APPLICANT: MR. GARY McKEON

EXISTING DEVELOPMENT AT GLASSAMUCKY,
BOHERNABREENA, DUBLIN 24

WASTEWATER TREATMENT SYSTEM REPORT

PATRICK JOYCE ASSOCIATES

CONSULTING ENGINEERS

2 PROSPECT GROVE

STOCKING LANE,

RATHFARNHAM,

DUBLIN 16.

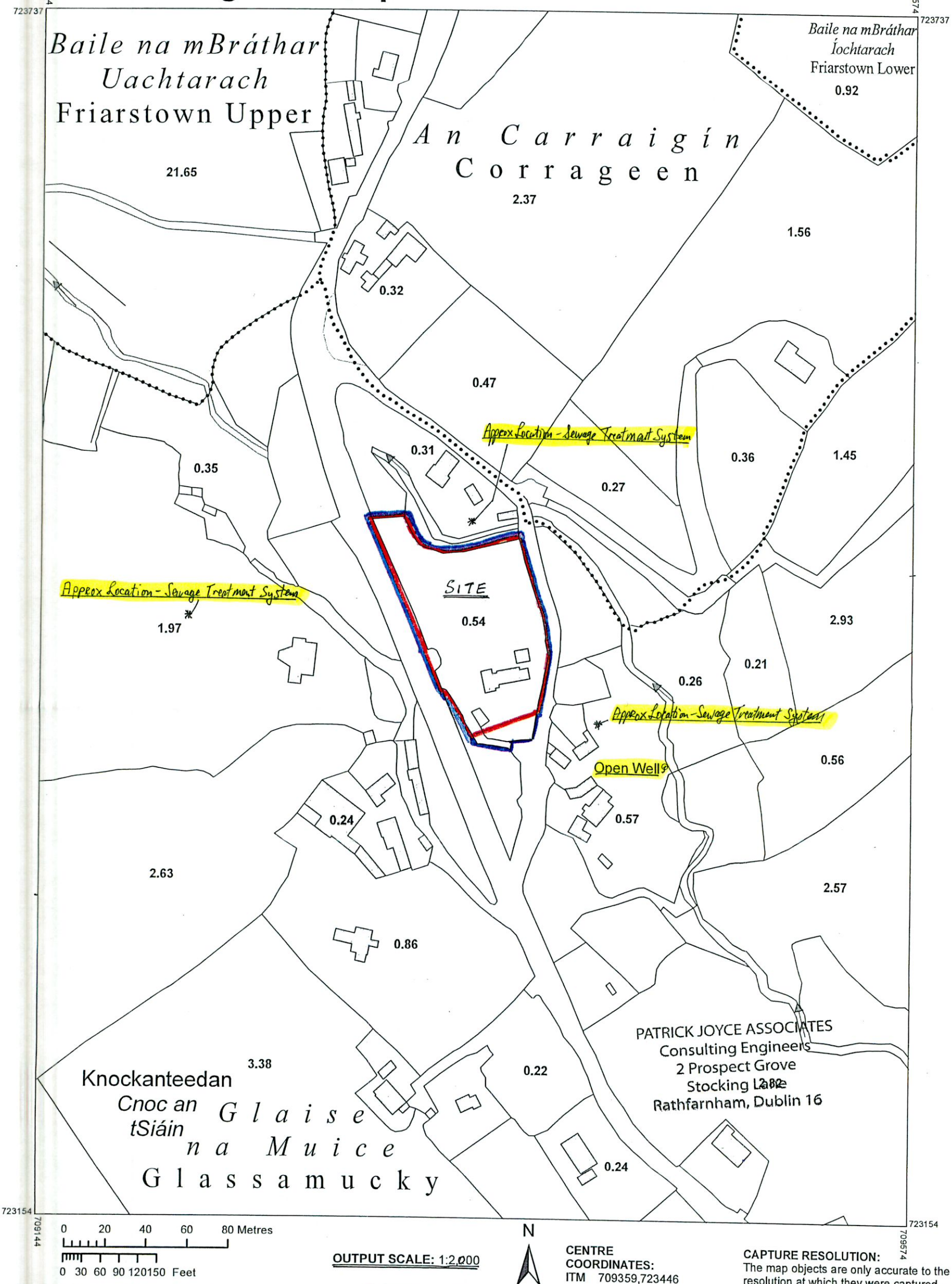
UPDATED DECEMBER 2022

APPLICANT: MR. GARY MCKEON

EXISTING DEVELOPMENT AT GLASSAMUCKY, BOHERNABREENA, D.24

MAP SHOWING EXISTING WELLS & SEWAGE TREATMENT SYSTEMS IN VICINITY OF THE SITE

Planning Pack Map



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CAPTURE RESOLUTION:
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NOTE: The locations marked for adjoining Sewage Treatment Systems are approximate only

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APPLICANT: MR. GARY McKEON

EXISTING DEVELOPMENT AT GLASSAMUCKY,
BOHERNABREENA, DUBLIN 24

WASTEWATER TREATMENT SYSTEM REPORT

Introduction:

The relevant development consists of the following at Glassamucky, Bohernabreena, Dublin 24:

(1) Retention of the existing Building (A1) with new direct link to the existing family home (A) providing extra living accommodation
(2) Retention and completion of existing Building (B) for use as private family gym and general store
(3) Retention of single storey Shed (E) in side garden for storage of equipment used by the applicant in relation to his work
(4) Retention and completion of Building (F) to accommodate the storage of vintage cars owned by the applicant together with required storage of associated materials.

The relevant development, relating to wastewater treatment, is the retention of existing building (A1) with new direct link to the existing family dwelling-house.

The existing dwelling-house is a detached bungalow with a converted attic area. The dwelling-house appears to have been constructed circa 40 years ago and contains three bedrooms. The building for which retention is sought was originally a detached garage and it is proposed to construct a new connecting lobby between the building and the dwelling-house to provide extra living accommodation i.e. family TV room. The proposed new arrangement will not involve any increase in the number of bedrooms in the dwelling-house.

None of the other buildings on site, proposed for retention, will have any wastewater treatment requirements.

Site Inspections:

I have visited the site on several occasions in respect of the preparation of the planning application. As well as carrying out inspections of the existing dwelling-house and the other buildings on site, I have carried out a visual inspection of the existing wastewater treatment arrangements.

The existing wastewater arrangement consists of 2 No. septic tanks which are marked on Drawing No. EX-22-03: Existing Drainage Plan. The applicant purchased the property circa 2011 and I am instructed by the applicant that the septic tanks were in place when he purchased the property. I am further instructed by him that there is an existing percolation area located where shown on the Drawing and that the percolation area was constructed by the previous owner of the dwelling-house.

I understand from the applicant that there have been no issues with the existing septic tanks or the percolation area. There were no obvious smells or drainage problems evident in the vicinity of the septic tanks or the percolation area.

The site of the proposed development is located in an area which is considered environmentally sensitive. Hence, having regard to the unusual arrangement of two septic tanks and the limited information available on the existing percolation area, I recommend that a new wastewater treatment system be installed and the existing septic tanks be decommissioned. I therefore requested the applicant to excavate a trial hole and percolation test holes.

Assessment:

In order to determine type of treatment system suitable for the site, I carried out Site Characterisation Assessment in accordance with recommendations of Code of Practice on Wastewater Treatment and Disposal Systems serving Single Houses issued by Environmental Protection Agency 2021. On the 15th/16th April 2022, I carried out percolation tests – refer attached completed Site Characterisation Form.

The test results determined that the Subsurface Percolation Value was 35.53. Based on the test results the site is considered suitable for the discharge of the sewage treatment effluent to groundwater. The trial hole excavated contained no bedrock. The depth from ground surface to water table in the trial hole was 2.0 metres.

The site is located in an area with Aquifer Category indicated as 'Locally Important with High Vulnerability'. All the houses in the area are connected to the public water mains. I have carried out a review in relation to existing groundwater wells in the vicinity of the site. The only well identified is an 'open well' located circa 75 metres south east of the site boundary – refer attached Site Location Map. There is an existing stream running to the north of the site as shown on the attached drawings.

The Site Charaterisation Assessment indicated that the site is suitable for septic tank system i.e. septic tank and percolation area. However, as the site is located in an area considered environmentally sensitive it is proposed to install a tertiary treatment system and infiltration/treatment area.

Proposed Wastewater Treatment System:

The Code of Practice on Wastewater Treatment and Disposal Systems serving Single Houses issued by Environmental Protection Agency 2021 requires the following on-site domestic water treatment minimum performance standards in accordance with Table 4.2 of the Code of Practice:

BOD:	Less than 20 mg/l
Suspended Solids:	Less than 30 mg/l
Ammonium Nitrogen (NH4-N):	Less than 20 mg/l

Based on the number of bedrooms in the dwelling-house, the required population equivalent has been determined as 5, in accordance with Table 3.2 of the Code of Practice.

I have proposed the installation of a Domestic Wastewater Treatment Plant (Klargester BioDisc Domestic Sewage Treatment Plant, Model Reference BA, or similar approved system) with tertiary sand polishing filter as shown on Drawing No. PP-22-02: Proposed Drainage Layout Plan.

The wastewater treatment system must comply with the SR 66 and I.S. 12566 Part 3 standards as required by EPA 2021 Code of Practice.

As the site of the proposed development is located in an area which is considered environmentally sensitive, it is proposed that the wastewater treatment system will be required to meet the following minimum performance standards:

BOD:	10 mg/l
Suspended Solids:	15 mg/l
Ammonium Nitrogen (NH4-N):	5 mg/l

The treated water from the sewage treatment plant shall be discharged onto the monograde sand polishing filter. The sand layer shall have a minimum total thickness of 900 mm. The sand polishing filter shall have a plan area of 37.5 m2 and shall be constructed in accordance with the EPA 2021 Code of Practice. Details of the sand polishing filter are shown on the attached Drawing No. PP-22-09.

The sand polishing filter shall discharge to a tertiary infiltration area with minimum plan area of 37.5 m2. The tertiary infiltration area shall consist of a 300 mm deep gravel distribution area (pea gravel 12-32 mm). The minimum depth between the base of the distribution gravel and the bedrock and the water table shall be 900 mm in compliance with the requirements of Table 6.3 of the Code of Practice.

No rainwater, surface water or run-off from paved areas will be allowed to discharge to the wastewater treatment system.

A domestic type grease trap shall be fitted on the wastewater outlet drain from the kitchen sink.

Decommissioning of Existing Treatment System:

The existing septic tanks will be decommissioned. All pipework to the tanks shall be disconnected/removed. The septic tanks shall be fully emptied and removed. Alternatively, the empty tanks shall be filled with inert material and suitably covered.

The foul drain connected into the existing system from the adjoining Chalet (D) shall be disconnected and removed.

Signed: Patrick Joyce
Patrick C. Joyce
Patrick Joyce Associates

Date: 20th December 2022

APPENDIX A: SITE CHARACTERISATION FORM

File Reference:

1.0 GENERAL DETAILS (From planning application)

Prefix: Mr First Name: Gary Surname: McKeon

Address: Glenside House, Glassamucky, Bohernabreena, Dublin 24

Site Location and Townland: Glassamucky, Bohernabreena, Dublin 24

Number of Bedrooms: 3 Maximum Number of Residents: 5

Comments on population equivalent

Proposed Water Supply:

Mains ✓ Private Well/Borehole ☐ Group Well/Borehole ☐

2.0 GENERAL DETAILS (From planning application)

Soil Type, (Specify Type): AminDW - Deep well drained mineral (mainly acidic) soil

Subsoil, (Specify Type): Till derived from Metamorphic rocks

Bedrock Type: Butter Mountain Formation - Dark slate-schist, quartzite & coticule

Aquifer Category: Regionally Important | Locally Important LI | Poor

Vulnerability: Extreme ☐ High ✓ Moderate ☐ Low ☐

Groundwater Body: Status

Name of Public/Group Scheme Water Supply within 1 km: Public mains

Source Protection Area: ZOC ☐ SI ☐ SO ☐ Groundwater Protection Response: R1

Presence of Significant Sites (Archaeological, Natural & Historical): None identified

Past experience in the area: Suitable for development with secondary treatment system and polishing filter

Comments:

(Integrate the information above in order to comment on: the potential suitability of the site, potential targets at risk, and/or any potential site restrictions).

The site is potentially suitable for development with secondary treatment system and polishing filter.

Note: Only information available at the desk study stage should be used in this section.

3.0 ON-SITE ASSESSMENT

3.1 Visual Assessment

Landscape Position: Site elevated relative to local roadway to east of site

Slope: Steep (>1:5) ☐ Shallow (1:5-1:20) ☑ Relatively Flat (<1:20) ☐

Slope Comment

Surface Features within a minimum of 250m (Distance To Features Should Be Noted In Metres)

Houses:

There are existing houses adjacent to the site as shown on the attached Site Location Map.

Existing Land Use:

Residential garden

Vegetation Indicators:

Grass

Groundwater Flow Direction: North

Ground Condition:

Good

Site Boundaries:

Trees and hedgerows along boundaries

3.0 ON-SITE ASSESSMENT

3.1 Visual Assessment (contd.)

Roads:

Public roadway to west and east of site

Outcrops (Bedrock And/Or Subsoil):

None

Surface Water Ponding:

None

Lakes:

None

Beaches/Shellfish Areas:

None

Wetlands:

None

Karst Features:

None

Watercourses/Streams:*

There is an existing stream running to the north of the site

***Note and record** water level

3.0 ON-SITE ASSESSMENT

3.1 Visual Assessment (contd.)

Drainage Ditches:*

None

Springs:*

None

Wells:*

No well on site. None identified in the vicinity except for 'open well' located circa 75 metres south east of the site boundary - refer Site Location Map attached

Comments:

(Integrate the information above in order to comment on: the potential suitability of the site, potential targets at risk, the suitability of the site to treat the wastewater and the location of the proposed system within the site).

There are two existing septic tanks on site which it is proposed to decommission and replace with a wastewater treatment system.

The site appears generally suitable for wastewater treatment system.

***Note and record** water level

3.2 Trial Hole (should be a minimum of 2.1m deep (3m for regionally important aquifers))

To avoid any accidental damage, a trial hole assessment or percolation tests should not be undertaken in areas which are at or adjacent to significant sites, (e.g. NHAs, SACs, SPAs, and/or Archaeological etc.), without prior advice from National Parks and Wildlife Service or the Heritage Service.

Depth of trial hole (m): 2.3

Depth from ground surface to bedrock (m) (if present): Not reached

Depth from ground surface to water table (m) (if present): 2.0

Depth of water ingress: 0.3

Rock type (if present): None

Date and time of excavation: 06-Apr-2022

Date and time of examination: 15-Apr-2022 12:00

Depth of Surface and Subsurface Percolation Tests	Soil/Subsoil Texture & Classification**	Plasticity and dilatancy***	Soil Structure	Density/ Compactness	Colour****	Preferential flowpaths
0.1 m						
0.2 m	Silty Topsoil			Soft	Brown	None
0.3 m						
0.4 m	Sandy Clay			Compact	Light Brown	None
0.5 m						
0.6 m						
0.7 m						
0.8 m						
0.9 m						
1.0 m						
1.1 m						
1.2 m						
1.3 m						
1.4 m	Silty Clay			Stiff	Dark Brown	None
1.5 m						
1.6 m						
1.7 m						
1.8 m						
1.9 m						
2.0 m						
2.1 m						
2.2 m						
2.3 m						
2.4 m						
2.5 m						
2.6 m						
2.7 m						
2.8 m						
2.9 m						
3.0 m						
3.1 m						
3.2 m						
3.3 m						
3.4 m						
3.5 m						

Likely Subsurface Percolation Value:

Likely Surface Percolation Value:

Note: *Depth of percolation test holes should be indicated on log above. ('Enter Surface or Subsurface at depths as appropriate).

** See Appendix E for BS 5930 classification.

*** 3 samples to be tested for each horizon and results should be entered above for each horizon.

**** All signs of mottling should be recorded.

3.2 Trial Hole (contd.) Evaluation:

No rock was encountered at 2.3 metres depth.

The presence of land drain was noted circa 0.5 metre below ground level.

There was some water present in trial hole at 2.0 metres below ground level. Water was still at same level on re-inspection on the 19th April 2022.

There was no indication of mottling.

3.3(a) Subsurface Percolation Test for Subsoil

Step 1: Test Hole Preparation

Percolation Test Hole	1	2	3
Depth from ground surface to top of hole (mm) (A)	800	630	670
Depth from ground surface to base of hole (mm) (B)	1,200	1,030	1,120
Depth of hole (mm) [B - A]	400	400	450
Dimensions of hole [length x breadth (mm)]	300 x 300	300 x 300	300 x 300

Step 2: Pre-Soaking Test Holes

		1	2	3
Pre-soak start	Date	14-Apr-2022	14-Apr-2022	14-Apr-2022
	Time	10:00	10:00	10:00
2nd pre-soak start	Date	14-Apr-2022	14-Apr-2022	14-Apr-2022
	Time			

Each hole should be pre-soaked twice before the test is carried out.

Step 3: Measuring T_{100}

Percolation Test Hole No.	1	2	3
Date of test	15-04-2022	15-04-2022	15-04-2022
Time filled to 400 mm	09:20	09:23	09:26
Time water level at 300 mm	11:03	12:38	11:18
Time (min.) to drop 100 mm (T_{100})	103.00	195.00	112.00
Average T_{100}			136.67

If T_{100} > 480 minutes then Subsurface Percolation value >120 – site unsuitable for discharge to ground
If $T_{100} \leq 210$ minutes then go to Step 4;
If T_{100} > 210 minutes then go to Step 5;

Step 4: Standard Method (where $T_{100} \leq 210$ minutes)

Percolation Test Hole	1			2			3		
Fill no.	Start Time (at 300 mm)	Finish Time (at 200 mm)	Δt (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	Δt (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	Δt (min)
1	12:25	14:13	108.00	12:38	15:59	201.00	12:27	14:21	114.00
2	14:19	16:10	111.00	09:21	12:40	199.00	14:27	16:25	118.00
3	09:26	11:13	107.00	12:47	16:11	204.00	09:29	11:26	117.00
Average Δt Value			108.67			201.33			116.33
	Average Δt/4 = [Hole No.1]		27.17 (t_1)	Average Δt/4 = [Hole No.2]		50.33 (t_2)	Average Δt/4 = [Hole No.3]		29.08 (t_3)

Result of Test: Subsurface Percolation Value = 35.53 (min/25 mm)

Comments:

Based on Percolation Value the site is suitable for septic tank and percolation area as well as secondary treatment system and polishing filter. It is noted that the percolation rate in Test Hole No. 2 was slower than Test Hole Nos. 1 and 3.

Step 5: Modified Method (where $T_{100} > 210$ minutes)

Percolation Test Hole No. 1

Fall of water in hole (mm)	Time Factor = T_f	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = T_m	$K_{fs} = T_f / T_m$	T – Value = 4.45 / K_{fs}
300 - 250	8.1			0.00		
250 - 200	9.7			0.00		
200 - 150	11.9			0.00		
150 - 100	14.1			0.00		
Average	T- Value		T- Value Hole 1 = (T_1)			0.00

Percolation Test Hole No. 2

Fall of water in hole (mm)	Time Factor = T_f	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = T_m	$K_{fs} = T_f / T_m$	T – Value = 4.45 / K_{fs}
300 - 250	8.1			0.00		
250 - 200	9.7			0.00		
200 - 150	11.9			0.00		
150 - 100	14.1			0.00		
Average	T- Value		T- Value Hole 2 = (T_2)			0.00

Percolation Test Hole No. 3

Fall of water in hole (mm)	Time Factor = T_f	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = T_m	$K_{fs} = T_f / T_m$	T – Value = 4.45 / K_{fs}
300 - 250	8.1			0.00		
250 - 200	9.7			0.00		
200 - 150	11.9			0.00		
150 - 100	14.1			0.00		
Average	T- Value		T- Value Hole 3 = (T_2)			0.00

Result of Test: Subsurface Percolation Value =

0.00 (min/25 mm)

Comments:

3.3(b) Surface Percolation Test for Soil

Step 1: Test Hole Preparation

Percolation Test Hole	1	2	3
Depth from ground surface to top of hole (mm)			
Depth from ground surface to base of hole (mm)			
Depth of hole (mm)	0	0	0
Dimensions of hole [length x breadth (mm)]	x	x	x

Step 2: Pre-Soaking Test Holes

Pre-soak start	Date			
	Time			
2nd pre-soak start	Date			
	Time			

Each hole should be pre-soaked twice before the test is carried out.

Step 3: Measuring T_{100}

Percolation Test Hole No.	1	2	3
Date of test			
Time filled to 400 mm			
Time water level at 300 mm			
Time to drop 100 mm (T_{100})	0.00	0.00	0.00
Average T_{100}			0.00

If T_{100} > 480 minutes then Surface Percolation value >90 – site unsuitable for discharge to ground
If $T_{100} \leq 210$ minutes then go to Step 4;
If T_{100} > 210 minutes then go to Step 5;

Step 4: Standard Method (where $T_{100} \leq 210$ minutes)

Percolation Test Hole	1			2			3		
Fill no.	Start Time (at 300 mm)	Finish Time (at 200 mm)	ΔT (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	ΔT (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	ΔT (min)
1			0.00			0.00			0.00
2			0.00			0.00			0.00
3			0.00			0.00			0.00
Average ΔT Value			0.00			0.00			0.00
	Average ΔT/4 = [Hole No.1]		0.00 (T_1)	Average ΔT/4 = [Hole No.2]		0.00 (T_2)	Average ΔT/4 = [Hole No.3]		0.00 (T_3)

Result of Test: Surface Percolation Value = 0.00 (min/25 mm)

Comments:

Step 5: Modified Method (where $T_{100} > 210$ minutes)

Percolation Test Hole No. 1

Fall of water in hole (mm)	Time Factor = T_f	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = T_m	$K_{fs} = T_f / T_m$	T – Value = 4.45 / K_{fs}
300 - 250	8.1			0.00		
250 - 200	9.7			0.00		
200 - 150	11.9			0.00		
150 - 100	14.1			0.00		
Average	T- Value		T- Value Hole 1 = (T_1)			0.00

Percolation Test Hole No. 2

Fall of water in hole (mm)	Time Factor = T_f	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = T_m	$K_{fs} = T_f / T_m$	T – Value = 4.45 / K_{fs}
300 - 250	8.1			0.00		
250 - 200	9.7			0.00		
200 - 150	11.9			0.00		
150 - 100	14.1			0.00		
Average	T- Value		T- Value Hole 2 = (T_2)			0.00

Result of Test: Surface Percolation Value = 0.00 (min/25 mm)

Percolation Test Hole No. 3

Fall of water in hole (mm)	Time Factor = T_f	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = T_m	$K_{fs} = T_f / T_m$	T – Value = 4.45 / K_{fs}
300 - 250	8.1			0.00		
250 - 200	9.7			0.00		
200 - 150	11.9			0.00		
150 - 100	14.1			0.00		
Average	T- Value		T- Value Hole 3 = (T_2)			0.00

Comments:

3.4 The following associated Maps, Drawings and Photographs should be appended to this site characterisation form.

1. Discovery Series 1:50,000 Map indicating overall drainage, groundwater flow direction and housing density in the area.
2. Supporting maps for vulnerability, aquifer classification, soil, subsoil, bedrock.
3. North point should always be included.
4. (a) Scaled sketch of site showing measurements to Trial Hole location and
   (b) Percolation Test Hole locations,
   (c) wells and
   (d) direction of groundwater flow (if known),
   (e) proposed house (incl. distances from boundaries)
   (f) adjacent houses,
   (g) watercourses,
   (h) significant sites
   (i) and other relevant features.
5. Site specific cross sectional drawing of the site and the proposed layout[1] should be submitted.
6. Photographs of the trial hole, test holes and site including landmarks (date and time referenced).
7. Pumped design must be designed by a suitably qualified person.

[1] The calculated percolation area or polishing filter area should be set out accurately on the site layout drawing in accordance with the code of practice's requirements.

4.0 CONCLUSION of SITE CHARACTERISATION

Integrate the information from the desk study and on-site assessment (i.e. visual assessment, trial hole and percolation tests) above and conclude the type of system(s) that is (are) appropriate. This information is also used to choose the optimum final disposal route of the treated wastewater.

Slope of proposed infiltration / treatment area: <1:10

Are all minimum separation distances met? ✓

Depth of unsaturated soil and/or subsoil beneath invert of gravel (or drip tubing in the case of drip dispersal system)

Percolation test result: Surface: Sub-surface: 35.53

Not Suitable for Development ☐ **Suitable for Development** ✓

Identify all suitable options

1. Septic tank system (septic tank and percolation area) **(Chapter 7)** — Yes
2. Secondary Treatment System **(Chapters 8 and 9)** and soil polishing filter **(Section 10.1)** — Yes
3. Tertiary Treatment System and Infiltration / treatment area **(Section 10.2)** — Yes

Discharge Route [1]

Discharge to Ground Water

5.0 SELECTED DWWTS

Propose to install: Tertiary Treatment System and Infiltration /treatment area

and discharge to: Ground Water

Invert level of the trench/bed gravel or drip tubing (m)

Site Specific Conditions (e.g. special works, site improvement works testing etc.

It is proposed to install a Klargester BioDisc Domestic Sewage Treatment Plant (Model Reference BA), or similar approved, with a sand polishing filter as shown on the Drainage Layout Plan.

The treated water from the sewage treatment plant shall be discharged onto the monograde sand polishing filter. The sand layer shall have a minimum total thickness of 900 mm.

The sand polishing filter shall have a plan area of 37.5 m2 and it shall be constructed in accordance with the EPA 2021 Code of Practice. The infiltration area shall have a minimum plan area of 37.5 m2.

For details of the sand polishing filter refer to Drawing No. PP-22-09.

[1] A discharge of sewage effluent to "waters" (definition includes any or any part of any river, stream, lake, canal, reservoir, aquifer, pond, watercourse or other inland waters, whether natural or artificial) will require a licence under the Water Pollution Acts 1977-90. Refer to Section 2.4.

6.0 TREATMENT SYSTEM DETAILS

SYSTEM TYPE: Septic Tank Systems (Chapter 7)

Tank Capacity (m^3)		Percolation Area		Mounded Percolation Area	
		No. of Trenches		No. of Trenches	
		Length of Trenches (m)		Length of Trenches (m)	
		Invert Level (m)		Invert Level (m)	

SYSTEM TYPE: Secondary Treatment System (Chapters 8 and 9) and polishing filter (Section 10.1)

Secondary Treatment Systems receiving septic tank effluent (Chapter 8)

Media Type	Area (m^2)*	Depth of Filter	Invert Level
Sand/Soil			
Soil			
Constructed Wetland			
Other			

Packaged Secondary Treatment Systems receiving raw wastewater (Chapter 9)

Type: Klargester BioDisc WWTS

Capacity PE: 6

Sizing of Primary Compartment: ____ m^3

Polishing Filter*: (Section 10.1)

Surface Area (m^2)*: 37.50

Option 1 - Direct Discharge Surface area (m^2):

Option 2 - Pumped Discharge Surface area (m^2): 37.50

Option 3 - Gravity Discharge Trench length (m):

Option 4 - Low Pressure Pipe Distribution Trench length (m):

Option 5 - Drip Dispersal Surface area (m^2):

SYSTEM TYPE: Tertiary Treatment System and infiltration / treatment area (Section 10.2)

Identify purpose of tertiary treatment	Provide performance information demonstrating system will provide required treatment levels	Provide design information
		Refer attached Wastewater Treatment System Report

DISCHARGE ROUTE:

Groundwater	✓	Hydraulic Loading Rate * ($l/m^2.d$)	20.00	Surface area (m^2)	37.50
Surface Water **		Discharge Rate (m^3/hr)			

* Hydraulic loading rate is determined by the percolation rate of subsoil

** Water Pollution Act discharge licence required

6.0 TREATMENT SYSTEM DETAILS

QUALITY ASSURANCE:

Installation & Commissioning

The sewage treatment system shall be installed and commissioned by the manufacturer. The construction of the sand polishing filter shall be carried out by an experienced contractor with supervising Engineer and will be certified on completion to comply with the EPA Code of Practice 2021.

The existing septic tanks shall be decommissioned i.e. emptied out and filled with inert material.

On-going Maintenance

An annual maintenance contract shall be put in place prior to the commissioning of the system.

7.0 SITE ASSESSOR DETAILS

Company: Patrick Joyce Associates, Consulting Engineers

Prefix: Mr First Name: Patrick Surname: Joyce

Address: 2 Prospect Grove,
Stocking Lane,
Rathfarnham,
Dublin 16

Qualifications/Experience: BE, CEng, MIEI, MBA

Date of Report: 26-May-2022

Phone: 087-2476375 E-mail patrickjoyceassociates@gmail.com

Indemnity Insurance Number: PI0004258

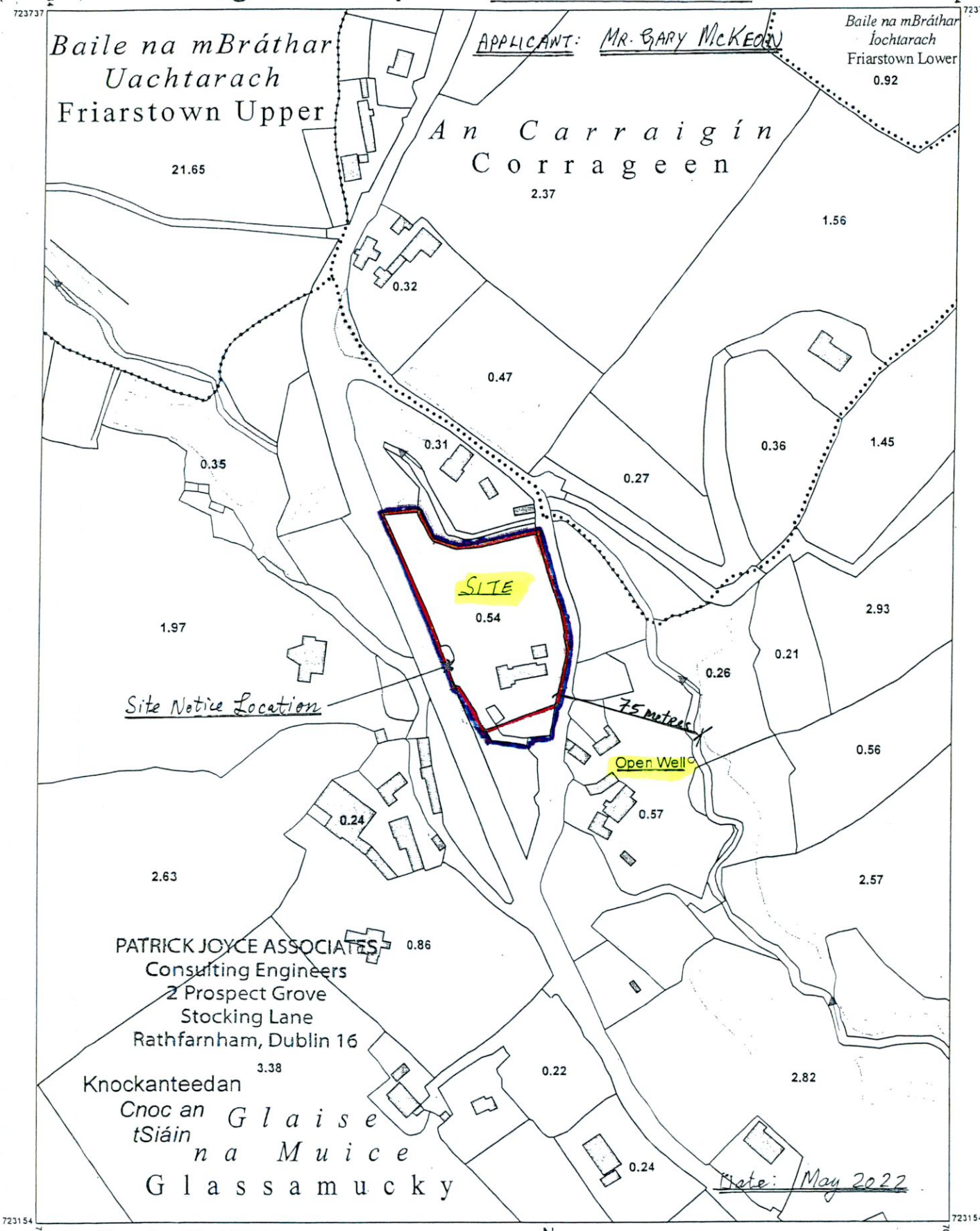
Signature: Patrick Joyce

NOTE: To secure your work prior to forwarding to third parties please select **Print**, select Printer **"print to PDF"** and name and save document.

Planning Pack Map

SITE LOCATION MAP

APPLICANT: MR. GARY McKEON



0 20 40 60 80 Metres

0 30 60 90 120150 Feet

OUTPUT SCALE: 1:2,500

N

CENTRE COORDINATES:
ITM 709359,723446

PUBLISHED: 01/04/2022
ORDER NO.: 50259703_1
MAP SERIES: 1:2,500
MAP SHEETS: 3453-C

CAPTURE RESOLUTION:
The map objects are only accurate to the resolution at which they were captured.
Output scale is not indicative of data capture scale.
Further information is available at:
http://www.osi.ie; search 'Capture Resolution'
LEGEND:
http://www.osi.ie; search 'Large Scale Legend'

COMPILED AND PUBLISHED BY:
Ordnance Survey Ireland,
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Ireland.

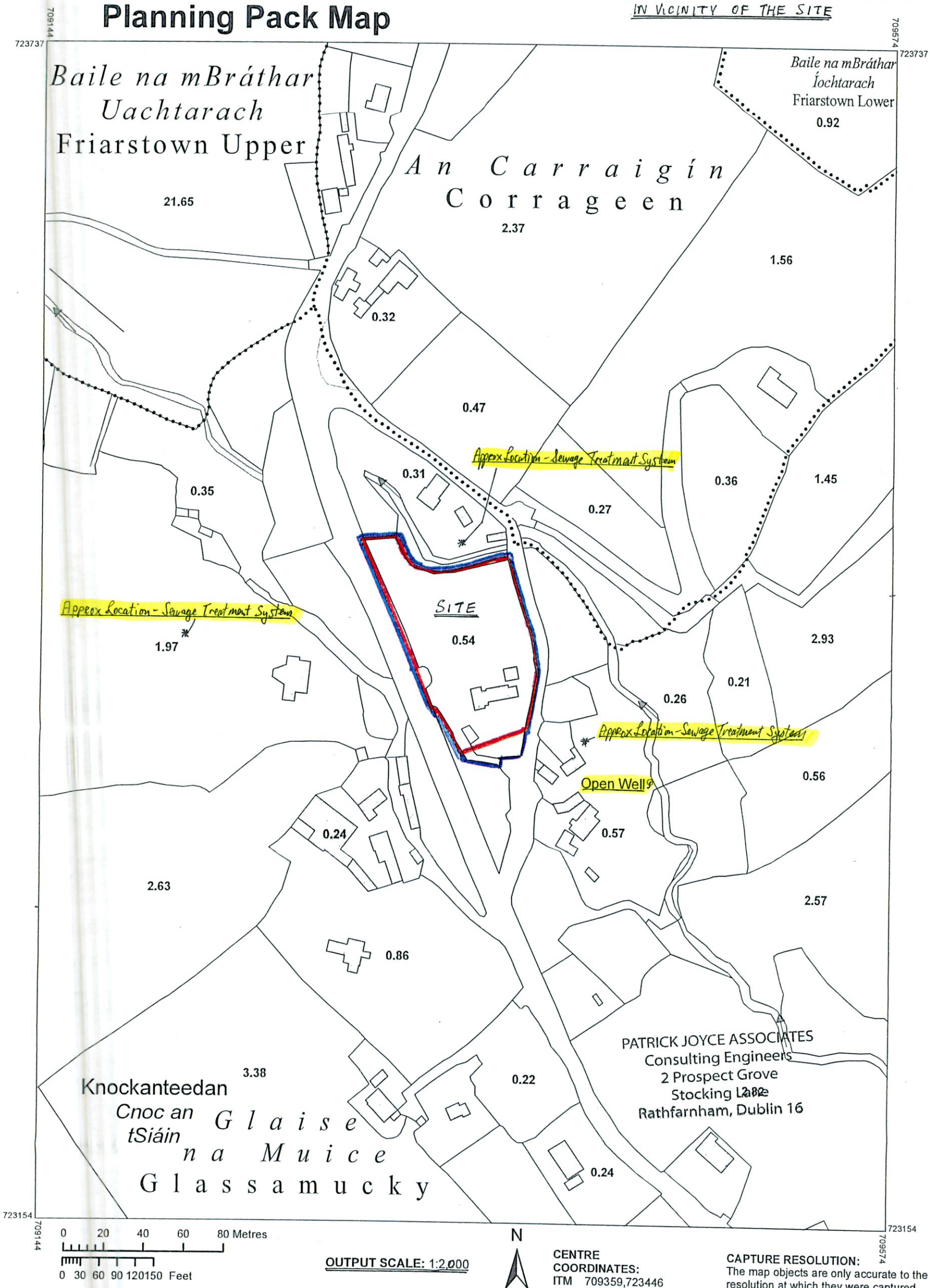
Ordnance Survey Ireland
Suirbhéireacht Ordanáis Éireann
www.osi.ie

APPLICANT: MR. GARY McKEON

EXISTING DEVELOPMENT AT GLASSAMUCKY, BOHERNABREENA, D.24

MAP SHOWING EXISTING WELLS & SEWAGE TREATMENT SYSTEMS IN VICINITY OF THE SITE

Planning Pack Map



OUTPUT SCALE: 1:2,000

CENTRE COORDINATES:
ITM 709359,723446

PUBLISHED: 01/04/2022
ORDER NO.: 50259703_1
MAP SERIES: 1:2,500
MAP SHEETS: 3453-C

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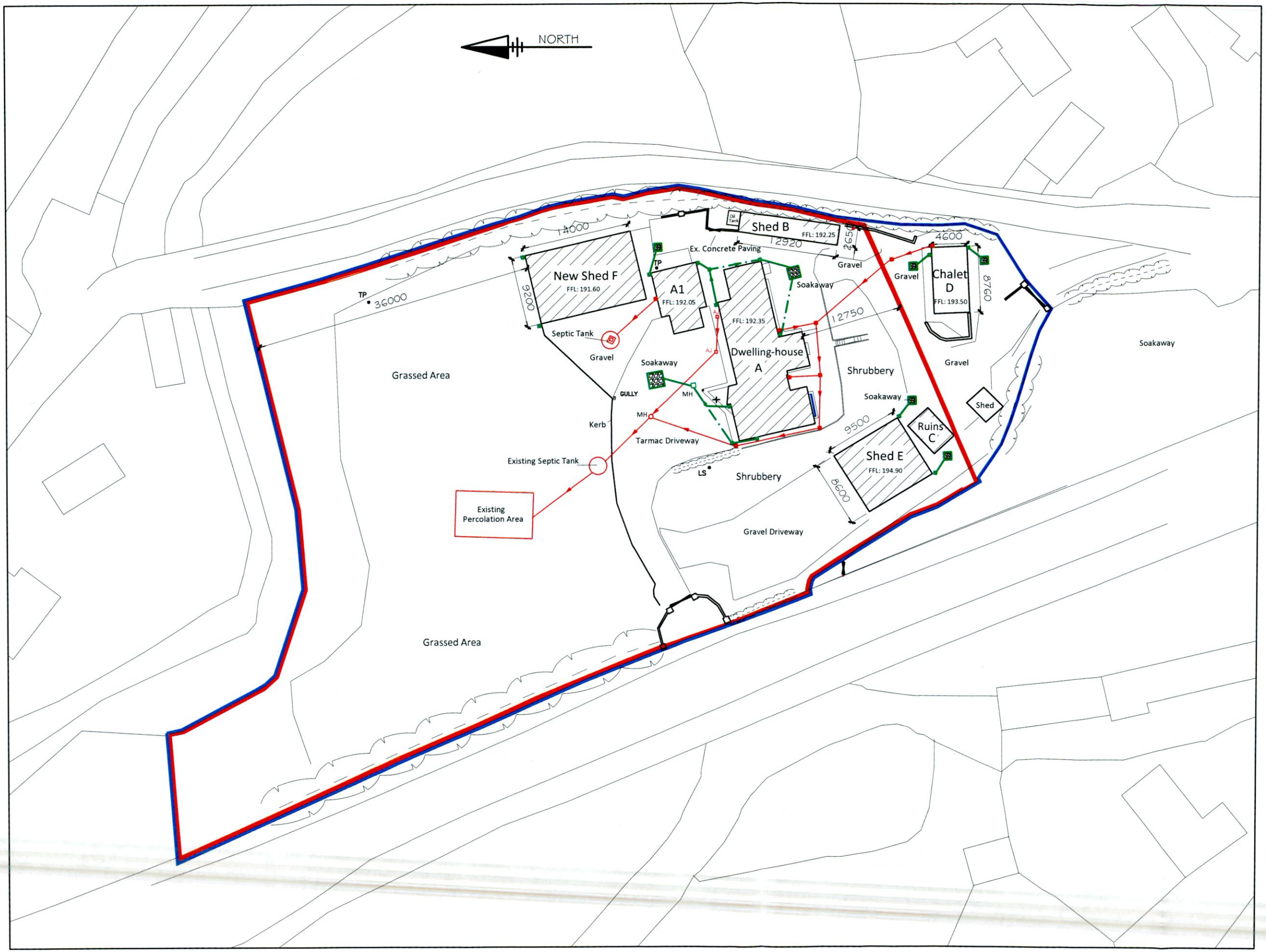
Further information is available at:
http://www.osi.ie; search 'Capture Resolution'
LEGEND:
http://www.osi.ie; search 'Large Scale Legend'

NOTE: The locations marked for adjoining Sewage Treatment Systems are approximate only



EXISTING SITE LAYOUT PLAN SCALE 1:500 (A3)

ISSUED FOR PLANNING PERMISSION PURPOSES ONLY

NOTES:

The two existing septic tanks shall be decommissioned and replaced with new sewerage treatment plant and sand polishing filter

Existing foul drain from the Building (A1) shall be disconnected

Existing foul drain from the Chalet (D) shall be disconnected

MCGILLEN DESIGN SERVICES
PLANNING AND PROJECT MANAGEMENT

BURGAGE, BLESSINGTON, CO. WICKLOW.
T: (045) 891 468
M: (087) 646 9079
E: petermcgillen@hotmail.com

REV.	DESCRIPTION	BY	APPR	DATE
F	ISSUED FOR ADDITIONAL INFORMATION PURPOSES	P.J.	P.J.	14.01.23
E	ISSUED FOR PLANNING PERMISSION PURPOSES	P.J.	P.J.	26.05.22
D	ISSUED FOR PLANNING PERMISSION PURPOSES	P.J.	P.J.	07.03.22
C	ISSUED FOR APPROVAL	P.J.	P.J.	10.02.22
B	LEVELS ADDED	P.J.	P.J.	01.10.21
A	PRELIMINARY	P.J.	P.J.	26.07.21

CLIENT
MR. GARY McKEON

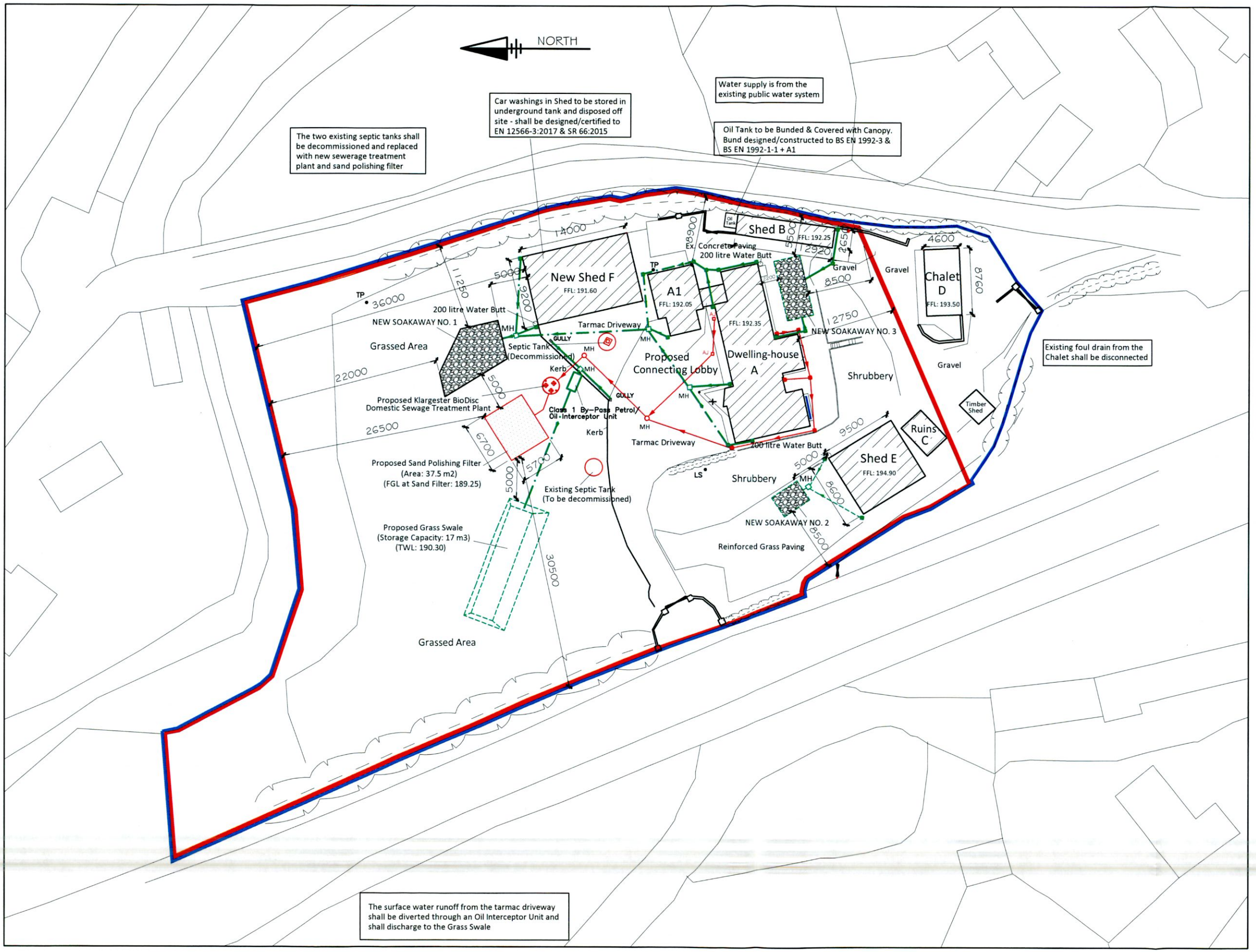
PROJECT
EXISTING DEVELOPMENT AT GLASSAMUCKY, BOHERNABREENA, DUBLIN 24

TITLE
EXISTING DRAINAGE LAYOUT PLAN

PATRICK JOYCE ASSOCIATES
CONSULTING ENGINEERS
2 Prospect Grove
Stocking Lane
Rathfarnham
Dublin 16
Telephone: (01) 494 6745
E-Mail: patrickjoyceassociates@gmail.com

DESIGNED:	CHECKED:	APPR'D:
P.J.	P.J.	P.J.
DRAWN:	DATE:	SCALE:
P.J.	JULY–2021	1:500

DRG.No. EX/22/03 REV. F



PROPOSED SITE LAYOUT PLAN SCALE 1:500 (A3)

ISSUED FOR PLANNING PERMISSION PURPOSES ONLY

SOAKAWAY NO. 1:
50.0 m2 plan x 1.35 m effective depth

SOAKAWAY NO. 2:
4.0 m x 3.0 m x 0.90 m effective depth

SOAKAWAY NO. 3:
8.0 m x 3.5 m x 0.70 m effective depth

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CO. WICKLOW. E: petermcgillen@hotmail.com

REV	DESCRIPTION	BY	APPR	DATE
G	ISSUED FOR ADDITIONAL INFORMATION PURPOSES	P.J.	P.J.	14.01.23
F	ISSUED FOR APPROVAL	P.J.	P.J.	16.12.22
E	ISSUED FOR PLANNING PERMISSION PURPOSES	P.J.	P.J.	26.05.22
D	ISSUED FOR PLANNING PERMISSION PURPOSES	P.J.	P.J.	07.03.22
C	ISSUED FOR APPROVAL	P.J.	P.J.	10.02.22
B	LEVELS ADDED	P.J.	P.J.	01.10.21
A	PRELIMINARY	P.J.	P.J.	26.07.21

CLIENT
MR. GARY McKEON

PROJECT
EXISTING DEVELOPMENT AT GLASSAMUCKY, BOHERNABREENA, DUBLIN 24

TITLE
PROPOSED DRAINAGE LAYOUT PLAN

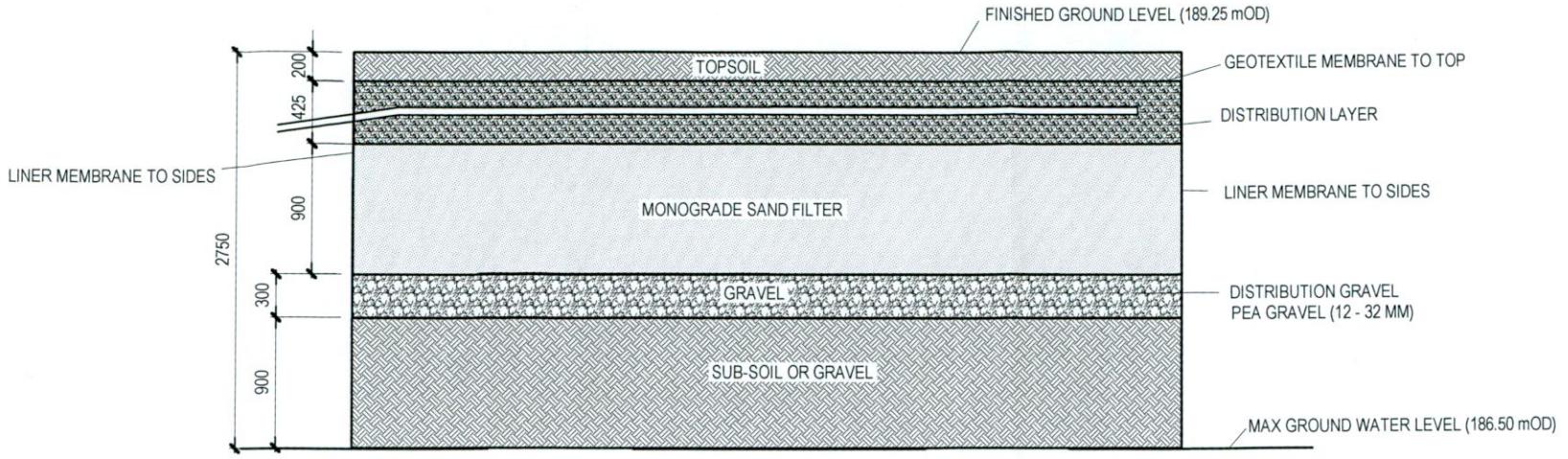
PATRICK JOYCE ASSOCIATES
CONSULTING ENGINEERS

2 Prospect Grove
Stocking Lane
Rathfarnham
Dublin 16

Telephone: (01) 494 6745
E-Mail: patrickjoyceassociates@gmail.com

DESIGNED:	CHECKED:	APPR'D:
P.J.	P.J.	P.J.
DRAWN:	DATE:	SCALE:
P.J.	JULY-2021	1:500(A3)

DRG.No. PP/22/02 REV: G



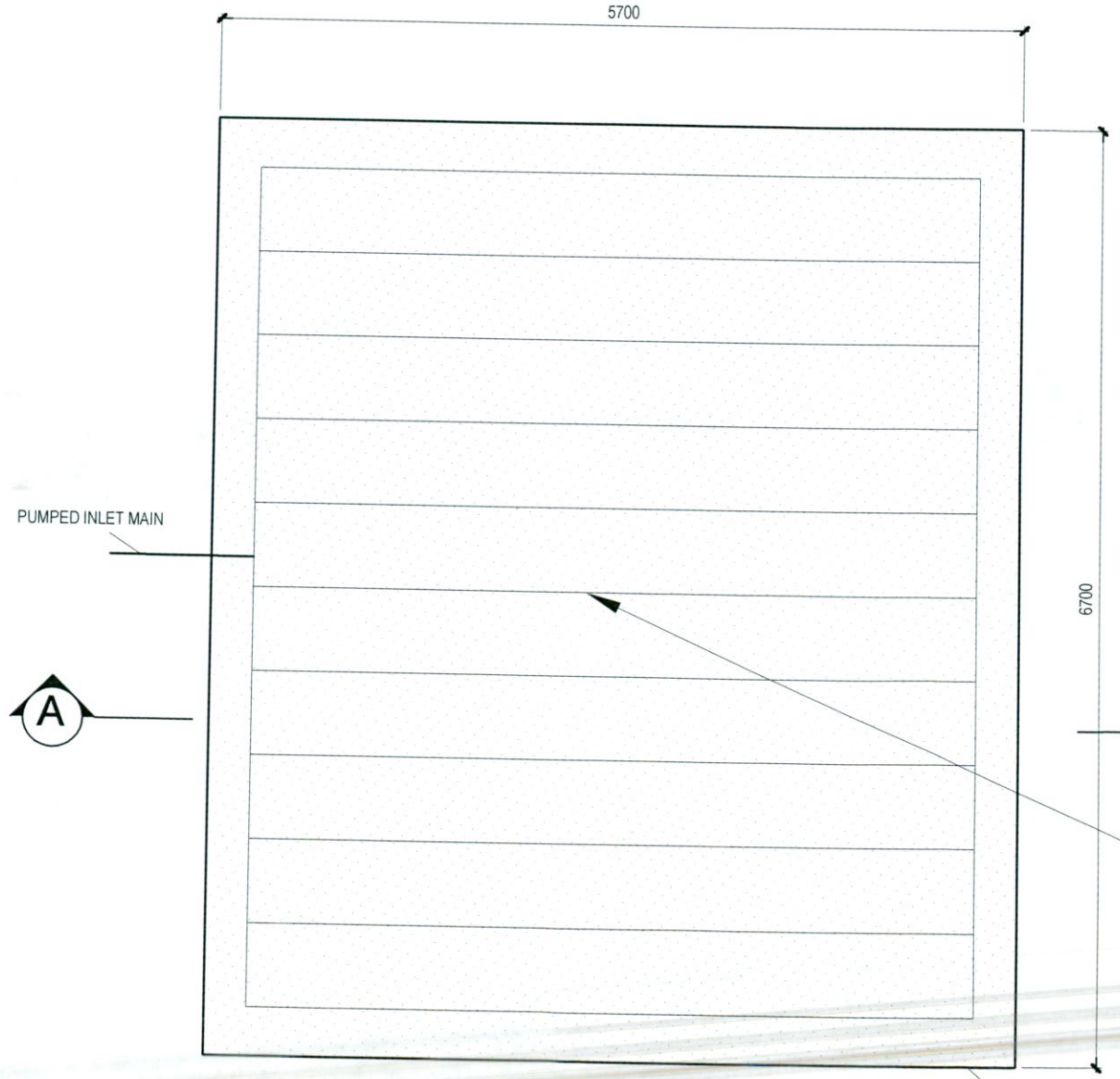
SAND POLISHING FILTER - SECTION SCALE 1:50 (A3)

THE DEPTH BETWEEN THE BASE OF THE DISTRIBUTION GRAVEL AND THE BEDROCK AND THE WATER TABLE SHALL BE 900 MM MINIMUM

SAND POLISHING FILTER SIZE: 37.5 M2

INFILTRATION AREA MIN SIZE: 37.5 M2

ALL WORK SHALL COMPLY WITH EPA 2021 CODE OF PRACTICE



SAND POLISHING FILTER - PLAN SCALE 1:50 (A3)

REV	DESCRIPTION	BY	APPR	DATE
C	ISSUED FOR ADDITIONAL INFORMATION PURPOSES	P.J.	P.J.	20.12.22
B	ISSUED FOR APPROVAL	P.J.	P.J.	20.12.22
A	ISSUED FOR PLANNING PERMISSION PURPOSES	P.J.	P.J.	02.04.21

CLIENT

MR. GARY McKEON

PROJECT

EXISTING DEVELOPMENT AT GLASSAMUCKY, BOHERNABREENA, CO. DUBLIN

TITLE

SAND POLISHING FILTER

PATRICK JOYCE ASSOCIATES
CONSULTING ENGINEERS

2 Prospect Grove
Stocking Lane
Rathfarnham
Dublin 16

Telephone: (01) 494 6745
E-Mail: patrickjoyceassociates@gmail.com

DESIGNED:	CHECKED:	APPR'D:
P.J.	P.J.	P.J.
DRAWN:	DATE:	SCALE:
P.J.	APRIL–2022	AS–SHOWN

DRG.No. PP–22–09 REV. C