597	739630.304	60.48	294282.287	239605.086				
RC09	694497.168	739610.386	61.10	294566.919	239585.165				
RC10	694428.449	739378.834	57.86	294498.187	239353.562				
RC11	694711.726	739248.236	59.49	294781.526	239222.938				
RC12	694562.423	738770.148	52.93	294632.195	238744.745				
RC13	694473.806	738837.204	55.00	294543.558	238811.815				
RC14	694269.076	739051.513	55.61	294338.783	239026.170				
RC16	694648.959	738608.023	45.96	294718.751	238582.586				
RC17	693707.911	739303.990	54.78	293777.495	239278.698				
RC18	693667.400	739242.451	49.86	293736.976	239217.145				
RC19	694613.822	739485.171	58.39	294683.599	239459.924				
RC20	694717.266	739392.581	59.02	294787.066	239367.314				
	Trial Pits								
TP01	693958.608	739151.571	55.32	294028.247	239126.247				
TP02	693988.420	739286.118	57.37	294058.064	239260.824				
TP03	693767.173	739286.781	55.26	293836.770	239261.486				
TP04	693682.930	739502.916	56.95	293752.507	239477.667				

Location	Irish Transve	erse Mercator	Elovation	Irish National Grid					
Location	Easting	Northing	Elevation	Easting	Northing				
TP05	693971.792	739656.168	58.70	294041.430	239630.954				
TP06	693989.839	739437.563	57.88	294059.483	239412.302				
TP07	694176.647	739446.736	58.93	294246.331	239421.478				
TP08	694199.733	739712.642	61.26	294269.420	239687.442				
TP09	694508.798	739701.821	62.01	294578.551	239676.620				
TP10	694486.386	739434.493	58.96	294556.136	239409.234				
TP11	694739.889	739363.529	59.42	294809.695	239338.256				
TP12	694471.269	739060.502	56.97	294541.019	239035.162				
TP13	694562.423	738770.148	52.93	294632.195	238744.745				
TP14	694240.465	739010.894	55.01	294310.166	238985.542				
TP15	694131.238	739202.931	55.37	294200.914	239177.620				
TP16	694580.524	739205.916	58.33	294650.296	239180.608				
TP17	693968.747	739114.742	54.52	294038.389	239089.410				
TP18	693940.121	739224.755	55.98	294009.756	239199.447				
TP19	693876.942	739296.996	55.71	293946.562	239271.703				
TP20	694084.588	739079.517	55.01	294154.255	239054.179				
TP21	694518.865	738836.591	54.89	294588.627	238811.202				
Dynamic Probes									
DP01	694395.693	739790.416	62.17	294465.421	239765.234				
DP02	694488.532	739787.664	61.87	294558.280	239762.481				
DP03	693987.686	739685.908	58.58	294057.327	239660.700				
DP04	694088.248	739692.829	59.34	294157.911	239667.624				
DP05	694187.716	739683.631	60.98	294257.400	239658.424				
DP06	694288.959	739687.709	61.12	294358.665	239662.504				
DP07	694385.497	739682.425	61.53	294455.224	239657.219				
DP08	694489.069	739686.527	61.51	294558.818	239661.323				
DP09	694590.817	739686.475	61.71	294660.588	239661.271				
DP10	694693.928	739687.423	60.58	294763.721	239662.220				
DP11	693887.836	739587.012	58.01	293957.456	239561.782				
DP12	693990.198	739586.789	58.63	294059.841	239561.560				
DP13	694087.587	739588.545	58.95	294157.250	239563.317				
DP14	694188.942	739587.683	59.62	294258.627	239562.455				
DP15	694289.424	739586.183	59.97	294359.131	239560.956				
DP16	694488.048	739589.540	60.82	294557.798	239564.315				
DP17	694589.076	739587.354	60.73	294658.847	239562.129				
DP18	694688.772	739584.729	60.89	294758.565	239559.504				
DP19	693691.519	739485.259	57.06	293761.098	239460.006				
DP20	693789.642	739485.089	56.56	293859.242	239459.837				
DP21	693889.602	739486.389	57.21	293959.224	239461.138				
DP22	693990.017	739487.250	58.16	294059.660	239461.999				
DP23	694089.764	739487.208	58.44	294159.429	239461.958				

Location	Irish Transve	erse Mercator	Elovation	Irish National Grid			
Location	Easting	Northing	Elevation	Easting	Northing		
DP24	694198.133	739492.619	59.24	294267.821	239467.371		
DP25	694385.716	739486.593	59.28	294455.444	239461.345		
DP26	694489.024	739485.194	59.56	294558.775	239459.946		
DP27	694586.781	739491.852	58.59	294656.553	239466.606		
DP28	694688.953	739488.632	58.31	294758.747	239463.386		
DP29	694780.802	739491.934	56.47	294850.615	239466.689		
DP30	693593.273	739395.730	56.03	293662.832	239370.457		
DP31	693688.922	739386.795	57.17	293758.501	239361.521		
DP32	693787.843	739388.255	56.49	293857.444	239362.982		
DP33	693889.656	739385.777	56.89	293959.278	239360.504		
DP34	693987.346	739387.484	57.60	294056.989	239362.212		
DP35	694086.861	739385.871	57.91	294156.526	239360.599		
DP36	694190.231	739385.957	58.35	294259.918	239360.686		
DP37	694288.456	739387.753	58.62	294358.164	239362.483		
DP38	694370.568	739380.643	58.45	294440.294	239355.372		
DP39	694486.826	739390.243	58.25	294556.577	239364.974		
DP40	694569.043	739386.611	54.78	294638.812	239361.342		
DP41	694691.616	739389.831	59.36	294761.411	239364.563		
DP42	694791.212	739385.883	58.94	294861.028	239360.615		
DP43	693688.642	739290.847	52.18	293758.222	239265.552		
DP44	693788.258	739285.161	56.04	293857.859	239259.865		
DP45	694091.482	739278.290	56.67	294161.149	239252.995		
DP46	694430.386	739324.235	53.90	294500.125	239298.952		
DP47	694493.472	739282.726	58.49	294563.225	239257.434		
DP48	694590.116	739288.613	59.21	294659.890	239263.323		
DP49	694682.452	739291.233	59.96	294752.246	239265.944		
DP50	694788.363	739288.137	59.82	294858.180	239262.848		
DP51	693890.121	739187.554	55.56	293959.745	239162.238		
DP52	693984.693	739184.950	56.07	294054.337	239159.634		
DP53	694089.481	739189.955	55.39	294159.148	239164.641		
DP54	694189.069	739183.974	55.51	294258.757	239158.659		
DP55	694250.676	739180.873	51.64	294320.378	239155.557		
DP56	694409.931	739184.774	55.98	294479.667	239159.460		
DP57	694513.646	739200.814	58.11	294583.404	239175.504		
DP58	694584.206	739182.489	58.08	294653.979	239157.176		
DP59	694690.632	739192.594	58.36	294760.428	239167.284		
DP60	694784.383	739187.502	58.33	294854.199	239162.191		
DP61	693991.061	739083.755	53.29	294060.708	239058.417		
DP62	694185.443	739087.742	49.21	294255.131	239062.406		
DP63	694290.240	739085.762	55.96	294359.951	239060.426		
DP64	694385.154	739082.180	56.76	294454.885	239056.844		

Location	Irish Transve	erse Mercator	Elevation	Irish National Grid		
Location	Easting	Northing	Elevation	Easting	Northing	
DP65	694488.362	739086.289	57.03	294558.116	239060.954	
DP66	694588.543	739090.206	57.41	294658.318	239064.873	
DP67	694682.814	739084.421	57.54	294752.609	239059.087	
DP68	694787.254	739083.914	56.22	294857.072	239058.581	
DP69	694090.959	738991.035	49.72	294160.628	238965.677	
DP70	694187.890	738981.735	52.48	294257.580	238956.376	
DP71	694289.189	738983.578	55.45	294358.901	238958.220	
DP72	694384.733	738989.607	56.10	294454.465	238964.251	
DP73	694486.822	738986.510	56.87	294556.576	238961.154	
DP74	694586.960	738983.395	56.54	294656.736	238958.039	
DP75	694691.101	738989.216	56.20	294760.899	238963.862	
DP76	694188.862	738882.936	48.76	294258.553	238857.556	
DP77	694291.409	738890.282	54.52	294361.122	238864.904	
DP78	694392.533	738890.201	54.87	294462.268	238864.823	
DP79	694490.609	738885.308	55.95	294560.365	238859.930	
DP80	694587.972	738887.143	55.82	294657.749	238861.766	
DP81	694688.909	738889.761	54.95	294758.707	238864.385	
DP82	694286.007	738783.740	47.18	294355.719	238758.339	
DP83	694396.549	738786.809	53.35	294466.285	238761.409	
DP84	694589.396	738787.697	53.34	294659.174	238762.298	















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