Clifton Scannell Emerson Associates

Cavan Abbeylands Public Realm Design and Redevelopment Scheme

Engineering Services Report

Cavan
Comhairle Contae an Chabháin

Client: Cavan County Council

Date: 28th November 2022

Job Number: 19_134

CONSULTING ENGINEERS

Civil Engineering | Structural Engineering | Transport Engineering | Environmental Engineering | Project Management | Health and Safety

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1 Introduction

The Cavan Abbeylands Public Realm Design and Redevelopment Scheme consists of the provision of enhanced public realm in the existing Abbeylands site area, which is the site of a former Franciscan Abbey and associated graveyard. Abbeylands in Cavan Town is of significant archaeological, architectural and civic importance playing a vital role in Cavan Town for over seven centuries. Geographically located at the centre of the island of Ireland, and within the province of Ulster, Cavan Town is located 70 miles northwest of Dublin along two major national road connections; the N3 and the N55 respectively. The town is the largest in County Cavan and holds 'hub' status.

Clifton Scannell Emerson Associates (CSEA) have been appointed by the clients, Cavan County Council, to carry out the planning stage (Part VIII) design of the civil engineering elements for the future Cavan Abbeylands Public Realm Design and Redevelopment Scheme in Cavan Town. As part of their duties, CSEA were requested to prepare this Engineering Report in support of a Part VIII planning application for the Scheme.

This report addresses the following elements from an engineering perspective:

- Strategic Flood Risk Assessment.
- Surface Water Network and Sustainable Urban Drainage Systems (SuDS).
- Foul Sewer Network.
- Water Supply Network.
- ESB Power Supply Network.
- Telecoms Supply Network (Virgin Media and Eir).
- Proposed Internal Road / Street Network.

1.1 Policy Guidance

This report has been prepared taking the following documents into account:

- Cavan County Council Development Plan incorporating a Local Area Plan for Cavan Town.
- Cavan Abbeylands Final Masterplan Report, December 2020.
- TII Traffic and Transport Assessment Guidelines, 2014.
- Pre-development Archaeological Evaluation at the site of Abbeylands Regeneration Project Report by Farrimond MacManus Ltd., May 2021.

2 Site Description

2.1 Site Location and Existing Site Description

The existing Abbeylands site is located centrally within Cavan Town, located 70 miles northwest of Dublin along two major national road connections; the N3 and the N55 respectively. The existing site is bounded to the west by Abbey Street and Farnham Street, to the north by Town Hall Street, to the east by Main Street and to the south by Bridge Street.

The existing development site (shown below in Figure 1) consists of the derelict McIntyre's Furniture Shop on Abbey Street, the Abbeylands open space which is accessed by both vehicles and pedestrians via Abbey Street. This open space area was formerly a graveyard, and it includes a perimeter stone wall and a tower that were associated with the former Abbey that was once on the site. This open space area can also be accessed by pedestrians from Cavan Town Main Street via the backlands alley that is located adjacent to the Credit Union building. The existing development site area also includes a number of derelict buildings, and a derelict former abattoir behind Donohoe's Foodstore, which was previously accessed via both an access from Abbey Street and through the aforementioned Donohue's Foodstore which has an existing entrance fronting on to Bridge Street.

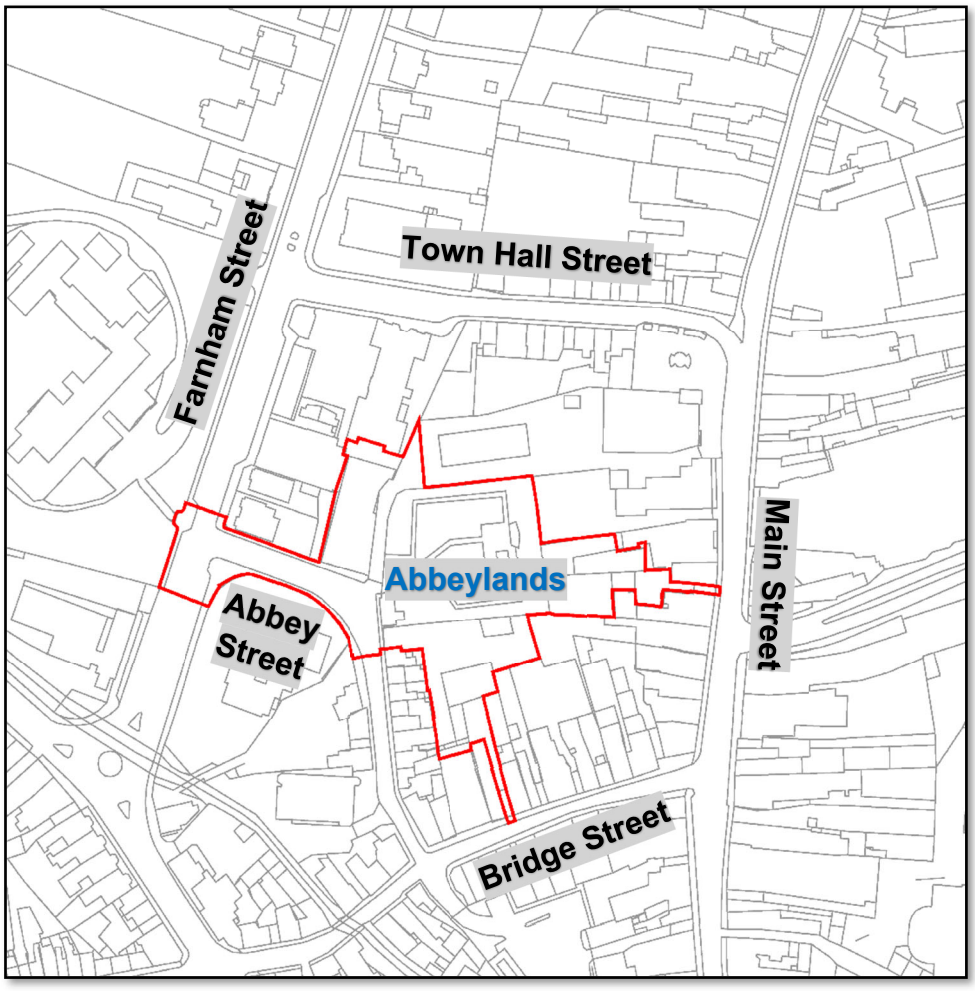


Figure 1: *Site Location of Cavan Abbeylands Public Realm Design and Redevelopment Scheme development site (Outlined in Red)*

The current Cavan County Council ownership boundary, and the development boundary that is subject to this Part VIII planning permission extends to 6493m.sq.

2.2 General Description of the Proposed Development

The Cavan Abbeylands Public Realm Design and Redevelopment Scheme (see Figure 2) consists of:

1. Demolition of the existing McIntyres Furniture Shop building (currently derelict) and proposed construction of a cultural and remote working centre at this location (indicated as 1 in Figure 2 below);
2. Public Realm upgrade of the Abbeylands site (shown as 2 in Figure 2 below);
3. Pedestrian walkway through the Credit Union site and stabilisation of the existing derelict buildings within the site (indicated as 3 in Figure 2 below);
4. Demolition of the old Donohoe's abattoir building and construction of a Community Services Centre at its location (shown as 4 in Figure 2 below).
5. Renovations and alterations to be made to the existing dwelling house located on Abbey Street, adjacent to the access entrance to the old Donohoe's abattoir building, so that it may be used for commercial purposes (indicated as 5 in Figure 2 below).
6. Renovations and alterations to be made to the existing coach house located in the Donohoe's abattoir building yard, so that it may be used as a café (indicated as 6 in Figure 2 below).
7. Upgrade of Abbey Street between the junction with Farnham Street and the access to the Abbeylands development (indicated as 7 in Figure 2 below).

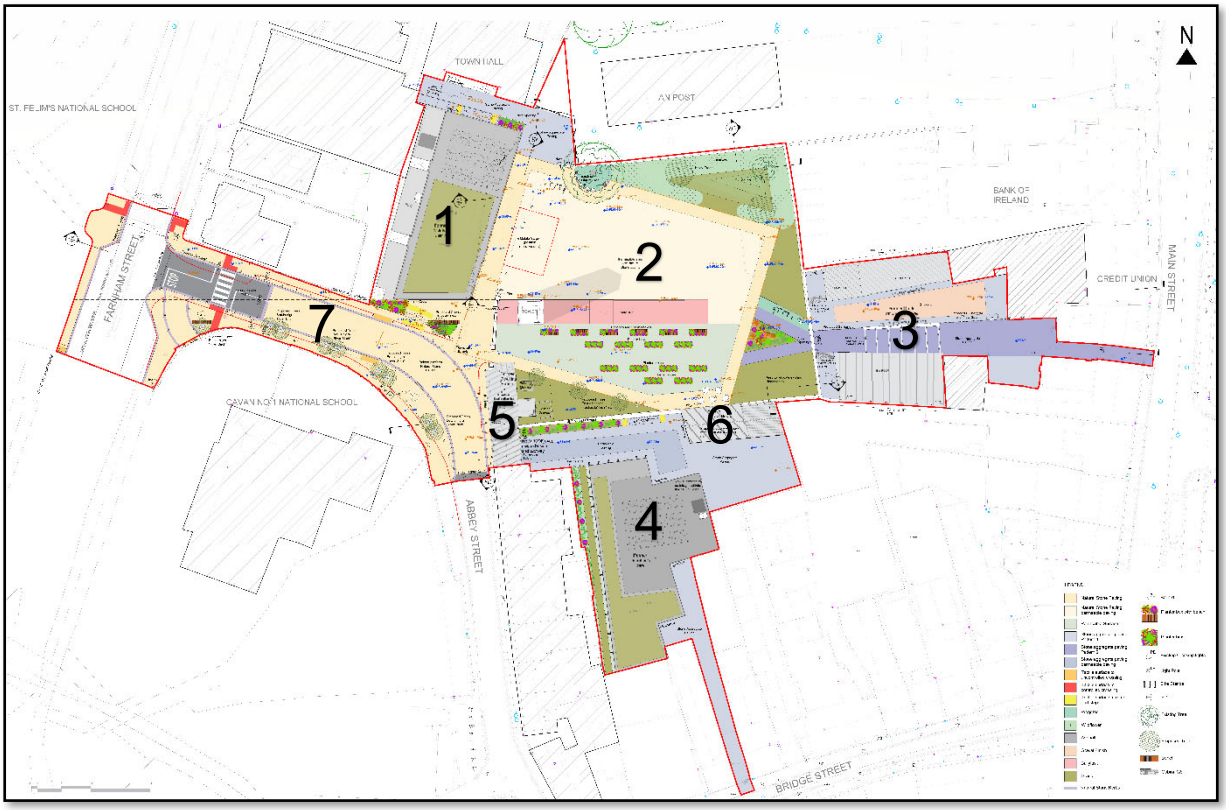


Figure 2: *Cavan Abbeylands Public Realm Design and Redevelopment Scheme Site Layout*

The proposals include improving accessibility into the Abbeylands site as well as opening it up to the surrounding town centre. This will be done by reimagining existing and potential connections, developing the backland areas for use as public space, with a special emphasis on the Abbey graveyard / enclosure area. It is envisaged that the public realm area within the Abbey graveyard / enclosure will be used for public gatherings and events. The proposed development also proposes a range of sustainable new uses within the block for local residents, business owners and visitors to the town.

3 Site Flood Risk

The Cavan Abbeylands Public Realm Design and Redevelopment Scheme site is required to be assessed for risk of flooding in accordance with the Planning System and Flood Risk management Guidelines for Planning Authorities 2009 (hereafter referred to as the "OPW Guidelines) issued by the Office of Public Works (OPW).

The existing Abbeylands site was assessed for flood risk using the Office of Public Works (OPW) Catchment Flood Risk Assessment and Management (CFRAM) Study maps that were prepared for the Cavan Town area in July 2016. Flooding within the area is associated with Fluvial occurrences. To the south of the Abbeylands site, an existing watercourse / open culvert crosses Farnham Street beside the Roundabout Junction with Railway Road. From here the watercourse travels in a south easterly direction and passes beneath Bridge Street before travelling towards James Connolly Street / Main Street. The CFRAMS Flood Risk Mapping shows the 1% (1 in 100 year) and 0.1% (1 in 1000 year) probabilities of flooding for the Abbeylands site.

Figure 3, shown below, displays mapping of the 1% (1 in 100 year) probability of flooding for the Abbeylands site area and its surrounds.

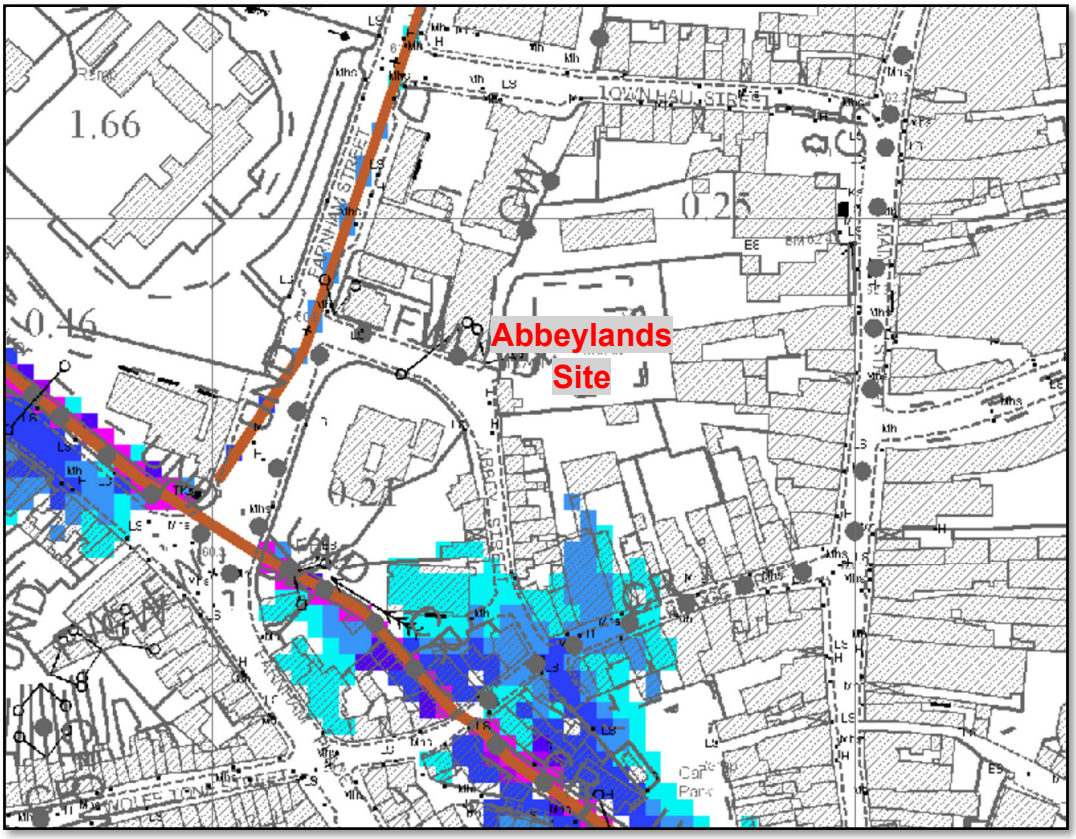


Figure 3: *Abbeylands site and surrounds 1% (1 in 100 year) probability of flooding.*

Based on the above 1% probability flood map, as shown in Figure 3 above, it can be seen that the Upper Abbey Street, existing McIntyres building, the upper part of the Donohue's site (i.e., the Abattoir section of the existing Donohue's building), the existing graveyard / public realm area and the existing Credit Union buildings experience no flooding during the 1:100-year flood event. However, from the above mapping it can be seen that Bridge Street, lower Abbey Street and the lower part of the Donohue's building (i.e., the Foodstore section of the existing Donohue's building) experiences flooding of between 0.00 - 0.25m (shown turquoise) and 0.25 - 0.50m (shown light blue) during the 1:100-year flood event.

Figure 4, shown below, displays mapping of the 0.1% (1 in 1000 year) probability of flooding for the Abbeylands site area and its surrounds.

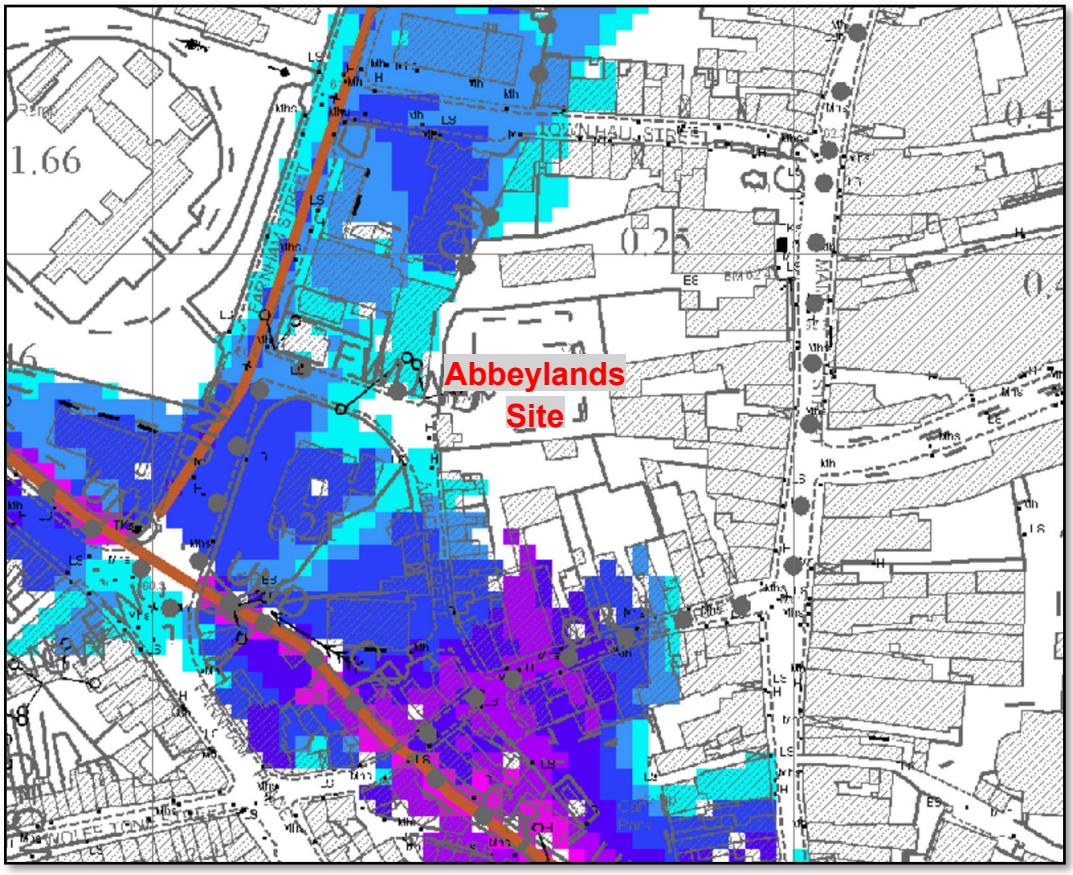


Figure 4: *Abbeylands site and surrounds 0.1% (1 in 1000 year) probability of flooding.*

Based on the above 0.1% probability flood map, as shown in Figure 4 above, it can be seen that the upper part of the Donohue's site (i.e., the Abattoir section of the existing Donohue's building), the existing graveyard / public realm area and the existing Credit Union buildings experience no flooding during the 1:1000-year flood event. However, from the above mapping it can be seen that Upper Abbey Street the existing McIntyres building experiences flooding of between 0.0m (shown turquoise) and 0.5m (shown light blue) during the 1:1000-year flood event. Bridge Street, lower Abbey Street and the lower part of the Donohue's building (i.e., the Foodstore section of the existing Donohue's building) also experiences flooding of between 1.00 – 1.50m (shown dark blue) and 1.50 – 2.00m (shown purple) during the 1:1000-year flood event.

Flood Zones are the extents of design flood events that determine whether development is appropriate from a flood risk point of view. They are defined in the OPW Guidelines as follows:

- Flood Zone A – where the probability of flooding from rivers and the sea is highest (greater than 1% or 1 in 100 for river flooding or 0.5% or 1:200 for coastal flooding).
- Flood Zone B - where the probability of flooding from rivers and the sea is moderate (between 0.1% or 1 in 1000 and 1% or 1 in 100 for river flooding and between 0.1% or 1 in 1000 and 0.5% or 1 in 200 for coastal flooding).
- Flood Zone C – where the probability of flooding from rivers and the sea is low (less than 0.1% of 1 in 1000 for both river and coastal flooding).

The OPW guidelines require a freeboard to be applied to relevant flood levels when setting finished floor levels (FFLs) and finished ground levels (FGLs). Generally, it is best practice to provide a freeboard of 500mm as a minimum requirement. Freeboard is applied to Flood Zone A for less vulnerable development (access roads, commercial units) and to Flood Zone B for highly vulnerable development (residential units, crèche).

Based on the OPW CFRAMS mapping (shown in Figures 3 and 4) it can be seen that the proposed Cavan Abbeylands Public Realm Design and Redevelopment Scheme that is being considered as part of this Part VIII Planning application is located within Flood Zone B. The OPW Guidelines indicate that less vulnerable development, such as that proposed for the Cavan Abbeylands Scheme (i.e., 2 no. commercial units and small retail units) may be considered appropriate within this type of flood zone. The proposed public amenity space / public realm area within the walled graveyard area of the Abbeylands site is deemed as being a water – compatible development and is an appropriate land use for this type of flood zone (Flood Zone B). The proposed finished floor levels for the new commercial units to be constructed at the locations of the existing McIntyres Furniture building and the existing Donohue's Abattoir building is 62.00 metres above Ordnance Datum (m OD). The CFRAMs mapping gives 1% or 1 in 100 for river flooding water levels adjacent to the site as being in the region of 60.66m OD which is 1340mm above the 1% Annual Exceedance Probability (AEP) flood level of the watercourse at the south of the site located adjacent to Bridge Street.

Refer to Appendix B for Drawing N36CAV_EXFCD_F0_08 - Cavan Fluvial Flood Extents.

Refer to Appendix B for Drawing N36CAV_DPFCD010_F0_08 - Cavan Fluvial Flood Depths - 1 in 100 Year Flood Event.

Refer to Appendix B for Drawing N36CAV_DPFCD001_F0_08 - Cavan Fluvial Flood Depths - 1 in 1000 Year Flood Event.

4 Surface Water Network and Sustainable Urban Drainage Systems (SuDS)

The European Union (EU) Water Framework Directive (WFD) requires EU member States to achieve water quality of at least "good status" in rivers, lakes, groundwater, estuaries and coastal waters, by 2027 at the latest. The Greater Dublin Strategic Drainage Study (GDSDS) is the key guideline document used for the purpose of design of surface water drainage systems within the Dublin area and within the island of Ireland as a whole. The GDSDS presents a strategic approach to sustainable drainage in consistency with the EU Water Framework Directive (WFD) and establishes key policies and standards which should be applied. The implementation of GDSDS guidelines in the context the Cavan Abbeylands Public Realm Design and Redevelopment Scheme will aim to prevent the adverse impacts of discharging the resulting development runoff, which may include discharging of pollutants, into existing watercourses. The other objective of working in accordance with the GDSDS guidelines is to decrease the risk of flooding of the proposed development within the Abbeylands site and its environs.

Clifton Scannell Emerson Associates (CSEA) have been appointed by the client, Cavan County Council, to carry out the Planning Stage design of the civil engineering elements for the future Cavan Abbeylands Public Realm Design and Redevelopment Scheme, including the proposed surface water layout and Sustainable Urban Drainage Systems (SuDS) strategy.

4.1 Existing Surface Water Drainage

Based on the Irish Water records received for the Abbeylands area, there are currently no public surface water drainage networks located within, or immediately adjacent to, the site area designated for the Cavan Abbeylands Public Realm Design and Redevelopment Scheme. The records show that the closest surface water networks to the site are an existing 1500x1200mm Surface Water Box Culvert and an existing 375mm Ø Surface Water Network pipe, both of which are located within Farnham Street and discharge to the existing watercourse / open culvert located to the south of the Abbeylands site. It is assumed that the upper section of the Abbey Street road drains to the aforementioned existing surface water systems.

It is assumed that the majority of the surface water runoff generated within the existing walled graveyard area of the Abbeylands site infiltrates freely into the soils within / beneath this area and permeates away from the site or is carried away by existing stone drains or networks that there is currently not recorded.

4.2 Proposed Surface Water Drainage Network and SuDS Constraints

A pre-development Archaeological Evaluation of the Abbeylands site by Farrimond MacManus Limited, carried out in May 2021, found burial remains and archaeological features at a depth of between 1.1-1.3m within the access entrance / carpark area between the walled graveyard and the existing Donohue's abattoir building. A new Community Services Building is proposed to replace the existing Donohue's abattoir. Upon the completion of the archaeological evaluation, it was agreed that the in-situ preservation of burial remains, and archaeological features would be the preferred mitigation strategy to allow them to be left undisturbed. As a result of this, it was stipulated that the depth of excavation for the surface water drainage and SuDS features for the development would be limited to a depth of between 500-600mm below existing ground levels. The selection of proposed SuDS features deemed appropriate for the development site was formed on the basis of the restriction put on the allowable depth of excavation.

4.3 Proposed Surface Water Drainage Network and SuDS Strategy

It is proposed to design and construct a surface water drainage system for the Cavan Abbeylands Public Realm Design and Redevelopment Scheme in compliance with the requirements of the following guidelines:

- The SuDS Manual (CIRIA, 2015)
- The Greater Dublin Strategic Drainage Study (GDSDS)

An internal surface water pipe network shall be constructed as part of the proposed development. This constructed pipe network shall convey surface water runoff generated by the development i.e., from the public realm area within the existing walled Abbeylands graveyard area, from the Cultural and Remote Working Centre (at the site of the existing McIntyres building) and from the Community Services Centre (at the site of the existing Donohue's former abattoir building) to the existing 1500x1200mm Surface Water Box Culvert located within Farnham Street which, in turn, discharges to the existing watercourse / open culvert located to the south of the Abbeylands site. The typical pipe sizes of the main surface water network branches shall be 225 in diameter. Ancillary pipes that shall collect surface water runoff from around the proposed buildings and within the public realm area and carry it to the main surface water network shall be 150mm in diameter. The overall surface water network will be constructed so that rainfall runoff is collected from the proposed Sustainable Urban Drainage Strategy (SuDS) source control features of the development and discharged to the existing 1500x1200mm Surface Water Box Culvert located within Farnham Street.

In an effort to find an appropriate SuDS solution for the proposed development, the proposed SuDS strategy and the various site constraints have been the subject of numerous design team meetings and discussions with Cavan County Council. It has been proposed by Clifton Scannell Emerson Associates (CSEA) to create a SuDS train with differing SuDS methodologies used across the site. The following sections of this report outlines the SuDS strategy that is proposed.

Refer to Appendix B for Drawing 19_134-CSE-GEN-XX-SK-C-1011 - Proposed Surface Water Layout.

4.3.1 Raised Planters

It is proposed, as a landscaping feature and additional SuDS source control, to install raised planters within the public realm area that will be located within the existing walled graveyard area of the Abbeylands development site. This allows a small volume of water to be stored within the planter and integrated within the proposed surface water network of the development. The planter will have an overflow outlet pipe in times of storm events. The raised planters are to be installed as a SuDS measure that will have ecological and aesthetic benefits.

4.3.2 Tree Pits

Tree pit systems are porous surfacing systems which are laid around the base of trees that are designed to take surface water runoff from adjacent impermeable areas within an urban environment. Using tree pits as a SuDS measure also allows water air and nutrients to reach the tree roots thus encouraging the trees' growth. Tree pits also have ecological and aesthetic benefits.

4.3.3 Green / Sedum Roofs

Green and Sedum roofs involve covering a roof of a building with vegetation laid over a drainage layer and a waterproofing membrane. They are designed to intercept and store rainwater and therefore reduce surface water runoff. They are suited to the flat type of roof being proposed for the proposed Cultural and Remote Working Centre (at the site of the existing McIntyres building) and the proposed

Community Services Centre (at the site of the existing Donohue's former abattoir building) to be constructed as part of the Cavan Abbeylands Public Realm Design and Redevelopment Scheme. Green / Sedum roofs have ecological and aesthetic benefits and remove pollutants from rainwater. Disadvantages are that they are more expensive than conventional roof drainage systems and require maintenance of the roof vegetation.

Image 1, shown below, gives an example of a Sedum Roof similar to that proposed as a SuDS measure at the proposed Cultural and Remote Working Centre and proposed Community Services Centre.

Image 1: *Sedum Roof similar to that proposed for the Abbeylands Development*

4.3.4 Rain Gardens

Rain Gardens are small, planted areas with stormwater controls that collect and treat stormwater runoff. Shallow landscaped basins make use of soils and vegetation in order to remove pollutants. This treated runoff shall be collected in these basins and form part of a wider SuDS approach prior to discharge to the sealed surface water pipe network.

Rain gardens, similar to that shown in Image 2 below, are proposed to be used within the grassed areas with the public realm area of the Abbeylands development.

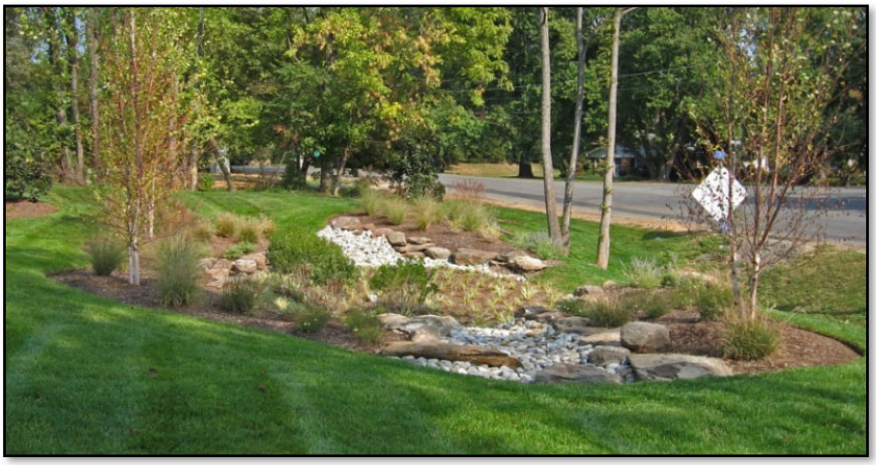


Image 2: *Rain Garden similar to that proposed as SuDS measure for the Abbeylands Development*

4.3.5 Permeable Block Paving

Where feasible, permeable block paving is to be used within hardstanding areas of the Cavan Abbeylands Public Realm Design and Redevelopment Scheme in an effort to control the rate of surface water runoff from the proposed hardstanding areas within the development site. The proposed public realm area within the existing walled graveyard of the Abbeylands will be constructed using permeable block paving. Permeable block paving allows the rainwater to infiltrate through the surface and into the underlying layers where it is collected and conveyed to the proposed sealed drainage network. Permeable paving reduces peak surface water flow, is effective in removing urban pollutants, has low maintenance costs and requires no additional land space. However, if not properly maintained there is a risk that clogging and weed growth between the permeable paving blocks may occur. The permeable block paving runoff will be collected by means of a series of perforated collection pipes, located beneath the permeable paving areas, which shall in turn discharge to the sealed surface water pipe network system before discharging to the existing 1500x1200mm Surface Water Box Culvert located within Farnham Street.

Image 3, shown below, displays an example of a permeable block paving hardstanding area. Permeable block paving is to be used as a SuDS approach within the hardstanding areas of the Cavan Abbeylands Public Realm Design and Redevelopment Scheme, in particular the public realm area within the existing walled Abbeylands Graveyard.

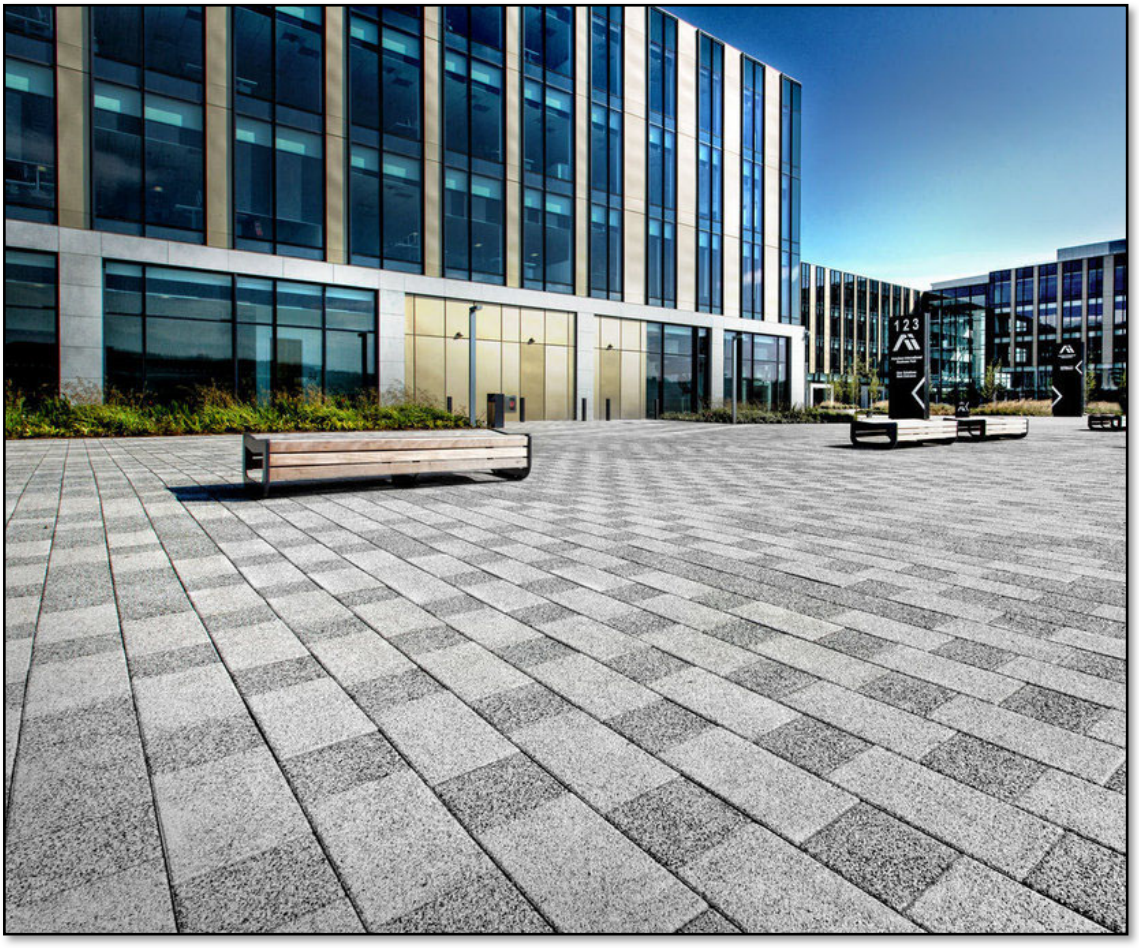


Image 3: *Example of Permeable Block Paving in hardstanding areas*

5 Foul Sewer Network

5.1 Existing Foul / Wastewater Sewer Drainage

At present, there is existing 300mm Ø public foul / wastewater sewer network pipe located within Farnham Street which in turn discharges to the main trunk foul sewer at the Farnham Street / Railway Road Junction. There is also an existing 225-300mm Ø public foul / wastewater sewer network pipe within Bridge Street, located to the south of the Abbeylands Development site.

5.2 Proposed Foul Sewer Network Constraints

A pre-development Archaeological Evaluation of the Abbeylands site by Farrimond MacManus Limited, carried out in May 2021, found burial remains and archaeological features at a depth of between 1.1-1.3m within the access entrance / carpark area between the walled graveyard and the existing Donohue's abattoir building. A new Community Services Building is proposed to replace the existing Donohue's abattoir. Upon the completion of the archaeological evaluation, it was agreed that the in-situ preservation of burial remains, and archaeological features would be the preferred mitigation strategy to allow them to be left undisturbed. As a result of this, it was stipulated that the depth of excavation for the foul sewer network to serve the development would be limited to a depth of between 500-600mm below existing ground levels.

5.3 Proposed Foul Sewer Network

The proposed foul / wastewater sewer network has been designed with reference to the following guidelines and processes:

- Irish Water document IW-CDS-5030-01 (Revision 4), *"Wastewater Infrastructure Standard Details: Connections and Developer Services",* July 2020
- Irish Water document IW-CDS-5030-03 (Revision 2), *"Code of Practice for Wastewater Infrastructure: Connections and Developer Services",* July 2020

The calculated post development average wastewater discharge is approximately 20m^3/day for the Cavan Abbeylands Public Realm Design and Redevelopment Scheme, with a post development peak discharge of approximately 87m^3/day. Foul sewerage / wastewater will be collected by means of manholes and underground pipework networks within the development site and within the Abbey Street Road. Typical pipe sizes of the foul sewer network shall be 225mm in diameter. The wastewater will discharge via gravity to the existing 300mm Ø public foul / wastewater sewer network pipe located within Farnham Street which in turn discharges to the main trunk foul sewer at the Farnham Street / Railway Road Junction.

Refer to Appendix B for Drawing 19_134-CSE-GEN-XX-SK-C-1013 - Proposed Foul Sewer Layout.

6 Water Supply Network

6.1 Existing Water Supply and Distribution

At present, there is a 3" Ø Asbestos watermain that travels adjacent to the Abbeylands site along the Abbey Street Road. This 3" Asbestos watermain form part of a watermain loop and connects to an existing 5" Ø uPVC watermain that is located within Farnham Street and to and existing 6" Ø asbestos watermain that is located within Bridge Street.

6.2 Proposed Water Supply and Distribution Network

The proposed Water supply and distribution networks for the proposed development have been designed with respect to the following guidelines and processes:

- Irish Water document IW-CDS-5020-01 (Revision 4), *"Water Infrastructure Standard Details: Connections and Developer Services"*, July 2020.
- Irish Water document IW-CDS-5020-03 (Revision 2), *"Code of Practice for Water Infrastructure: Connections and Developer Services"*, July 2020.

The calculated post development average water demand for the Cavan Abbeylands Public Realm Design and Redevelopment Scheme is approximately 16m^3/day, with a post development peak water demand of approximately 99m^3/day. In order to provide sufficient water demand for the proposed Abbeylands development it will be necessary to upgrade a section of the existing 3" Ø Asbestos watermain within Abbey Street. It is proposed to connect a new 125mm Ø PE watermain to the existing 5" Ø uPVC watermain that is located within Farnham Street at the Farnham Street / Abbey Street Junction. From this connection point, the new 125mm Ø PE watermain shall be laid along Abbey Street and will connect back to the existing 3" Ø Asbestos watermain immediately south of the entrance to the Donohue's yard. This proposed watermain network upgrade will allow for a of section of the existing 3" Ø Asbestos watermain on Abbey Street to be abandoned. Any existing dwellings or premises that are serviced by the section of abandoned 3" Ø Asbestos watermain will have new connections made to the proposed 125mm Ø PE watermain.

The watermain network for the proposed development will include fire hydrants located at no more than 46m from any of the proposed buildings as per Irish Water Requirements and subject to agreement with the relevant Fire Authority. The relevant Fire Authority shall be notified in relation to the proposed development during detailed design stage and their fire flow requirements satisfied. All sluice valves, scour valves and air valves shall be designed, sited, and constructed in accordance with Irish Water requirements.

Refer to Appendix B for Drawing 19_134-CSE-GEN-XX-SK-C-1012 - Proposed Watermain Layout.

7 Public Lighting

7.1 Existing Public Lighting Infrastructure

A description of the Existing Public Lighting Infrastructure is given in W1952 Abbeylands Public Lighting Planning Report, prepared by Douglas Carroll Consulting Engineers, which accompanies the Cavan Abbeylands Public Realm Design and Redevelopment Scheme Part VIII Planning Application.

7.2 Proposed Public Lighting Infrastructure

A description of the Proposed Public Lighting Infrastructure is given in W1952 Abbeylands Public Lighting Planning Report, prepared by Douglas Carroll Consulting Engineers, which accompanies the Cavan Abbeylands Public Realm Design and Redevelopment Scheme Part VIII Planning Application.

8 ESB Power Supply Network

8.1 Existing ESB Power Supply Network

A description of the Existing ESB Power Supply Network is given in W1952 Abbeylands Public Realm M&E Planning Report, prepared by Douglas Carroll Consulting Engineers, which accompanies the Cavan Abbeylands Public Realm Design and Redevelopment Scheme Part VIII Planning Application.

8.2 Proposed ESB Power Supply Network

A description of the Proposed ESB Power Supply Network is given in W1952 Abbeylands Public Realm M&E Planning Report, prepared by Douglas Carroll Consulting Engineers, which accompanies the Cavan Abbeylands Public Realm Design and Redevelopment Scheme Part VIII Planning Application.

9 Telecommunications Supply Network

9.1 Existing Telecommunications Supply Networks

A description of the Existing Telecommunications Supply Network is given in W1952 Abbeylands Public Realm M&E Planning Report, prepared by Douglas Carroll Consulting Engineers, which accompanies the Cavan Abbeylands Public Realm Design and Redevelopment Scheme Part VIII Planning Application.

9.2 Proposed Telecommunications Supply Networks

A description of the Proposed Telecommunications Supply Network is given in W1952 Abbeylands Public Realm M&E Planning Report, prepared by Douglas Carroll Consulting Engineers, which accompanies the Cavan Abbeylands Public Realm Design and Redevelopment Scheme Part VIII Planning Application.

10 Likely Traffic Impacts of the Abbeylands Public Realm Design and Redevelopment

Refer to the Traffic and Transport Assessment Report prepared by Clifton Scannell Emerson Associates, on behalf of Cavan County Council that accompanies the Cavan Abbeylands Public Realm Design and Redevelopment Scheme Part VIII Planning Application.

11 List of Appendices

Appendix A - Relevant Document References

Appendix B - Relevant Drawing References

12 Appendix A – Relevant Document References

The following relevant documents accompany the Cavan Abbeylands Public Realm Design and Redevelopment Scheme Part VIII Planning Application:

- *W1952 Abbeylands Public Lighting Planning Report*, (November 2022), by Douglas Carroll Consulting Engineers.

  W1952 Abbeylands Public Realm M&E Planning Report, (November 2022), by Douglas Carroll Consulting Engineers.

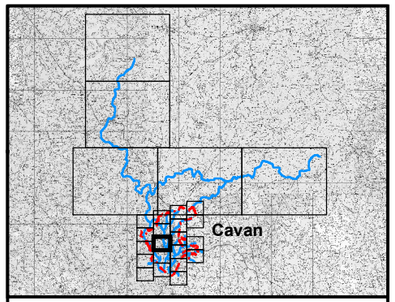
- *"RPT-19_134-003, Traffic and Transport Report, Abbeylands Redevelopment, Part 8"*, (November 2022), by Clifton Scannell Emerson Associates.

13 Appendix B – Relevant Drawing References

The following relevant drawings accompany the Cavan Abbeylands Public Realm Design and Redevelopment Scheme Part VIII Planning Application:

- N36CAV_EXFCD_F0_08 - Cavan Fluvial Flood Extents.
- N36CAV_DPFCD010_F0_08 - Cavan Fluvial Flood Depths - 1 in 100 Year Flood Event.
- N36CAV_DPFCD001_F0_08 - Cavan Fluvial Flood Depths - 1 in 1000 Year Flood Event.
- 19_134-CSE-GEN-XX-SK-C-1011 - Proposed Surface Water Layout.
- 19_134-CSE-GEN-XX-SK-C-1012 - Proposed Watermain Layout.
- 19_134-CSE-GEN-XX-SK-C-1013 - Proposed Foul Sewer Layout.

Node Label	Water Level (OD) 10% AEP	Flow (m³/s) 10% AEP	Water Level (OD) 1% AEP	Flow (m³/s) 1% AEP	Water Level (OD) 0.1% AEP	Flow (m³/s) 0.1% AEP
3606M00829I	60.88	10.13	61.38	17.09	62.82	29.36
3606M00811D	59.75	N/A	60.66	N/A	61.79	N/A
3606M00804	59.51	10.15	60.28	17.15	61.22	31.23
3606M00798	59.40	10.34	59.92	17.32	60.48	31.68
3606M00781D	59.28	N/A	59.70	N/A	60.14	N/A
3606M00750	57.52	10.38	57.89	17.44	58.54	31.21
3606M00739	57.14	10.40	57.55	17.45	58.19	31.69
3606M00727D	56.74	N/A	57.18	N/A	57.76	N/A
3606M00687	55.10	N/A	55.47	N/A	56.09	N/A
3610M00086J	62.65	N/A	62.86	N/A	63.21	N/A
3610M00082eI	60.04	N/A	60.27	N/A	60.88	N/A
3610M00082hI	59.40	3.21	59.92	5.00	60.48	8.64



IMPORTANT USER NOTE:
THE VIEWER OF THIS MAP SHOULD REFER TO THE DISCLAIMER, GUIDANCE NOTES AND CONDITIONS OF USE THAT ACCOMPANY THIS MAP.

Legend

- 10% Fluvial AEP Event
- 1% Fluvial AEP Event
- 0.1% Fluvial AEP Event
- Modelled River Centreline
- AFA Extents
- Node Point
- Node ID Node Label

FINAL

REV:	NOTE:	DATE:

NORTH WESTERN NEAGH BANN CFRAM STUDY
CATCHMENT FLOOD RISK ASSESSMENT AND MANAGEMENT

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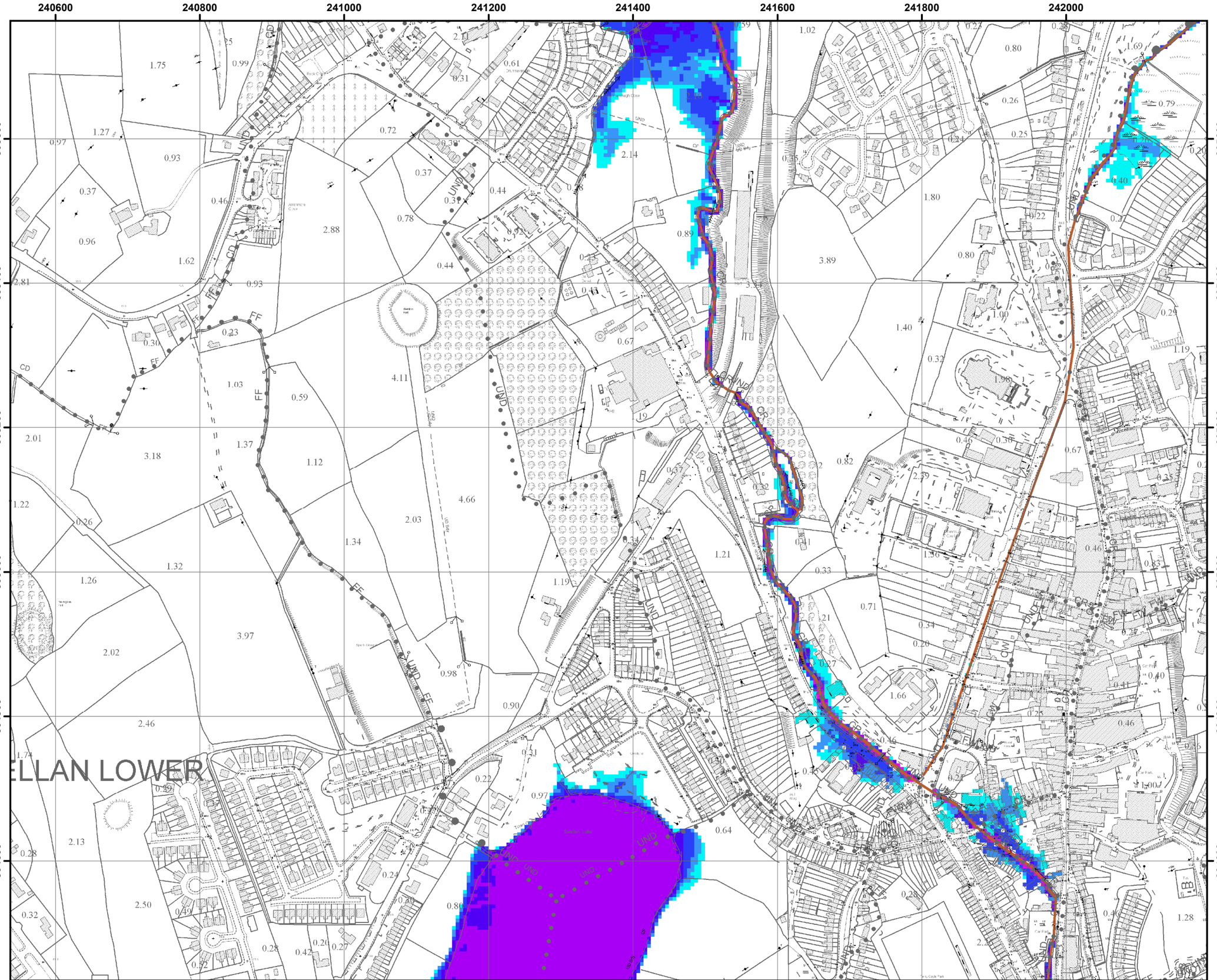
Map: Cavan Fluvial Flood Extents

Map Type:	EXTENT
Source:	FLUVIAL
Map Area:	HPW
Scenario:	CURRENT
Drawn By : C.C.	Date : 14 July 2016
Checked By : T.D.	Date : 14 July 2016
Approved By : S.P.	Date : 14 July 2016
Drawing No. :	N36CAV_EXFCD_F0_08
Map Series :	Page 8 of 25
Drawing Scale :	1:5,000 @ A3



IMPORTANT USER NOTE:
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Legend

1% Fluvial AEP Flood Depth

- 0 - 0.25m
- 0.25 - 0.5m
- 0.5 - 1m
- 1.0 - 1.5m
- 1.5 - 2m
- >2m

Modelled River Centreline

AFA Extents

FINAL

REV:	NOTE:	DATE:

NORTH WESTERN NEAGH BANN CFRAM STUDY
CATCHMENT FLOOD RISK ASSESSMENT AND MANAGEMENT

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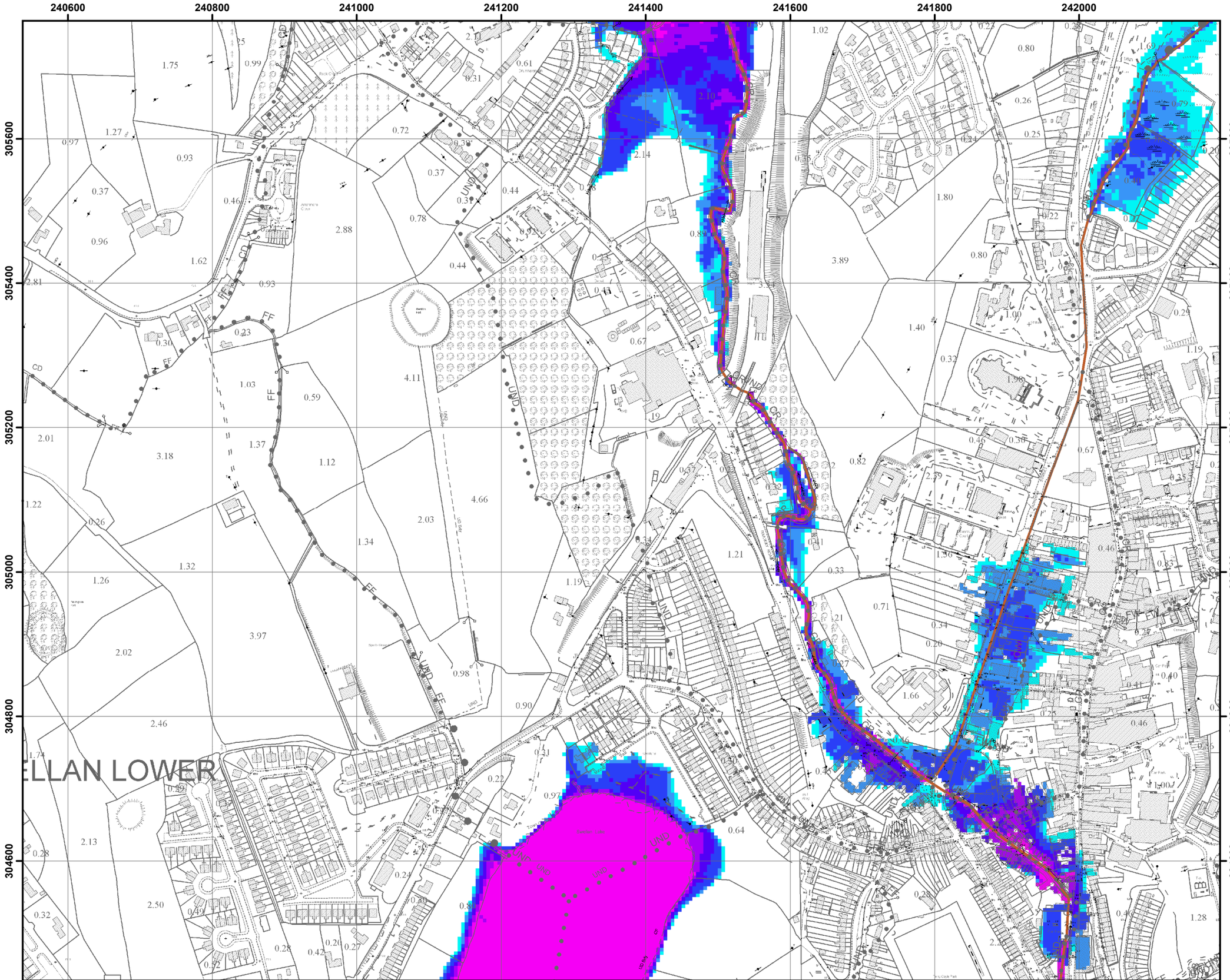
Map:
Cavan Fluvial Flood Depths

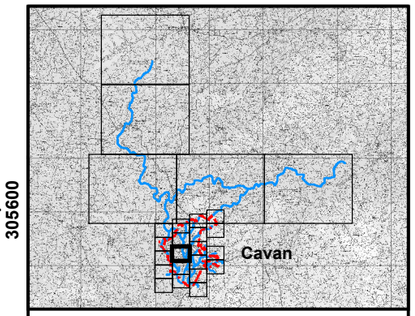
Map Type:	**DEPTH**	
Source:	**FLUVIAL**	
Map Area:	**HPW**	
Scenario:	**CURRENT**	
Drawn By :	**C.C.**	**Date : 14 July 2016**
Checked By :	**T.D.**	**Date : 14 July 2016**
Approved By :	**S.P.**	**Date : 14 July 2016**

Drawing No. :
N36CAV_DPFCD010_F0_08

Map Series : Page 8 of 25

Drawing Scale : 1:5,000 @ A3





IMPORTANT USER NOTE:
THE VIEWER OF THIS MAP SHOULD REFER TO THE DISCLAIMER, GUIDANCE NOTES AND CONDITIONS OF USE THAT ACCOMPANY THIS MAP.

Legend

0.1% Fluvial AEP Flood Depth

- 0 - 0.25m
- 0.25 - 0.5m
- 0.5 - 1m
- 1.0 - 1.5m
- 1.5 - 2m
- >2m

Modelled River Centreline

AFA Extents

FINAL

REV:	NOTE:	DATE:

NORTH WESTERN NEAGH BANN CFRAM STUDY
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Map:
Cavan Fluvial Flood Depths

Map Type:	**DEPTH**	
Source:	**FLUVIAL**	
Map Area:	**HPW**	
Scenario:	**CURRENT**	
Drawn By :	**C.C.**	**Date : 14 July 2016**
Checked By :	**T.D.**	**Date : 14 July 2016**
Approved By :	**S.P.**	**Date : 14 July 2016**

Drawing No. :
N36CAV_DPFCD001_F0_08

Map Series : Page 8 of 25

Drawing Scale : 1:5,000 @ A3

DRAWING IS PRODUCED USING THE IRISH TRANSVERSE MERCATOR (ITM) GEOGRAPHIC COORDINATE SYSTEM

A1

SURFACE WATER LEGEND:

- EXISTING FOUL SEWER PIPE — ExFS ExFS
- EXISTING COMBINED SEWER PIPE — EX.CS EX.CS
- EXISTING FOUL SEWER MANHOLE — MH - FS CL: 60.99 IL: 60.08
- EXISTING SURFACE WATER GULLY — G
- PROPOSED 225mm Ø PVC SURFACE WATER PIPE — SW SW SW SW SW
- PROPOSED 225mm Ø PVC SURFACE WATER PIPE WITH CONCRETE SURROUND (CS) — SW SW SW SW SW
- PROPOSED MANHOLE CHAMBER TYPE C — MH 1-4 CL: 60.940 IL: 59.240
- PROPOSED AREA OF PERMEABLE PAVING WITHIN PUBLIC REALM OPEN SPACE AREA (TOP LEVEL OF PERMEABLE PAVING INDICATED BY MAGENTA LEVEL (62.400) AND EXCAVATION LEVEL OF PERMEABLE PAVING AREA INDICATED BY BLUE LEVEL (61.900) — 62.400 61.900
- PROPOSED INFILTRATION MANHOLE IN PERMEABLE PAVING AREA — INF CH 5 CL: 62.350 IL: 61.325
- PROPOSED 150mm Ø PERFORATED DRAINAGE PIPE
- PROPOSED 150mm Ø PVC SURFACE WATER PIPE FOR RAINWATER COLLECTION FROM PROPOSED BUILDING ROOFS
- PROPOSED 150mm Ø PVC SURFACE WATER PIPE WITH CONCRETE SURROUND (CS)
- PROPOSED ACCESS JUNCTION (AJ) FOR 150mm Ø PVC PIPE — SW AJ CL - 62.050 IL - 61.615
- PROPOSED ROAD GULLY — RG
- PROPOSED 150mm Ø PVC GULLY CONNECTION PIPE

Rev	Description	Drawn	Checked	Date
P05	FOR PLANNING	CP	CB	24.11.22
P04	SURFACE WATER LAYOUT UPDATED	CP	CB	11.11.22
P03	SURFACE WATER LAYOUT UPDATED	CP	CB	10.11.22
P02	SURFACE WATER & LAYOUT UPDATED	CP	CB	09.11.22
P01	FOR DISCUSSION	CP	CB	28.09.22

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Client: CAVAN COUNTY COUNCIL

Project: ABBEYLANDS PUBLIC REALM CAVAN DESIGN AND REDEVELOPMENT

PROPOSED SURFACE WATER LAYOUT

Dwg. Title

Drawn By	Date	CSEA Job No.
CP	28.09.22	19_134
Checked By	Scale	
CB	1:250 @ A1	

Project Code	Originator	Zone/ Phase	Level	Type	Role	Dwg. No.
19_134	CSE	GEN	XX	SK	C	1011

S2 — FOR PLANNING (Status Code / Suitability Description)

P05 — PLANNING (Revision / Project Status)

DRAWING IS PRODUCED USING THE IRISH TRANSVERSE MERCATOR (ITM) GEOGRAPHIC COORDINATE SYSTEM

A1

WATERMAIN LEGEND:

- EXISTING WATERMAIN PIPE — EX WM
- EXISTING WATER METER — M
- EXISTING HYDRANT — H
- EXISTING AIR VALVE — A
- EXISTING SCOUR VALVE — S
- EXISTING SLUICE VALVE
- PROPOSED 125mm OUTSIDE DIAMETER PE-80 SDR 17 WATERMAIN PIPE — WM
- PROPOSED WATERMAIN CONNECTION TO PROPOSED BUILDINGS WITH BOUNDARY BOX
- PROPOSED HYDRANT — H
- PROPOSED AIR VALVE — A
- PROPOSED SLUICE VALVE

NOTE:

- NO HYDRANTS ARE CLOSER THAN 6m TO A PROPOSED OR EXISTING STRUCTURE. NO PROPERTY WITHIN THIS PROPOSED DEVELOPMENT IS MORE THAN 46m FROM A FIRE HYDRANT.
- NO NEW WATERMAIN WITHIN THE PROPOSED DEVELOPMENT UP TO AND INCLUDING 150mm Ø IS LAID WITHIN 3m OF AN EXISTING OR PROPOSED STRUCTURE.
- ALL WATERMAIN "T" JUNCTIONS HAVE BEEN SHOWN AT 90 DEGREE ANGLES.

FARNHAM STREET

ABBEY STREET

ABBEYLANDS GRAVEYARD

AN POST SECURITY GATE IN

PROPOSED TEMPORARY DEAD END DETAIL TO ALLOW FOR POSSIBLE FUTURE CONNECTION

THIS SECTION OF EXISTING 3" ASBESTOS WATERMAIN (SHOWN WITH "X" LINE) TO BE ABANDONED AFTER INSTALLATION OF THE PROPOSED 125mm OUTSIDE DIAMETER PE-80 SDR 17 WATERMAIN. ANY DWELLINGS OR PREMISES SERVICED ALONG THE LENGTH OF THE ABANDONED WATERMAIN ARE TO HAVE NEW CONNECTIONS MADE TO THE PROPOSED WATERMAIN

PROPOSED 125mm OUTSIDE DIAMETER PE-80 SDR 17 WATERMAIN TO CONNECT TO EXISTING 5" uPVC WATERMAIN AT THIS POINT

PROPOSED WATERMAIN CONNECTION TO PROPOSED BUILDING WITH ANCILLARY BOUNDARY BOX

EXITING HISTORICAL STONE WALL AROUND PERIMETER OF GRAVEYARD AREA

PROPOSED WATERMAIN LOOP AT THIS LOCATION TO PASS BELOW EXITING HISTORICAL STONE WALL

PROPOSED WATERMAIN CONNECTION TO PROPOSED BUILDING WITH ANCILLARY BOUNDARY BOX

EXITING HISTORICAL STONE WALL AROUND PERIMETER OF GRAVEYARD AREA

PROPOSED WATERMAIN CONNECTION TO PROPOSED BUILDING WITH ANCILLARY BOUNDARY BOX

PROPOSED AIR VALVE

EXISTING AIR VALVE TO BE REMOVED UPON INSTALLATION OF PROPOSED WATERMAIN

PROPOSED HYDRANT

EXISTING HYDRANT TO BE REMOVED UPON INSTALLATION OF PROPOSED WATERMAIN

PROPOSED 125mm OUTSIDE DIAMETER PE-80 SDR 17 WATERMAIN TO CONNECT TO EXISTING 3" ASBESTOS WATERMAIN AT THIS POINT

PROPOSED TEMPORARY DEAD END DETAIL TO ALLOW FOR POSSIBLE FUTURE CONNECTION

Rev	Description	Drawn	Checked	Date
P05	FOR PLANNING	CP	CB	24.11.22
P04	WATERMAIN LAYOUT REVISED	CP	CB	11.11.22
P03	WATERMAIN LAYOUT REVISED	CP	CB	10.11.22
P02	WATERMAIN & LAYOUT UPDATED	CP	CP	09.11.22
P01	FOR DISCUSSION	CP	CP	28.09.22

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Client: CAVAN COUNTY COUNCIL

Project: ABBEYLANDS PUBLIC REALM CAVAN DESIGN AND REDEVELOPMENT

Dwg. Title: PROPOSED WATERMAIN LAYOUT

Drawn By: CP | Date: 28.09.22

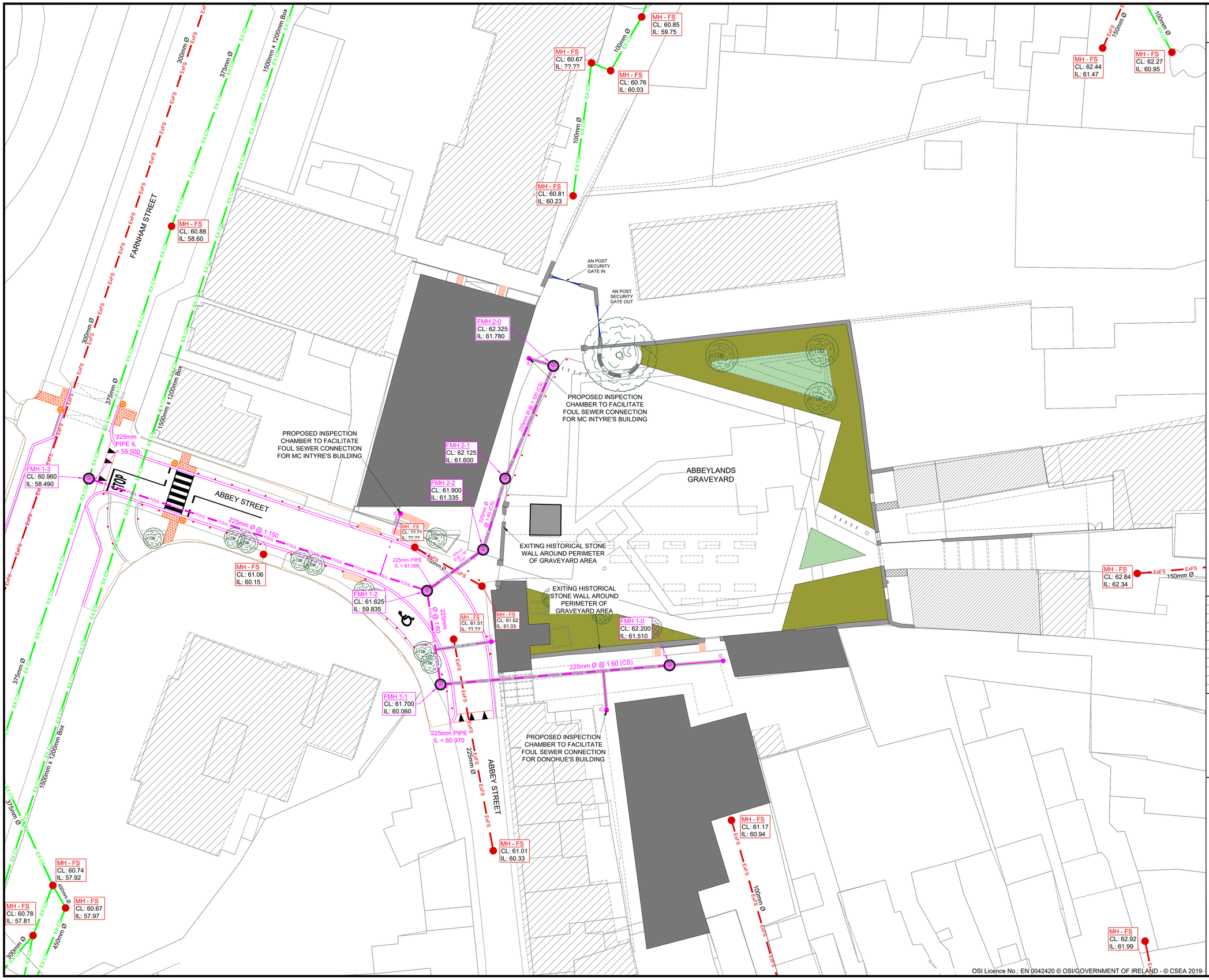
Checked By: CB | Scale: 1:250 @ A1

CSEA Job No.: 19_134

Project Code	Originator	Zone/ Phase	Level	Type	Role	Dwg. No.
19_134	CSE	GEN	XX	SK	C	1012

Status Code: S2 — FOR PLANNING (Suitability Description)

Revision: P05 — PLANNING (Project Status)



DRAWING IS PRODUCED USING THE IRISH TRANSVERSE MERCATOR (ITM) GEOGRAPHIC COORDINATE SYSTEM

A1

SURFACE WATER LEGEND:

- EXISTING FOUL SEWER PIPE
- EXISTING COMBINED SEWER PIPE
- EXISTING FOUL SEWER MANHOLE — MH - FS CL: 60.99 IL: 60.08
- PROPOSED 225mm Ø FOUL SEWER PIPE
- PROPOSED FOUL SEWER MANHOLE CHAMBER — FMH 1-3 CL: 60.960 IL: 58.490
- PROPOSED FOUL INSPECTION CHAMBER AND DRAIN
- PROPOSED 225mm Ø FOUL SEWER PIPE WITH CONCRETE SURROUND (CS)

NOTE:

- NO HYDROCARBONS SHALL BE DISCHARGED INTO THE PROPOSED ABBEYLANDS PUBLIC SEWER NETWORK.
- ALL FOUL SEWER PIPES WITH LESS THAN 1.2m DEPTH OF COVER IN ROADWAYS AND PARKING AREAS WITH UNRESTRICTED ACCESS TO VEHICLES WITH A GROSS WEIGHT IN EXCESS OF 1.2 TONNES ARE TO HAVE FULL CONCRETE SURROUND (CS) OF C16/20 CONCRETE TO THE PIPE.

N

Rev	Description	Drawn	Checked	Date
P05	FOR PLANNING	CP	CB	24.11.22
P04	FOUL SEWER LAYOUT UPDATED	CP	CB	11.11.22
P03	FOUL SEWER LAYOUT UPDATED	CP	CB	10.11.22
P02	FOUL SEWER & LAYOUT UPDATED	CP	CB	09.11.22
P01	FOR DISCUSSION	CP	CB	28.09.22

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Client: CAVAN COUNTY COUNCIL

Project: ABBEYLANDS PUBLIC REALM CAVAN DESIGN AND REDEVELOPMENT

PROPOSED FOUL SEWER LAYOUT

Dwg. Title

Drawn By	Date	CSEA Job No.
CP	28.09.22	19_134
Checked By	Scale	
CB	1:250 @ A1	

Project Code	Originator	Zone/ Phase	Level	Type	Role	Dwg. No.
19_134	CSE	GEN	XX	SK	C	1013

S2 — FOR PLANNING (Status Code / Suitability Description)

P05 — PLANNING (Revision / Project Status)

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