DRAINAGE STRATEGY AND FLOOD RISK

for

THE REDEVELOPMENT OF THE FORMER SOCIAL CLUB TONYPANDY REV B

REF: INT26010

November 2026

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Fourth							

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1. Introduction

Intrado Consulting Engineers have been appointed by Easy Living Ltd to prepare a Drainage Strategy and Flood Risk report for the proposed redevelopment of the 171–172 Brithweunydd Road, Tonypandy, CF40 2UH.

The proposed development comprises 20 residential units within a three-story building, together with 20 parking spaces and associated access, servicing and external areas. The proposals include a green roof and permeable external surfacing.

This report sets out the preliminary strategy for managing surface-water runoff and considers the available information relating to flood risk, ground conditions and existing drainage. The report is based on information available at the time of preparation.

The drainage strategy remains subject to confirmation of the existing sewer connection, detailed site levels, hydraulic calculations and coordination with the final architectural, structural and external works information.

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2. The Site

The site is located at 171–172 Brithweunydd Road, Tonypandy, CF40 2UH, and comprises the former social club and its associated external areas. The proposed redevelopment is for 20 residential units within a three-storey building, with 20 parking spaces and associated access and external works.

The proposed layout indicates a significant fall across the site. Spot levels shown on the drawing range approximately from 49.8m at the higher end to 45.3m at the lower end.



Figure 1 – Site Location

3. Flood Risk

Based on the information provided, the Natural Resources Wales Flood Map for Planning indicates that the site is not identified as being at risk of flooding from the mapped sources. The Rhondda River is located to the south of the site at a circa 40m lower than the site. There is a railway track between the river and the site.

Fluvial and Tidal Flood Risk

Natural Resources Wales Flood Map for Planning confirms there is no flood risk from fluvial and tidal sources.

Surface Water Flood Risk

Natural Resources Wales Flood Map for Planning shows there confirms there is no flood risk from surface water within the site.

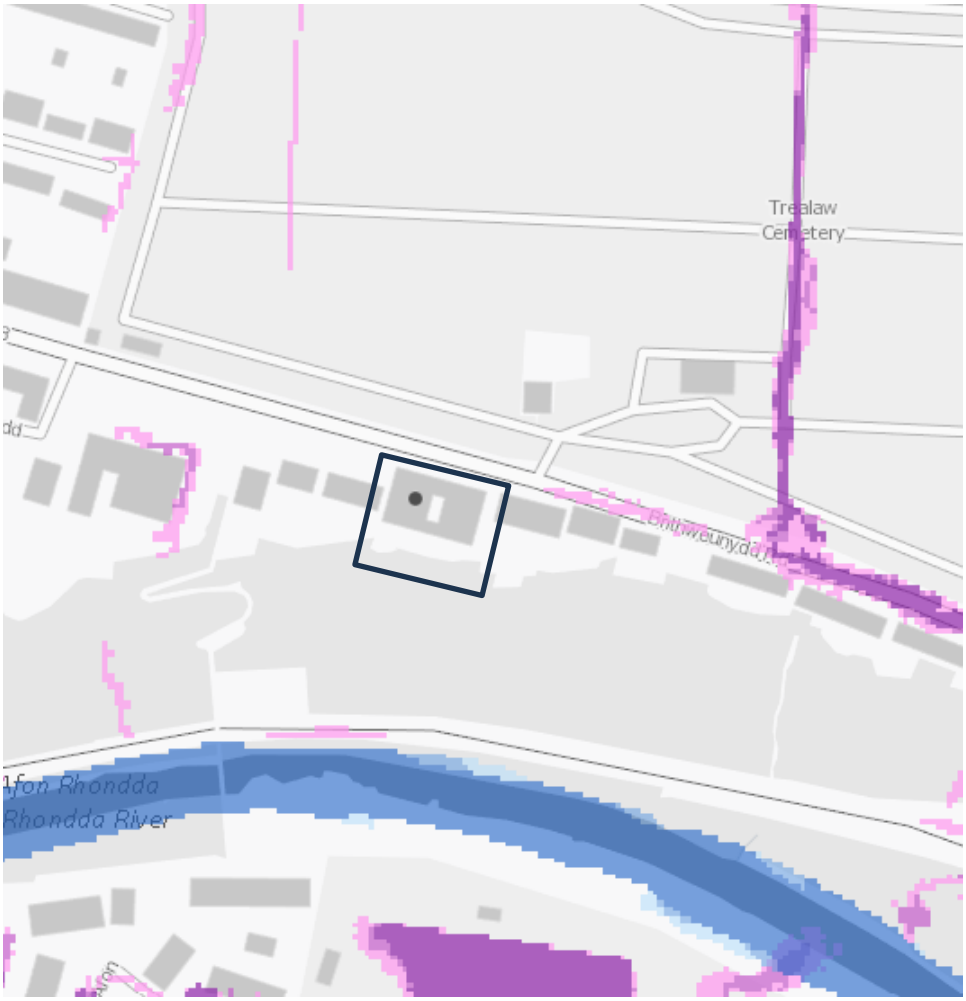


Figure 2 – Extract from Flood Map for Planning

Groundwater Flood Risk

Groundwater was encountered in one trial pit at 2m below ground level.

Artificial Sources

Natural Resources Wales Flood Map for Planning confirms there is no flood risk from artificial sources, including reservoirs.

4. Surface Water Drainage

4.1 Existing Surface Water Drainage

The site is an existing developed site. The project information provided confirms that the existing surface-water discharge is to the combined sewer at the rear of the site. The Dŵr Cymru Welsh Water (DCWW) CCTV plan (Drawing Ref. 21504-01-001, dated 5 May 2026) shows the location of the DCWW sewer together with the private drainage.

Refer to Appendix A for the CCTV plan.

4.2 Proposed Surface Water Drainage

Surface-water runoff from the proposed development will be managed using Sustainable Drainage Systems (SuDS) such as permeable paving, a bioretention area and attenuation crate, with the aim of managing runoff close to source, reducing runoff rates where practicable and providing appropriate treatment before discharge.

Priority Level 1 - Collection for Reuse

Rainwater harvesting has not been relied upon as the primary surface water disposal mechanism at this stage, due to the complexities associated with providing and maintaining a suitable rainwater harvesting system to serve the individual flats.

In particular, the distribution of harvested rainwater to multiple residential units would require a coordinated system of storage, pumping and distribution, together with appropriate metering and controls to manage the supply to each flat. This would introduce additional operational and maintenance requirements, as well as the need to establish clear responsibilities for the ongoing management of the system.

Furthermore, the demand for harvested rainwater would be dependent on the usage patterns of individual residents, and the availability of storage capacity during periods of prolonged rainfall. As such, rainwater harvesting cannot be relied upon to provide a consistent or sufficient means of surface water disposal, particularly during periods when the storage tanks are full or there is limited demand for the harvested water.

On this basis, the surface water drainage strategy has been developed without relying on rainwater harvesting to provide the primary means of disposal.

Priority Level 2 - Infiltration

Intégral Géotechnique (Wales) Limited undertook soil infiltration testing at two locations, SA01 and SA02, in February 2026. The trial pits were excavated to approximately 2.0m and 2.2m below ground level respectively. The ground conditions comprised a thin layer of tarmac over historic made ground, generally extending to approximately 1.4m below ground level at SA01 and 1.85m at SA02, overlying cohesive natural clay.

The trial pits encountered instability and localised collapse within the granular made ground during excavation. Slow groundwater seepage was observed at approximately 2.0m depth in SA01; no groundwater was encountered in SA02. The report notes that groundwater conditions may vary seasonally.

Initial infiltration was observed within the granular made ground, but infiltration stalled on encountering the underlying cohesive natural soils. Only one test cycle was completed at each location, and no design infiltration rate was established.

Intégral Géotechnique advises that soakaways within made ground are not typically recommended due to variability in the composition and compaction of the made ground, which may result in inconsistent infiltration rates. The report also identifies the potential for leachate to present a risk to controlled waters and notes that the underlying cohesive soils will restrict vertical infiltration and dispersal.

On this basis, infiltration to ground is not relied upon as the principal method of surface-water disposal for the proposed development. No soakaway or unlined infiltration feature should be incorporated into the design unless supported by further appropriate investigation and geotechnical advice.

Refer to Appendix B for the Site investigation report.

Priority Level 3 - Watercourse

There are no existing watercourses within or immediately adjacent to the site that would provide a viable means of surface water disposal. The nearest watercourse is located approximately 40m below the site, and a connection would require the surface water drainage to cross the intervening railway line.

The significant level difference and requirement to cross the railway infrastructure would introduce considerable technical and practical challenges, including the need to establish a suitable drainage route, obtain the necessary third-party consents and demonstrate that the proposed connection could be achieved without adversely affecting the railway infrastructure.

On this basis, a connection to the nearest watercourse has not been considered a viable option for the proposed development at this stage.

Priority Level 4 – Surface Water Sewer

There are no existing surface water sewers within the site that could provide a direct connection for the proposed development.

A short length of surface water sewer is present within third-party land adjacent to the site. However, this sewer ultimately discharges to the public combined sewer network, rather than a dedicated surface water sewer.

Given the absence of a direct surface water sewer connection within the site, this option has not been relied upon as the primary means of surface water disposal at this stage.

Priority Level 5 – Combined Sewer

A connection to the existing public combined sewer network is proposed as the means of surface water disposal for the development.

Discussions have been held with Dŵr Cymru Welsh Water (DCWW), who have confirmed their agreement in principle to the proposed connection, subject to the final surface water discharge rates and flows being demonstrated within the detailed drainage design.

The proposed drainage system will therefore be designed to restrict surface water discharge to an agreed rate, ensuring that the additional flows from the development are controlled prior to entering the existing combined sewer network. The final design will be submitted to DCWW for review and approval, with the connection arrangements and allowable discharge rate confirmed as part of this process.

Refer to Appendix C for the DCWW correspondence.

4.3 Source Control

Green roof

A green roof is proposed as part of the development. The green roof will provide source control by retaining and delaying a proportion of rainfall, as well as providing potential water-quality, amenity and biodiversity benefits. Its contribution to the drainage design will depend on the final roof build-up, substrate depth, drainage layer, vegetation specification and manufacturer's performance data.

The green roof should not be treated as providing complete retention of all rainfall events, and an overflow route and connection to the formal drainage system will be required.

Permeable external surfaces

Permeable external surfacing is proposed to the new external parking areas within the development. The use of permeable paving can provide source control, temporary storage and treatment of runoff. However, the ground investigation did not establish a reliable infiltration rate and identified cohesive natural clay beneath the made ground. Permeable surfacing should therefore not be assumed to discharge by infiltration into the underlying ground.

The permeable paving will be designed as a lined with a designed sub-base storage layer and controlled underdrainage connection to the sewer network.

Bio-retention area

A bioretention area will be implemented to receive surface water from the raised extended access road as shown in the drainage layout found in Appendix E. This area can provide source control, temporary storage and treatment of runoff. Like the permeable paving, this area should not be assumed to discharge by infiltration into the underlying ground. The bioretention area will be lined with a controlled underdrainage connection to the existing combined sewer.

Attenuation crate

An attenuation crate has been used in the preliminary design with the expectation that it will be required due to the low greenfield run off rate, this would be lined and positioned under one of the areas of permeable paving. The crate would receive surface water via the permeable paving's underdrain where it would provide temporary storage before draining to the connected sewer network. Final details of the attenuation crate will be provided in the final design.

4.3 Surface Water Run-off Hydraulic Control

The identified surface-water receiving system is the existing combined sewer, to which the existing site discharge connects and for which DCWW acceptance has been reported.

We have calculated the discharge from the existing site as 17.7 l/s, the calculations are in Appendix D.

The greenfield run off rate has been calculated in InfoDrainage for the full catchment area as figure 3 below.

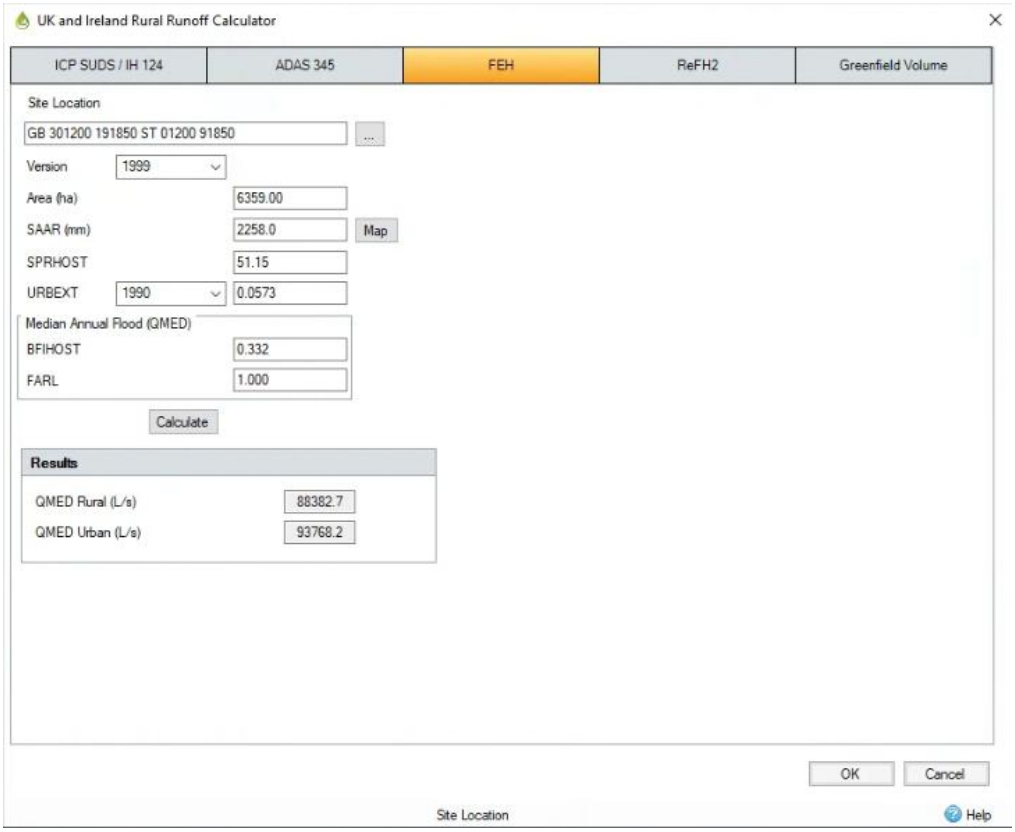


Figure 3 – Greenfield run off rate Info Drainage

Based on our proposed impermeable area of 852m^2, this would give a greenfield run off rate of 1.18l/s.

The surface water runoff rate from the roof and the new parking areas will be reduced from the current rate and if practical will be designed to be as close as possible to greenfield. The existing access road and external areas will remain unchanged and continue to discharge to the on site gullies/drainage system.

4.4 Water Quality

The surface-water drainage system will incorporate an appropriate treatment to manage pollutants from roof and external areas before runoff is discharged to the combined sewer.

The green roof, permeable external surfaces, bioretention area and attenuation crate will provide treatment as part of the overall SuDS approach. Any additional vegetated features will be coordinated with the landscape layout and designed to remain accessible for inspection and maintenance.

4.5 Exceedance and Climate Change

The detailed drainage design will include the applicable climate-change allowance and demonstrate the performance of the system for the required design storms.

The site levels fall significantly across the development, and the layout includes a retaining wall and parking / access areas. The external levels will follow the existing so that exceedance flows are directed away from building entrances and do not create unacceptable ponding within parking or access areas, and do not discharge onto neighbouring property.

The flows will be over the embankment as per the current scenario.

Refer to Appendix E for the Drainage Strategy

4.6 Amenity

Due to the constraints of the site the amenity is limited to the green roof and bioretention area.

4.7 Biodiversity

The final SuDS and landscape strategy will provide biodiversity benefits through the vegetated green roof and bioretention area.

5. Foul Drainage

Foul drainage from the 20 residential units will be designed as a separate system from the surface-water drainage.

The DCWW CCTV plan provides information on existing drainage assets, and the connection will be to one of the existing manholes.

6. Principal Operation and Maintenance Requirements

The proposed drainage system will require routine inspection and maintenance throughout the lifetime of the development to ensure that the green roof, permeable surfacing, drainage pipework, flow controls and any attenuation or treatment components remain operational.

- Inspect roof outlets, inspection chambers, gullies, catchpits and silt traps regularly and remove accumulated sediment and debris.
- Maintain the green roof in accordance with the system manufacturer's requirements, including vegetation, drainage outlets and overflow routes.
- Inspect permeable paving for clogging and undertake appropriate vacuum sweeping or other maintenance in accordance with the pavement specification.
- Inspect any attenuation storage, flow controls and associated access points and maintain clear access for inspection and cleansing.
- Prevent sediment-laden construction runoff from entering the permanent drainage system during construction.
- Maintain drainage pipework and joints to prevent leakage, blockage or unintended discharge.
- Ensure that exceedance routes and surface channels remain unobstructed.

A detailed operation and maintenance plan should be prepared for the final drainage design. It should identify the responsible maintenance party, inspection frequencies, maintenance activities, access requirements and any manufacturer-specific requirements for each drainage component.

7. Conclusion

Intrado Consulting Engineers have prepared this preliminary Drainage Strategy and Flood Risk report for the proposed redevelopment of The Rez, 171–172 Brithweunydd Road, Tonypandy, CF40 2UH. The proposed development comprises 20 residential units within a three-storey building, together with 20 parking spaces and associated access and external areas.

The proposed surface-water strategy is to manage runoff close to source through the use of a green roof, permeable external surfaces, a bioretention area and attenuation crate with appropriate treatment and attenuation as required, before discharging at a controlled rate to the existing combined sewer connection.

The existing surface-water discharge has been accepted by DCWW; however, the proposed redevelopment connection and discharge conditions must be confirmed.

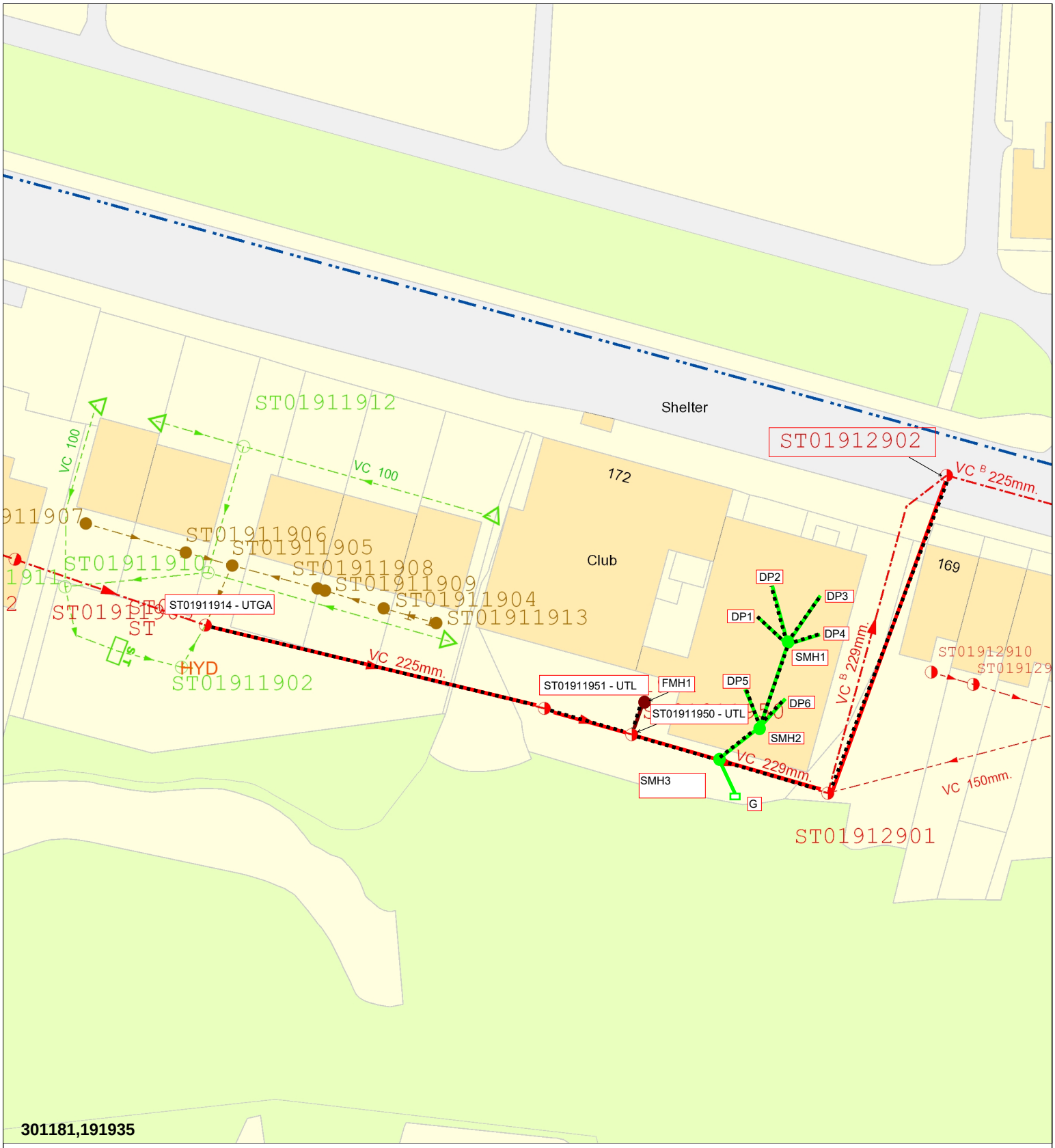
The infiltration investigation undertaken by Intégral Géotechnique identified made ground over cohesive natural clay. Although initial infiltration was observed in the made ground, infiltration stalled on encountering the natural clay and no design infiltration rate was established. Infiltration is therefore not relied upon as the principal method of surface-water disposal.

The proposed layout indicates a significant level difference across the site and a retaining wall, both of which will influence drainage routing, attenuation location and exceedance design. Existing sewer infrastructure is also recorded along the rear of the site and beneath the eastern access and will need to be verified and protected.

The strategy remains preliminary and is subject to confirmation of the DCWW connection and discharge requirements, final site levels, the detailed green-roof and permeable-surfacing specifications, hydraulic calculations, attenuation requirements, exceedance routing and foul drainage arrangements.

Appendix A

CCTV Plan



KEY:
UTL - Unable to locate
UTGA - Unable to gain access

DRAINTECH
Cleaning • Surveys • Lining • Civils
Job / Plan ref: 21504 - 01 - 001

Scale: 1:500

05/05/2026

EXACT LOCATION OF ALL APPARATUS TO BE DETERMINED ON SITE

Dŵr Cymru Welsh Water

LEGEND

- Sluice Valve
- Air Valve SINGLE
- Tap
- Pressure Reducing Valve
- Meter
- Bulk Meter
- Fire Hydrant
- Cap
- Non Dwr Cymru
- Existing Distribution Main
- Inspection Chamber
- Gravity Sewer
- Rising Main
- Outfall
- Pumping Station
- Lamphole
- Combined Sewer Overflow
- Special Purpose Chamber
- Treatment Works
- Private Sewer Transfer
- Lateral Drain

NB:
Sewer symbol colour indicates the sewer type.
RED - Combined
GREEN - Surface Water
BROWN - Foul

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Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF) . It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation

Dwr Cymru Cyfyngedig ('the Company') gives this infirmation as to the position of its underground apparatus by way of general guidance only and on the strict understanding that it is based on the best information available and no warranty as to its correctness is relied upon in the event of excavations or other works made in the vicinity of the company's apparatus and any onus of locating the apparatus before carrying out any excavations rests entirely on you. The information which is supplied hereby by the company, is done so in accordance with statutory requirements of sections 198 and 199 of the Water Industry Act 1991 based particular, but without prejudice to be generality of that foregoing, it should be noted that the records that are available to the company may not disclose the existence of a drain sewer or disposal main laid before 1 September 1989, or if they do, the particulars thereof including their position underground may not be accurate. It must be understood that the furnishing of thisinformation is entirely without prejudice to the provision of the New Roads and Street Works Act 1991 and the company's right to be compensated for any damageto its apparatus.

DRAINTECH

helping to improve the drainage network

Drainage Survey Report

Job Number : 21504

Project Number: 1

Project Name: Easyliving - Trealaw/Tonypandy Development

Company: EASYLIVING LIMITED

Site Date: 21-04-2026

Draintech Surveys Ltd| Atlantic House| Charnwood Park| Bridgend| CF31 3PL| 01656 767001| www.draintech.co.uk

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21504 EasyLiving Tonypandy Development		21/04/2026

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Section Item 4: ST01942901 > ST01912902 (ST01942901X) 6

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Project Information

Project Name	Project Number	Project Date
21504 EasyLiving Tonypandy Development		21/04/2026

Client

Company: EASYLIVING LIMITED
Contact: Steve Ingham

Site

Company: Draintech Surveys Ltd
Contact: Jack Jones

Contractor

Company: Draintech Surveys Ltd

DRAINTECH
Cleaning • Surveys • Lining • Civils

Draintech Surveys Ltd

Section Inspection - 21/04/2026 - ST01911950X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
1	1	21/04/26	10:09	Not Specified	No Rain Or Snow	No	ST01911950X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JJ	CA70SZJ	Minicam	Not Specified	Not Specified	Not Specified

Town or Village:	Tonypandy	**Inspection Direction:**	Downstream	**Upstream Node:**	ST01911950
Road:	Easyliving	**Inspected Length:**	43.27 m	**Upstream Pipe Depth:**	
Location:	Property or buildings	**Total Length:**	22.63 m	**Downstream Node:**	ST01942901
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	2.090 m

Use:	Combined	**Pipe Shape:**	Circular
Type of Pipe:		**Dia/Height:**	225 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:		**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:146



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0.00	MH	Start node, manhole, reference: ST01911950	00:00:00		
0.00	WL	Water level, 30% of the vertical dimension	00:00:02		
0.93	JN	Junction at 3 o'clock, 150mm dia	00:00:17		
2.17	WL	Water level, 5% of the vertical dimension	00:00:30		
4.59	B	Broken pipe from 12 o'clock to 3 o'clock	00:00:54		4
4.59	CC	Crack, circumferential from 7 o'clock to 9 o'clock	00:00:54		2 / 2
5.37	BJ	Broken pipe at joint from 9 o'clock to 12 o'clock	00:01:10		4
6.26	JN	Junction at 3 o'clock, 150mm dia	00:01:31		
6.26	B	Broken pipe from 12 o'clock to 2 o'clock	00:01:33		4
6.26	SV	Soil visible beyond defect	00:01:34		
6.26	VV	Void visible beyond defect	00:01:34		
7.54	WL	Water level, 10% of the vertical dimension	00:01:58		
8.85	LU	Line deviates up	00:02:16		
12.14	LU	Line deviates up	00:03:06		
14.84	JN	Junction at 2 o'clock, 150mm dia	00:03:25		

Section Inspection - 21/04/2026 - ST01911950X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
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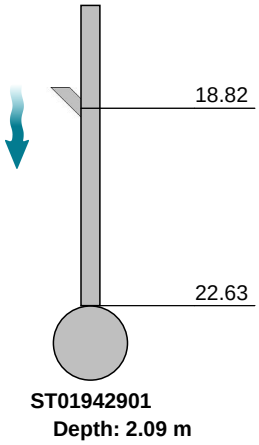

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Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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Section Inspection - 21/04/2026 - ST01911951X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
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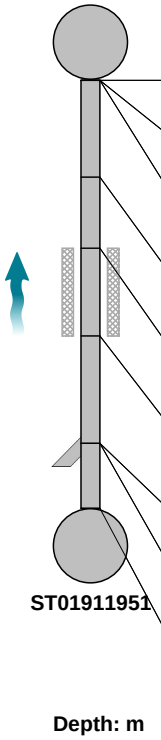
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JJ	CA70SZJ	Minicam	Not Specified	Not Specified	Not Specified

Town or Village:	Tonypandy	**Inspection Direction:**	Upstream	**Upstream Node:**	ST01911951
Road:	Easyliving	**Inspected Length:**	2.83 m	**Upstream Pipe Depth:**	
Location:	Property or buildings	**Total Length:**	2.83 m	**Downstream Node:**	ST01911950
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Combined	**Pipe Shape:**	Circular
Type of Pipe:		**Dia/Height:**	225 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:		**Lining Material:**	No Lining

Comments:
Recommendations:



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0.00		REM	General remark: VIDEO HEADER INCORRECT, PLEASE SEE REPORT	00:05:53		
0.64		FLJ	Fracture, longitudinal at joint at 2 o'clock	00:00:20		3 / 2
1.11	S01	FL	Fracture, longitudinal at 12 o'clock, start	00:00:29		
1.69	F01	FL	Fracture, longitudinal at 12 o'clock, finish	00:00:39		3 / 2
2.40		JN	Junction at 3 o'clock, 150mm dia	00:00:52		
2.40		FL	Fracture, longitudinal at 2 o'clock	00:01:14		3 / 2
2.83		MHF	Finish node, manhole, reference: ST01911951	00:01:22		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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Section Inspection - 21/04/2026 - ST01911914X

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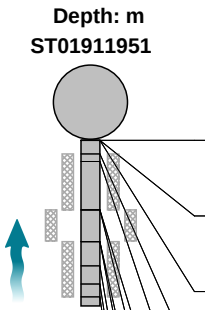
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JJ	CA70SZJ	Minicam	Not Specified	Not Specified	Not Specified

Town or Village:	Tonypandy	**Inspection Direction:**	Upstream	**Upstream Node:**	ST01911914
Road:	Easyliving	**Inspected Length:**	33.23 m	**Upstream Pipe Depth:**	
Location:	Property or buildings	**Total Length:**	33.23 m	**Downstream Node:**	ST01911951
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Combined	**Pipe Shape:**	Circular
Type of Pipe:		**Dia/Height:**	225 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:		**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:163



Position [m]		Code	Observation	MPEG	Photo	Grade
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0.00		WL	Water level, 5% of the vertical dimension	00:00:04		
0.00		REM	General remark: VIDEO HEADER INCORRECT, PLEASE SEE REPORT	00:05:53		
0.30	S01	FL	Fracture, longitudinal at 12 o'clock, start	00:00:07		
0.47		B	Broken pipe from 4 o'clock to 6 o'clock	00:00:18		4
1.51	F01	FL	Fracture, longitudinal at 12 o'clock, finish	00:00:32		3 / 2
1.51	S02	FL	Fracture, longitudinal at 11 o'clock, start	00:00:33		
2.19	F02	FL	Fracture, longitudinal at 11 o'clock, finish	00:00:42		3 / 2
2.19	S03	FL	Fracture, longitudinal at 11 o'clock, start	00:00:50		
2.71		RFJ	Roots, fine at joint	00:01:00		2
3.11		RTJ	Roots, tap at joint	00:01:08		4
3.38	F03	FL	Fracture, longitudinal at 11 o'clock, finish	00:01:13		3 / 2

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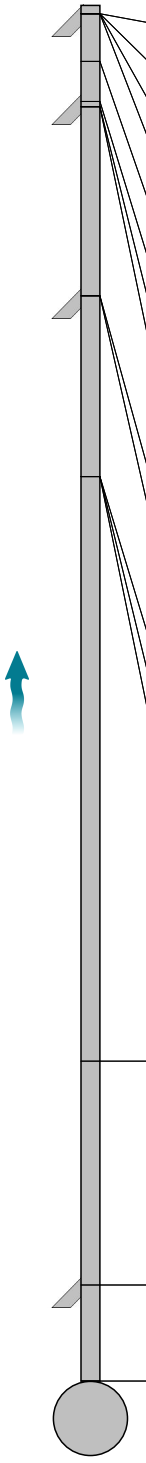
Section Inspection - 21/04/2026 - ST01911914X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
3	1	21/04/26	10:30	Not Specified	No Rain Or Snow	No	ST01911914X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JJ	CA70SZJ	Minicam	Not Specified	Not Specified	Not Specified

Scale: 1:163



Position [m]	Code	Observation	MPEG	Photo	Grade
3.77	FL	Fracture, longitudinal at 9 o'clock	00:01:36		3 / 2
3.77	RT	Roots, tap	00:01:37		4
3.77	JN	Junction at 3 o'clock, 150mm dia	00:01:46		
3.77	LU	Line deviates up	00:01:48		
4.79	JDL	Joint displaced, large	00:02:05		1 / 4
5.65	JN	Junction at 3 o'clock, 150mm dia	00:02:12		
5.76	LU	Line deviates up	00:02:20		
5.76	WL	Water level, 10% of the vertical dimension	00:02:20		
9.84	JNC	Junction, closed at 3 o'clock, 150mm dia	00:02:53		
9.84	LU	Line deviates up	00:02:57		
13.73	B	Broken pipe from 9 o'clock to 12 o'clock	00:03:29		4
13.73	SV	Soil visible beyond defect	00:03:29		
13.73	VV	Void visible beyond defect	00:03:30		
26.33	DEG	Attached deposits, grease from 11 o'clock to 1 o'clock, 5% cross-sectional area loss	00:04:55		3
31.17	JNC	Junction, closed at 3 o'clock, 150mm dia	00:05:31		
33.23	MHF	Finish node, manhole, reference: ST01911914	00:05:48		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
7	120.0	12.1	402.0	4.0	9	7.0	0.8	26.0	4.0

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Section Inspection - 21/04/2026 - ST01942901X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
4	1	21/04/26	10:46	Not Specified	No Rain Or Snow	No	ST01942901X

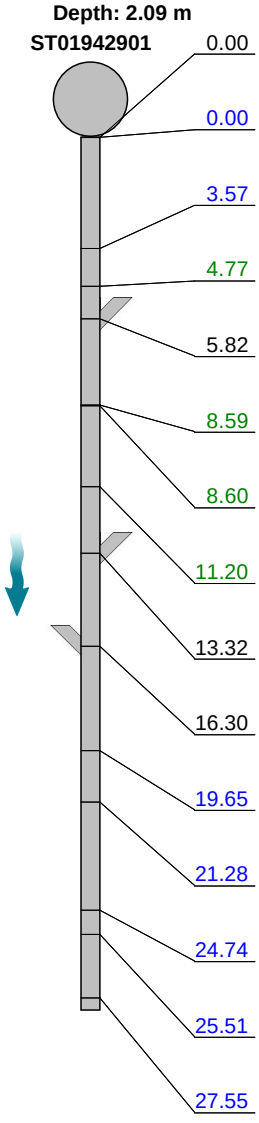
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JJ	CA70SZJ	Minicam	Not Specified	Not Specified	Not Specified

Town or Village:	Tonypandy	**Inspection Direction:**	Downstream	**Upstream Node:**	ST01942901
Road:	Easyliving	**Inspected Length:**	31.00 m	**Upstream Pipe Depth:**	2.090 m
Location:	Property or buildings	**Total Length:**	31.00 m	**Downstream Node:**	ST01912902
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Combined	**Pipe Shape:**	Circular
Type of Pipe:		**Dia/Height:**	225 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:		**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:242



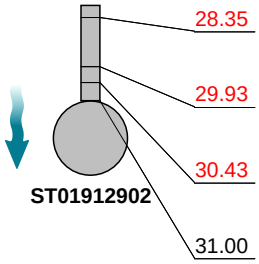
Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: ST01942901	00:00:00		
0.00	WL	Water level, 20% of the vertical dimension	00:00:02		
3.57	WL	Water level, 10% of the vertical dimension	00:00:33		
4.77	RFJ	Roots, fine at joint	00:00:47		2
5.82	JN	Junction at 10 o'clock, 150mm dia	00:01:03		
8.59	RFJ	Roots, fine at joint	00:01:24		2
8.60	RTJ	Roots, tap at joint	00:01:27		4
11.20	RFJ	Roots, fine at joint	00:01:46		2
13.32	JNC	Junction, closed at 10 o'clock, 150mm dia	00:02:04		
16.30	JN	Junction at 3 o'clock, 150mm dia	00:02:35		
19.65	WL	Water level, 20% of the vertical dimension	00:03:04		
21.28	WL	Water level, 5% of the vertical dimension	00:03:18		
24.74	WL	Water level, 10% of the vertical dimension	00:03:54		
25.51	WL	Water level, 20% of the vertical dimension	00:04:00		
27.55	WL	Water level, 10% of the vertical dimension	00:04:13		

Section Inspection - 21/04/2026 - ST01942901X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
4	1	21/04/26	10:46	Not Specified	No Rain Or Snow	No	ST01942901X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JJ	CA70SZJ	Minicam	Not Specified	Not Specified	Not Specified

Scale: 1:242



Position [m]	Code	Observation	MPEG	Photo	Grade
28.35	CCJ	Crack, circumferential at joint from 2 o'clock to 5 o'clock	00:04:24		2 / 2
29.93	FLJ	Fracture, longitudinal at joint at 3 o'clock	00:04:41		3 / 2
30.43	CL	Crack, longitudinal at 12 o'clock	00:04:48		2 / 2
31.00	MHF	Finish node, manhole, reference: ST01912902	00:04:54		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
3	50.0	1.9	60.0	3.0	8	6.0	0.4	12.0	4.0

Section Inspection - 21/04/2026 - FMH1X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
5	1	21/04/26	11:17	Not Specified	No Rain Or Snow	No	FMH1X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JJ	CA70SZJ	Minicam	Not Specified	Not Specified	Not Specified

Town or Village:	Tonypandy	**Inspection Direction:**	Downstream	**Upstream Node:**	FMH1
Road:	Easyliving	**Inspected Length:**	4.85 m	**Upstream Pipe Depth:**	2.780 m
Location:	Property or buildings	**Total Length:**	4.85 m	**Downstream Node:**	ST01911950
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	5.700 m

Use:	Foul	**Pipe Shape:**	Circular
Type of Pipe:		**Dia/Height:**	100 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:		**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]		Code	Observation	MPEG	Photo	Grade
0.00		MH	Start node, manhole, reference: FMH1	00:00:00		
0.00		WL	Water level, 5% of the vertical dimension	00:00:01		
0.00	S01	RM	Roots, mass, 30% cross-sectional area loss, start	00:00:02		
1.29	F01	RM	Roots, mass, 30% cross-sectional area loss, finish			5
2.67		CC	Crack, circumferential from 8 o'clock to 6 o'clock	00:00:23		2 / 2
4.85		MHF	Finish node, manhole, reference: ST01911950	00:00:49		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
1	10.0	2.1	10.0	2.0	2	10.0	4.3	21.0	5.0

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Section Inspection - 27/04/2026 - DP1X

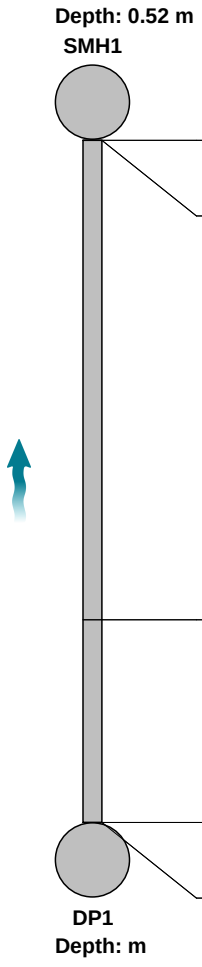
Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
6	1	27/04/26	15:07	Not Specified	No Rain Or Snow	Yes	DP1X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JK	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified

Town or Village:	Trealaw	**Inspection Direction:**	Upstream	**Upstream Node:**	DP1
Road:	Rez Club	**Inspected Length:**	4.51 m	**Upstream Pipe Depth:**	
Location:	Property or buildings	**Total Length:**	4.51 m	**Downstream Node:**	SMH1
Surface Type:		**Joint Length:**	0.80 m	**Downstream Pipe Depth:**	0.520 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	100 mm
Flow Control:	No flow control	**Material:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:		**Lining Material:**	No Lining

Comments:
Recommendations:



Scale: 1:50 Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: SMH1	00:00:00		
0.00	WL	Water level, 5% of the vertical dimension	00:00:02		
3.17	JDM	Joint displaced, medium	00:00:33		1 / 3
4.51	LU	Line deviates up	00:01:05		
4.51	OCF	Finish node, other special chamber, reference: DP1: LINE UP/DOWN PIPE	00:01:06		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
1	1.0	0.2	1.0	1.0	1	2.0	0.4	2.0	3.0

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Section Inspection - 27/04/2026 - DP2X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
7	1	27/04/26	15:11	Not Specified	No Rain Or Snow	Yes	DP2X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JK	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified

Town or Village:	Trealaw	**Inspection Direction:**	Upstream	**Upstream Node:**	DP2
Road:	Rez Club	**Inspected Length:**	10.55 m	**Upstream Pipe Depth:**	
Location:	Property or buildings	**Total Length:**	10.55 m	**Downstream Node:**	SMH1
Surface Type:		**Joint Length:**	0.80 m	**Downstream Pipe Depth:**	0.520 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	100 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:		**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:92



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: SMH1	00:00:00		
0.00	WL	Water level, 5% of the vertical dimension	00:00:08		
7.51	JDL	Joint displaced, large	00:00:46		1 / 4
8.80	JDM	Joint displaced, medium	00:00:59		1 / 3
9.41	FC	Fracture, circumferential from 4 o'clock to 2 o'clock	00:01:22		3 / 2
10.55	LU	Line deviates up	00:01:40		
10.55	OCF	Finish node, other special chamber, reference: DP2: LINE UP/DOWN PIPE	00:01:43		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
3	40.0	4.1	43.0	3.0	3	5.0	0.8	8.0	4.0

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Section Inspection - 27/04/2026 - DP3X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
8	1	27/04/26	15:15	Not Specified	No Rain Or Snow	Yes	DP3X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JK	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified

Town or Village:	Trealaw	**Inspection Direction:**	Upstream	**Upstream Node:**	DP3
Road:	Rez Club	**Inspected Length:**	10.32 m	**Upstream Pipe Depth:**	
Location:	Property or buildings	**Total Length:**	10.32 m	**Downstream Node:**	SMH1
Surface Type:		**Joint Length:**	0.80 m	**Downstream Pipe Depth:**	0.520 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	100 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:		**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:90



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: SMH1	00:00:00		
0.00	WL	Water level, 5% of the vertical dimension	00:00:09		
0.29	CC	Crack, circumferential from 3 o'clock to 9 o'clock	00:00:22		2 / 2
7.32	JDL	Joint displaced, large	00:00:56	1	1 / 4
10.32	LU	Line deviates up	00:01:20		
10.32	OCF	Finish node, other special chamber, reference: DP3: LINE UP/DOWN PIPE	00:01:21		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
2	10.0	1.2	12.0	2.0	2	5.0	0.6	6.0	4.0

Section Pictures - 27/04/2026 - DP3X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
8	Upstream	DP3X		



1, 00:00:56, 7.32 m
Joint displaced, large

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Section Inspection - 27/04/2026 - SMH1X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
10	1	27/04/26	15:25	Not Specified	No Rain Or Snow	Yes	SMH1X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JK	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified

Town or Village:	Trealaw	**Inspection Direction:**	Downstream	**Upstream Node:**	SMH1
Road:	Rez Club	**Inspected Length:**	7.77 m	**Upstream Pipe Depth:**	0.520 m
Location:	Property or buildings	**Total Length:**	7.77 m	**Downstream Node:**	SMH2
Surface Type:		**Joint Length:**	0.80 m	**Downstream Pipe Depth:**	0.310 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:		**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:68

Depth: 0.52 m
SMH1

Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: SMH1	00:00:00		
0.00	WL	Water level, 5% of the vertical dimension	00:00:04		
0.00	REM	General remark: VIDEO HEADER INCORRECT, PLEASE SEE REPORT	00:00:05		
1.84	FC	Fracture, circumferential from 1 o'clock to 9 o'clock	00:00:25	1	3 / 2
3.05	LD	Line deviates down	00:00:37		
3.05	FCJ	Fracture, circumferential at joint from 6 o'clock to 8 o'clock	00:00:41	2	3 / 2
3.39	BJ	Broken pipe at joint from 11 o'clock to 1 o'clock	00:00:57		4
5.02	JDL	Joint displaced, large	00:01:14	3	1 / 4
5.95	FC	Fracture, circumferential from 1 o'clock to 11 o'clock	00:01:31	4	3 / 2
7.01	SC	Pipe size changes, new size(s), 100mm high	00:01:48	5	
7.18	MCPVC	Pipe material changes to polyvinyl chloride at this point	00:01:58		
7.77	MHF	Finish node, manhole, reference: SMH2	00:02:07		

SMH2
Depth: 0.31 m

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
5	80.0	26.0	202.0	4.0	4	5.0	1.0	8.0	4.0

Section Inspection - 27/04/2026 - DP4X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
9	1	27/04/26	15:18	Not Specified	No Rain Or Snow	Yes	DP4X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JK	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified

Town or Village:	Trealaw	**Inspection Direction:**	Upstream	**Upstream Node:**	DP4
Road:	Rez Club	**Inspected Length:**	4.74 m	**Upstream Pipe Depth:**	
Location:	Property or buildings	**Total Length:**	4.74 m	**Downstream Node:**	SMH1
Surface Type:		**Joint Length:**	0.80 m	**Downstream Pipe Depth:**	0.520 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	100 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:		**Lining Material:**	No Lining

Comments:
Recommendations:



Scale: 1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 0.52 m SMH1						
	0.00	MH	Start node, manhole, reference: SMH1	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:02		
	3.71	JDM	Joint displaced, medium	00:00:38		1 / 3
	4.70	LU	Line deviates up	00:00:48		
DP4 Depth: m	4.74	OCF	Finish node, other special chamber, reference: DP4: DOWN PIPE-PLASTIC BOTTLE STUCK IN LINE	00:00:49		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
1	1.0	0.2	1.0	1.0	1	2.0	0.4	2.0	3.0

Section Pictures - 27/04/2026 - SMH1X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Downstream	SMH1X		



1, 00:00:25, 1.84 m
Fracture, circumferential from 1 o'clock to 9 o'clock



2, 00:00:41, 3.05 m
Fracture, circumferential at joint from 6 o'clock to 8 o'clock



3, 00:01:14, 5.02 m
Joint displaced, large



4, 00:01:31, 5.95 m
Fracture, circumferential from 1 o'clock to 11 o'clock

Section Pictures - 27/04/2026 - SMH1X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Downstream	SMH1X		



5, 00:01:48, 7.01 m
Pipe size changes, new size(s), 100mm high

Section Inspection - 27/04/2026 - SMH2X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
11	1	27/04/26	15:29	Not Specified	No Rain Or Snow	Yes	SMH2X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JK	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified

Town or Village:	Trealaw	**Inspection Direction:**	Downstream	**Upstream Node:**	SMH2
Road:	Rez Club	**Inspected Length:**	1.92 m	**Upstream Pipe Depth:**	0.310 m
Location:	Property or buildings	**Total Length:**	1.92 m	**Downstream Node:**	SMH3
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	1.560 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:		**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 0.31 m **SMH2**					
0.00	MH	Start node, manhole, reference: SMH2	00:00:00		
0.00	WL	Water level, 5% of the vertical dimension	00:00:02		
1.92	MHF	Finish node, manhole, reference: SMH3	00:00:29		
SMH3 **Depth: 1.56 m**					

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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Section Inspection - 27/04/2026 - DP5X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
12	1	27/04/26	15:34	Not Specified	No Rain Or Snow	Yes	DP5X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JK	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified

Town or Village:	Trealaw	**Inspection Direction:**	Upstream	**Upstream Node:**	DP5
Road:	Rez Club	**Inspected Length:**	6.34 m	**Upstream Pipe Depth:**	
Location:	Property or buildings	**Total Length:**	6.34 m	**Downstream Node:**	SMH2
Surface Type:		**Joint Length:**	0.80 m	**Downstream Pipe Depth:**	0.310 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	100 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:		**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:55



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: SMH2	00:00:00		
0.00	WL	Water level, 5% of the vertical dimension	00:00:01		
3.24	JDL	Joint displaced, large			1 / 4
6.34	LU	Line deviates up	00:00:31		
6.34	OCF	Finish node, other special chamber, reference: DP5: LINE UP	00:00:33		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
1	2.0	0.3	2.0	1.0	1	5.0	0.8	5.0	4.0

DRAINTECH
Cleaning • Surveys • Lining • Civils

Section Inspection - 27/04/2026 - DP6X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
13	1	27/04/26	15:38	Not Specified	No Rain Or Snow	Yes	DP6X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
DRAINTECH JK	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified

Town or Village:	Trealaw	**Inspection Direction:**	Upstream	**Upstream Node:**	DP6
Road:	Rez Club	**Inspected Length:**	5.79 m	**Upstream Pipe Depth:**	
Location:	Property or buildings	**Total Length:**	5.79 m	**Downstream Node:**	SMH2
Surface Type:		**Joint Length:**	0.80 m	**Downstream Pipe Depth:**	0.310 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	100 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:		**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:51



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: SMH2	00:00:00		
0.00	WL	Water level, 5% of the vertical dimension	00:00:01		
4.03	JDM	Joint displaced, medium	00:00:36	1	1 / 3
5.79	LU	Line deviates up	00:00:51		
5.79	OCF	Finish node, other special chamber, reference: DP6: LINE UP/DOWN PIPE	00:00:52		

Construction Features
Structural Defects

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade
1	1.0	0.2	1.0	1.0

Miscellaneous Features
Service & Operational Observations

SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	2.0	0.3	2.0	3.0

Section Pictures - 27/04/2026 - DP6X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
13	Upstream	DP6X		



1, 00:00:36, 4.03 m
Joint displaced, medium

Appendix B

Site Investigation

Intégral Géotechnique

Intégral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX
Tel: 029 20807991
mail@integralgeotec.com

14557/AS

5 March 2026

Easy Living Ltd
5 The Highlands
Old Barry Road
Penarth
CF64 2AR

For the attention of Steve Ingham

172 Brithweunydd Rd, Tonypandy - Soil Infiltration Testing Report

Further to your recent instruction, we have now completed the BRE 365 and shallow soil infiltration testing at the above site and report as follows.

This report (including all appendices to it and any subsequent addendums or correspondence) has been prepared for the sole benefit, use and information of Easy Living Ltd and no third party is entitled or permitted to rely upon it. This report may not be used, reproduced, or circulated (in whole or part) for any purpose without the written consent of Intégral Géotechnique (Wales) Limited. Intégral Géotechnique (Wales) Limited shall not be liable to any third party who does not have express written permission to rely on the report for any losses they may suffer.

Background

Easy Living Ltd are proposing to redevelop land south of Brithweunydd Rd in Tonypandy for residential end use. The location of the site is illustrated on Figure 1.

Specific development proposals are not currently available.

Easy Living Ltd, on behalf of YourSpace Projects, appointed Intégral Géotechnique (Wales) Limited to undertake infiltration testing to assess the permeability of the underlying soils to support the SAB application.

A Desk Study Report has been undertaken by Intégral Géotechnique (Wales) Limited, Ref. 14557/LP/26/DS dated February 2026. This report should be read in conjunction with the Desk Study report in order to gain a wider understanding of the site.

Limitations

It should be noted that there were a number of constraints and limitations regarding the locations of the soil infiltration tests.

An existing sewer is present running east-west along the rear of the site, within the area of existing hardstanding.

The sewer also runs north-south within the eastern part of the site, beneath the site access.

The southwest area of the site was covered in fly tipped materials and was inaccessible for the site works.

The approximate extent of the site constraints are indicated on Figure 2.

Fieldworks

Intégral Géotechnique (Wales) Limited attended site during February 2026 to carry out soil infiltration testing at 2 No. locations. The location of the trial pits/soil infiltration tests are shown in Figure 2.

The two trial pits (ref. SA01 and SA02) were excavated to depths of 2.0m and 2.2m bgl, respectively, using a JCB 3CX wheeled excavator. The pits were terminated due to collapse and instability within the made ground caused by removal of cobbles and boulders and the general granular nature of the made ground.

The fieldworks were supervised by a qualified Geotechnical Engineer from Intégral Géotechnique (Wales) Limited who also logged the trial pits and prepared their detailed engineering logs in accordance with the requirements of BS5930:2015+A1:2020. The engineering logs provide descriptions of the materials encountered in accordance with BSEN ISO 14688-1 (2002) and 14689-1 (2003) for soils and rocks respectively.

The trial pits were rapidly filled with water from a tractor-towed agricultural bowser and the water level monitored over a period of time.

Due to time constraints and lack of infiltration only one test cycle was completed within both SA01 and SA02.

Upon completion the trial pits were backfilled with the excavated arisings.

The trial pit logs are presented in Appendix A, while the soil infiltration test calculation sheets are presented in Appendix B.

Ground Conditions

The ground conditions encountered within the trial pits comprised a thin layer of hardstanding over made ground of an approximate thickness of 1.8m, overlying cohesive natural clay soils.

Hardstanding

A thin layer of tarmac was encountered at both trial pit locations.

The tarmac was generally encountered to a depth of approximately 0.07m below ground level (bgl).

Made Ground

In both trial pits the hardstanding was underlain by historic made ground comprising dark brown very gravelly sand with gravel of fine to coarse angular to sub-angular mudstone, brick, and coal. Both trial pits also contained a low cobble and boulder content of mudstone.

Locally, SA01 encountered a 200mm thick concrete obstruction with associated rebar at approximately 1.20m bgl. Evidence of more recent backfill/made ground was observed above the concrete obstruction.

The made ground was encountered to approximate depths of 1.4m bgl in SA01 and 1.85m bgl in SA02.

Natural Cohesive Deposits

In situ natural cohesive deposits were encountered in both trial pits, underlying the made ground. The deposits generally comprised soft to firm, grey mottled yellow slightly silty slightly gravelly clay with a low boulder content of angular sandstone. The gravel was fine to coarse angular to sub-angular, of mudstone.

These cohesive deposits were encountered to the base of the exploratory pits, to approximate depths of 2.00m bgl in SA01 and 2.20m bgl in SA02.

Stability

Instability and localised collapse was observed in the granular made ground as a result of removal of cobbles and boulders during excavation.

Groundwater

Slow seepage of groundwater was encountered within SA01 at 2.0m depth.

No groundwater was encountered within SA02.

It should be noted that the groundwater conditions are based on observations made at the time of the fieldwork and groundwater levels may vary due to seasonal and other effects.

Soil Infiltration Test Results

Soil infiltration testing was undertaken in SA01 and SA02 in general accordance with BRE 365.

The soil infiltration test results are specific to the locations and depths of the tests undertaken.

It should be noted that the soil infiltration testing was undertaken within both the made ground and underlying natural cohesive deposits.

The results of the soil infiltration testing are presented in Appendix B and summarised below in Table 1.

Table 1: Summary of Soil Infiltration Testing

Trial Pit Location	Depth of Pit (m)	Infiltration Rate (m/s)			Design infiltration rate (m/s)
		Cycle 1	Cycle 2	Cycle 3	
SA01	2.00	N/A	N/A	N/A	**N/A**
SA02	2.20	N/A	N/A	N/A	**N/A**

Whilst initial infiltration was observed within the granular made ground, the infiltration stalled within the cohesive in situ natural soils.

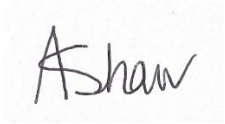
Installation of soakaways within made ground are not typically recommended due to the inherent lateral and vertical variability in composition and compaction of the made ground which may result in inconsistent infiltration rates. Additionally, infiltration into made ground has the potential to generate unacceptable levels of leachate which may present a potential risk to controlled waters.

In addition, the underlying cohesive soils will restrict vertical water infiltration and dispersal.

The results of the soakaway testing should be provided to a suitably qualified drainage engineer.

We trust the above and enclosed are to your satisfaction. However, if you have any queries or require any further information, please do not hesitate to contact us.

Yours faithfully,



Adam Shaw
For
Intégral Géotechnique (Wales) Limited

Encl.

Appendix A – Trial Pit Logs
Appendix B – Soil Infiltration Test Calculation Sheets

Figure 1 - Site Location
Figure 2 - Site Plan

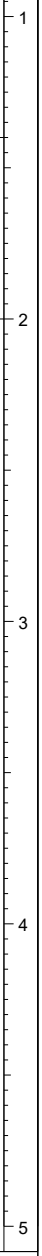
Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name:	Project No.:	Trial Pit No.:
Former Social Club, Tonypandy	**14557**	**SA01** Sheet 1 of 1

Location:	Client:	Logged By:	Scale
172 Brithweunydd Road, Tonypandy	Easy Living Ltd	AS	1:25

Equipment:	Coordinates:	**Dimensions**
JCB3CX		2.00m
Date Excavated: 19/02/2026	Level:	Depth : 2.00m, 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.07			Tarmac.
						Dark brown very gravelly SAND. Gravel is fine to coarse angular to sub-angular of mudstone, brick, and coal with a low cobble content and boulder content of mudstone.
						200mm thick concrete slab with associated rebar at 1.20m bgl
			1.40			(Soft to firm) grey mottled yellow slightly silty slightly gravelly CLAY with a low boulder content of angular sandstone. Gravel is fine to coarse angular to sub-angular of mudstone.
			2.00			End of Trialpit at 2.00 m



Remarks:
1. Machine excavated trial pit to 2.0m bgl. 2. Terminated at 2.0 due to instability.

Groundwater: Slow seepage at 2.00m bgl.

Stability: Unstable: collapse of trial pit side-walls within the made ground due to cobble and boulder content.

Key:
D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
W - Water sample

AGS

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name:	Project No.:	Trial Pit No.:
Former Social Club, Tonypandy	**14557**	**SA02** Sheet 1 of 1

Location:	Client:	Logged By:	Scale
172 Brithweunydd Road, Tonypandy	Easy Living Ltd	AS	1:25

Equipment:	Coordinates:	**Dimensions**
JCB3CX		2.10m
Date Excavated: 19/02/2026	Level:	Depth : 2.20m, 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.07			Tarmac.
						Dark brown very gravelly SAND. Gravel is fine to coarse angular to sub-angular of mudstone, brick, and coal with a medium cobble content and low boulder content of mudstone.
			1.85			(Soft to firm) grey mottled yellow slightly silty slightly gravelly CLAY with a low boulder content of angular sandstone. Gravel is fine to coarse angular to sub-angular of mudstone.
			2.20			End of Trialpit at 2.20 m

Remarks:
1. Machine excavated trial pit to 2.2m bgl. 2. Terminated at 2.2 due to instability.

Groundwater: No groundwater encountered.

Stability: Unstable: collapse of trial pit side-walls within the made ground due to cobble and boulder content.

Key:
D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
W - Water sample

AGS

APPENDIX B

SOIL INFILTRATION TEST CALCULATION SHEETS

BRE365 SOIL INFILTRATION RATE TEST - SA01

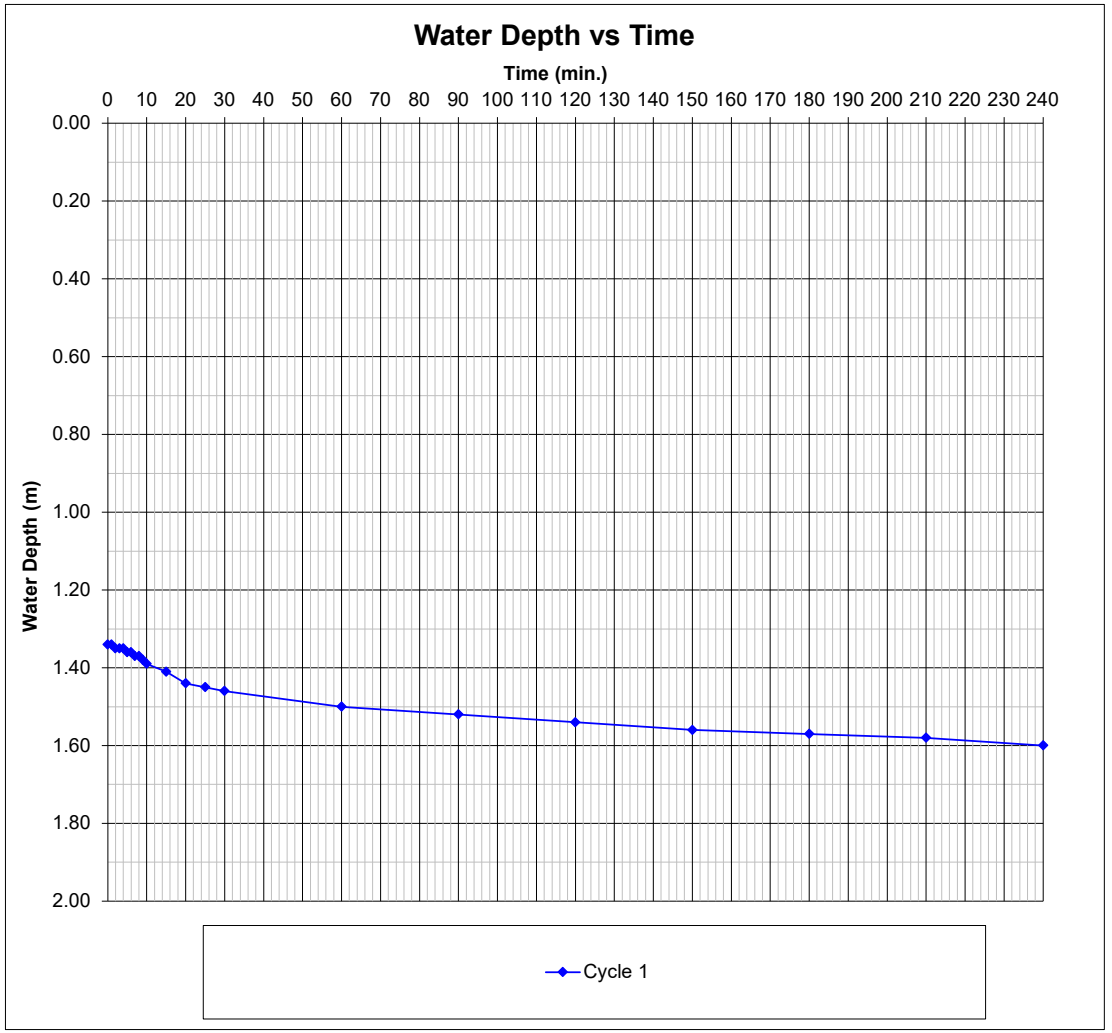
Trial Pit Information	
Length (m)	2.00
Width (m)	0.70
Depth (m)	2.00
Groundwater	n/a
Weather Conditions	Mild
Date	19-Feb-26

Remarks

1. Test undertaken within made ground and underlying natural coheisve deposits.
2. Insufficient infiltration observed.

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	1.34				
1	1.34				
2	1.35				
3	1.35				
4	1.35				
5	1.36				
6	1.36				
7	1.37				
8	1.37				
9	1.38				
10	1.39				
15	1.41				
20	1.44				
25	1.45				
30	1.46				
60	1.50				
90	1.52				
120	1.54				
150	1.56				
180	1.57				
210	1.58				
240	1.6				

Final Excavation Depth (m)	Cycle 1	Cycle 2	Cycle 3
At end of testing cycle	2.00		
Water Depths (m)			
Water depth at start of test	1.34		
Water depth at end of test	1.60		
Effective depth (measured)	0.26		
% Effective storage depth	0.39		
Effective Storage Depths (m)			
Effective storage depth (100%)	0.66		
Effective storage depth (75%)	0.50		
Effective storage depth (50%)	0.33		
Effective storage depth (25%)	0.17		
Outflow Time (min)			
Time for measured outflow	240		
Time for 100% outflow	N/A		
Time for 75-25% outflow	N/A		
Volume of Outflow (m^3)			
Over measured effective depth	0.36		
Over 100% effective depth	0.92		
From 75% - 25% effective depth	0.46		
Surface Area (m^2)			
For 100% effective storage	4.96		
For 50% effective storage	3.18		
Over measured depth	2.80		
Soil Infiltration Rate (m/s)	**Cycle 1**	**Cycle 2**	**Cycle 3**
Over 100% effective depth	N/A		
Over measured depth	N/A		
Over 75% - 25% effective depth	**N/A**		



Intégral Géotechnique

BRE365 SOIL INFILTRATION RATE TEST - SA02

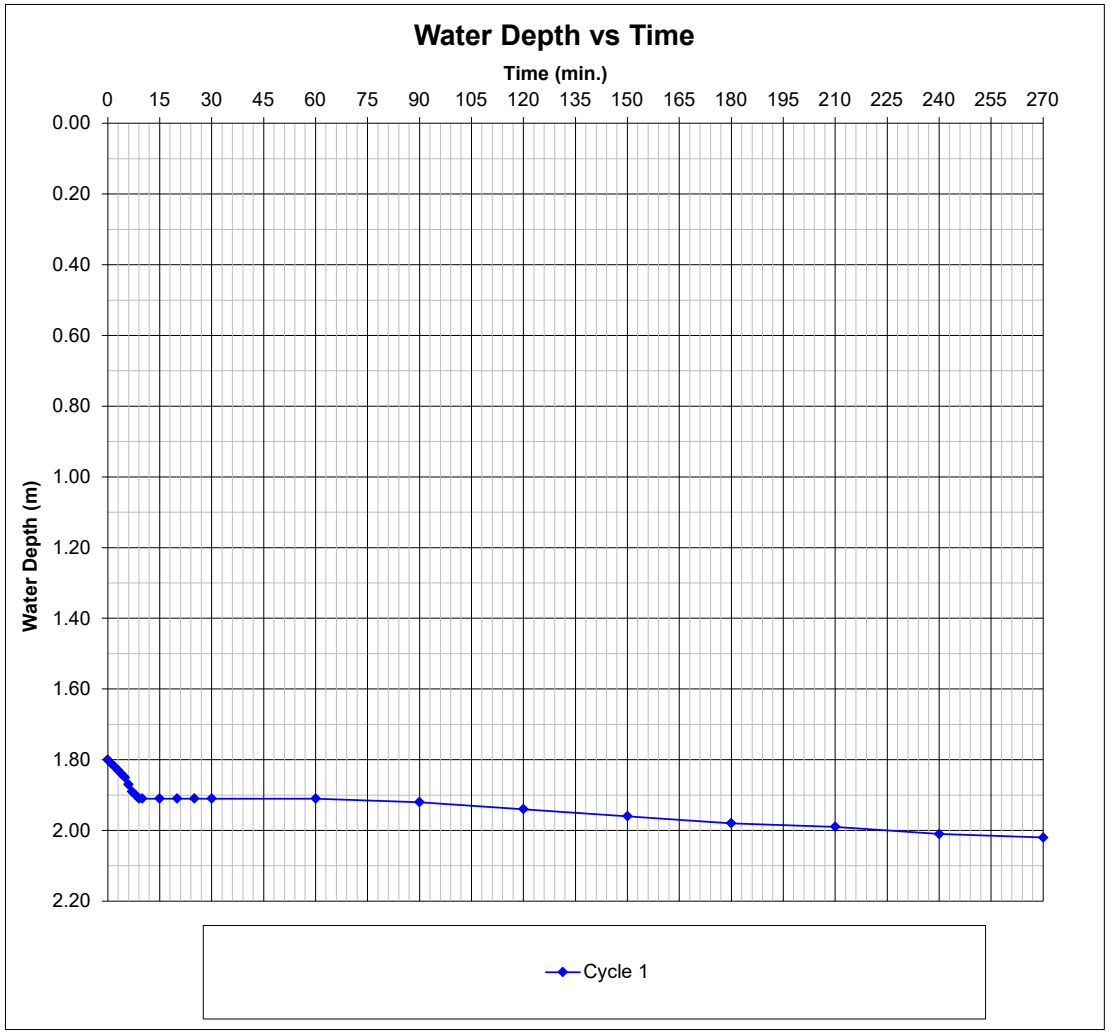
Trial Pit Information	
Length (m)	2.10
Width (m)	0.70
Depth (m)	2.20
Groundwater	n/a
Weather Conditions	Mild
Date	19-Feb-26

Remarks

1. Test undertaken within made ground and underlying natural coheisve deposits.
2. Insufficient infiltration observed..

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	1.80				
1	1.81				
2	1.82				
3	1.83				
4	1.84				
5	1.85				
6	1.87				
7	1.89				
8	1.90				
9	1.91				
10	1.91				
15	1.91				
20	1.91				
25	1.91				
30	1.91				
60	1.91				
90	1.92				
120	1.94				
150	1.96				
180	1.98				
210	1.99				
240	2.01				
270	2.02				

Final Excavation Depth (m)	Cycle 1	Cycle 2	Cycle 3
At end of testing cycle	2.20		
Water Depths (m)			
Water depth at start of test	1.80		
Water depth at end of test	2.02		
Effective depth (measured)	0.22		
% Effective storage depth	0.55		
Effective Storage Depths (m)			
Effective storage depth (100%)	0.40		
Effective storage depth (75%)	0.30		
Effective storage depth (50%)	0.20		
Effective storage depth (25%)	0.10		
Outflow Time (min)			
Time for measured outflow	270		
Time for 100% outflow	N/A		
Time for 75-25% outflow	N/A		
Volume of Outflow (m^3)			
Over measured effective depth	0.32		
Over 100% effective depth	0.59		
From 75% - 25% effective depth	0.29		
Surface Area (m^2)			
For 100% effective storage	3.71		
For 50% effective storage	2.59		
Over measured depth	2.70		
Soil Infiltration Rate (m/s)	**Cycle 1**	**Cycle 2**	**Cycle 3**
Over 100% effective depth	N/A		
Over measured depth	N/A		
Over 75% - 25% effective depth	**N/A**		



Intégral Géotechnique

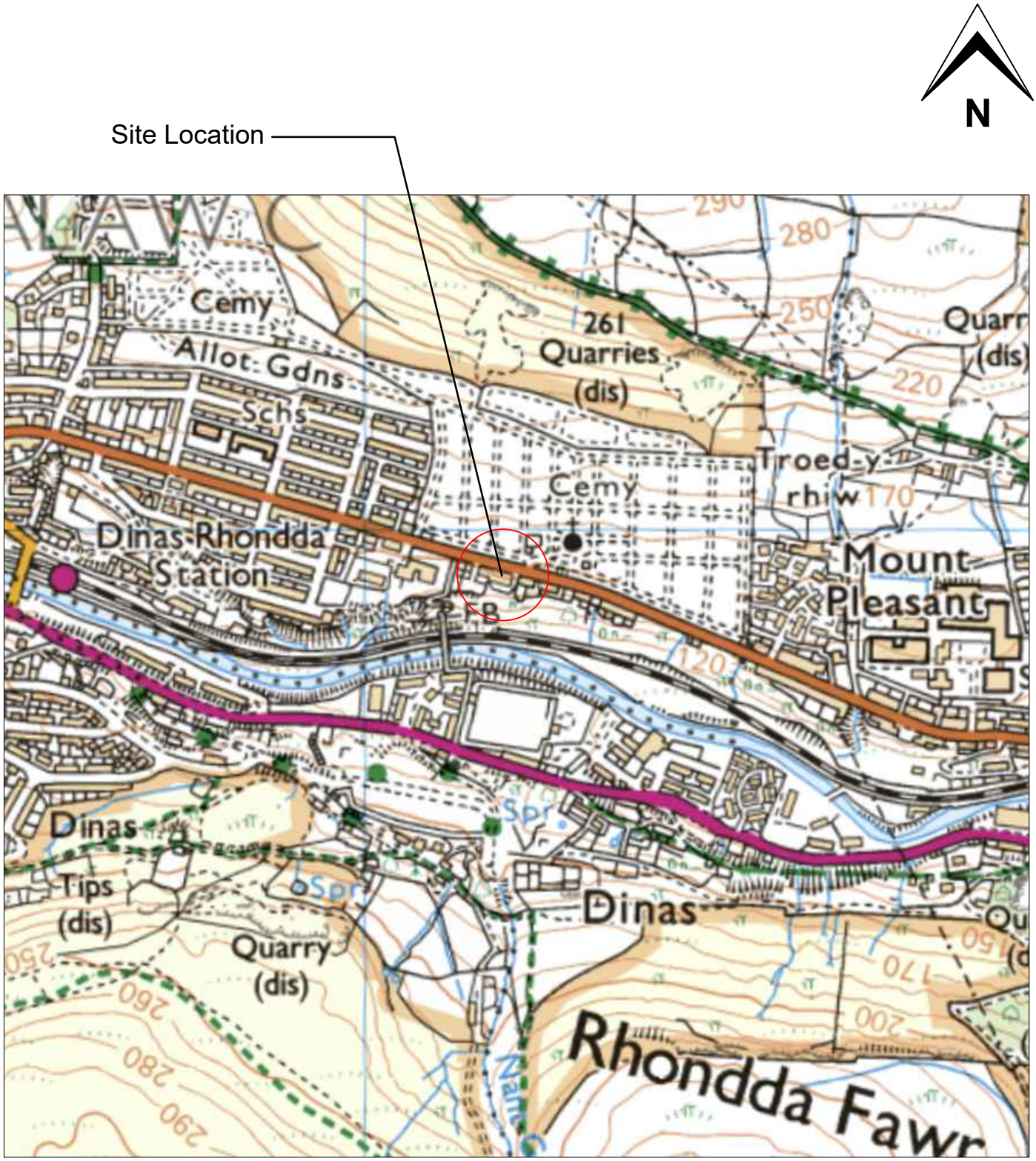


Figure 1: Site Location

Project: Former Social Club, Tonypandy	Job no.: 14557	**Intégral** Géotechnique	Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX. Tel: 029 2080 7991
Client: Easy Living Ltd	Scale: NTS		

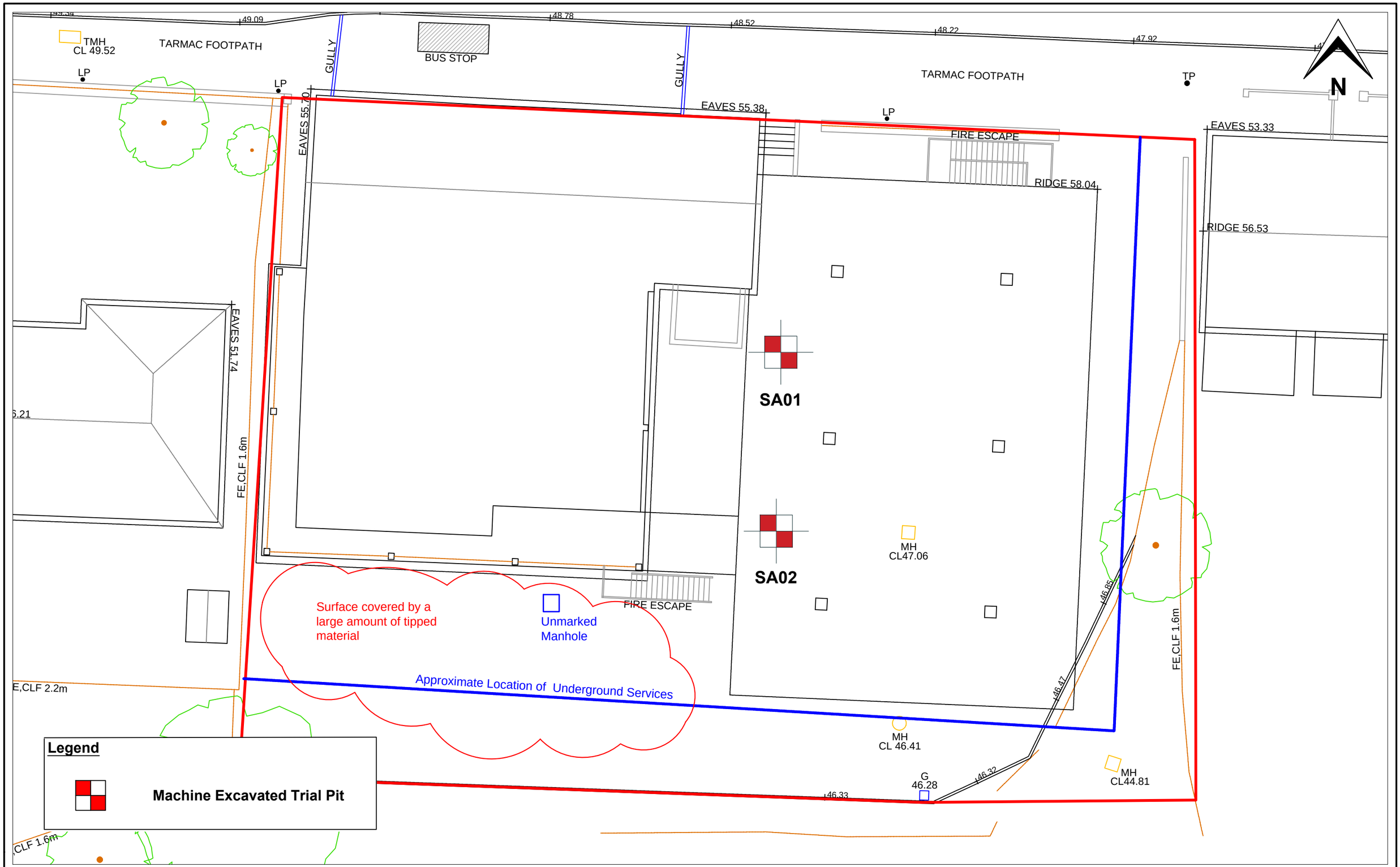


Figure 2: Exploratory Hole Location Plan

Project: Former Social Club, Tonypandy	Job No.: 14557	Intégral Géotechnique
Client: Easy Living Ltd	Scale: n/a	Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX. Tel: 029 2080 7991

Appendix C

DCWW Correspondence

Clare Cooke

From: Bridget Jones <Bridget.Jones@dwrcymru.com>
Sent: 30 September 2026 15:45
To: Clare Cooke
Subject: RE: INT26010 - Former Social Club Tonypandy - Proposed connection

Hi Clare,

Thanks for this. We are happy with the principle subject to the lowest discharge rate being obtained and presented to us for review with evidence as why it's the lowest.

Kind Regards,

Bridget Jones
Lead Development Planning Officer – Developer services
Dwr Cymru Welsh Water
Linea | Fortran Road | St Mellons | CF3 0LT
www.dwrcymru.com

Mobile Tel: **+442922944264**
Email: Bridget.Jones@dwrcymru.com



From: Clare Cooke <Clare.cooke@intrado.co.uk>
Sent: 30 September 2026 11:49
To: Bridget Jones <Bridget.Jones@dwrcymru.com>
Subject: RE: INT26010 - Former Social Club Tonypandy - Proposed connection

******** External Mail ********
Thanks,

I guess the betterment % would be driven by DCWW.

Regards,

Clare

Clare Cooke
Director

intrado
Consulting Engineers

Tel: 029 20 811097
Mobile : 07855 530066

www.intrado.co.uk

From: Bridget Jones <Bridget.Jones@dwrcymru.com>
Sent: 30 September 2026 11:47
To: Clare Cooke <Clare.cooke@intrado.co.uk>
Subject: RE: INT26010 - Former Social Club Tonypandy - Proposed connection

Hi Clare,

Looking to raise it today. If the rates can't be submitted today that's no worries as I will present it as a betterment from the existing scenario.

Kind Regards,

Bridget Jones
Lead Development Planning Officer – Developer services
Dwr Cymru Welsh Water
Linea | Fortran Road | St Mellons | CF3 0LT
www.dwrcymru.com

Mobile Tel: **+442922944264**
Email: Bridget.Jones@dwrcymru.com



From: Clare Cooke <Clare.cooke@intrado.co.uk>
Sent: 30 September 2026 11:46
To: Bridget Jones <Bridget.Jones@dwrcymru.com>
Subject: RE: INT26010 - Former Social Club Tonypandy - Proposed connection

******** External Mail ********
Hi Bridget,

Apologies I was out of the office yesterday, we would be providing betterment on the current scenario.

When is the next internal review I will get the rates across to you?

Regards,

Clare

Clare Cooke
Director

Tel: 029 20 811097
Mobile : 07855 530066

www.intrado.co.uk

From: Bridget Jones <Bridget.Jones@dwrcymru.com>
Sent: 29 September 2026 09:49
To: Clare Cooke <Clare.cooke@intrado.co.uk>
Subject: RE: INT26010 - Former Social Club Tonypandy - Proposed connection

Thanks Clare. Do you have the proposed flow rates I can take with me for an internal review tomorrow?

Kind Regards,

Bridget Jones
Lead Development Planning Officer – Developer services
Dwr Cymru Welsh Water
Linea | Fortran Road | St Mellons | CF3 0LT
www.dwrcymru.com

Mobile Tel: **+442922944264**
Email: Bridget.Jones@dwrcymru.com



From: Clare Cooke <Clare.cooke@intrado.co.uk>
Sent: 23 September 2026 13:57
To: Bridget Jones <Bridget.Jones@dwrcymru.com>
Subject: RE: INT26010 - Former Social Club Tonypandy - Proposed connection

******** External Mail ********
Hi Bridget,

Yes, a tanked permeable surface needs an outlet to your sewer, it will provide betterment on the current scenario.

Similarly the green roof needs an outlet, however the run off will be significantly less than the current scenario.

Regards,

Clare

Clare Cooke

Director

intrado
Consulting Engineers

Tel: 029 20 811097
Mobile : 07855 530066

www.intrado.co.uk

From: Bridget Jones <Bridget.Jones@dwrcymru.com>
Sent: 23 September 2026 09:21
To: Clare Cooke <Clare.cooke@intrado.co.uk>
Subject: RE: INT26010 - Former Social Club Tonypandy - Proposed connection

Thanks Clare,

When you say permeable and tanked, will that be an attenuation device that eventually discharges to the combined sewer?

Furthermore, with the green roof, will there be any surface water run off from here into our asset?

Kind Regards,

Bridget Jones
Lead Development Planning Officer – Developer services
Dwr Cymru Welsh Water
Linea | Fortran Road | St Mellons | CF3 0LT
www.dwrcymru.com

Mobile Tel: **+442922944264**
Email: Bridget.Jones@dwrcymru.com



From: Clare Cooke <Clare.cooke@intrado.co.uk>
Sent: 16 September 2026 14:09
To: Bridget Jones <Bridget.Jones@dwrcymru.com>
Subject: RE: INT26010 - Former Social Club Tonypandy - Proposed connection

******** External Mail ********
HI Bridget,

Currently the site is 100% impermeable, from either building or car park.

The proposed layout will be all building and car park, however with SAB we will have a green roof to the building and the car park will be permeable and tanked.

Regards,

Clare

Clare Cooke
Director

intrado
Consulting Engineers

Tel: 029 20 811097
Mobile : 07855 530066

www.intrado.co.uk

From: Bridget Jones <Bridget.Jones@dwrcymru.com>
Sent: 15 September 2026 15:55
To: Clare Cooke <Clare.cooke@intrado.co.uk>
Subject: RE: INT26010 - Former Social Club Tonypandy - Proposed connection

Thanks Clare, great to hear the BOS query has resolved.

Could you provide detail on whether the proposal (block of flats) will result in an increase of impermeable material or result in a reduction?

Kind Regards,

Bridget Jones
Lead Development Planning Officer – Developer services
Dwr Cymru Welsh Water
Linea | Fortran Road | St Mellons | CF3 0LT
www.dwrcymru.com

Mobile Tel: **+442922944264**
Email: Bridget.Jones@dwrcymru.com



From: Clare Cooke <Clare.cooke@intrado.co.uk>
Sent: 15 September 2026 12:48

To: Bridget Jones <Bridget.Jones@dwrcymru.com>
Subject: RE: INT26010 - Former Social Club Tonypandy - Proposed connection

******** External Mail ********
Hi Bridget,

Firstly, I have had confirmation on the BOS thank you.

With regards the development yes the existing building will be demolished prior to development.

Regards,

Clare

Clare Cooke
Director

intrado
Consulting Engineers

Tel: 029 20 811097
Mobile : 07855 530066

www.intrado.co.uk

From: Bridget Jones <Bridget.Jones@dwrcymru.com>
Sent: 11 September 2026 09:44
To: Clare Cooke <Clare.cooke@intrado.co.uk>
Subject: RE: INT26010 - Former Social Club Tonypandy - Proposed connection

Hi Clare,

Thanks for the email. Could you provide some more detail about the development? Will there be any demolition involved? Any increase in impermeable area?

Have you had a response on your original BOS query as well or is that still outstanding?

Kind Regards,

Bridget Jones
Lead Development Planning Officer – Developer services
Dwr Cymru Welsh Water
Linea | Fortran Road | St Mellons | CF3 0LT
www.dwrcymru.com

Mobile Tel: **+442922944264**
Email: Bridget.Jones@dwrcymru.com



From: Clare Cooke <Clare.cooke@intrado.co.uk>
Sent: 08 September 2026 13:34
To: Services Developer <developer.services@dwrcymru.com>
Subject: INT26010 - Former Social Club Tonypandy - Proposed connection

******** External Mail ********
Dear Sirs,

We have been investigating the drainage at:

Former Social Club Tonypandy
The Rez
171-172 Brithweunyd Road
Tonypandy
CF40 2UH

As part of the redevelopment of the site. The existing building is currently unused.

From the CCTV and dye testing the rainwater pipes and gullies serving the existing building and hardstanding discharge into the combined sewer, as per the evidence in the WeTransfer link - https://we.tl/t-QPcDtvMjYMaPPZ3R

Infiltration test have shown that is not a suitable means by which to discharge the surface water.

There are no watercourse local to the site and the nearest surface water sewers to the west connect into the combined sewer.

We have yet to apply or planning but are starting the early dialogue with yourself to arrive at a solution for the proposed development of flats to allow a solution to be out forward for planning.

If you need anything further please advise.

Regards,

Clare

Clare Cooke
Director

intrado
Consulting Engineers

Tel: 029 20 811097
Mobile : 07855 530066

Appendix D

Existing Drainage Info Drainage Model

Former Social Club : Brownfield run off rate	Date: 01/10/2026		
	Designed by: customer	Checked by:	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	Intrado ltd:		

Name	Cover Level (m) Invert Level (m)	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)		Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
ST01912901	44.810 42.720	Diameter / Length: 0.600	{1} Pipe (3)	Pipe	42.720	Diam/Width:225	Manhole
E:5018.993 N:6983.658	2.090		{a} Pipe	Pipe	42.720	Diam/Width:225	Not Applicable
ST01912902	47.950 42.500	Diameter / Length: 0.600	{1} Pipe	Pipe	42.500	Diam/Width:225	Manhole
E:5020.935 N:7017.233	5.450						Not Applicable
SMH2	46.410 46.100	Diameter / Length: 0.600	{1} Pipe (1)	Pipe	46.100	Diam/Width:150	Manhole
E:5009.739 N:6985.357	0.310		{a} Pipe (2)	Pipe	46.100	Diam/Width:150	Not Applicable
SMH3	46.350 44.790	Diameter / Length: 0.600	{1} Pipe (2) {2} Pipe (4)	Pipe Pipe	44.790 44.790	Diam/Width:150 Diam/Width:225	Manhole
E:5008.778 N:6983.281	1.560		{a} Pipe (3)	Pipe	44.790	Diam/Width:225	Not Applicable
ST01911951	46.440 44.870	Diameter / Length: 0.600					Manhole
E:4992.290 N:6983.691	1.570		{a} Pipe (4)	Pipe	44.870	Diam/Width:225	Not Applicable
SMH1	47.060 46.540	Diameter / Length: 0.600					Manhole
E:5010.096 N:6993.272	0.520		{a} Pipe (1)	Pipe	46.540	Diam/Width:150	Not Applicable

Former Social Club : Brownfield run off rate	Date: 01/10/2026		
	Designed by: customer	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	Intrado ltd:		

Critical Storm Per Item: Rank By: Max. Outflow

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
ST01912901	FEH: 2 years: +0 %: 15 mins: Summer	44.810	42.720	42.827	0.107	18.7	0.030	0.000	17.7	8.292	OK
ST01912902	FEH: 2 years: +0 %: 15 mins: Summer	47.950	42.500	42.601	0.101	17.7	0.000	0.000	17.8	8.292	OK
SMH2	FEH: 2 years: +0 %: 15 mins: Summer	46.410	46.100	46.122	0.022	6.7	0.006	0.000	6.7	2.938	Flood Risk
SMH3	FEH: 2 years: +0 %: 15 mins: Summer	46.350	44.790	44.831	0.041	17.8	0.012	0.000	17.6	7.835	OK
ST01911951	FEH: 2 years: +0 %: 15 mins: Summer	46.440	44.870	44.952	0.082	9.7	0.023	0.000	9.5	4.217	OK
SMH1	FEH: 2 years: +0 %: 15 mins: Summer	47.060	46.540	46.586	0.046	6.8	0.013	0.000	6.7	2.939	OK



ST01912901 Type : Manhole

Critical Storm: FEH: 2 years: Increase Rainfall (%): +0: 15 mins: Summer

Tables

Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	4.0	0.046	0.013	0.000	3.6
10	18.7	0.107	0.030	0.000	17.7
15	5.1	0.058	0.016	0.000	6.1
20	0.5	0.023	0.006	0.000	0.9
25	0.0	0.006	0.002	0.000	0.1
30	0.0	0.002	0.001	0.000	0.0



ST01912902 Type : Manhole

Critical Storm: FEH: 2 years: Increase Rainfall (%): +0: 15 mins: Summer

Tables

Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	3.6	0.044	0.000	0.000	3.6
10	17.7	0.101	0.000	0.000	17.8
15	6.1	0.058	0.000	0.000	6.1
20	0.9	0.023	0.000	0.000	0.9
25	0.1	0.006	0.000	0.000	0.1
30	0.0	0.002	0.000	0.000	0.0



SMH2 Type : Manhole

Critical Storm: FEH: 2 years: Increase Rainfall (%): +0: 15 mins: Summer

Tables

Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	1.5	0.010	0.003	0.000	1.4
10	6.7	0.022	0.006	0.000	6.7
15	1.7	0.011	0.003	0.000	1.7
20	0.1	0.004	0.001	0.000	0.2
25	0.0	0.000	0.000	0.000	0.0
30	0.0	0.000	0.000	0.000	0.0



SMH3 Type : Manhole

Critical Storm: FEH: 2 years: Increase Rainfall (%): +0: 15 mins: Summer

Tables

Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	3.8	0.020	0.006	0.000	3.8
10	17.8	0.041	0.012	0.000	17.6
15	4.6	0.022	0.006	0.000	4.8
20	0.4	0.008	0.002	0.000	0.5
25	0.0	0.001	0.000	0.000	0.0
30	0.0	0.000	0.000	0.000	0.0



ST01911951 Type : Manhole

Critical Storm: FEH: 2 years: Increase Rainfall (%): +0: 15 mins: Summer

Tables

Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	2.2	0.039	0.011	0.000	2.0
10	9.7	0.082	0.023	0.000	9.5
15	2.2	0.041	0.012	0.000	2.5
20	0.0	0.013	0.004	0.000	0.2
25	0.0	0.003	0.001	0.000	0.0
30	0.0	0.002	0.001	0.000	0.0



SMH1 Type : Manhole

Critical Storm: FEH: 2 years: Increase Rainfall (%): +0: 15 mins: Summer

Tables

Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	1.5	0.021	0.006	0.000	1.5
10	6.8	0.046	0.013	0.000	6.7
15	1.5	0.022	0.006	0.000	1.7
20	0.0	0.006	0.002	0.000	0.1
25	0.0	0.001	0.000	0.000	0.0
30	0.0	0.001	0.000	0.000	0.0



Pipe
Critical Storm: FEH: 2 years: Increase Rainfall (%): +0: 15 mins: Summer

Type : Pipe

Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.045	3.6
10	0.104	17.7
15	0.058	6.1
20	0.023	0.9
25	0.006	0.1
30	0.002	0.0



Pipe (1)
Critical Storm: FEH: 2 years: Increase Rainfall (%): +0: 15 mins: Summer

Type : Pipe

Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.016	1.5
10	0.034	6.7
15	0.017	1.7
20	0.005	0.1
25	0.001	0.0
30	0.000	0.0



Pipe (2)
Critical Storm: FEH: 2 years: Increase Rainfall (%): +0: 15 mins: Summer

Type : Pipe

Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.015	1.4
10	0.032	6.7
15	0.017	1.7
20	0.006	0.2
25	0.001	0.0
30	0.000	0.0



Pipe (3)
Critical Storm: FEH: 2 years: Increase Rainfall (%): +0: 15 mins: Summer

Type : Pipe

Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.033	3.8
10	0.074	17.6
15	0.040	4.8
20	0.015	0.5
25	0.004	0.0
30	0.001	0.0



Pipe (4)
Critical Storm: FEH: 2 years: Increase Rainfall (%): +0: 15 mins: Summer

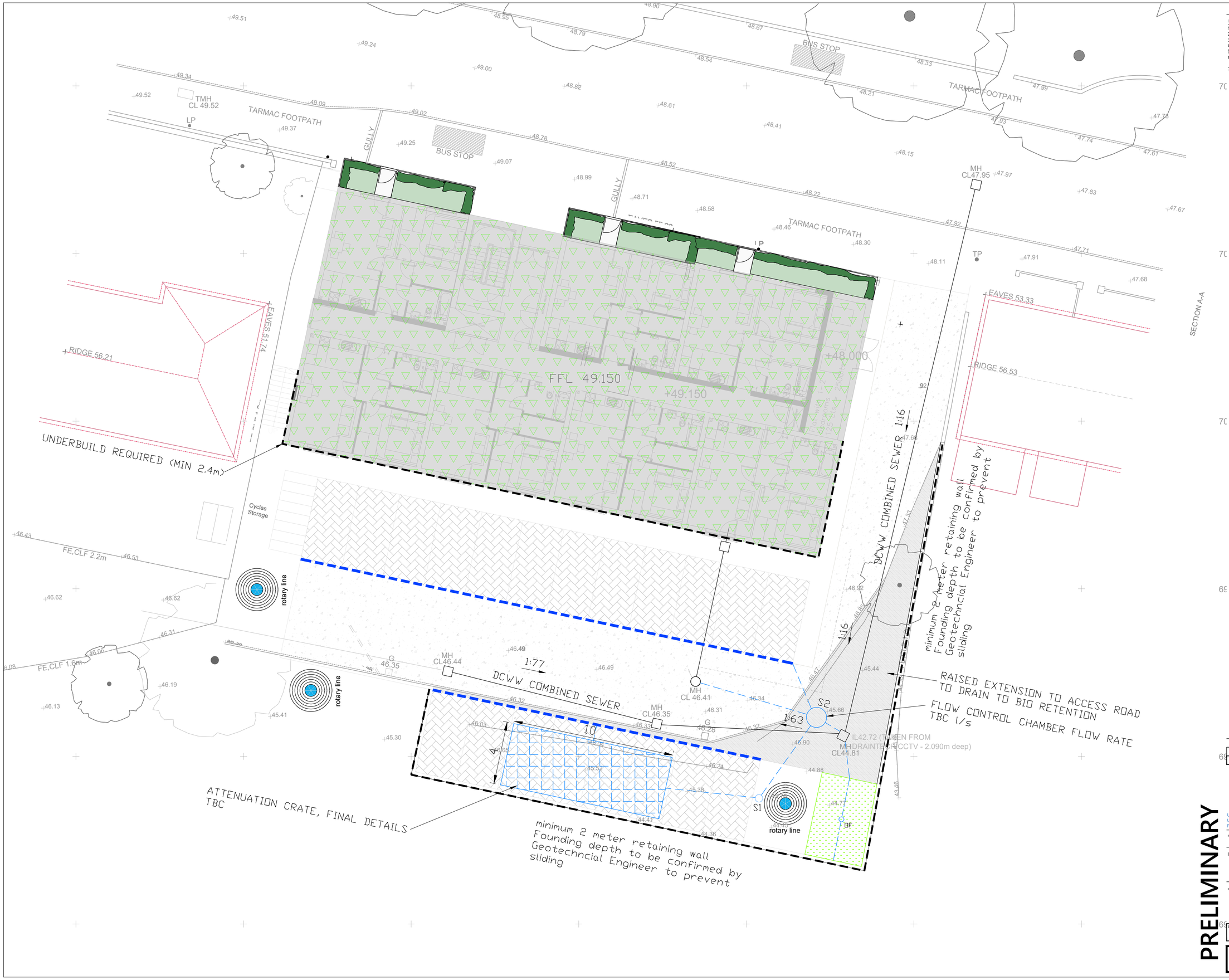
Type : Pipe

Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.029	2.0
10	0.061	9.5
15	0.032	2.5
20	0.010	0.2
25	0.002	0.0
30	0.001	0.0

Appendix E

Preliminary Drainage Drawings.



NOTES

GENERAL

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.
3. ALL LEVELS RELATE TO ORDNANCE DATUM UNLESS NOTED OTHERWISE.
4. DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS ONLY.
5. ANY DISCREPANCIES TO BE REPORTED IMMEDIATELY TO THE ENGINEER.
6. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, SUBCONTRACTORS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
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KEY:

- STORM WATER SEWER
- DCWW COMBINED SEWER
- GREEN ROOF
- PERMEABLE PAVING
- BIO RETENTION AREA
- EXISTING ACCESS ROAD
- RETAINING WALL
- PERFORATED PIPE
- FINN DRAIN

REV.	DESCRIPTION	BY	DATE
P2	SECOND ISSUE	JE	23/11/2026
P1	FIRST ISSUE	JE	16/11/2026

PRELIMINARY

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Upper Boat Business Centre,
Pontypridd CF37 5BP
tel: 02920 811097
web: www.intrado.co.uk
e-mail: admin@intrado.co.uk

client: EASY LIVING

project: FORMER SOCIAL CLUB TONYPANDY

drawing title: PROPOSED DRAINAGE LAYOUT

drawn	chkd	scale	date
JE	CLC	1:100@A1	FEB 2026

Preliminary ☒ Tender ☐ Construction ☐	Job No.	Drawing No.	Rev.
	INT26010	100	P2

NOTES

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TARMAC FOOTPATH
BUS STOP
TMH CL 49.52
LP
GULLY
MH CL47.95
TP
FIRE ESCAPE
EAVES 55.38
EAVES 51.74
RIDGE 56.21
EAVES 53.33
RIDGE 56.53
SECTION A-A
49.000
+48.000
FFL 49.150
+49.150
Flat with 1-2 bedrooms = 125 Lts = 250Lts
EX 48.11
EX 47.92
1:16
1:77
1:63
FE.CLF 1.6m
FE.CLF 2.2m
UNDERBUILD REQUIRED (MIN 2.4m)
46.750
46.764
46.835
46.710
46.915
EX 46.92
EX 46.70
EX 46.49
46.602
46.400
EX 46.34
46.420
46.468
EX 45.41
EX 45.30
46.483
46.402
46.414
EX 43.95
EX 43.46
46.465
rotary line
Cycles Storage
RAISED EXTENSION TO ACCESS ROAD TO DRAIN TO BIO RETENTION
ADDITIONAL LEVELS REQUIRED TO CONFIRM HEIGHT AND EXTENT OF RETAINING WALL

REV.	DESCRIPTION	BY	DATE
P1	FIRST ISSUE	JE	23/11/2026

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client: EASY LIVING

project: FORMER SOCIAL CLUB TONYPANDY

drawing title: PROPOSED LEVELS

drawn	chkd	scale	date
JE	CLC	1:100@A1	NOV 2026

Preliminary	Tender	Construction	Job No.	Drawing No.	Rev.
☒	☐	☐	INT26010	101	P1

NOTES

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EXISTING CONTRIBUTING AREAS

- ROAD/FOOTPATHS-361.32 m²
- BUILDING ROOFS - 705.7 m²

P1	FIRST ISSUE	JE	16-11-2026
REV.	DESCRIPTION	BY	DATE

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project: FORMER SOCIAL CLUB TONYPANDY

drawing title: EXISTING CONTRIBUTING AREAS

drawn	chkd	scale	date
JE	CC	1:100@A1	NOV 2026

	Job No.	Drawing No.	Rev.
Preliminary ☒ Tender ☐ Construction ☐	INT26010	102	P1

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PROPOSED CONTRIBUTING AREAS

513 m^2

250 m^2

15 m^2

74 m^2

EXISTING CONTRIBUTING AREAS

225 m^2

SECTION A-A

+48.000

+49.150

Cycles Storage

rotary line

rotary line

rotary line

PRELIMINARY

P1	FIRST ISSUE	JE	16/11/26
REV.	DESCRIPTION	BY	DATE

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Unit C
Upper Boat Business Centre,
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e-mail: admin@intrado.co.uk

client: EASY LIVING

project: FORMER SOCIAL CLUB TONYPANDY

drawing title: PROPOSED CONTRIBUTING AREA

drawn	chkd	scale	date
JE	CLC	1:200@A1	NOV 2026

	Job No.	Drawing No.	Rev.
Preliminary ☒ Tender ☐ Construction ☐	INT26010	103	P1