St Edmundsbury Hospital

Volume III Appendices- EIAR

April 2026

Project number: 2023s0007

The Governors of St Patrick's Hospital

JBA Project Manager

Bernadette O'Connell
Unit 8, Greenogue Business Plaza
Greenogue Business Park
Rathcoole
Dublin
Ireland

Revision History

Revision Ref / Date Issued	Amendments	Issued to
S0-P01 24-04-2026	Draft	St Patricks Mental Health Services
S3-P01 28-04-2026	Final	St Patricks Mental Health Services

Contract

This report relates to St Edmundsbury Mental Health Hospital commissioned by St Patrick's Mental Health Services. Thom Owen of JBA Consulting compiled this report, which was prepared by the competent experts listed in Table 1-5 of Volume 2, Chapter 1.

Purpose

This document has been prepared as a Final Report for St Patrick's Mental Health Services ('the Client'). JBA Consulting accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

JBA Consulting has no liability regarding the use of this report except to St Patrick's Mental Health Services.

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Contents

1 Introduction

This document includes all appendices to the St Edmundsbury Mental Health Hospital Environmental Impact Assessment Report (EIAR). The EIAR is presented over three volumes.

- Volume 1: Non-Technical Summary
- Volume 2: Main Report
- Volume 3: Appendices (this document)

Appendices are presented for the following EIAR Chapters:

- Chapter 1 Introduction - Consultation Responses
- Chapter 4 Biodiversity - Bat Report
- Chapter 9 Material Assets - Utility Drawings and Report, Traffic and Transport Assessment
- Chapter 10 Cultural Heritage - Conservation Report - Architectural Heritage Impact Assessment, Southern wall - Architectural Heritage Impact Assessment, Engineering Investigations and Archaeological Site Inspection
- Chapter 11 Landscape and Visual Impact Assessment- Photomontages

The appendices are laid out in the following sections, numbered in the same order as the EIAR chapters in Volume 2, Main Report.

APPENDIX 1
Chapter 1 Introduction
Consultation responses

1.1 EIAR Scoping Responses

1.1.1 NPWS - Scoping Response

[Via email received 20/06/2023]

Our Ref: G Pre00105/2023 (Please quote in all related correspondence)

A Chara

I acknowledge receipt of your recent consultation.

In the event of observations, you will receive a co-ordinated heritage-related response by email from Development Applications Unit (DAU).

The normal target turnaround for pre-planning and other general consultations is six weeks from date of receipt. In relation to general consultations from public bodies under the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 to 2011, the Department endeavours to meet deadline dates, where requested.

Please note Development Applications Unit (DAU) is the coordinating unit for the Department of Housing, Local Government and Heritage, coordinating responses/submission from National Parks and Wildlife Service, National Monuments Service, Architectural Heritage and Underwater Archaeology Unit. All Correspondence is to be issued to and from DAU

If you have not heard from DAU and wish to receive an update, please email manager.dau@housing.gov.ie.

Regards

Edel Griffin
Executive Officer
——
An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage
Aonad na nIarratas ar Fhorbairt
Development Applications Unit
Oifigí an Rialtais
Government Offices
Bóthar an Bhaile Nua, Loch Garman, Contae Loch Garman, Y35 AP90
Newtown Road, Wexford, County Wexford, Y35 AP90

1.1.2 NMS - Scoping Response

[Via email received 29/05/2023]

Our Ref: G Pre00105/2023 (Please quote in all related correspondence)

A Chara

I acknowledge receipt of your recent consultation.

In the event of observations, you will receive a co-ordinated heritage-related response by email from Development Applications Unit (DAU).

The normal target turnaround for pre-planning and other general consultations is six weeks from date of receipt. In relation to general consultations from public bodies under the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 to 2011, the Department endeavours to meet deadline dates, where requested.

Please note Development Applications Unit (DAU) is the coordinating unit for the Department of Housing, Local Government and Heritage, coordinating responses/submission from National Parks and Wildlife Service, National Monuments Service, Architectural Heritage and Underwater Archaeology Unit. All Correspondence is to be issued to and from DAU

If you have not heard from DAU and wish to receive an update, please email manager.dau@housing.gov.ie.

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Bóthar an Bhaile Nua, Loch Garman, Contae Loch Garman, Y35 AP90
Newtown Road, Wexford, County Wexford, Y35 AP90

1.1.3 DECC - Scoping Response

[Via email received 26/05/2023]

We acknowledge receipt of your email.

The Planning Advisory Division acts on behalf of the Department of the Environment, Climate and Communications with respect to its function as a statutory consultee within the planning system.

The Department provides observations in relation to County Development Plans, Local Area Plans and Strategic Environmental Assessments.

The Department does not provide observations for individual projects and developments.

As such, the Department will not provide observations on individual planning applications, Environmental Impact Assessments or any notification relating to an individual development.

1.1.4 DHLGH - Scoping Response

[Via email received 26/05/2023]

A Chara

Thank you for your email to the Quality Customer Service mailbox of the Department of Housing, Local Government and Heritage. We will examine your query and endeavour to resolve it within 15 working days, in accordance with our Customer Charter.

We will use the information and details you have provided to us to examine and respond to your query. Your email will be kept in the QCS mailbox which is password protected and accessible only to those officials working on the QCS account. Emails to this account are retained for no longer than one year, unless it is necessary to retain them for a longer period in the context of the ongoing resolution of an issue.

Go raibh maith agat as ucht do ríomhphoist chuig Seirbhís Ardchaighdeáin do Chustaiméirí na Roinne Tithíochta, Rialtais Áitiúil agus Oidhreachta. Bíonn sé d'aidhm againn do cheist a fhreagairt faoi cheann15 lá oibre.

Kind regards

Quality Customer Service Office

1.1.5 Failte Ireland - Scoping Response

[Via email received 27/06/2023]

Hello Conor,

Thank you for your email, we have no comments on this EIAR Scoping Request.

Regards,

Yvonne Jackson

Product Development-Environment & Planning Support | Fáilte Ireland

1.1.6 OPW - Scoping Response

[Via email received 27/06/2023]

Conor

On behalf of OPW Environment Section, we don’t have a statutory function to provide environmental comment on EIARs for building e.t.c. and we deal with the environmental management of flood risk activities. For the EIAR public consultation, can you forward your request to our corporate email info@opw.ie. This will be circulated to a broader number of OPW colleagues. Frequently our engineering side will give comments to consider any known flood risk or river maintenance access requirements.

Regards

Nathy Gilligan

1.1.7 GSI - Scoping Response

Bernadette O'Connell
Unit 8, Block 660
Greenogue Business Plaza
Greenogue Business Park
Rathcoole, D24 YN81

12 June 2023

Re: EIAR Scoping Report for St Patrick's Mental Health Services at Saint Edmundsbury

Your Ref: n/a
Our Ref: 23/134

Dear Bernadette,

Geological Survey Ireland is the national earth science agency and is a division of the Department of the Environment, Climate and Communications. We provide independent geological information and gather various data for that purpose. Please see our website for data availability. We recommend using these various data sets, when conducting the EIAR, SEA, planning and scoping processes. Use of our data or maps should be attributed correctly to 'Geological Survey Ireland'.

The publicly available data referenced/presented here, should in no way be construed as Geological Survey Ireland support for or objection to the proposed development or plan. The data is made freely available to all and can be used as independent scientific data in assessments, plans or policies. It should be noted that in many cases this data is a baseline or starting point for further site specific assessments.

With reference to your letter/email received on the 26 May 2023, concerning the EIAR Scoping Report for St Patrick's Mental Health Services at Saint Edmundsbury, Geological Survey Ireland would encourage use of and reference to our datasets. Please find attached a list of our publicly available datasets that may be useful to the environmental assessment and planning process. We recommend that you review this list and refer to any datasets you consider relevant to your assessment. The remainder of this letter and following sections provide more detail on some of these datasets.

Geoheritage

A national inventory of geoheritage sites known as County Geological Sites (CGSs) is managed by the Geoheritage Programme of Geological Survey Ireland. CGSs, as adopted under the National Heritage Plan, include sites that are of national importance which have been selected as the very best examples for NHA (Natural Heritage Areas) designation. NHA designation will be completed in partnership with the National Parks and Wildlife Service (NPWS). CGSs are now routinely included in County Development Plans and in the GIS of planning departments, to ensure the recognition and appropriate protection of geological heritage within the planning system. CGSs can be viewed online under the Geological Heritage tab on the online Map Viewer.

The audit for South Dublin was completed in 2014. The full report details can be found here. **Our records show that there are no CGSs in the vicinity of the proposed development.**

Groundwater

Geological Survey Ireland's Groundwater and Geothermal Unit, provides advice, data and maps relating to groundwater distribution, quality and use, which is especially relevant for safe and secure drinking water supplies and healthy ecosystems.

Proposed developments need to consider any potential impact on specific groundwater abstractions and on groundwater resources in general. We recommend using the groundwater maps on our Map viewer which should include: wells; drinking water source protection areas; the national map suite - aquifer, groundwater vulnerability, groundwater recharge and subsoil permeability maps. For areas underlain by limestone, please refer to the karst specific data layers (karst features, tracer test database; turlough water levels (gwlevel.ie). Background information is also provided in the Groundwater Body Descriptions. Please read all disclaimers carefully when using Geological Survey Ireland data.

The Groundwater Data Viewer indicates two aquifers classed as a 'Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones' and a 'Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones' underlie the proposed development.

The Groundwater Vulnerability map indicates the range of groundwater vulnerabilities within the area covered is variable. We would therefore recommend use of the Groundwater Viewer to identify areas of High to Extreme Vulnerability and 'Rock at or near surface' in your assessments, as any groundwater-surface water interactions that might occur would be greatest in these areas.

GWClimate is a groundwater monitoring and modelling project that aims to investigate the impact of climate change on groundwater in Ireland. This is a follow on from a previous project (GWFlood) and the data may be useful in relation to Flood Risk Assessment (FRA) and management plans. Maps and data are available on the Map viewer.

Geological Survey Ireland has completed Groundwater Protection Schemes (GWPSs) in partnership with Local Authorities, and there is now national coverage of GWPS mapping. A Groundwater Protection Scheme provides guidelines for the planning and licensing authorities in carrying out their functions, and a framework to assist in decision-making on the location, nature and control of developments and activities in order to protect groundwater. **The Groundwater Protection Response overview and link to the main reports is here: https://www.gsi.ie/en-ie/programmes-and-projects/groundwater/projects/protecting-drinking-water/what-is-drinking-water-protection/county-groundwater-protection-schemes/Pages/default.aspx**

Geological Mapping

Geological Survey Ireland maintains online datasets of bedrock and subsoils geological mapping that are reliable and accessible. We would encourage you to use these data which can be found here, in your future assessments.

Please note we have recently launched QGIS compatible bedrock (100K) and Quaternary geology map data, with instructional manuals and videos. This makes our data more accessible to general public and external stakeholders. QGIS compatible data can be found in our downloadable bedrock 100k .zip file on the Data & Maps section of our website.

Our 3D models can help stakeholders visualize, understand and characterise geology, for deposit and resource mapping, for flooding and for urban geology applications including basement impact assessment, Sustainable Drainage Systems (SuDS), and subsurface management. Our 3D models offer a key element of geotechnical risk management by identifying areas requiring further site investigation.

Further information on the bedrock and Quaternary 3D models of Dublin is available here and here.

Geohazards

Geohazards can cause widespread damage to landscapes, wildlife, human property and human life. In Ireland, landslides, flooding and coastal erosion are the most prevalent of these hazards. We recommend that geohazards be taken into consideration, especially when developing areas where these risks are prevalent, and we encourage the use of our data when doing so.

Geological Survey Ireland has information available on landslides in Ireland via the National Landslide Database and Landslide Susceptibility Map both of which are available for viewing on our dedicated Map Viewer. Associated guidance documentation relating to the National Landslide Susceptibility Map is also available.

Geological Survey Ireland also engaged in a national project on Groundwater Flooding. The data from this project may be useful in relation to Flood Risk Assessment (FRA) and management plans, and is described in more detail under 'Groundwater' above.

Natural Resources (Minerals/Aggregates)

Geological Survey Ireland provides data, maps, interpretations and advice on matters related to minerals, their use and their development in our Minerals section of the website. The Active Quarries, Mineral Localities and the Aggregate Potential maps are available on our Map Viewer.

We would recommend use of the Aggregate Potential Mapping viewer to identify areas of High to Very High source aggregate potential within the area. In keeping with a sustainable approach we would recommend use of our data and mapping viewers to identify and ensure that natural resources used in the proposed development are sustainably sourced from properly recognised and licensed facilities, and that consideration of future resource sterilization is considered.

Geochemistry of soils, surface waters and sediments for Dublin Region

Geological Survey Ireland provides baseline geochemistry data for Ireland as part of the Tellus programme. Data is available at https://www.gsi.ie/en-ie/data-and-maps/Pages/Geochemistry.aspx**. This page also hosts urban geochemistry mapping (Dublin SURGE project) which may be useful to the project.**

Geological Survey Ireland has completed a geochemical characterization of the subsoil beneath large parts of Dublin, known colloquially as the Dublin Boulder Clay. The report documents the analysis completed on a third-party geochemical dataset obtained from the private sector and is accompanied by an excel spreadsheet containing the database of geochemical observations. Further details can be found at: https://www.gsi.ie/en-ie/publications/Pages/Geochemical-characterization-of-the-Dublin-Boulder-Clay.aspx

Guidelines

The following guidelines may also be of assistance:

- Institute of Geologists of Ireland, 2013. Guidelines for the Preparation of the Soils, Geology and Hydrogeology Chapters of Geology in Environmental Impact Statements.

- EPA, 2022. Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR)

Other Comments

Should development go ahead, all other factors considered, Geological Survey Ireland would much appreciate a copy of reports detailing any site investigations carried out. The data would be added to Geological Survey Ireland's national database of site investigation boreholes, implemented to provide a better service to the civil engineering sector. Data can be sent to the Geological Mapping Unit, at mailto:GeologicalMappingInfo@gsi.ie, 01-678 2795.

I hope that these comments are of assistance, and if we can be of any further help, please do not hesitate to contact me Clare Glanville, or my colleague Trish Smullen at GSIPlanning@gsi.ie.

Yours sincerely,

Dr. Clare Glanville
Senior Geologist
Geological Survey Ireland

Trish Smullen
Geoheritage and Planning Programme
Geological Survey Ireland

Enc: Table - Geological Survey Ireland's Publicly Available Datasets Relevant to Planning, EIA and SEA processes.

1.1.8 IFI - Scoping Response

Iascach Intíre Éireann
Inland Fisheries Ireland

21/06/2023

RE: EIAR Scoping Report for St Patrick's Mental Health Services at Saint Edmundsbury

To whom it may concern

The following observations and comments are of necessity of a general nature, as construction proposals and method statements are not as yet available. While they apply to the proposed development in general, the waters in fisheries terms likely to be impacted act primarily as contributories to downstream habitat for juvenile salmonids, lampreys and other species. They also, in the context of the proposed works, have the potential to convey deleterious matter from those works such as concrete, silt, fuel, lubricating and hydraulic oils from construction plant and equipment downstream unless proper safeguards are in place. IFI request you have particular regard to the following in the proposed development:

The Liffey system is exceptional in supporting Atlantic salmon (*Salmo salar,* listed under Annex II and V of the EU Habitats Directive) in addition to resident Brown trout (both *Salmo trutta*) populations. The Liffey River also supports populations of the Freshwater Crayfish (*Austropotamobius pallipes*) and Lamprey (Lampetra sp.) species listed under Annex II of the EU Habitats Directive. The Liffey estuary serves as the natural linkage for species such as Salmon, Sea trout and Eels migrating between freshwater and ocean environments, providing the necessary habitat for their transition. Previous surveys in Dublin city area of the Liffey have recorded Eel and river lamprey.

Pollution of the adjacent fresh / estuarine waters from poor on-site construction practices could have a significantly negative impact on the fauna and flora of this surface water system. A comprehensive and integrated approach for achieving estuary and river protection during construction and operation should be implemented through environmental construction management planning.

Best practice should be implemented at all times in relation to any activities that may impact on surface water. Any discharges to surface streams present on the site must not impact negatively on the salmonid status of the Liffey system. Comprehensive surface water management measures must be implemented at the construction and operational stage to prevent any pollution.

IIE Baile Átha Cliath, 3044 Céide an Locha, Campas Gnó Larthar Na Cathrach, Baile Átha Cliath 24, D24 Y265
IFI Dublin, 3044 Lake Drive, Citywest Business Campus, Dublin 24, D24 Y265
+353(0)1 8842 600 - dublin@fisheriesireland.ie - www.fisheriesireland.ie

Iascach Intíre Éireann
Inland Fisheries Ireland

It is recommended that the "Guidelines on protection of fisheries during construction works in and adjacent to waters" (2016) http://www.fisheriesireland.ie/fisheries-management-1/624-guidelines-on-protection-of-fisheries-during-construction-works-in-and-adjacent-to-waters should be consulted when planning to undertake works near any of the relevant rivers and streams. The maintenance of habitat integrity (both in-stream and riparian) is essential in safeguarding the ecological value of this important urban natural resource. The specific details of any works directly affecting watercourses or riparian habitats in the area, in particular surface water discharges to streams must first be submitted to IFI directly for assessment.

Pre-construction baseline data (biotic and abiotic) is essential within the EIA process and IFI would be delighted to contribute any information that may be relevant to the fishery section. Potential impacts (likely and significant effects) of the development on the system should be comprehensively assessed and recommendations and mitigation measures should formulated. The identification of good baseline data across a range of sites, both close to the development and at a distance from the site will allow for comparison between the current situation and that which may develop over time if the project proceeds.

IFI have also published revised "Planning for watercourses in the urban environment" which can provide guidance on site specific measures to enhance, protect, rehabilitate or establish riparian and aquatic habitats. This should be referred to in the EIAR. It can be accessed on our website www.fisheriesireland.ie

I trust you will take our observations on board.

Kind regards,

Roisin O' Callaghan

Fisheries Environmental Officer
Inland Fisheries Ireland - Dublin
Iascach Intire Eireann
Inland Fisheries Ireland

Telephone: +353 (0) 1 8842651
EMail: roisin.ocallaghan@fisheriesireland.ie

1.1.9 Irish Water - Scoping Response

Uisce Éireann
Bosca OP 6000
Baile Átha Cliath 1
D01 WA07
Éire

Irish Water
PO Box 6000
Dublin 1
D01 WA07
Ireland

T: +353 1 89 25000
F: +353 1 89 25001
www.water.ie

For the attention of Conor O'Neill

21st June 2023

By Email: Conor.oneill@jbaconsulting.ie

Re: EIA Scoping Request – Proposed healthcare development within the grounds of St Edmundsbury Hospital in Lucan, South Dublin.

Dear Mr O'Neill,

Uisce Éireann has received notification of your Environmental Impact Assessment (EIA) scoping request relating to a proposal for the provision of a healthcare development within the grounds of the existing St Edmundsbury Hospital in Lucan, South Dublin

Please see below, Uisce Éireann's scoping opinion in relation to Water Services. On receipt of the planning referral, Uisce Éireann will review the finalised Environmental Impact Assessment Report (EIAR) as part of the planning process.

Queries relating to the terms and the EIA scoping opinions below should be directed to planning@water.ie

PP. *Ali Robinson*

Yvonne Harris

Connections and Developer Services

Uisce Éireann's Response to EIA Scoping Requests

At present, Uisce Éireann does not have the capacity to advise on the scoping of individual projects. However, in general the following aspects of Water Services should be considered in the scope of an EIA where relevant;

a) Where the development proposal has the potential to impact an Uisce Éireann Drinking Water Source(s), the applicant shall provide details of measures to be taken to ensure that there will be no negative impact to Uisce Éireann's Drinking Water Source(s) during the construction and operational phases of the development. Hydrological / hydrogeological pathways between the applicant's site and receiving waters should be identified as part of the report.

b) Where the development proposes the backfilling of materials, the applicant is required to include a waste sampling strategy to ensure the material is inert.

c) Mitigations should be proposed for any potential negative impacts on any water source(s) which may be in proximity and included in the environmental management plan and incident response.

d) Any and all potential impacts on the nearby reservoir as public water supply water source(s) are assessed, including any impact on hydrogeology and any groundwater/ surface water interactions.

e) Impacts of the development on the capacity of water services (*i.e. do existing water services have the capacity to cater for the new development*). This is confirmed by Uisce Éireann in the form of a Confirmation of Feasibility (COF). If a development requires a connection to either a public water supply or sewage collection system, the developer is advised to submit a Pre-Connection Enquiry (PCE) enquiry to Uisce Éireann to determine the feasibility of connection to the Uisce Éireann network.

   All pre-connection enquiry forms are available from https://www.water.ie/connections/connection-steps/.

f) The applicant shall identify any upgrading of water services infrastructure that would be required to accommodate the proposed development.

g) In relation to a development that would discharge trade effluent – any upstream treatment or attenuation of discharges required prior to discharging to an Uisce Éireann collection network.

h) In relation to the management of surface water; the potential impact of surface water discharges to combined sewer networks and potential measures to minimise and or / stop surface waters from combined sewers.

i) Any physical impact on Uisce Éireann assets – reservoir, drinking water source, treatment works, pipes, pumping stations, discharges outfalls etc. including any relocation of assets.

j) When considering a development proposal, the applicant is advised to determine the location of public water services assets, possible connection points from the applicant's site / lands to the public network and any drinking water abstraction catchments to ensure these are included and fully assessed in any pre-planning proposals. Details, where known, can be obtained by emailing an Ordnance Survey map identifying the proposed location of the applicant's intended development to datarequests@water.ie

k) Other indicators or methodologies for identifying infrastructure located within the applicant's lands are the presence of registered wayleave agreements, visible manholes, vent stacks, valve chambers, marker posts etc. within the proposed site.

l) Any potential impacts on the assimilative capacity of receiving waters in relation to Uisce Éireann discharge outfalls including changes in dispersion / circulation characterises. Hydrological / hydrogeological pathways between the applicant's site and receiving waters should be identified within the report.

m) Any potential impact on the contributing catchment of water sources either in terms of water abstraction for the development (*and resultant potential impact on the capacity of the source*) or the potential of the development to influence / present a risk to the quality of the water abstracted by Uisce Éireann for public supply should be identified within the report.

n) Where a development proposes to connect to an Uisce Éireann network and that network either abstracts water from or discharges wastewater to a "protected"/ sensitive area, consideration as to whether the integrity of the site / conservation objectives of the site would be compromised should be identified within the report.

o) Mitigation measures in relation to any of the above ensuring a zero risk to any Uisce Éireann drinking water sources (Surface and Ground water).

This is not an exhaustive list.

Please note;

- Where connection(s) to the public network is required as part of the development proposal, applicants are advised to complete the Pre-Connection Enquiry process and have received a Confirmation of Feasibility letter from Uisce Éireann ahead of any planning application.

- Uisce Éireann will not accept new surface water discharges to combined sewer networks.

1.2 Statutory Consultation - NPWS

RECORD OF MEETING

JBA Project Code	2023s0007
Contract	St Edmundsbury Hospital
Client	St Patrick's Mental Health Services
Day, Date and Time	03/12/2025 15:00
Meeting	NPWS Ecology Consultation No.1
Venue	Online
Version / Date	P01 - 08/12/2025

ATTENDING

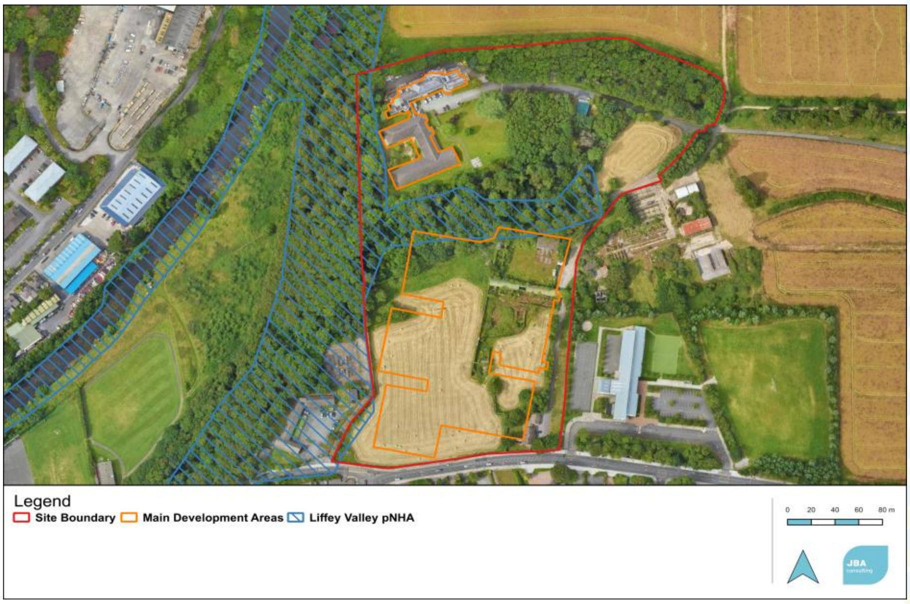
NPWS, Department of Housing, Local Government and Heritage	Terry Doherty Divisional Ecologist Dublin, Meath, Louth, Ecological Guidance and Advisory Unit	TD
JBA Consulting		
	William Mulville	WM
	Matt Hosking	MH
	Bernadette O'Connell	BOC
	Thom Owen	TO
	Notes/Minutes to be taken by JBA	
Item		Action

1 Introduction to Project

1.1 Consultation to date

BOC introduced the JBA team, stated that the project was deemed Strategic Infrastructure and that the competent planning authority was An Coimisiún Pleanála (ACP). The project would go into for planning in February 2026. JBA has met with the South Dublin CC Biodiversity officer (Rosaleen Dwyer) on site in 2023 and that although they had not received a written response from her, that her concern was the effect on the protected woodland (pNHA).

MH presented an overview of the proposed development in a Power Point presentation. The project aim is to provide a new mental health hospital on the grounds of the existing St Patrick's Hospital in St Edmundsbury, Lucan.



1.2 Proposed works

MH described the features of the proposed development and the main ecological constraints associated with them. These included:

- A new adolescent facility on top of the existing extension (closer to the pNHA woodland on the western edge)
- A new 200-bed in patient facility to the south of the existing woodland (will encroach on the woodland, as well as remove agricultural grassland which can provide foraging potential for local bird populations)
- The existing historic farm buildings and walls which will largely be retained.

1.3 Comments:

- NPWS asked if the encroachment into the pNHA is necessary.
- NPWS concerned about bat roosts located in the trees to be relocated from the pNHA.
- NPWS asked about planning restriction due the special amenity order crossing into the site.
- NPWS concerned about the loss of natural and ancient woodland but impressed with the translocation mitigation measure.

2 Local ecology surveys

MH described the ecology surveys carried out by JBA over two seasons in 2023 and 2025, namely:

- Baseline habitats
- Non-volant mammals
- Breeding birds
- Rare/protected floral surveys
- Grassland assessment
- Breeding bird's nest counts

MH noted that the floral surveys in 2023 recorded the presence of Hairy St John’s Wort Hypericum hirsutum (a FPO species), within the woodland to the west of the proposed development. However, during the follow up surveys in 2025 no individual plants were found.

MH noted that, within the site, seven Amber-listed and one Red-listed bird of conservation concern were recorded by JBA. Surveys for bats were conducted by a separate company (Gannon and Associates), the results of which are listed in the figures below.

Date	Structures surveyed	Sunset	Temp (°C)	Precipitation	Wind	Observations
22/09/2022	B, C, D, E & F	19:10	14-11	None	Light air	No emergence. 3 species recorded in general vicinity, Common Pipistrelle, Soprano Pipistrelle and Leisler's bat
07/07/2023	G & H	21:30	19-16	None	Gentle breeze	No emergence. 3 species recorded in general vicinity, Common Pipistrelle, Soprano Pipistrelle and Leisler's bat
27/07/2023	B, C, D, E & F	21:15	20-17	None	Gentle breeze	No emergence. 3 species recorded in general vicinity, Common Pipistrelle, Soprano Pipistrelle and Leisler's bat
06/09/2023	B, C, D, E & F	20:05	25-21	None	Light air	No emergence. 3 species recorded in general vicinity, Common Pipistrelle, Soprano Pipistrelle and Leisler's bat
13/05/2025	B, C, D, E & F	21:18	17-13	None	Light air	No emergence. 3 species recorded in general vicinity, Common Pipistrelle, Soprano Pipistrelle and Leisler's bat
29/09/2025	I	19:04	16-15	None	Light breeze	No emergence. 3 species recorded in general vicinity, Common Pipistrelle, Soprano Pipistrelle and Leisler's bat
01/10/2025	J	19:02	17-15	None	Light breeze	No emergence. 4 species recorded in general vicinity, Common Pipistrelle, Soprano Pipistrelle, Leisler's bat and brown long-eared bat

2.1 **Comments:**

- TD was surprised at the lack of bat roosts recorded during the surveys.
- TD remarked that the encroachment into the pNHA is a pity.

3 Mitigation Measures

WM described the mitigation measures:

- Targeted replacement of nesting opportunity. i.e. Barn Swallow, House Martin, Treecreeper, and Goldcrest
- Bat roost features to be installed to mitigate expected loss of potential bat roost features due to loss of derelict buildings
- The removal of invasive species from the site, i.e. Cherry Laurel and Butterfly-bush
- Ecologically friendly lighting design for site operations
- Translocation of the encroached upon woodland soil to other areas within the site (including retention of mycelium network and seedbank, accompanied planting to try reducing ecological lag of semi-natural woodland establishing)
- Installation of a wetland / pond to introduce another niche for local wildlife
- Creation of a semi-natural meadow (providing more food resource for local invertebrates and potential nesting for ground nesting birds).

3.1 **Comments:**

- TD was impressed with the woodland translocation mitigation measure.
- TD was pleased with the idea of using local seeding for the meadow, especially due to its proximity to the pNHA.

4 General Discussion

NPWS' main concern was the presence of bats in the area. TD noted that he was aware of the presence of bats all around the site and was surprised that the surveys didn't show bat activity within the old buildings as NPWS gets the most calls about bats in the South Dublin area. TD also noted that there are several other rare/interesting species in proximity to the site, including millipedes, pine martens, potentially owls.

TD was concerned about the internal lighting and its effects on bat populations.

TD was concerned about the lack of bat roosts in trees or buildings on site, WM assured him that pre-construction bat and badger surveys were to be carried out.

BOC stated that JBA are writing the EIAR for the project, which aims to go to planning by the end of January 2026. TD noted that a bat derogation licence may be required as part of the EIAR. In the case of a multiple year licence being granted, new surveys would have to be carried out before demolition and tree felling if there is a fair interval between the grant date and the start of the construction works. JBA

TD was satisfied with the woodland translocation, native and local seeding for the meadow and wetland installation as mitigation measures.

TD was concerned about the development's encroachment into the Valley Special Amenity Area Order (SAAO).

TD noted that the ecology work done by JBA was comprehensive.

JBA stated that we would send NPWS a copy of the PowerPoint presentation along with the minutes.

JBA

1.3 Public and Local Stakeholder Consultation

TOT ARCHITECTS St Patrick's Mental Health Services

Report: Public Consultation for Proposed New Mental Health Hospital with connected facilities at the Saint Edmundsbury site, Lucan, Co. Dublin.

Location: Saint Edmundsbury House, Lucan, Co. Dublin.
Date: 18 November 2025

1. Introduction
A public consultation event was held on 18 November 2025 at St Edmundsbury House, Lucan, to present the proposals for the development of a new Mental Health Hospital and associated facilities on the Saint Edmundsbury campus. The purpose of the consultation was to provide both public representatives and members of the community with a clear understanding of the project vision, its key components, and the planning process ahead. The event was structured in two parts: a dedicated session for public representatives from 3:00 pm to 4:00 pm, followed by a public session from 4:00 pm to 5:00 pm. This structure ensured that elected representatives had the opportunity for focused engagement before the wider public discussions commenced.

2. Attendance
2.1 Public Representatives (3:00 pm – 4:00 pm)
Cllr Caroline Brady, Cllr Helen Farrell and public representatives attended the initial briefing. Their attendance was welcomed as a vital part of maintaining open communication with elected officials.

2.2 Members of the Public (4:00 pm – 5:00 pm)
Interest from the local community was strong. A total of 50 individuals registered to attend the consultation, and a further 10-15 community members joined without registration. This level of engagement reflects the significance of the project for residents in the Lucan area.

3. Presentations and Design Team Participation
The consultation included a series of presentations delivered by representatives of St. Patrick's Mental Health Services and members of the design team. Their contributions provided attendees with a comprehensive overview of the architectural, technical, environmental, and procedural dimensions of the proposed development.
The session opened with an introduction by Tom Maher, Director of Services at SPMHS, who outlined the overall objectives of the new Mental Health Hospital project and the importance of public engagement at this early stage.
Following this, members of the design and consultancy team delivered presentations in the following areas:

- Architecture – Presented by Des Smyth (TOT Architects), outlining the overarching design concept, layout of buildings, and integration of the new facilities within the Saint Edmundsbury site.
- Environmental Assessment – Delivered by Bernadette O'Connell (JBA Consulting), with a focus on environmental considerations, site ecology, and measures to mitigate potential impacts.

- Landscaping – Presented by Jim Bloxam (DFLA), describing the approach to landscape integration, preservation of natural character, and enhancement of green spaces.
- Conservation – Presented by Tim Dowling (Carrig), addressing heritage considerations and the protection of existing structures on the site.
- Transportation and Roads – Presented by Garry Flood (Egis), covering anticipated traffic impacts, access arrangements, and proposed transport improvements.
- Civil & Structural Design – Also presented by Garry Flood (Egis), providing an overview of the technical engineering framework supporting the project.
- Planning Process – Delivered by John Gannon (Tom Philips & Associates), detailing the procedural steps, timelines, and statutory requirements associated with the submission of the planning application.

Together, these presentations aimed to give attendees a clear, integrated picture of how the project has been developed to date and how it will progress through the planning stages.

4. Feedback and Initial Reactions

Overall, the project was generally well received by those in attendance. Many participants expressed appreciation for the comprehensive overview provided by the design and planning team, and there was a shared recognition of the importance of delivering a modern Mental Health Hospital with connected facilities on the Saint Edmundsbury site. While the sentiment was broadly positive, a number of questions and comments were raised, reflecting the community's interest in the project and its potential implications.

4.1 Councillors' Queries (prior to public consultation)

- Concerns over intrusion into the proposed Natural Heritage Area (pNHA).
- Requested reasons why the building had to extend into the woodland.
- Asked for clarity over the Site of Archaeological and Architectural Interest (SAAO) and the pNHA boundaries.

4.2 Public Comments and Queries

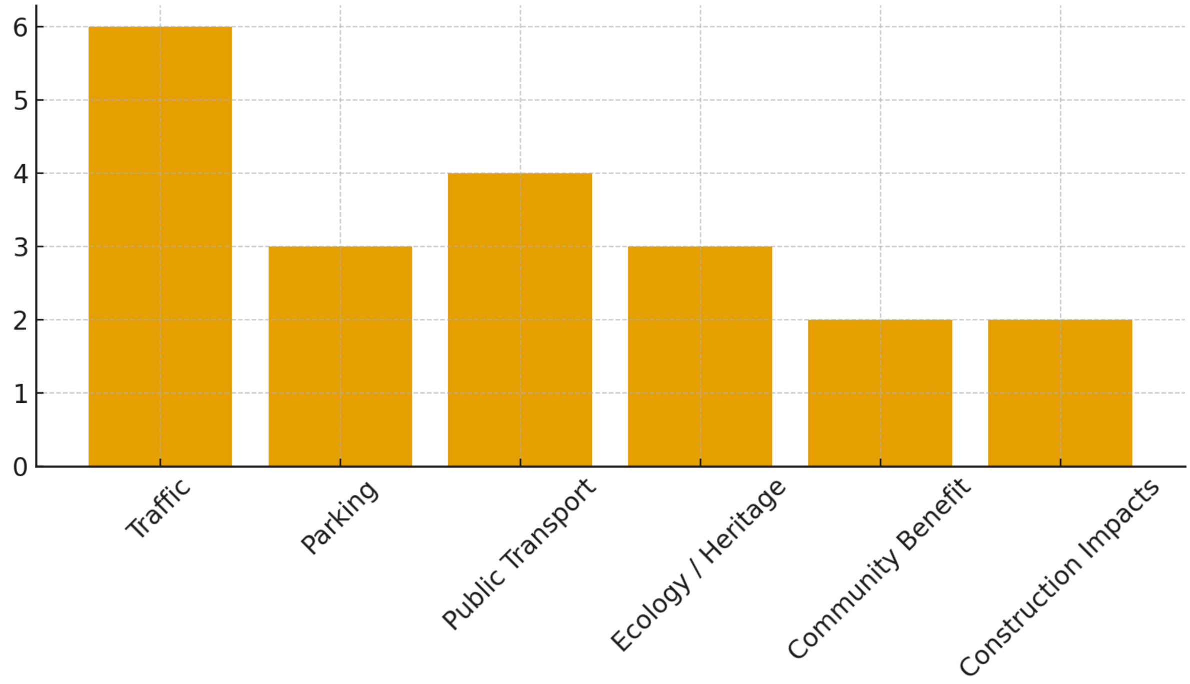
- Majority of comments focused on traffic issues; these were addressed by Garry Flood (Egis).
- Questions about whether the existing walking loop would be retained.
- Queries regarding whether proposed visitor parking would be paid.
- Concerns about safety for school parents' vehicular drop-off during construction.
- Questions about the amount and type of native planting in the proposed landscaping scheme.
- Comments regarding safety of the proposed pond within the wetland area.
- Queries about whether the site is designated as a greenbelt that cannot be developed.
- Questions regarding whether local labour would be recruited to work in the hospital.
- Concerns about the appropriateness and safety of locating a mental health facility beside two schools.
- Queries regarding the proportion of secure facilities and patients who would be resident in the development.
- Additional concerns raised about access arrangements (vehicular and pedestrian), future traffic volumes, and the maintenance of the existing walking route.

The design team responded to these queries, providing explanations where possible and noting areas where further information will become available as the project progresses.
It is important to note that some of the queries raised fall outside the scope of the planning process and therefore cannot be addressed within a planning forum. These included questions relating to staffing policies (such as recruitment of local labour), the operational model of the mental health facility, and broader perceptions of safety or social suitability. While not planning matters, these comments have been recorded for completeness and will be relayed to the appropriate parties.

4.3 Written Feedback

In addition to questions raised during the sessions, written comments were received from attendees. On the evening of the consultation, 11 comments were submitted on cards, with a further comment received by email since the event. Cards and email in Appendix A.
An analysis of these written submissions was conducted to identify the key areas of concern and ensure that all feedback is considered in the ongoing development and planning process. Six main areas of interest were identified:

- Traffic
- Parking
- Public Transport
- Ecology / Heritage
- Community Benefits
- Construction Impact



Note:
Number of submissions mentioning each concern (not mutually exclusive).

Traffic

- Concern about increased impact on already heavy traffic on the road (Card 1).
- Traffic access and parking sufficiency questioned (Card 3).
- Any increase of traffic into an already clogged roadway is a concern (Card 4).
- Issues caused by toll-bridge avoiders creating rat-run traffic (Card 4).
- Concern about traffic close to Esker Lane and through the village (Card 10).
- Worry that traffic will build up and block the road near the school, where lanes merge (Card 11).
- Email: Safety concerns at the entrance, particularly with children crossing by foot or bike near the school.
- Email: Concern that patients may need to travel by car due to vulnerability or long-distance journeys.
- Email: Concern that access routes may not cope with demand.

Parking

- Issues raised about parking numbers by residents closest to the expansion (Card 2).
- Concern about whether parking provision is sufficient (Card 3).
- Email: Concern that the proposed 215 spaces may be inadequate.
- Email: Worry that if the car park is full, visitors will park in nearby estates (comparison to Crumlin Hospital).
- Email: Query on how the 215 spaces were calculated (size vs. usage).
- Email: Concern that limited public transport makes car travel necessary for many.
- Email: Concern about shift patterns and limited public transport at weekends reducing staff ability to avoid car use.
- Email: Request for contingency plans if parking proves insufficient.

Public transport

- Request for engagement with TFI regarding increasing C3/C4 bus services (Card 1).
- Existing problem with bus frequency; buses already full going into town (Card 5).
- Increase in bus numbers suggested (Card 6).
- Email: Patients may not be able to use public transport due to mental health vulnerability.
- Email: Lucan not well connected to areas outside Dublin/Kildare suburbs.
- Email: Existing bus services do not support staff shift times, especially weekends.
- Email: Concern that sustainable transport assumptions may not be realistic.

Ecology / heritage

- Maintaining existing walking route down to Liffey Valley Park (Card 1).
- Strong importance placed on green/ecology of the site (Card 6).
- Preserve old stone walls/buildings and large trees (Card 7).
- Email: Commends the preservation of green space and biodiversity.
- Email: Highlights importance of green space for healing, health, and stress management.

Community benefit

- How will the local community benefit from this development? (Card 9).
- Interest in something being done with the gate lodge, e.g., a coffee shop (Card 8).

Construction impacts

- Concern about construction traffic (Card 9).
- Email: Concern that children crossing the road near the entrance during construction could be at risk.
- Email: Questions about mitigating construction-phase access issues.

5. Photos

1. Public Representatives Meeting

2. Public Representatives Meeting


3. Public Representatives Meeting

4. Members of the Public Meeting

5. Members of the Public Meeting

6. Members of the Public Meeting

Appendix A

Comment Cards

1. I don't have any strong objections to the development as a whole. However, key concerns of mine are: 1. Increased impact on already excessive traffic on road 2. Maintaining existing walking down to Liffey Valley Park 3. Will there be engagement with TFI re more C3/C4 buses?
2. Overall, I think it's a very good plan but I have noted from some people that live closer to the proposed expansion that there are big issues in relation to the parking numbers
3. Excellent concept. Purpose built accommodation to meet a huge need in our society. I would totally support the proposal. Making good use of land you own. Expanding on existing services. Only issue would be traffic access and parking - is it sufficient? One way road would be ideal. In at Dean Clinic and out at the Esker Lane Gate
4. Any increase of traffic into a clogged-up roadway is a concern. Toll bridge avoiders cause a lot of issues. Can traffic through "Gates" (Eagle gates?) be minimised to avoid rat run traffic?
5. Looks great. Existing problem with bus frequency outside going to town - buses all full
6. Looks really good - green/ecology of site very important - am a resident across the road. St Ed's land so special. Could do with increase in number of buses
7. Preserve old stone / walls / buildings / preserve large trees. Think green!
8. Love to see something done (coffee shop) with gate lodge at Junction 2
9. How will the local community benefit from this development? Worries - construction traffic. Wrong location for development
10. Delighted about the new mental health facilities - just concerned about the traffic close to Esker Lane and traffic through village
11. My worry is that the traffic will build up more and block the road as while there will be two lanes from just before the school, the traffic goes into two lanes anyhow.

Email

To whom it may concern,

Thank you for showcasing the plans for the proposed development at St. Edmundsbury/ St. Patrick's Hospital Lucan.

I feel it is absolutely an essential service and facility first and foremost. And with a mental health facility at the site locally for many years, it also feels organic to see a plan for an evolvement of use rather than entire change of use.

I would like to commend the plan in terms of preserving so much green space in the design and a commitment to maintaining the biodiversity in the area. Nature and green space is particularly important for healing, health and stress management so I think it is especially important to prioritise here. I think it is so wonderful to see a gym onsite and useable nature spaces. Often these are an afterthought in hospital / healthcare facility design.

I have some concerns regarding access and parking spaces. I understand there will be approx 215 spaces provided based on council guidelines. Whilst I fully applaud the decent

size of bicycle parking and understand the incentive to promote green transport, my concerns are:
1. Safety at the entrance site especially with local children crossing by foot or bike to access the school- during both construction phase and beyond.
2. The patients travelling to / from the site are vulnerable & most probably suffering mental ill health, therefore may not be in a position to opt for public transport options due to same.
3. As a center of excellence people are likely travelling from an array of different locations for example Swords/Ashbourne/Carlow. Lucan is not a central hub for transport links to/from many other locations other than Dublin city and the surrounding suburbs in Kildare.
3. When a patient/visiting family arrive by car and they find the car park full, where do they choose as a backup plan? There is an extreme shortage in alternative publicly available carparking facilities nearby. Do they have no choice but to park in nearby housing estates similar to that which happens at Crumlin Hospital?
4. Are the 215 spaces calculated on the size of the facility e.g. Sq Meterage or is usage taken into account? e.g. outpatient services
5. As mentioned there will be a workplace travel officer allocated to oversee staff carparking and promote the use of alternative transport links but again, these transport links to/from Lucan are limited to very few areas and the services often do not meet the shift timing requirements especially on weekends.
6. Is there a contingency plan if the parking transport facilities do not meet the needs of the use of the facility? Is there scope to revise parking facilities or access links if/when overflow issues occur?
Many thanks, I enjoyed the display and found those I spoke to very engaging.

APPENDIX 2

Chapter 2 Description of Proposed Development

No Appendix

APPENDIX 3
Chapter 3 Population and Human Health
No Appendix

APPENDIX 4
Chapter 4 Biodiversity
Bat Report

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- gannonandassociates.ie

BAT SURVEY REPORT

for

PROPOSED NEW HOSPITAL

ST PATRICK'S UNIVERSITY HOSPITAL

LUCAN

CO. DUBLIN

On behalf of

St Patrick's University Hospital (SPUH)

MARCH 2026

TABLE OF CONTENTS

DOCUMENT CONTROL

Revision No.	Date	Note	Author
F1	20/03/2026	Final	DW

1 INTRODUCTION

1.1 Overview

Gannon + Associates were commissioned by St Patrick's University Hospital (SPUH) to carry out bat roost inspection and emergence surveys of some existing buildings within the grounds of St. Patrick's University Hospital, Lucan, Co. Dublin.

This report details the methodology and results of bat surveys undertaken at the subject site in 2022, 2023 and 2025. The subject site comprises the existing St. Patrick's Hospital and associated buildings, in addition to a former farmyard with a range of derelict structures, an area of woodland and former agricultural land within the wider site, which measures approximately 8.3ha in total. The proposed development broadly comprises renovation works to the main St. Patrick's Hospital Building, the construction of a new hospital building incorporating the derelict former Coach house/barn building, bell tower and walls, and the demolition of the existing Ward building, Dean Clinic and two ruined structures (a former farmhouse and cow shed).

FIGURE 1. SUBJECT SITE.

1.2 Statement of Competency

This report has been prepared by Donnacha Woods (M.Sc., B.Sc.) of Wingspan Ecology[a]. Donnacha has over 10 years' experience working as an ecologist in both private consultancy and NGO sectors. Donnacha holds a B.Sc. in Zoology from University College Dublin and a M.Sc. in Biodiversity and Conservation from Trinity College. He has worked as an ecologist across a wide range of projects both in Ireland and abroad and has significant experience carrying out bat surveys, impact assessments and prescribing mitigation in relation to bats. Donnacha has received specialist training in bat trapping, handling and identification from Bat Conservation Ireland, and is involved in bat monitoring with local bat groups.

1.3 Legislation

All bat species in Ireland, and their roost sites, are protected under the following national and international legislation:

[a] Wingspan Ecology, Killincarrig, Greystones, Co. Wicklow. (www.wingspan.ie).

- Wildlife Act (1976) & Wildlife (Amendment) Act 2000;
- EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Directive 92/43/EEC), i.e. the 'Habitats Directive';
- The Convention on the Conservation of European Wildlife and Natural Habitats, i.e. the 'Berne Convention'; and
- The Convention on the Conservation of Migratory Species of Wild Animals, i.e. the 'Bonn Convention'.

Under Section 23 of the above listed Wildlife Acts (1976-2000) it is offence to wilfully interfere with or destroy the breeding or resting place of any bat species. The provisions of Section 23 state that it is an offence to:

- Intentionally kill, injure or take a bat;
- Possess or control any live or dead specimen or anything derived from a bat;
- Wilfully interfere with any structure or place used for breeding or resting by a bat; and
- Wilfully interfere with a bat while it is occupying a structure or place which it uses for that purpose.

In view of their sensitive status across Europe, all species of bat have been listed on Annex IV of the EC 'Habitats Directive' and some, such as the lesser horseshoe bat, are given further protection and listed on Annex II of this Directive. This Directive was transposed into Irish law as the European Communities (Natural Habitats) Regulations, 1997, and combined with the Wildlife Acts (1976-2016), ensures that individual bats and their breeding sites and resting places are fully protected.

A list of bat species known to occur in Ireland is given in Table 1. This includes nine resident species and two vagrant species, which have only been recorded on a single or handful of occasions in Ireland.

TABLE 1. STATUS AND DISTRIBUTION OF BAT SPECIES IN IRELAND.

Species	Conservation Status (NPWS, 2019)	Occurrence in Ireland	Distribution in Ireland (McAney, 2006)
Common Pipistrelle (*Pipistrellus pipistrellus*)	Favourable	Resident	Widespread
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	Favourable	Resident	Widespread
Nathusius' Pipistrelle (*Pipistrellus nathusii*)	Unknown	Resident	Widespread
Leisler's Bat (*Nyctalus leisleri*)	Favourable	Resident	Widespread
Brown Long-eared Bat (*Plecotus auritus*)	Favourable	Resident	Widespread
Brandt's bat (*Myotis brandtii*)	Data deficient	Vagrant	Handful of records from counties Wicklow, Clare and Kerry
Daubenton's Bat (*Myotis daubentonii*)	Favourable	Resident	Widespread
Whiskered Bat (*Myotis mystacinus*)	Favourable	Resident	Widespread
Natterer's Bat (*Myotis nattereri*)	Favourable	Resident	Widespread
Greater Horseshoe Bat (*Rhinolophus ferrumequinum*)	n/a	Vagrant	One existing record from Co. Wexford
Lesser Horseshoe Bat (*Rhinolophus hipposideros*)	Inadequate	Resident	West of Ireland

2 METHODOLOGY

2.1 Roost Inspection Surveys

Roost inspection surveys were carried out of the existing structures within the subject site (i.e. structures 'A' – 'J', see Figure 4 further below) on the following dates: 22nd September 2022, 7th July 2023, 27th July 2023, 13th May 2025 and 29th September 2025.

The surveys were carried out in-line with the best practice methods outlined in the Bat Conservation Trusts "*Bat Surveys for Professional Ecologists*", 4th edition (Collins, 2023). The surveys involved a search for evidence of bat presence within the structures, including, but not limited to:

- Droppings;
- Fur-oil stains and scratch marks,
- Dead specimens;
- Urine splashes;
- Prey items (moth/butterfly wings etc.); and
- Audible squeaking.

The surveys encompassed a thorough assessment of the exterior and interior (where possible) of the structures on-site for evidence of the presence of roosting bats and/or any potential to support roosting bats. The subject buildings were thoroughly searched for any evidence of roosting bats. This included, but was not limited to, the following areas:

- External stone, bricks, plaster, soffits, facia boards etc. for grease stains and scratch marks;
- External paving, windowsills and internal floors, walls, stairs, furniture and attics (where accessible) for bat droppings;
- Where possible in suitable crevices for live bats;
- Internal attics (where accessible), floors and surfaces for discarded moth and butterfly wings.
- Walls and corner areas for perching stains and scratch marks; and
- In toilets, sinks and other areas of standing water for dead bats.

The features within the proposed development site were also assessed for their suitability for bats based on Collins (2023), given in Table 2 below.

TABLE 2. SUITABILITY LEVELS OF HABITAT FEATURES FOR BATS (COLLINS, 2023).

Potential suitability	Roosting Habitats in Structures	Potential flight-paths and foraging habitats
None	No habitat features on site likely to be used bay any roosting bats at any time of year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels.	No habitat features on site likely to be used by any commuting or foraging bats at any time of year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions, and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but cold be used by individual hibernating bats).	Habitats that could be used by small numbers of bats such as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a park-land situation) or a patch of scrub.

Potential suitability	Roosting Habitats in Structures	Potential flight-paths and foraging habitats
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses, and grazed park-land. Site is close to and connected to known roosts.

2.2 Emergence Surveys

A total of seven individual emergence surveys were carried out between 2022 and 2025. These were carried out on the following dates: 22nd September 2022, 7th July 2023, 27th July 2023, 6th September 2023, 13th May 2025, 29th September 2025 and 1st October 2025. All surveys were undertaken by two observers, and carried out using direct observation and handheld bat detectors (both heterodyne and full-spectrum). Surveyor locations are shown in Figures 5 & 6.

The emergence surveys were carried out of the existing buildings within the proposed development site (i.e. structures 'A' – 'J', see Figure 4 further below). The surveys followed the best practice methods outlined in "*Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition)*" (Collins, 2023) and *3rd edition* (Collins, 2016) for the 2022 and 2023 surveys. The surveys commenced *c.*15 minutes prior to sunset and concluded *c.*1.5 to 2 hours post-sunset. Temperatures were favourable during all surveys (i.e. above 11°C) with light winds and no precipitation.

A high-sensitivity thermal imaging camera was also utilised as a survey aid, as per Fawcett Williams (2021). Thermal imaging significantly improves the detectability of bats emerging/re-entering roost sites, as the camera is not restricted by the available visible light. Footage was then reviewed following the surveys to ensure no potential emergence was missed during the surveys. The thermal camera viewpoints are shown in Figure 2 and locations shown in Figures 5 & 6.

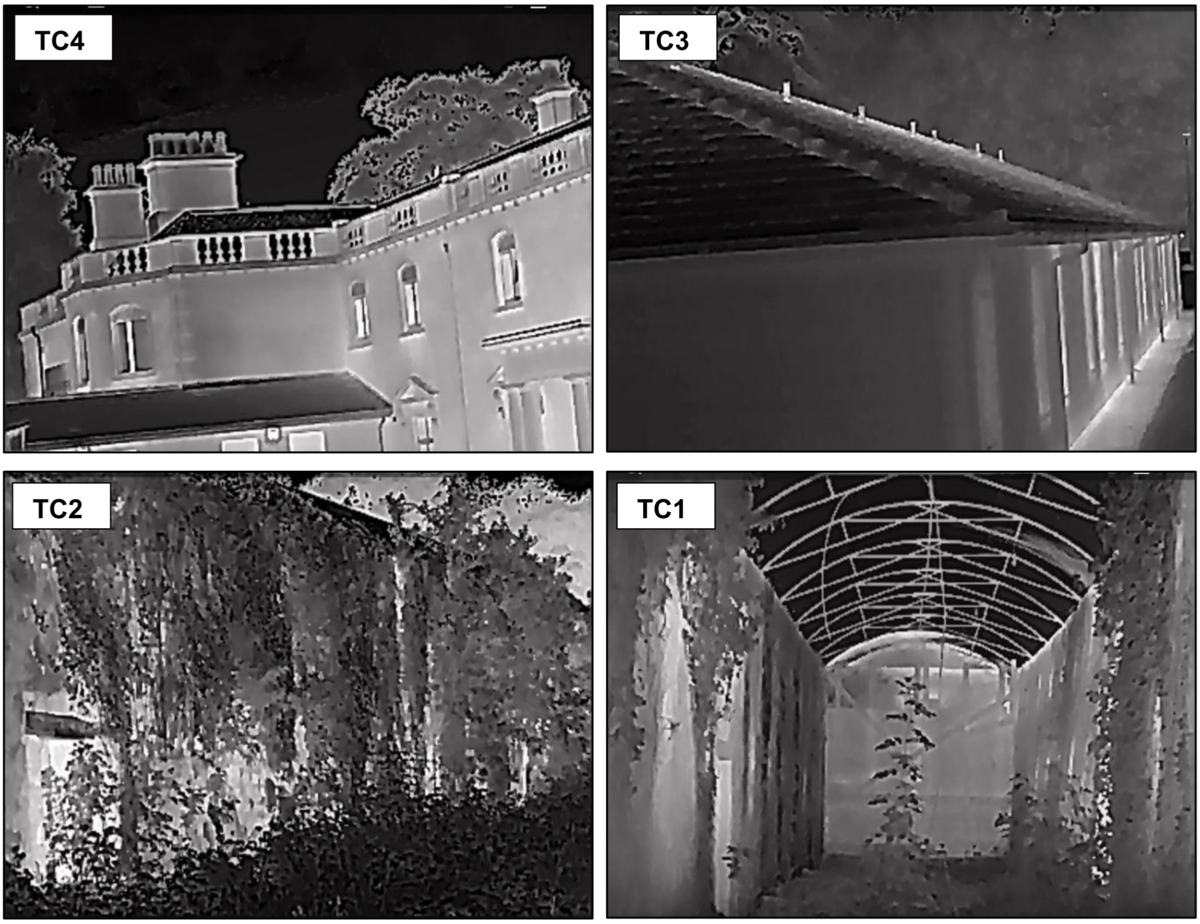
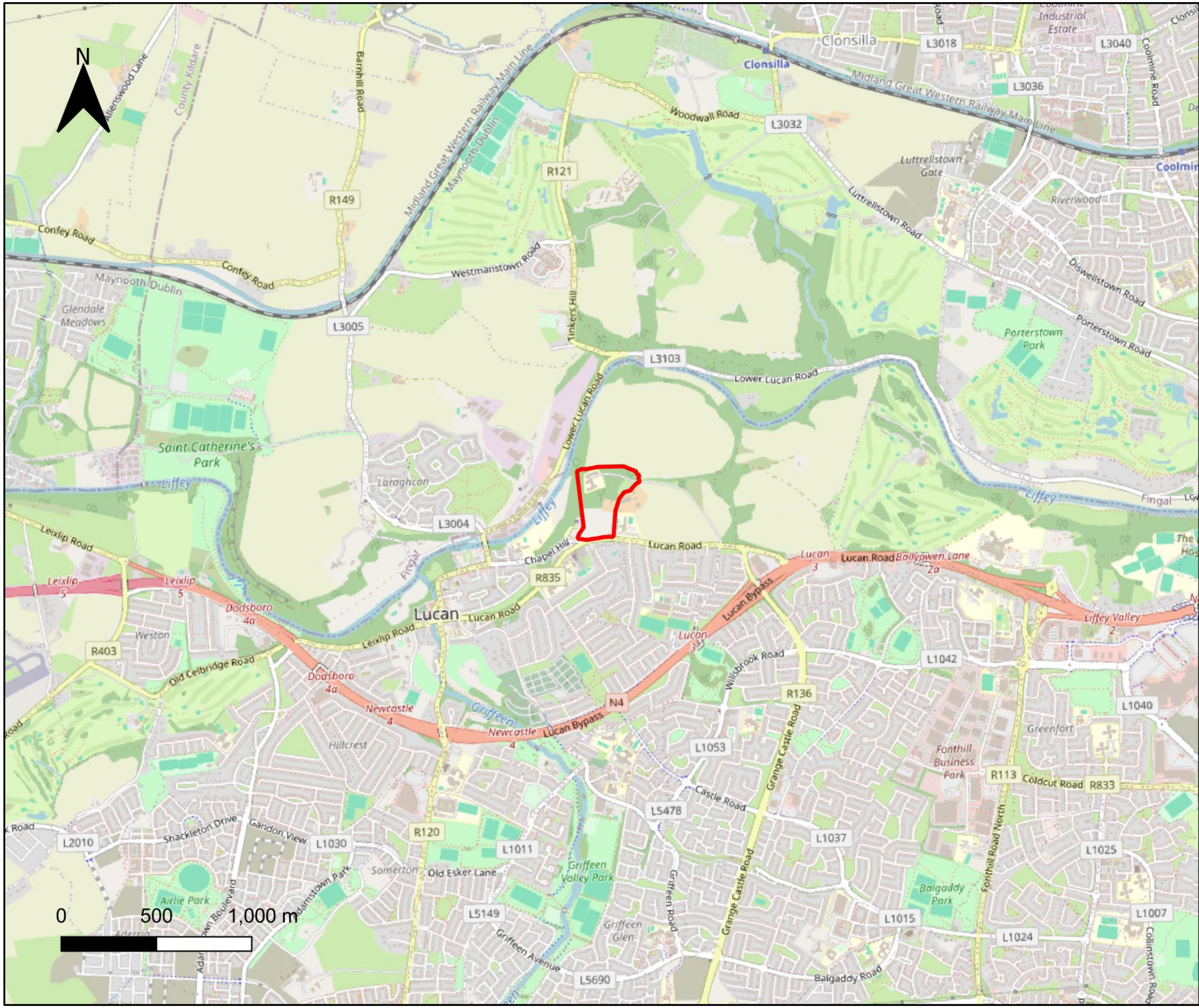


FIGURE 2. THERMAL IMAGAGING CAMERA VIEWPOINTS.



Legend

Site Boundary

Title

Figure 3: Location of subject site.

Project

Proposed new hospital development, St. Edmundsbury Hospital, Lucan, Co. Dublin

Client

St Patrick's University Hospital (SPUH)

Date: 05/02/2026
Scale: 1:25,000
Imagery: OpenStreetMaps

Notes:
Site boundaries are for demonstrative purposes and do not represent exact legal or planning boundaries.

gannon + associates

Legend

Site Boundary

Structures

Title

Figure 4: Existing site.

Project

Proposed new hospital development, St. Edmundsbury Hospital, Lucan, Co. Dublin

Client

SPUH

Date: 05/02/2026 Scale: 1:2,250
Imagery: Google Satellite

Notes:
Site boundaries are for demonstrative purposes and do not represent exact legal or planning boundaries.

gannon + associates

Legend

- Site Boundary
- Structures
- Observation Points
- Observer Viewshed
- Thermal Camera Locations

Title

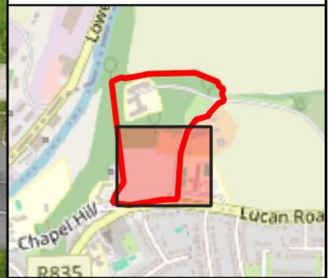
Figure 5: Survey locations (south).

Project

Proposed new hospital development, St. Edmundsbury Hospital, Lucan, Co. Dublin

Client

SPUH



Date: 16/03/2026 Scale: 1:1,100
Imagery: Google Satellite

Notes:
Site boundaries are for demonstrative purposes and do not represent exact legal or planning boundaries.

gannon + associates

Legend

- Site Boundary
- Structures
- Observation Points
- Observer Viewshed
- Thermal Camera Locations

Title

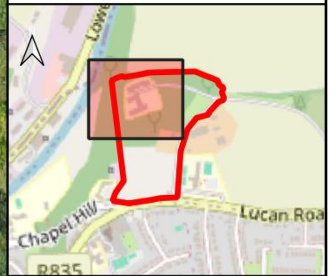
Figure 6: Survey locations (north).

Project

Proposed new hospital development, St. Edmundsbury Hospital, Lucan, Co. Dublin

Client

SPUH



Date: 16/03/2026 Scale: 1:1,100
Imagery: Google Satellite

Notes:
Site boundaries are for demonstrative purposes and do not represent exact legal or planning boundaries.

gannon + associates

3 RESULTS

3.1 Summary

A summary of the results from all surveys is provided in Tables 3 & 4 below, with further detail provided in the following sections.

TABLE 3. SUMMARY OF STRUCTURES WITHIN SUBJECT SITE.

Structure	Roosting Habitat Suitability Level (as per Collins, 2023)	Evidence of bat presence during Roost Inspection Surveys?	Bats recording exiting structure during Emergence Surveys?
A - Cow Shed	Low	No	**No**
B - Barn / Coach House	Moderate	No	**No**
C - Modern Shed	Low	No	**No**
D - Shipping Container	Negligible	No	**No**
E - Kiosk	Low	No	**No**
F - Ruined Farmhouse	Negligible	No	**No**
G - Dean Clinic 1	Low	No	**No**
H - Dean Clinic 2	Low	No	**No**
I - Ward	Moderate	No	**No**
J - St. Patrick's Hospital Building	High	No	**No**[b]

TABLE 4. SUMMARY OF RESULTS FROM EMERGENCE SURVEYS.

Survey Date	Structures targeted during survey	Surveyor Locations	Sunset Time	Temp.	Precip.	Wind	Observations
22/09/2022	**B, C, D, E & F**	OP1 OP2	19:10	14-11	None	Light air	No emergence recorded. Total of three species recorded in general vicinity during survey, comprising common pipistrelle, soprano pipistrelle and Leisler's bat.
07/07/2023	**G & H**	OP5 OP6	21:30	19-16	None	Gentle breeze	No emergence recorded. Total of three species recorded in general vicinity during survey, comprising common pipistrelle, soprano pipistrelle and Leisler's bat.
27/07/2023	**B, C, D, E & F**	OP1 OP2	21:15	20-17	None	Gentle breeze	No emergence recorded. Total of three species recorded in general vicinity during survey, comprising common pipistrelle, soprano pipistrelle and Leisler's bat.
06/09/2023	**B, C, D, E & F**	OP3 OP4 TC1	20:05	25-21	None	Light air	No emergence recorded. Total of three species recorded in general vicinity during survey, comprising

[b] Building 'J' surveyed on 1st October 2025.

Survey Date	Structures targeted during survey	Surveyor Locations	Sunset Time	Temp.	Precip.	Wind	Observations
							common pipistrelle, soprano pipistrelle and Leisler's bat.
13/05/2025	**B, C, D, E & F**	OP3 OP4 TC2	21:18	17-13	None	Light air	No emergence recorded. Total of three species recorded in general vicinity during survey, comprising common pipistrelle, soprano pipistrelle and Leisler's bat.
29/09/2025	**I**	OP7 OP8 TC3	19:04	16-15	None	Light breeze	No emergence recorded. Total of three species recorded in general vicinity during survey, comprising common pipistrelle, soprano pipistrelle and Leisler's bat.
01/10/2025	**J**	OP9 OP10 TC4	19:02	17-15	None	Light breeze	No emergence recorded. Total of three species recorded in general vicinity during survey, comprising common pipistrelle, soprano pipistrelle and brown long-eared bat.

3.2 Roost Inspection Surveys

3.2.1 Buildings

There is a total of 10no. structures present within the subject site. These are listed in Table 2 and shown in Figure 4 further above. The results of roost inspection surveys carried out of these structures are provided below.

A – Cow Shed

This is a single storey former agricultural building of rubble/brick construction and slate roof. The floor and lower part of the interior walls have been rendered in concrete. The building is derelict and in poor repair, with large holes present in the roof structure and no remaining doors or windows. As such there is limited protection for any potential roosting bats.

FIGURE 7. COW SHED BUILDING.

Crevices were directly examined via endoscope where possible during the roost inspection survey on 6th September 2023 with aid of a ladder where required. The building is assessed as *Low* suitability for roosting bats. No evidence of roosting bats was recorded during the roost inspection surveys.

<u>B – Barn / Coach House</u>

This is a long linear former barn that extends for approximately 65m and includes an arch for the local access road at the eastern end. The building has a curved corrugated metal roof of which large sections are missing. The interior comprises pointed stonework, extending up to roof level with no attic space. There are large numbers of crevices present along these internal walls where mortar has failed, which provide suitable roosting opportunities for bats. Crevices were directly examined via endoscope where possible during the roost inspection survey on 6th September 2023 with aid of a ladder where required. It is noted however that the large roof openings, in addition to the entryways and terminal archway create a draughty interior likely reducing suitability. The building is therefore assessed as *Moderate* suitability for roosting bats. No evidence of roosting bats was recorded during the roost inspection surveys.

FIGURE 8. BARN / COACH HOUSE.

<u>C – Modern Shed</u>

This structure is a modern agricultural shed of concrete construction with corrugated roofing. The entirety of the interior of the building comprises rendered concrete, with no attic space present. There are therefore limited suitable crevices present that could be utilised by roosting bats. There are large permanent openings to the front of the building. The building is assessed as *Low* suitability for roosting bats. No evidence of roosting bats was recorded during the roost inspection surveys.

FIGURE 9. MODERN SHED BUILDING.

<u>D – Shipping Container</u>

This is a standard shipping container used for storage. The structure contains no suitable features for roosting bats. The structure is assessed as *Negligible* suitability for roosting bats. No evidence of roosting bats was recorded during the roost inspection surveys.

FIGURE 10. SHIPPING CONTAINER (STRUCTURE 'D').

E – Kiosk

This is a flat-roofed former kiosk building. The building comprises rendered pebble-dash exterior and plasterboard interior with no attic space. There are gaps at the edges of roofing felt in places, which provide some limited potential for roosting bats. The building is assessed as *Low* suitability for roosting bats. No evidence of roosting bats was recorded during the roost inspection surveys.

FIGURE 11. KIOSK (STRUCTURE 'E').

F – Ruined Farmhouse

This is a former two-storey stone/brick-built farmhouse which is now in a ruinous state. While the roof was partially present on the building during surveys in 2022, it had collapsed and been removed as of the 2023 surveys, and the building now solely comprises the four former walls of the farmhouse. The building is assessed as *Negligible* suitability for roosting bats. No evidence of roosting bats was recorded during the roost inspection surveys.


FIGURE 12. RUINED FARMHOUSE (STRUCTURE 'F').

G – Dean Clinic 1

The Dean Clinic buildings comprise mid to late-20th century structures. Dean Clinic 1 is a single storey building of concrete block construction with pre-cast concrete tilled roof and timber framed windows. The building is in overall good condition with no slipped or missing tiles, and no obvious entry-exit points for bats were noted during the roost inspection survey. The building is assessed as *Low* suitability for roosting bats. No evidence of roosting bats was recorded during the roost inspection surveys.

FIGURE 13. DEAN CLINIC 1 (STRUCTURE 'G').

<u>H – Dean Clinic 2</u>

This is a 1.5-storey dormer building of similar age and construction to Dean Clinic 1, with similar pre-cast concrete tilled roof and timber framed windows. This building is also in overall good condition. A slipped tile was recorded to the rear of the building, above one of the Velux windows. The building contains two sections of varying height. The attic space is limited, as the roof space is largely occupied by the dormer level. There is some attic space at the eaves in the lower section and a small attic space at the apex of the higher section. The building is assessed as *Low* suitability for roosting bats. No evidence of roosting bats was recorded during the roost inspection survey.

FIGURE 14. DEAN CLINIC 2 (STRUCTURE 'H').

<u>I – Ward</u>

This is a large single-storey building in active use as a ward for the hospital. The building is of concrete block construction with pre-cast concrete tiled roof. The roof is in overall good condition with no slipped or missing tiles noted during survey. The soffits and facia boards are comprised of wooden panels, and gaps were identified in panelling in several place, which provide suitable potential exit/entry points for bats (see example in Figure 13 below). The attic space is large, covering the entirety of the building and includes a lighted walkway. The building is assessed as *Moderate* suitability for roosting bats. No evidence of roosting bats was recorded during the roost inspection survey.

FIGURE 15. WARD (STRUCTURE 'I').

J – St. Patrick's Hospital Building

This is the main hospital building and comprises the former St. Edmundsbury House, an 18th century two/three-storey Georgian house which has been renovated and refurbished, including some modern extensions to the rear. The attic space of the building is relatively limited; however the overall structure contains many suitable features for roosting bats typical of such historic buildings – e.g. hipped roof of natural slate roof and ridge tiles providing likely entry/exit points and suitable crevices. The building is assessed as *High* suitability for roosting bats.

FIGURE 16. ST. PATRICKS HOSPOTAL BUILDING FRONT (STRUCTURE 'J').

FIGURE 17. ST. PATRICKS HOSPOTAL BUILDING REAR (STRUCTURE 'J').

<u>K – Old Stone Walls</u>

There are some remnant old stone walls present within the subject site, the largest of which comprising a wall running from north-south from the Barn building as far as the Cow Shed, and containing an historic bell tower.

Crevices along these walls were directly examined via endoscope where possible during the roost inspection survey on 6th September 2023 with aid of a ladder where required.

FIGURE 18. OLD STONE WALLS.

3.2.2 Trees

There is an area of woodland (forming part of Liffey Valley pNHA) situated between the existing hospital buildings and the former farmyard buildings. This is an unmanaged woodland with dense undergrowth. The vast majority of trees have dense ivy growth which severely limits the potential for identification of potential roost features (PRFs). It is highly likely that PRFs are present on trees within this woodland. The woodland is assessed as *High* suitability for foraging/commuting bats.

FIGURE 19. WOODLAND AREA SITUATED BETWEEN EXISTING HOSPITAL AND FORMER FARMYARD.

3.3 Emergence Surveys

Observations recorded during the emergence surveys are summarised below.

22nd September 2022 – **Buildings 'B', 'C', 'D', 'E' & 'F'**

Sunset: 19:25 Temperature: 15-12°C Precip.: None Wind: Light breeze

No bats were recorded emerging from the target structures during the emergence survey. Some incidental bat activity was recorded within the surrounding area during the survey, comprising three species: common pipistrelle, soprano pipistrelle and Leisler's bat.

Both soprano and common pipistrelle were recorded foraging within the vicinity of the buildings with moderate levels of activity. Leisler's bat was recorded travelling and foraging over woodland to the north of the buildings. As would be expected, the predominant foraging areas were correlated with areas of scrub and tall grasses, which harboured high concentrations of flying insects. There were two notable observations during the emergence survey. These comprised observations of a minimum four soprano pipistrelle coming from the east of the survey area early in the survey, close to sunset. Given the timing of these observations, it is considered probable that these bats emerged from a roost in the nearby surrounding environment of the survey area, with the buildings directly east of the survey area considered the most probable location.

7th July 2023 – **Buildings 'G' & 'H'**

Sunset: 21:50 Temperature: 19-16°C Precip.: None Wind: Light breeze

No bats were recorded emerging from the target structures during the emergence survey. Some incidental bat activity was recorded within the surrounding area during the survey, comprising three species: common pipistrelle, soprano pipistrelle and Leisler's bat.

Activity recorded predominantly comprised 1-2 common pipistrelles and 1-2 soprano pipistrelles intermittently foraging to the rear area of the two buildings while travelling through the wider site. A Lesiler's bat was also recorded travelling overhead early in the survey.

27th July 2023 – **Buildings 'B', 'C', 'D', 'E' & 'F'**

Sunset: 21:27 Temperature: 20-17°C Precip.: None Wind: Light breeze

No bats were recorded emerging from the target structures during the emergence survey. Some incidental bat activity was recorded within the surrounding area during the survey, comprising three species: common pipistrelle, soprano pipistrelle and Leisler's bat.

Overall activity recorded was low despite ideal survey conditions. Initial observations comprised Leisler's bat travelling and briefly foraging over woodland to north of buildings (earliest recording at 16-minutes post-sunset). Single common and soprano pipistrelles were recorded foraging intermittently in the vicinity of the buildings, predominantly over piles of recently cleared vegetation (earliest recording at 42-minutes post-sunset).

6th September 2023 – **Buildings 'B', 'C', 'D', 'E' & 'F'**

Sunset: 20:05 Temperature: 25-21°C Precip.: None Wind: Light air

No bats were recorded emerging from the target structures during the emergence survey. Some incidental bat activity was recorded within the surrounding area during the survey, comprising three species: common pipistrelle, soprano pipistrelle and Leisler's bat.

Overall activity levels recorded were moderate, comprising up 3-4 soprano pipistrelle and 1-2 common pipistrelle foraging in general vicinity of the buildings, including foraging within Barn / coach house building, entering and exiting through archways and gaps in roof. The interior of this building was noted to harbour good numbers of insects on the wing.

13th May 2025 – **Buildings 'B', 'C', 'D', 'E' & 'F'**

Sunset: 21:18 Temperature: 17-13°C Precip.: None Wind: Still

No bats were recorded emerging from the target structures during the emergence survey. Some incidental bat activity was recorded within the surrounding area during the survey, comprising three species: common pipistrelle, soprano pipistrelle and Leisler's bat.

Overall activity levels were moderate. First recordings comprised Leisler's bats foraging along the woodland edge (earliest record at 17-minutes post-sunset). The remaining activity predominantly comprised between 1-2 common pipistrelle and 1-2 soprano pipistrelle foraging in the general vicinity of the buildings, in addition to within Barn / coach house building, from approximately 32-minutes post-sunset to 52-minutes post-sunset with activity then reducing.

29th September 2025 – **Building 'I'**

Sunset: 19:04 Temperature: 16-15°C Precip.: None Wind: Light breeze

No bats were recorded emerging from the target structures during the emergence survey. Some incidental bat activity was recorded within the surrounding area during the survey, comprising two species: common pipistrelle and soprano pipistrelle.

Overall activity levels recorded were low, with recordings comprising single soprano and common pipistrelle bats foraging along the woodland edge. Additional faint echolocation calls were recorded, assumed to be from within the woodland area.

1st October 2025 – **Buildings 'J'**

Sunset: 19:02 Temperature: 17-15°C Precip.: None Wind: Light breeze

No bats were recorded emerging from the target structures during the emergence survey. Some incidental bat activity was recorded within the surrounding area during the survey, comprising three species: common pipistrelle, soprano pipistrelle and brown long-eared bat.

Overall activity levels recorded were low. A soprano pipistrelle was observed travelling over St. Patrick's Hospital building from west to east at 37-minutes post-sunset. Some faint common pipistrelle echolocation was recorded from within the woodland area, in addition to a brown long-eared bat echolocation call.

3.4 Incidental Records

Notable non-bat related observations recorded during surveys are contained within this section.

A suspected barn owl was recorded travelling adjacent to the Barn / coach house during the emergence survey on 13th May 2025 at 22:04 (46-minutes post-sunset). The bird was seen briefly in low light coming from the east and travelling west along northern edge of Barn. There is some potential this sighting was a long-eared owl, but the overall pale impression and surrounding habitat suggest likely barn owl.

Suspected badger feeding signs ('snuffle holes') were recorded in proximity to the Ward building during emergence survey on 29th September 2025, at the south-west corner adjacent to the area of woodland (see Figure 17 below).

FIGURE 20. LIKELY BADGER FEEDING SIGNS ('SNUFFLE HOLES') RECORDED ADJACENT TO WOODLAND AND WARD BUILDING.

4 RECOMMENDATIONS

4.1 Buildings

No bats were recorded roosting within the buildings on-site during bat surveys. However, there is potential for bats to begin utilising the structures for roosting between the period of when the surveys were undertaken and when the proposed development may commence. As such the following measures are recommended.

Bats are most likely to be present in buildings in large numbers during the summer months (May - August) when forming maternity colonies, and to a lesser extent in September – October when in transitionary or mating roosts. Therefore, should the demolition of the existing buildings on-site (i.e. structures A, C, D, E, F & I), or renovation works to the buildings to be retained (i.e. structures B and J) take place during the months of April – September/October, these works should be preceded by bat emergence surveys to re-confirm whether any bats are utilising the structures. In addition, preceding emergence surveys, suitable crevices in stonework should be directly investigated via endoscope immediately prior to demolition (i.e. Cow Shed and Ruined Farmhouse) or commencement of renovation works (i.e. Barn / Coach house and existing walls to be retained).

Note: the St. Patrick's Hospital building (i.e. structure 'J') was identified as being of *High* suitability for roosting bats. While no bats were recorded roosting during survey, there is a high likelihood of individual/small numbers of bats utilising the structure for roosting. As such, any renovation works to the roof structure of this building during the months of April – October should be immediately preceded by bat emergence surveys. These surveys may be required to be undertaken from a height via scaffolding installed for renovation works, in order to allow for sufficient views of the roof area.

Should bats be recorded utilising any of the structures, then no works will take place to the relevant structure, and a derogation licence will be required by the National Parks and Wildlife Service for the disturbance of the bat roost.

Should the demolition works, or renovation works to the buildings to be retained, take place during the winter months, outside the period for breeding bats (October - March inclusive), the likelihood of bats being present in the buildings is considered to be low. It is recommended that for demolition, the roof structures should be removed first, and the buildings left for a minimum of 24 hours in order to facilitate any potential bats present to exit the structures. In addition, suitable crevices in stonework should be directly investigated via endoscope immediately prior to demolition (i.e. Cow Shed and Ruined Farmhouse) or commencement of renovation works (i.e. Barn / Coach house and existing walls to be retained).

Provision of roosting habitat

<u>Installation</u>

A total of 12no. bat boxes (comprising a mix of Schwegler 2F and Schwegler 1FF, or comparatively similar models) will be erected on suitable mature trees within the area of existing woodland to mitigate the loss of potential roosting habitat as a result of the proposed development. The boxes should be erected at a minimum height of 4m, and in varying orientations (i.e. some south-facing, some east/west facing and some north-facing) and various areas of the woodland. This allows for potential bat movement between boxes under changing environmental conditions (e.g. south-facing boxes can overheat during summer heat waves). The bat boxes will be installed prior to the demolition of the existing structures and under guidance from a suitably qualified ecologist.

<u>Monitoring of proposed bat boxes post-construction</u>

A monitoring visit to the installed bat boxes will be undertaken by a suitably qualified ecologist during the first summer post-installation and at a minimum in the fifth-year post-installation (during May-August window). Boxes should be investigated via ladder (Schwegler 2F design) or from ground level (only Schwegler 1FF design) and records taken on the usage of any boxes by bats. Cleaning of the 2F boxes should also be undertaken where no bats are present. Note: Any handling of bats must only be undertaken by a bat ecologist licenced to handle bats and under appropriate licence from the NPWS. The ecologist will assess the suitability of the bat boxes post-installation and may make recommendations on the relocation or replacement of bat boxes. Any boxes recorded to be utilised by bats will be strictly protected. Any maintenance works (i.e. tree pruning or removal) will be scheduled so as to avoid works to trees containing bat boxes during the March-September window. Any bat boxes noted to be damaged or removed will be replaced by a similar comparative available model.

4.2 Trees

Where possible the felling of any mature trees on-site should be undertaken during the period of April – September, as bats are capable of flight during this time. In such instances, a bat emergence survey should be carried out on these trees on the night preceding felling by a suitably qualified ecologist, aided by the use of bat detectors and thermal/infra-red imaging camera where possible. Should bats be identified emerging from any trees, a derogation licence will need to be obtained from the National Parks and Wildlife Service (NPWS) for the disturbance of these bats prior to the tree removal.

In addition to the above, or should trees need to be felled outside the active bat season, an ecologist will be present on-site during the felling and will investigate any PRFs via endoscope where possible (with aid of cherry picker or similar) immediately prior to felling. This may require the removal of thick ivy growth where possible. Under the guidance of the bat ecologist, some limbs of the subject trees may need to be rigged prior to cutting and lowered to ground to avoid sudden movements (i.e., limbs containing potential roost features not accessible for direct investigation, or limbs obscured by ivy growth). The subject limbs and truck sections will then be investigated by the bat ecologist prior to removal off-site / mulching. Should bats be present in any feature, they will be re-moved by a bat ecologist licenced to handle bats and released in the area on the following evening.

4.3 Lighting

It was noted during surveys that large sections of the subject site are currently un-lit and provide good foraging and commuting habitat for bats. Of particular note is the area of woodland which runs through the centre of the subject site. As such, appropriate lighting design is required to minimise any potential impacts to foraging or commuting bats utilising the subject site.

Where possible, lighting in the vicinity of the existing woodland should be limited during the active bat season (i.e. April – September). Where lighting is required in this area, only the minimum required external lighting to meet health and safety standards should be included, manged under strict controls (i.e. motion sensors, timers) to ensure minimum activations during the April to September period. Note: A recent study shown that even motion-triggered LED lighting can result in avoidance of areas by foraging bats (Heim *et al*., 2024). This study monitored motion-triggered LEDs along a bicycle trail with an on-phase of 40-seconds, and stated that effects could be mitigated via shorter lighting periods. As such, timers should be set to 30-seconds or less in these areas.

The Institute of Lighting Professionals (ILP) and the Bat Conservation Trust UK (BCT) have compiled guidelines on artificial lighting and bats (BCT, 2018). These guidelines should be taken into consideration in the general lighting plan in order to best facilitate continued bat usage within the wider subject site. Measures outlined in this guidance document include advice on appropriate luminaire specifications, as outlined below:

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.

- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used –See ILP Guidance for the Reduction of Obtrusive Light.
- Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

5 CONCLUSION

Bat roost assessment and emergence surveys were carried out of existing buildings within the subject site between 2022 and 2025. No bats were recorded emerging from any building and no evidence of roosting bats was recorded in any building during survey work. Measures have been proposed to avoid potential impacts to bats as a result of the proposed development. Overall bat activity recorded within the subject site comprised four species: common pipistrelle, soprano pipistrelle, Leisler's bat and brown long-eared bat.

6 REFERENCES

Andrews, H. *et al.* (2013). Bat Tree Habitat Key, 2nd Edition. AEcol, Bridgewater.

Aughney, T., Kelleher, C. & Mullen, D. (2008) Bat Survey Guidelines: Traditional Farm Buildings Scheme. The Heritage Council, Áras na hOidhreachta, Church Lane, Kilkenny.

Aughney, T., Langton, S. & Roche, N. (2011) Brown long-eared bat roost monitoring scheme for the Republic of Ireland: synthesis report 2007-2010. Irish Wildlife Manuals, No. 56. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. Chartered Institute of Ecology and Environmental Management.

Collins, J. (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition.). The Bat Conservation Trust, London.

Collins, J. (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition.). The Bat Conservation Trust, London.

Fawcett Williams, K. (2021). Thermal Imaging: Bat Survey Guidelines. The Bat Conservation Trust, London.

Heim, O., Chávez, F., Courtiol, A., Paul, F., & Voigt, C. C. (2024). Guild-specific response of bats to motion-triggered LED lighting of bicycle trails. Conservation Science and Practice, 6(4), e13116.

Hundt L (2012) Bat Surveys: Good Practice Guidelines, 2nd edition, Bat Conservation Trust.

ILP (2023). Guidance Note GN08/23 Bats and Artificial Lighting At Night. In conjunction with Bat Conservation Trust. Institution of Lighting Professionals, Warwickshire, UK.

Kelleher, C., and Marnell, F. (2006). Bat Mitigation Guidelines for Ireland. Irish Wildlife Manuals, No. 25. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

Marnell, F., Kingston, N. & Looney, D. (2009) Ireland Red List No. 3: Terrestrial Mammals, National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.

Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.

McAney, K. (2006). A conservation plan for Irish vesper bats. Irish Wildlife Manuals, No. 20. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

NRA (2005a). Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes. National Roads Authority, Dublin.

NRA (2005b). Guidelines for the Treatment of Bats during the Construction of National Road Schemes. National Roads Authority, Dublin.

Roche., N., Clarke, D., Healy, K., Langton, S & Aughney, T. (2024). Irish Bat Monitoring Schemes: Annual Report for 2023.

Roche, N. & Langton, S. (2024). Population estimates, trends and background information for six Irish bat species. Article 17 reporting 2018-2023: Supporting document. Unpublished report to National Parks & Wildlife Service.

APPENDIX 5
Chapter 5 Land and Soil
No Appendix

APPENDIX 6
Chapter 6 Water -Surface and Ground Water
No Appendix

APPENDIX 7

Chapter 7 Air and Climate

No Appendix

APPENDIX 8

Chapter 8 Noise and Vibration

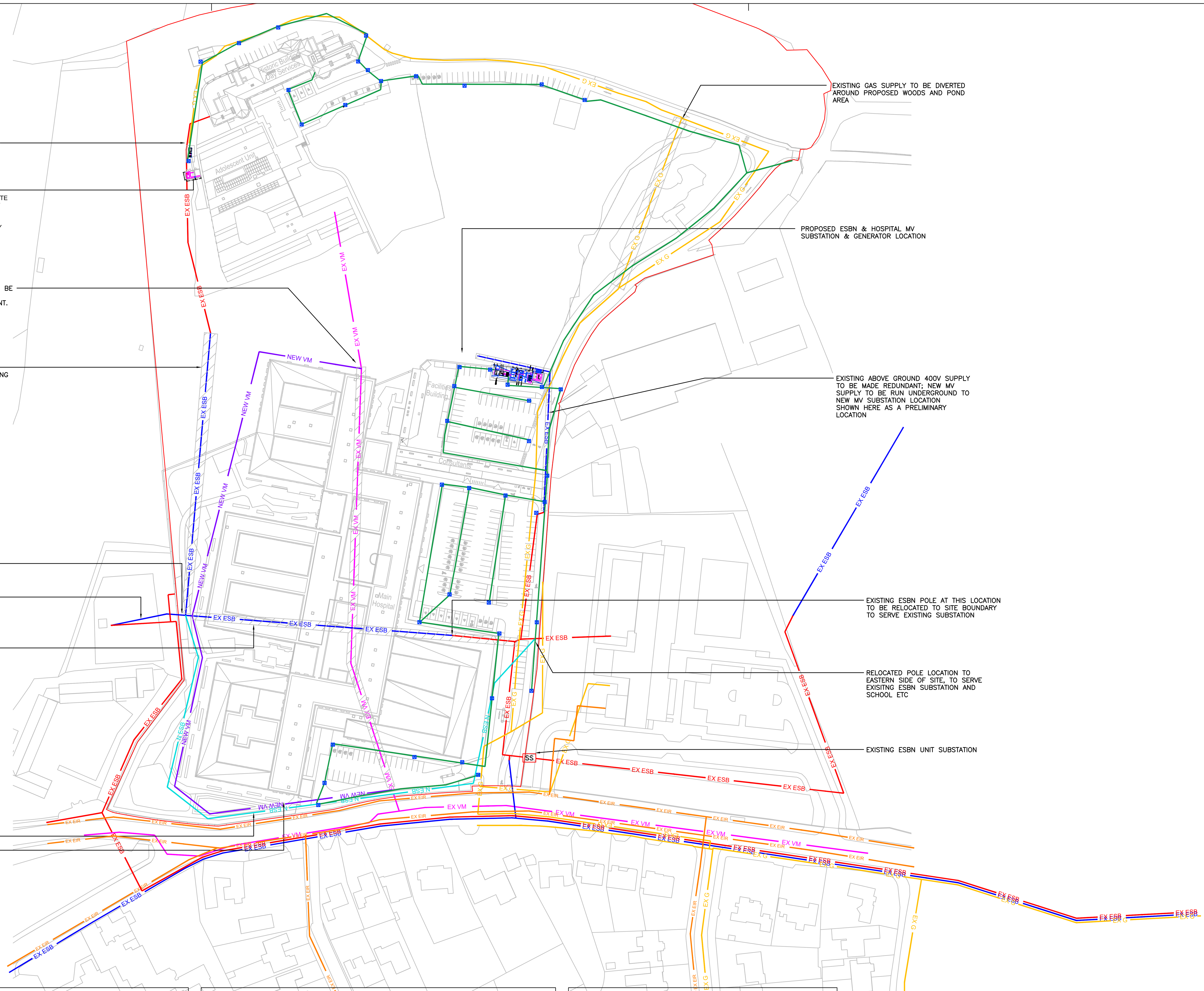
No Appendix

APPENDIX 9

Chapter 9 Material Assets

Utility Drawings and Reports

Traffic and Transport Assessment

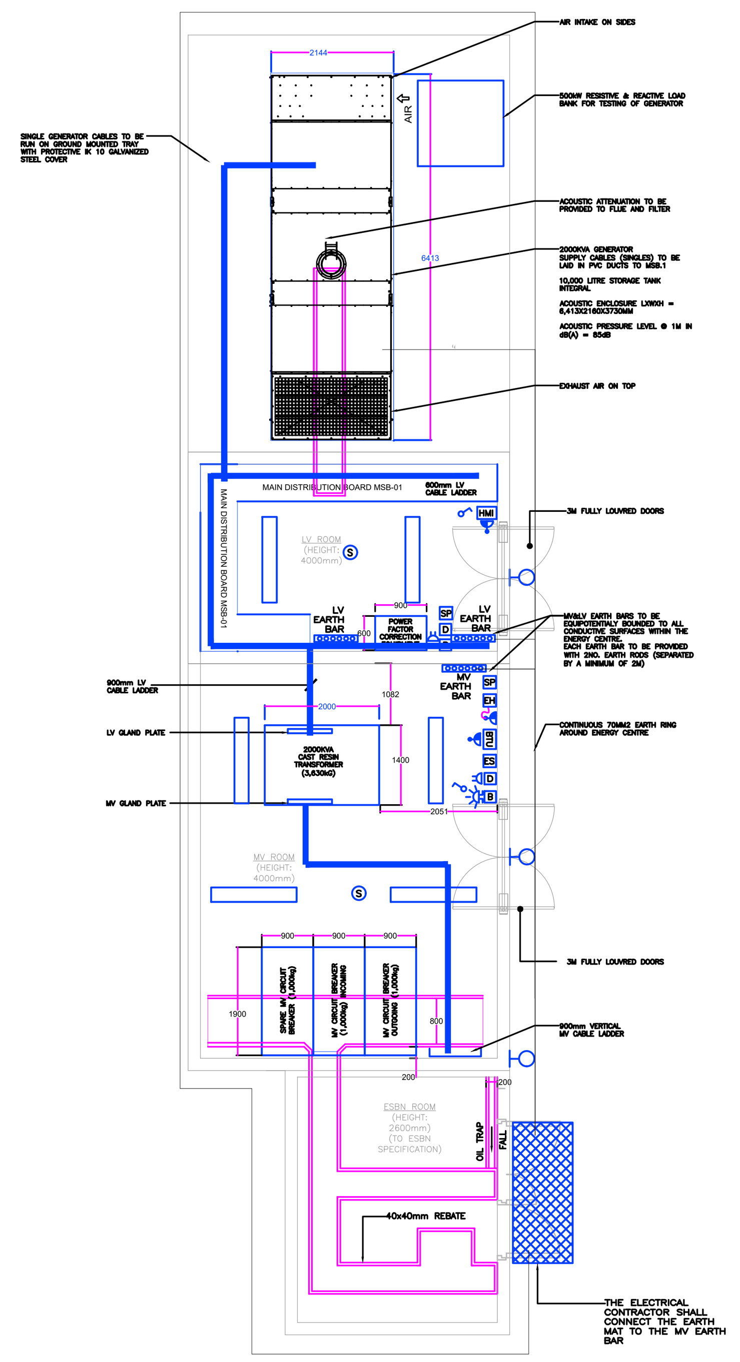


LEGEND:

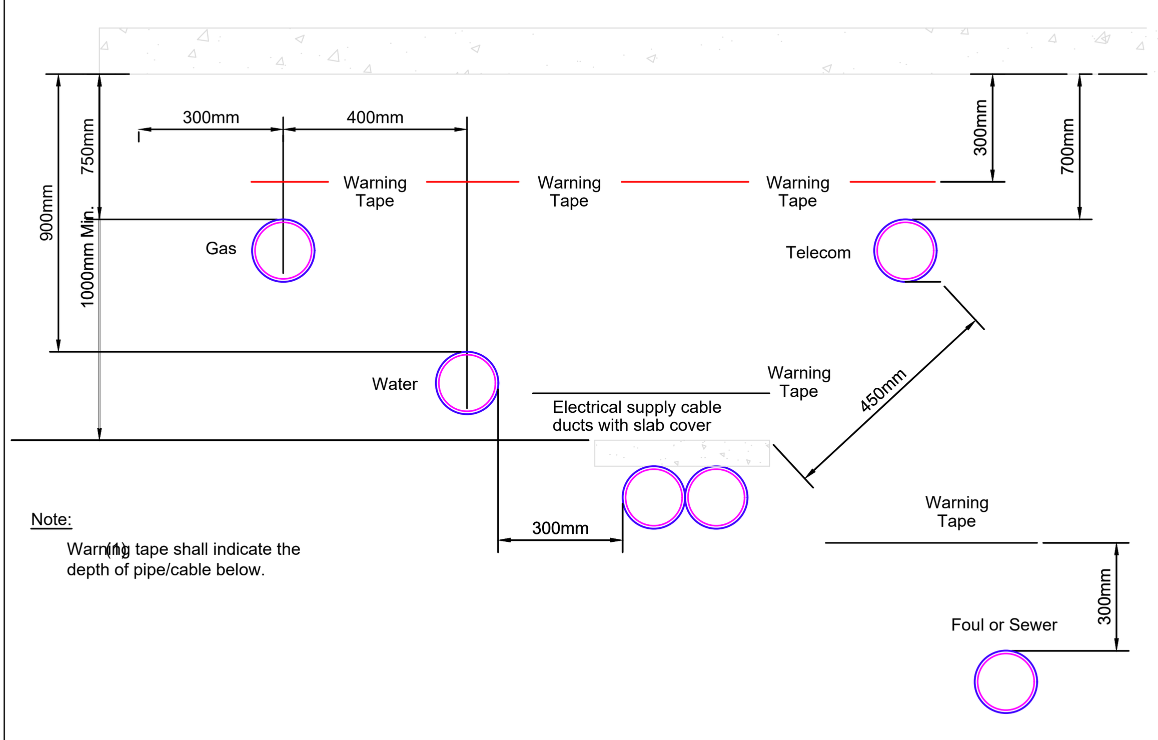
	SITE RED LINE BOUNDARY
	OWNERSHIP BOUNDARY
EX ESB	EXISTING ESB UNDERGROUND DUCTING
EX ESB	EXISTING ESB LV OVERHEAD CABLING
EX EIR	EXISTING EIR BELOW GROUND DUCTING
EX VM	EXISTING VIRGIN MEDIA OVER HEAD LINES
EX SIRO	EXISTING SIRO BELOW GROUND FIBRE LINE
EX G	EXISTING NATURAL GAS
NEW VM	NEW VIRGIN MEDIA CABLES
N ESB	NEW ESB CABLES
	DENOTES CABLES TO BE REMOVED/RELOCATED
SS	EXISTING ESB MV UNIT SUBSTATION
	SITE LIGHTING & EV CHARGING LV DUCT 120MM2
	INSPECTION CHAMBER/DRAW PIT FOR LV SITE SERVICES

NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS & CONTRACT DOCUMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CO-ORDINATION OF ALL ELECTRICAL SERVICES.
3. THE CONTRACTOR IS TO ALLOW FOR THE SUPPLY AND INSTALLATION OF ACCESS CHAMBERS ON DUCTING IN ACCORDANCE WITH UTILITY PROVIDER SPECIFICATION.
4. ALL TELECOMS DUCTING TO BE LOCATED IN FOOTPATHS & SOFT LANDSCAPING.
5. SEPARATION DISTANCES BETWEEN MANHOLES SHALL BE A MAXIMUM DISTANCE OF 80 METERS.
6. SERVICE DUCTS ARE NOT TO BE CUT. DUCTS TO BE LEFT COILED FOR CONTINUOUS RUN TO THE EXTERNAL TERMINATION UNIT OR INTERNAL TERMINATION POINT.
7. ANY SUBSEQUENT CHANGES TO THIS DRAWING LAYOUT ARE TO BE COMMUNICATED TO TELECOM SUPPLIER TO FACILITATE TELECOM INFRASTRUCTURE DESIGN CHANGES.

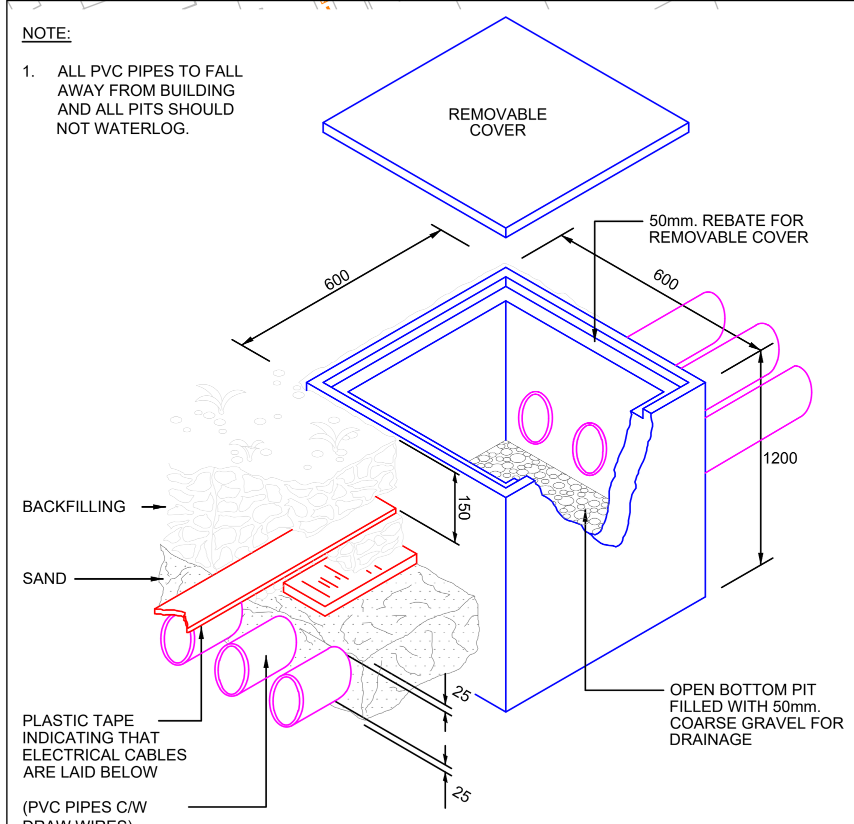


PROPOSED ELECTRICAL ENERGY CENTRE WITH 2MV TRANSFORMER & 2MVA BACKUP GENERATOR

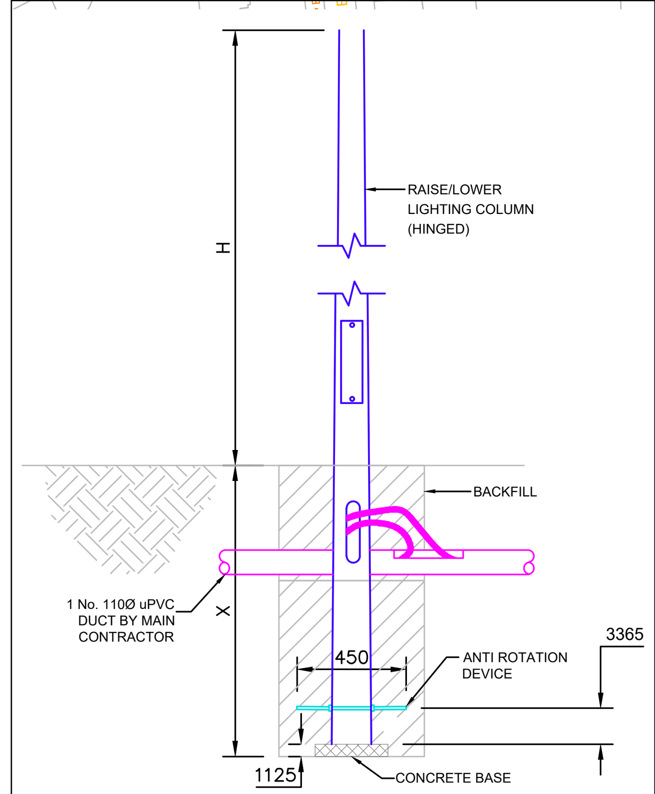


Note:
Warning tape shall indicate the depth of pipe/cable below.

TYPICAL – SITE SERVICES SHOWING SEPARATION DISTANCES



TYPICAL SUGGESTED DETAIL OF DRAW PIT



MOUNTING HEIGHT H (metres)	PLANTING DEPTH X (metres)	SETBACK FROM KERB (metres)	BRACKET OUTREACH (metres)
6	1.0	1.0	1.0

General Notes
A. DO NOT SCALE FROM THIS DRAWING- WORK ONLY FROM FIGURED DIMENSIONS.
B. ALL ERRORS & OMISSIONS TO BE REPORTED TO THE CONSULTING ENGINEER
C. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECTS AND STRUCTURAL ENGINEER'S DRAWINGS.
D. REFER TO DOCUMENT REGISTER FOR DESCRIPTION OF STATUS CODES.

Rev	Status	Date	Description	D.E.
P02	S0	10/02/26	ISSUE FOR INFORMATION	P.H.
P01	S0	01/07/22	ISSUE FOR INFORMATION	P.H.

Client
ST EDMUNDSBURY

Project Title
SPUH 200 BED WARD

Drawing Title
MECHANICAL & ELECTRICAL SITE SERVICES LAYOUT

Dublin	01 4872300
Cork	021 2375080
Roscommon	090 6602380
Website	www.varming.ie

Engineering for the Future

Varming Consulting Engineers Ltd.

Revision	Project Drawing Reference		
P02	21679-VCE-ZZ-00-DR-ME-01000		
Status	Varming Project Number		
S0	21679		
Date	Checked By	Drawn By	Scale
AUG '20	P.H.	A.W.	1:1000@A1

Titleblock Revision: 2020_2

LEGEND:

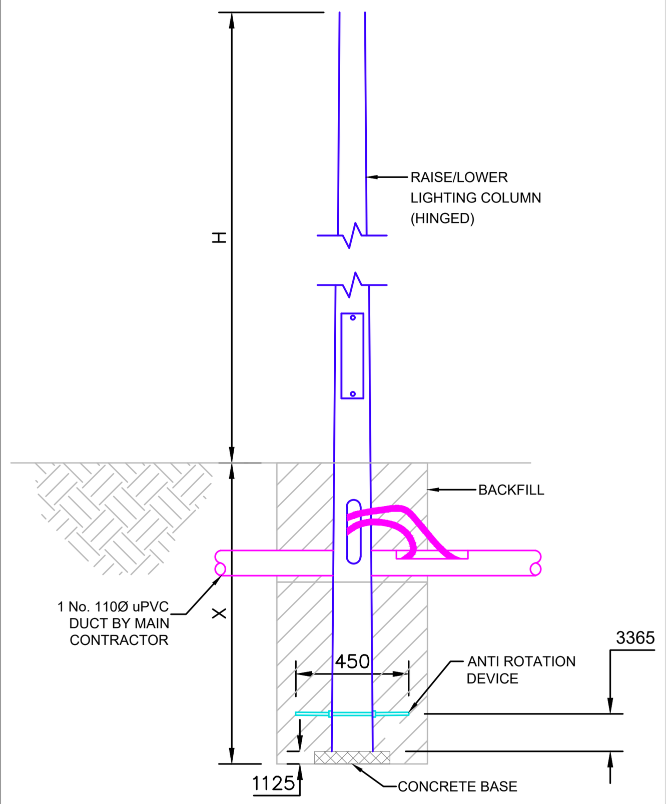
(red line)	SITE RED LINE BOUNDARY
(blue line)	OWNERSHIP BOUNDARY
EX ESB	EXISTING ESB UNDERGROUND DUCTING
EX ESB	EXISTING ESB LV OVERHEAD CABLING
EX EIR	EXISTING EIR BELOW GROUND DUCTING
EX VM	EXISTING VIRGIN MEDIA OVER HEAD LINES
EX SIRO	EXISTING SIRO BELOW GROUND FIBRE LINE
EX G	EXISTING NATURAL GAS
NEW VM	NEW VIRGIN MEDIA CABLES
N ESB	NEW ESB CABLES
(hatched)	DENOTES CABLES TO BE REMOVED/RELOCATED
SS	EXISTING ESB MV UNIT SUBSTATION
(green line)	SITE LIGHTING & EV CHARGING LV DUCT 120MM2
(box)	INSPECTION CHAMBER/DRAW PIT FOR LV SITE SERVICES
(blue line)	1 LUX
(red line)	10 LUX
(symbol)	LUMINAIRE AS PER SPEC & IMAGE BELOW ON A 5m LAMP COLUMN

NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS & CONTRACT DOCUMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CO-ORDINATION OF ALL ELECTRICAL SERVICES.
3. THE CONTRACTOR IS TO ALLOW FOR THE SUPPLY AND INSTALLATION OF ACCESS CHAMBERS ON DUCTING IN ACCORDANCE WITH UTILITY PROVIDER SPECIFICATION.
4. ALL TELECOMS DUCTING TO BE LOCATED IN FOOTPATHS & SOFT LANDSCAPING.
5. SEPARATION DISTANCES BETWEEN MANHOLES SHALL BE A MAXIMUM DISTANCE OF 80 METERS.
6. SERVICE DUCTS ARE NOT TO BE CUT. DUCTS TO BE LEFT COILED FOR CONTINUOUS RUN TO THE EXTERNAL TERMINATION UNIT OR INTERNAL TERMINATION POINT.
7. ANY SUBSEQUENT CHANGES TO THIS DRAWING LAYOUT ARE TO BE COMMUNICATED TO TELECOM SUPPLIER TO FACILITATE TELECOM INFRASTRUCTURE DESIGN CHANGES.

Luminaire A Data	
Supplier	
Type	Streetllight SL 11 mini, ST1.2a, 2200 K, D4 with power reduct
Lamp(S)	luminous flux: 100 % / dim-lin: 254 / 515mA
LampFlux(klm)/Colour	6.92 2200 K/70
File Name	5XC2A22Y08HE_1xLED_58293_371.ldt
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	593.8, 98.9, 0.0
No. in Project	84

LUMINAIRE TYPE "A"



MOUNTING HEIGHT H (metres)	PLANTING DEPTH X (metres)	SETBACK FROM KERB (metres)	BRACKET OUTREACH (metres)
5	1.0	1.0	1.0

General Notes

A. DO NOT SCALE FROM THIS DRAWING- WORK ONLY FROM FIGURED DIMENSIONS.
B. ALL ERRORS & OMISSIONS TO BE REPORTED TO THE CONSULTING ENGINEER
C. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECTS AND STRUCTURAL ENGINEER'S DRAWINGS.
D. REFER TO DOCUMENT REGISTER FOR DESCRIPTION OF STATUS CODES.

Rev	Status	Date	Description	
P01	S0	01/07/22	ISSUE FOR INFORMATION	P.H.
				D.E.

Client: ST EDMUNDSBURY

Project Title: SPUH 200 BED WARD

Drawing Title: MECHANICAL & ELECTRICAL SITE LIGHTING LAYOUT

Dublin 01 4872300
Cork 021 2375080
Roscommon 090 6602380
Website www.varming.ie

Engineering for the Future

Varming Consulting Engineers Ltd.

Revision	Project Drawing Reference		
P01	21679-VCE-ZZ-00-DR-ME-01001		
Status	Varming Project Number		
S0	21679		
Date	Checked By	Drawn By	Scale
AUG '20	P.H.	A.W.	1:1000@A1

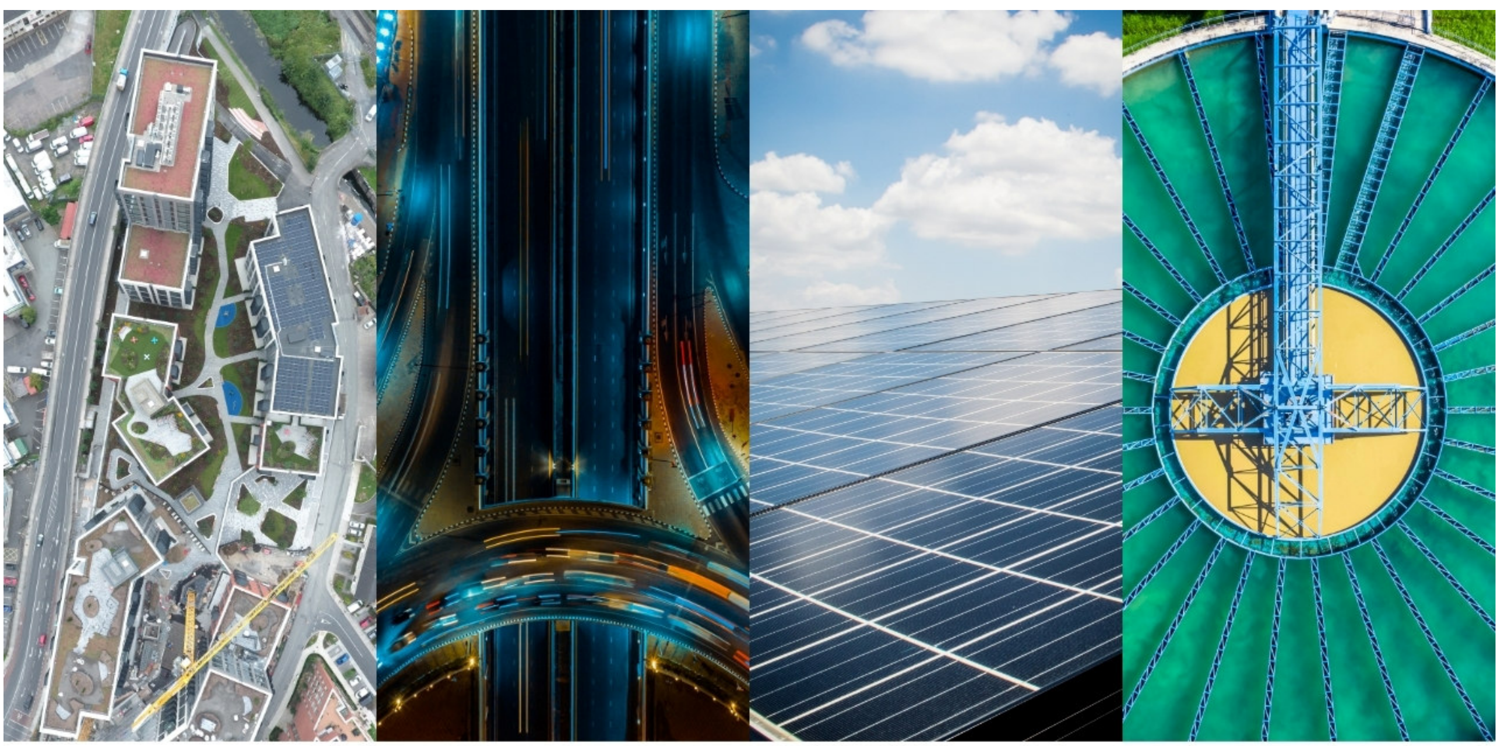
Titleblock Revision: 2020_2

St Edmundsbury Campus Development

Construction, Demolition & Environmental Waste Management Plan

20 April 2026

St Patrick's
Mental Health Services



Formerly JB Barry & Partners who became part of Egis in 2023.

Document Information

GENERAL INFORMATION

Client: The Governors of St Patricks Hospital
Project Title: St Edmundsbury Campus Development
Report Title: Construction, Demolition & Environmental Waste Management Plan
File Name: 25207-EEI-XX-XX-RP-CE-10102_Construction_Management_Plan

HISTORY OF CHANGES

DOCUMENT REVISION			DOCUMENT VERIFICATION			
Issue Date (DD/MM/YY)	Revision	Suitability	Author(s)	Reviewer(s)	Approver(s)	Peer Review (or N/A)
04/03/2026	P01	S4	BK	GF	GF	N/A
20/04/2026	P02	S4	BK	GF	GF	N/A

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1 INTRODUCTION

1.1 General

Egis has been commissioned by St Patrick's Mental Health Services to prepare this preliminary Construction and Demolition Waste Management Plan (CDWMP) in support of the planning application for the proposed redevelopment of the St Edmundsbury Campus in Lucan, Co Dublin.

1.1.1 Purpose

This Preliminary Construction, Demolition & Environmental Waste Management Plan outlines the typical strategies, arrangements, and mitigation measures that may be implemented during the construction phase of the project. Its primary purpose is to identify potential impacts on the surrounding environment and community, and to provide guidance on how these impacts can be effectively managed.

The report serves as a foundational document for the Main Contractor, who will be responsible for developing and executing a comprehensive Construction, Demolition & Environmental Waste Management Plan throughout the duration of the works. It is intended to support the contractor in planning site activities in a manner that minimises disruption, ensures environmental compliance, and promotes safe and efficient operations.

As per standard industry practice, the Main Contractor will retain full responsibility for the items outlined below in the section 1.1.2.

This plan should be used as a reference framework by the Main Contractor to inform the development of their detailed Construction Management Plan, ensuring alignment with project goals and regulatory standards.

1.1.2 Objectives

- Determining the methodologies for executing the construction works.
- Ensuring compliance with all relevant legislation, statutory requirements, planning conditions., including Health and Safety regulations, Local Authority requirements, and environmental obligations.
- Protect the health and safety of workers and the public.
- Incorporating best practices in construction management to reduce and minimise environmental impacts including noise, dust, waste, and traffic.
- Designing and installing all necessary temporary works to facilitate the completion of the permanent structures.
- Promote sustainable construction and waste management practices.
- Maintain clear communication with stakeholders and local residents.

1.1.3 Site Location

The proposed development site is located close to the junction of Chapel Hill and Lucan Road in Lucan, Co Dublin as shown on Figure 1.1 below.

FIGURE 1.1: LOCATION OF PROJECT SITE (SOURCE: GOOGLE MAPS, ANNOTATIONS BY EGIS)

1.2 Proposed Development Description

In accordance with section 37E of the Planning and Development Act 2000, as amended, The Governors of St. Patrick's Hospital, care of Tom Phillips + Associates, 80 Harcourt Street, Dublin 2, gives notice of its intention to make an application to An Coimisiún Pleanála for permission for a period of 10 no. years for the development of the new mental health hospital facility and all ancillary site development, site services, utilities and landscaping works ("the proposed development"), all at the c. 8.10 Ha site, located at St Edmundsbury Hospital, Lucan Road, Lucan, Co. Dublin, K78 NW63 (Protected Structures: RPS Ref Nos. 003, 008, 012, 013.) The cumulative area of all proposed new and refurbished buildings is c. 19,251.90 sqm. Associated site development works will include the provision of 8,524 sqm public open space facilities, including public walking and cycling facilities.

The proposed development comprises the demolition of an existing single storey 52 no. bed psychiatric ward (c. 1,633.00 sq m), located to the south-west of St. Edmundsbury House (RPS 003), and the construction of a single storey 14 no. bedroom in-patient adolescent mental health facility (c. 1,857.10 sq m) in its place, with façade remediation where the former building connected to St. Edmundsbury House; The demolition of 1 no. storey existing shed (c. 17.90 sq m) to the north-west of St. Edmundsbury House and replacement with 1 no. ESB substation unit building (c. 23.60 sq m). The proposed development includes a new 200 no. bed adult inpatient facility ranging from one to two storeys in height and a total floor area of c. 16,283.20sq m, with screened plant at roof level. It will be located within the existing walled garden area (RPS 012) and will incorporate the historic walls and bell tower structures (RPS 013.) The facility will be arranged as a single continuous block comprising 7 no. In-patient wards. The form of the building will create 10 no. new internal courtyards at ground floor & 2 no. terraces at first floor (c. 3696.00 sqm in total); with c. 62lin.m of the north garden wall to be demolished and this stone reincorporated into the proposed hospital structures.

The proposed development also includes for the alteration, refurbishment and conversion of the existing structures within the historic farmyard enclosure (RPS 008), including: coach house building (c. 312.95 sq m) to provide a new consultancy suite (c. 599.50 sq m), including c. 71.5 sq m café; Alteration, conversion and refurbishment of existing barn (c. 183.65 sq m) to form a maintenance facility building and associated offices (c. 374.00 sqm); The demolition of an existing contemporary shed within the historic farm yard (c. 163.75 sq m) and construction of a new single storey energy centre building (c. 114.50 sq m), within the historic farmyard enclosure. In total, c. 210.80 sq m of structures are required to be demolished within the walled garden and farmyard enclosure areas to facilitate the proposed development.

The proposed development also includes the removal and relocation of the existing southern boundary wall to Lucan Road (c. 190lin.m) (Regional Road Number Ref. R835) set back from the existing boundary to facilitate the future junction improvement works to the Lucan Road and Chapel Hill Junction. The junction upgrade works do not form part of this application and will be carried out by South Dublin County Council. The proposed development also comprises the demolition of the existing 2 no. Dean Clinic buildings (single storey and single storey with dormer level) at the existing entrance to the site via the Lucan Road (c. 221.15 sq m and c. 60 sq m respectively) to facilitate the construction of revised access arrangements and widening of the access to the Lucan Road.

The new mental health facility will provide adult and adolescent in-patient service rooms; Adult and adolescent day services rooms; Patient care services rooms; Patient pharmacy; Laboratories; Staff and patient canteen facilities; Consultant and hospital administration accommodation; Staff welfare facilities; Reconfigured and additional new car and cycle parking facilities (with revised total of 214 no. car parking spaces, 2 no. bus parking spaces and 160 no. secure cycle parking spaces); Signage and wayfinding.

The proposed development also includes private and secure patient gardens (c. 9,982 sq m); Plant and associated tanks; Public lighting; All piped infrastructure and ducting and redirection works; Tree removal, including tree removal within the Proposed Liffey Valley Natural Heritage Area (pNHA - 000128); Redirection and undergrounding of existing overhead power lines from the Lucan East 38KV Substation to the existing hospital facility; Controlled access barriers; 2 no. Secure cycle parking stores total c. 107.10 sq m; EV charging facilities; 2 no. Attenuation tanks; Rainwater harvesting tanks; PVs; SUDs including extensive green roof provision; Boundary treatments, including new boundary treatments and the repair and refurbishment of existing stone boundary walls; Waste marshalling compound storage area; Changes in level and retaining walls; Internal roads and paths, including vehicle set down areas; Site clearance works; Services provision and related ducting, piping and cabling; and all associated site development and excavation works above and below ground. Upon completion, the mental health facility will cumulatively provide 214 no. inpatient beds across the campus, including existing and proposed inpatient beds

2 SITE ESTABLISHMENT AND MANAGEMENT

2.1 Pre-Commencement Measures

The following pre-commencement measures will be implemented by the Main Contractor prior to the start of construction works for the redevelopment. These measures are designed to ensure safety, minimise disruption to hospital operations and the surrounding community, and comply with South Dublin County Council and national guidelines:

2.1.1 Condition Survey of Adjacent Infrastructure

A comprehensive condition survey will be undertaken of all adjacent public roads, footpaths, and infrastructure that may be affected by construction traffic. The survey will document existing conditions and serve as a reference for reinstatement or dispute resolution.

2.1.2 Identification and Tagging of Existing Services

All existing underground and overhead services—including water, gas, electricity, telecommunications, and hospital-specific utilities—will be identified, located, and clearly tagged. This will be done in coordination with utility providers to avoid service disruptions.

2.1.3 Establishment of Site Compound and Facilities

A secure site compound will be established in a designated area ideally located to minimise disruption. The compound will include:

- Site offices and meeting rooms
- Welfare facilities
- First aid station
- Secure bicycle parking
- On-site parking for all construction operatives and visitors

2.1.4 Site Security and Fencing

The site will be enclosed with hoarding or fencing to prevent unauthorised access and ensure public safety. Security lighting will be installed and designed to avoid glare or disturbance to nearby residential properties. Access points will be controlled and monitored during working hours.

2.1.5 Construction Access and Traffic Management

Construction access will be via Lucan Road, with heavy goods vehicle (HGV) movements managed in accordance with the SDCC HGV Management Strategy. A Traffic Management Plan (TMP) will be implemented, including:

- Designated HGV routes avoiding sensitive areas
- Restricted delivery times to avoid traffic and school peak hours
- Wheel-wash facilities to prevent debris on public roads
- Use of road sweepers as required

All access arrangements will always maintain uninterrupted emergency vehicle access to the neighbouring propertiesl.

2.1.6 Cleanliness and Road Maintenance

The contractor will ensure that no muck, debris, or construction material is deposited on public roads or footpaths. A wheel-wash facility will be installed at the site exit, and road sweepers will be deployed as required to maintain cleanliness and safety on surrounding roads.

2.1.7 Excavated Material Management

Excavated material will be stored on-site in designated areas and removed in a phased manner to minimise disruption. Waste management will be carried out in accordance with the Construction and Environmental Management Plan (CEMP) and the Demolition and Waste Management Plan (DWMP).

2.1.8 Monitoring and Reporting

All works will be coordinated to ensure minimal disruption to adjacent stakeholders. A Construction Liaison Officer will be appointed to manage communication with neighbours.

2.1.9 Typical Working Hours

Standard working hours on site will be from 07:00 to 18:00, Monday to Friday and 08:00 to 14:00 on Saturday.

No work is permitted on Sundays, Bank Holidays, or Public Holidays, except under exceptional circumstances.

Certain construction activities that require special handling to reduce disruption to the surrounding area may be carried out outside of these hours. Such operations will be subject to prior agreement with the Planning Authority.

Heavy equipment and machinery must not be operated on or adjacent to the site:

Before 07:00 or after 18:00, Monday to Friday
Before 08:00 or after 14:00 on Saturday
At any time on Sundays, Bank Holidays, or Public Holidays

2.1.10 Compliance with Roadworks Timing Restrictions

All roadworks will comply with South Dublin County Council’s Traffic Impact Number (TIN) restrictions:

Permission for any out-of-hours works will be sought from the Roadworks Control Unit.

2.2 Site Access and Traffic Management

The construction of the new St Edmundsbury Hospital will be carried out within an urbanised environment with residential and educational neighbours. As such, careful planning of access and traffic management is essential to ensure safety and minimise disruption.

2.2.1 Access Points

Separate and clearly defined access points will be established for the following:

Construction Staff Access
Staff will access the site via Lucan Road, where a secure pedestrian gate will be provided. All personnel will be required to sign in and out daily and undergo site inductions.

Deliveries and Material Handling
All deliveries, including plant, materials, and equipment, will enter the site via a new temporary entrance at Lucan Road. Delivery times will be scheduled to avoid peak traffic periods and school drop-off/pick-up times.

Waste Removal
Waste will be removed from the site using the same access point on Lucan Road. Skips and waste containers will be located within the site compound and collected during off-peak hours to reduce traffic impact.

Emergency Access
Emergency vehicle access on Lucan Road will remain uninterrupted at all times. The contractor will coordinate activities to ensure that ambulance routes and fire tender access are never obstructed.

2.2.2 Traffic Routing and Management

To minimise disruption to local residents and the surrounding road network, the following traffic management measures will be implemented:

Designated Construction Routes
Construction traffic will be routed via Lucan Road, avoiding residential streets and sensitive areas. HGVs will follow approved routes in accordance with the Dublin City Council HGV Management Strategy.

Restricted Delivery Hours
Deliveries will be restricted to 07:00–10:00 and 14:00–17:00, avoiding peak traffic and school traffic times. No deliveries will be permitted outside of these hours without prior approval.

Traffic Management Plan (TMP)
A detailed TMP will be developed and approved by South Dublin County Council. It will include:

- Temporary signage and wayfinding
- Segregated pedestrian and vehicle routes
- Temporary traffic signals or marshals where required
- Emergency contact procedures for traffic-related incidents

Wheel Wash and Road Cleaning
A wheel wash facility will be installed at the site exit to prevent mud and debris from being tracked onto public roads. Road sweepers will be deployed as needed to maintain cleanliness on surrounding streets.

Monitoring and Compliance
The contractor will monitor traffic movements daily and maintain a log of deliveries, vehicle types, and any incidents. Non-compliance with routing or timing restrictions will be addressed immediately.

Coordination with Hospital Operations

Given that the project involves an extension to an operational hospital, maintaining clear communication and uninterrupted emergency access is critical throughout the construction period. Regular coordination meetings will be held with hospital management to review upcoming deliveries, roadworks, or any activities that may impact hospital access or operations.

Communication with Hospital Management and Staff

A dedicated Liaison Officer will be appointed to act as the primary point of contact between the construction team and hospital management.

Regular coordination meetings will be held (weekly or as required) to review upcoming works, assess potential impacts, and agree on mitigation measures.

Advance notice will be provided for any activities likely to generate noise, vibration, dust, or temporary access restrictions.

A Construction Communication Plan will be implemented, including:

- Contact details for key site personnel
- Emergency contact procedures
- Notification protocols for planned disruptive works
- Feedback and issue resolution mechanisms

Emergency Access and Traffic Management

Uninterrupted access for emergency vehicles (ambulances, fire services, etc.) will be maintained at all times.

Construction traffic will be managed to avoid peak hospital activity periods and will follow designated routes agreed with hospital facilities management.

A Traffic Management Plan (TMP) will be developed and approved prior to commencement, including:

- Clear signage and wayfinding for hospital users
- Segregated access points for construction and hospital traffic
- Procedures for temporary road or entrance closures, including advance notice and alternative routing

Emergency evacuation routes and fire exits for the hospital will remain fully accessible and unobstructed throughout the works.

All site personnel will be briefed on the importance of maintaining a safe and respectful environment within the hospital campus, with particular attention to noise control, cleanliness, and professional conduct.

2.3 Working Hours

As previously mentioned in section 2.1.9, this project involves the construction of an extension to an existing hospital, which necessitates careful coordination to minimise disruption to ongoing healthcare services and ensure the safety and comfort of patients, staff, and visitors.

The site will operate in accordance with the Environmental Noise Regulations 2006, and the following working hours will apply:

Standard Working Hours

Monday to Friday: 07:00 to 18:00
Saturday: 8:00 to 14:00
Sundays and Bank/Public Holidays: No works permitted

These hours reflect the typical operational window for general construction activities. No heavy machinery or equipment shall be operated on or adjacent to the site outside of these hours.

Out-of-Hours Works

Due to the sensitive nature of the hospital environment, certain construction activities may need to be scheduled outside standard hours to avoid interfering with critical hospital operations or to reduce noise during peak patient care times. Such works will only proceed following prior agreement with the relevant Planning Authority and in close coordination with hospital management. Advance notice will be provided to all relevant stakeholders.

All construction activities will be planned and managed to minimise noise, vibration, and other potential disturbances, with particular attention to maintaining a safe and quiet environment for hospital users.

3 CONSTRUCTION & DEMOLITION WASTE MANAGEMENT

3.1 Policy and Principles

The management of construction and demolition (C&D) waste for the works at St Edmundsbury Campus will be guided by the principles of sustainable development and in full compliance with the Waste Management Act 1996 (as amended), the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects (2006), and relevant EU Waste Framework Directives.

The project will adopt the waste management hierarchy, prioritising:

Prevention → Minimisation → Reuse → Recycling → Recovery → Disposal

This approach ensures that waste generation is reduced at source, and that materials are managed in the most environmentally responsible manner.

3.1.1 Waste Minimisation and Segregation

To support the waste hierarchy, the following measures will be implemented on-site:

Design for Waste Reduction
The construction methodology and material procurement will be optimised to reduce off-cuts, over-ordering, and packaging waste.

On-Site Segregation
Waste materials will be segregated at source into clearly labelled skips or containers for:

- Concrete, brick, and rubble
- Timber
- Metals
- Plasterboard
- Plastics
- Mixed recyclables
- General waste
- Hazardous waste (e.g. asbestos, if encountered)

Reuse of Materials
Where feasible, materials such as timber hoarding, pallets, and formwork will be reused on-site or transferred to other projects.

Recycling and Recovery
Recyclable materials will be sent to authorised recycling facilities. Recovery options (e.g. energy from waste) will be considered for non-recyclable but recoverable materials.

Hazardous Waste Management
Any hazardous waste encountered (e.g. contaminated soils, asbestos) will be handled by licensed contractors in accordance with the Hazardous Waste Regulations 1998 (as amended) and disposed of at authorised facilities.

3.1.2 Waste Collection and Disposal

Licensed Waste Contractors
All waste will be collected and transported by permitted waste contractors holding valid waste collection permits under the Waste Management (Collection Permit) Regulations 2007 (as amended).

Authorised Facilities
Waste will only be delivered to licensed waste facilities authorised under the Waste Management (Facility Permit and Registration) Regulations 2007 (as amended).

Documentation and Record Keeping
A Waste Management Log will be maintained on-site, recording:

- Waste types and quantities
- Source and destination of waste
- Contractor details and permit numbers
- Waste transfer documentation

Monitoring and Reporting
Waste generation and disposal will be monitored monthly. A final Waste Audit Report will be prepared at project completion, summarising waste volumes, recycling rates, and compliance with the Waste Management Plan.

3.2 Waste Types

The following waste streams are anticipated during the demolition and construction phases:

Excavated Soils and Subsoils
Generated during site clearance and foundation works. Clean fill may be reused on-site for landscaping or backfilling.

Concrete and Masonry
Arising from demolition of existing structures. Where permitted, concrete may be crushed and reused for haul roads or sub-base layers.

Timber
Includes formwork, pallets, and off-cuts. Clean timber will be separated for reuse or recycling.

Metals
Structural steel, reinforcement bars, and piping will be segregated and sent for recycling.

Packaging Waste
Cardboard, plastic wrap, and pallets from material deliveries will be collected and recycled where possible.

Plastics
Includes piping, insulation, and packaging. Clean plastics will be separated for recycling.

Hazardous Materials (if encountered)
May include asbestos, contaminated soils, or chemical containers. These will be managed by specialist contractors in accordance with relevant legislation.

3.3 Waste Handling and Documentation

To ensure effective implementation of the Waste Management Plan:

Appointment of a C&D Waste Manager

A dedicated Construction & Demolition Waste Manager will be appointed to oversee all aspects of waste management, including:

Ensuring compliance with legal and environmental obligations
Coordinating waste segregation and storage
Maintaining accurate records and documentation

Waste Records and Tracking

A Waste Management Log will be maintained, recording:
Waste type and quantity
Date of removal
Waste carrier details and permit numbers
Destination facility and waste licence/permit number
Copies of waste transfer forms (C1 forms, weighbridge dockets)

Licensed Waste Carriers

All waste will be transported by permitted waste collectors under the Waste Management (Collection Permit) Regulations 2007 (as amended).

Hazardous Waste Testing

Where hazardous materials are suspected, the Main Contractor will conduct environmental chemistry testing, including Waste Acceptance Criteria (WAC) analysis. Testing will be performed by accredited laboratories and coordinated with receiving landfill operators. Pretreatment of hazardous soils will follow EPA guidance and be documented in the Waste Management Log.

C & D Waste Material	Quantity in Tonnes (t)
Excavated Soils and Subsoils	~9,200 tonnes to be removed from site by licensed haulier
Concrete and Masonry	~1,400 tonnes removed from site by licensed haulier
Timber	~70 tonnes to be sorted and removed by licensed haulier to depot for disposal
Metals	~45 tonnes to be sorted and removed by licensed haulier to depot for disposal
Packaging Waste	~10 tonnes (estimated, to be completed by c&d waster manager)
Plastics	~7 tonnes (estimated, to be completed by c&d waster manager)
Hazardous Materials	To be confirmed by survey and completed by c&d waster manager

TABLE 1 - ESTIMATED QUANTITY OF C&D WASTE MATERIAL

3.4 Reuse and Recycling

The project will actively pursue opportunities for reuse and recycling, including:

Reuse of Excavated Material
Where suitable, clean excavated soils will be reused on-site for backfilling, landscaping, or grading.

Earthworks Cut & Fill Strategy
Excavation volumes will be optimised to reduce the need for off-site disposal. Where feasible design levels will be set to balance cut and fill. Unsuitable subsoils will be assessed for reuse in landscaping or non-engineering fill. Segregation of reusable and waste materials will be enforced to minimise landfill disposal.

Topsoil Management
Topsoil will be carefully stored and reused on-site where feasible, particularly for landscaping and grading. To preserve its integrity:

- Topsoil will be stored separately from other materials to prevent contamination.
- Storage piles will not exceed 2 meters in height to avoid structural degradation.
- Piles will be kept dry and protected from vehicle damage.
- Records of topsoil movements and reuse will be maintained by the C&D Waste Manager.

Crushing of Concrete
Subject to approval and environmental compliance, concrete from demolition may be crushed and reused for temporary haul roads or hardstanding areas.

Segregation for Recycling
Dedicated skips and containers will be provided for:

- Timber: Reused or sent to wood recyclers
- Metals: Collected for recycling
- Packaging: Cardboard and plastics separated for recycling
- Plasterboard: Collected separately to avoid contamination

Monitoring Recycling Rates
Recycling and reuse rates will be tracked and reported as part of the final Waste Audit Report, which will be submitted to the local authority upon project completion.

4 ENVIRONMENTAL MANAGEMENT

The construction of the facility will be managed in accordance with relevant environmental legislation and best practice guidelines to minimise impacts on the surrounding environment, hospital operations, and local residents. The following subsections outline the key environmental control measures to be implemented on-site by the Main contractor.

4.1 Dust and Air Quality

To control dust and maintain air quality during construction:

Dust Monitoring Protocols
Dust emissions will be monitored in accordance with EPA and planning authority guidelines. If required, deposition rates will be measured using standard methods (e.g., ≤350 mg/m²/day averaged over 30 days). Monitoring stations will be installed at sensitive receptors, and results will be logged and reviewed weekly.

Dust Suppression
Water misting or damping down will be used during dry or windy conditions, particularly during demolition, excavation, and material handling.

Stockpile Management
Stockpiles will be kept to a minimum, covered or dampened, and located away from sensitive areas.

Vehicle Controls
All vehicles will be required to switch off engines when not in use.

Wheel-wash facilities
Vehicle wheel-wash facilities will be installed at site exits.

Material Storage
Fine materials (e.g. sand, cement) will be stored in covered containers or silos to prevent windblown dust.

Material Handling
Drop heights will be minimised, and dusty materials will be covered during transport.

No Burning Policy
Burning of waste or vegetation on-site is strictly prohibited.

Monitoring
Dust levels will be visually monitored daily. If required by the local authority, real-time dust monitoring equipment will be installed at sensitive receptors.

Compliance
All works will comply with BS 5228 – Noise and Vibration Control on Construction and Open Sites, and relevant EPA guidance on air quality.

4.2 Noise and Vibration

Given the proximity to an operational hospital and residential areas, noise and vibration control is a priority:

Noise Risk Framework
Noise exposure will be assessed using the following thresholds:

Lower Action Value (LAV): 80 dBA LEX,8 – Hearing protection available
Upper Action Value (UAV): 85 dBA LEX,8 – Hearing protection mandatory
Exposure Limit Value (ELV): 87 dBA LEX,8 – Not to be exceeded
Noise exposure = LEX,8 – (SNR – 10)
Risk assessments will be conducted for noisy activities, and mitigation measures (e.g., silencers, scheduling, PPE) will be implemented accordingly.

Low-Noise Equipment
Plant and machinery will be selected for low-noise output and fitted with silencers or acoustic enclosures where appropriate.

Maintenance
All equipment will be regularly maintained to ensure optimal performance and minimal noise emissions.

Working Hours
Noisy operations will be restricted to 07:00–19:00 Monday to Friday and 09:00–13:00 on Saturdays. No works will be permitted on Sundays or public holidays without prior approval.

Monitoring
Noise and vibration levels will be monitored at sensitive locations (e.g. hospital wards, residential boundaries) if required by planning conditions or the local authority.

Communication
Advance notice will be provided to hospital management and local residents for any particularly noisy activities.

Control Measures
Idle plant will be switched off or throttled down.
Compressors and generators will be sited away from sensitive receptors.
Noise complaints will be logged and addressed immediately.

4.3 Pollution Prevention Measures

Pollution Prevention Summary Table

Source	Action
Fuel/Oil	Bunded storage, spill kits, drip trays
Concrete Washout	Designated impermeable washout area
Material Storage	10m buffer from watercourses, covered storage
Leaks/Spills	Regular inspections, absorbent materials on hand
Litter	On-site bins and regular collection
Construction Vehicles	Wheel wash facilities and emission control

TABLE 2 - POLLUTION PRVENTION ACTIONS

4.4 Water Management

To prevent pollution and protect local watercourses and drainage systems:

Surface Water Control
Sediment traps, silt fences, or settlement tanks will be used to treat surface water runoff before discharge.

Fuel and Chemical Storage
All fuels, oils, and chemicals will be stored in bunded areas with a minimum capacity of 110% of the largest container.

Concrete Washout
A designated impermeable concrete washout area will be established on-site to prevent contamination of soil and water.

Spill Response
Spill kits and absorbent materials will be available on-site.

Drainage Protection
Measures will be taken to prevent the discharge of untreated water or pollutants into surface drains or watercourses.

4.5 Ecology and Biodiversity

Although the site is in an urban setting, ecological protection measures will be implemented:

Vegetation Clearance
Any vegetation clearance will be scheduled outside the bird nesting season (March–August). If works must proceed during this period, a qualified ecologist will carry out a nesting bird survey.

Tree Protection
There are no trees to be protected on site.

Ecological Inspections and Assessments
An Appropriate Assessment (AA) screening has been completed in compliance with relevant legislation, as well as a bat survey, which have been submitted with this planning application.

4.6 Archaeology and Heritage

Although no significant archaeological features are expected, the following measures will be observed:

Mitigation Measures
Any recommendations from archaeological assessments or planning conditions will be fully implemented.

Unexpected Finds
If archaeological artefacts or features are discovered during excavation, all works in the vicinity will cease immediately, and the National Monuments Service and Dublin City Council will be notified. Works will not resume until authorised by the relevant authorities.

5 HEALTH & SAFETY

The Main Contractor will be required to implement and enforce Health and safety as a core priority for the construction works. All activities will be carried out in strict compliance with the Safety, Health and Welfare at Work (Construction) Regulations 2013, and other relevant legislation and codes of practice.

5.1 Project Supervisor Construction Stage (PSCS)

A competent Project Supervisor Construction Stage (PSCS) will be appointed prior to commencement of works. The PSCS will be responsible for:

- Coordinating the implementation of the Construction Stage Safety and Health Plan
- Managing and monitoring compliance with statutory health and safety requirements
- Coordinating the activities of all contractors and subcontractors
- Ensuring that site-specific risk assessments and method statements (RAMS) are prepared and followed

5.2 Site Induction and Toolbox Talks

Site Induction
All personnel entering the site will undergo a comprehensive induction covering:

- Site-specific hazards and controls
- Emergency procedures
- Site rules and PPE requirements
- Environmental and waste management protocols

Toolbox Talks
Regular toolbox talks will be delivered by the Site Manager or Safety Officer to address:

- High-risk activities (e.g. working at height, manual handling)
- Environmental protection (e.g. spill response, dust control)
- Updates to procedures or site conditions
- Lessons learned from incidents or near misses

5.3 Permit-to-Work Systems

A permit-to-work system will be implemented for all high-risk activities, including but not limited to:

- **Hot Works:** Welding, cutting, or grinding operations
- **Confined Space Entry:** Any work in tanks, ducts, or enclosed areas
- **Excavations:** Deep or unstable groundworks
- **Working at Height:** Use of scaffolding, MEWPs, or roof access
- **Electrical Works:** Live or temporary electrical installations

Permits will be issued by authorised personnel only after verifying that all safety controls are in place.

5.4 Hearing Protection Training

Hearing Protection Protocols
All workers will receive training on proper use of earmuffs, earplugs, and semi-inserts. PPE will be maintained in good condition, and hearing protection zones will be clearly marked. Spot checks will be conducted to ensure compliance, and any issues will be reported to the Site Manager.

5.5 Emergency Preparedness and Spill Response

Emergency Response Plan
A site-specific emergency plan will be developed and communicated to all staff. It will include:

Evacuation procedures
Assembly points
Contact details for emergency services and key personnel
Procedures for fire, medical emergencies, and environmental incidents

Spill Kits and Fire Extinguishers

Spill kits (including absorbents, booms, and PPE) will be strategically located near fuel and chemical storage areas.
Fire extinguishers will be provided at key locations and maintained regularly.
All staff will be trained in the use of emergency equipment.

First Aid:

Trained first aiders will be present on-site at all times.
First aid kits will be available in the site office and welfare areas.

6 COMMUNICATION AND COMMUNITY RELATIONS

Given the sensitive nature of the hospital environment and its urban setting, proactive communication and community engagement will be essential throughout the construction phase. The following measures will be implemented by the Main Contractor to ensure transparency, responsiveness, and minimal disruption to stakeholders.

6.1 Site Contact Information

Site Signage: Prominent signage will be displayed at the site entrance and key access points, including:

- Name and contact number of the Site Manager
- Emergency contact details (including out-of-hours)
- Health and safety notices
- Environmental and traffic management information

6.2 Advance Notification of Works

Resident Communication
Local residents, hospital staff, and nearby businesses will be notified in advance of any major construction activities that may cause disruption, such as:

- Road closures or diversions
- Out-of-hours works
- High-noise operations
- Large deliveries or crane lifts

Notification Methods

- Email circulars or printed flyers
- Updates via hospital communications channels
- On-site signage and notices

Coordination with Hospital Management
All communications will be coordinated with the hospital's facilities and communications teams to ensure alignment with hospital operations and patient care needs.

6.3 Complaints Management

Complaints Register: A dedicated Complaints Register will be maintained on-site to record:

- Nature and source of complaint
- Date and time received
- Actions taken to investigate and resolve the issue
- Follow-up communication with the complainant

Response Protocol:

- All complaints will be acknowledged within 24 hours
- Investigations will be initiated promptly
- Corrective actions will be documented and reviewed by the Site Manager

Reporting: Complaints and resolutions will be included in monthly reports to the Client and, where relevant, to the Planning Authority.

7 MONITORING AND REPORTING

Effective monitoring and reporting are essential to ensure compliance with the Construction Management Plan (CMP), maintain environmental standards, and respond promptly to any incidents or deviations.

7.1 Site Inspections and Audits

Regular Inspections: The Site Manager and Environmental Officer will conduct routine inspections to verify compliance with all CMP provisions, including health and safety, environmental controls, and waste management.

Formal Audits: Scheduled audits will be carried out at key project milestones or phases to assess performance against regulatory and internal standards.

Corrective Actions: Any non-compliance identified during inspections or audits will be documented, and corrective actions will be implemented promptly.

7.2 Monitoring Logs and Records

The following logs will be maintained on-site and updated regularly:

Waste Management Log:

- Types and quantities of waste generated
- Disposal/recycling routes and facilities
- Waste carrier details and permits

Dust Monitoring Log:

- Visual inspections and, if applicable, real-time monitoring data
- Mitigation measures applied (e.g. damping, wheel washing)

Noise Monitoring Log:

- Records of noise levels at sensitive receptors
- Complaints and responses
- Use of hearing protection and mitigation measures

Water Quality Monitoring Log:

- Surface water runoff treatment and discharge records
- Spill incidents and containment actions
- Sediment trap and settlement tank maintenance

All logs will be reviewed weekly and made available to the Client, Planning Authority, and other relevant stakeholders upon request.

7.3 Incident Reporting

Environmental Incidents: Any incident involving pollution, hazardous material release, or breach of environmental controls will be reported immediately to:

- The Client's Representative
- The Local Authority
- The Environmental Protection Agency (EPA), if applicable

Reporting Procedure:

- Initial verbal notification within 2 hours of discovery
- Written incident report within 24 hours, including:
  - Nature and cause of the incident
  - Immediate actions taken
  - Proposed corrective and preventative measures

Follow-Up: All incidents will be investigated, and lessons learned will be incorporated into updated procedures and toolbox talks.

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NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS, ANY DISCREPANCIES, ERRORS OR OMISSIONS TO BE BROUGHT TO THE ATTENTION OF THE DESIGNER.
2. ALL DIMENSIONS TO BE CHECKED BY THE CONTRACTOR ON SITE PRIOR TO COMMENCEMENT OF WORKS.
3. JB BARRY TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OF WORKS ON SITE.
4. DIMENSIONS OF ALL BOUNDARIES AND ADJOINING ROADS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF WORKS.
5. DO NOT SCALE, ALL MEASUREMENTS AND COORDINATES TO BE CHECKED ON SITE.
6. ALL PROPOSED WATERMAIN PIPEWORK TO BE HDPE WITH MINIMUM PE-80 SDR-17 IN ACCORDANCE WITH SECTION 3.9 OF IRISH WATER CODE OF PRACTICE FOR WATER INFRASTRUCTURE
7. THE MINIMUM PIPE DIAMETER PROPOSED IS 100mmØ(ID).
8. IF APPLICABLE, WATERMAIN TO BE LOCATED IN COMPLIANCE WITH STD-W-12A OF IW STANDARDS, IN RELATION TO PLANTING PROXIMITY.
9. SEPARATION DISTANCES FROM WATERMAIN TO BE IN COMPLIANCE WITH STD-W-11 OF IW STANDARDS.
10. ALL WATERMAINS WILL HAVE A MINIMUM COVER OF 900mm. ALL SERVICE PIPES CONNECTING PROPERTIES WILL HAVE MINIMUM COVER OF 750mm.
11. HYDRANTS SHALL BE DOUBLE FLANGED DRILLED TO PN16 AND SHALL COMPLY WITH BS EN 14339, IS EN 1074 PART 6 AND 135 750. REFER TO IRISH WATER CODE OF PRACTICE FOR WATER INFRASTRUCTURE SECTION 3.16.5.
12. SLUICE VALVES HAVE BEEN PROVIDED SO THAT INDIVIDUAL SECTIONS CAN BE ISOLATED & WILL COMPLY TO BS 5163. THE DEPTH OF THE SLUICE VALVE SPINDLE CAP BELOW FINISHED GROUND WILL NOT EXCEED 300mm.
13. AIR VALVE AND HYDRANT COVERS, WHERE LOCATED IN GRASS AREAS, SHALL BE SURROUNDED BY CONCRETE PLINTH, 200MM ALL AROUND AND 100MM DEEP, IN COMPLIANCE WITH IW STANDARDS
14. ALL WATERMAIN DETAILS TO BE IN ACCORDANCE WITH THE IRISH WATER INFRASTRUCTURE STANDARD DETAILS AND CODE OF PRACTICE FOR WATER INFRASTRUCTURE.
15. IN RELATION TO SECTION 3.5.9. OF IRISH WATER CODE OF PRACTICE THE 150mmØ WATERMAIN CANNOT BE LOCATED AT LEAST 3.0m FROM THE EDGE OF BUILDINGS. THE EXACT LOCATION OF THE 100mmØ WATERMAIN TO BE AGREED WITH IRISH WATER.
16. IN RELATION TO SECTION 3.5.25. OF IRISH WATER CODE OF PRACTICE THE HYDRANTS CANNOT BE LOCATED AT LEAST 6.0m FROM THE EDGE OF BUILDINGS. THE EXACT LOCATION OF HYDRANTS TO BE AGREED WITH IRISH WATER.

WATERMAIN LEGEND:

EXISTING WATERMAIN

PROPOSED 150mm Ø(ID)HDPE WATERMAIN
(PE-80 SDR-17)

PROPOSED FIRE HYDRANT H
(Irish Water: STD-W-18)

PROPOSED SLUICE VALVE SV
(Irish Water: STD-W-15)

PROPOSED BULK WATER METER Me
(Irish Water: STD-W-26)

Rev.	Suit.	Description	Drawn	Ch'kd	Date
P04	S3	PLANNING APPLICATION ISSUE	PM	JM	20.04.26
P03	S3	PLANNING APPLICATION ISSUE	PM	JM	09.04.26
P02	S3	PRE-PLANNING ISSUE	SW	SW	07.06.24
P01	S3	INITIAL ISSUE	LR	LR	08.05.23

Client

St Patricks University Hospital (SPUH)

egis

info.ireland@egis-group.com

Formerly JB Barry & Partners who became part of Egis in 2023

Project

ST EDMUNDSBURY HOSPITAL, LUCAN, CO. DUBLIN

Drawing Title

PROPOSED WATERMAIN LAYOUT

Drawn by :	PM	Date :	APRIL 2026
Checked by :	JM	Date :	APRIL 2026
Approved by :	GF	Date :	APRIL 2026
Internal Project REF :	JBB: 22203		
Scales :	1:1000 @ A1		
Stage :	PLANNING APPLICATION		
Drawing No. :	22203-JBB-00-XX-DR-C-01400	Revision P04	Suitability Code S3

N

NOTES:

1. Figured dimensions only to be taken from this drawing.
2. All dimensions to be checked on site.
3. All levels are in metres O.D. and are related to Ordnance datum at Malin

STORM SEWER NOTES:

1. Sewer laying to be in accordance with the 'Greater Dublin Regional Code of Practice for Drainage Works' version 6.0
2. Refer to architects layout for overall setting out information (buildings, roads, boundaries and footpaths)
3. All pipes with less than 1.2m cover (road) and 0.9m (landscaped areas) shall be encased in min 150mm concrete surround CL. 16/20

FOUL SEWER NOTES:

1. SEWER LAYING TO BE IN ACCORDANCE WITH IRISH WATER STANDARD DETAILS.
2. REFER TO ARCHITECTS LAYOUT FOR OVERALL SETTING OUT INFORMATION (BUILDINGS, ROADS, BOUNDARIES AND FOOTPATHS)
3. ALL PIPES WITH LESS THAN 1.2m COVER (ROAD) AND 0.9m (LANDSCAPED AREAS) SHALL BE ENCASED IN min 150mm CONCRETE SURROUND Cl. 16/20
4. INDIVIDUAL PRIVATE SIDE INSPECTION CHAMBERS TO EACH UNIT TO BE IN ACCORDANCE WITH STD-WW-13 OF IW STANDARDS.INDIVIDUAL CONNECTIONS OMITTED FOR CLARITY.
5. MANHOLE COVERS, WHERE LOCATED IN GRASS AREAS, SHALL BE SURROUNDED BY CONCRETE PLINTH, 200mm ALL AROUND AND 100mm DEEP, IN COMPLIANCE WITH IW STANDARDS
6. SEPARATION DISTANCES FROM SERVICES TO BE IN COMPLIANCE WITH STD-WW-05 OF IW STANDARDS.

STORM SEWER LEGEND:

EXISTING SURFACE WATER SEWER

PROPOSED SURFACE WATER SEWER

PROPOSED CLASS 1 BYPASS SEPARATOR

PROPOSED SURFACE WATER DETENTION/ATTENUATION TANK (STORMTECH)

PROPOSED PERMEABLE PAVING

PROPOSED GREEN ROOF

PROPOSED BIO-RETENTION

CATCHMENT 1 OUTLINE

CATCHMENT 2 OUTLINE

CATCHMENT 3 OUTLINE

CATCHMENT 4 OUTLINE

FOUL SEWER LEGEND:

EXISTING FOUL WATER SEWER

PROPOSED uPVC FOUL WATER SEWER
(Stiffness Class 8kN/m²)

Rev.	Suit.	Description	Drawn	Ch'kd	Date
P04	S3	PLANNING APPLICATION ISSUE	PM	JM	20.04.26
P03	S3	PLANNING APPLICATION ISSUE	PM	JM	09.04.26
P02	S3	PRE-PLANNING ISSUE	SW	SW	07.06.24
P01	S3	INITIAL ISSUE	LR	LR	08.05.23

Client

St Patricks University Hospital (SPUH)

egis

info.ireland@egis-group.com

Formerly JB Barry & Partners who became part of Egis in 2023

Project

ST EDMUNDSBURY HOSPITAL, LUCAN, CO. DUBLIN

Drawing Title

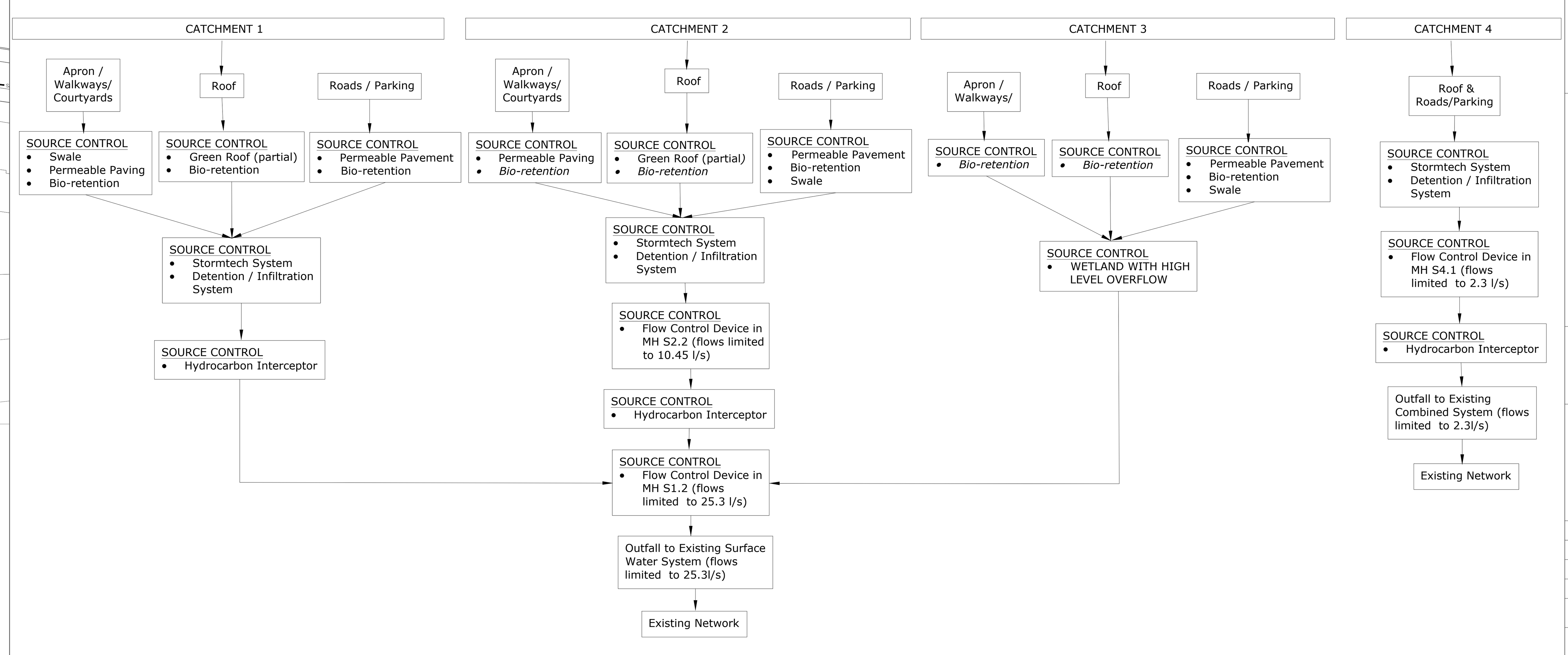
PROPOSED FOUL AND STORM LAYOUT

Drawn by :	PM	Date :	APRIL 2026
Checked by :	JM	Date :	APRIL 2026
Approved by :	GF	Date :	APRIL 2026
Internal Project REF :	JBB: 22203		

Scales : 1:1000 @ A1

Stage : PLANNING APPLICATION

Drawing No.	Revision	Suitability Code
22203-JBB-00-XX-DR-C-01401	P04	S3



SuDS Treatment Train Schematic

NOTES:

1. Figured dimensions only to be taken from this drawing.
2. All dimensions to be checked on site.
3. All levels are in metres O.D. and are related to Ordnance datum at Malin

STORM SEWER NOTES:

1. Sewer laying to be in accordance with the 'Greater Dublin Regional Code of Practice for Drainage Works' version 6.0
2. Refer to architects layout for overall setting out information (buildings, roads, boundaries and footpaths)
3. All pipes with less than 1.2m cover (road) and 0.9m (landscaped areas) shall be encased in min 150mm concrete surround CL. 16/20

STORM SEWER LEGEND:

- EXISTING SURFACE WATER SEWER
- PROPOSED SURFACE WATER SEWER
- PROPOSED CLASS 1 BYPASS SEPARATOR
- PROPOSED SURFACE WATER DETENTION/ATTENUATION TANK (STORMTECH)
- PROPOSED PERMEABLE PAVING
- PROPOSED GREEN ROOF
- PROPOSED BIO-RETENTION
- CATCHMENT 1 OUTLINE
- CATCHMENT 2 OUTLINE
- CATCHMENT 3 OUTLINE
- CATCHMENT 4 OUTLINE

Rev.	Suit.	Description	Drawn	Ch'kd	Date
P04	S3	PLANNING APPLICATION ISSUE	PM	JM	20.04.26
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P01	S3	INITIAL ISSUE	LR	LR	08.05.23

Client

St Patricks University Hospital (SPUH)

egis

info.ireland@egis-group.com

Formerly JB Barry & Partners who became part of Egis in 2023

Project

ST EDMUNDSBURY HOSPITAL, LUCAN, CO. DUBLIN

Drawing Title

PROPOSED SuDS DEVICES LAYOUT

Drawn by :	PM	Date :	APRIL 2026
Checked by :	JM	Date :	APRIL 2026
Approved by :	GF	Date :	APRIL 2026

Internal Project REF : JBB: 22203

Scales : 1:1000 @ A1

Stage : PLANNING APPLICATION

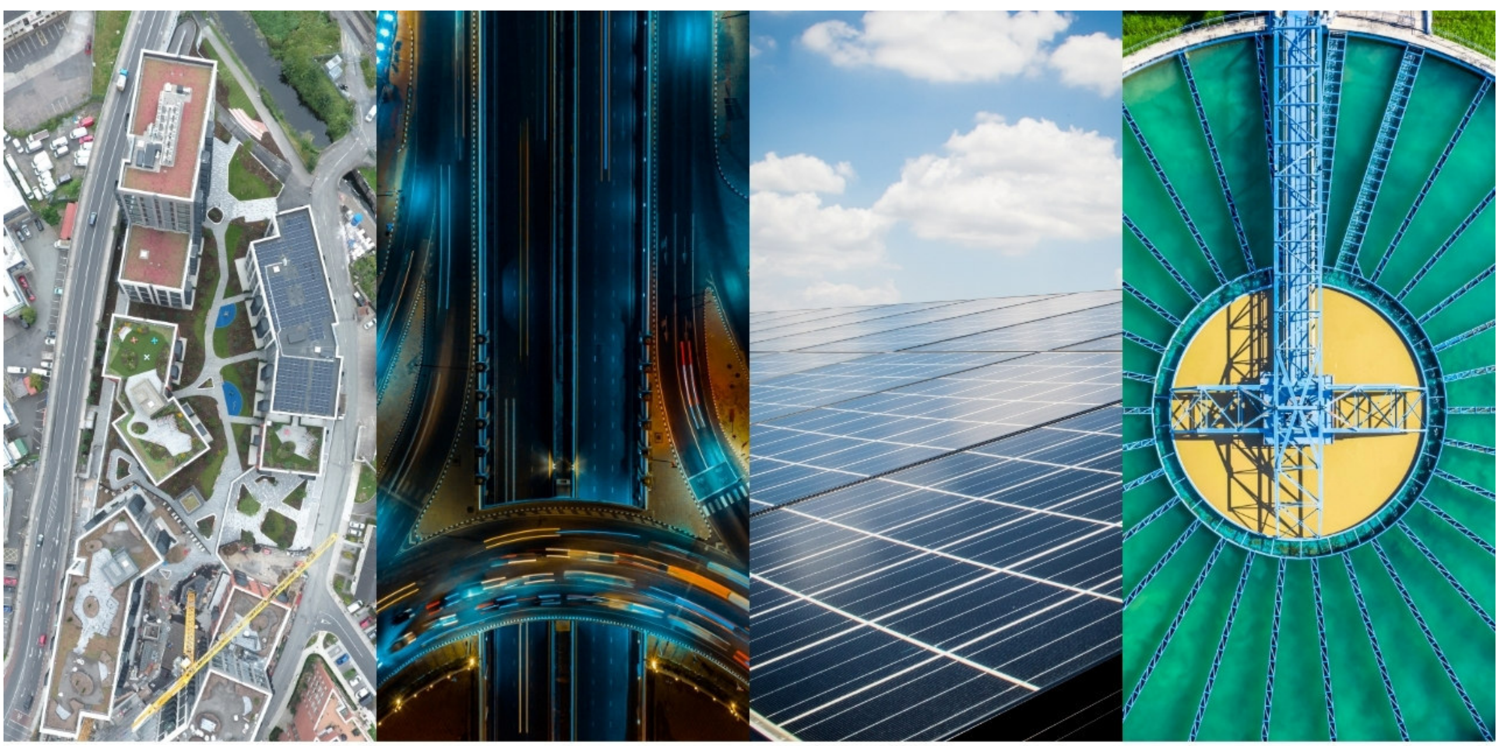
Drawing No. :	Revision	Suitability Code
22203-JBB-00-XX-DR-C-01402	P04	S3

St Edmundsbury Campus Development

Water Services Report

20 April 2026

St Patrick's
Mental Health Services



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Document Information

GENERAL INFORMATION

Client: The Governors of St Patricks Hospital
Project Title: St Edmundsbury Campus Development
Report Title: Water Services Report
File Name: 22203-JBB-00-XX-RP-C-00004

HISTORY OF CHANGES

DOCUMENT REVISION			DOCUMENT VERIFICATION			
Issue Date (DD/MM/YY)	Revision	Suitability	Author(s)	Reviewer(s)	Approver(s)	Peer Review (or N/A)
26/02/2026	P01	S4	BK	GF	GF	N/A
20/04/2026	P02	S4	BK	GF	GF	N/A

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1 INTRODUCTION

1.1 General

Egis Engineering Ireland Limited were commissioned by the the Governors of St Patrick's Hospital to prepare a Water Services Report for a proposed St. Edmundsbury Hospital, Lucan, Co. Dublin.

The proposed development comprises the demolition of an existing single storey 52 no. bed psychiatric ward (c. 1,633.00 sq m), located to the south-west of St. Edmundsbury House (RPS 003), and the construction of a single storey 14 no. bedroom in-patient adolescent mental health facility (c. 1,857.10 sq m) in its place, with façade remediation where the former building connected to St. Edmundsbury House; The demolition of 1 no. storey existing shed (c. 17.90 sq m) to the north-west of St. Edmundsbury House and replacement with 1 no. ESB substation unit building (c. 23.60 sq m). The proposed development includes a new 200 no. bed adult inpatient facility ranging from one to two storeys in height and a total floor area of c. 16,283.20sq m, with screened plant at roof level. It will be located within the existing walled garden area (RPS 012) and will incorporate the historic walls and bell tower structures (RPS 013.) The facility will be arranged as a single continuous block comprising 7 no. In-patient wards. The form of the building will create 10 no. new internal courtyards at ground floor & 2 no. terraces at first floor (c. 3696.00 sqm in total); with c. 62lin.m of the north garden wall to be demolished and this stone reincorporated into the proposed hospital structures.

The proposed development also includes for the alteration, refurbishment and conversion of the existing structures within the historic farmyard enclosure (RPS 008), including: coach house building (c. 312.95 sq m) to provide a new consultancy suite (c. 599.50 sq m), including c. 71.5 sq m café; Alteration, conversion and refurbishment of existing barn (c. 183.65 sq m) to form a maintenance facility building and associated offices (c. 374.00 sqm); The demolition of an existing contemporary shed within the historic farm yard (c. 163.75 sq m) and construction of a new single storey energy centre building (c. 114.50 sq m), within the historic farmyard enclosure. In total, c. 210.80 sq m of structures are required to be demolished within the walled garden and farmyard enclosure areas to facilitate the proposed development.

The proposed development also includes the removal and relocation of the existing southern boundary wall to Lucan Road (c. 190lin.m) (Regional Road Number Ref. R835) set back from the existing boundary to facilitate the future junction improvement works to the Lucan Road and Chapel Hill Junction. The junction upgrade works do not form part of this application and will be carried out by South Dublin County Council. The proposed development also comprises the demolition of the existing 2 no. Dean Clinic buildings (single storey and single storey with dormer level) at the existing entrance to the site via the Lucan Road (c. 221.15 sq m and c. 60 sq m respectively) to facilitate the construction of revised access arrangements and widening of the access to the Lucan Road.

The new mental health facility will provide adult and adolescent in-patient service rooms; Adult and adolescent day services rooms; Patient care services rooms; Patient pharmacy; Laboratories; Staff and patient canteen facilities; Consultant and hospital administration accommodation; Staff welfare facilities; Reconfigured and additional new car and cycle parking facilities (with revised total of 214 no. car parking spaces, 2 no. bus parking spaces and 160 no. secure cycle parking spaces); Signage and wayfinding.

The proposed development also includes private and secure patient gardens (c. 9,982 sq m); Plant and associated tanks; Public lighting; All piped infrastructure and ducting and redirection works; Tree removal, including tree removal within the Proposed Liffey Valley Natural Heritage Area (pNHA - 000128); Redirection and undergrounding of existing overhead power lines from the Lucan East 38KV Substation to the existing hospital facility; Controlled access barriers; 2 no. Secure cycle parking stores total c. 107.10 sq m; EV charging facilities; 2 no. Attenuation tanks; Rainwater harvesting tanks; PVs; SUDs including extensive green roof provision; Boundary treatments, including new boundary treatments and the repair and refurbishment of existing stone boundary walls; Waste marshalling compound storage area; Changes in level and retaining walls; Internal roads and paths, including vehicle set down areas; Site clearance works; Services provision and related ducting, piping and cabling; and all associated site development and excavation works above and below ground. Upon completion, the mental health facility will cumulatively provide 214 no. inpatient beds across the campus, including existing and proposed inpatient beds.

The proposed development site is located along the Lucan Road approximately 1km north east of Lucan centre as shown in Figure 1 below:

FIGURE 1 - LOCATION OF PROPOSED DEVELOPMENT (SOURCE: GOOGLE MAPS, ANNOTATION BY EGIS)

1.2 Purpose

This Report addresses the following:

- Water Supply,
- Foul Sewer Design,
- Surface Water Design,
- Operations/Maintenance of SuDS Devices

2 WATER SUPPLY

2.1 Connection

The proposed watermain layout and connection point are shown in Drawing 22203-JBB-00-XX-DR-C-01400 accompanying this application. The proposed development will be connected to an existing 200 mm diameter watermain located across Lucan Road from the existing entrance to the site.

A Pre-Connection Enquiry was submitted to Irish Water on the 28th November 2022. A Confirmation of Feasibility was received on the 17th May 2023 with an updated confirmation provided on 29th September 2025. A copy of CDS25004860 is contained in Appendix 1. It is noted that the CoF states that the water connection is feasible without an infrastructure upgrade by Irish Water, to the network.

2.2 Daily Water Demand

The daily water demand for the proposed development is estimated, based on Section 3.7.2, Irish Water's Code of Practice for Water Infrastructure (July 2020 -Rev 2), as follows:

1. IN-PATIENT WATER DEMAND (ESTIMATED - 215 BEDS)

Daily Demand:	215x350l/head/day = 75,250 litres
Average Demand:	75,250/24x3600 = 0.87 l/sec
Average Day Peak Week Demand:	0.87 x1.25 = 1.09 l/sec
Peak Demand:	1.09x5 = 5.44 l/sec

2. STAFF WATER DEMAND (ESTIMATED - 453)

Daily Demand:	453x100l/head/day = 45,300 litres
Average Demand:	45,300/24x3600 = 0.52 l/sec
Average Day Peak Week Demand:	0.52 x1.25 = 0.66 l/sec
Peak Demand:	0.66x5 = 3.28 l/sec

3. DAY SERVICE USERS WATER DEMAND (ESTIMATED - 200)

Daily Demand:	200x60l/head/day = 12,000 litres
Average Demand:	12,000/24x3600 = 0.14l/sec
Average Day Peak Week Demand:	0.14 x1.25 = 0.17 l/sec
Peak Demand:	0.17x5 = 0.87 l/sec

4. VISITORS WATER DEMAND (ESTIMATED - 180)

Daily Demand:	180x40l/head/day = 7,200 litres
Average Demand:	7,200/24x3600 = 0.08l/sec
Average Day Peak Week Demand:	0.08 x1.25 = 0.10 l/sec
Peak Demand:	0.10x5 = 0.52 l/sec

5. TOTAL WATER DEMAND

Daily Demand:	75,250 + 45,300 + 12,000 + 7,200 = 139,750 litres
Average Demand:	0.87 + 0.52 + 0.14 + 0.08 = 1.62l/sec
Average Day Peak Week Demand:	1.09 + 0.66 + 0.17 + 0.10 = 2.02 l/sec
Peak Demand:	5.44 + 3.28 + 0.87 + 0.52 = 10.11 l/sec

2.3 Watermain Works

For firefighting purposes, the watermain will be installed in accordance with the requirements of Technical Guidance Document B of the Building Regulations. Hydrants will be provided around the site and have been located in accordance with Technical Guidance Document B of the Building Regulations.

Watermain works will be strictly in accordance with Irish Water Code of Practice and Standard Details.

Pressure boosting, if required will be to the requirements of Irish Water's Code of Practice. Design details for pressure boosting will be agreed with Irish Water.

New emerging water conservation technologies will be monitored during the course of the project and may be used subject to their efficiency and the approval of Irish Water.

3 FOUL DRAINAGE

3.1 Connection

The proposed foul layout and connection point are shown in Drawing 22203-JBB-00-XX-DR-C-01401 accompanying this application.

A Pre-Connection Enquiry was submitted to Irish Water on the 28th November 2022. A Confirmation of Feasibility was received on the 17th May 2023 and a copy is contained in Appendix 1. It is noted that the CoF states that the foul connection is feasible without an infrastructure upgrade by Irish Water, to the network.

The proposed development will be connected to an existing 225mm diameter foul sewer located across Lucan Road from the existing entrance to the site.

3.2 Estimated Dry Weather Flow (DWF)

The estimated Dry Weather Flow (DWF) from the proposed development, based on Section 3.6 and Appendix C, Irish Water's Code of Practice for Wastewater Infrastructure (July 2020 – Rev 2) is estimated as follows:

1. IN-PATIENT FOUL DISCHARGE (ESTIMATED - 215 BEDS)

Daily Discharge:	215x350l/head/day = 75,250 litres
1DWF:	75,250/24x3600 = 0.87 l/sec
6DWF:	0.87x6 = 5.23 l/sec

2. STAFF FOUL DISCHARGE (ESTIMATED - 453)

Daily Discharge:	453x100l/head/day = 45,300 litres
1DWF:	45,300/24x3600 = 0.52 l/sec
6DWF:	0.52x6 = 3.15 l/sec

3. DAY SERVICE FOUL DISCHARGE (ESTIMATED - 200)

Daily Discharge:	200x60l/head/day = 12,000 litres
1DWF:	12,000/24x3600 = 0.14l/sec
6DWF:	0.14x6 = 0.83 l/sec

4. VISITORS FOUL DISCHARGE (ESTIMATED - 180)

Daily Discharge:	180x40l/head/day = 7,200 litres
1DWF:	7,200/24x3600 = 0.08l/sec
6DWF:	0.08x6 = 0.50 l/sec

5. TOTAL FOUL DISCHARGE

Daily Discharge:	75,250 + 45,300 + 12,000 + 7,200 = 139,750 litres
1DWF:	0.87 + 0.52 + 0.14 + 0.08 = 1.62l/sec
6DWF:	5.23 + 3.15+ 0.83 + 0.50 = 9.70 l/sec

3.3 Foul Drainage Works

Within the development, it is proposed to lay 225mm diameter foul drains at 1:170, at a minimum gradient of 1 in 200 to achieve self-cleansing velocities.

All sewers on site will be uPVC pipes, which (incl. fittings) will comply with the provisions IS EN 1401 2009/2012. Pipes to be application area code "UD", Stiffness Class 8kN/m2 and in accordance with Irish Water Standards.

The foul and storm sewer networks will be on separate systems. No surface water will be discharged into the foul sewer system.

Foul sewer construction will comply with the Irish Water Code of Practice and Standard Details.

4 SURFACE WATER DESIGN

4.1 Connection

The proposed development will be connected to an existing 300mm diameter stormwater sewer located outside the existing entrance to the site. Details of the proposed surface water network and SuDS measures for the proposed development are shown on drawings 22203-JBB-00-XX-DR-C-01401 and 01402.

The foul and storm sewer networks will be on separate systems. No surface water will be discharged into the foul sewer system.

4.2 Discharge Analysis

Flows from the proposed development will be connected via SUDS measures (described below) and attenuated in the Stormtech subsurface detention/attenuation system and in the permeable paving for the 100-year critical storm event + 20% for climate change prior to discharge to the existing surface water network via the hydrocarbon interceptor. The Stormtech system, proposed in two locations, will have a total effective storage volume of 2374m³ and the Permeable Paving, which also is proposed in two locations, will have an effective storage volume of 558m³, providing a combined total effective storage volume of 2935m³. The attenuated runoff rate will be limited to 2l/sec/ha by means of a hydro-brake flow control device, located in manhole S1.2, for the 100-year critical storm.

A MicroDrainage analysis incorporating a limited discharge rate of 7.2l/sec is included in Appendix 2.

The surface water drainage system shall be in accordance with the "Greater Dublin Regional Code of Practice for Drainage Works, Version 6, April 2006.

4.3 SuDS Strategy

SuDS (Sustainable Urban Drainage Systems) are defined in the SuDS Manual, CIRIA 753, 2015 as follows:

"Drainage Systems that are considered to be environmentally friendly, causing minimum or no long-term detrimental impact"

The SuDS strategy for the development will provide a comprehensive approach to the management of surface water on the site both for water quality and water quantity. The treatment train approach has been adopted for the design of the surface water system for the development. SuDS measures considered are contained in Appendix 3. This approach uses suitable SuDS measures in providing source control. The surface water treatment train is defined in Appendix A, Glossary, Volume 3, Environmental Management of the Greater Dublin Strategic Drainage Study.

The Treatment Train Schematic below outlines the proposed SuDS devices working in series prior to discharge to the existing surface water network. Flows from the development will be limited to 7.2l/sec via 1 No. hydro-brake located within manhole S1.2 for the 1 in 100 Year critical storm event + 20% allowance for climate change in accordance with GDSDS requirements.

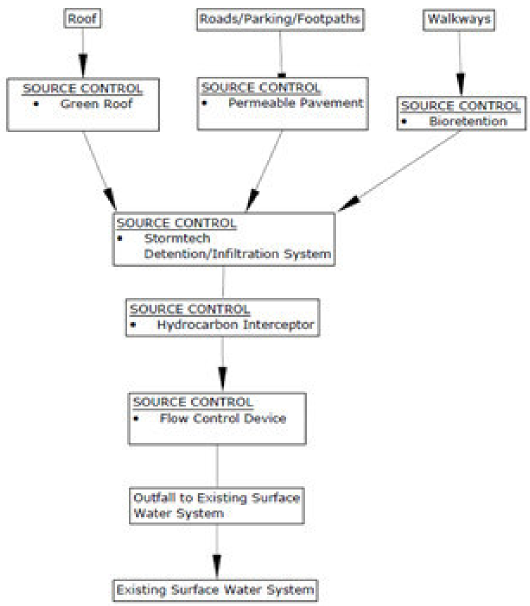

FIGURE 2 - TREATMENT TRAIN SCHEMATIC

4.4 SuDS Source Control Measures

The proposed SuDS source control measures for the Development are described separately below.

TABLE 1 – SOURCE CONTROL MEASURES

Source Control Measures	Location / Treatment Area
Green Roof	Roof (60% min)
Bioretention	Footpaths/Walkways Parking Bays
Permeable Paving	

Attenuation (Stormtech)	Roads/Footpaths/ Parking/Roofs
Hydrocarbon Interceptor	Roads/Footpaths/ Parking/Roof

The green roof for this development will be designed and supplied by an approved supplier and subject to the approval of the Engineer and the Water Services Department SDCC.

The proposed green roof will be in accordance with the Green Roofs Guidance Document, South Dublin County Development Plan 2022 – 2028 and the SuDS Manual, CIRIA 753, 2015.

Bioretention Areas/Tree Pits will be provided to cater for walkways as shown on drawing 22203-JBB-00-XX-DR-C-01402.

The Stormtech system (described earlier) will incorporate the following:

- Pre-treatment control (deep sump manhole with a 90 degree bend on the outlet) upstream of the system.
- Isolator row – patented technique for Total Suspended Solids (TSS) removal.

The pre-treatment and isolation systems are easily inspected and maintained (via the jet vac process). Further information on Stormtech is available on www.stormtech.com.

A hydrocarbon interceptor will be provided for the proposed development as shown on the drawings.

The surface water run-off from the Development will pass through a minimum of 2 SuDS devices. This treatment approach for the proposed SuDS measures meets with the requirement of Volume 2, New Development, of the Greater Dublin Strategic Drainage Study.

Interception Storage

The total area (hardstanding, roofs & permeable paving) which drains positively to the surface water network is 23,218m2 which preferably requires a 10mm interception storage volume of 232.2m3.

Proposed SuDS Devices and Interception storage will be provided by the following:

- Permeable Paving is proposed in the parking areas, totalling 5575m^2. Fin Drain outlets from the permeable paving will be set at 50mm above the bed formation (assumed 30% voids) to achieve interception storage equivalent to 15mm storage depth.

  The total interception volume provided in the permeable paving equals 84m^3 (5575 x 0.05 x 0.3)

  The untanked permeable paving will take advantage of available infiltration into the sub-soil and the interception storage provided is potentially higher than the 84m^3 calculated. It is anticipated that any water below the fin drain invert will disperse through infiltration to subsoil or evaporation.

- The Green Roof is proposed over a total area of 13,241 m^2 which equates to 90% of the overall roof area 14,414 m^2. The green roof will include a drainage mat which will provide a minimum of 10mm of interception storage per 1m^2, allowing for a total interception storage of 132.4 m^3 (488 x 0.01) at roof level.

- The Stormtech system will provide an interception storage volume of 128.5m^3 (i.e. 1397 m^2 (L x W) x 0.23D x 0.4Void Ratio) within the 230mm depth of stone below the Stormtech chambers. It is anticipated that any water within this layer of stone will infiltration to subsoil.

Interception Storage Summary

Total Area (hardstanding, roofs & permeable paving)	= 23,218m^2
Required Interception Storage (10mm)	= 232.2m^3
(0.01m x 2,020m^2)	
Provided Interception Storage	= 345m^3
(Permeable Paving, Green Roof, Stormtech)	

The total provided interception storage is 345m^3 which is 33% more than the minimum requirement. As full interception storage has been provided, treatment storage is not required.

5 OPERATIONS/MAINTENANCE OF SUDS DEVICES

The SuDS components proposed will be operated and maintained strictly in accordance with the requirements of the SuDS Manual, CIRIA 753, 2015 to ensure that "water quality standards are maintained".

Each SuDS component is referenced below to the relevant operation and maintenance sections of CIRIA 753, 2015 where appropriate.

- Green roofs will be operated and maintained in accordance with Part D, Sub-Section 12.12 including Table 12.5 and Section 32 of CIRIA 753.

- Permeable pavements will be operated and maintained in accordance Part D, Sub-Section 20.14 including Table 20.15 and Section 32 of CIRIA 753.

- Tree pits/Bioretention areas will be operated and maintained in accordance with Part D, Sub-Section 18.12 including Table 18.3 and Section 32 of CIRIA 753.
- Hydrocarbon interceptors will be operated and maintained in accordance with Part D Sub-Section 14.12 including Table 14.2 and Section 32 of CIRIA 753.
- Waste management of the various SuDS components will be carried out strictly in accordance with Section 33 of CIRIA 753.
- The hydro-brake unit will be maintained in accordance with the Manufacturer's requirements. Normally it is recommended that the unit be initially inspected monthly for three months and thereafter at six monthly intervals with a hose down if necessary. The required maintenance procedures will be included in the Operating and Maintenance Manual for the project.

6 FLOOD RISK ASSESSEMENT (FRA) REPORT

A Flood Risk Assessment is included as a separate document in the Planning Application Documentation

7 RELEVANT DRAWINGS

Drawing No	**Title**
22203-JBB-00-XX-DR-C-01400	Watermain Layout
22203-JBB-00-XX-DR-C-01401	Foul & Storm Sewers Layout
22203-JBB-00-XX-DR-C-01402	SuDS Devices Layout
22203-JBB-00-XX-DR-C-01405	Typical Foul Sewer Details
22203-JBB-00-XX-DR-C-01406	Typical Surface Water Drainage Details
22203-JBB-00-XX-DR-C-01407	Typical SuDS Devices Details
22203-JBB-00-XX-DR-C-01408	Typical Watermain Details Sheet 1
22203-JBB-00-XX-DR-C-01409	Typical Watermain Details Sheet

APPENDIX 1 UISCE EIREANN CONFIRMATION OF FEASIBILITY

CONFIRMATION OF FEASIBILITY

Barry Kavanagh
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Dundrum Business Park
Dublin
D14T9T0

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

29 September 2025

Our Ref: CDS25004860 Pre-Connection Enquiry Site At, St Edmundsbury Hospital, Lucan, Dublin

Dear Applicant/Agent,

We have completed the review of the Pre-Connection Enquiry.

Uisce Éireann has reviewed the pre-connection enquiry in relation to a Water & Wastewater connection for a Business Connection of 1 unit(s) at Site At, St Edmundsbury Hospital, Lucan, Dublin, (the **Development)**.

Based upon the details provided we can advise the following regarding connecting to the networks;

- **Water Connection** - Feasible without infrastructure upgrade by Uisce Éireann
- **Wastewater Connection** - Feasible without infrastructure upgrade by Uisce Éireann

This letter does not constitute an offer, in whole or in part, to provide a connection to any Uisce Éireann infrastructure. Before the Development can be connected to our network(s) you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.

As the network capacity changes constantly, this review is only valid at the time of its completion. As soon as planning permission has been granted for the Development, a completed connection application should be submitted. The connection application is available at www.water.ie/connections/get-connected/

Where can you find more information?

- **Section A -** What is important to know?

This letter is issued to provide information about the current feasibility of the proposed connection(s) to Uisce Éireann's network(s). This is not a connection offer and capacity in Uisce Éireann's network(s) may only be secured by entering into a connection agreement with Uisce Éireann.

For any further information, visit www.water.ie/connections, **email** newconnections@water.ie or contact 1800 278 278**.**

Yours sincerely,

Dermot Phelan
Connections Delivery Manager

Section A - What is important to know?

What is important to know?	Why is this important?
Do you need a contract to connect?	• Yes, a contract is required to connect. This letter does not constitute a contract or an offer in whole or in part to provide a connection to Uisce Éireann's network(s). • Before the Development can connect to Uisce Éireann's network(s), you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.
When should I submit a Connection Application?	• A connection application should only be submitted after planning permission has been granted.
Where can I find information on connection charges?	• Uisce Éireann connection charges can be found at: https://www.water.ie/connections/information/charges/
Who will carry out the connection work?	• All works to Uisce Éireann's network(s), including works in the public space, must be carried out by Uisce Éireann*. *Where a Developer has been granted specific permission and has been issued a connection offer for Self-Lay in the Public Road/Area, they may complete the relevant connection works
Fire flow Requirements	• The Confirmation of Feasibility does not extend to fire flow requirements for the Development. Fire flow requirements are a matter for the Developer to determine. • **What to do?** - Contact the relevant Local Fire Authority
Plan for disposal of storm water	• The Confirmation of Feasibility does not extend to the management or disposal of storm water or ground waters. • **What to do?** - Contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges.
Where do I find details of Uisce Éireann's network(s)?	• Requests for maps showing Uisce Éireann's network(s) can be submitted to: datarequests@water.ie

What are the design requirements for the connection(s)?	• The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this Development shall comply with ***the Uisce Éireann Connections and Developer Services Standard Details and Codes of Practice,*** available at www.water.ie/connections
Trade Effluent Licensing	• Any person discharging trade effluent** to a sewer, must have a Trade Effluent Licence issued pursuant to section 16 of the Local Government (Water Pollution) Act, 1977 (as amended). • More information and an application form for a Trade Effluent License can be found at the following link: https://www.water.ie/business/trade-effluent/about/ **trade effluent is defined in the Local Government (Water Pollution) Act, 1977 (as amended)

APPENDIX 2 SURFACE WATER CALCULATIONS

MicroDrainage Analysis GDSDS Critical Storm 1, 30 and 100 year return periods + 20% for climate change

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - Scotland and Ireland

Return Period (years)	2	PIMP (%)	100
M5-60 (mm)	17.200	Add Flow / Climate Change (%)	0
Ratio R	0.307	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	18.000	0.900	20.0	0.050	5.00	0.0	0.600	o	225	Pipe/Conduit	
S1.001	15.954	0.245	65.0	0.050	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.002	40.000	0.067	600.0	0.100	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.003	6.739	0.143	47.1	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	50.00	5.10	41.300	0.050	0.0	0.0	0.0	2.94	116.9	6.8
S1.001	50.00	5.27	40.400	0.100	0.0	0.0	0.0	1.62	64.6	13.5
S1.002	50.00	5.94	39.210	0.200	0.0	0.0	0.0	0.99	279.0	27.1
S1.003	50.00	6.00	39.143	0.200	0.0	0.0	0.0	1.91	76.0	27.1

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	o	225	S4.3	43.750	41.300	2.225	Open Manhole	1200
S1.001	o	225	S4.3	41.900	40.400	1.275	Open Manhole	1200
S1.002	o	600	S4.2	41.660	39.210	1.850	Open Manhole	1500
S1.003	o	225	S4.1	41.200	39.143	1.832	Open Manhole	1500

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	18.000	20.0	S4.3	41.900	40.400	1.275	Open Manhole	1200
S1.001	15.954	65.0	S4.2	41.660	40.155	1.280	Open Manhole	1500
S1.002	40.000	600.0	S4.1	41.200	39.143	1.457	Open Manhole	1500
S1.003	6.739	47.1	S	41.200	39.000	1.975	Open Manhole	0

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.050	0.050	0.050
1.001	-	-	100	0.050	0.050	0.050
1.002	-	-	100	0.100	0.100	0.100
1.003	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.200	0.200	0.200

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.003	S	41.200	39.000	0.000	0	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Offline Controls	0	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	100	Cv (Summer)	0.750
Region	Scotland and Ireland	Cv (Winter)	0.840
M5-60 (mm)	17.200	Storm Duration (mins)	30
Ratio R	0.307		

Online Controls for Storm

Hydro-Brake® Optimum Manhole: S4.1, DS/PN: S1.003, Volume (m³): 14.5

Unit Reference	MD-SHE-0064-2300-1700-2300
Design Head (m)	1.700
Design Flow (l/s)	2.3
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	64
Invert Level (m)	39.143
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	**Head (m)**	**Flow (l/s)**	**Control Points**	**Head (m)**	**Flow (l/s)**
Design Point (Calculated)	1.700	2.3	Kick-Flo®	0.569	1.4
Flush-Flo™	0.279	1.7	Mean Flow over Head Range	-	1.8

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	**Flow (l/s)**	**Depth (m)**	**Flow (l/s)**	**Depth (m)**	**Flow (l/s)**	**Depth (m)**	**Flow (l/s)**	**Depth (m)**	**Flow (l/s)**
0.100	1.5	0.800	1.6	2.000	2.5	4.000	3.4	7.000	4.4
0.200	1.7	1.000	1.8	2.200	2.6	4.500	3.6	7.500	4.6
0.300	1.7	1.200	2.0	2.400	2.7	5.000	3.8	8.000	4.7
0.400	1.7	1.400	2.1	2.600	2.8	5.500	4.0	8.500	4.8
0.500	1.6	1.600	2.2	3.000	3.0	6.000	4.1	9.000	5.0
0.600	1.4	1.800	2.4	3.500	3.2	6.500	4.3	9.500	5.1

Storage Structures for Storm

Cellular Storage Manhole: S4.1, DS/PN: S1.003

Invert Level (m) 39.143 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.70
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	71.0	71.0	1.200	71.0	161.0	1.201	0.0	161.0

Volume Summary (Static)

Length Calculations based on Centre-Centre

Pipe Number	USMH Name	Manhole Volume (m³)	Pipe Volume (m³)	Storage Structure Volume (m³)	Total Volume (m³)
S1.000	S4.3	2.771	0.716	0.000	3.487
S1.001	S4.3	1.696	0.634	0.000	2.331
S1.002	S4.2	4.330	11.310	0.000	15.639
S1.003	S4.1	3.635	0.268	59.657	63.560
Total		12.432	12.928	59.657	85.016

Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 17.000 Cv (Summer) 0.750
Region Scotland and Ireland Ratio R 0.300 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 30, 100
Climate Change (%) 20, 20, 20

WARNING: Half Drain Time has not been calculated as the structure is too full.

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
S1.000	S4.3	15 Winter	100	+20%					41.368	-0.157	0.000
S1.001	S4.3	360 Winter	100	+20%	100/240 Winter				40.942	0.317	0.000
S1.002	S4.2	360 Winter	100	+20%	30/60 Winter				40.939	1.129	0.000
S1.003	S4.1	360 Winter	100	+20%	1/30 Winter				40.939	1.571	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S4.3	0.20			20.7	OK	
S1.001	S4.3	0.12			6.7	SURCHARGED	
S1.002	S4.2	0.05			12.9	SURCHARGED	
S1.003	S4.1	0.04			2.3	FLOOD RISK	

APPENDIX 3 SUDS MEASURES CONSIDERED

Project – Saint Edmundsbury Hospital, Lucan

In accessing the various "SuDS Systems and techniques available for use in the proposed development, the "Greater Dublin Strategic Drainage Study" (GDSDS) and "CIRIA Document 522 – Sustainable Urban Drainage Systems" were consulted to establish a suitable set of drainage features (**treatment train**)

Type of System	Device	Primary Function	Primary Characteristics	Consideration	Comments
Source Control	Avoiding foul connections to storm systems	Avoid direct pollution of storm system	Maintaining principle of separate drainage systems	Incorporated	Separate foul and surface water drainage systems provided. CCTV survey and "As Built" mapping of drainage system on completion by Contractor to ensure adherence to this principle.
Pollution Prevention	Management of pollution sources	Prevention of polluted runoff.	Interception of pollutants in runoff	Incorporated	A Bypass Separator will be installed to remove any potential pollutants.
Source Control	Green-Roof	Minimize runoff and wash off of pollutants	Interception of pollutants in runoff and attenuation of flows	Incorporated	Minimum 60% of the roof area will be a green roof.
Infiltration Systems	Underground Detention/Infiltration System	Minimize runoff, flow attenuation encourage stormwater to soak into the ground while filtering pollutants	Permeable features allowing Infiltration and attenuation of flows	Incorporated	Surface water drainage to be collected on site via Stormtech underground detention/attenuation system or similar approved to cater for the 1 in 100-year critical storm event plus 20% for climate change.
Source Control	Bio Retention	Minimize runoff, flow attenuation encourages stormwater to soak into the ground while filtering pollutants	Pervious surface on footpaths	Incorporated	Bio retention (tree pits) will be provided to cater for run-off from footpaths/pathways.
Source Control	Permeable Pavement. Minimising impermeable areas	Minimize runoff and wash off of pollutants	Pervious surface on parking areas.	Incorporated	Surface water drainage from paved areas to be collected on site via Permeable Paving which in turn is connected to the Stormtech detention/attenuation system

Infiltration Systems	Ponds, Basins	Encourage stormwater to soak into the ground while filtering pollutants	Permeable features allowing Infiltration	Not Incorporated	Not Incorporated due to site constraints
Infiltration Systems	Infiltration trenches, swales	Encourage stormwater to soak into the ground while filtering pollutants	Permeable features allowing Infiltration	Not Incorporated	Not Incorporated due to site constraints
Source Control	Rainwater Harvesting	Rainwater Harvesting	Minimize runoff, flow attenuation, water re-use	Not Incorporated	Surface water drainage from Green Roof overflow to be collected on site via Stormtech underground detention/attenuation system.

Ireland

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CONFIRMATION OF FEASIBILITY

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17 May 2023

Our Ref: CDS23002883 Pre-Connection Enquiry
St Edmundsbury Hospital, Lucan, Dublin

Dear Applicant/Agent,

We have completed the review of the Pre-Connection Enquiry.

Irish Water has reviewed the pre-connection enquiry in relation to a Water & Wastewater connection for a Business Connection of 1 unit(s) at St Edmundsbury Hospital, Lucan, Dublin, (the **Development)**.

Based upon the details provided we can advise the following regarding connecting to the networks;

- **Water Connection** - Feasible without infrastructure upgrade by Irish Water
- **Wastewater Connection** - Feasible without infrastructure upgrade by Irish Water

This letter does not constitute an offer, in whole or in part, to provide a connection to any Irish Water infrastructure. Before the Development can be connected to our network(s) you must submit a connection application and be granted and sign a connection agreement with Irish Water.

As the network capacity changes constantly, this review is only valid at the time of its completion. As soon as planning permission has been granted for the Development, a completed connection application should be submitted. The connection application is available at www.water.ie/connections/get-connected/

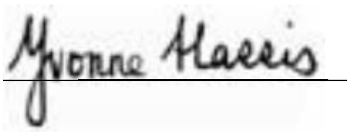
Where can you find more information?

- **Section A -** What is important to know?

This letter is issued to provide information about the current feasibility of the proposed connection(s) to Irish Water's network(s). This is not a connection offer and capacity in Irish Water's network(s) may only be secured by entering into a connection agreement with Irish Water.

For any further information, visit **www.water.ie/connections**, **email newconnections@water.ie** or contact 1800 278 278**.**

Yours sincerely,



Yvonne Harris
Head of Customer Operations

Section A - What is important to know?

What is important to know?	Why is this important?
Do you need a contract to connect?	• Yes, a contract is required to connect. This letter does not constitute a contract or an offer in whole or in part to provide a connection to Irish Water's network(s). • Before the Development can connect to Irish Water's network(s), you must submit a connection application and be granted and sign a connection agreement with Irish Water.
When should I submit a Connection Application?	• A connection application should only be submitted after planning permission has been granted.
Where can I find information on connection charges?	• Irish Water connection charges can be found at: https://www.water.ie/connections/information/charges/
Who will carry out the connection work?	• All works to Irish Water's network(s), including works in the public space, must be carried out by Irish Water*. *Where a Developer has been granted specific permission and has been issued a connection offer for Self-Lay in the Public Road/Area, they may complete the relevant connection works
Fire flow Requirements	• The Confirmation of Feasibility does not extend to fire flow requirements for the Development. Fire flow requirements are a matter for the Developer to determine. • **What to do?** - Contact the relevant Local Fire Authority
Plan for disposal of storm water	• The Confirmation of Feasibility does not extend to the management or disposal of storm water or ground waters. • **What to do?** - Contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges.
Where do I find details of Irish Water's network(s)?	• Requests for maps showing Irish Water's network(s) can be submitted to: datarequests@water.ie

What are the design requirements for the connection(s)?	• The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this Development shall comply with ***the Irish Water Connections and Developer Services Standard Details and Codes of Practice,*** available at www.water.ie/connections
Trade Effluent Licensing	• Any person discharging trade effluent** to a sewer, must have a Trade Effluent Licence issued pursuant to section 16 of the Local Government (Water Pollution) Act, 1977 (as amended). • More information and an application form for a Trade Effluent License can be found at the following link: https://www.water.ie/business/trade-effluent/about/ **trade effluent is defined in the Local Government (Water Pollution) Act, 1977 (as amended)

St. Edmundsbury Hospital, Lucan, Co. Dublin

Traffic and Transport Assessment

20 April 2026

Formerly JB Barry Partners who became part of Egis in 2023

Document Information

GENERAL INFORMATION

Client:	The Governors of St Patrick's Hospital
Project Title:	St. Edmundsbury Hospital, Lucan, Co. Dublin
Report Title:	Traffic and Transport Assessment
File Name:	22203-JBB-00-ZZ-RP-C-00001_Traffic and Transport Assessment

HISTORY OF CHANGES

DOCUMENT REVISION				DOCUMENT VERIFICATION			
Issue Date (DD/MM/YY)	Revision	Suitability	Author(s) (initials)	Checker(s) (Initials)	Reviewer(s) As per PMP (initials)	Approver(s) as per PMP (initials)	Peer Review (initials or N/A)
09/05/2023	P01	S3	KCL	KCL	GF	GF	N/A
23/01/2024	P02	S3	KCL	MM	GF	GF	N/A
07/02/2024	P03	S3	KCL	MM	GF	GF	N/A
25/03/2024	P04	S3	KCL	MM	GF	GF	N/A
08/07/2024	P05	S3	KCL	MM	GF	GF	N/A
10/12/2024	P06	S3	KCL	MM	GF	GF	N/A
27/01/2025	P07	S3	KCL	MM	GF	GF	N/A
12/03/2026	P08	S3	KA	KCL	GF	GF	N/A
20/04/2026	P09	S3	BK	MM	GF	GF	N/A

BIM Codes Definitions

SHARED (NON-CONTRACTUAL)

Suitability /Status	Definition	Revision Code
S2	Suitable for Information	Pnn (Major Revision) starting at P01
S3	Suitable for Review and Comment	
S4	Suitable for Stage Approval	

PUBLISHED DOCUMENTATION (CONTRACTUAL)

Suitability /Status	Definition	Revision Code
	Approved and accepted as stage complete.	Cnn (C=Contractual/Complete) starting at C01
A1	Preparation & Brief	
A2	Concept Design	
A3	Spatial Co-ordination	
A4	Technical Design	
A5	Manufacturing & Construction	
A6	Handover	
A7	Evaluation	

PUBLISHED FOR ASSET INFORMATION MODEL (AIM) ACCEPTANCE

Suitability /Status	Definition	Revision Code
CR	As Constructed Record file	Cnn (C=Contractual/Complete) starting at C01

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1 INTRODUCTION

1.1 Background

EGIS was commissioned by the Saint Patrick's University Hospital to prepare a Traffic & Transport Assessment (TTA) for a proposed St. Edmundsbury Hospital, Lucan, Co. Dublin.

The proposed development will consist of the following:

- Site clearance, including the removal of all existing structures (except protected structures such as St. Edmundsbury House) on Site;
- The development of adult main hospital, adolescent unit, St. Edmundsbury House (historic building), individual therapy rooms (historic barn) and facilities building; and car and bicycle parking;
- Proposed improvement works at Chapel Hill / Lucan Road Junction; and
- The provision of public and communal open spaces, public realm, boundary treatments, landscaping and lighting; refuse storage, associated drainage, attenuation and services; and all associated site development works.

The proposed development Site is located to the north of Lucan Road as shown in **Figure 1.1** below.

FIGURE 1.1 - LOCATION OF THE PROPOSED DEVELOPMENT
(*SOURCE: GOOGLE MAPS, ANNOTATION BY EGIS*)

1.2 Consultation and Scoping Study

Following analysis of the surrounding area, a conservative approach has been adopted and it has been agreed with the Applicant that the TTA would examine the impact of the proposed development on the following seven junctions surrounding the development:

- Junction 1 - Western Access Road to St. Edmundsbury Hospital / Lucan Road;
- Junction 2 - Eastern Access Road to St. Edmundsbury Hospital / Lucan Road / Esker Lane;
- Junction 3 - R136 / Lucan Road;
- Junction 4 - Lucan Road / Access to Hermitage Golf Club;
- Junction 5 - R136 / N4 Slip Road (eastbound);
- Junction 6 - R136 / N4 Slip Road (westbound); and
- Junction 7 - Chapel Hill / Lucan Road.

These junctions were selected as they are considered the junctions most likely to be affected by traffic associated with the proposed development. As a result, these seven junctions will form the study area for the TTA. The locations of the seven junctions are illustrated in **Figure 1.2** below.

FIGURE 1.2 – LOCATION OF THE PROPOSED DEVELOPMENT AND CONCERNED JUNCTIONS (*SOURCE: GOOGLE MAPS, ANNOTATION BY EGIS*)

1.3 Objectives

This report provides an assessment of the potential traffic impacts associated with the proposed development. In this regard, the assessment aims to:

- Identify the existing environment in terms of traffic and transportation;
- Quantify the likely vehicle traffic flows to and from the development onto the surrounding road network;
- Identify and quantify the likely traffic impacts on the surrounding road network resulting from the development;
- Identify any potential impacts on vulnerable road users in the study area; and
- Identify suitable measures to mitigate traffic and transportation impacts, if any, associated directly with the development.

The assessment is based on the findings of site visits, traffic observations, on-site traffic counts, architectural plans, and discussions with the Design Team.

1.4 Methodology

The methodology adopted for this report is summarised as follows:

- Reference was made to site layout drawings issued by the design team and the proposed plans for the Site;
- An inspection of the local road network was undertaken during peak traffic periods;
- Proposed access arrangements for the development onto the surrounding road network were considered;

- The traffic survey locations and survey times, which was undertaken on 22nd February 2023, adjacent to the proposed development at Lucan were selected so as to best reflect the likely traffic generation from the subject development, particularly at proposed site access/egress points;
- The net trip generation for the proposed development was estimated by using the TRICS database;
- Existing traffic volumes on the surrounding road network were analysed;
- An exercise was carried out to quantify the expected development net trip generation (By using the TRICS database) as a proportion of existing traffic flows on the surrounding road network to determine if a detailed traffic impact assessment is required for all of the junctions included within the scoping study;
- The improvement scheme was proposed to relieve traffic congestion and enhance the safety of vulnerable road users at Junction 7;
- The modal shift for car was estimated;
- Utilising the TRICS database, the junctions considered to be most likely to be impacted upon by traffic movements associated with the proposed development was assessed in terms of capacity and road safety;
- Another two traffic count surveys at St. Patrick's University Hospital at Dublin 8 and at Junction 1 of Lucan were also undertaken on 2nd May 2024 and 21st May 2024 respectively to facilitate the estimation of net trip generation for the proposed development;
- Utilising the aforementioned traffic count surveys, the junctions considered to be most likely to be impacted upon by traffic movements associated with the proposed development was assessed;
- The analysis results based on different methods (i.e. by using the TRICS database, traffic count survey at St. Patrick's University Hospital and traffic count surveys at Lucan) were compared in term of net trip generation, net trip generation as a percentage of existing traffic and traffic impact;
- Car parking utilization was also used to estimate the net trip generation for the proposed development; and
- Utilising the car parking utilization, the junctions considered to be most likely to be impacted upon by traffic movements associated with the proposed development was assessed.

In preparing this assessment, reference has been made to the following documents:

- TII Traffic and Transport Assessment Guidelines (2014);
- TII PE-PAG-02017 - Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections (issued in October 2021);
- Design Manual for Urban Roads and Streets (DMURS);
- NTA Greater Dublin Area Transport Strategy 2022-2042;
- Greater Dublin Area Cycle Network Plan;
- South Dublin County Development Plan 2022-2028; and
- Cycle Design Manual (issued in September 2023).

2 RECEIVING ENVIRONMENT

2.1 Site Location

The proposed development Site is located to the north of Lucan Road, Co. Dublin as shown in **Figure 1.2**. At present, two existing vehicular accesses are located at Junction 1 and Junction 2 on the Lucan Road to provide access to the proposed development. Refer to planning documentation and submitted plans for a more detailed description of the proposed development and the positioning of the building relative to the site boundary and access road/link.

2.2 Local Road Network

The local road network in the vicinity of the subject Site is illustrated graphically in **Figure 1.2**. **Figure 2.1** to **Figure 2.6** following illustrate the existing road network adjacent to the proposed development.

FIGURE 2.1 – JUNCTION 1 (WESTERN ACCESS ROAD TO ST. EDMUNDSBURY HOSPITAL/ LUCAN ROAD)
(*SOURCE: GOOGLE MAPS*)

FIGURE 2.2 – JUNCTION 2 (EASTERN ACCESS ROAD TO ST. EDMUNDSBURY HOSTPIAL/ LUCAN ROAD/ ESKER LANE)
(*SOURCE: GOOGLE MAPS*)

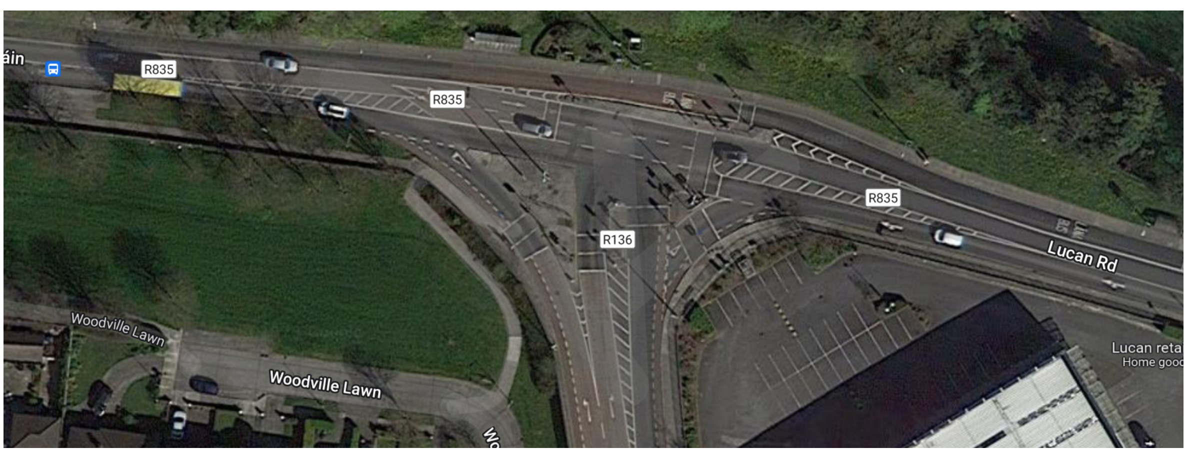

FIGURE 2.3 – JUNCTION 3 (R136/ LUCAN ROAD)
(*SOURCE: GOOGLE MAPS*)

FIGURE 2.4 – JUNCTION 7 (CHAPEL HILL/ LUCAN ROAD)
(*SOURCE: GOOGLE MAPS*)

FIGURE 2.5 – JUNCTION 5 (R136/ N4 SLIP ROAD – EASTBOUND)
(*SOURCE: GOOGLE MAPS*)

FIGURE 2.6 – JUNCTION 6 (R136/ N4 SLIP ROAD – WESTBOUND)
(*SOURCE: GOOGLE MAPS*)

2.2.1 Lucan Road

The subject Site is located to the north of Lucan Road, which connects to the R136 and the Chapel Hill. Lucan Road runs in east/west direction past the Site. Lucan Road between Junction 7 and Junction 1 is a bi-directional two-lane road with some turning inbound flares at junctions as shown in **Figure 2.1** above. The road pavement width of this road section is approximately 8.2 metres. Majority of Lucan Road between Junction 1 to Junction 4 is a bi-directional three-lane road (two lane for eastbound - including one bus lane, and one lane for westbound) with road pavement width of approximately 9 metres as shown in **Figure 2.2** above. A pedestrian footpath runs along both side of Lucan Road, but no cycle track/lane exists along Lucan Road. The speed limit of Lucan Road in the vicinity of the Site is 50kph.

2.2.2 R136

R136 is located to the east of the proposed development and it provides access to local residents travelling to/from the N4 via the Lucan Road and the R136 as shown in **Figure 1.2**. R136 is a bi-directional four-lane road with a road pavement width of approximately 12 metres as shown in **Figure 2.5** and **Figure 2.6** above. A pedestrian footpath is present along one side of R136. Cycle lane is presented along both side of R136 between Junction 3 and Junction 5 as shown in **Figure 2.5** but no cycle track/lane exists along R136 between Junction 5 and Junction 6 as shown in **Figure 2.6**.

2.3 Existing Public Transport

2.3.1 Bus Services

The proposed development is situated to benefit from a good quality existing bus services provided by two bus operators (i.e. Dublin Bus and Airport Hopper). The closest bus stop is just located outside the proposed development on Lucan Road westbound as shown in **Figure 2.7**. Another bus stop is located on Lucan Road eastbound with approximately 120 metres (approximately 1.5-minute walk) from the proposed development as shown in **Figure 2.7**. Also, the C3 bus route provides a link to Leixlip Louisa Bridge Station, which is located approximately 6 kilometres (approximately 30-minute cycle) from the proposed development. In addition, the L54 bus route provides a link to Red Cow LUAS (red line), which is located approximately 11 kilometres (approximately 55-minute cycle) from the proposed development. At the time of writing, the bus services serving the proposed development are detailed in **Table 2.1**.

FIGURE 2.7 – BUS STOP LOCATIONS
(*SOURCE: GOOGLE MAPS, ANNOTATION BY EGIS*)

TABLE 2.1 – BUS ROUTES SERVING THE AREA

Route No.	Route Direction	Frequency of Services*			Bus Stop No.
		Mon – Fri	Sat	Sun	
C3	Maynooth, Straffan Road – Ringsend Road	38 services (04:36 – 22:36)	36 services (04:35 – 22:35)	34 services (04:36 – 22:36)	Stop 2233 at Lucan Road
	Ringsend Road – Maynooth, Straffan Road	37 services (05:34 – 23:35)	36 services (05:20 – 23:35)	34 services (05:36 – 23:36)	Stop 2218 at Lucan Road
C4	Maynooth Station – Ringsend	41 services (04:55 – 23:03)	39 services (05:05 – 23:02)	34 services (05:04 – 23:04)	Stop 2233 at Lucan Road
	Ringsend – Maynooth Station	42 services (05:09 – 23:06)	40 services (05:09 – 23:06)	36 services (05:07 – 23:07)	Stop 2218 at Lucan Road
C5	Maynooth, Straffan Road – Ringsend Road	5 services (23:36 – 03:36)	5 services (23:35 – 03:35)	5 services (23:36 – 03:36)	Stop 2233 at Lucan Road
	Ringsend – Maynooth Station	5 services (00:35 – 04:35)	5 services (00:35 – 04:35)	5 services (00:36 – 04:36)	Stop 2218 at Lucan Road
C6	Maynooth Station – Ringsend Road	5 services (00:02 – 04:02)	5 services (00:01 – 04:01)	5 services (00:03 – 04:03)	Stop 2233 at Lucan Road
	Ringsend Road – Maynooth Station	5 services (00:05 – 04:05)	5 services (00:05 – 04:05)	5 services (00:06 – 04:06)	Stop 2218 at Lucan Road
L52	Blanchardstown SC – Adamstown Station	18 services (06:15 – 23:25)	18 services (06:15 – 23:15)	16 services (08:15 – 23:20)	Stop 2223 at Main Street Lucan
	Adamstown Station – Blanchardstown SC	18 services (06:25 – 23:25)	18 services (06:20 – 23:25)	16 services (08:20 – 23:25)	Stop 2229 at Main Street Lucan
L54	River Forest – Red Cow LUAS	35 services (06:07 – 23:37)	32 services (06:07 – 23:37)	29 services (08:07 – 23:37)	Stop 2233 at Lucan Road
	Red Cow LUAS – River Forest	36 services (05:52 – 23:37)	32 services (06:07 – 23:37)	29 services (08:07 – 23:37)	Stop 2218 at Lucan Road
X30	Dodsboro – Belfield UCD	4 services (06:45 – 08:10)	-	-	Stop 2233 at Lucan Road
	Belfield UCD – Dodsboro	2 services (16:50 – 17:25)	-	-	Stop 2218 at Lucan Road
X31	River Forest – Earlsfort Terrace	3 services (07:20 – 07:55)	-	-	Stop 2233 at Lucan Road
	Earlsfort Terrace – River Forest	3 services (16:50 – 17:50)	-	-	Stop 2218 at Lucan Road
X32	Hewlett Packard – Earlsfort Terrace	2 services (07:05 – 07:45)	-	-	Stop 2233 at Lucan Road
	Earlsfort Terrace – Hewlett Packard	2 services (17:05 – 17:35)			Stop 2218 at Lucan Road

*Note: * The Dublin Bus timetable and Airport Hopper timetable can be referred to https://www.dublinbus.ie/Your-Journey1/Timetables/ and https://bustimes.org/operators/airport-hopper respectively.*

2.3.2 Train Services

The train stations in adjacent to the proposed development are Adamstown, Clondalkin Fonthill, Clonsilla, Leixlip Confey and Leixlip Louisa Bridge Stations as shown in **Figure 2.8**. The train stations with the feeder bus to the proposed development are illustrated in **Table 2.2**.

FIGURE 2.8 – LOCATION OF TRAIN STATIONS IN ADJACENT TO THE PROPOSED DEEVELOPMENT (*SOURCE: GOOGLE MAPS, ANNOTATION BY EGIS)*

TABLE 2.2 – ROUTE FROM THE PROPOSED DEVELOPMENT TO TRAIN STATION

Train Station	Distance from the Proposed Development	Route from the Proposed Development to Train Station	
		Feeder Bus Route	Total Walking Distance
Adamstown	Approx. 4.6km	L52 (to Adamstown Station)	Approx. 900m
Clondalkin Fonthill	Approx. 5.3km	L54 (to Red Cow LUAS)	Approx. 120m
Clonsilla	Approx. 5.3km	L52 (to Blanchardstown SC)	Approx. 1100m
Leixlip Confey	Approx. 5.6km	L54 (to River Forest)	Approx. 300m
Leixlip Louisa Bridge	Approx. 6.1km	C3 (to Maynooth)	Approx. 100m

At the time of writing, the frequency of train services provided at Adamstown, Clondalkin Fonthill, Clonsilla, Leixlip Confey and Leixlip Louisa Bridge Station are shown in **Table 2.3**. Exact times can be found in the Irish Rail website.

TABLE 2.3 – TRAIN SERVICE (*WWW.IRISHRAIL.IE*)

Train Direction	Train Serviced*	Frequency of Services**		
		Mon – Fri	Sat	Sun
Adamstown	Grand Canal Dock / Dublin Heuston - Portlaoise	48 services (06:32 – 23:22)	18 services (07:23 – 23:10)	7 services (09:05 – 20:20)
	Portlaoise – Grand Canal Dock / Dublin Heuston	46 services (05:33 – 22:30)	18 services (05:33 – 22:30)	8 services (07:40 – 20:30)
	Dublin Heuston – Waterford	1 service (20:15)	1 service (20:15)	-
	Waterford – Dublin Heuston	2 services (06:30 – 21:37)	1 service (21:37)	-
Clondalkin Fonthill	Grand Canal Dock / Dublin Heuston - Portlaoise	48 services (06:32 – 23:22)	18 services (07:25 – 23:10)	7 services (09:05 – 20:20)
	Portlaoise – Grand Canal Dock / Dublin Heuston	46 services (05:33 – 22:30)	19 services (05:33 – 22:30)	8 services (07:40 – 20:30)
	Dublin Heuston – Waterford	1 service (20:39)	1 service (20:39)	-
	Waterford – Dublin Heuston	1 service (07:30)	1 service (07:30)	-
	Dublin Heuston – Cork	19 service (06:51 – 0:11)	17 service (06:51 – 23:00)	13 services (06:51 – 23:00)
	Cork – Dublin Heuston	19 service (06:25 – 23:00)	18 service (06:25 – 23:00)	13 service (06:25 – 23:00)
Clonsilla	Dublin – M3 Parkway and, Longford	50 services (05:25 – 23:20)	32 services (05:58 – 23:27)	24 services (08:45 – 23:27)
	Longford and M3 Parkway – Dublin	64 services (05:57 – 23:10)	48 services (06:50 – 23:10)	39 services (08:07 – 23:10)
Leixlip Confey	Dublin – M3 Parkway and, Longford	37 services (05:25 – 23:20)	32 services (05:58 – 23:27)	24 services (08:45 – 23:27)
	Longford and M3 Parkway –Dublin	39 services (05:57 – 23:10)	31 services (06:50 – 23:10)	24 services (08:07 – 23:10)
Leixlip Louisa Bridge Station	Dublin Connolly – Sligo	3 services (17:10 – 20:50)	-	-
	Sligo - Dublin Connolly	2 services (07:00 – 07:35)	-	-
	Dublin – M3 Parkway and, Longford	38 services (05:25 – 23:20)	33 services (05:58 – 23:27)	25 services (08:45 – 23:27)
	Longford and M3 Parkway – Dublin	39 services (05:57 – 23:10)	31 services (06:50 – 23:10)	24 services (08:07 – 23:10)

Note: * *The rail fares and tickets details can be referred to https://www.irishrail.ie/en-ie/rail-fares-and-tickets/fares-info/dart-and-short-hop-zone.*

** *The train timetable can be referred to https://www.irishrail.ie/en-ie/travel-information/find-a-station.*

2.3.3 LUAS

The Red Line LUAS stop of Red Cow is located approximately 11 kilometres (approximately 55-minute cycle) to the southeast of the Site. Also, the L54 bus route provides a link between the proposed development and Red Cow LUAS stop. At the time of writing, the Red Line LUAS service is detailed in **Table 2.4** following.

TABLE 2.4 – OPERATING HOURS OF LUAS SERVICE (*WWW.LUAS.IE*)

LUAS	LUAS Serviced*	Timetable**			Closest Stop with Feeder Bus to the Proposed Development
		Mon – Fri	Sat	Sun	
Red Line	Eastbound from Tallaght	05:30 – 00:00	06:42 – 00:15	07:12 – 22:51	Red Cow
	Westbound from the Point	05:30 – 00:30	06:30 – 00:30	07:00 – 23:30	Red Cow
	Westbound from Connolly	07:10 – 19:31	09:14 – 18:39	15:12 – 19:03	Red Cow

*Note: * The LUAS fares and tickets details can be referred to https://luas.ie/ticket-types.html.*
*** The LUAS timetable can be referred to https://luas.ie/operating-hours.html.*

2.3.4 Taxi Services

Taxi is also a common form of transport in Ireland. Currently, passengers can order / book taxi services in advance via online / phone / apps (i.e. Free Now, Lynk, Taxy, etc.). By using these software, the passengers can order their nearest taxi so as to reduce the waiting time.

2.3.5 Car Clubs and Car Sharing

Car clubs or car sharing (i.e. "Yuko" and "GoCar") is a model of car rental where people rent cars for short periods of time, often by the hour. It differs from traditional car rental in that as noted above rental periods are shorter, the owners of the cars are sometimes private individuals themselves, and the carsharing facilitator is generally distinct from the car owners. Carsharing is part of a larger trend of shared mobility. Benefits include cost saving, convenience (no responsibility for insurance, tax, fuel, maintenance), less traffic congestion and less parking pressure. At the time of writing, two GoCars (GoBases) are available at the Lucan Road near Brookvale (refer to **Figure 2.9**) which is approximately 850 metres walking distance (approximately 10-minute walk) from the proposed development.

FIGURE 2.9 – LOCATION OF GOCAR
(*SOURCE: https://www.gocar.ie/locations, ANNOTATION BY EGIS)*

2.4 Emerging Transport Developments

2.4.1 BusConnects

The BusConnects Dublin Programme comprises a series of integrated initiatives, including the delivery of 12 Core Bus Corridor schemes, together with the phased implementation of the Dublin Network Redesign Project, enhanced bus stops and shelters, simplified fares, next generation ticketing and transition to a zero-emission fleet. As part of this programme, a number of improved and redesigned bus services have been introduced in the vicinity of the proposed development.

Of particular relevance to the subject site is Phase 2 of the Dublin Network Redesign, which was implemented on 28 November 2021 and introduced the C-Spine routes (C1, C2, C3 and C4), together with Route 52, a number of peak-only routes including X25, X26, X27, X28, X30, X31 and X32, and a number of local routes including L51, L52, L53, L54, L58 and L59. Two night-time routes, C5 and C6, were also introduced as part of this phase.

These services improve public transport accessibility in the wider area of the proposed development, including along Lucan Road to the south of the site. In particular, the C3 and C4 routes form part of the C-Spine, providing enhanced connectivity between the outer western suburbs and Dublin City Centre, while the L54 local route improves access to surrounding residential areas and onward connections to the Red Cow Luas stop. The X30, X31 and X32 peak-time routes further enhance commuter accessibility during peak periods.

Figure 2.10 and **Figure 2.11**, taken from the latest BusConnects proposals, illustrate the bus network in the vicinity of the proposed development.

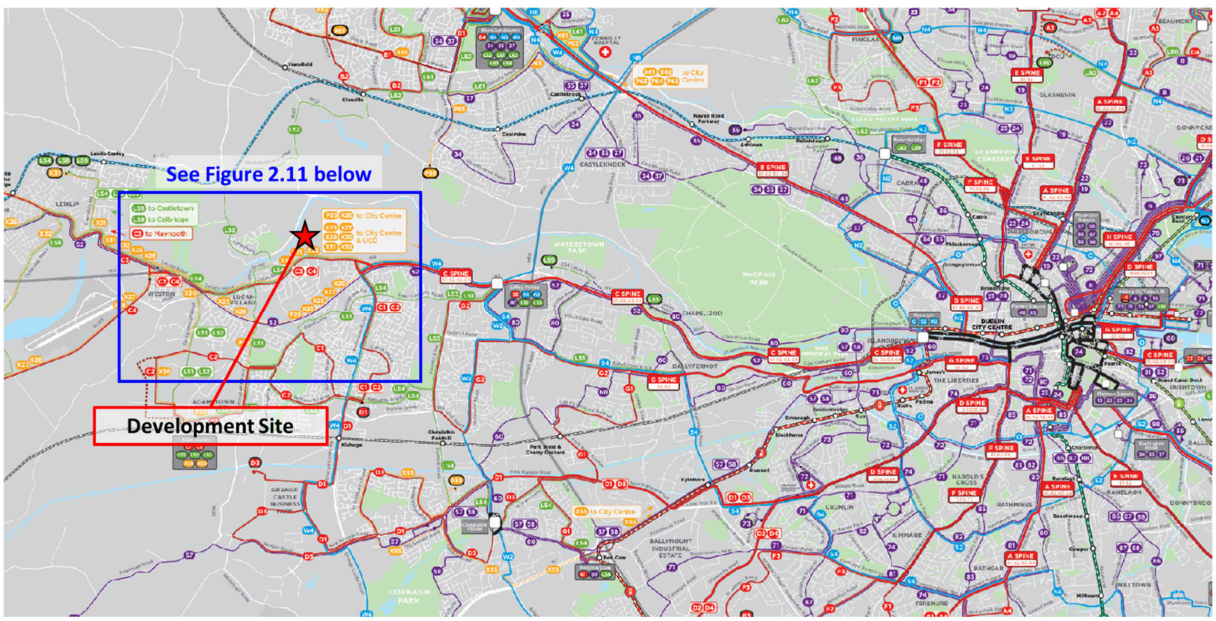

FIGURE 2.10 – BUSCONNECTS 'BIG PICTURE MAP' SHOWING SITE LOCATION (*SOURCE: www.busconnects.ie, ANNOTATION BY EGIS)*

FIGURE 2.11 – PROPOSED BUSCONNECTS ROUTES IN THE VICINITY OF THE PROPOSED DEVELOPMENT (*SOURCE: www.busconnects.ie, ANNOTATION BY EGIS)*

2.4.2 LUAS Lucan Line

According to the GDA Transport Strategy 2022-2042, it is proposed to introduce a Luas Lucan, which will run from Lucan to the city centre via Liffey Valley Town Centre and Ballyfermot. New line will be built from Lucan (Newcastle Road) to Blackhorse, where it links to the Luas Red Line. The preliminary alignment of Luas Lucan is presented in **Figure 2.12**.

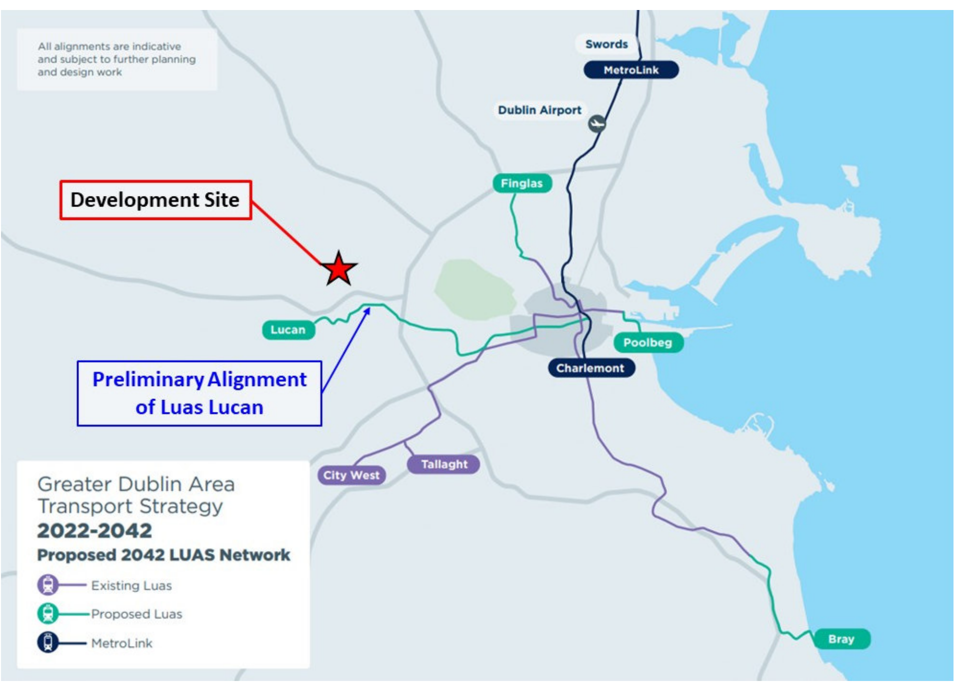

FIGURE 2.12 – PRELIMINARY ALIGNMENT OF LUAS LUCAN

(*SOURCE: GDA TRANSPORT STRATEGY 2022-2042, ANNOTATION BY EGIS)*

2.5 Cycling and Pedestrian Facilities

The Site is connected to the surround public footpath network via the footpath on Lucan Road. The nearest cycle track to the west of proposed development is on Laraghcon as shown in **Figure 2.15**. Cyclists are expected to share the carriageway with motorists for 850 metres along the Lucan Road, Chapel Hill and Lucan Bridge in order to access this cycle track as shown in **Figure 2.13**. In addition, the nearest cycle track to the east of proposed development is on R136 as shown in **Figure 2.15**. Cyclists are expected to share the carriageway with motorists for 700 metres along the Lucan Road in order to access this cycle track as shown in **Figure 2.14**.

FIGURE 2.13 – CYCLE TRACK ACCESS ON LARAGHCON
(*SOURCE: GOOGLE MAPS)*

FIGURE 2.14 – CYCLE TRACK ACCESS ON R1136
(*SOURCE: GOOGLE MAPS)*

In 2013, the NTA published the Greater Dublin Area (GDA) Cycle Network Plan, which examined existing cycle facilities within the GDA and identified a number of cycle networks consisting of the Urban Network, Inter-Urban Network and Green Route Network for each of the seven Local Authorities within the GDA. The existing nearby exiting cycle facilities are shown in **Figure 2.15**.

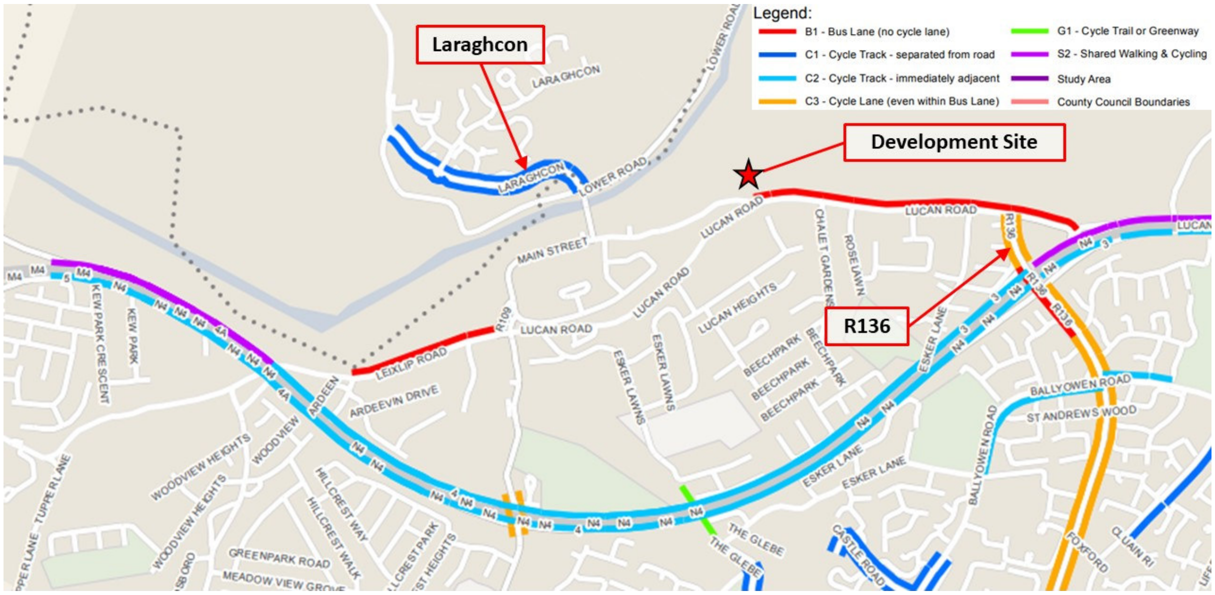

FIGURE 2.15 – EXISTING CYCLE FACILITIES (GREATER DUBLIN AREA CYCLE NETWORK PLAN)
(*SOURCE: GREATER DUBLIN AREA CYCLE NETWORK PLAN, ANNOTATION BY EGIS)*

The 2022 Greater Dublin Area Cycle Network Plan examines the proposed cycle network in the Dublin North West. The proposed cycle networks include a secondary cycling along the Lucan Road and Chapel Hill, which will allow easy and safe access to/from the proposed development as shown in **Figure 2.16**.

FIGURE 2.16 – PROPOSED CYCLE NETWORK
(*SOURCE: 2022 GDA CYCLE NETWORK – DUBLIN NORTH WEST, ANNOTATION BY EGIS)*

3 BASE YEAR 2023 – TRAFFIC VOLUMES & CAPACITY

3.1 Traffic Survey

To determine current traffic behaviour in the vicinity of the subject Site, a vehicle turning movement survey was carried out at the seven junctions identified in the scoping study (See **Figure 1.2**). These junctions are:

Junction 1 - Western Access Road to St. Edmundsbury Hospital / Lucan Road;
Junction 2 - Eastern Access Road to St. Edmundsbury Hospital / Lucan Road / Esker Lane;
Junction 3 - R136 / Lucan Road;
Junction 4 - Lucan Road / Access to Hermitage Golf Club;
Junction 5 - R136 / N4 Slip Road (eastbound);
Junction 6 - R136 / N4 Slip Road (westbound); and
Junction 7 - Chapel Hill / Lucan Road.

A vehicle turning movement survey was undertaken on Wednesday, 22nd February 2023. The count was carried out over the 12-hour period from 07:00 hours to 19:00 hours and included both the morning and evening peak periods. The date was chosen while schools were open to ensure the maximum volume of traffic was included. The count was designed to identify the critical peak hour periods of traffic flow through the adjacent junctions. Data was collected in 15-minute intervals and the following count classifications were employed.

Cars;
Taxi;
Light Goods Vehicles (LGV);
Motorcycles (M/C);
Oversize Goods Vehicles 1 (OGV1);
Oversize Goods Vehicles 2 (OGV2);
Public Service Vehicles (PSV); and
Pedal Cycles (P/C).

The morning and evening peak hours for Junction 1 to Junction 7 were identified as shown in **Table 3.1** below:

TABLE 3.1 – MORNING AND EVENING PEAK HOURS IN 2023 BASELINE YEAR

Junction	AM Peak Hour	PM Peak Hour
Junction 1 - Western Access Road to St. Edmundsbury Hospital / Lucan Road	09:00 - 10:00	14:00 - 15:00
Junction 2 - Eastern Access Road to St. Edmundsbury Hospital / Lucan Road / Esker Lane	08:00 - 09:00	14:00 - 15:00
Junction 3 - R136 / Lucan Road	08:00 - 09:00	15:00 - 16:00
Junction 4 - Lucan Road / Access to Hermitage Golf Club	07:00 - 08:00	15:00 - 16:00
Junction 5 - R136 / N4 Slip Road (eastbound)	08:00 - 09:00	14:00 - 15:00
Junction 6 - R136 / N4 Slip Road (westbound)	08:00 - 09:00	17:00 - 18:00
Junction 7 - Chapel Hill / Lucan Road	09:00 - 10:00	14:00 - 15:00

A full transcription of the turning movement survey is included in **Appendix 1** herein.

In order to carry out a robust traffic analysis of the surrounding road network, the traffic modelling exercise following herein will be based on traffic flows recorded for both the weekday morning and evening peak hours.

4 PROPOSED ACCCESS ARRANGEMENT FOR PROPOSED DEVELOPMENT

4.1 Access Arrangement and Internal Layout

At present, two existing vehicular accesses on the Lucan Road provide an access to the existing St. Edmundsbury Hospital via two internal roads, which are connected to each other, as shown in **Figure 4.1**. The Western Vehicular Access and Eastern Vehicular Access are located at Junction 1 and Junction 2 respectively. The proposed development will be mainly served by the existing Western Vehicular Access, which will connect to Lucan Road directly at Junction 1 as shown in **Figure 4.2**. Also, the proposed development will connect to the existing Eastern Vehicular Access at Junction 2 via the internal roads, which will be only allowed for emergency vehicles or medium / heavy goods vehicles use, as shown in **Figure 4.1**.

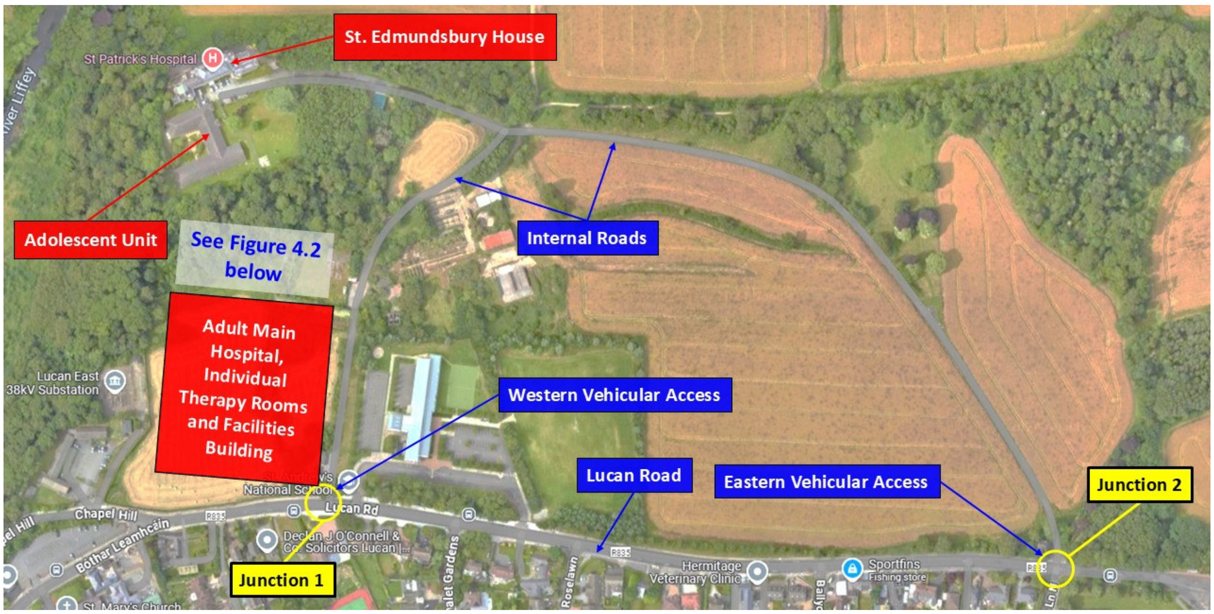

FIGURE 4.1 – ROAD NETWORK ADJACENT TO THE PROPOSED DEVELOPMENT

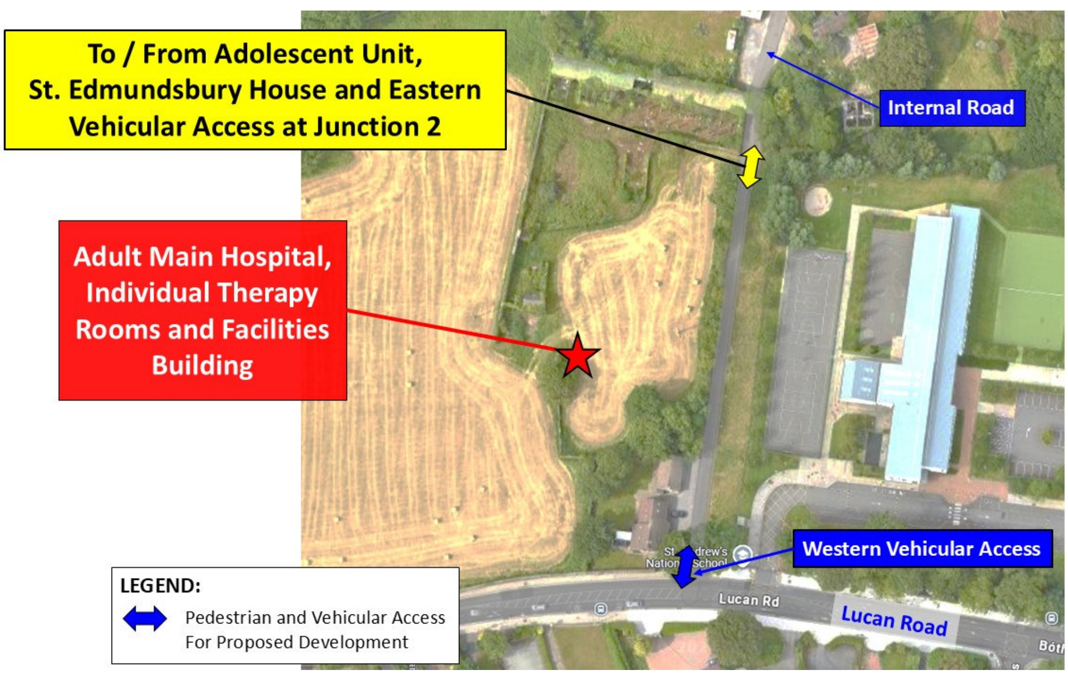

FIGURE 4.2 – PROPOSED WESTERN VEHICULAR ACCCESS TO THE PROPOSED DEVELOPMENT

Referring to the **Figure 4.2** above, a main pedestrian access to the proposed development will be located at the Western Vehicular Access at Junction 1. Also, another pedestrian access will connect to the Eastern Vehicular Access at Junction 2 via the internal roads as shown in **Figure 4.1**. However, section of this pedestrian access does not have a footpath and pedestrians are expected to share the carriageway with motorists for 600m along the internal road.

The Lucan Road has a 50kph speed limit. Sightlines in excess of 49 metres are provided in accordance with the Design Manual for Urban Roads and Streets for 50kph speed limit road at the Western Vehicular Access and Eastern Vehicular Access located at Junction 1 and Junction 2 respectively.

As shown in **Figure 2.16**, one of the proposed secondary routes is along the Lucan Road, which is outside the proposed development. Thus, it is considered that the site location will be well serviced by the cycle facilities.

The internal Site junctions have all been designed with corner radii of 4.5m or less to improve pedestrian and cyclist safety at junctions by lowering the speed at which vehicles can turn corners. To give priority to pedestrian and cyclist, appropriate measures (i.e. road markings, signages, ramp, courtesy crossing, etc.) will be considered in later detailed design stage to ensure safety of road users.

Pedestrian movements are fully catered for within the proposed development. A network of internal footpaths, dropped kerbs, tactile paving and walkways will link all parts of the development.

4.2 Proposed Public Road Improvement

To minimize a traffic disruption of west bound traffic on Lucan Road, road marking at the Western Vehicular Access will be modified in order to provide a right turning pocket to the proposed development as shown in **Figure 4.3**.

As shown in **Figure 2.16**, one of the proposed secondary routes is along the Lucan Road, which is outside the proposed development. Thus, it is considered that the site location will be well serviced by the cycle facilities.

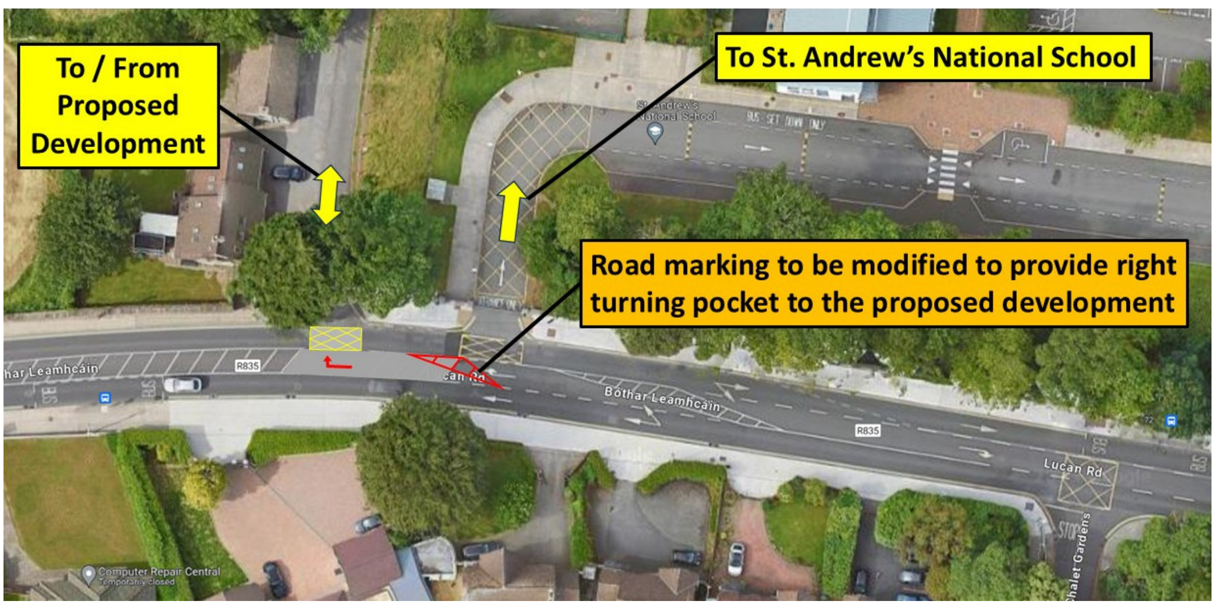

FIGURE 4.3 – PROVISION OF RIGHT TURNING POCKET AT WESTERN VEHICULAR ACCESS (*SOURCE: GOOGLE MAPS, ANNOTATION BY EGIS*)

In order to relieve the traffic congestion, it is proposed to upgrade the existing Chapel Hill / Lucan Road (Junction 7) to signalised junction with signalised parallel crossings as shown in **Figure 4.4**. As enhancement of safety of vulnerable road users is always a top priority in design, therefore, the active traffic facilities will be provided for the proposed improvement scheme in accordance with the Cycle Design Manual. The design has been discussed and agreed in principle with South Dublin County Council. The proposed improvement scheme includes the following key features to enhance the safety of vulnerable road users:

- Provision of one-way cycle track for both sides of the roads;
- Removal of triangle island at the junction;
- Provision of signalised parallel crossings (i.e. dedicated and separated crossing facilities for pedestrians and cyclists) at Lucan Road East arm, Lucan Road West arm and Chapel Hill arm; and
- The existing bus stop at Lucan Road East arm will be relocated westward (approximately 80m) in order to minimize any traffic obstruction for vehicles travelling from Lucan Road East arm to Chapel Hill arm due to pick-up/drop-off activity by buses.

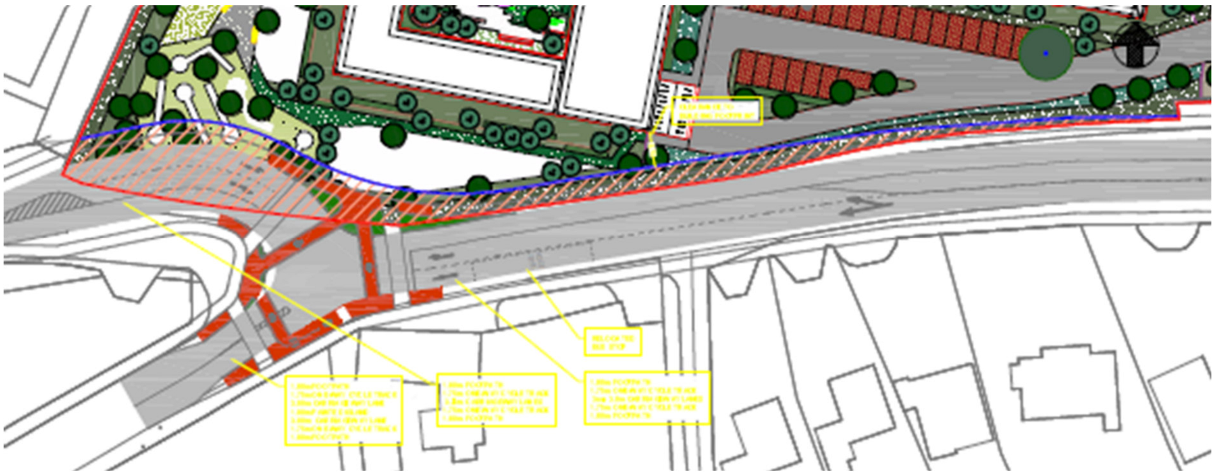

FIGURE 4.4 – PROPOSED IMPROVEMENT SCHEME FOR CHAPEL HILL / LUCAN ROAD JUNCTION (JUNCTION 7)

5 TRIP GENERATION AND ASSIGNMENT (BY USING THE TRICS DATABASE)

5.1 Proposed Development

The purpose of proposed development is to relocate the services / facilities from St. Patrick's University Hospital at Dublin 8 to the Site at Lucan. Within the Site, the existing St. Edmundsbury House (refer to **Figure 5.1**) associated with its services provided to patients will be kept as a part of the proposed development. Another existing structure as shown in Detail A of **Figure 5.1** will be demolished for construction of a new building for adolescent unit, which includes the current services provided to patients from this existing structure and part of the services provided to patient from St. Patrick's University Hospital. After completion of the proposed development, all services / facilities at St. Patrick's University Hospital will be relocated to the new buildings, including adolescent unit, adult main hospital, individual therapy rooms and facilities building, of the proposed development at Lucan.

The existing St. Edmundsbury Hospital at Lucan consists of 52 beds to provide services to public. After completion of the proposed development, the new St. Edmundsbury Hospital will increase from the existing 52 beds to a total of 214 beds. Therefore, the net increase of beds is 162.

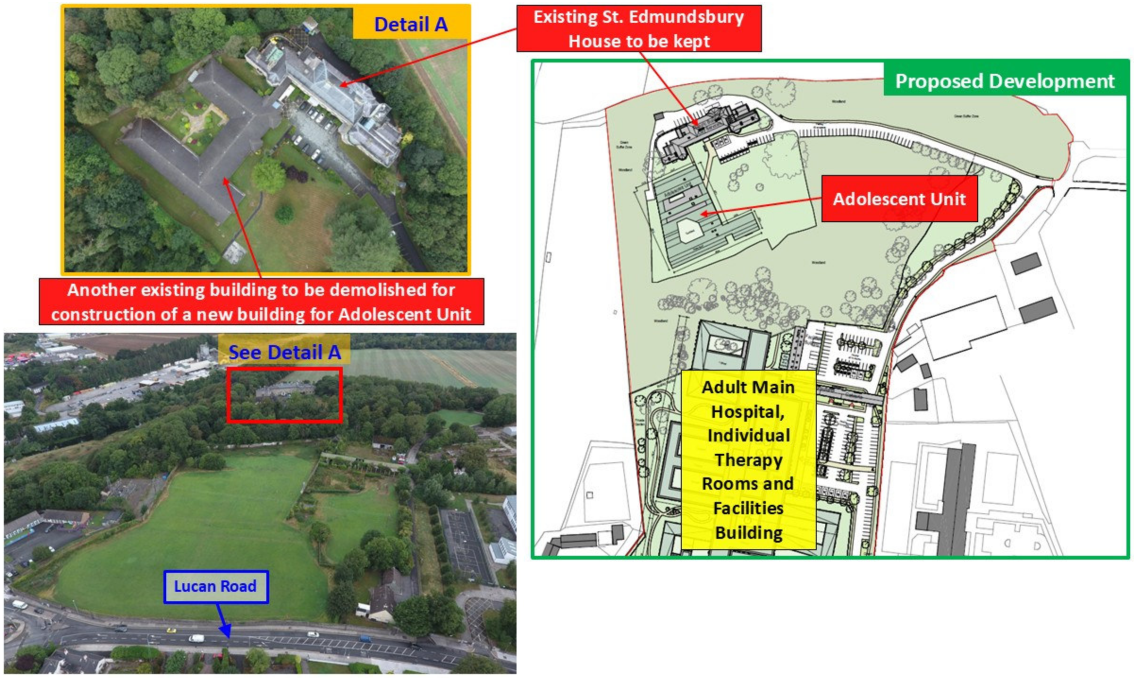

FIGURE 5.1 – EXISTING AND PROPOSED STRUCTURES

5.2 Net Trip Generation By Using the TRICS Database

The Trip Rate Information Computer System (TRICS) database was interrogated to derive the potential development trip generation rates. As the traffic count survey at Lucan on 22nd February 2023 as mentioned in Section 3.1 can capture the trip generated from the existing St. Edmundsbury Hospital (i.e. St. Edmundsbury House), therefore, the net trip generated for the proposed development is only included the trip generated from the new buildings of proposed development (including adolescent unit, adult main hospital, individual therapy rooms and facilities building) in order to provide a robust assessment.

Utilising data supplied by the TRICS database (7.9.4), **Table 5.1** details the estimated net trip generation for the proposed development during the morning and evening peak hours being considered for this study. The full TRICS output files are contained in **Appendix 2**.

TABLE 5.1 – NET TRIP GENERATION FOR THE PROPOSED DEVELOPMET BY USING THE TRICS DATABASE

Proposed Development	Time	Factor	TRICS Arrival Rate	TRICS Departure Rate	Net Hourly Trips	
					Trips In	Trips Out
Adult Main Hospital, Individual Therapy Rooms and Facilities Buildings	AM Peak Hour	312 Employees	0.190 (per employee)	0.051 (per employee)	59	16
	PM Peak Hour		0.102 (per employee)	0.187 (per employee)	32	58
Adolescent Unit	AM Peak Hour	27 Employees	0.190 (per employee)	0.051 (per employee)	5	1
	PM Peak Hour		0.102 (per employee)	0.187 (per employee)	3	5
Total	AM Peak Hour	-	-	-	**64**	**17**
	PM Peak Hour		-	-	**35**	**63**

5.3 Modal Choice

In order to produce a robust assessment of the traffic impact of the proposed development, this study assumes that all net trips generated by the proposed development will be by car and the peak trip generation will coincide with the morning and evening peak periods for the adjoining junctions in order to provide a "worst-case" scenario.

5.4 Trip Distribution and Assessment Years

It was assumed for the purposes of this study that the future development traffic will mirror existing travel flows when exiting and entering the development. Moreover, the internal road between the Eastern Vehicular Access (Junction 2) and the proposed development as shown in **Figure 4.1** will be only assigned for emergency vehicles and medium / heavy goods vehicles so it is anticipated that there is a tiny traffic using the above-mentioned internal road in normal operation. Therefore, it was assumed that the net trip generation (utilising the TRICS database) to/from the new buildings (including adult main hospital, individual therapy rooms, facilities buildings and adolescent unit) within the proposed development will only use the Western Vehicular Access (Junction 1).

5.4.1 Trip Distribution at Junction 1 – Western Access Road to St. Edmundsbury Hospital / Lucan Road

In order to obtain the latest trips to/from the Site, another traffic count survey was undertaken at Junction 1 of Lucan (refer to **Figure 1.2**), which is a main entrance to the existing St. Edmundsbury Hospital, on Tuesday, 21st May 2024. The count was carried out over the 12-hour period from 07:00 hours to 19:00 hours and included both the morning and evening peak periods. Data was collected in 15-minute intervals. A full transcription of the traffic count survey at the Junction 1 of Lucan is included in **Appendix 3** herein.

During the operational phase, all vehicles (except emergency vehicles and medium / heavy goods vehicles) will travel to/from the Site through Junction 1 only. However, vehicles are currently travelling to/from the Site through Junction 1 and Junction 2. Therefore, to determine the modal split at Junction 1 during the operational phase, the total trips to/from the existing St. Edmundsbury Hospital, which is equal to the trips to/from the existing St. Edmundsbury Hospital through Junction 1 (based on the traffic count survey on 21st May 2024) plus the trips to/from the existing St. Edmundsbury Hospital through Junction 2 (based on the traffic count survey on 22nd February 2023), shall be considered.

Currently, traffic congestion along Lucan Road occurs between 07:00 and 10:00 and between 16:00 and 19:00. Therefore, the highest total trips to/from the existing St. Edmundsbury Hospital (through Junction 1 and Junction 2) between 07:00 and 10:00, and between 16:00 and 19:00 have been used for modal split at Junction 1 in the morning and evening peak hours respectively during the operational phase. For a period between 07:00 and 10:00, the highest total trips to/from the existing St. Edmundsbury Hospital was identified as 08:00-09:00. For a period between 16:00 and 19:00, the highest total trips to/from the existing St. Edmundsbury Hospital was identified as 18:00-19:00.

Figure 5.2 and **Figure 5.3** illustrates the trips to/from the Site through Junction 1 (based on the traffic count survey on 21st May 2024) and through Junction 2 (based on the traffic count survey on 22nd February 2023) respectively at the identified morning (08:00-09:00) and evening (18:00-19:00) periods.

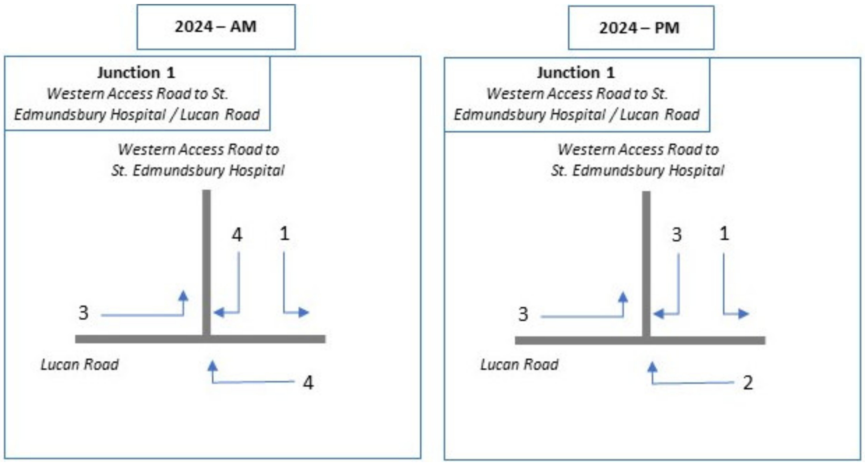

FIGURE 5.2 – TRIPS TO/FROM THE EXISTING ST. EDMUNDSBURY HOSPITAL VIA JUNCTION 1 ON 21ST MAY 2024 (FOR AM AT 08:00-09:00 AND FOR PM AT 18:00-19:00)

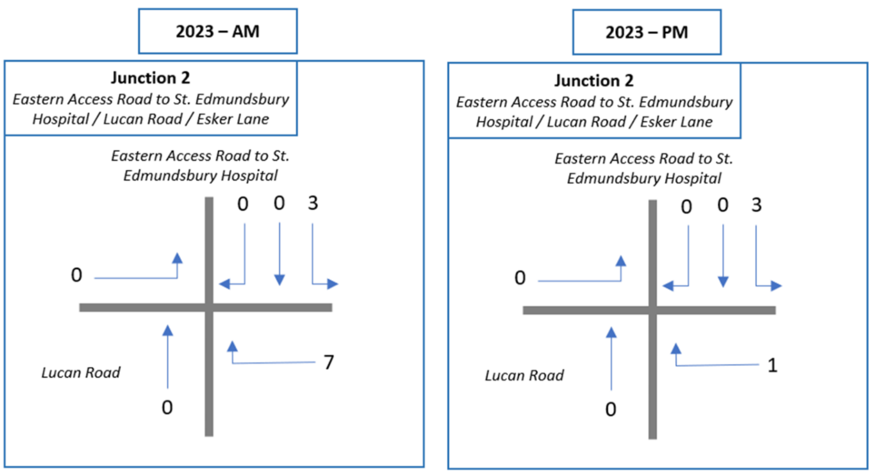

FIGURE 5.3 – TRIPS TO/FROM THE EXISTING ST. EDMUNDSBURY HOSPITAL AT JUNCTION 2 ON 22ND FEBRUARY 2023 (FOR AM AT 08:00-09:00 AND FOR PM AT 18:00-19:00)

Table 5.2 presents the modal split at Junction 1 for the proposed development during the operational phase based on the highest total trips to/from the existing St. Edmundsbury Hospital through Junction 1 and Junction 2 (For AM between 07:00 and 10:00, and for PM between 16:00 and 19:00).

TABLE 5.2 – MODAL SPLIT AT JUNCTION 1 FOR THE PROPOSED DEVELOPMENT DURING THE OPERATIONAL PHASE

Trip	Time	Morning Peak Hour		Evening Peak Hour	
		Traffic Count Data*	Modal Split	Traffic Count Data*	Modal Split
Arrival	Turn left from Lucan Road (arriving from Junction 7)	3	21%	3	50%
	Turn right from Lucan Road (arriving from Junction 3)	11	79%	3	50%
Departure	Turn left to Lucan Road (towards Junction 3)	4	50%	4	57%
	Turn right to Lucan Road (towards Junction 7)	4	50%	3	43%

*Note: * The highest total trips to/from the existing St. Edmundsbury Hospital through Junction 1 and Junction 2.*

Table 5.2 revealed that in the morning peak hour, 21% and 79% vehicles currently turn left (i.e. arriving from Junction 7) and right (i.e. arriving from Junction 3) respectively from Lucan Road into the Site while 50% and 50% of vehicles from the Site currently turn eastward (towards Junction 3) and westward (towards Junction 7) respectively.

In the evening peak hour, 50% and 50% vehicles currently turn left (i.e. arriving from Junction 7) and right (i.e. arriving from Junction 3) respectively from Lucan Road into the Site while 57% and 43% of vehicles from the Site currently turn eastward (towards Junction 3) and westward (towards Junction 7) respectively.

During the operational phase, the trip distributions at Junction 1 were based on the modal split approach as mentioned above while the future development traffic distribution at the surrounding junctions will mirror existing traffic patterns i.e. development generated flows will be split through the junctions proportionally to existing flows.

Assuming planning permission is granted for the development in year 2023 and allowing for a 4-year construction period, it is estimated that the proposed development will be fully operational by the year 2027. For the purpose of this study, 2027 is assumed as the Year of Opening. Therefore, traffic analysis associated with this study will focus on the following future development operational scenarios:

Residential Development Year of Opening – 2027; and
15 Year Design Horizon – 2042.

The projected 2027 and 2042 design year traffic flows have been calculated by factoring up the 2023 recorded traffic flows in accordance with the TII Publications Project Appraisal Guidelines for National Roads document 'Unit 5.3 Travel Demand Projections, Table 6.1: Link-Based Growth Rates: Metropolitan Area Annual Growth Rates by using the central growth rate factors to create the "without" development scenario. Additional net traffic flows due to the proposed development has been then applied to these future year flows to create the **"**with**"** development scenario.

5.5 Net Trip Generation as a Percentage of Existing Traffic

Expected net trip generation for the proposed development was estimated utilising the TRICS database and was revealed to be in total 64 trips inbound and 17 trips outbound in the morning peak hour, and 35 trips inbound and 63 trips outbound in the evening peak hour.

An exercise was carried out to quantify the expected development net trip generation as a proportion of existing traffic flows on the surrounding road network to determine if a detailed traffic impact assessment is required for all of the junctions included within the scoping study.

It is anticipated that the future background traffic flows shall be factored up in accordance with Table 6.1 of Transport Infrastructure Ireland Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections under central growth factor scenario. In view of the above reasons, the existing traffic flows will be used instead of future traffic flows in order to provide a robust analysis and a "worst-case" scenario.

Based on the trip distribution approach as mentioned in Section 5.4, the result of this trip distribution and assignment exercise (by using the TRICS database) is presented in **Table 5.3** and **Table 5.4** following.

TABLE 5.3 – DEVELOPMENT AM PEAK HOUR NET TRIP GENERATION AS A PERCENTAGE OF EXISTING ROAD NETWORK TRAFFIC FLOW (BY USING THE TRICS DATABASE)

Junction	Junction AM Peak Traffic	TRICS Database	
		Development Net Generated Traffic	Percentage
Junction 1 – Western Access Road to St. Edmundsbury Hospital / Lucan Road	1,316	81	**6.2%**
Junction 2 – Eastern Access Road to St. Edmundsbury Hospital / Lucan Road / Esker Lane	1,800	58	3.2%
Junction 3 – R136 / Lucan Road	2,173	57	2.6%
Junction 4 – Lucan Road / Access to Hermitage Golf Club	1,056	4	0.4%
Junction 5 – R136 / N4 Slip Road (Eastbound)	1,823	53	2.9%
Junction 6 – R136 / N4 Slip Road (Westbound)	2,450	51	2.1%
Junction 7 – Chapel Hill / Lucan Road	1,364	23	1.7%

As demonstrated by **Table 5.3**, the ratio of estimated net trip (by using the TRICS database) associated with the proposed development to the existing traffic flows is less than 5% for Junction 2 to Junction 7 in the morning peak hour.

TABLE 5.4 - DEVELOPMENT PM PEAK HOUR NET TRIP GENERATION AS A PERCENTAGE OF EXISTING ROAD NETWORK TRAFFIC FLOW (BY USING THE TRICS DATABASE)

Junction	Junction PM Peak Traffic	TRICS Database	
		Development Net Generated Traffic	Percentage
Junction 1 – Western Access Road to St. Edmundsbury Hospital / Lucan Road	1,414	98	**6.9%**
Junction 2 – Eastern Access Road to St. Edmundsbury Hospital / Lucan Road / Esker Lane	1,655	53	3.2%
Junction 3 – R136 / Lucan Road	2,046	52	2.5%
Junction 4 – Lucan Road / Access to Hermitage Golf Club	1,000	19	1.9%
Junction 5 – R136 / N4 Slip Road (Eastbound)	1,808	33	1.8%
Junction 6 – R136 / N4 Slip Road (Westbound)	2,592	32	1.2%
Junction 7 – Chapel Hill / Lucan Road	1,464	45	3.1%

As demonstrated by **Table 5.4**, the ratio of estimated net trip (by using the TRICS database) associated with the proposed development to the existing traffic flows is less than 5% for Junction 2 to Junction 7 in the evening peak hours.

In view of the above analysis for Junction 2 to Junction 7, the estimated net trips associated with the proposed development represent a tiny proportion of existing traffic flows on the surrounding road network and less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists).

As a result of this negligible increase in traffic volumes on the surrounding road network, it is not required to undertake any traffic capacity assessments for Junction 2 to Junction 7 in this study. It is reasonable to assume that the number of net trips generated by the proposed development will remain close to a constant number in future years while background traffic levels will show a steady increase. This will result in the traffic impact of the proposed development decreasing even further in future years.

However, it is acknowledged that Junction 1 is greater than the 5% of the traffic flow on the existing road network where congestion exists or the location is sensitive. Additionally, as requested by the South Dublin County Council, Junction 3, Junction 5 to Junction 7 have also been selected for conducting a traffic capacity assessment in order to have a better understanding of this minimal traffic impact due to the proposed development. Therefore, a capacity assessment on Junction 1, Junction 3 and Junction 5 to Junction 7 were undertaken by using the Transport Research Laboratory's (TRL) Priority Intersection Capacity and Delay (PICADY) and Optimised Signal Capacity and Delay (OSCADY) traffic modelling software for priority junction and signalized junction.

The above-mentioned junctions were modelled for the 2023 Baseline Year, 2027 Opening Year and 2042 Design Year (Opening Year plus 15 years) in the morning and evening peak hours.

To demonstrate the direct traffic impact associated with the proposed development, the traffic modelling exercise was carried out for the "without" development and **"with"** development scenarios.

5.6 Modal Shift Assumptions

With provision of active travel facilities and enhancement of public transport services in the vicinity of the proposed development, it is anticipated that the amount of people walking, cycling and using public transport will increase and the number of journeys in private vehicles will decrease. As such, a modal shift from private car to walking, cycling and public transport is expected for this development. As the proposed improvement works as mentioned in Section 4.2 will be carried out at Junction 7, therefore, it is proposed to carry out the traffic analysis at Junction 7 in both "without allowing for modal shift" approach and "allowing for modal shift" approach for the **"with"** development scenario.

According to the Table 7.0 of South Dublin County Development Plan 2022-2028, it sets modal share target for car from 62% in 2016 to 50% in 2042 as shown in **Table 5.5**.

TABLE 5.5 – EXISTING AND TARGET MODE SHARE
(*SOURCE: SOUTH DUBLIN COUNTY DEVELOPMENT PLAN 2022-2028*)

Mode	SDCC Existing Mode Share (%)	SDCC Target Mode Share (%)
Walk	13	15
Cycle	5	10
Bus	17	20
Train	3	5
Private (Car, Van, HGV, Motorcycle)	62	50

The outcome of modal share for car in 2023 Baseline Year and 2027 Opening Year can be obtained by interpolating the modal share for car in 2016 and 2042. **Table 5.6** below presents the modal share for car in 2023 Baseline Year, 2027 Opening Year and 2042 Design Year.

TABLE 5.6 – MODAL SHARE FOR CAR AND PERCENTAGE CHANGE OF CAR BASED N 2023 BASELINE YEAR

Mode	Mode share of Car	% Change (Based on 2023 Baseline Year)
2016	62%	-
2023 Baseline Year	58.8%	-
2027 Opening Year	56.9%	1.9%
2042 Design Year	50%	8.8%

Therefore, 1.9% and 8.8% of traffic reduction, either for background traffic or new trips, were applied on Junction 7 in 2027 Opening Year and 2042 Design Year respectively in a "allowing for modal shift" approach.

5.7 Network Traffic Flow (By Using the TRICS Database)

Reference is drawn to **Figure 5.4** to **Figure 5.9** below for the traffic count surveys (in PCU[1]) on 22nd February 2023 and estimated future traffic flows (in PCU) in a "without allowing for modal shift" approach in the morning and evening peak hours at Junction 1, Junction 3 and Junction 5 to Junction 7 by using the TRICS database.

5.7.1 2023 Baseline Year Traffic Flow

Figure 5.4 and **Figure 5.5** illustrate the 2023 Baseline Year scenario traffic flows in the morning and evening peak hours from traffic count surveys.

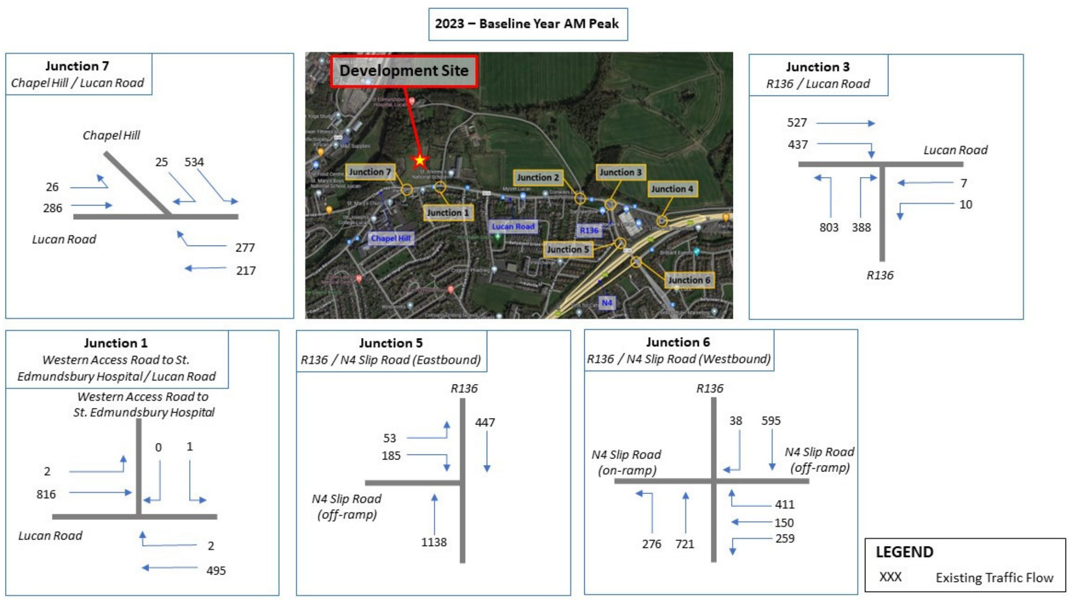

FIGURE 5.4 – 2023 BASELINE YEAR TRAFFIC FLOWS IN THE MORNING PEAK HOUR

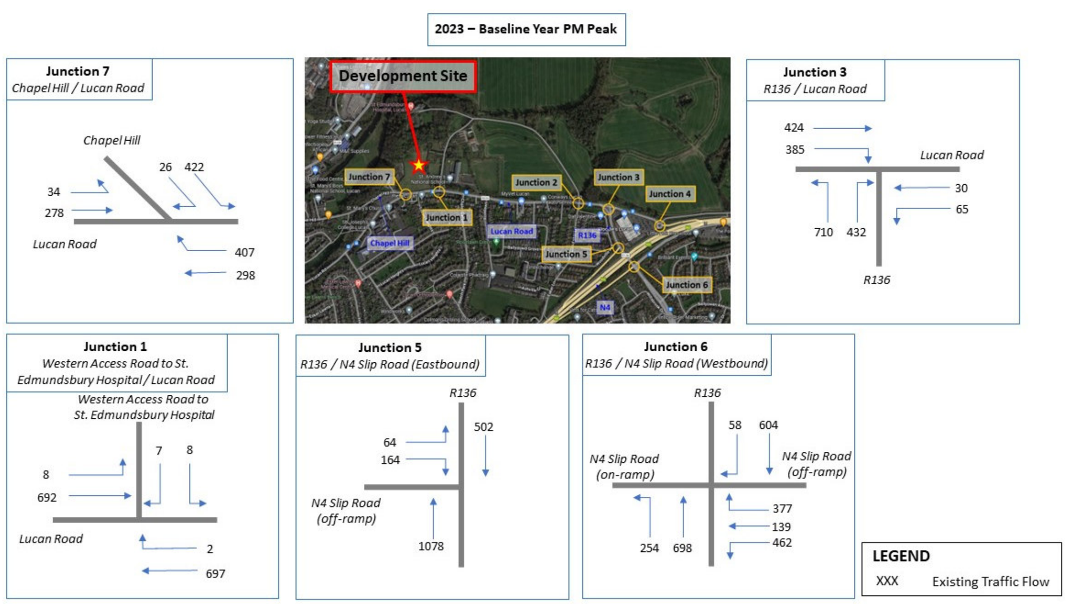

FIGURE 5.5 – 2023 BASELINE YEAR TRAFFIC FLOWS IN THE EVENING PEAK HOUR

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[1] *PCU means Passenger Car Unit. A passenger car equivalent is essentially the impact that a mode of transport has on traffic variables (such as headway, speed, density) compared to a single car. PCU conversation factors for different type of vehicles are listed as following: 1 car / taxi / LGV = 1 PCU, 1 OGV1 = 1.5 PCU, 1 OGV2 = 2.3 PCU,*
1 PSV = 2 PCU, 1 motor cycle = 0.4 PCU and 1 pedal cycles = 0.2 PCU.

5.7.2 Network Traffic Flows By Using the TRICS Database

By using the TRICS database, **Figure 5.6** and **Figure 5.7** present the 2027 Opening Year traffic flows in the morning and evening peak hours for the "without" development and "with" development scenarios while **Figure 5.8** and **Figure 5.9** illustrate the 2042 Design Year Horizon traffic flows in the morning and evening peak hours for the "without" development and "with" development scenarios.

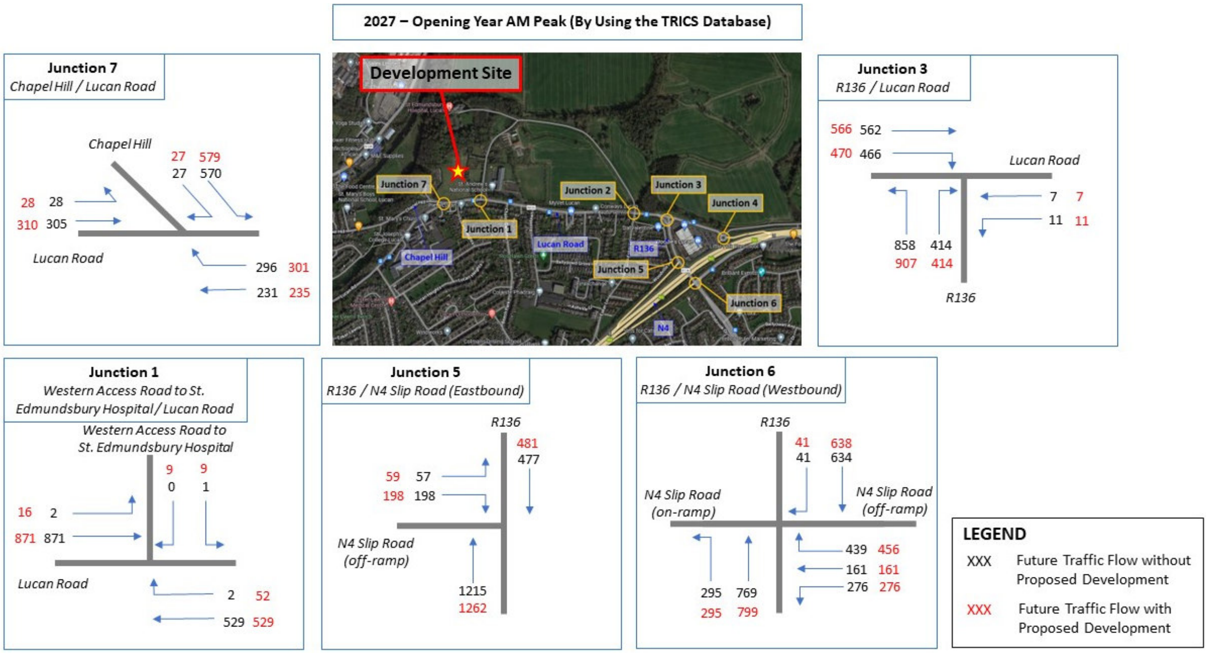

FIGURE 5.6 – 2027 OPENING YEAR TRAFFIC FLOWS IN THE MORNING PEAK HOUR (BY USING THE TRICS DATABASE)

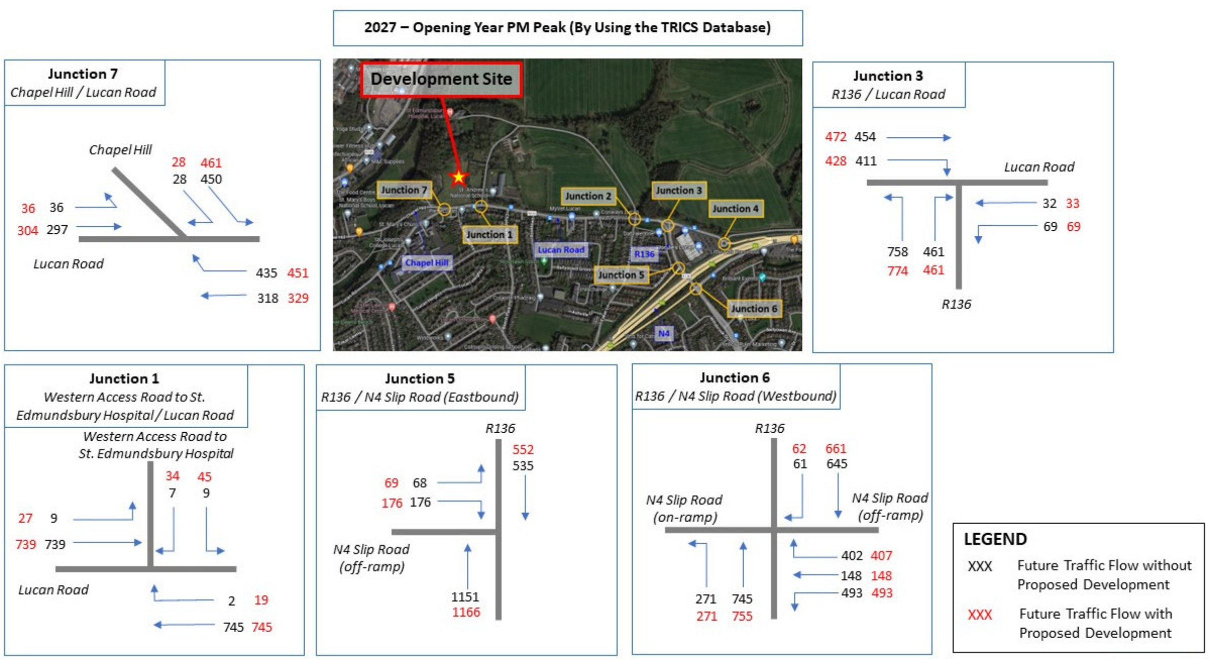

FIGURE 5.7 – 2027 OPENING YEAR TRAFFIC FLOWS IN THE EVENING PEAK HOUR (BY USING THE TRICS DATABASE)

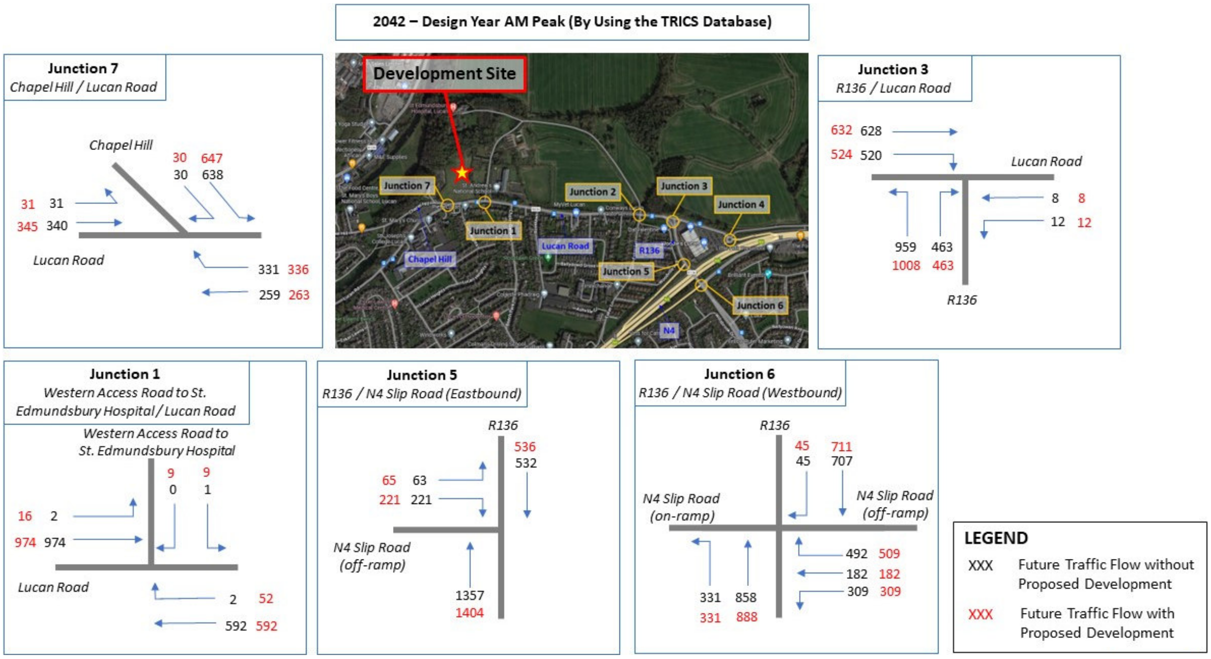

FIGURE 5.8 – 2042 DESIGN YEAR TRAFFIC FLOWS IN THE MORNING PEAK HOUR (BY USING THE TRICS DATABASE)

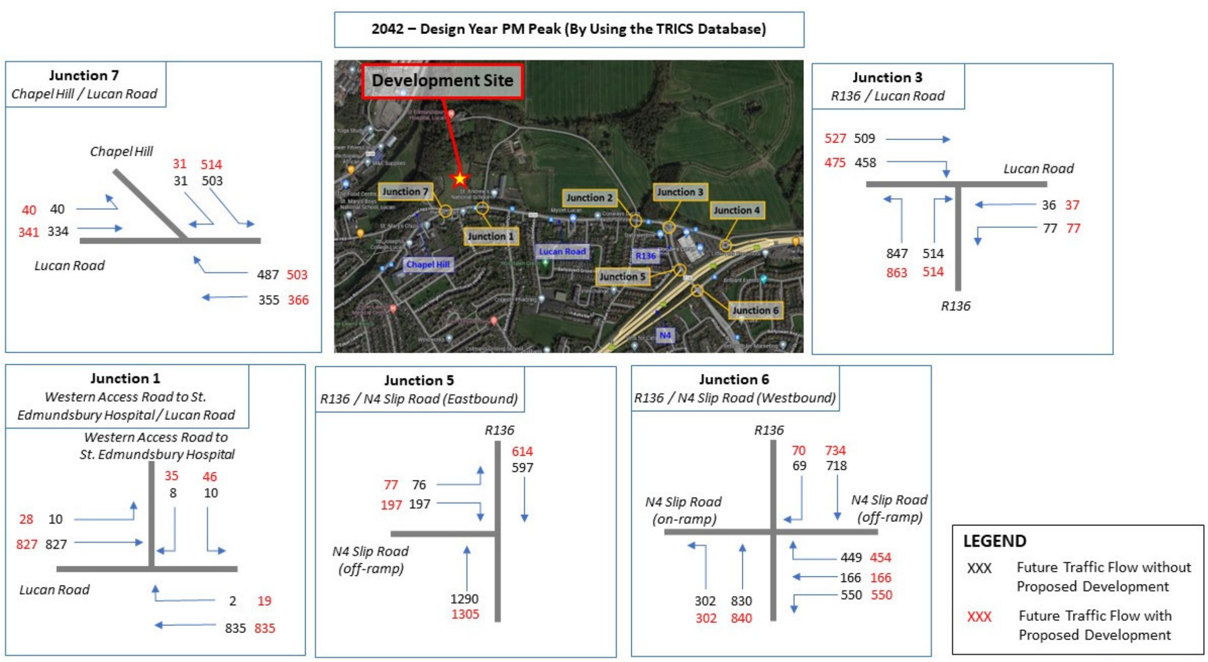

FIGURE 5.9 – 2042 DESIGN YEAR TRAFFIC FLOWS IN THE EVENING PEAK HOUR (BY USING THE TRICS DATABASE)

6 TRAFFIC IMPACT (BY USING THE TRICS DATABASE)

6.1 Background

To assess the current performance of the junctions under consideration and traffic impacts due to the proposed development, capacity assessments were undertaken using TRL's PICADY and OSCADY software on the following junctions:

Junction 1 - Western Access Road to St. Edmundsbury Hospital / Lucan Road (PICADY);
Junction 3 - R136 / Lucan Road (OSCADY);
Junction 5 - R136 / N4 Slip Road (eastbound) (OSCADY);
Junction 6 - R136 / N4 Slip Road (westbound) (OSCADY); and
Junction 7 - Chapel Hill / Lucan Road (OSCADY).

The junctions were modelled for the 2023 Baseline Year, 2027 Opening Year and 2042 Design Year Horizon for the morning and evening peak hours using the flow diagrams as shown in **Figure 5.4** to **Figure 5.9** in the previous section herein. Each junction was modelling using their own peak times as outlined in **Table 3.1**.

To demonstrate the direct traffic impact associated with the proposed development, the traffic modelling exercise was carried out for the "without" development and "with" development scenarios.

6.2 Junction Capacity Analysis for 2023 Baseline Year

A traffic capacity assessment of the Junction 1, Junction 3 and Junction 5 to Junction 7 were undertaken utilising the surveyed results as shown in **Figure 5.4** and **Figure 5.5**, and TRL's PICADY and OSCADY traffic modelling software. A summary of the results of junction capacity analysis for the 2023 Baseline Year during the morning and evening peak hours is shown in **Table 6.1** to **Table 6.5** following.

The criteria utilised for the assessment of priority junction capacity is Ratio of Flow to Capacity (RFC) while the criteria utilised for the assessment of signalised junction capacity is Degree of Saturation (DOS). The RFC and DOS provide a basis for judging the acceptability of junction designs. Typically, a RFC of less than 0.85 normal design threshold for priority junction, and a DOS of less than 0.9 normal design threshold for signalised junction are considered to indicate satisfactory performance.

Junction 1 – Western Access Road to St. Edmundsbury Hospital / Lucan Road

TABLE 6.1 – 2023 BASELINE YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 1

Approach Arm	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
	AM	PM	AM	PM	AM	PM
Lucan Road West	-	-	-	-	-	-
Western Access Road to St. Edmundsbury Hospital	0	0.05	0	0	0	11
Lucan Road East	0	0	0	0	8	7

The normal design threshold for the ratio of flow to capacity (RFC) is 0.85 for a priority junction. The results shown in **Table 6.1** demonstrate that Junction 1 is currently operating within the normal design threshold in both the morning and evening peak hours in 2023 baseline scenario.

Junction 3 – R136 / Lucan Road

TABLE 6.2 – 2023 BASELINE YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 3

Approach Arm	Max. DOS		Max. Queue (PCU)	
	AM*	PM*	AM*	PM*
Lucan Road East	0.07	0.39	1	3
R136	0.97	0.91	25	30
Lucan Road West	1.09	1.05	65	46

*Note: * For the AM and PM peak hours, the queue length from the downstream is extending to Junction 3 and stopping the traffic travelling from R136 to Lucan Road westbound occasionally when the traffic light is green / flashing amber. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 6.2** demonstrate that R136 arm and Lucan Road West arm on this junction are operating over the normal design threshold in both the morning and evening peak hours in 2023 baseline scenario, resulting in substantial queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues/ delays.

Junction 5 – R136 / N4 Slip Road (Eastbound)

TABLE 6.3 – 2023 BASELINE YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 5

Approach Arm	Max. DOS		Max. Queue (PCU)	
	AM*	PM*	AM*	PM*
R136 South	0.91	0.91	17	18
N4 Slip Road (off-ramp)	0.88	0.78	10	8
R136 North	0.32	0.38	5	6

*Note: * For the AM and PM peak hours, the queue lengths from the downstream junctions (i.e. Junction 3 and Junction 6) are extending to Junction 5 and stopping the traffic travelling to R136 southward / northward occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 6.3** demonstrate that R136 South arm on this junction is operating slightly over the normal design threshold in both the morning and evening peak hours in 2023 baseline scenario, resulting in queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues/ delays.

Junction 6 – R136 / N4 Slip Road (Westbound)

TABLE 6.4 – 2023 BASELINE YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 6

Approach Arm	Max. DOS		Max. Queue (PCU)	
	AM*	PM*	AM*	PM*
R136 North	0.63	0.64	11	12
N4 Slip Road (off-ramp)	0.83	0.93	21	29
R136 South	0.95	0.92	27	24
N4 Slip Road (on-ramp)	-	-	-	-

*Note: * For the AM and PM peak hours, the queue lengths from the downstream junctions (i.e. Junction 5) are extending to Junction 6 and stopping the traffic travelling to R136 southward / northward occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 6.4** demonstrate that R136 South arm on this junction in the morning peak hour, and N4 Slip

Road (off-ramp) arm and R136 South arm on this junction in the evening peak hour are operating slightly over the normal design threshold in 2023 baseline scenario, resulting in queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues/ delays.

Junction 7 – Chapel Hill / Lucan Road

TABLE 6.5 – 2023 BASELINE YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 7

Approach Arm	Max. DOS		Max. Queue (PCU)	
	AM*	PM**	AM*	PM**
Lucan Road West	0.64	0.59	9	8
Chapel Hill	1.01	1.20	29	58
Lucan Road East	0.95	1.36	22	155

*Note: * For the AM peak hour, the queue length from the downstream junction (i.e. Junction 2) is extending to Junction 7 and stopping the traffic moving eastward from Lucan Road West arm / Chapel Hill arm to Lucan Road East arm occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

*** For the PM peak hour, the queue length from the downstream junction (Chapel Hill / Main Street / R109 Junction) is extending to Junction 7 and stopping the traffic moving westward from Lucan Road East arm / Lucan Road West arm to Chapel Hill arm occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 6.5** demonstrate that Chapel Hill arm and Lucan Road East arm on this junction are operating over the normal design threshold in both the morning and evening peak hours in 2023 baseline scenario, resulting in substantial queues and delays for motorists. **Table 6.5** also indicates that in the evening peak hour, the queue length[2] at Lucan Road East arm on this junction is extending to the Junction 3 – R136 / Lucan Road. This analysis concurs with observation made on site. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues/ delays.

6.3 Operational Phase 2027 Opening Year – Junction Capacity Analysis (By Using the TRICS Database)

A traffic capacity of the Junction 1, Junction 3 and Junction 5 to Junction 7 were undertaken utilising the future traffic flows as shown in **Figure 5.6** and **Figure 5.7**, and TRL's PICADY and OSCADY traffic modelling software. A summary of the results of the analysis for the 2027 year of opening, "without" development and **"**with**"** development scenarios by using the TRICS database, in the morning and evening peak hours is shown in **Table 6.6** and **Table 6.10** following.

[2] Assuming that a vehicle length of pcu is 5.5 metres.

Junction 1 – Western Access Road to St. Edmundsbury Hospital / Lucan Road

TABLE 6.6 – 2027 OPENING YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 1 (BY USING THE TRICS DATABASE)

Approach Arm	Scenario	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
		AM	PM	AM	PM	AM	PM
Lucan Road West	Without Development	-	-	-	-	-	-
	With Development	-	-	-	-	-	-
Western Access Road to St. Edmundsbury Hospital	Without Development	0	0.05	0	0	0	11
	With Development	0.07	0.26	0	0	13	15
Lucan Road East	Without Development	0	0	0	0	8	7
	With Development	0.13	0.04	0	0	9	8

The normal design threshold for the ratio of flow to capacity (RFC) is 0.85 for a priority junction. The results shown in **Table 6.6** demonstrate that Junction 1 will operate within the normal design threshold in both the morning and evening peak hours in 2027 for both the "without" development and "with" development scenarios.

Junction 3 – R136 / Lucan Road

TABLE 6.7 – 2027 OPENING YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 3 (BY USING THE TRICS DATABASE)

Approach Arm	Scenario	Max. DOS		Max. Queue (PCU)	
		AM*	PM*	AM*	PM*
Lucan Road East	Without Development	0.08	0.41	1	3
	With Development	0.08	0.42	1	3
R136	Without Development	1.04	0.97	34	38
	With Development	1.04	1.01	34	46
Lucan Road West	Without Development	1.16	1.12	101	73
	With Development	1.17	1.15	106	85

Note: * *For the AM and PM peak hours, it is anticipated that the queue length from the downstream will extend to Junction 3 and stop the traffic travelling from R136 to Lucan Road westbound occasionally when the traffic light is green / flashing amber. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 6.7** demonstrate the R136 arm and Lucan Road West arm on this junction will exceed the normal design threshold in both the morning and evening peak hours in 2027 for both the "without" development and "with" development scenarios, resulting in substantial queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues / delays.

Additionally, **Table 5.3** and **Table 5.4** show that the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 baseline year in the morning and evening peak hours for this junction are 2.6% and 2.5% respectively, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. Additionally, shift working pattern will be implemented by the new hospital in order to reduce the trip generation in the morning and evening peak hours. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on this junction so traffic from the proposed development will not have significant impact on this junction.

Junction 5 – R136 / N4 Slip Road (Eastbound)

TABLE 6.8 – 2027 OPENING YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 5 (BY USING THE TRICS DATABASE)

Approach Arm	Scenario	Max. DOS		Max. Queue (PCU)	
		AM*	PM*	AM*	PM*
R136 South	Without Development	0.97	0.98	24	26
	With Development	0.99	0.99	31	29
N4 Slip Road (off-ramp)	Without Development	0.94	0.83	13	10
	With Development	0.94	0.83	13	10
R136 North	Without Development	0.34	0.41	5	7
	With Development	0.34	0.42	5	7

*Note: * For the AM and PM peak hours, it is anticipated that the queue lengths from the downstream junctions (i.e. Junction 3 and Junction 6) will extend to Junction 5 and stop the traffic travelling to R136 southward / northward occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 6.8** demonstrate the R136 South arm and N4 Slip Road (off-ramp) arm on this junction in the morning peak hour, and R136 South arm on this junction in the evening peak hour will slightly exceed the normal design threshold in 2027 for both the "without" development and "with" development scenarios, resulting in queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues / delays.

Additionally, **Table 5.3** and **Table 5.4** show that the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 baseline year in the morning and evening peak hours for this junction are 2.9% and 1.8% respectively, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. Additionally, shift working pattern will be implemented by the new hospital in order to reduce the trip generation in the morning and evening peak hours. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on this junction so traffic from the proposed development will not have significant impact on this junction.

Junction 6 – R136 / N4 Slip Road (Westbound)

TABLE 6.9 – 2027 OPENING YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 6 (BY USING THE TRICS DATABASE)

Approach Arm	Scenario	Max. DOS		Max. Queue (PCU)	
		AM*	PM*	AM*	PM*
R136 North	Without Development	0.67	0.68	12	13
	With Development	0.67	0.70	12	13
N4 Slip Road (off-ramp)	Without Development	0.89	1.00	24	38
	With Development	0.92	1.00	26	38
R136 South	Without Development	1.01	0.98	39	32
	With Development	1.05	0.99	51	34
N4 Slip Road (on-ramp)	Without Development	-	-	-	-
	With Development	-	-	-	-

*Note: * For the AM and PM peak hours, it is anticipated that the queue lengths from the downstream junctions (i.e. Junction 5) will extend to Junction 6 and stop the traffic travelling to R136 southward / northward occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 6.9** demonstrate the N4 Slip Road (off-ramp) arm and R136 South arm on this junction will approach to / exceed the normal design threshold in both the morning and evening peak hours in 2027 for both the "without" development and "with" development scenarios, resulting in queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues / delays.

Additionally, **Table 5.3** and **Table 5.4** show that the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 baseline year in the morning and evening peak hours for this junction are 2.1% and 1.2% respectively, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. Additionally, shift working pattern will be implemented by the new hospital in order to reduce the trip generation in the morning and evening peak hours. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on this junction so traffic from the proposed development will not have significant impact on this junction.

Junction 7 – Chapel Hill / Lucan Road

TABLE 6.10 – 2027 OPENING YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 7 (BY USING THE TRICS DATABASE)

Approach Arm	Scenario	Max. DOS		Max. Queue (PCU)	
		AM*	PM**	AM*	PM**
Without Proposed Improvement Scheme as mentioned in Section 4.2 in a "Without Allowing for Modal Shift" Approach as mentioned in Section 5.6					
Lucan Road West	Without Development	0.68	0.63	10	9
	With Development	0.69	0.65	10	9
Chapel Hill	Without Development	1.08	1.28	44	82
	With Development	1.09	1.32	49	93
Lucan Road East	Without Development	1.01	1.45	31	205
	With Development	1.03	1.50	34	239
With Proposed Improvement Scheme as mentioned in Section 4.2 in a "Without Allowing for Modal Shift" Approach as mentioned in Section 5.6					
Lucan Road West	With Development	0.93	0.98	16	19
Chapel Hill	With Development	0.95	0.99	22	24
Lucan Road East	With Development	0.60	1.04	13	49
With Proposed Improvement Scheme as mentioned in Section 4.2 in a "Allowing for Modal Shift" Approach as mentioned in Section 5.6					
Lucan Road West	With Development	0.91	0.97	14	18
Chapel Hill	With Development	0.94	0.92	20	18
Lucan Road East	With Development	0.59	0.99	13	34

*Note: * For the AM peak hour, it is anticipated that the queue length from the downstream junction (i.e. Junction 2) will extend to Junction 7 and stop the traffic moving eastward from Lucan Road West arm / Chapel Hill arm to Lucan Road East arm occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

*** For the PM peak hour, it is anticipated that the queue length from the downstream junction (Chapel Hill / Main Street / R109 Junction) will extend to Junction 7 and stop the traffic moving westward from Lucan Road East arm / Lucan Road West arm to Chapel Hill arm occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 6.10** demonstrate that based on the existing junction layout in a "without allowing for modal shift" approach as mentioned in Section 5.6, the Chapel Hill arm and Lucan Road East arm on this junction will exceed the normal design threshold in both the morning and evening peak hours in 2027 for both the "without" development and "with" development scenarios, resulting in substantial queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues / delays.

Additionally, **Table 5.3** and **Table 5.4** show that the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 baseline year in the morning and evening peak hours for this junction are 1.7% and 3.1% respectively, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. Additionally, shift working pattern will be implemented by the new hospital in order to reduce the trip generation in the morning and evening peak hours. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on this junction so traffic from the proposed development will not have significant impact on this junction.

To relieve the traffic congestion and enhance the safety of vulnerable road users at this junction, it is proposed to carry out the improvement works as mentioned in Section 4.2. The results shown in **Table 6.10** demonstrate that with the proposed improvement scheme in a "without allowing for modal shift" approach as mentioned in Section 5.6, Junction 7 will exceed the normal design threshold in both the morning and evening peak hours in 2027 for the "with" development scenario. However, with the proposed improvement scheme in a "allowing for modal shift" approach as mentioned in Section 5.6, Junction 7 will slightly exceed the normal design threshold (but still less than its theoretical capacity of 1.0) in both the morning and evening peak hours in 2027 for the "with" development scenario. Additionally, the proposed improvement scheme can reduce the highest DOS for AM on Chapel Hill arm from 1.09 to 0.94 and PM on Lucan Road East arm from 1.50 to 0.99. Therefore, it is considered that the proposed improvement scheme can relieve the traffic congestion when compared to the "with" development scenario (based on the existing junction layout).

6.4 Operational Phase 2042 (Opening Year plus 15 Years) – Junction Capacity Analysis (By Using the TRICS Database)

A traffic capacity assessment of the Junction 1, Junction 3 and Junction 5 to Junction 7 were undertaken utilising the future traffic flows as shown in **Figure 5.8** and **Figure 5.9**, and TRL's PICADY and OSCADY traffic modelling software. A summary of the results of the analysis for the 2042 design year (opening year plus 15 years), "without" development and "with" development scenarios by using the TRICS database, in the morning and evening peak hours is shown in **Table 6.11** and **Table 6.15** following.

Junction 1 – Western Access Road to St. Edmundsbury Hospital / Lucan Road

TABLE 6.11 – 2042 DESIGN YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 1 (BY USING THE TRICS DATABASE)

Approach Arm	Scenario	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
		AM	PM	AM	PM	AM	PM
Lucan Road West	Without Development	-	-	-	-	-	-
	With Development	-	-	-	-	-	-
Western Access Road to St. Edmundsbury Hospital	Without Development	0	0.07	0	0	0	13
	With Development	0.08	0.31	0	0	15	18
Lucan Road East	Without Development	0.01	0	0	0	8	8
	With Development	0.14	0.05	0	0	10	8

The normal design threshold for the ratio of flow to capacity (RFC) is 0.85 for a priority junction. The results shown in **Table 6.15** demonstrate that Junction 1 will operate within the normal design threshold in both the morning and evening peak hours in 2042 for both the "without" development and "with" development scenarios.

Junction 3 – R136 / Lucan Road

TABLE 6.12 – 2042 DESIGN YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 3 (BY USING THE TRICS DATABASE)

Approach Arm	Scenario	Max. DOS		Max. Queue (PCU)	
		AM*	PM*	AM*	PM*
Lucan Road East	Without Development	0.09	0.46	1	4
	With Development	0.09	0.46	1	4
R136	Without Development	1.16	1.08	60	81
	With Development	1.16	1.10	61	89
Lucan Road West	Without Development	1.30	1.26	194	142
	With Development	1.31	1.28	202	160

*Note: * For the AM and PM peak hours, it is anticipated that the queue length from the downstream will extend to Junction 3 and stop the traffic travelling from R136 to Lucan Road westbound occasionally when the traffic light is green / flashing amber. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 6.12** demonstrate that the R136 arm and Lucan Road West arm on this junction will exceed the normal design threshold in both the morning and evening peak hours in 2042 for both the "without" development and "with" development scenarios, resulting in substantial queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues/ delays.

Additionally, **Table 5.3** and **Table 5.4** that the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 baseline year in the morning and evening peak hours for this junction are 2.6% and 2.5% respectively, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. Additionally, shift working pattern will be implemented by the new hospital in order to reduce the trip generation in the morning and evening peak hours. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on this junction so traffic from the proposed development will not have significant impact on this junction.

Junction 5 – R136 / N4 Slip Road (Eastbound)

TABLE 6.13 – 2042 DESIGN YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 5 (BY USING THE TRICS DATABASE)

Approach Arm	Scenario	Max. DOS		Max. Queue (PCU)	
		AM*	PM*	AM*	PM*
R136 South	Without Development	1.07	1.09	66	77
	With Development	1.11	1.11	90	85
N4 Slip Road (off-ramp)	Without Development	1.05	0.93	20	13
	With Development	1.05	0.93	20	13
R136 North	Without Development	0.38	0.45	6	8
	With Development	0.38	0.47	6	8

*Note: * For the AM and PM peak hours, it is anticipated that the queue lengths from the downstream junctions (i.e. Junction 3 and Junction 6) will extend to Junction 5 and stop the traffic travelling to R136 southward / northward occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 6.13** demonstrate that the R136 South arm and N4 Slip Road (off-ramp) arm on this junction will exceed the normal design threshold in both the morning and evening peak hours in 2042 for both the "without" development and "with" development scenarios, resulting in substantial queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues/ delays.

Additionally, **Table 5.3** and **Table 5.4** that the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 baseline year in the morning and evening peak hours for this junction are 2.9% and 1.8% respectively, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. Additionally, shift working pattern will be implemented by the new hospital in order to reduce the trip generation in the morning and evening peak hours. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on this junction so traffic from the proposed development will not have significant impact on this junction.

Junction 6 – R136 / N4 Slip Road (Westbound)

TABLE 6.14 – 2042 DESIGN YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 6 (BY USING THE TRICS DATABASE)

Approach Arm	Scenario	Max. DOS		Max. Queue (PCU)	
		AM*	PM*	AM*	PM*
R136 North	Without Development	0.75	0.76	14	15
	With Development	0.75	0.78	14	16
N4 Slip Road (off-ramp)	Without Development	0.99	1.11	34	66
	With Development	1.03	1.11	40	67
R136 South	Without Development	1.13	1.09	82	66
	With Development	1.17	1.10	100	72
N4 Slip Road (on-ramp)	Without Development	-	-	-	-
	With Development	-	-	-	-

*Note: * For the AM and PM peak hours, it is anticipated that the queue lengths from the downstream junctions (i.e. Junction 5) will extend to Junction 6 and stop the traffic travelling to R136 southward / northward occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 6.14** demonstrate that the N4 Slip Road (off-ramp) arm and R136 South arm on this junction will exceed the normal design threshold in both the morning and evening peak hours in 2042 for both the "without" development and "with" development scenarios, resulting in substantial queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues/ delays.

Additionally, **Table 5.3** and **Table 5.4** that the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 baseline year in the morning and evening peak hours for this junction are 2.1% and 1.2% respectively, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. Additionally, shift working pattern will be implemented by the new hospital in order to reduce the trip generation in the morning and evening peak hours. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on this junction so traffic from the proposed development will not have significant impact on this junction.

Junction 7 – Chapel Hill / Lucan Road

TABLE 6.15 – 2042 DESIGN YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 7 (BY USING THE TRICS DATABASE)

Approach Arm	Scenario	Max. DOS		Max. Queue (PCU)	
		AM*	PM**	AM*	PM**
Without Proposed Improvement Scheme as mentioned in Section 4.2 in a "Without Allowing for Modal Shift" Approach as mentioned in Section 5.6					
Lucan Road West	Without Development	0.76	0.71	11	11
	With Development	0.77	0.72	12	11
Chapel Hill	Without Development	<u>1.21</u>	<u>1.43</u>	83	136
	With Development	<u>1.22</u>	<u>1.47</u>	89	148
Lucan Road East	Without Development	<u>1.13</u>	<u>1.62</u>	60	321
	With Development	<u>1.15</u>	<u>1.67</u>	65	357
With Proposed Improvement Scheme as mentioned in Section 4.2 in a "Without Allowing for Modal Shift" Approach as mentioned in Section 5.6					
Lucan Road West	With Development	<u>1.04</u>	<u>1.10</u>	27	36
Chapel Hill	With Development	<u>1.07</u>	<u>1.10</u>	45	47
Lucan Road East	With Development	0.67	<u>1.16</u>	15	96
With Proposed Improvement Scheme as mentioned in Section 4.2 in a "Allowing for Modal Shift" Approach as mentioned in Section 5.6					
Lucan Road West	With Development	<u>0.95</u>	<u>0.97</u>	17	18
Chapel Hill	With Development	<u>0.95</u>	<u>0.91</u>	22	17
Lucan Road East	With Development	0.60	<u>0.99</u>	13	35

*Note: * For the AM peak hour, it is anticipated that the queue length from the downstream junction (i.e. Junction 2) will extend to Junction 7 and stop the traffic moving eastward from Lucan Road West arm / Chapel Hill arm to Lucan Road East arm occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

*** For the PM peak hour, it is anticipated that the queue length from the downstream junction (Chapel Hill / Main Street / R109 Junction) will extend to Junction 7 and stop the traffic moving westward from Lucan Road East arm / Lucan Road West arm to Chapel Hill arm occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 6.15** demonstrate that based on the existing junction layout in a "without allowing for modal shift" approach as mentioned in Section 5.6, the Chapel Hill arm and Lucan Road East arm on this junction will <u>exceed the normal design threshold</u> in both the morning and evening peak hours in 2042 for both the "without" development and "with" development scenarios, resulting in substantial queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues/ delays.

Additionally, **Table 5.3** and **Table 5.4** that the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 baseline year in the morning and evening peak hours for this junction are 1.7% and 3.1% respectively, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. Additionally, shift working pattern will be implemented by the new hospital in order to reduce the trip generation in the morning and evening peak hours. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on this junction so traffic from the proposed development will not have significant impact on this junction.

To relieve the traffic congestion and enhance the safety of vulnerable road users at this junction, it is proposed to carry out the improvement works as mentioned in Section 4.2. The results shown in **Table 6.15** demonstrate that with the proposed improvement scheme in a "without allowing for modal shift" approach as mentioned in Section 5.6, Junction 7 will exceed the normal design threshold in both the morning and evening peak hours in 2042 for the "with" development scenario. However, with the proposed improvement scheme in a "allowing for modal shift" approach as mentioned in Section 5.6, Junction 7 will slightly exceed the normal design threshold (but still less than its theoretical capacity of 1.0) in both the morning and evening peak hours in 2042 for the "with" development scenario. Additionally, the proposed improvement scheme can reduce the highest DOS for AM on Chapel Hill arm from 1.22 to 0.95 and PM on Lucan Road East arm from 1.67 to 0.99. Therefore, it is considered that the proposed improvement scheme can relieve the traffic congestion when compared to the "with" development scenario (based on the existing junction layout).

6.5 Traffic Impacts During Construction

The duration of the construction phase and the resource level and trips associated with the construction stage will be decided by the Contractor in accordance with contractual restrictions and may fluctuate depending on the sequence and type of work being carried out at any one time.

During construction, trucks and vans will be delivering materials to the site on a daily basis. It is estimated that the arrivals of deliveries to the site are expected to be evenly spread throughout the day.

A Construction Stage Traffic Management Plan will be developed and agreed with South Dublin County Council prior to undertaking any construction works and full consultation with South Dublin County Council, An Garda Siochana, the Fire Service, the Ambulance service and other relevant same stakeholders will be carried out. All traffic management plans, including working times, shall be agreed with and approved by South Dublin County Council Transportation Department in advance of implementation. A Construction Manager shall be appointed to liaise directly with the various sections of the Council.

The construction management plan will take into account construction vehicle routing and timing to mitigate any issues with vehicles on public roads. The following provisions shall be provided to minimize the impacts to the public road network during Construction Stage:

- Tracked excavators will be moved to and from the site on low-loaders and will not be permitted to drive on the street pavements;
- Wheel washers / judder bars will be placed at all site access points to minimise the migration of detritus onto the public roads. The roads will be inspected and cleaned on a regular basis; and
- Haul vehicles will be covered after loading to ensure there is no risk of construction material falling.

7 TRIP GENERATION AND TRAFFIC IMPACT (BY USING THE TRAFFIC COUNT SURVEYS)

Apart from estimating the net trip generation for the proposed development based on the TRICS database as mentioned in Section 5.2, another two traffic count surveys at St. Patrick's University Hospital at Dublin 8 and at Junction 1 of Lucan (refer to **Figure 1.2**) were also undertaken on 2nd May 2024 and 21st May 2024 respectively for estimation of the net trip generation for the proposed development.

Based on the scope of proposed development, total trip generation for the proposed development is equal to the trip generated from the existing St. Edmundsbury Hospital at Lucan (i.e. 52 beds) plus the net trip generated for the proposed development (i.e. 162 net increase of beds). As the traffic count survey on 22nd February 2023 as mentioned in Section 3.1 can capture the trip generated from the existing St. Edmundsbury Hospital at Lucan (i.e. 52 beds), therefore, the net trip generation for the proposed development is equal to the trip generated from the net increase of beds (i.e. 162 beds) for the proposed development. The following sections present the net trip generation for the proposed development by using the traffic count survey at St. Patrick's University Hospital at Dublin 8 and traffic count surveys at Lucan.

7.1 Net Trip Generation (By Using the Traffic Count Survey at St. Patrick's University Hospital at Dublin 8 on 2nd May 2024)

7.1.1 Net Trip Generation (By Using the Traffic Count Survey at St. Patrick's University Hospital)

Currently, St. Patrick's University Hospital at Dublin 8 has two site entrances as shown in **Figure 7.1**. In order to estimate the net trip generation for the proposed development from St. Patrick's University Hospital, a traffic count survey at the site entrances of St. Patrick's University Hospital was undertaken on Thursday, 2nd May 2024.

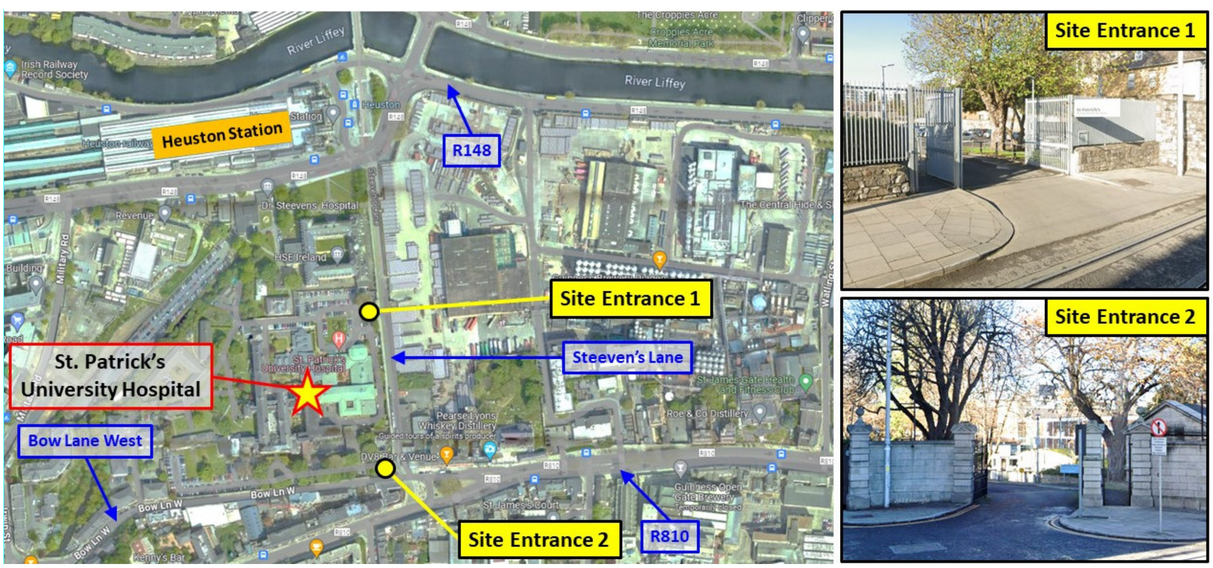

FIGURE 7.1 – EXISTING SITE ENTRANCES OF ST. PATRICK'S UNIVERSITY HOSPITAL AT DUBLIN 8

The count, which captured trips inbound and trips outbound of St. Patrick's University Hospital, was carried out over the 12-hour period from 07:00 hours to 19:00 hours and included both the morning and evening peak periods. Data was collected in 15-minute intervals. A full transcription of the traffic count survey at the site entrances of St. Patrick's University Hospital is included in **Appendix 4** herein.

According to the aforementioned traffic count survey, the highest total trips to/from St. Patrick's University Hospital between 07:00 and 10:00 was identified as 07:00-08:00 while the highest total trips to/from St. Patrick's University Hospital between 16:00 and 19:00 was identified as 16:00-17:00.

The existing St. Patrick's University Hospital at Dublin 8 consists of 265 beds to provide services to public while the existing St. Edmundsbury Hospital at Lucan consists of 52 beds to provide services to public. After completion of the proposed development, the new hospital will increase from the existing 52 beds to a total of 214 beds. Therefore, the net increase of beds is 162.

To ensure a more accurate and locally based assessment, the predicted net trips to/from the proposed development have been calculated by examining the highest total trips (between 07:00 and 10:00 and between 16:00 and 19:00) to/from the existing St. Patrick's University Hospital at Dublin 8 based on the traffic count survey on 2nd May 2024. In order to produce a robust and conservative scenario, a tolerance of 10% was added to the net hourly trips to account for daily fluctuations.

Additionally, as the public transport services adjacent to St. Patrick's University Hospital at Dublin 8 is better than the public transport services adjacent to the proposed development at Lucan, so it is anticipated that after completion of the proposed development, the actual trip generation at the Site for relocation of services / facilities from St. Patrick's University Hospital will increase slightly when compared to the traffic count survey obtained from St. Patrick's University Hospital on Thursday, 2nd May 2024. To take into account of different degree of public transport services provided between St. Patrick's University Hospital at Dublin 8 and the proposed development at Lucan, another 25% additional trips was added to the net hourly trips.

During the operational phase, only emergency vehicles and medium / heavy goods vehicles will be allowed to use the Eastern Vehicular Access (Junction 2). Thus, the estimated net trip generation for the proposed development, which is based on the OGV1, OGV2 and PSV recorded in the aforementioned traffic count survey, will travel to/from the proposed development via Eastern Vehicular Access (Junction 2). The remaining estimated net traffic, which is based on the P/C, M/C, Cars and LGV recorded in the aforementioned traffic count survey, will travel to/from the proposed development via Western Vehicular Access (Junction 1). In consideration of number of bed at the existing St. Patrick's University Hospital at Dublin 8 (i.e. 265 beds) and additional beds (i.e. 162 beds) for the proposed development, the adjusted net hourly trips (i.e. additional 162 beds) for the proposed development in the morning and evening peak hours was estimated as shown in **Table 7.1**.

TABLE 7.1 – NET TRIP GENERATION FOR THE PROPOSED DEVELOPMENT
(BY USING TRAFFIC COUNT SURVEY AT ST. PATRICK'S UNIVERSITY HOSPITAL AT DUBLIN 8 ON 2ND MAY 2024)

No. of Bed at Existing St. Patrick's University Hospital	Time	No. of Trips as per Traffic Count Survey at St. Patrick's University Hospital on 2nd May 2024				Adjusted Net Hourly Trips for Additional 162 Bed*			
						Junction 1		Junction 2	
		P/C, M/C, Car & LGV		OGV1, OGV2 & PSV		P/C, M/C, Car & LGV		OGV1, OGV2 & PSV	
		Trips In	Trips Out	Trips In	Trips Out	Trips In	Trips Out	Trips In	Trips Out
265	AM	69	23	0	2**	58	19	0	2**
	PM	8	47	0	2**	7	40	0	2**

*Note: * The adjusted net hourly trips for proposed development = [No. of Trips as per Traffic Count ÷ No. of Bed at Existing St. Patrick's University Hospital at Dublin 8 (i.e. 265 beds)] × Net increase of beds (i.e. 162) × (1+10%) × (1+25%).*

*** Based on the trip distributions proportionally to the 2023 recorded traffic flows, it is anticipated that all trips out for OGV1, OGV2 and PSV will travel to/from the Junction 3 via the Eastern Vehicular Access (Junction 2) in both the morning and evening peak hours.*

7.1.2 2024 Design Year Traffic Flows (By Using the Traffic Count Survey at St. Patrick's University Hospital at Dublin 8)

Based on the trip distribution approach as mentioned in Section 5.4 above, **Figure 7.2** and **Figure 7.3** illustrate the 2042 Design Year Horizon traffic flows in the morning and evening peak hours for the "without" development and "with" development scenarios by using the traffic count survey at St. Patrick's University Hospital at Dublin 8 on 2nd May 2024.

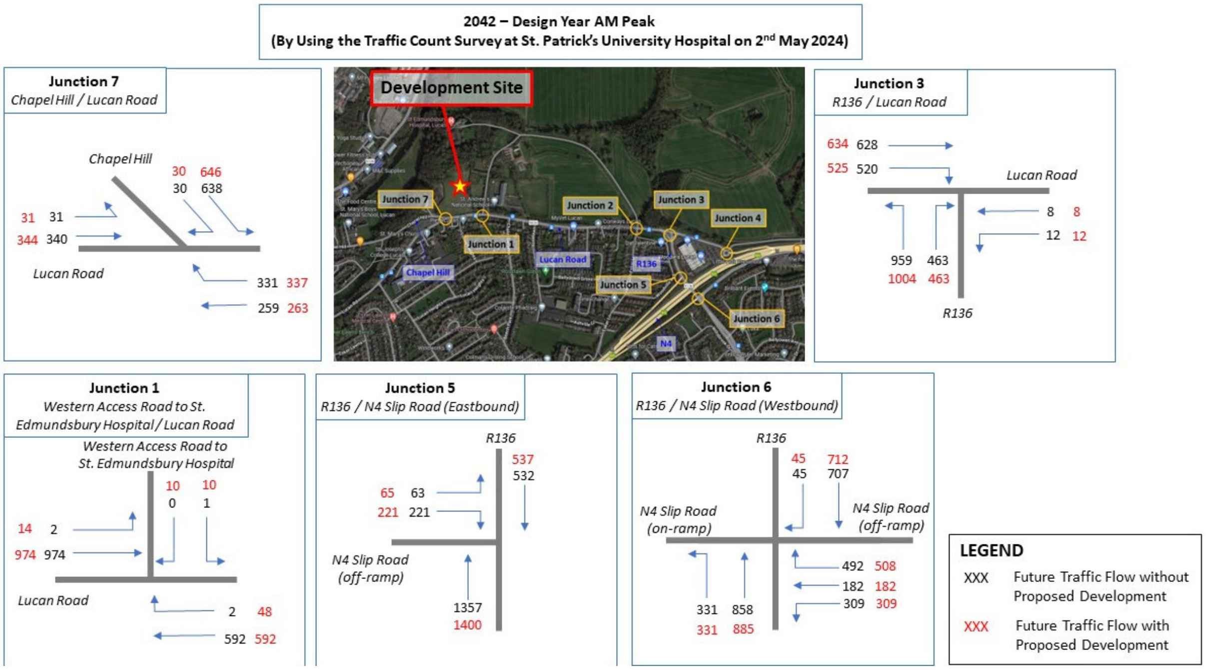

FIGURE 7.2 – 2042 DESIGN YEAR TRAFFIC FLOWS IN THE MORNING PEAK HOUR (BY USING THE TRAFFIC COUNT SURVEY AT ST. PATRICK'S UNIVERSITY HOSPITAL ON 2ND MAY 2024)

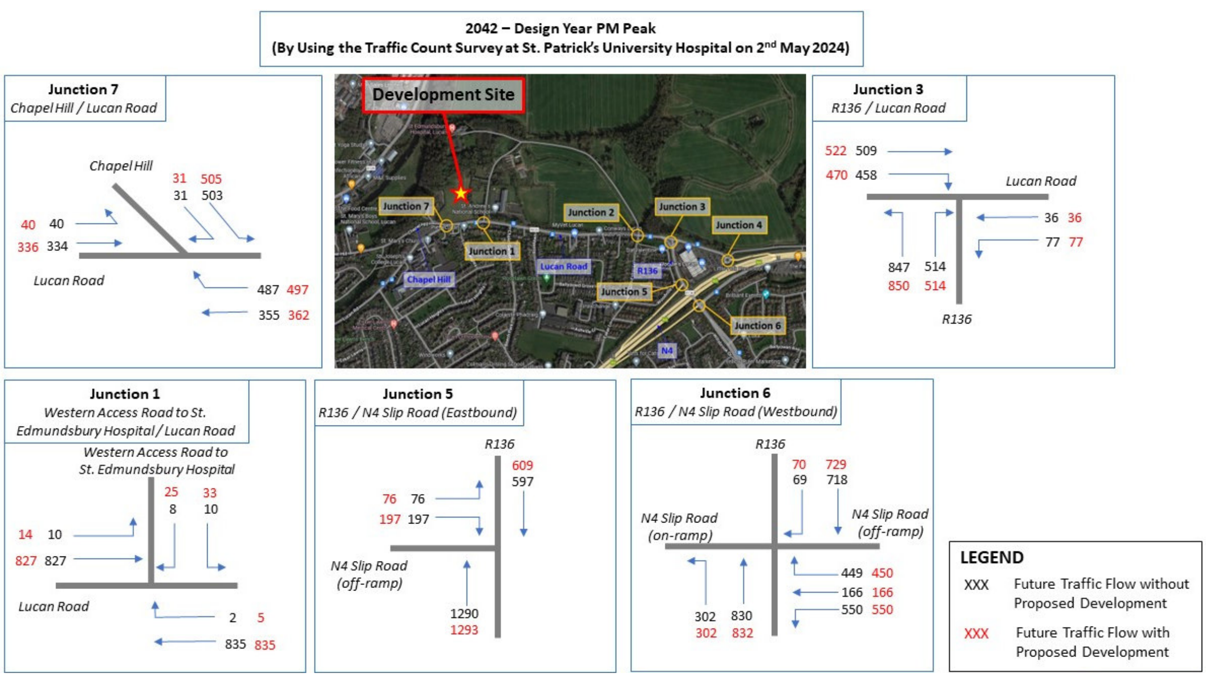

FIGURE 7.3 – 2042 DESIGN YEAR TRAFFIC FLOWS IN THE EVENING PEAK HOUR (BY USING THE TRAFFIC COUNT SURVEY AT ST. PATRICK'S UNIVERSITY HOSPITAL ON 2ND MAY 2024)

7.2 Net Trip Generation (By Using the Traffic Count Survey at Lucan)

7.2.1 Net Trip Generation (By Using the Traffic Count Survey at Lucan)

The existing St. Edmundsbury Hospital at Lucan consists of 52 beds to provide services to public. After completion of the proposed development, the new St. Edmundsbury Hospital will increase from the existing 52 beds to a total of 214 beds. Therefore, the net increase of beds is 162.

For estimation of the net trip generation for the proposed development, a traffic count survey at Junction 1 of Lucan (refer to **Figure 1.2**) was undertaken on Tuesday, 21st May 2024 as mentioned in Section 5.4.

The count was carried out over the 12-hour period from 07:00 hours to 19:00 hours and included both the morning and evening peak periods. Data was collected in 15-minute intervals. A full transcription of the traffic count survey at the Western Vehicular Access (Junction 1) is included in **Appendix 3** herein.

Currently, vehicles are travelling to/from the existing St. Edmundsbury Hospital through Junction 1 and Junction 2. Therefore, the total trips to/from the existing St. Edmundsbury Hospital, which is equal to the trips to/from the existing St. Edmundsbury Hospital through Junction 1 (based on the traffic count survey on 21st May 2024) plus the trips to/from the existing St. Edmundsbury Hospital through Junction 2 (based on the traffic count survey on 22nd February 2023), shall be considered.

Referring to the Section 5.4 above, the highest total trips to/from the existing St. Edmundsbury Hospital (through Junction 1 and Junction 2) between 07:00 and 10:00 was identified as 08:00-09:00 while the highest total trips to/from the existing St. Edmundsbury Hospital between 16:00 and 19:00 was identified as 18:00-19:00.

To ensure a more accurate and locally based assessment, the predicted net trips to/from the proposed development have been calculated by examining the highest total trips (for AM between 07:00 and 10:00 and for PM between 16:00 and 19:00) to/from the existing St. Edmundsbury Hospital based on the traffic count surveys at Junction 1 on 21st May 2024 and at Junction 2 on 22nd February 2023. In order to produce a robust and conservative scenario, a tolerance of 10% was added to the net hourly trips to account for daily fluctuations.

During the operational phase, only emergency vehicles and medium / heavy goods vehicles will be allowed to use the Eastern Vehicular Access (Junction 2). However, no OGV1, OGV2 and PSV were recorded in the aforementioned traffic count surveys at Lucan during the identified morning and evening periods. Therefore, all estimated net traffic, which is based on the P/C, M/C, Cars and LGV recorded in the aforementioned traffic count surveys at Lucan, will travel to/from the proposed development via Western Vehicular Access (Junction 1). In consideration of the number of bed at the existing St. Edmundsbury Hospital at Lucan (i.e. 52 beds) and additional beds (i.e. 162 beds) for the proposed development, the adjusted net hourly trips (i.e. additional 162 beds) for the proposed development in the morning and evening peak hours during the operational phase was estimated as shown in **Table 7.2**.

TABLE 7.2 – NET TRIP GENERATION FOR THE PROPOSED DEVELOPMENT (BY USING THE TRAFFIC COUNT SURVEYS AT LUCAN)

No. of Bed at Existing St. Edmundsbury Hospital	Time	No. of Total Trips as per Traffic Count Surveys at Junction 1 on 21st May 2024 and at Junction 2 on 22nd February 2023				Adjusted Net Hourly Trips for Additional 162 Bed*			
						Junction 1		Junction 2	
		P/C, M/C, Car & LGV		OGV1, OGV2 & PSV		P/C, M/C, Car & LGV		OGV1, OGV2 & PSV	
		Trips In	Trips Out	Trips In	Trips Out	Trips In	Trips Out	Trips In	Trips Out
52	AM	14	8	0	0	48	27	0	0
	PM	6	7	0	0	21	24	0	0

*Note: * The adjusted net hourly trips for proposed development = [No. of Trips as per Traffic Count ÷ No. of Bed at Existing St. Edmundsbury Hospital at Lucan (i.e. 52 beds)] × Net increase of beds (i.e. 162) × (1+10%).*

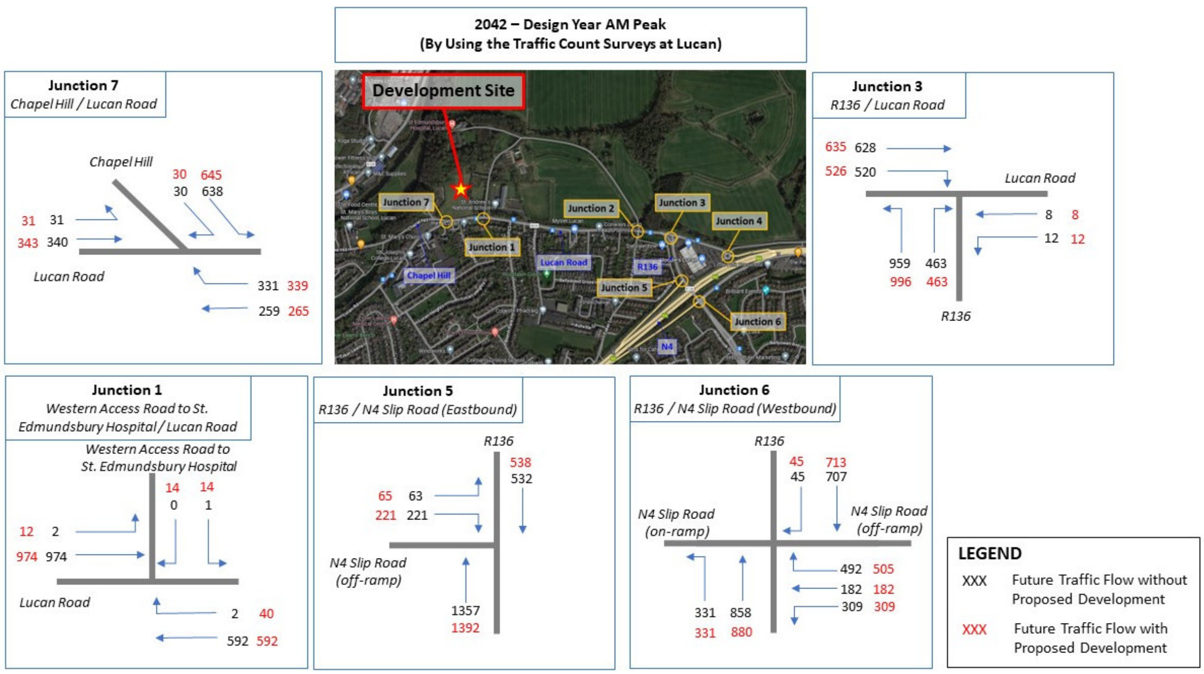

FIGURE 7.4 – 2042 DESIGN YEAR TRAFFIC FLOWS IN THE MORNING PEAK HOUR (BY USING THE TRAFFIC COUNT SURVEYS AT LUCAN)

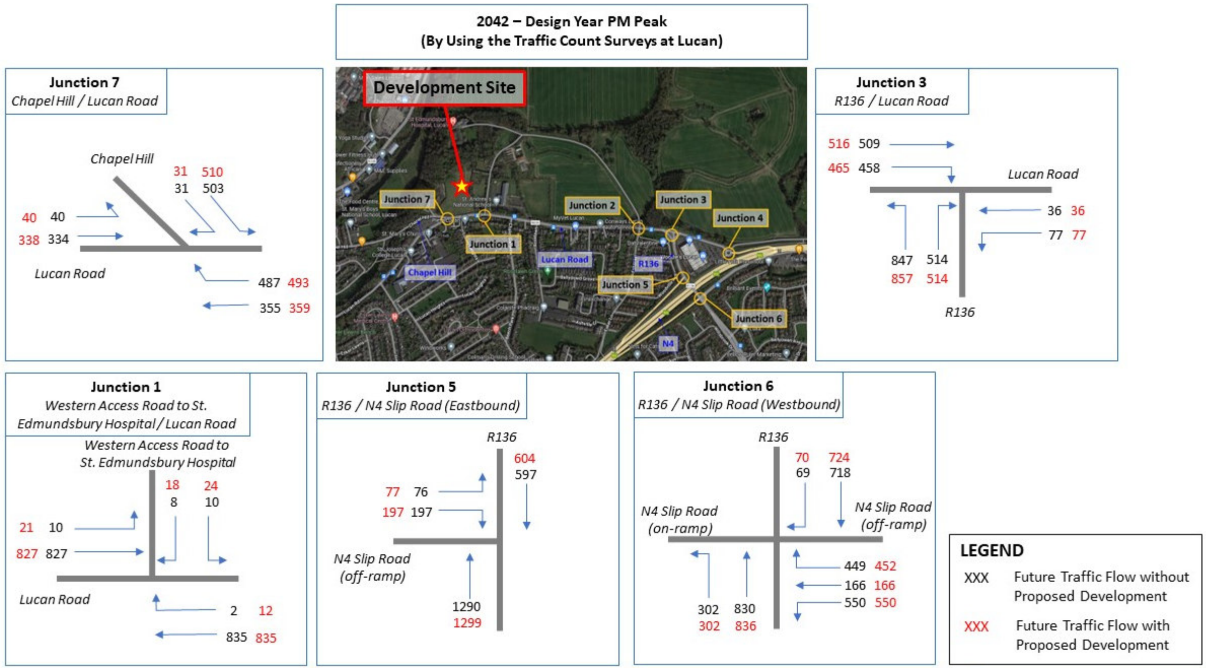

FIGURE 7.5 – 2042 DESIGN YEAR TRAFFIC FLOWS IN THE EVENING PEAK HOUR (BY USING THE TRAFFIC COUNT SURVEYS AT LUCAN)

7.3 Comparison

7.3.1 Comparison of Net Trip Generation for the Proposed Development

In view of the above, three methods (i.e. using the TRICS Database, traffic count survey at St. Patrick's University Hospital and traffic count surveys at Lucan) were considered to estimate the net trip generation for the proposed development. **Table 7.3** summarizes the net trip generation for the proposed development based on the aforementioned methods.

TABLE 7.3 – COMPARISON OF NET HOURLY TRIPS FOR THE PROPOSED DEVELOPMENT BASED ON DIFFERENT METHODS

Method for Estimation of Net Trip Generation for the Proposed Development	Period	Net Hourly Trips for the Proposed Development		
		Trips In	Trips Out	Total Trips
By using the TRICS Database	AM	64	17	81
	PM	35	63	98
By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	AM	58	21*	79
	PM	7	42*	49
By using the traffic count surveys at Lucan	AM	48	27	75
	PM	21	24	45

*Note: * By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024 for estimation of net trip generation for the proposed development, it is anticipated that 2 PCUs of total trips-out will travel from the Site to Junction 3 via the Eastern Vehicular Access (Junction 2) in both the morning and evening peak hours while the remaining trips-out (i.e. 19 trips-out in the morning peak hour and 40 trips-out in the evening peak hour) will travel from the Site via the Western Vehicular Access (Junction 1). For other scenarios, all net trips-in or trips-out for the proposed development will travel to/from the Site via the Western Vehicular Access (Junction 1) only in both the morning and evening peak hours.*

Table 7.3 demonstrates that the total net trip generation for the proposed development by using the TRICS database is greater than the total net trip generation by using the traffic count survey at St. Patrick's University Hospital at Dublin 8 or traffic count surveys at Lucan. It is because generally, the TRICS database provides an average data to calculate the trip generation for developments. However, using the traffic count survey at St.

Patrick's University Hospital at Dublin 8 or traffic count surveys at Lucan can provide a more accurate, specific and locally based assessment. It should be also noted that the total net trip generation for the proposed development by using the traffic count survey at St. Patrick University Hospital and traffic count surveys at Lucan are similar. **Table 7.3** also revealed that with implementation of the current measures (i.e. shift working pattern, etc.) in the Workplace Travel Plan for both St. Patrick's University Hospital at Dublin 8 and the existing St. Edmundsbury Hospital at Lucan, it can effectively reduce the net trip generation in the morning and evening peak hours when compared to the net trip generation by using the TRICS database.

7.3.2 Comparison of Net Trip Generation as a Percentage of Existing Traffic

Based on the trip distribution approach as mentioned in Section 5.4 above, the result of the trip distribution and assignment exercise by using the TRICS database, traffic count survey at St. Patrick's University Hospital on 2nd May 2024 and traffic count surveys at Lucan is presented in **Table 7.4**.

TABLE 7.4 – COMPARISON OF DEVELOPMENT AM AND PM PEAK HOURS NET TRIP GENERATION AS A PERCENTAGE OF EXISTING ROAD NETWORK TRAFFIC FLOW

Junction	Peak Hour	Junction AM Peak Traffic	TRICS Database		Traffic Count Survey at St. Patrick's University Hospital		Traffic Count Surveys at Lucan	
			Development Net Generated Traffic	%	Development Net Generated Traffic	%	Development Net Generated Traffic	%
Junction 1 – Western Access Road to St. Edmundsbury Hospital / Lucan Road	AM	1,316	81	**6.2%**	77	**5.9%**	75	**5.7%**
	PM	1,414	98	**6.9%**	47	3.3%	45	3.2%
Junction 2 – Eastern Access Road to St. Edmundsbury Hospital / Lucan Road / Esker Lane	AM	1,800	58	3.2%	57	3.2%	51	2.8%
	PM	1,655	53	3.2%	28	1.7%	24	1.4%
Junction 3 – R136 / Lucan Road	AM	2,173	57	2.6%	56	2.6%	50	2.3%
	PM	2,046	52	2.5%	28	1.4%	24	1.2%
Junction 4 – Lucan Road / Access to Hermitage Golf Club	AM	1,056	4	0.4%	6	0.6%	7	0.7%
	PM	1,000	19	1.9%	12	1.2%	7	0.7%
Junction 5 – R136 / N4 Slip Road (Eastbound)	AM	1,823	53	2.9%	50	2.7%	43	2.4%
	PM	1,808	33	1.8%	15	0.8%	17	0.9%
Junction 6 – R136 / N4 Slip Road (Westbound)	AM	2,450	51	2.1%	48	2.0%	41	1.7%
	PM	2,592	32	1.2%	15	0.6%	16	0.6%
Junction 7 – Chapel Hill / Lucan Road	AM	1,364	23	1.7%	22	1.6%	24	1.8%
	PM	1,464	45	3.1%	21	1.4%	21	1.4%

As demonstrated by **Table 7.4**, the ratio of estimated net trip (by using the aforementioned three methods) associated with the proposed development to the existing traffic flows for Junction 2 to Junction 7 in both the morning and evening peak hours are also less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Additionally, the ratio of estimated net trip (by using the traffic count survey at St. Patrick's University Hospital at Dublin 8 or traffic count surveys at

Lucan) associated with the proposed development to the existing traffic flows are generally less than to the ratio (by using the TRICS database) for Junction 1 to Junction 7 in both the morning and evening peak hours.

It should be also noted that the ratio of net trip (by using the traffic count survey at St. Patrick's University Hospital at Dublin 8 or traffic count surveys at Lucan) associated with the proposed development to the existing traffic flows for Junction 7 are less than 1.8% in both the morning and evening peak hours.

In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on Junction 2 to Junction 7.

7.3.3 Comparison of Traffic Impact

A traffic capacity assessment of the Junction 1, Junction 3 and Junction 5 to Junction 7 were undertaken. A summary of the results of the analysis for the 2042 design year is shown in **Table 7.5** and **Table 7.9.**

Junction 1 – Western Access Road to St. Edmundsbury Hospital / Lucan Road

Table 7.5 summarized the analysis results at Junction 1 in 2042 for both the "without" development and "with" development scenarios by using the TRICS database, traffic count survey at St. Patrick's University Hospital at Dublin 8 on 2nd May 2024 and traffic count surveys at Lucan.

TABLE 7.5 – COMPARISON OF JUNCTION CAPACITY ANALYSIS FOR JUNCTION 1 IN 2042 DESIGN YEAR

Approach Arm	Scenario	Method for Estimation of Net Trip Generation for the Proposed Development	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
			AM	PM	AM	PM	AM	PM
Lucan Road West	Without Development	-	-	-	-	-	-	-
	With Development	By using the TRICS Database	-	-	-	-	-	-
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	-	-	-	-	-	-
		By using the traffic count surveys at Lucan	-	-	-	-	-	-
Western Access Road to St. Edmundsbury Hospital	Without Development	-	0	0.07	0	0	0	13
	With Development	By using the TRICS Database	0.08	0.31	0	0	15	18
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	0.09	0.22	0	0	15	16
		By using the traffic count surveys at Lucan	0.12	0.16	0	0	16	15
Lucan Road East	Without Development	-	0.01	0	0	0	8	8
	With Development	By using the TRICS Database	0.14	0.05	0	0	10	8
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	0.12	0.01	0	0	9	8
		By using the traffic count surveys at Lucan	0.10	0.03	0	0	9	8

The normal design threshold for the ratio of flow to capacity (RFC) is 0.85 for a priority junction. The results shown in **Table 7.5** demonstrate that Junction 1 will operate within the normal design threshold in both the morning and evening peak hours in 2042 for both the "without" development and "with" development scenarios by using the aforementioned three methods.

Junction 3 – R136 / Lucan Road

Table 7.6 summarizes the analysis results at Junction 3 in 2042 for both the "without" development and "with" development scenarios by using the TRICS database, traffic count survey at St. Patrick's University Hospital at Dublin 8 on 2nd May 2024 and traffic count surveys at Lucan.

TABLE 7.6 – COMPARISON OF JUNCTION CAPACITY ANALYSIS FOR JUNCTION 3 IN 2042 DESIGN YEAR (BY USING THE TRICS DATABASE)

Approach Arm	Scenario	Method for Estimation of Net Trip Generation for the Proposed Development	Max. DOS		Max. Queue (PCU)	
			AM*	PM*	AM*	PM*
Lucan Road East	Without Development	-	0.09	0.46	1	4
	With Development	By using the TRICS Database	0.09	0.46	1	4
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	0.09	0.46	1	4
		By using the traffic count surveys at Lucan	0.09	0.46	1	4
R136	Without Development	-	1.16	1.08	60	81
	With Development	By using the TRICS Database	1.16	1.10	61	89
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	1.16	1.11	61	90
		By using the traffic count surveys at Lucan	1.16	1.09	61	86
Lucan Road West	Without Development	-	1.30	1.26	194	142
	With Development	By using the TRICS Database	1.31	1.28	202	160
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	1.31	1.27	205	150
		By using the traffic count surveys at Lucan	1.31	1.28	207	155

*Note: * For the AM and PM peak hours, it is anticipated that the queue length from the downstream will extend to Junction 3 and stop the traffic travelling from R136 to Lucan Road westbound occasionally when the traffic light is green / flashing amber. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. **Table 7.6** demonstrates that Junction 3 will exceed the normal design threshold (with the highest DOS for AM at 1.30 and for PM at 1.26 on Lucan Road West arm) in both the morning and evening peak hours in 2042 for the "without" development scenario. **Table 7.6** also demonstrates that by using different methods for estimation of net trip generation, the operating capacity on this junction in both the morning and evening peak hours in 2042 for the "with" development scenario are similar (with the highest DOS for AM at 1.31 and for PM at 1.28 on Lucan Road West arm) and slightly increase when compared to the analysis results in both the morning and evening peak hours in 2042 for the "without" development scenario (with the highest DOS for AM at 1.30 and for PM at 1.26 on Lucan Road West arm).

Junction 5 – R136 / N4 Slip Road (Eastbound)

Table 7.7 summarizes the analysis results at Junction 5 in 2042 for both the "without" development and "with" development scenarios by using the TRICS database, traffic count survey at St. Patrick's University Hospital at Dublin 8 on 2nd May 2024 and traffic count surveys at Lucan.

TABLE 7.7 – COMPARISON OF JUNCTION CAPACITY ANALYSIS FOR JUNCTION 5 IN 2042 DESIGN YEAR

Approach Arm	Scenario	Method for Estimation of Net Trip Generation for the Proposed Development	Max. DOS		Max. Queue (PCU)	
			AM*	PM*	AM*	PM*
R136 South	Without Development	-	1.07	1.09	66	77
	With Development	By using the TRICS Database	1.11	1.11	90	85
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	1.10	1.10	88	79
		By using the traffic count surveys at Lucan	1.10	1.10	84	82
N4 Slip Road (off-ramp)	Without Development	-	1.05	0.93	20	13
	With Development	By using the TRICS Database	1.05	0.93	20	13
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	1.05	0.93	20	13
		By using the traffic count surveys at Lucan	1.05	0.93	20	13
R136 North	Without Development	-	0.38	0.45	6	8
	With Development	By using the TRICS Database	0.38	0.47	6	8
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	0.38	0.46	6	8
		By using the traffic count surveys at Lucan	0.38	0.46	6	8

*Note: * For the AM and PM peak hours, it is anticipated that the queue lengths from the downstream junctions (i.e. Junction 3 and Junction 6) will extend to Junction 5 and stop the traffic travelling to R136 southward / northward occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. **Table 7.7** demonstrates that Junction 5 will exceed the normal design threshold (with the highest DOS for AM at 1.07 and for PM at 1.09 on R136 South arm) in both the morning and evening peak hours in 2042 for the "without" development scenario. **Table 7.7** also demonstrates that by using different methods for estimation of net trip generation, the operating capacity on this junction in both the morning and evening peak hours in 2042 for the "with" development scenario are similar (with the highest DOS for AM at 1.11 and for PM at 1.11 on R136 South arm) and slightly increase when compared to the analysis results in both the morning and evening peak hours in 2042 for the "without" development scenario (with the highest DOS for AM at 1.07 and for PM at 1.09 on R136 South arm).

Junction 6 – R136 / N4 Slip Road (Westbound)

Table 7.8 summarizes the analysis results at Junction 6 in 2042 for both the "without" development and "with" development scenarios by using the TRICS database, traffic count survey at St. Patrick's University Hospital at Dublin 8 on 2nd May 2024 and traffic count surveys at Lucan.

TABLE 7.8 – 2042 DESIGN YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 6 (BY USING THE TRICS DATABASE)

Approach Arm	Scenario	Method for Estimation of Net Trip Generation for the Proposed Development	Max. DOS		Max. Queue (PCU)	
			AM*	PM*	AM*	PM*
R136 North	Without Development	-	0.75	0.76	14	15
	With Development	By using the TRICS Database	0.75	0.78	14	16
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	0.75	0.77	14	15
		By using the traffic count surveys at Lucan	0.75	0.76	14	15
N4 Slip Road (off-ramp)	Without Development	-	0.99	1.11	34	66
	With Development	By using the TRICS Database	1.03	1.11	40	67
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	1.03	1.11	40	67
		By using the traffic count surveys at Lucan	1.02	1.11	39	67
R136 South	Without Development	-	1.13	1.09	82	66
	With Development	By using the TRICS Database	1.17	1.10	100	72
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	1.16	1.09	98	67
		By using the traffic count surveys at Lucan	1.16	1.10	95	70
N4 Slip Road (on-ramp)	Without Development	-	-	-	-	-
	With Development	By using the TRICS Database	-	-	-	-
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	-	-	-	-
		By using the traffic count surveys at Lucan	-	-	-	-

*Note: * For the AM and PM peak hours, it is anticipated that the queue lengths from the downstream junctions (i.e. Junction 5) will extend to Junction 6 and stop the traffic travelling to R136 southward / northward occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. **Table 7.8** demonstrates that Junction 6 will exceed the normal design threshold (with the highest DOS for AM at 1.13 on R136 South arm and for PM at 1.11 on N4 Slip Road (off-ramp) arm) in both the morning and evening peak hours in 2042 for the "without" development scenario. **Table 7.8** also demonstrates that by using different methods for estimation of net trip generation, the operating capacity on this junction in both the morning and evening peak hours in 2042 for the "with" development scenario are similar (with the highest DOS for AM at 1.17 on R136 South arm and for PM at 1.11 on N4 Slip Road (off-ramp) arm) and slightly increase when compared to the analysis results in both the morning and evening peak hours in 2042 for the "without" development scenario (with the highest DOS for AM at 1.13 on R136 South arm and for PM at 1.11 on N4 Slip Road (off-ramp) arm).

Junction 7 – Chapel Hill / Lucan Road

Table 7.9 summarizes the analysis results at Junction 7 in 2042 for both the "without" development and "with" development scenarios by using the TRICS database, traffic count survey at St. Patrick's University Hospital at Dublin 8 on 2nd May 2024 and traffic count surveys at Lucan.

TABLE 7.9 – COMPARISON OF JUNCTION CAPACITY ANALYSIS FOR JUNCTION 7 IN 2042 DESIGN YEAR

Approach Armt	Scenario	Method for Estimation of Net Trip Generation for the Proposed Development	Max. DOS		Max. Queue (PCU)	
			AM*	PM*	AM*	PM*
Without Proposed Improvement Scheme as mentioned in Section 4.2 in a "Without Allowing for Modal Shift" Approach as mentioned in Section 5.6						
Lucan Road West	Without Development	-	0.76	0.71	11	11
	With Development	By using the TRICS Database	0.77	0.72	12	11
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	0.77	0.71	11	10
		By using the traffic count surveys at Lucan	0.77	0.72	11	11
Chapel Hill	Without Development	-	1.21	1.43	83	136
	With Development	By using the TRICS Database	1.22	1.47	89	148
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	1.22	1.44	88	138
		By using the traffic count surveys at Lucan	1.22	1.45	88	143
Lucan Road East	Without Development	-	1.13	1.62	60	321
	With Development	By using the TRICS Database	1.15	1.67	65	357
		By using the traffic count survey at St. Patrick's University Hospital on 2nd May 2024	1.15	1.65	66	343
		By using the traffic count surveys at Lucan	1.16	1.64	68	334
With Proposed Improvement Scheme as mentioned in Section 4.2 in a "Allowing for Modal Shift" Approach as mentioned in Section 5.6						
Lucan Road West	With Development	By using the TRICS Database	0.95	0.97	17	18
Chapel Hill	With Development	By using the TRICS Database	0.95	0.91	22	17
Lucan Road East	With Development	By using the TRICS Database	0.60	0.99	13	35

*Note: * For the AM peak hour, it is anticipated that the queue length from the downstream junction (i.e. Junction 2) will extend to Junction 7 and stop the traffic moving eastward from Lucan Road West arm / Chapel Hill arm to Lucan Road East arm occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

*** For the PM peak hour, it is anticipated that the queue length from the downstream junction (Chapel Hill / Main Street / R109 Junction) will extend to Junction 7 and stop the traffic moving westward from Lucan Road East arm / Lucan Road West arm to Chapel Hill arm occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. **Table 7.9** demonstrates that in a "without allowing for modal shift" approach, Junction 7 will exceed the normal design threshold (with the highest DOS for AM at 1.21 on Chapel Hill arm and for PM at 1.62 on Lucan Road East arm) in both the morning and evening peak hours in 2042 for the "without" development scenario. **Table 7.9** also demonstrates that by using different methods for estimation of net trip generation, the operating capacity in the morning peak hour in 2042 for the "with" development scenario are almost the same (with the highest DOS for AM at 1.22 on Chapel Hill arm) and slightly increase when compared to the analysis results in the morning peak hour in 2042 for the "without" development scenario (with the highest DOS for AM at 1.21 on Chapel Hill arm). In the evening peak hour in 2042 for the "with" development scenario, the operating capacity by using different methods for estimation of net trip generation are similar (with the highest DOS for PM at 1.64 – 1.67 on Lucan Road East arm) and slightly increase when compared to the analysis results in the evening peak hour in 2042 for the "without" development scenario (with the highest DOS for PM at 1.62 on Lucan Road East arm).

However, by using the traffic count survey at St. Patrick's University Hospital at Dublin 8 for assessment, **Table 7.9** shows that Junction 7 will have a better operating capacity (with the highest DOS for PM at 1.65 on Lucan Road East arm) in the evening peak hour in 2042 for the "with" development scenario when compared to the analysis results by using the TRICS database (with the highest DOS for PM at 1.67 on Lucan Road East arm).

By using the traffic count surveys at Lucan for assessment, **Table 7.9** shows that Junction 7 will also have a better operating capacity (with the highest DOS for PM at 1.64 on Lucan Road East arm) in the evening peak hour in 2042 for the "with" development scenario when compared to the analysis results by using the TRICS database (with the highest DOS for PM at 1.67 on Lucan Road East arm).

It is because with implementation of the current measures (i.e. shift working pattern, etc.) in the Workplace Travel Plan for both St. Patrick's University Hospital at Dublin 8 and the existing St. Edmundsbury Hospital at Lucan, it can effectively reduce the net trip generation in the morning and evening peak hours when compared to the net trip generation by using the TRICS database. It should be also noted that the TRICS database provides an average data to calculate the trip generation for developments. Thus, using the traffic count survey at St. Patrick's University Hospital at Dublin 8 or traffic count surveys at Lucan can also provide a more accurate and locally based assessment. After using the traffic count survey at St. Patrick's University Hospital at Dublin 8 or traffic count surveys at Lucan, the results shown in **Table 7.9** also demonstrate that the impact on Junction 7 will be mainly due to regular background traffic growth but not the proposed development per se so traffic from the proposed development will not have significant impact on this junction.

Table 7.9 also indicates that the assessment results by using the TRICS database is the "worst-case" scenario. To relieve the traffic congestion and enhance the safety of vulnerable road users at Junction 7, it is proposed to carry out the improvement works as mentioned in Section 4.2. The results shown in **Table 7.9** demonstrate that in a "allowing for modal shift" approach as mentioned in Section 5.6, the proposed improvement scheme can relieve the traffic congestion when compared to the "with" development scenario (based on the existing junction layout) by using the TRICS database for assessment.

8 TRIP GENERATION AND TRAFFIC IMPACT (BY USING THE ANTICIPATED CAR PARKING UTILIZATION)

8.1 Assumption

To minimize the traffic impacts to public, the hospital (except facilities building) will schedule their staff to work shifts in 2 timeslots (i.e. 07:00 to 19:00 and 19:00 to 07:00). For facilities building, the staff will work from 07:00 to 18:30. Additionally, a shuttle bus from the existing St. Patrick's University Hospital at Dublin 8 will be provided and will arrive the hospital at Lucan between 06:00 and 07:00 for daytime staff, and between 18:00 and 19:00 for night-time staff. Similarly, this shuttle bus will leave the hospital at Lucan between 07:00 and 08:00 for night-time staff, and between 19:00 and 20:00 for daytime staff. Moreover, the hospital will schedule visiting hours (i.e. 10:00 to 12:00, 14:00 to 16:00 and 19:00 to 21:00), which are outside the busiest hours of the surrounding road network. It should be also noted that the hospital will provide a day service to patients between 07:30 and 18:00. During the operational phase, emergency vehicles and medium / heavy goods vehicles (i.e. delivery vehicles) will be only allowed to travel to/from the site via the Eastern Vehicular Access (Junction 2).

To estimate the car parking utilization and net trip generation for staff and visitors, the following key assumptions were made:

- 75% of staff working between 07:00 and 19:00 (day shift) while the remaining 25% of staff working between 19:00 and 07:00 (night shift);
- There will be temporary overlap in parking between one shift arriving and one shift leaving;
- Assuming 50% staff driving to the new hospital;
- Assuming 50% of visitors and patients driving to the new hospital;
- Visitors and patients will generally stay in hospital for 1.5 hours and 2 hours respectively;
- Assuming 3 delivery vehicles (i.e. 7 PCU) per hour arriving to the new hospital from 10:00 to 16:00; and
- Assuming 3 emergency vehicles per hour arriving to the new hospital from 00:00 to 24:00.

8.2 Anticipated Car Parking Utilization

8.2.1 No. of Staff in Daytime and Night-time

It is anticipated that total 366 staff will work in the new hospital. Based on the above assumptions made in Section 8.1, **Table 8.1** summarized the number of staff working in daytime and night-time. **Table 8.1** shows that the total number of staff working in daytime and night-time are 278 and 88 respectively.

As the traffic count survey at Lucan on 22nd February 2023 as mentioned in Section 3.1 can capture the trip generated from the existing St. Edmundsbury Hospital (i.e. St. Edmundsbury House), therefore, the net trip generated for the proposed development is only included the trip generated from the new buildings of proposed development (including adolescent unit, adult main hospital, individual therapy rooms and facilities building). **Table 8.1** also shows that the net increase of staff working in daytime and night-time are 258 and 81 respectively.

TABLE 8.1 – NUMBER OF STAFF WORKING IN DAYTIME AND NIGHT-TIME

Type of Building	Number of Staff		
	Daytime	Night-time	Total
Adult Main Hospital, Individual Therapy Rooms and Adolescent Unit	244	81	325
Facilities Building	14	0	14
Net Increase*	**258**	**81**	**339**
St. Edmundsbury House**	20	7	27
Total	**278**	**88**	**366**

*Note: * The net trip generated for the proposed development is only included the trip generated from the new buildings of proposed development (including adolescent unit, adult main hospital, individual therapy rooms and facilities building).*
*** The existing St. Edmundsbury House (associated with its services provided to patients) within the site will be kept.*

8.2.2 Target Mode of Transport

Assuming 50% staff driving to the new hospital, **Table 8.2** demonstrates that the total number of staff driving to work in daytime and night-time are 139 and 45 respectively, which were used for estimation of the car parking utilization for staff. Additionally, the net increase of staff driving to work in daytime and night-time are 129 and 41 respectively, which were used for estimation of net trip generation for staff due to the proposed development.

TABLE 8.2 – NUMBER OF STAFF DRIVING TO WORK IN DAYTIME AND NIGHT-TIME

Mode of Transport	Target Modal Split	Type of Building	Number of Staff Driving to Work	
			Daytime	Night-time
Car	50%	Adult Main Hospital, Individual Therapy Rooms, Adolescent Unit and Facilities Building (**Net Increase***)	129	41
		St. Edmundsbury House	10	4
		Total:	**139**	**45**

*Note: * The net trip generated for the proposed development is only included the trip generated from the new buildings of proposed development (including adolescent unit, adult main hospital, individual therapy rooms and facilities building).*

8.2.3 Anticipated Car Parking Utilization

Apart from the car parking utilization for staff, car parking utilization for visitors and patients shall be also considered. It is anticipated that total 180 visitors will go the hospital during the scheduled visiting hours (i.e. 10:00 to 12:00, 14:00 to 16:00 and 19:00 to 21:00) and 200 patients will go to the hospital during the opening time of day services provided (i.e. 07:30 to 18:00).

In view of the above sections, the anticipated car parking utilization for staff and visitors (including patients) throughout a day are presented in **Table 8.3**.

TABLE 8.3 – ANTICIPATED CAR PARKING UTILIZATION FOR STAFF AND VISITORS (INCLUDING PATIENTS)

Type	Hour Ending																							
	01:00		02:00		03:00		04:00		05:00		06:00		07:00		08:00		09:00		10:00		11:00		12:00	
Staff	45	45	45	45	45	45	45	45	45	45	45	45	45	184	184	139	139	139	139	139	139	139	139	139
Visitor*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	12	18	24	24	33	42	51	51	42
Total	45	45	45	45	45	45	45	45	45	45	45	45	45	184	190	151	157	163	163	172	181	190	190	181

Type	Hour Ending																							
	13:00		14:00		15:00		16:00		17:00		18:00		19:00		20:00		21:00		22:00		23:00		00:00	
Staff	139	139	139	139	139	139	139	139	139	139	139	139	139	184	177	45	45	45	45	45	45	45	45	45
Visitor*	33	24	24	33	42	51	51	42	33	24	18	12	6	9	18	27	27	18	9	0	0	0	0	0
Total	172	163	163	172	181	190	190	181	172	163	157	151	145	193	**195**	72	72	63	54	45	45	45	45	45

Remark: * Including Patients

The anticipated maximum car parking utilization for staff and visitors (including patients) is 195 parking spaces, which is the period for daytime staff leaving the hospital between 19:00 and 19:30. It should be also noted that this maximum car parking utilization (195 parking spaces) is close to the proposed car parking spaces (i.e. 214 parking spaces) within the proposed development.

8.3 Anticipated Net Trip Generation (By Using the Car Parking Utilization)

As the traffic count survey at Lucan on 22nd February 2023 as mentioned in Section 3.1 can capture the trip generated from the existing St. Edmundsbury Hospital (i.e. St. Edmundsbury House), therefore, the net trip generated for the proposed development is only included the trip generated from the new buildings of proposed development (including adolescent unit, adult main hospital, individual therapy rooms and facilities building).

8.3.1 Estimation of Net Trips Generation for the Proposed Development

Table 8.2 indicates that the net increase of staff driving to work in daytime and night-time are 129 and 41 respectively. It is anticipated that net increase of visitors is 170 who will go the aforementioned new buildings during the scheduled visiting hours (i.e. 10:00 to 12:00, 14:00 to 16:00 and 19:00 to 21:00). Additionally, the net increase of patients is 100 patients who will go to the aforementioned new buildings during the opening time of day services provided (i.e. 07:30 to 18:00). Based on the above assumptions made in Section 8.1, the net trip in & out for staff and visitors (including patients) can be estimated. **Table 8.4** presents the net hourly trips generation for the proposed development at Junction 1 throughout a day.

TABLE 8.4 – NET TRIP GENERATION FOR THE PROPOSED DEVELOPMENT AT JUNCTION 1 THROUGHOUT A DAY

Description	Time											
	00:00-01:00	01:00-02:00	02:00-03:00	03:00-04:00	04:00-05:00	05:00-06:00	06:00-07:00	07:00-08:00	08:00-09:00	09:00-10:00	10:00-11:00	11:00-12:00
Net Trip In	0	0	0	0	0	0	131	3	3	3	11	11
Net Trip Out	0	0	0	0	0	0	0	43	0	3	3	11
Total Net Trips	0	0	0	0	0	0	131	46	3	6	14	22

Description	Time											
	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00	19:00-20:00	20:00-21:00	21:00-22:00	22:00-23:00	23:00-24:00
Net Trip In	3	3	11	11	3	0	43	8	8	0	0	0
Net Trip Out	11	3	3	11	11	3	10	124	8	8	0	0
Total Net Trips	14	6	14	22	14	3	53	132	16	8	0	0

8.4 Traffic Impact (Bys Using the Car Parking Utilization)

8.4.1 2023 Background Traffic Flows

As mentioned in Section 3.1, traffic count survey at Lucan was undertaken on 22nd February 2023 from 07:00 to 19:00. To estimate the background hourly traffic flows outside the 07:00-19:00, the TII Traffic Count Data for an ATC on N04 between Jn01 N4/M50 and Jn02 Liffey Valley, Liffey Valley, Co. Dublin (TMU N04 000.0W), which is approximately 2.8 km from the proposed development, was adopted. The location and full traffic flows on 22nd February 2023, which is the same day of traffic count survey conducted, for this ATC station are contained in **Appendix 5**. **Table 8.5** presents the 2023 recorded hourly traffic flows (within 07:00-19:00) and estimated hourly traffic flows (outside 07:00-19:00) based on the TII Traffic Count Data at Junction 1.

TABLE 8.5 – 2023 RECORDED / ESTIMATED HOURLY TRAFFIC FLOWS AT JUNCTION 1

Time	00:00-01:00	01:00-02:00	02:00-03:00	03:00-04:00	04:00-05:00	05:00-06:00
Background Traffic Flows	129*	75*	66*	73*	128*	313*
Time	**06:00-07:00**	**07:00-08:00**	**08:00-09:00**	**09:00-10:00**	**10:00-11:00**	**11:00-12:00**
Background Traffic Flows	1145*	1,280	1,306	1,316	1,091	1,045
Time	**12:00-13:00**	**13:00-14:00**	**14:00-15:00**	**15:00-16:00**	**16:00-17:00**	**17:00-18:00**
Background Traffic Flows	1,128	1,246	1,414	1,342	1,310	1,402
Time	**18:00-19:00**	**19:00-20:00**	**20:00-21:00**	**21:00-22:00**	**22:00-23:00**	**23:00-24:00**
Background Traffic Flows	1,118	893*	639*	453*	326*	186*

*Note: * The total background hourly traffic flows were estimated based on the TII Traffic Count Data as shown in Appendix 5.*

8.4.2 Total Hourly Traffic Flows (Background Hourly Traffic Flows plus Net Hourly Trips Generation)

In view of the **Table 8.4** and **Table 8.5** above, the total hourly traffic flows at Junction 1, which is equal to the 2023 background hourly traffic flows plus the net hourly trips generation for the proposed development, is presented in **Table 8.6**.

TABLE 8.6 – TOTAL HOURLY TRAFFIC FLOWS AT JUNCTION 1
(BACKGROUND HOURLY TRAFFIC FLOWS PLUS HOURLY TRIPS GENERATION)

Description	Time											
	00:00-01:00	01:00-02:00	02:00-03:00	03:00-04:00	04:00-05:00	05:00-06:00	06:00-07:00	07:00-08:00	08:00-09:00	09:00-10:00	10:00-11:00	11:00-12:00
Background Traffic Flows	129	75	66	73	128	313	1145	1280	1306	1316	1091	1045
Total Net Trips (In & Out)	0	0	0	0	0	0	131	46	3	6	14	22
Total Traffic Flows	129	75	66	73	128	313	1276	1326	1309	1322	1105	1067

Description	Time											
	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00	19:00-20:00	20:00-21:00	21:00-22:00	22:00-23:00	23:00-24:00
Background Traffic Flows	1128	1246	1414	1342	1310	1402	1118	893	639	453	326	186
Total Net Trips (In & Out)	14	6	14	22	14	3	53	132	16	8	0	0
Total Traffic Flows	1142	1252	1428	1364	1324	1405	1171	1025	655	461	326	186

Table 8.6 shows that the highest total hourly traffic flows (i.e. 1,326) in the morning period was identified as 07:00-08:00, which is the period for night-time staff leaving the hospital. Additionally, the total hourly traffic flows (i.e. 1,326) between 07:00 and 08:00 is similar to the background traffic flows at the busiest hours (i.e. 1,316 between 09:00-10:00). It should be also noted that daytime staff will arrive the hospital between 06:00 and 07:00, which is outside the busiest hours (i.e. 07:00-10:00) of the surrounding road network in the morning period.

Table 8.6 also demonstrates that the total hourly traffic flows (i.e. 1,171) between 18:00 and 19:00 (which is the period for night-time staff arriving to the hospital) is higher than the total hourly traffic flows (i.e. 1,025) between 19:00 and 20:00 (which is the period for daytime staff leaving the hospital). However, the aforementioned total hourly traffic flows (i.e. 18:00-19:00 and 19:00-20:00) are also less than the background hourly traffic flows at the busiest hour (i.e. 1,402 between 17:00-18:00) in the evening. It should be also noted that the daytime staff leaving the hospital between 19:00 and 20:00, which is outside the busiest hours (i.e. 16:00-19:00) in the evening period. Therefore, it is anticipated that with implementation of shift working patterns, the proposed development will not cause significant impact on the surrounding road network in the evening.

In consideration of traffic impact during the staff shifting periods (i.e. 06:00-08:00 and 18:00-20:00), a capacity assessment in the morning (07:00-08:00) and evening (18:00-19:00) periods were selected for analysis because it has the highest total traffic flows at shifting periods in the morning and evening periods.

8.4.3 Net Trip Generation as a Percentage of Existing Traffic

Based on the traffic count surveys at Junction 1 on 21st May 2024 and at Junction 2 on 22nd February 2023, 69% and 31% vehicles currently turn left (i.e. arriving from Junction 7) and right (i.e. arriving from Junction 3) respectively from Lucan Road into the Site for a period between 07:00 and 08:00 while 78%. Additionally, 22% of vehicles from the Site currently turn eastward (towards Junction 3) and westward (towards Junction 7) respectively for a period between 07:00 and 08:00. For a period between 18:00 and 19:00, 50% and 50% vehicles currently turn left (i.e. arriving from Junction 7) and right (i.e. arriving from Junction 3) respectively from Lucan Road into the Site while 57% and 43% of vehicles from the Site currently turn eastward (towards Junction 3) and westward (towards Junction 7) respectively. This modal split will be applied to the trip distribution at Junction 1 for this exercise. The future development traffic distribution at the surrounding junctions will mirror existing traffic patterns i.e. development generated flows will be split through the junctions proportionally to existing flows in the morning (07:00-08:00) and evening (18:00-19:00) periods. The result of this trip distribution and assignment exercise (by using the car parking utilization) in the morning (07:00-08:00) and evening (18:00-19:00) periods is presented in following.

TABLE 8.7 – DEVELOPMENT AM HOUR (07:00-08:00) NET TRIP GENERATION AS A PERCENTAGE OF EXISTING ROAD NETWORK TRAFFIC FLOW (BY USING THE CAR PARKING UTILIZATION)

Junction	Junction AM (07:00-08:00) Traffic	Car Parking Utilization	
		Development Net Generated Traffic	Percentage
Junction 1 – Western Access Road to St. Edmundsbury Hospital / Lucan Road	1,280	46	3.6%
Junction 2 – Eastern Access Road to St. Edmundsbury Hospital / Lucan Road / Esker Lane	1,378	40	2.9%
Junction 3 – R136 / Lucan Road	1,880	40	2.1%
Junction 4 – Lucan Road / Access to Hermitage Golf Club	1,056	23	2.2%
Junction 5 – R136 / N4 Slip Road (Eastbound)	1,592	17	1.1%
Junction 6 – R136 / N4 Slip Road (Westbound)	2,072	17	0.8%
Junction 7 – Chapel Hill / Lucan Road	1,315	12	0.9%

As demonstrated by **Table 8.7**, the ratio of estimated net trip (by using the car parking utilization) associated with the proposed development to the existing traffic flows is less than 5% for all concerned junctions in the morning hour (07:00-08:00).

TABLE 8.8 – DEVELOPMENT PM HOUR (18:00-19:00) NET TRIP GENERATION AS A PERCENTAGE OF EXISTING ROAD NETWORK TRAFFIC FLOW (BY USING THE CAR PARKING UTILIZATION)

Junction	Junction PM (18:00-19:00) Traffic	Car Parking Utilization	
		Development Net Generated Traffic	Percentage
Junction 1 – Western Access Road to St. Edmundsbury Hospital / Lucan Road	1,118	53	4.7%
Junction 2 – Eastern Access Road to St. Edmundsbury Hospital / Lucan Road / Esker Lane	1,449	33	2.3%
Junction 3 – R136 / Lucan Road	1,788	32	1.8%
Junction 4 – Lucan Road / Access to Hermitage Golf Club	744	5	0.7%
Junction 5 – R136 / N4 Slip Road (Eastbound)	1,588	27	1.7%
Junction 6 – R136 / N4 Slip Road (Westbound)	2,396	26	1.1%
Junction 7 – Chapel Hill / Lucan Road	1,140	26	2.3%

As demonstrated by **Table 8.8**, the ratio of estimated net trip (by using the car parking utilization) associated with the proposed development to the existing traffic flows is less than 5% for all concerned junctions in the evening hour (18:00-19:00).

As a result of this negligible increase in traffic volumes on the surrounding road network, it is not necessary to undertake any traffic capacity assessments for all concerned junctions in this exercise according to the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists).

However, as requested by the South Dublin County Council, Junction 3, Junction 5 to Junction 7 have also been selected for conducting a traffic capacity assessment. Additionally, Junction 1 has been selected for conducting a traffic capacity assessment because it is a main entrance for the proposed development. Therefore, a capacity assessment on Junction 1, Junction 3 and Junction 5 to Junction 7 were undertaken in order to have a better understanding of this minimal traffic impact due to the proposed development.

8.4.4 Network Traffic Flow By Using the Car Parking Utilization

Figure 8.1 and **Figure 8.2** illustrate the 2042 Design Year Horizon traffic flows in the morning (07:00-08:00) and evening (18:00-19:00) periods for the "without" development and "with" development scenarios by using the car parking utilization.

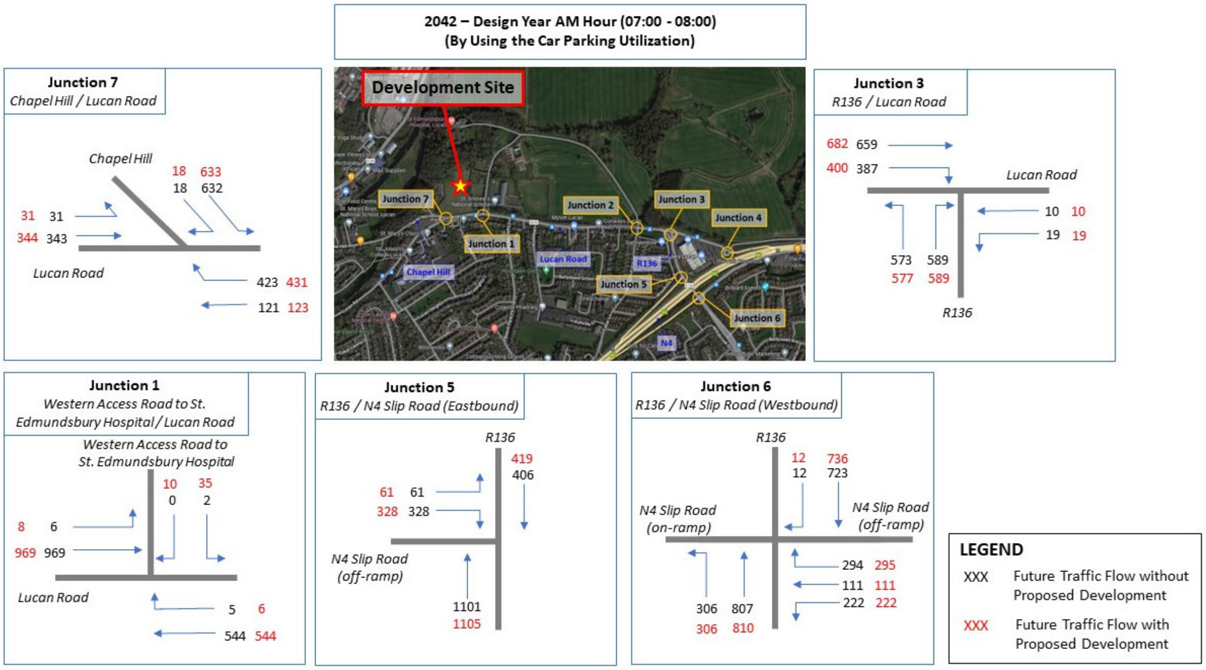

FIGURE 8.1 – 2042 DESIGN YEAR TRAFFIC FLOWS IN THE MORNING HOUR (07:00-08:00) (BY USING THE CAR PARKING UTILIZATION)

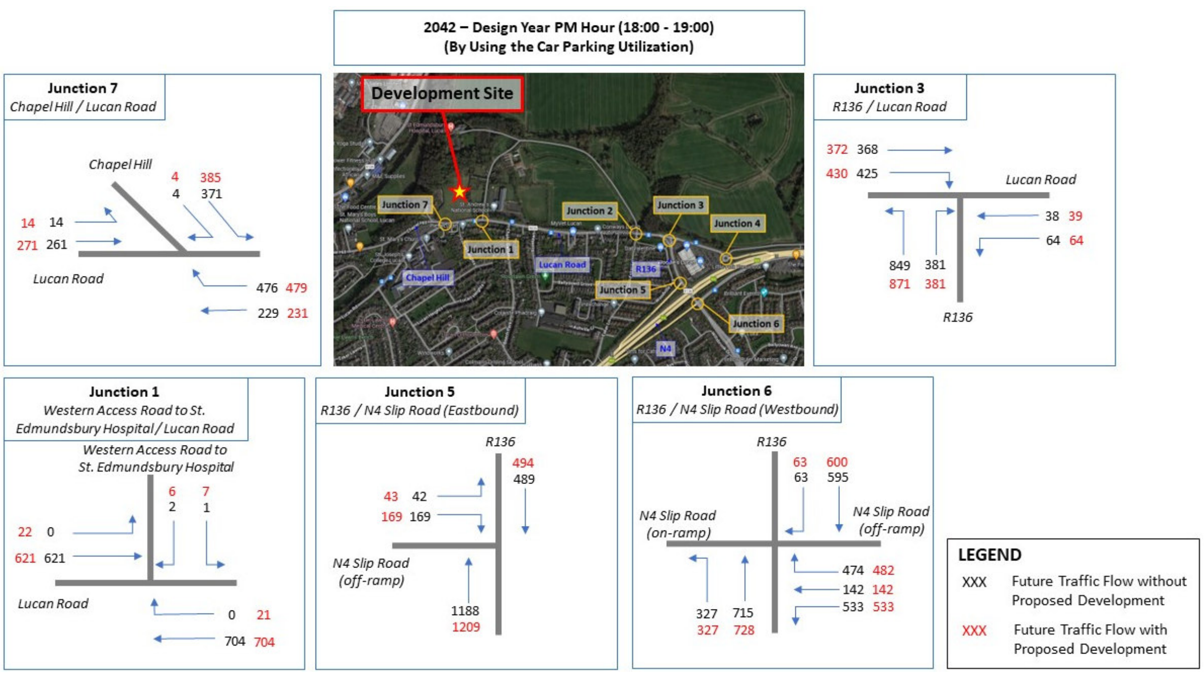

FIGURE 8.2 – 2042 DESIGN YEAR TRAFFIC FLOWS IN THE EVENING HOUR (18:00-19:00) (BY USING THE CAR PARKING UTILIZATION)

8.4.5 Operational Phase 2042 – Junction Capacity Analysis (By Using the Car Parking Utilization)

A traffic capacity assessment of the Junction 1, Junction 3 and Junction 5 to Junction 7 were undertaken utilising the future traffic flows as shown in **Figure 8.1** and **Figure 8.2**, and TRL's PICADY and OSCADY traffic modelling software. A summary of the results of the analysis for the 2042 design year (opening year plus 15 years), "without" development and "with" development scenarios by using the car parking utilization, in the morning (07:00-08:00) and evening (18:00-19:00) hours is shown in **Table 8.9** and **Table 8.13** following.

Junction 1 – Western Access Road to St. Edmundsbury Hospital / Lucan Road

TABLE 8.9 – 2042 DESIGN YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 1 (BY USING THE CAR PARKING UTILIZATION)

Approach Arm	Scenario	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
		AM	PM	AM	PM	AM	PM
Lucan Road West	Without Development	-	-	-	-	-	-
	With Development	-	-	-	-	-	-
Western Access Road to St. Edmundsbury Hospital	Without Development	0	0	0	0	0	0
	With Development	0.14	0.04	0	0	12	10
Lucan Road East	Without Development	0.01	0	0	0	9	0
	With Development	0.02	0.04	0	0	9	7

The normal design threshold for the ratio of flow to capacity (RFC) is 0.85 for a priority junction. The results shown in **Table 8.9** demonstrate that Junction 1 will operate within the normal design threshold in both the morning (07:00-08:00) and evening (18:00-19:00) hours in 2042 for both the "without" development and "with" development scenarios.

Junction 3 – R136 / Lucan Road

TABLE 8.10 – 2042 DESIGN YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 3 (BY USING THE CAR PARKING UTILIZATION)

Approach Arm	Scenario	Max. DOS		Max. Queue (PCU)	
		AM*	PM*	AM*	PM*
Lucan Road East	Without Development	0.13	0.41	1	3
	With Development	0.13	0.44	1	3
R136	Without Development	<u>1.25</u>	<u>1.08</u>	93	67
	With Development	<u>1.25</u>	<u>1.09</u>	93	71
Lucan Road West	Without Development	<u>1.28</u>	<u>1.04</u>	165	42
	With Development	<u>1.30</u>	<u>1.08</u>	183	53

*Note: * For the AM (07:00-08:00) and PM (18:00-19:00) hours, it is anticipated that the queue length from the downstream will extend to Junction 3 and stop the traffic travelling from R136 to Lucan Road westbound occasionally when the traffic light is green / flashing amber. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 8.10** demonstrate that Junction 3 will <u>exceed the normal design threshold</u> in both the morning (07:00-08:00) and evening (18:00-19:00) hours in 2042 for both the "without" development and "with" development scenarios, resulting in substantial queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues/ delays.

Additionally, **Table 8.7** and **Table 8.8** that the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 baseline year in the morning (07:00-08:00) and evening (18:00-19:00) hours for this junction are 2.1% and 1.8% respectively, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on this junction in the morning (07:00-08:00) and evening (18:00-19:00) hours. The results shown in **Table 8.10** also demonstrate that the impact on this Junction will be mainly due to regular background traffic growth but not the proposed development per se (with the highest DOS for AM increased from 1.28 to 1.30 on Lucan Road West arm and for PM increased from 1.08 to 1.09 on R136 arm) so traffic from the proposed development will not have significant impact on this junction.

Junction 5 – R136 / N4 Slip Road (Eastbound)

TABLE 8.11 – 2042 DESIGN YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 5 (BY USING THE CAR PARKING UTILIZATION)

Approach Arm	Scenario	Max. DOS		Max. Queue (PCU)	
		AM*	PM*	AM*	PM*
R136 South	Without Development	0.97	1.00	26	32
	With Development	0.98	1.01	27	38
N4 Slip Road (off-ramp)	Without Development	0.96	0.86	17	9
	With Development	0.96	0.86	17	9
R136 North	Without Development	0.32	0.37	5	6
	With Development	0.33	0.37	6	6

*Note: * For the AM (07:00-08:00) and PM (18:00-19:00) hours, it is anticipated that the queue lengths from the downstream junctions (i.e. Junction 3 and Junction 6) will extend to Junction 5 and stop the traffic travelling to R136 southward / northward occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 8.11** demonstrate that Junction 5 will exceed the normal design threshold in both the morning (07:00-08:00) and evening (18:00-19:00) hours in 2042 for both the "without" development and "with" development scenarios, resulting in substantial queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues/ delays.

Additionally, **Table 8.7** and **Table 8.8** that the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 in the morning (07:00-08:00) and evening (18:00-19:00) hours for this junction are 1.1% and 1.7% respectively, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on this junction in the morning (07:00-08:00) and evening (18:00-19:00) hours. The results shown in **Table 8.11** also demonstrate that the impact on this Junction will be mainly due to regular background traffic growth but not the proposed development per se (with the highest DOS for AM increased from 0.97 to 0.98 on R136 South arm and for PM increased from 1.00 to 1.01 on R136 South arm) so traffic from the proposed development will not have significant impact on this junction.

Junction 6 – R136 / N4 Slip Road (Westbound)

TABLE 8.12 – 2042 DESIGN YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 6 (BY USING THE CAR PARKING UTILIZATION)

Approach Arm	Scenario	Max. DOS		Max. Queue (PCU)	
		AM*	PM*	AM*	PM*
R136 North	Without Development	0.67	0.65	10	13
	With Development	0.68	0.66	11	13
N4 Slip Road (off-ramp)	Without Development	0.76	1.02	17	46
	With Development	0.76	1.02	17	47
R136 South	Without Development	0.91	0.98	24	33
	With Development	0.91	1.00	24	37
N4 Slip Road (on-ramp)	Without Development	-	-	-	-
	With Development	-	-	-	-

*Note: * For the AM (07:00-08:00) and PM (18:00-19:00) hours, it is anticipated that the queue lengths from the downstream junctions (i.e. Junction 5) will extend to Junction 6 and stop the traffic travelling to R136 southward / northward occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 8.12** demonstrate that Junction 6 will exceed the normal design threshold in both the morning (07:00-08:00) and evening (18:00-19:00) hours in 2042 for both the "without" development and "with" development scenarios, resulting in substantial queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues/ delays.

Additionally, **Table 8.7** and **Table 8.8** that the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 in the morning (07:00-08:00) and evening (18:00-19:00) hours for this junction are 0.8% and 1.1% respectively, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on this junction in the morning (07:00-08:00) and evening (18:00-19:00) hours. The results shown in **Table 8.12** also demonstrate that the impact on this Junction will be mainly due to regular background traffic growth but not the proposed development per se (with the highest DOS for AM (i.e. 0.91) on R136 South arm and for PM (i.e. 1.02) on N4 Slip Road (off-ramp) arm remain unchanged) so traffic from the proposed development will not have significant impact on this junction.

Junction 7 – Chapel Hill / Lucan Road

TABLE 8.13 – 2042 DESIGN YEAR JUNCTION CAPACITY ANALYSIS FOR JUNCTION 7 (BY USING THE CAR PARKING UTILIZATION)

Approach Arm	Scenario	Max. DOS		Max. Queue (PCU)	
		AM*	PM**	AM*	PM**
Without Proposed Improvement Scheme as mentioned in Section 4.2 in a "Without Allowing for Modal Shift" Approach as mentioned in Section 5.6					
Lucan Road West	Without Development	0.77	0.51	11	7
	With Development	0.77	0.53	11	8
Chapel Hill	Without Development	1.19	1.06	79	29
	With Development	1.20	1.10	79	35
Lucan Road East	Without Development	1.10	1.39	49	169
	With Development	1.12	1.40	55	173
With Proposed Improvement Scheme as mentioned in Section 4.2 in a "Without Allowing for Modal Shift" Approach as mentioned in Section 5.6					
Lucan Road West	With Development	1.04	0.78	26	10
Chapel Hill	With Development	1.04	0.74	38	11
Lucan Road East	With Development	0.63	0.89	14	23
With Proposed Improvement Scheme as mentioned in Section 4.2 in a "Allowing for Modal Shift" Approach as mentioned in Section 5.6					
Lucan Road West	With Development	0.94	0.71	16	9
Chapel Hill	With Development	0.95	0.68	21	10
Lucan Road East	With Development	0.57	0.81	13	19

*Note: * For the AM (07:00-08:00) hour, it is anticipated that the queue length from the downstream junction (i.e. Junction 2) will extend to Junction 7 and stop the traffic moving eastward from Lucan Road West arm / Chapel Hill arm to Lucan Road East arm occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

*** For the PM (18:00-19:00) hour, it is anticipated that the queue length from the downstream junction (Chapel Hill / Main Street / R109 Junction) will extend to Junction 7 and stop the traffic moving westward from Lucan Road East arm / Lucan Road West arm to Chapel Hill arm occasionally when the traffic light is green. Thus, this blocking effect was included in our assessment.*

The normal design threshold for the degree of saturation (DOS) is 0.9 for a signalized junction. The results shown in **Table 8.13** demonstrate that based on the existing junction layout in a "without allowing for modal shift" approach, Junction 7 will exceed the normal design threshold in both the morning (07:00-08:00) and evening (18:00-19:00) hours in 2042 for both the "without" development and "with" development scenarios, resulting in substantial queues and delays for motorists. Once a junction is nearing or at capacity, any slight increase, whether it is background traffic growth or a new development, will have a noticeable increase in queues/ delays.

Additionally, **Table 8.7** and **Table 8.8** that the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 in the morning (07:00-08:00) and evening (18:00-19:00) hours for this junction are 0.9% and 2.3% respectively, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on this junction in the morning (07:00-08:00) and evening (18:00-19:00) hours. The results shown in **Table 8.13** also demonstrate that the impact on this Junction will be mainly due to regular background traffic growth but not the proposed development per se (with the highest DOS for AM increased from 1.19 to 1.20 on Chapel Hill arm and for PM increased from 1.39 to 1.40 on Lucan Road East arm) so traffic from the proposed development will not have significant impact on this junction.

To relieve the traffic congestion and enhance the safety of vulnerable road users at this junction, it is proposed to carry out the improvement works as mentioned in Section 4.2. The results shown in **Table 8.13** demonstrate that with the proposed improvement scheme in a "without allowing for modal shift" approach as mentioned in Section 5.6, Junction 7 will operate within the normal design threshold in the evening (18:00-19:00) hours in 2042 for the "with" development scenario but it will exceed the normal design threshold in the morning (07:00-08:00) hour in 2042 for the "with" development scenario. However, with the proposed improvement scheme in a "allowing for modal shift" approach as mentioned in Section 5.6, Junction 7 will operate within the normal design threshold in the evening (18:00-19:00) hours in 2042 for the "with" development scenario but it will operate slightly exceed the normal design threshold (but still less than its theoretical capacity of 1.0) in the morning (07:00-08:00) hour in 2042 for the "with" development scenario. The analysis results also demonstrate that the proposed improvement scheme can reduce the highest DOS for AM (07:00-08:00) on Chapel Hill arm from 1.20 to 0.95. Therefore, it is considered that the proposed improvement scheme can relieve the traffic congestion when compared to the "with" development scenario (based on the existing junction layout).

8.4.6 Summary

The graphs of total hourly traffic flows, which is equal to the 2023 background traffic flows plus net trips generation for the proposed development, through a day at Junction 1 were shown in **Appendix 6**. By using the car parking utilization for estimation of net trip generation, an analysis for a staff shifting periods is summarized as follows:

- The daytime staff will arrive the hospital between 06:00 and 07:00 and leave the hospital between 19:00 and 20:00. Both periods are also outside the busiest hours of the road network (i.e. 07:00-10:00 and 16:00-19:00).
- In the morning, the night-time staff will leave the hospital between 07:00 and 08:00. However, the total traffic flows (i.e. 1,326) between 07:00 and 08:00 is similar to the background traffic flows at the busiest hours (i.e. 1,316 between 09:00-10:00).
- In the evening, the night-time staff will arrive the hospital between 18:00 and 19:00. However, the total traffic flows (i.e. 1,171) between 18:00 and 19:00 is less than the background hourly traffic flows at the busiest hour (i.e. 1,402 between 17:00-18:00).
- The visiting time is scheduled from 10:00 to 12:00, 14:00 to 16:00, and 19:00 to 21:00, which are also outside the busiest hours of the road network.

In view of the above, the proposed development will not cause significant impact to the road network.

9 PARKING PROVISION

9.1 Proposed Car Parking Provision

As the Site is located outside 800 metres of a train or LUAS station, it will be classified as Zone 1 in accordance with the Table 12.25 of South Dublin County Development Plan 2022-2028, which states a maximum of 1 car parking space per 100m^2 Gross Floor Area (GFA). A summary of the car parking required is presented in **Table 9.1** following:-

TABLE 9.1 – CAR PARKING COMPLIANCE

Land-Use	Type of Building	Max. Car Parking Required (South Dublin County Development Plan 2022-2028)	GFA (m^2)	Max. Parking Required
Hospital	Adult Main Hospital, Individual Therapy Rooms, Facilities Buildings, Adolescent Unit and St. Edmundsbury House	1 space per 100m^2 GFA	21,524	215

Within the proposed development, it is proposed to provide a total of 214 car-parking spaces for staff and visitors. This is less than the recommended maximum car parking spaces (i.e. 215 car parking spaces) as required in the South Dublin County Development Plan 2022-2028 as shown in Table 9.1. Moreover, 2 additional minibus parking spaces will be provided for the hospital's general operation.

As the site location is well serviced by existing public transports (i.e. existing bus services as mentioned in Section 2.3) and emerging transports (i.e. BusConnects and Luas Lucan as mentioned in Section 2.4), it can encourage the staff and visitors to use public transport to access the site. To further encourage staff and visitors to use sustainable forms of transport (i.e. walking, cycling and public transport), the hospital will consider implementing the following mitigation measures:

- providing shuttle bus services for staff between the existing hospital at Dublin 8 and the proposed development;
- providing parking spaces at the existing Dublin 8 hospital for staff availing of the above-mentioned shuttle bus services;
- implementing the paid parking for visitors to encourage use of public transport; and
- encouraging appointment times and visitor times to coincide with maximum public bus availability.

With reference to the existing National Forensic Mental Health Service (NFMHS) in Portrane, Co. Dublin, which has a similar nature of services/works to the proposed development, it provides 170 bed facilities and 255 car parking spaces for both staff and visitors. This equates to a provision rate of 1.5 car parking spaces per bed. Within the proposed development, it is proposed to provide about 214 bed facilities and 214 car parking spaces for both staff and visitors. Thus, this equates to a provision rate of 1.0 car parking space per bed, which is less than the provision rate (i.e. 1.5 car parking spaces per bed) for NFMHS.

It should also be noted that many staff (i.e. medical staff) live far away from the proposed development, and they have to travel long distances to/from work. Thus, they have no other practical option than driving to work. In view of the above analysis, provision of 214 car parking spaces, which is less than the recommended maximum car parking spaces (i.e. 215 car parking spaces) as required in the South Dublin County Development Plan 2022-2028, is considered reasonable for the proposed development.

A proactive approach to car parking management will be adopted by the management company to ensure that there will be no overspill onto adjacent areas. This will include the implementation of a Mobility Management Plan to encourage the use of sustainable transport modes.

9.2 Proposed Bicycle Parking Provision

According to the South Dublin County Development Plan 2022-2028, the "Hospital" land-use requires 1 bicycle parking space per 5 staff for long-term use and 1 bicycle parking space per 10 beds for short stay. A summary of the bicycle parking required is presented in **Table 9.2** following:-

TABLE 9.2 – BICYCLE PARKING COMPLIANCE

Land-Use	Type of Building	Max. Car Parking Required (South Dublin County Development Plan 2022-2028)		Proposed Development		Min. Parking Required	
		Long-term	Short Stay	Staff	Bed	Long-term	Short Stay
Hospital	Adult Main Hospital, Individual Therapy Rooms, Facilities Buildings, Adolescent Unit and St. Edmundsbury House	1 per 5 staff	1 per 10 beds	366	214	73	21
					Total:	**94**	

It is proposed to provide a total of 160 bicycle-parking spaces within the development, inclusive of 104 bicycle parking spaces for staff and 56 parking spaces for visitors. This exceeds the minimum bicycle parking requirement of 94 bicycle-parking spaces as required in the South Dublin County Development Plan 2022-2028 as shown in **Table 9.2**. Additionally, designated sheltered and secure bicycle parking will be provided within the proposed development.

10 SUMMARY & CONCLUSION

This report has been designed to specifically address potential traffic issues associated with the proposed St. Edmundsbury Hospital, Lucan, Co. Dublin. In doing so, the assessment has addressed:

Existing traffic behaviour;
Trip generation rates to/from the proposed development;
Existing and future road network capacity;
Traffic impact of the proposal; and
Proposed car and bicycle parking.

A vehicle turning movement survey was undertaken on Wednesday, 22nd February 2023 at seven junctions in the surrounding area, which captured all turning movements at the junctions from 07:00 to 19:00 and the trip generated from the existing structures within the Site. These junctions were selected as they are considered the junctions most likely to be affected by traffic associated with the proposed development:

Junction 1 - Western Access Road to St. Edmundsbury Hospital / Lucan Road;
Junction 2 - Eastern Access Road to St. Edmundsbury Hospital / Lucan Road / Esker Lane;
Junction 3 - R136 / Lucan Road;
Junction 4 - Lucan Road / Access to Hermitage Golf Club;
Junction 5 - R136 / N4 Slip Road (eastbound);
Junction 6 - R136 / N4 Slip Road (westbound); and
Junction 7 - Chapel Hill / Lucan Road.

Based on the scope of proposed development, total trip generation for the proposed development is equal to the trip generated from the existing St. Edmundsbury Hospital at Lucan plus the net trip generated for the proposed development. As the traffic count survey at Lucan on 22nd February 2023 can capture the trip generated from the existing St. Edmundsbury Hospital, therefore, the net trip generation for the proposed development (excluding the existing St. Edmundsbury Hospital) was used for trip distribution to the surrounding junctions and assessment.

Expected net trip generation for the proposed development was estimated utilising the TRICS database and was revealed to be in total 64 trips inbound and 17 trips outbound in the morning peak hour, and 35 trips inbound and 63 trips outbound in the evening peak hour.

An exercise was carried out to quantify the expected development net trip generation as a proportion of existing traffic flows on the surrounding road network to determine if a detailed traffic impact assessment is required for all of the junctions included within the scoping study. For Junction 2 to Junction 7, the estimated trips associated with the proposed development represent a tiny proportion of existing traffic flows on the surrounding road network and are less than the thresholds for traffic impact assessment noted in Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Thus, a full traffic impact assessment was ***not*** necessary for Junction 2 to Junction 7. However, it was identified that Junction 1 was greater than 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists in either the morning or evening peak periods. Additionally, as requested by the South Dublin County Council, Junction 3, Junction 5 to Junction 7 have also been selected for conducting a traffic capacity assessment in order to have a better understanding of this minimal traffic impact due to the proposed development. Therefore, a capacity assessment on Junction 1, Junction 3 and Junction 5 to Junction 7 were undertaken using TRL's PICADY and OSCADY traffic modelling software for priority junctions and signalized junctions.

2023 Baseline Year

In 2023 baseline year, Junction 1 is currently operating within the normal design threshold in both the morning and evening peak hours. However, Junction 3 and Junction 5 to Junction 7 are currently operating over the normal design threshold in both the morning and evening peak hours, resulting in queues and delays for motorists.

2027 Opening Year and 2042 Design Year (Opening Year plus 15 years)

In the 2027 opening year and 2042 design year, Junction 1 will also operate within the normal design threshold in both the morning and evening peak hours for both the "without" development and "with" development scenarios.

Junction 3, and Junction 5 to Junction 7 will exceed the normal design threshold in both the morning and evening peak hours in 2027 and 2042 for both the "without" development and "with" development scenarios, resulting in queues and delays for motorists. However, the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 baseline year in the morning and evening peak hours for Junction 3, and Junction 5 to Junction 7 are also less than 3.1%, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. Additionally, shift working pattern will be implemented by the new hospital in order to reduce the trip generation in the morning and evening peak hours. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on Junction 3, and Junction 5 to Junction 7 so traffic from the proposed development will not have significant impact on these junctions.

Net Trip Generation and Traffic Impact (By Using the Traffic Count Surveys Approach)

Apart from estimating the net trip generation for the proposed development based on the TRICS database, another two traffic count surveys at St. Patrick's University Hospital at Dublin 8 and at Junction 1 of Lucan were undertaken on 2nd May 2024 and 21st May 2024 respectively to facilitate the estimation of the net trip generation for the proposed development.

The existing St. Patrick's University Hospital at Dublin 8 consists of 265 beds to provide services to public while the existing St. Edmundsbury Hospital at Lucan consists of 52 beds to provide services to public. After completion of the proposed development, the new hospital will increase from the existing 52 beds to a total of 214 beds. Therefore, the net trip generation for the proposed development is equal to the trip generated from the net increase of beds (i.e. 162 beds) for the proposed development.

Utilising the traffic count survey at St. Patrick's University Hospital on 2nd May 2024, expected net trip generation for the proposed development was estimated and was revealed to be in total 58 trips inbound and 21 trips outbound in the morning peak hour, and 7 trips inbound and 42 trips outbound in the evening peak hour. Utilising the traffic count surveys at Lucan, expected net trip generation for the proposed development was estimated and was revealed to be in total 48 trips inbound and 27 trips outbound in the morning peak hour, and 21 trips inbound and 24 trips outbound in the evening peak hour.

The analysis results demonstrate that total net trip generation for the proposed development by using the TRICS database is greater than the total net trip generation by using the traffic count survey at St. Patrick's University Hospital at Dublin 8 or traffic count surveys at Lucan. It is because generally, the TRICS database provides an average data to calculate the trip generation for developments. However, using the traffic count survey at St. Patrick's University Hospital or traffic count surveys at Lucan can provide a more accurate, specific and locally based assessment. It should be also noted that the total net trip generation for the proposed development by using the traffic count survey at St. Patrick University Hospital and traffic count surveys at Lucan are similar. The analysis also revealed that with implementation of the current measures (i.e. shift working pattern, etc.) in the Workplace Travel Plan for both St. Patrick's University Hospital at Dublin 8 and the existing St. Edmundsbury Hospital at Lucan, it can effectively reduce the net trip generation in the morning and evening peak hours when compared to the net trip generation by using the TRICS database.

After using the traffic count survey at St. Patrick's University Hospital at Dublin 8 or traffic count surveys at Lucan, the analysis results demonstrate that the impact on Junction 3, and Junction 5 to Junction 7 will be mainly due to regular background traffic growth but not the proposed development per se so traffic from the proposed development will not have significant impact on this junction.

Net Trip Generation and Traffic Impact (By Using the Car Parking Utilization Approach)

Anticipated car parking utilization for the proposed development is also adopted to estimate the net hourly trip generation throughout a day for assessment. It is anticipated that the net increase of staff driving to work in daytime and night-time are 129 and 41 respectively. After consideration of the total traffic flows in 24 hours, which is equal to the 2023 background traffic flows plus net trips generation for the proposed development, the analysis results show that the highest total hourly traffic flows (i.e. 1,326) in the morning period was identified as 07:00-08:00, which is the period for night-time staff leaving the hospital. Additionally, the total hourly traffic flows (i.e. 1,326) between 07:00 and 08:00 is similar to the background traffic flows at the busiest hours (i.e. 1,316 between 09:00-10:00). It should be also noted that daytime staff will arrive the hospital between 06:00 and 07:00, which is outside the busiest hours (i.e. 07:00-10:00) of the surrounding road network in the morning period.

In the evening, the total hourly traffic flows (i.e. 1,171) between 18:00 and 19:00 (which is the period for night-time staff arriving to the hospital) is higher than the total hourly traffic flows (i.e. 1,025) between 19:00 and 20:00 (which is the period for daytime staff leaving the hospital). However, the aforementioned total hourly traffic flows (i.e. 18:00-19:00 and 19:00-20:00) are also less than the background hourly traffic flows at the busiest hour (i.e. 1,402 between 17:00-18:00). It should be also noted that the daytime staff leaving the hospital between 19:00 and 20:00, which is outside the busiest hours (i.e. 16:00-19:00) in the evening period. In consideration of traffic impact during the staff shifting periods, a capacity assessment in the morning (07:00-08:00) and evening (18:00-19:00) periods were selected for assessment.

By using the car parking utilization, expected net trip generation for the proposed development was estimated and was revealed to be in total 3 trips inbound and 43 trips outbound in the morning hour (07:00-08:00), and 43 trips inbound and 10 trips outbound in the evening hour (18:00-19:00).

In the 2042 design year, Junction 1 will also operate within the normal design threshold in both the morning (07:00-08:00) and evening (18:00-19:00) hours for both the "without" development and "with" development scenarios.

Junction 3, and Junction 5 to Junction 7 will exceed the normal design threshold in both the morning (07:00-08:00) and evening (18:00-19:00) hours in 2042 for both the "without" development and "with" development scenarios, resulting in queues and delays for motorists. Additionally, the ratio of estimated net trips associated with the proposed development to the traffic flows in 2023 in the morning (07:00-08:00) and evening (18:00-19:00) hours for Junction 3, and Junction 5 to Junction 7 are also less than 2.3%, which are less than the thresholds for traffic impact assessment as stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists). Moreover, the new hospital will employ a Workplace Travel Coordinator, who will prepare the Mobility Management Plan to supervise the use of private cars on Site and that opportunities for employees / visitors to use alternative modes of transport (i.e. walking, cycling and public transport) are maximised, resulting in further reduction of net trip generation by the proposed development. In view of the above analysis, the proposed development will have a negligible increase in traffic volumes on Junction 3, and Junction 5 to Junction 7 in the morning (07:00-08:00) and evening (18:00-19:00) hours. The results also demonstrate that the impact on Junction 3, and Junction 5 to Junction 7 will be mainly due to regular background traffic growth but not the proposed development per se so traffic from the proposed development will not have significant impact on these junctions.

Proposed Improvement Scheme at Junction 7 (Chapel Hill / Lucan Road Junction) in a "with allowing a modal shift" approach

With provision of active travel facilities and enhancement of public transport services in the vicinity of the proposed development, it is anticipated that the amount of people walking, cycling and using public transport will increase and the number of journeys in private vehicles will decrease. As such, a modal shift from private car to walking, cycling and public transport is expected for this development. As the proposed improvement works will be carried out at Junction 7 to relieve the traffic congestion and enhance the safety of vulnerable road users, it is also proposed to carry out the traffic analysis at Junction 7 in "without allowing for modal shift" approach and "allowing for modal shift" approach for the **"**with**"** development scenario. Therefore, 1.9% and 8.8% of traffic reduction, either for background traffic or new trips, were applied on Junction 7 in 2027 Opening Year and 2042 Design Year respectively in a "allowing for modal shift" approach.

In a "allowing for modal shift" approach, the proposed improvement scheme can relieve the traffic congestion when compared to the "with" development scenario (based on the existing junction layout).

Parking Provision

Within the proposed development, it is proposed to provide a total of 214 car-parking spaces for staff and visitors. This is less than the recommended maximum car parking spaces (i.e. 215 car parking spaces) as required in the South Dublin County Development Plan 2022–2028. Moreover, two additional minibus parking spaces will be provided for the hospital's general operation.

In addition, it is proposed to provide a total of 160 bicycle-parking spaces within the development, inclusive of 104 bicycle parking spaces for staff (long-stay) and 56 bicycle parking spaces for visitors (short-stay). This exceeds the minimum bicycle parking requirement of 94 bicycle-parking spaces as required in the South Dublin County Development Plan 2022–2028.

The study concludes that, from a traffic and transportation perspective, the proposed development as described herein will not result in any significant residual traffic or road safety impacts. On this basis, the proposed development is considered acceptable and should be granted planning permission.

APPENDIX 1 – TRAFFIC COUNT DATA AT LUCAN ON 22ND FEBRUARY 2023

APPENDIX 2 – TRICS OUTPUT FILES

APPENDIX 3 – TRAFFIC COUNT DATA AT JUNCTION 1 OF LUCAN ON 21ST MAY 2024

APPENDIX 4 – TRAFFIC COUNT DATA AT ST. PATRICK'S UNIVERSITY HOSPITAL AT DUBLIN 8 ON 2ND MAY 2024

APPENDIX 5 – LOCATION AND FULL TRAFFIC FLOWS ON 22ND FEBRUARY 2023 FOR N04 BETWEEN JN N4/M50 AND JN02 LIFFEY VALLEY, CO. DUBLIN (TMU N04 000.0W) ON 22ND FEBRUARY 2023

APPENDIX 6 – GRAPHS SHOWING THE TRAFFIC IMPACTS AT JUNCTION 1

Ireland

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APPENDIX 10

Chapter 10 Cultural Heritage

Conservation Report - Architectural Heritage Impact Assessment

Southern wall - Architectural Heritage Impact Assessment

Engineering Investigations and Archaeological Site Inspection

9 Appendix

9.1 Appendix 01 Architectural Heritage Impact Assessment.

ST. EDMUNDSBURY HOSPITAL, LUCAN, CO. DUBLIN

Volume 3: Conservation report – Architectural Heritage Impact Assessment

April 2026

Ref: 22037

CURRENT ISSUE DATE	RECIPIENT	ISSUE

20 APRIL 2026	DES SMYTH, TOT ARCHITECTS	ISSUE 1

QUALITY CONTROL

Report prepared on behalf of TOT Architects and prepared by:

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This document has been prepared by Carrig Conservation International Ltd. ("Carrig") for sole use of our client (the "client") in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between Carrig and the client. Any information provided by third parties and referred to herein has not been checked or verified by Carrig, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of Carrig.

The report adheres to national standard for conservation reports as set out in *Architectural Heritage Protection, Guidelines for Planning Authorities* (Department of Arts, Heritage and the Gaeltacht, 2011) and the European Standard for Condition Survey and Report of Built Cultural Heritage EN 16096-2012.

DOCUMENT ISSUE RECORD

ISSUE DATE	RECIPIENT	STATUS
20/04/2026	DES SMYTH, TOT ARCHITECTS	ISUUE 1

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1 INTRODUCTION AND SUMMARY

This Architectural Heritage Impact Assessment (AHIA) has been prepared in support of a planning application to An Coimisiún Pleanála under Section 37E of the Planning and Development Act 2000 (as amended), for the development of a new mental health hospital facility and associated works at St. Edmundsbury Hospital, Lucan Road, Lucan, Co. Dublin.

The application relates to a site of approximately 8.10 hectares and includes a number of protected structures listed in the Record of Protected Structures (RPS Ref. Nos. 003, 008, 012 and 013). The proposed development comprises the construction of a new adult inpatient mental health facility (c. 200 beds), a new adolescent inpatient unit, the refurbishment and reuse of existing historic structures within the farmyard complex, and associated site development works including landscaping, infrastructure and access improvements.

The proposed development includes the demolition of a number of existing structures, including a modern ward extension, non-historic ancillary buildings, and a historic farm building identified in the National Inventory of Architectural Heritage (NIAH) as being of regional significance. The development also involves the partial demolition of sections of the protected walled garden (RPS 012), and the incorporation and alteration of the boundary wall and bell tower (RPS 013) as part of the new hospital building.

This report assesses the potential impacts of the proposed development on the architectural heritage resource of the site, including the historic fabric, character, setting and significance of the protected structures and associated features. The assessment considers both adverse and beneficial effects arising from demolition, alteration, new construction and change of use.

The principal adverse impacts identified relate to:

- the demolition of the historic farm building;
- the partial removal of sections of the protected walled garden;
- the alteration and incorporation of the boundary wall and bell tower into the new hospital structure; and
- interventions to the historic fabric and plan form of protected structures.
- The principal positive impacts relate to:
- the conservation, repair and continued use of St. Edmundsbury House;
- the adaptive reuse of the Barn and Coach House;
- the removal of non-historic accretions which detract from the character of the historic complex; and
- the long-term securing of the viability of the site as a managed and maintained heritage environment.

This AHIA forms part of a suite of conservation documents prepared by Carrig Conservation International Ltd., including:

- Volume 1: Architectural Inventory, Condition Survey and Appraisal;
- Volume 2: Conservation Repair Methodology and Specification; and
- Volume 3: Architectural Heritage Impact Assessment (this document).

This document should be read in conjunction with Chapter 10 (Cultural Heritage) of the Environmental Impact Assessment Report (EIAR), which applies the Environmental Protection Agency Guidelines (2022) to classify the significance of effects identified in this assessment.

1.1 SUMMARY OF PROPOSED DEVELOPMENT

- Site area: **c. 8.10 ha**
- Protected structures: **RPS 003, 008, 012, 013**
- Total cumulative area of all proposed new and refurbished buildings: **c. 19,251.90 sq m**

- Public open space: **8,524 sq m including public walking and cycling facilities**
- Permission period: **10 years**
- Junction upgrade works: **do not form part of this application**

2 METHODOLOGY

2.1 BASIS OF ASSESSMENT

The architectural heritage appraisal describes and evaluates the heritage significance of the buildings and features within the application site and its immediate context. The assessment has been informed by a review of available documentary sources, statutory records and on-site inspection.

The following sources have been consulted:

- South Dublin County Development Plan 2022–2028
- Record of Protected Structures (RPS)
- National Inventory of Architectural Heritage (NIAH)
- Record of Monuments and Places (RMP)
- Historic mapping and aerial imagery
- Carrig Conservation Vol. 1: Architectural Inventory, Condition Survey and Appraisal
- Carrig Conservation Vol. 2: Conservation Repair Methodology and Specification

2.2 SCOPE OF THE ASSESSMENT

This report assesses the potential impact of the proposed development on the architectural heritage resource within the site, including:

- Protected structures and their curtilage
- Non-designated structures of architectural interest
- Historic boundaries and landscape features
- The setting and spatial relationships of the historic complex

The assessment is based on:

- visual inspection of the site and structures;
- review of architectural drawings and design proposals; and
- consideration of the historical development of the site.
- No intrusive investigation of the built fabric has been undertaken as part of this assessment.

Archaeological impacts are addressed separately within the Cultural Heritage chapter of the EIAR and associated specialist reports.

2.3 IMPACT ASSESSMENT METHODOLOGY

The assessment of impacts on architectural heritage is based on the interaction between:

- the significance of the heritage asset, and
- the magnitude of change arising from the proposed works

2.3.1 SIGNIFICANCE OF HERITAGE ASSETS

The significance of each asset is informed by:

- statutory designation (RPS, NIAH)
- architectural quality and craftsmanship
- historic and cultural value
- group value within the wider complex
- contribution to setting and landscape

2.3.2 MAGNITUDE OF CHANGE

The magnitude of change is assessed having regard to:

- the extent of removal of historic fabric
- the degree of alteration to character or form
- the reversibility of the intervention
- the impact on spatial relationships and setting
- the visibility of the change

2.3.3 IMPACT CLASSIFICATION

Impacts are classified as follows:

- **Significant Adverse Impact**
  Major loss of historic fabric or substantial harm to the character or setting of a heritage asset
- **Moderate Adverse Impact**
  Partial loss of fabric or notable alteration to character or setting
- **Slight Adverse Impact**
  Minor alteration to fabric or limited effect on character
- **Neutral Impact**
  No material change to fabric, character or setting
- **Slight Positive Impact**
  Minor enhancement, including repair or removal of inappropriate fabric
- **Moderate Positive Impact**
  Noticeable improvement to condition, character or legibility
- **Significant Positive Impact**
  Substantial enhancement, including securing long-term conservation and viable use

2.4 LIMITATIONS

This assessment is based on the information available at the time of writing, including architectural drawings and design proposals provided by the design team.

The assessment is limited to architectural heritage and does not include detailed structural analysis or archaeological excavation.

Where further design development occurs, additional detailed assessment may be required, particularly in relation to junction detailing and conservation methodologies.

3 Outline Description of the Site

3.1 Historic Development And Site Structure

The subject site comprises approximately 8.10 hectares located at St. Edmundsbury Hospital, Lucan Road, Lucan, Co. Dublin. The site forms part of a historic institutional complex set within a landscaped setting and accessed from the Lucan Road (R835).

The site contains a number of protected structures listed in the Record of Protected Structures (RPS) under the South Dublin County Development Plan, including:

- **RPS 003** – St. Edmundsbury House
- **RPS 008** – Farmyard complex, including Coach House and Barn
- **RPS 012** – Walled Garden
- **RPS 013** – Boundary Wall and Bell Tower

In addition, a number of structures within the site are identified in the National Inventory of Architectural Heritage (NIAH), reflecting their architectural and historical interest.

Structure & Description (As per NIAH)	Designation	
	RPS	NIAH Ref. No. & Rating
St. Edmondsbury House, Old Lucan Road **Detached multiple-bay two-storey over basement house, c.1740, with projecting Doric entrance portico. Rendered, ruled and lined walls with quoins and balustraded parapet. Various replacement windows, set beneath bracketed pediments to ground floor, and within segmental-headed openings having carved timber decoration to first floor. Hipped slate roof with lead flashing. Substantially extended and altered, in the early nineteenth century, and again, c.1986. Now in use as psychiatric hospital.**	003	11202003 Regional
Uncoursed rubble limestone boundary wall, c.1825, with attached medieval bell tower. Detached single-storey farm building with brick and rubble walls and pitched slate roof nearby.	013	11202005 Regional
Walled Garden, Lucan Road, St. Edmondsbury House	012	11202006 Regional
Uncoursed Rubble Limestone Boundary Wall with Attached Bell Tower, Off Lucan Road, St. Edmondsbury House.	013	11202005 Regional
St. Edmondsbury, Off Lucan Road - Barn **Detached multiple-bay double-height cattle barn, c.1880, with various later pitched-roofed extensions. Rubble stone walls retaining patches of render, with assorted small openings. Large round-headed archways with brick reveals running through each end. Corrugated iron roof on steel trusses. Dovecote to eastern end. Barn currently unused.**	008	11202007 Regional

Structure & Description (As per NIAH)	Designation	
	RPS	NIAH Ref. No. & Rating
St. Edmondsbury, Off Lucan Road (Barn) **Detached irregular-bay double-height former byre, c.1870. Roughcast rendered walls with various window openings, some blocked, some with timber ventilation slats. Plain doorways to south and east walls. Pitched slate roof with ventilators to ridge. Remnants of stalls and hay loft to interior.**	008	11202008 Regional

The site is centred on St. Edmundsbury House, a late eighteenth-century country house which forms the principal architectural element within the complex. The house is set within a structured landscape and is historically associated with a range of ancillary buildings and enclosed spaces.

To the west of the house lies the historic farmyard complex (RPS 008), comprising the Coach House, Barn and associated structures. These buildings are arranged around a courtyard and reflect the agricultural and service functions historically associated with the estate.

To the north-west of the house lies the walled garden (RPS 012), a formally enclosed space defined by high stone walls. The walled garden forms a key component of the historic layout of the site and contributes significantly to its character and spatial organisation.

The site is further defined by a series of boundary walls, including the boundary wall with bell tower (RPS 013), which forms a prominent and distinctive feature within the complex and contributes to the definition of internal spaces and circulation routes.

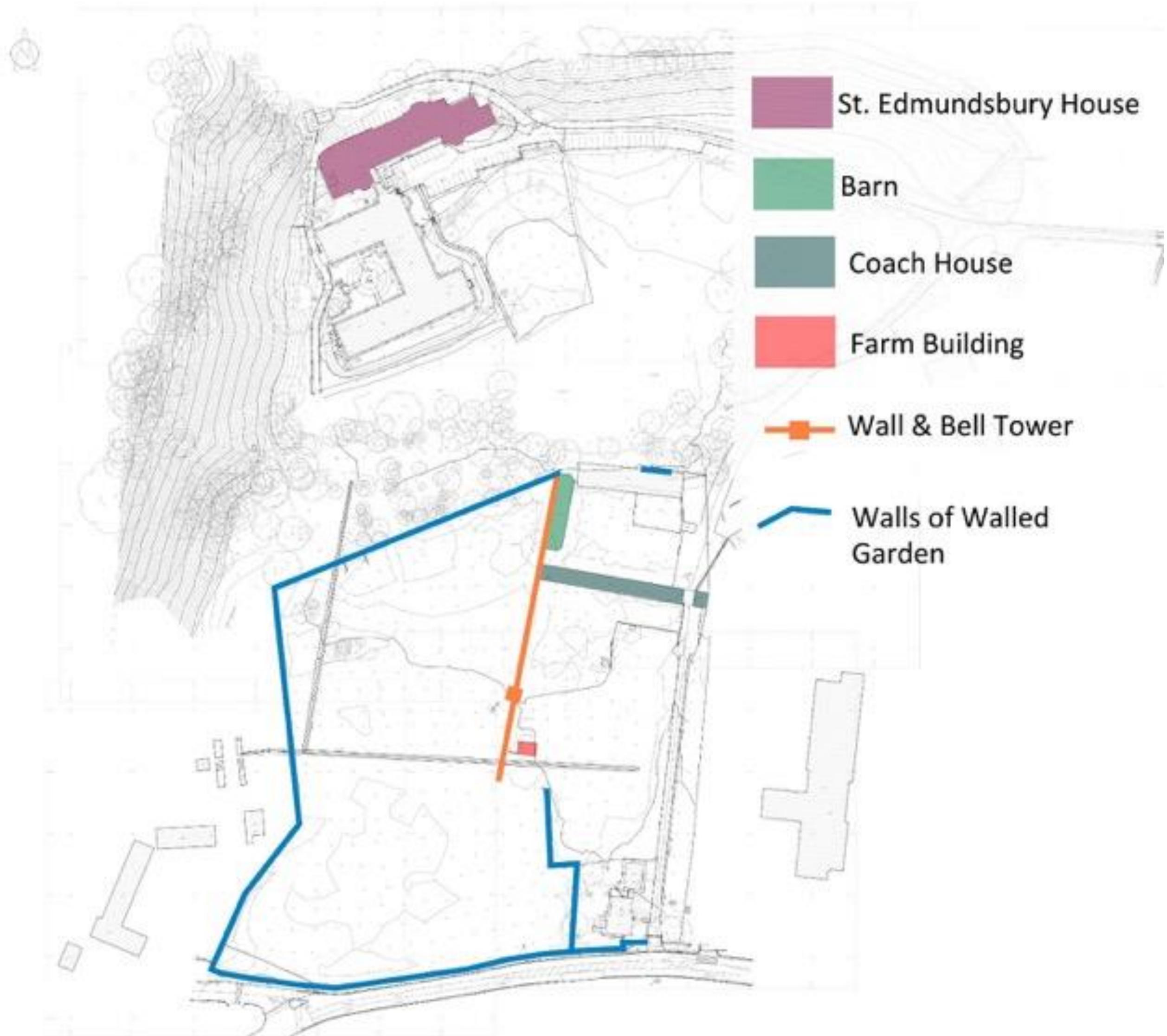

Fig.1: St. Edmundsbury Hospital existing key plan

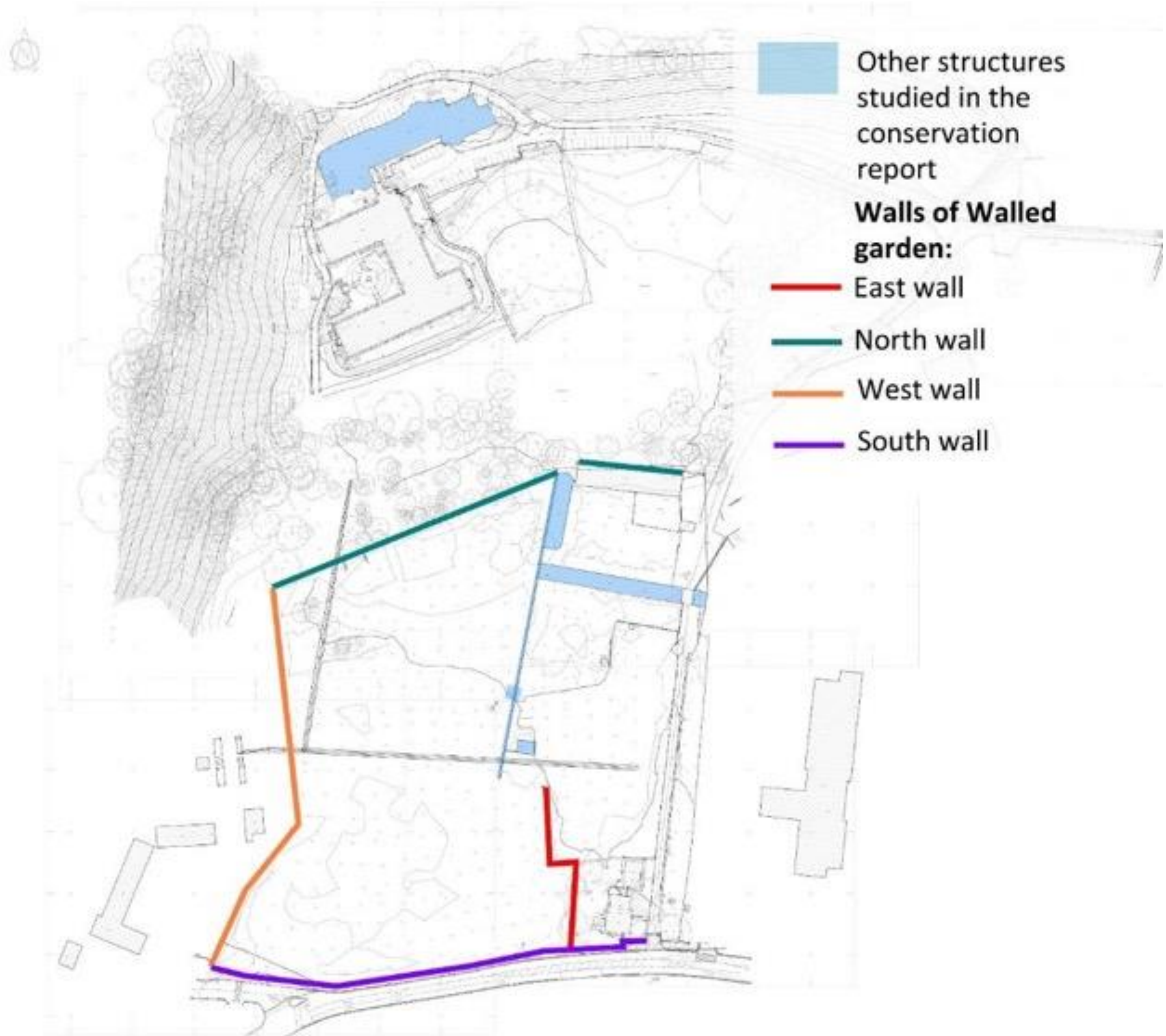

Fig.2: Walls of Walled Garden key plan

3.2 Architectural and Heritage Significance

The architectural heritage significance of the site derives not only from the individual protected structures, but from their **collective relationship as an integrated historic complex**.

Key aspects of significance include:

- The architectural quality and historic character of St. Edmundsbury House
- The functional and spatial relationship between the house and the farmyard complex
- The enclosure and definition provided by the walled garden
- The contribution of boundary walls and the bell tower to the legibility of the site
- The survival of historic spatial arrangements and circulation patterns

The group value of these elements is a defining characteristic of the site, and the relationships between buildings, walls and open spaces are critical to its understanding and significance.

3.3 Broader Setting and Context

The site is set within a wider suburban and institutional landscape, with development along the Lucan Road forming its southern boundary. While the surrounding context has evolved over time, the internal character of the site retains a distinct identity defined by its historic structures, enclosed spaces and mature landscape.

The boundary walls, entrances and internal layout contribute to the separation of the historic complex from its surroundings and reinforce its character as a defined and cohesive place.

4 Proposed Development

The proposed development comprises the construction of a new mental health hospital facility and associated works within the St. Edmundsbury Hospital campus.

For the purposes of this assessment, the development can be broadly described under the following headings:

4.1 Demolition Works

The proposed development includes the demolition of a number of existing structures within the site, including:

- The demolition of an existing single-storey 52-bed psychiatric ward (c. 1,633 sq m) located to the south-west of St. Edmundsbury House
- The demolition of a number of non-historic ancillary buildings, including sheds and outbuildings
- The demolition of two existing Dean Clinic buildings at the entrance to the site to facilitate revised access arrangements
- The demolition of a contemporary shed within the historic farmyard enclosure
- The demolition of an existing shed located to the north-west of St. Edmundsbury House

In addition, the proposed development includes the demolition of a historic farm building identified in the NIAH as being of regional significance.

4.2 New Construction

The proposed development includes the construction of:

- A new adult inpatient mental health facility (c. 200 beds), ranging from one to two storeys in height, with a total floor area of approximately 16,283 sq m. This building is located within the existing walled garden (RPS 012) and incorporates the historic boundary walls and bell tower (RPS 013)
- A new adolescent inpatient mental health facility (14 bedrooms), constructed on the site of the existing ward extension to the south-west of St. Edmundsbury House
- A new ESB substation building to the north-west of St. Edmundsbury House
- A new energy centre building within the historic farmyard enclosure

The new adult inpatient facility is arranged as a continuous block comprising multiple wards and incorporates a series of internal courtyards and terraces.

As part of these works, approximately 62 linear metres of the north wall of the walled garden will be demolished, with salvaged stone to be reused within the new construction.

4.3 Refurbishment of Existing Structures

The proposed development includes the alteration, refurbishment and reuse of historic structures within the site, including:

- St. Edmundsbury House (RPS 003), which will be adapted for continued healthcare use
- The Coach House (RPS 008), which will be converted to provide a consultancy suite and café
- The Barn (RPS 008), which will be adapted to accommodate maintenance facilities and associated offices

These works involve internal reconfiguration, insertion of new openings, and upgrading of building services.

4.4 Boundary and Wall Works

The proposed development includes significant works to historic boundary elements, including:

- The incorporation of the boundary wall and bell tower (RPS 013) into the new adult inpatient facility
- The demolition of sections of the walled garden (RPS 012), including approximately 62 linear metres of the north wall
- The removal and relocation of approximately 190 linear metres of the southern boundary wall along Lucan Road, set back from the existing boundary to facilitate future junction improvements (not part of this application)

These works will alter the spatial definition and enclosure of the historic site.

4.5 Access, Landscaping and Site Works

The proposed development includes a range of associated site development works, including:

- Revised access arrangements and widening of the site entrance from Lucan Road
- Provision of internal roads, paths, and set-down areas
- Landscaping works, including public open space, private patient gardens, and boundary treatments
- Installation of services infrastructure, including drainage, lighting, utilities and plant
- Tree removal and replacement planting
- Changes in level, retaining structures and groundworks

These works will influence the setting of the protected structures and the character of the site.

4.6 Summary of Proposed Works By Structure.

The proposed development includes a range of interventions across the protected structures and associated heritage assets within the site. A summary of the principal works affecting each structure is set out below.

4.6.1 ST. EDMUNDSBURY HOUSE (RPS 003)

- Removal of the existing modern ward extension to the south-west
- Construction of a new adolescent inpatient unit in its place
- Façade remediation where the existing extension connects to the house

- Internal alterations including removal and insertion of partitions
- Installation of new building services and finishes
- General refurbishment and redecoration

4.6.2 FARMYARD COMPLEX (RPS 008)

a) Coach House

- Conversion to consultancy suite and café
- Formation of new openings
- Alteration of existing openings
- Replacement of roof structure
- Installation of new internal floors and stairs
- Insertion of new services

b) Barn

- Conversion to maintenance facility and offices
- Replacement of roof structure, including increase in ridge height
- Formation of new openings
- Insertion of new first floor and stair
- Internal reconfiguration
- Installation of new mechanical and electrical services

4.6.3 WALLED GARDEN (RPS 012)

- Construction of a new adult inpatient facility within the enclosure
- Demolition of approximately 62 linear metres of the north garden wall
- Potential alteration to additional wall sections (subject to final design confirmation)
- Reuse of salvaged stone within the proposed development

4.6.4 BOUNDARY WALL AND BELL TOWER (RPS 013)

- Incorporation of the wall and bell tower into the new hospital building
- Formation of new openings within the wall
- Attachment of new structural elements and partitions
- Alteration of the spatial relationship between the wall and surrounding areas

4.6.5 FARM BUILDING (NIAH)

- Complete demolition of the existing structure
- Recording and salvage of materials

4.6.6 SOUTHERN BOUNDARY WALL (LUCAN ROAD)

- Removal and relocation of approximately 190 linear metres of boundary wall
- Reconstruction set back from the existing alignment
- Facilitation of future junction improvement works (not part of this application)

4.6.7 OTHER STRUCTURES AND SITE ELEMENTS

- Demolition of non-historic ancillary buildings, including Dean Clinic buildings
- Construction of new ESB substation and energy centre
- Revised access arrangements and entrance widening
- Landscaping, boundary treatments and infrastructure works affecting the setting of heritage assets.

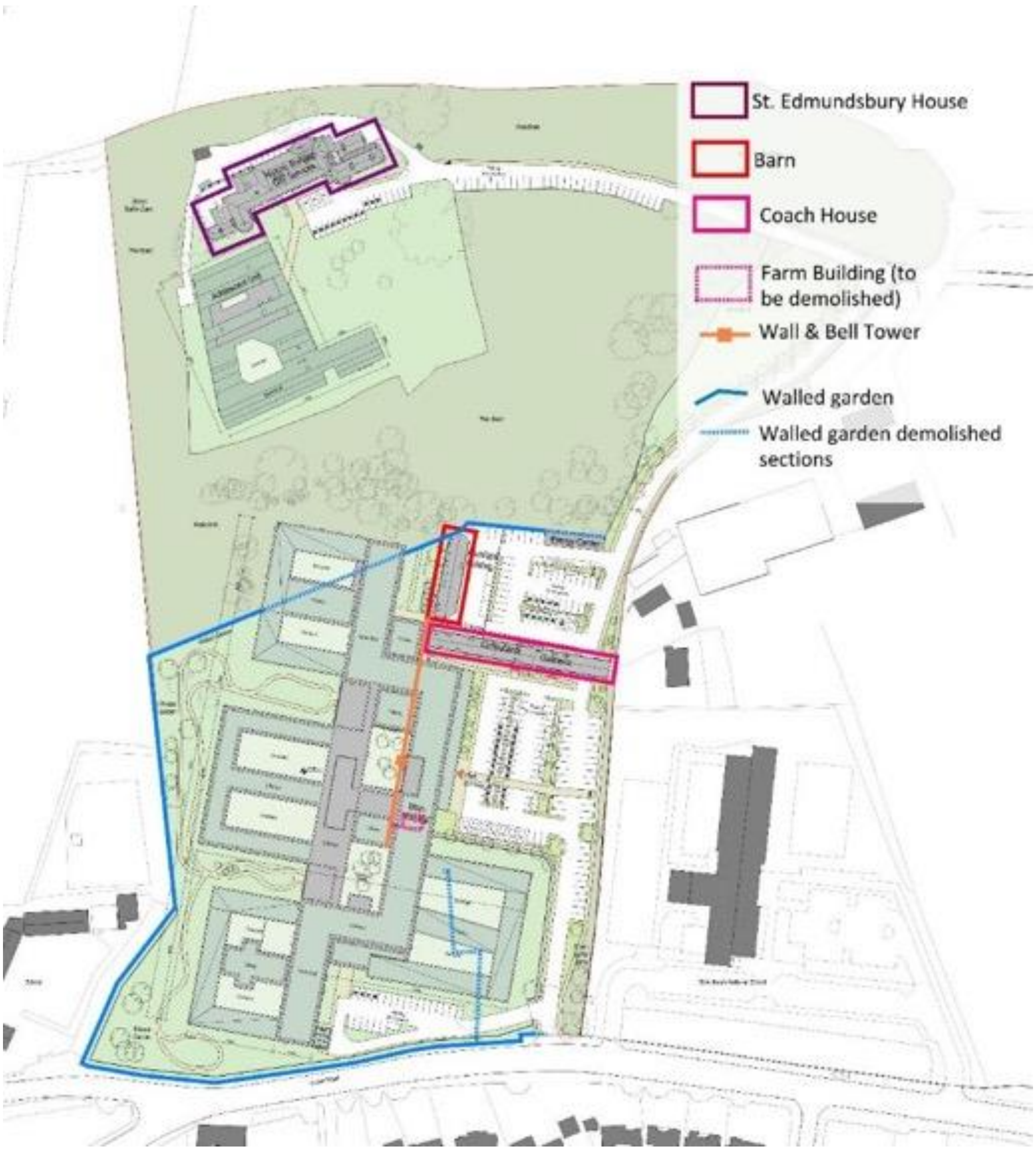

Fig.3: Proposed site plan. Source: TOT Architects

Fig.4: Demolition site plan. Source: TOT Architects. Elements in red are proposed for removal.

Fig.5: Historic Farm building proposed for demolition.

Fig.6: Non-historic section of entrance wall at the southeast of the site, proposed for demolition.

Fig.7: Non-historic bungalows buildings at the southeast of the site, proposed for demolition.

Fig.8: Protected brickwork and concrete walled garden at the southeast of the site, proposed for demolition. Source: Murphy survey

Fig.9: Non-historic concrete blocks outbuildings at the southeast of the Coach House, proposed for demolition.

Fig.10: Non-historic fencing and concrete wall boundary wall at the south of the Coach House, proposed for demolition.

Fig.11: Non-historic ancillary building at the south of the north walled garden, proposed for demolition.

Fig.12: Non-historic ancillary building close to the Barn, proposed for demolition.

Fig.13: Non-historic ancillary building at the north of the Coach House, proposed for demolition.

Fig.14: Non-historic 1980s ward extension at the south of St. Edmundsbury House, proposed for demolition.

Fig.15: Section of protected north wall of Walled Garden, proposed for demolition.

5 Architectural Heritage Impact Assessment

5.1 Introduction and Overview

This section provides a detailed assessment of the potential impacts of the proposed development on the architectural heritage resource within the site.

The assessment is informed by the methodology set out in Section 2 and considers the interaction between the significance of the heritage assets and the magnitude of change arising from the proposed works.

The assessment addresses impacts on:

- historic fabric
- architectural character
- spatial relationships and plan form
- setting and enclosure
- the legibility of the historic complex

The assessment is structured by reference to individual structures and site elements, and is supported by the summary of proposed works set out in Section 4.6.

This impact assessment should be read in conjunction with the design team's documentation.

The Architectural Heritage Impact Assessment adheres to the government publication *Architectural Heritage Protection, Guidelines for Planning Authorities.*

The assessment of impacts on architectural heritage is based on the interaction between the **significance of the heritage asset** and the **magnitude of change arising from the proposed works**.

Impacts are classified as follows:

- **Significant Adverse Impact:** Total or substantial loss of historic fabric or major alteration to character or setting of a heritage asset of high significance.
- **Moderate Adverse Impact:** Partial loss of historic fabric or notable alteration to character or setting.
- **Slight Adverse Impact:** Minor loss or alteration of fabric or limited impact on character.
- **Neutral Impact:** No material change to historic fabric, character or setting.
- **Slight / Moderate / Significant Positive Impact:** Improvement to the condition, legibility, or long-term conservation of a heritage asset.

The proposed works, the rationale for the proposed works, the anticipated impact of the proposed works and mitigation measures in response to the anticipated impacts are outlined below.

5.2 Official Development Description

In accordance with section 37E of the Planning and Development Act 2000, as amended, The Governors of St. Patrick's Hospital, care of Tom Phillips + Associates, 80 Harcourt Street, Dublin 2, gives notice of its intention to make an application to An Coimisiún Pleanála for permission for a period of 10 no. years for the development of the new mental health hospital facility and all ancillary site development, site services, utilities and landscaping works ("the proposed development"), all at the c. 8.10 Ha site, located at St Edmundsbury Hospital, Lucan Road, Lucan, Co. Dublin, K78 NW63 (Protected Structures: RPS Ref Nos. 003, 008, 012, 013.) The cumulative area of all proposed new and refurbished buildings is c. 19,251.90 sqm. Associated site development works will include the provision of 8,524 sqm public open space facilities, including public walking and cycling facilities.

The proposed development comprises the demolition of an existing single storey 52 no. bed psychiatric ward (c. 1,633.00 sq m), located to the south-west of St. Edmundsbury House (RPS 003), and the construction of a single storey 14 no. bedroom in-patient adolescent mental health facility (c. 1,857.10 sq m) in its place, with façade remediation where the former building connected to St. Edmundsbury House; The demolition of 1 no. storey existing shed (c. 17.90 sq m) to the north-west of St. Edmundsbury House and replacement with 1 no. ESB substation unit building (c. 23.60 sq m).

The proposed development includes a new 200 no. bed adult inpatient facility ranging from one to two storeys in height and a total floor area of c. 16,283.20sq m, with screened plant at roof level. It will be located within the existing walled garden area (RPS 012) and will incorporate the historic walls and bell tower structures (RPS 013.) The facility will be arranged as a single continuous block comprising 7 no. In-patient wards. The form of the building will create 10 no. new internal courtyards at ground floor & 2 no. terraces at first floor (c. 3696.00 sqm in total); with c. 62lin.m of the north garden wall to be demolished and this stone reincorporated into the proposed hospital structures.

The proposed development also includes for the alteration, refurbishment and conversion of the existing structures within the historic farmyard enclosure (RPS 008), including: coach house building (c. 312.95 sq m) to provide a new consultancy suite (c. 599.50 sq m), including c. 71.5 sq m café; Alteration, conversion and refurbishment of existing barn (c. 183.65 sq m) to form a maintenance facility building and associated offices (c. 374.00 sqm); The demolition of an existing contemporary shed within the historic farm yard (c. 163.75 sq m) and construction of a new single storey energy centre building (c. 114.50 sq m), within the historic farmyard enclosure. In total, c. 210.80 sq m of structures are required to be demolished within the walled garden and farmyard enclosure areas to facilitate the proposed development.

The proposed development also includes the removal and relocation of the existing southern boundary wall to Lucan Road (c. 190lin.m) (Regional Road Number Ref. R835) set back from the existing boundary to facilitate the future junction improvement works to the Lucan Road and Chapel Hill Junction. The junction upgrade works do not form part of this application and will be carried out by South Dublin County Council. The proposed development also comprises the demolition of the existing 2 no. Dean Clinic buildings (single storey and single storey with dormer level) at the existing entrance to the site via the Lucan Road (c. 221.15 sq m and c. 60 sq m respectively) to facilitate the construction of revised access arrangements and widening of the access to the Lucan Road.

The new mental health facility will provide adult and adolescent in-patient service rooms; Adult and adolescent day services rooms; Patient care services rooms; Patient pharmacy; Laboratories; Staff and patient canteen facilities; Consultant and hospital administration accommodation; Staff welfare facilities; Reconfigured and additional new car and cycle parking facilities (with revised total of 214 no. car parking spaces, 2 no. bus parking spaces and 160 no. secure cycle parking spaces); Signage and wayfinding.

The proposed development also includes private and secure patient gardens (c. 9,982 sq m); Plant and associated tanks; Public lighting; All piped infrastructure and ducting and redirection works; Tree removal, including tree removal within the Proposed Liffey Valley Natural Heritage Area (pNHA - 000128); Redirection and undergrounding of existing overhead power lines from the Lucan East 38KV Substation to the existing hospital facility; Controlled access barriers; 2 no. Secure cycle parking stores total c. 107.10 sq m; EV charging facilities; 2 no. Attenuation tanks; Rainwater harvesting tanks; PVs; SUDs including extensive green roof provision; Boundary treatments, including new boundary treatments and the repair and refurbishment of existing stone boundary walls; Waste marshalling compound storage area; Changes in level and retaining walls; Internal roads and paths, including vehicle set down areas; Site clearance works; Services provision and related ducting, piping and cabling; and all associated site development and excavation works above and below ground. Upon completion, the mental health facility will cumulatively provide 214 no. inpatient beds across the campus, including existing and proposed inpatient beds.

5.3 St. Edmundsbury Hospital: Site Wide Works Summary

St. Edmundsbury House is a protected structure of high architectural and historical significance, forming the principal element within the historic complex. Its significance derives from its architectural form, historic fabric, internal plan arrangement and its relationship to the wider estate.

The proposed works to the building are primarily internal and relate to its adaptation for continued healthcare use. These include reconfiguration of internal spaces, insertion and removal of partitions, installation of new services and finishes, and façade remediation following the removal of the existing ward extension.

While the majority of interventions are limited in extent, certain works will result in loss of historic fabric and alteration to the historic plan form. These impacts are balanced by the positive effect of securing the long-term use, repair and maintenance of the building. These works are assessed in table 2 below.

Table 2 – Works to St. Edmundsbury Hospital

Ref	Proposed Works	Impact	Reasoning	Mitigation
1	Demolition of modern section of entrance wall	Slight Positive	Removal of non-historic fabric improves legibility of historic boundary	Careful dismantling; protect retained historic fabric
2	Demolition of ward extension	Moderate Positive	Removal of large modern accretion enhances setting of St. Edmundsbury House	Controlled demolition; façade remediation
3	Demolition of shed north-west of house	Neutral to Slight Positive	Removal of minor non-historic structure with limited heritage value	Avoid damage to surrounding historic fabric
4	Demolition of modern ancillary buildings	Slight to Moderate Positive	Improves setting of historic farmyard complex	Controlled demolition; protect adjacent structures
5	Demolition of modern outbuildings	Slight Positive	Removal of visually intrusive elements	Careful sequencing of works
6	Demolition of concrete block boundary walls	Slight Positive	Improves character of site and reinstates historic boundary legibility	Salvage materials where feasible
7	Demolition of farm building (NIAH)	Moderate Adverse	Permanent loss of historic structure of regional significance	Full recording; salvage and reuse of materials

Ref	Proposed Works	Impact	Reasoning	Mitigation
8	Demolition of Dean Clinic buildings	Neutral to Slight Positive	Removal of non-historic structures to facilitate access improvements	Ensure works do not affect nearby historic fabric
9	Revised access and entrance widening	Slight Adverse	Alters historic approach and setting along Lucan Road	Sensitive design of entrance; retain boundary character

5.1 St. Edmundsbury House (RPS 003)

St. Edmundsbury House is a protected structure of high architectural and historical significance, forming the principal element within the historic complex. Its significance derives from its architectural form, historic fabric, internal plan arrangement and its relationship to the wider estate.

The proposed works to the building are primarily internal and relate to its adaptation for continued healthcare use. These include reconfiguration of internal spaces, insertion and removal of partitions, installation of new services and finishes, and façade remediation following the removal of the existing ward extension.

While the majority of interventions are limited in extent, certain works will result in loss of historic fabric and alteration to the historic plan form. These impacts are balanced by the positive effect of securing the long-term use, repair and maintenance of the building.

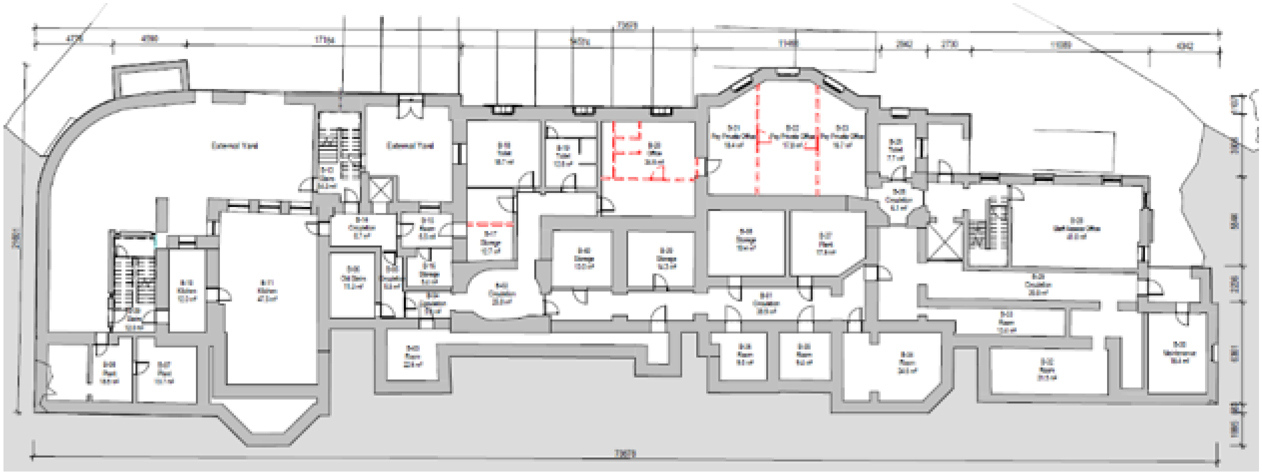

Fig.16: Basement demolition plan. Source: TOT Architects. Dashed red lines indication partitions removal.

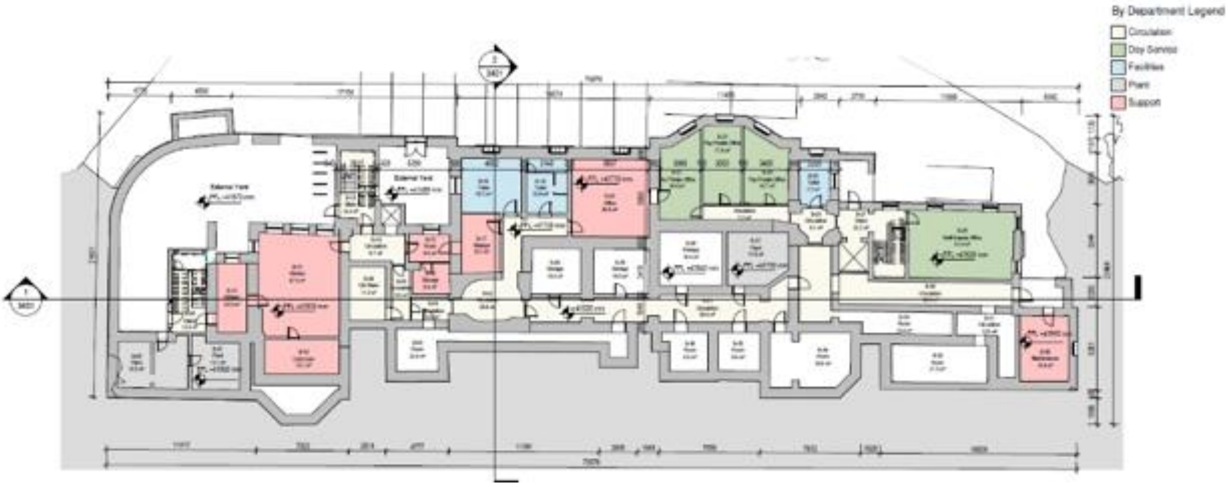

Fig.17: Basement proposed plan. Source: TOT Architects.

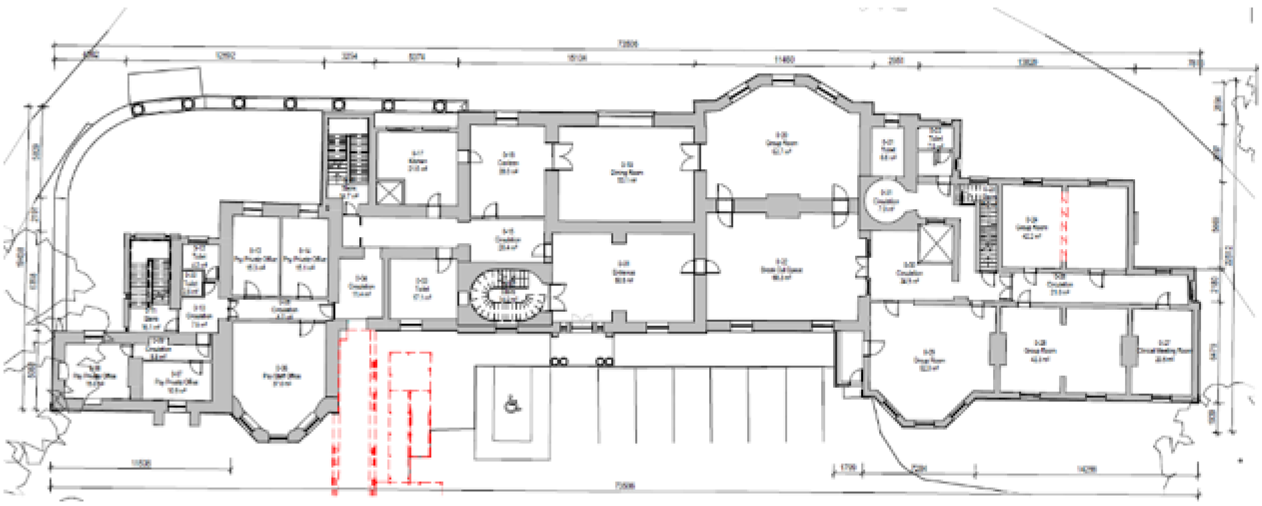

Fig.18: Ground floor demolition plan. Source: TOT Architects. Dashed red lines indication partitions removal.

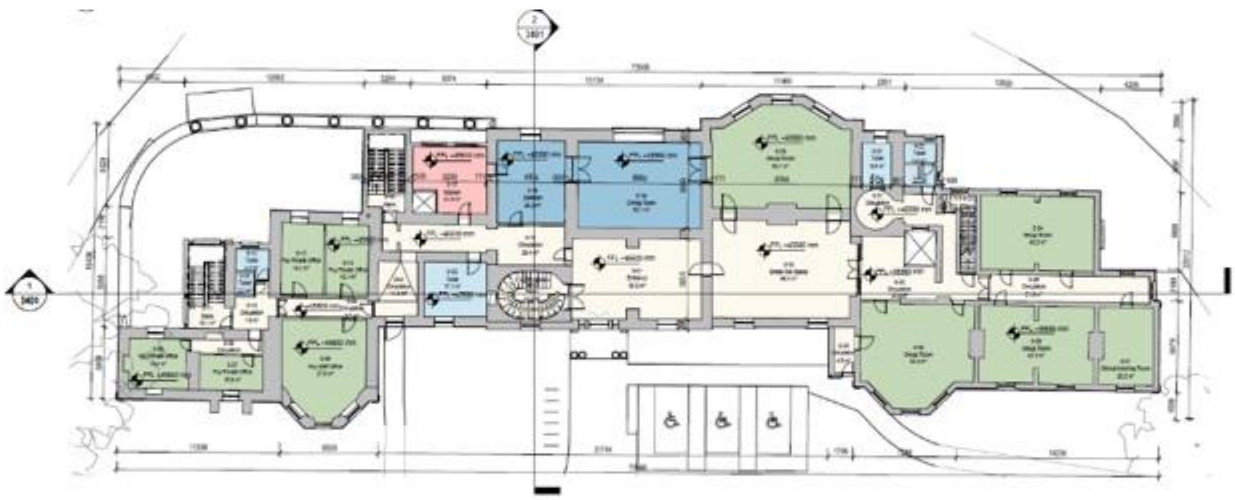

Fig.19: Ground floor proposed plan. Source: TOT Architects.

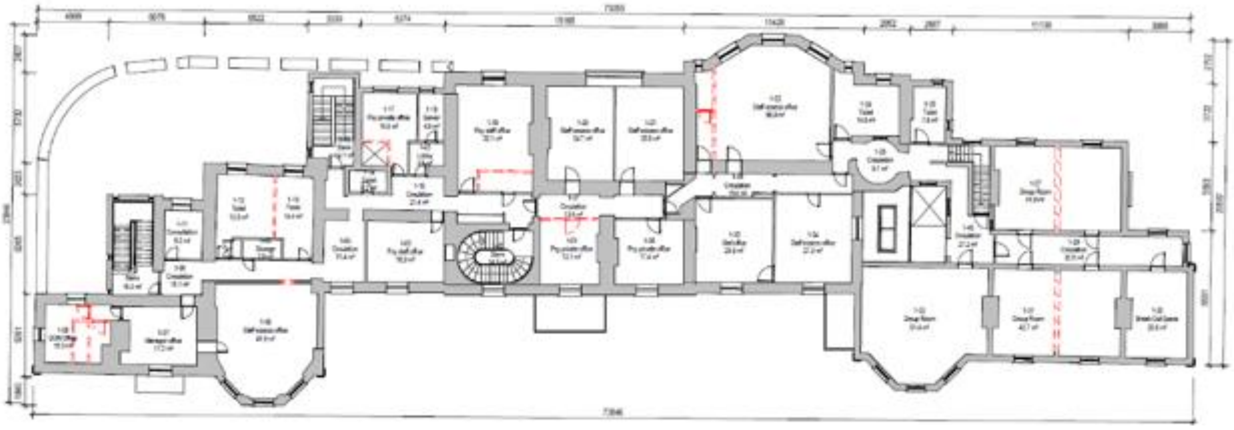

Fig.20: First floor demolition plan. Source: TOT Architects. Dashed red lines indication partitions removal.

Fig.21: First floor proposed plan. Source: TOT Architects.

Ref	Proposed Works	Impact	Reasoning	Mitigation
1	Repainting internal walls	Slight Positive	Improves condition and presentation of interior finishes without loss of historic fabric	Use breathable paints; avoid unnecessary preparation
2	Removal of non-historic wallpaper and repainting	Slight Positive	Removal of inappropriate finishes enhances character	As above
3	Replacement of modern wall tiles	Neutral to Slight Adverse	No loss of historic fabric where substrate is modern; risk to breathability	Avoid impermeable finishes; use compatible materials
4	Removal of modern tiles and repainting	Neutral	No impact on historic fabric	Retain underlying fabric
5	Application of new tiles to walls	Moderate Adverse	Risk of covering/removal of historic finishes, skirting and joinery	Avoid tiling on historic walls; retain detailing; use vapour-permeable systems
6	Localised tile replacement	Neutral	Limited intervention to non-historic fabric	Match existing; avoid damage
7	Partial tile removal and repainting	Neutral	No loss of historic fabric	Careful removal
8	Removal of hygienic finish and repainting	Neutral	No impact on historic fabric	Use breathable finishes
9	Vinyl flooring over existing tiles	Slight Adverse	Potential concealment of underlying fabric	Ensure reversibility
10	Replacement of vinyl flooring (historic skirting affected)	Slight Adverse	Risk of damage to historic joinery	Protect and reinstate skirting

Ref	Proposed Works	Impact	Reasoning	Mitigation
11	Replacement of vinyl flooring (modern skirting)	Neutral to Slight Adverse	Limited heritage impact	Careful installation
12	Replacement of carpet with vinyl/tile	Slight Adverse	Risk to skirting and detailing	Protect edges and junctions
13	Replacement of carpet (historic skirting lifted)	Slight Adverse	Risk of damage to original skirting	Specialist joinery handling
14	Replacement of carpet (modern skirting)	Neutral	No loss of historic fabric	Standard good practice
15	Replacement of vinyl with tiled floor	Slight Adverse	Change in finish and potential impact on substrate	Ensure compatibility
16	Vinyl over historic timber floor	Slight Adverse	Conceals historic fabric and alters breathability	Maintain reversibility; avoid fixings
17	Vinyl over concrete slab	Neutral	No heritage impact	—
18	Vinyl over historic ceramic tiles	Slight to Moderate Adverse	Conceals historic surface and affects legibility	Repair tiles; ensure reversible overlay
19	Replacement of non-historic timber floor	Slight Adverse	Limited heritage value but intervention required	Careful detailing
20	Removal of historic partition walls	Moderate Adverse	Loss of historic plan form and fabric	Minimise removal; record layout; retain traces

Ref	Proposed Works	Impact	Reasoning	Mitigation
21	Removal of non-historic partitions	Neutral	No loss of historic fabric	—
22	New openings in historic partitions	Moderate Adverse	Removal of fabric and alteration to plan form	Minimise intervention; salvage material
23	New partitions (independent construction)	Neutral	No direct impact on historic fabric	Ensure reversibility
24	New partitions affecting historic fabric	Slight to Moderate Adverse	Potential impact on cornices/skirting	Scribed installation; reversible fixing
25	Widening of door opening (non-original)	Neutral to Slight Positive	Opportunity to improve proportions	Careful detailing; conservation oversight
26	New sanitary installations	Slight Adverse	Localised intervention for services	Use existing routes; minimise cutting
27	Replacement of sanitary fittings	Slight Adverse	Minor intervention	As above
28	Removal of sanitary fittings	Slight Adverse	Localised impact on fabric	As above
29	Removal of kitchen fittings	Slight Adverse	Minor intervention	Careful removal
30	Repainting ceilings	Slight Adverse	Risk of covering historic finishes	Use breathable coatings

Ref	Proposed Works	Impact	Reasoning	Mitigation
31	Replacement of suspended ceilings	Slight Adverse	Minor alteration to interior character	Maintain access and reversibility
32	Replacement of plasterboard ceilings	Slight Adverse	Limited impact	Careful detailing
33	Installation of electrical services	Slight Adverse	Potential disturbance to fabric	Surface or discreet routing
34	Installation of new lighting	Slight Adverse	Visual and physical intervention	Minimise fixings
35	Installation of water services	Slight Adverse	Localised fabric disturbance	Route through non-sensitive areas

5.1.1 IMPACT SUMMARY

The proposed works to the Barn will result in a number of moderate adverse impacts arising from alterations to the building fabric and form, including the formation of new openings, replacement of the roof structure, and insertion of a new floor and stair.

These interventions will alter the architectural character and internal spatial quality of the building. However, the Barn is currently in a condition of partial deterioration and limited use.

The proposed conversion will secure the long-term use and maintenance of the structure, resulting in a moderate positive effect in terms of its overall conservation. On balance, the development will result in a mixed impact, with moderate adverse effects offset by the long-term benefit of reuse.

5.2 COACH HOUSE (RPS 008)

The Coach House forms part of the protected farmyard complex (RPS 008) and is of architectural and historical significance as a service building associated with the historic estate. The structure retains its original form and contributes to the character and spatial arrangement of the farmyard enclosure.

The proposed development includes the conversion of the Coach House to provide a consultancy suite and café. These works involve alteration of existing openings, formation of new openings, insertion of new structural elements including floors and stairs, and upgrading of the building fabric and services.

While the building is in a condition that requires intervention to facilitate reuse, the proposed works will result in alterations to its historic fabric and character. These impacts are balanced by the positive effect of bringing the structure into active use and securing its long-term conservation

Fig.22: Demolition ground floor plan. Above: Part 1. Bottom: Part 2. Source: TOT Architects. Dashed red lines indication partitions removal.

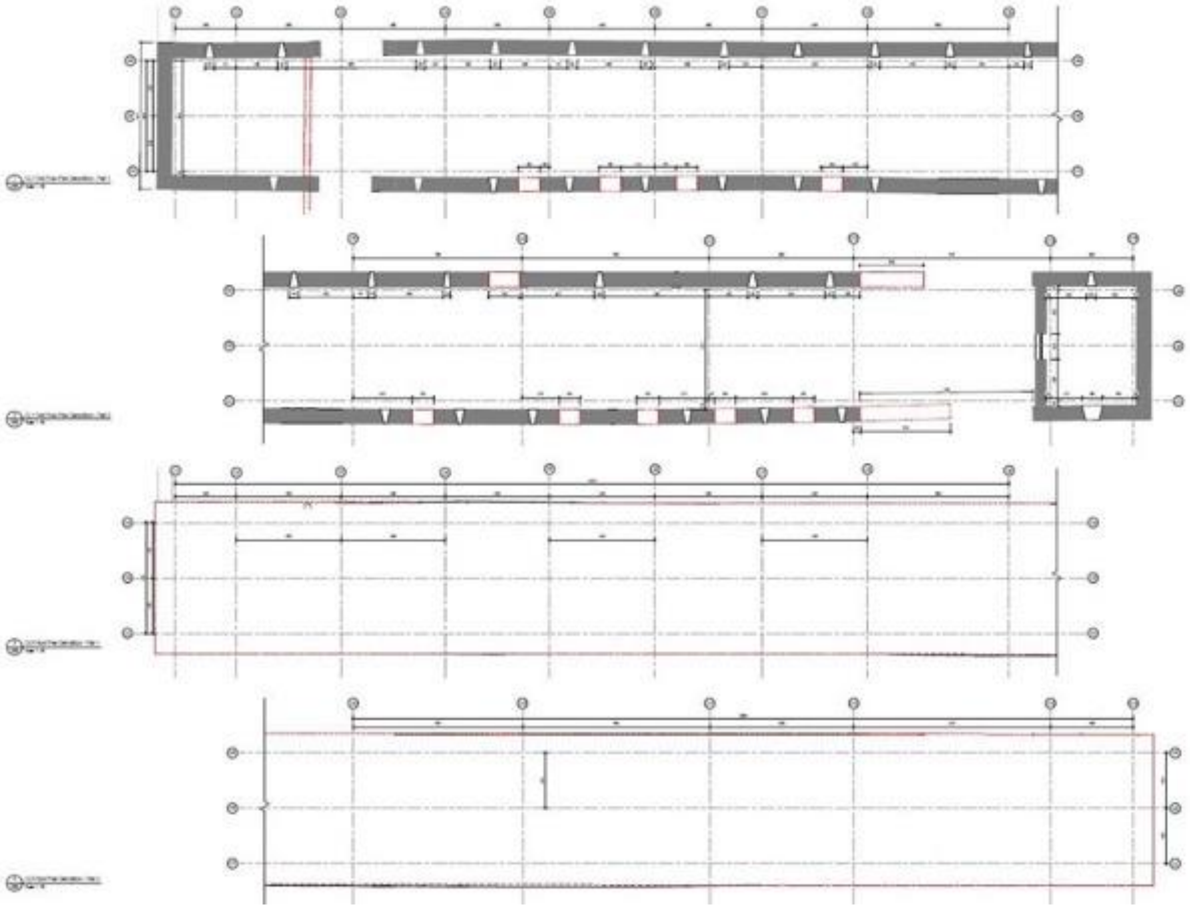

Fig.23: Demolition first floor and roof plan. From top to bottom:, first floor parts 1 &2, roof plans parts 1&2. Source: TOT Architects. Dashed red lines indication partitions removal.

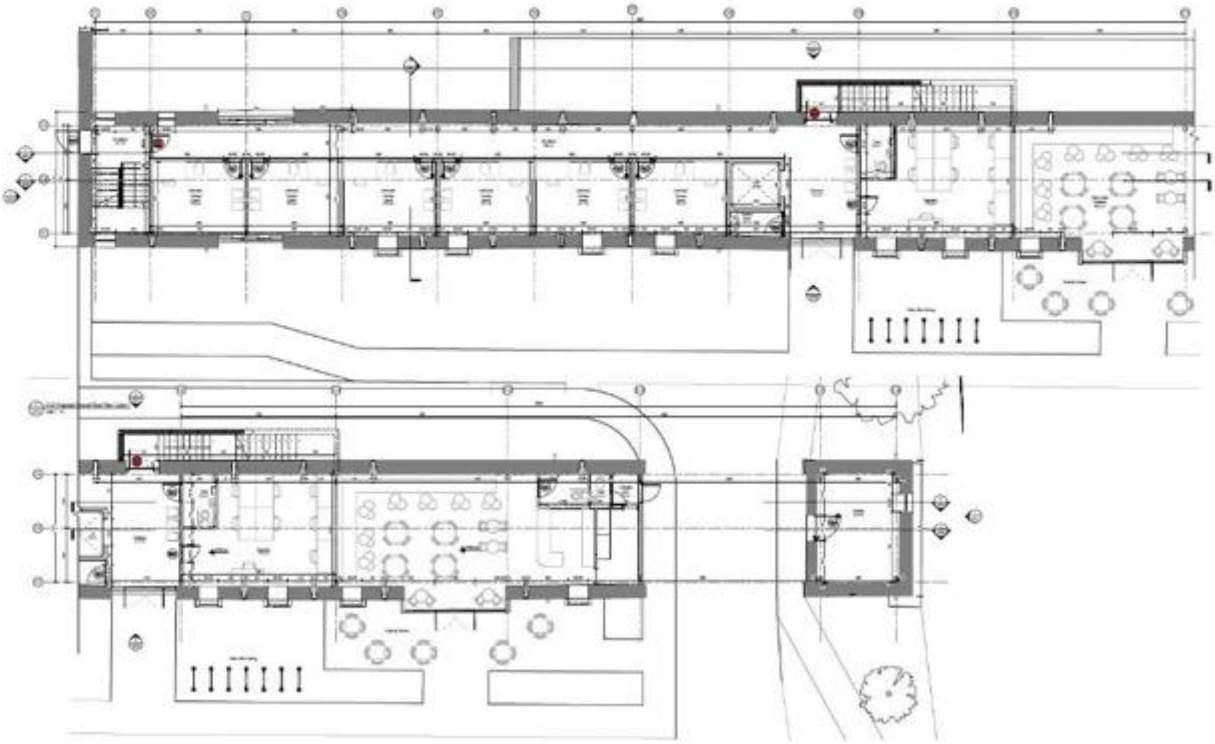

Fig.24: Proposed ground floor plan. Above: Part 1. Bottom: Part 2.

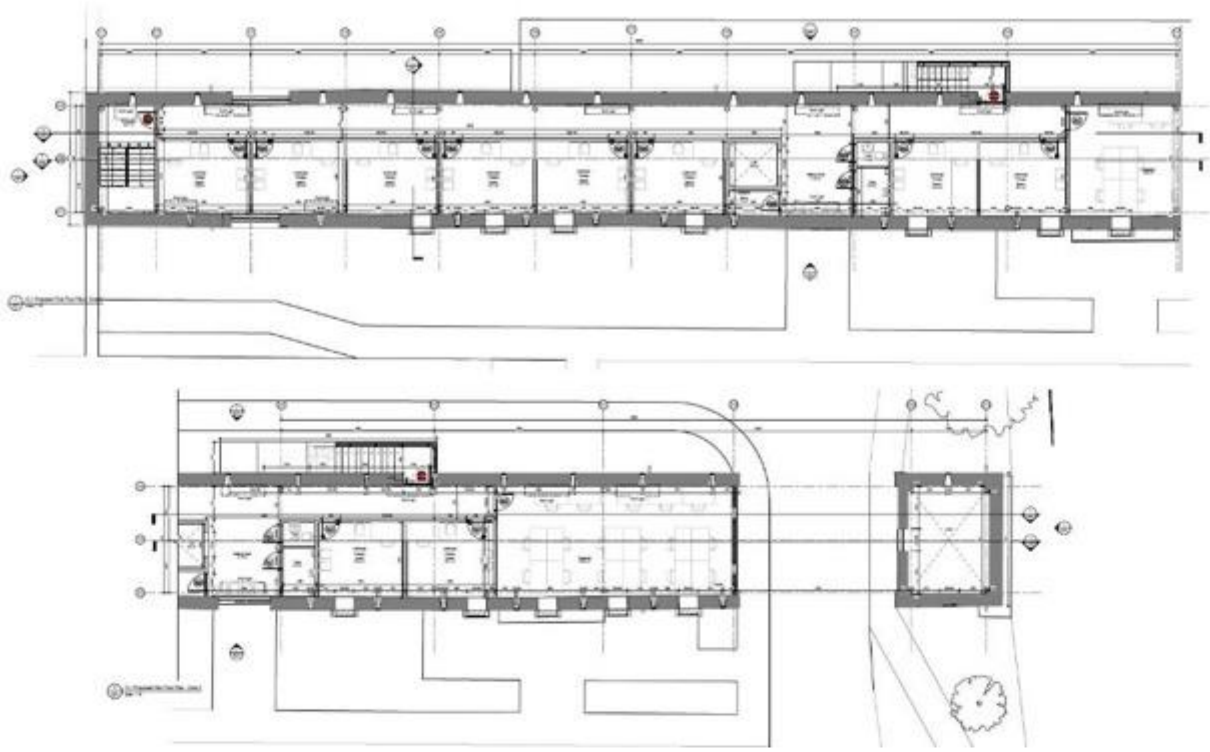

Fig.25: Proposed first floor plan. Above: Part 1. Bottom: Part 2.

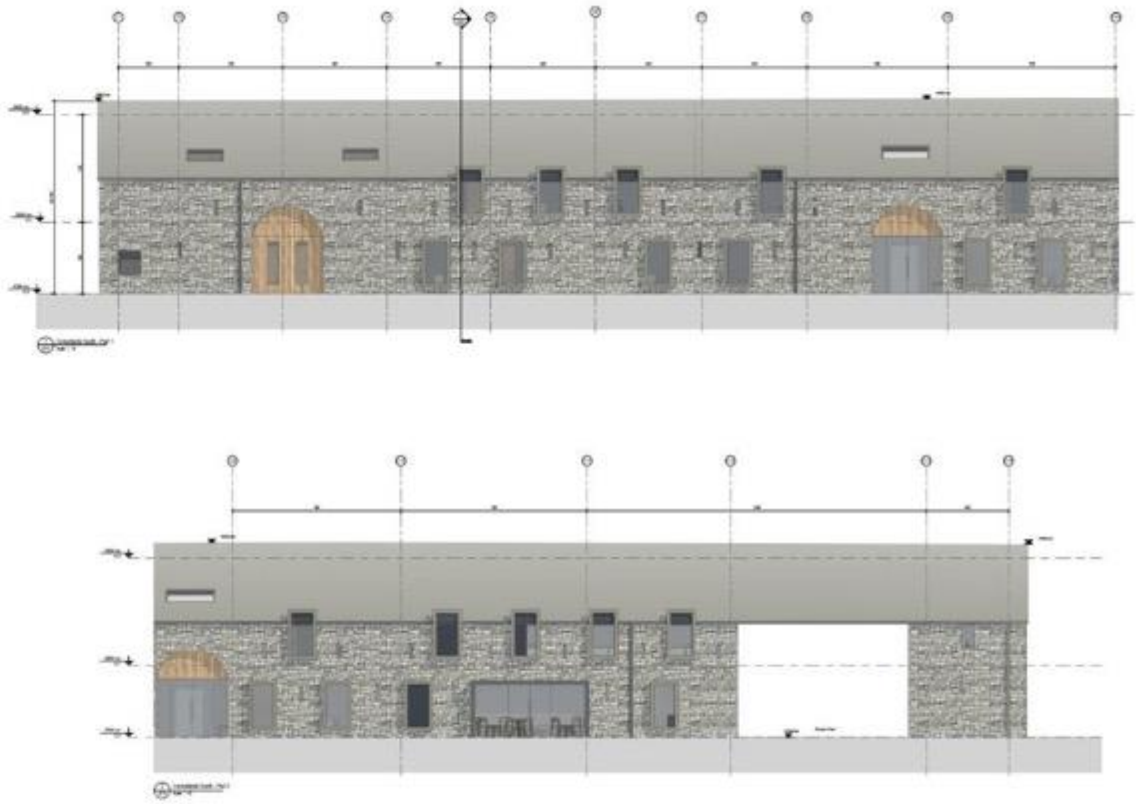

Fig.26: Proposed south elevation. Above: Part 1. Bottom: Part 2.

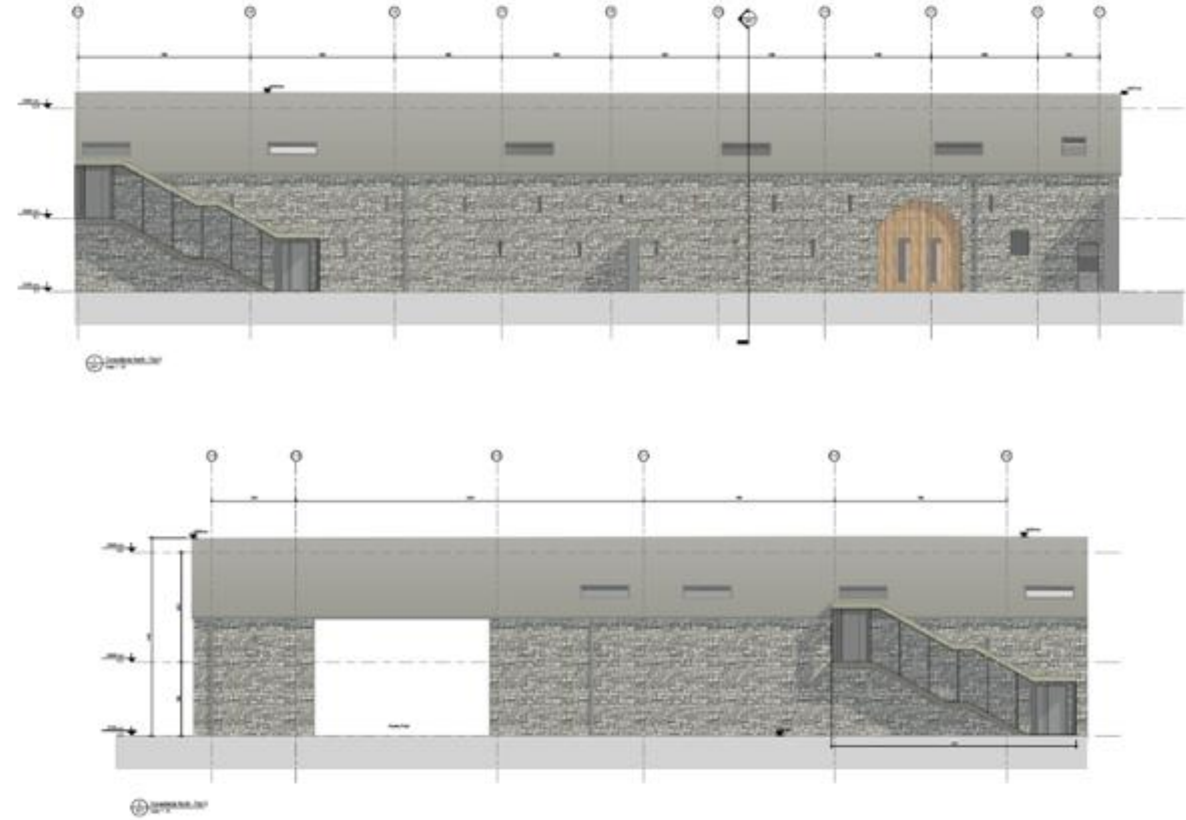

Fig.27: Proposed north elevation. Above: Part 1. Bottom: Part 2.

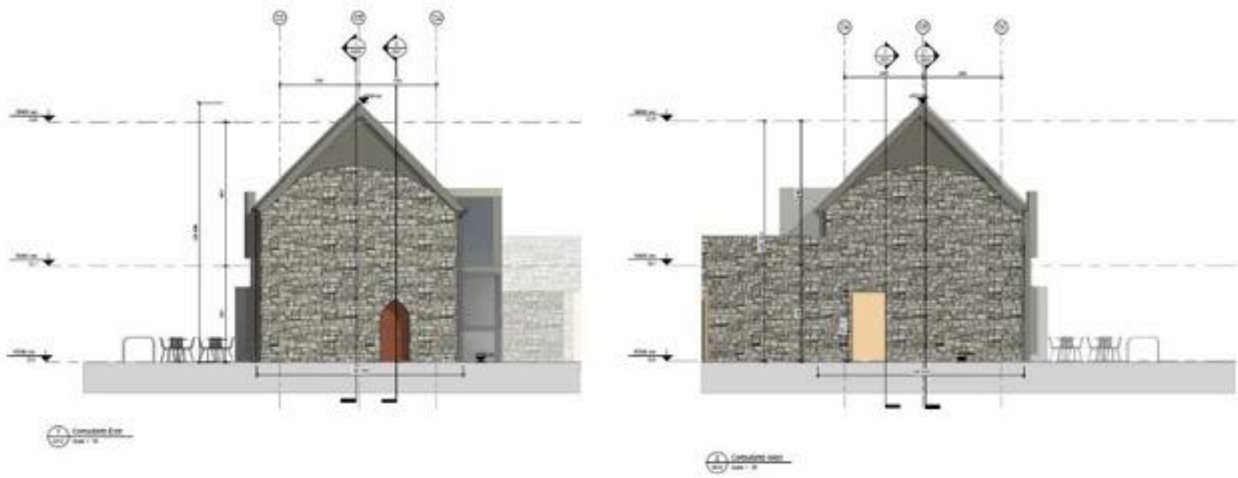

Fig.28: Proposed east west elevations. Above: Part 1. Bottom: Part 2.

Ref	Proposed Works	Impact	Reasoning	Mitigation
1	Demolition of modern concrete structures	Slight Positive	Removal of non-historic fabric improves legibility of original structure	Careful demolition; protect adjacent historic fabric
2	Removal of concrete slab	Neutral to Slight Positive	Removal of later intervention; limited heritage value	Avoid damage to wall bases
3	Replacement of corrugated roof with slate roof	Moderate Positive	Enhances character and weathering; reinstates appropriate material	Reuse salvaged slates where possible; match profile
4	Repair of masonry	Slight Positive	Improves condition of historic fabric	Use lime mortar; retain existing stone
5	Formation of new window openings	Moderate Adverse	Removal of historic masonry and alteration to façade composition	Minimise number and size; ensure proportional design
6	Formation of new door openings	Moderate Adverse	As above; alters external character	As above
7	Widening of wall opening to laneway	Moderate Adverse	Removal of fabric and change to spatial arrangement	Minimise intervention; retain maximum masonry
8	New opening to west elevation	Slight to Moderate Adverse	Localised loss of fabric; visual change	Careful siting and detailing
9	Installation of external stair	Moderate Adverse	Introduces visually intrusive modern element altering simple form	Lightweight construction; minimise fixings; sensitive design

Ref	Proposed Works	Impact	Reasoning	Mitigation
10	Insertion of new first floor	Moderate Adverse	Alters internal volume and spatial character	Independent structure where possible; reversible design
11	Installation of internal stair	Moderate Adverse	Introduces new structural and visual element	Locate in less sensitive areas; minimise fabric loss
12	Removal of non-historic partitions	Neutral	No loss of historic fabric	—
13	Installation of services	Slight Adverse	Localised disturbance to fabric	Route discreetly; avoid chasing masonry
14	Installation of mechanical systems	Slight Adverse	Visual and physical intervention	Integrate within new construction zones
15	Installation of structural steel frame	Neutral to Slight Adverse	Potential intervention into historic fabric depending on fixing	Use independent support; minimise connections
16	Installation of new concrete slab	Neutral to Slight Adverse	Potential impact on wall bases and moisture behaviour	Ensure breathable build-up; avoid bridging damp
17	Installation of new floor finishes	Slight Adverse	Minor intervention affecting internal character	Use compatible materials
18	Installation of windows and doors	Slight Adverse	Replacement introduces new elements	Match proportions; avoid pastiche

Ref	Proposed Works	Impact	Reasoning	Mitigation
19	Installation of insulation	Slight Adverse	Potential impact on breathability	Use vapour-permeable systems
20	Installation of internal finishes	Slight Adverse	Minor alteration to internal character	Use appropriate finishes
21	Installation of café fit-out	Slight Adverse	Introduction of new use-related elements	Ensure reversibility; avoid fixing into historic fabric
22	External landscaping works	Slight Adverse	Minor impact on setting	Respect existing layout and boundaries

5.2.1 IMPACT SUMMARY

The proposed works to the Coach House will result in a number of moderate adverse impacts arising from the formation of new openings, insertion of new structural elements including floors and stairs, and the introduction of an external stair.

These interventions will alter the character and fabric of the building, particularly in relation to its external appearance and internal spatial arrangement.

However, the building is currently underutilised and requires intervention to facilitate viable use. The proposed development will secure the long-term use, repair and maintenance of the structure, resulting in a **moderate to significant positive effect** in terms of its overall conservation.

On balance, the development will result in a **mixed impact**, with moderate adverse effects offset by the long-term benefits of adaptive reuse.

5.3 BOUNDARY WALL WITH BELL TOWER (RPS 013)

The boundary wall and bell tower (RPS 013) form a significant component of the historic site, contributing to its spatial organisation, enclosure and character. The wall defines internal circulation routes and enclosed spaces, while the bell tower represents a distinctive architectural feature within the complex.

The proposed development includes the incorporation of sections of the boundary wall and bell tower into the new adult inpatient facility constructed within the walled garden. This will involve the formation of new openings, attachment of new structural elements, and alteration of the relationship between the wall and surrounding spaces.

These works will result in a change to the historic function and spatial character of the wall and bell tower, which currently form part of the external boundary of the historic complex.

Fig.29: Proposed ground floor site plan excerpt. Source: TOT Architects.

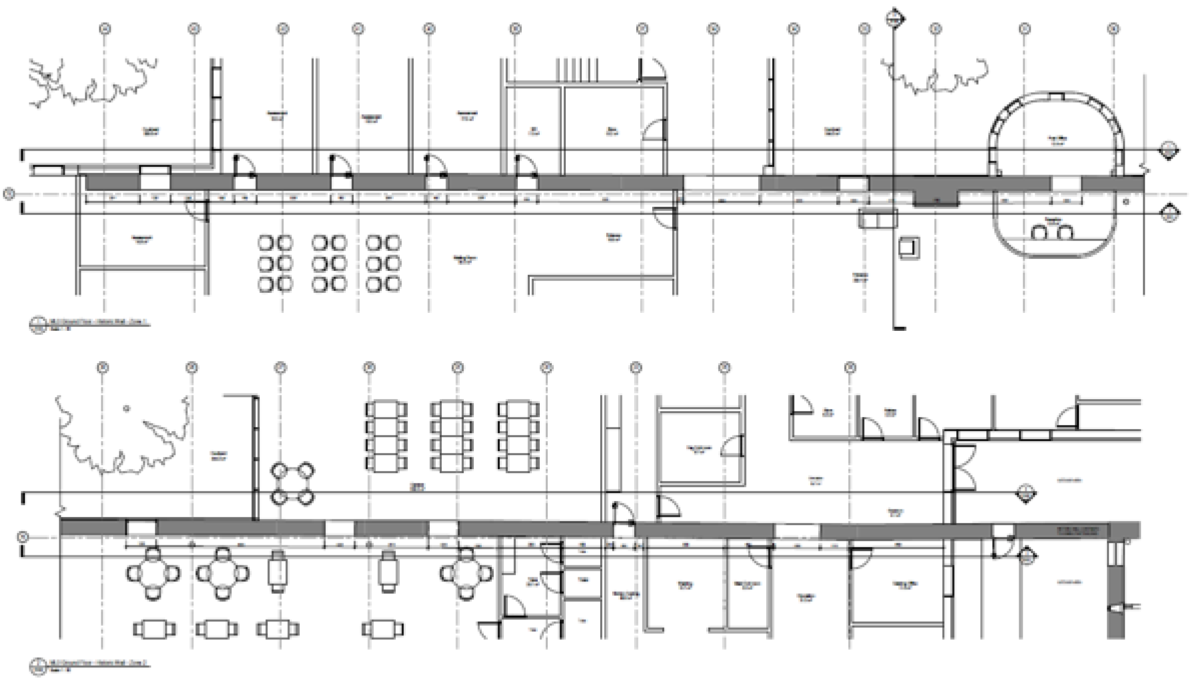

Fig.30: Proposed ground floor plan. Above: Part 1. Bottom: Part 2. Source: TOT Architects

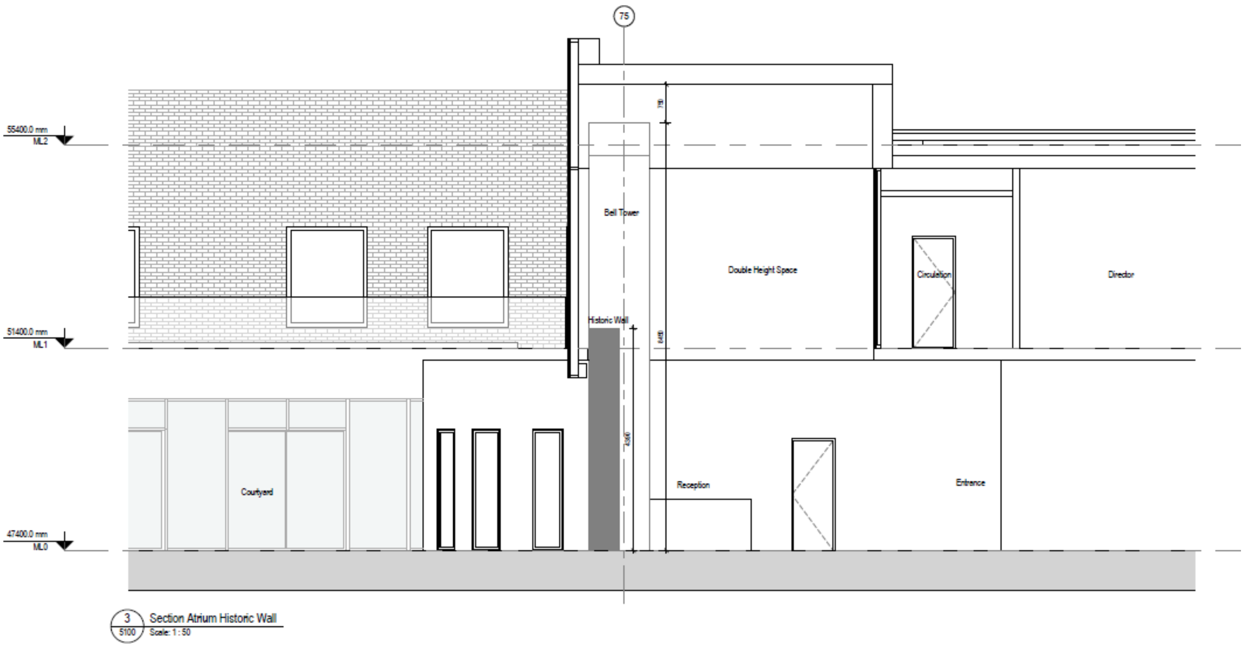

Fig.31: Proposed section through. Above: Part 1. Bottom: Part 2. Source: TOT Architects.

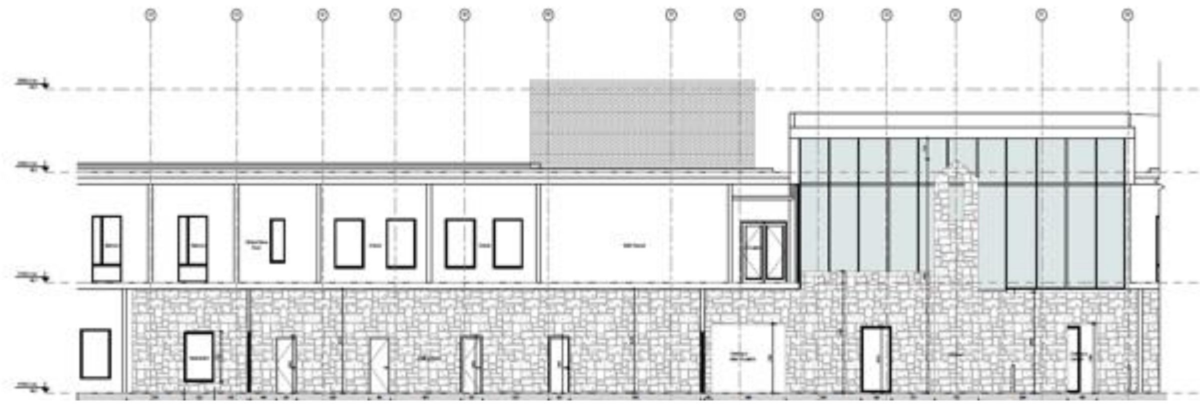

Fig.32: Proposed east elevation, Part 1. Source: TOT Architects

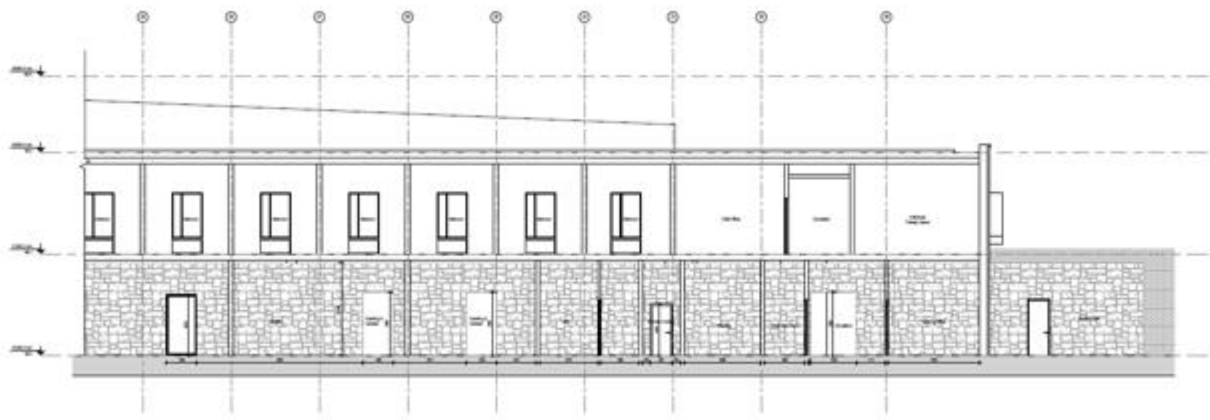

Fig.33: Proposed east elevation, Part 2. Source: TOT Architects

R	Proposed Works	Impact	Reasoning	Mitigation
1	Removal of non-historic louvres	Neutral to Slight Positive	Removal of later additions improves clarity of original form	Careful removal; avoid damage to masonry
2	Enlargement of existing window openings	Slight to Moderate Adverse	Removal of original masonry and alteration to façade composition	Minimise extent; maintain proportions
3	Formation of new door opening	Moderate Adverse	Loss of historic fabric and alteration to external character	Locate in less sensitive elevation; minimise size
4	Formation of new window openings	Moderate Adverse	As above; introduces new elements to façade	Careful siting and detailing
5	Repair of masonry	Slight Positive	Improves condition and stability of fabric	Use lime mortar; retain existing stone
6	Replacement of roof structure	Moderate Adverse	Loss of historic roof fabric and alteration of structure	Retain elements where feasible; match original form
7	Increase in ridge height	Moderate Adverse	Alters building profile and visual character	Keep increase minimal; respect original proportions
8	Removal of internal partitions (non-original)	Neutral	No loss of historic fabric	—
9	Insertion of new partitions	Slight Adverse	Minor alteration to internal arrangement	Ensure reversibility

R	Proposed Works	Impact	Reasoning	Mitigation
10	Insertion of new first floor	Moderate Adverse	Changes internal volume and spatial character	Use independent structure; minimise fixings
11	Installation of internal stair	Moderate Adverse	Introduces new structural and visual element	Locate in least sensitive area
12	Replacement of floor slab	Neutral to Slight Adverse	Potential impact on wall bases and moisture behaviour	Use breathable build-up; avoid damp bridging
13	Installation of services	Slight Adverse	Localised disturbance to fabric	Route discreetly; avoid chasing masonry
14	Installation of mechanical systems	Slight Adverse	Visual and physical intervention	Integrate within new construction
15	Installation of windows and doors	Slight Adverse	Introduction of new elements	Match proportions; avoid pastiche
16	Installation of insulation	Slight Adverse	Potential impact on breathability	Use vapour-permeable systems
17	Internal finishes	Slight Adverse	Minor change to internal character	Use appropriate materials

5.3.1 IMPACT SUMMARY

The proposed works to the boundary wall and bell tower will result in a number of moderate adverse impacts arising from the formation of new openings, physical attachment of new structural elements, and incorporation of the structures into the new hospital building.

These interventions will alter the historic function of the wall as an external boundary and change its spatial and visual relationship within the site. The bell tower, as a prominent architectural feature, will also experience a change in context as a result of the surrounding development.

While mitigation measures will reduce the extent of physical intervention and maintain visual legibility, the change in spatial character cannot be fully mitigated. The resulting impact is therefore considered to be moderate adverse.

5.4 Walls of the Walled Garden (RPS 012)

The walled garden (RPS 012) forms a key component of the historic site, providing a defined enclosed space associated with the original estate layout. The enclosing stone walls are of architectural and historical significance and contribute to the spatial structure and legibility of the complex.

The proposed development includes the construction of a new adult inpatient facility within the walled garden enclosure. This will involve the partial demolition of sections of the existing boundary walls, including approximately 62 linear metres of the north wall, and the alteration of the enclosure to accommodate the new building.

These works will result in a change to the integrity and character of the walled garden as a defined historic space.

Fig.34: Proposed ground floor plan excerpt showing north wall of walled garden. Source: TOT Architects

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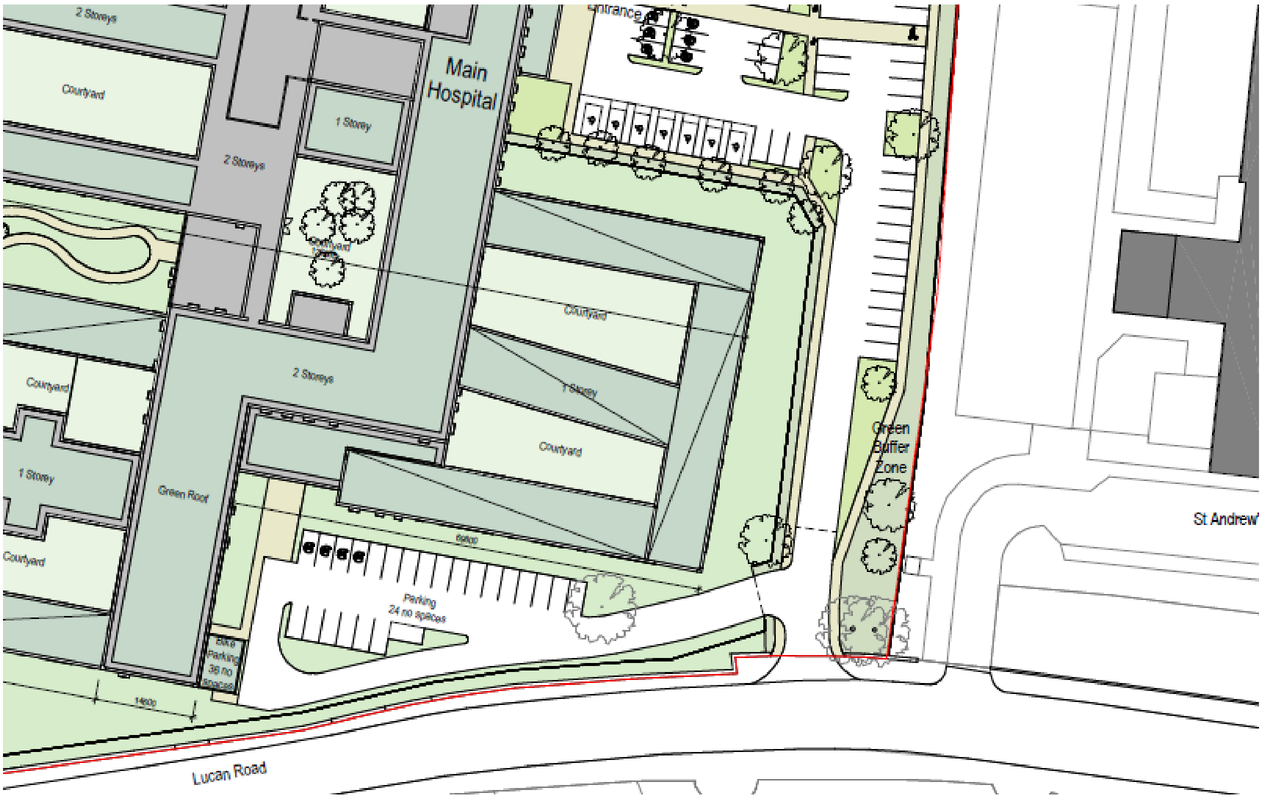

Fig.35: Proposed site plan excerpt showing area where the East wall of the Walled Garden will be removed. Source: TOT Architects

Ref	Proposed Works	Impact	Reasoning	Mitigation
1	Formation of new openings in boundary wall	Moderate Adverse	Removal of historic masonry and interruption of wall continuity	Minimise number and size of openings; retain as much fabric as possible
2	Incorporation of boundary wall and bell tower into new hospital building	Moderate Adverse	Change in historic function from external boundary to internalised element; alteration of spatial character and setting	Maintain visual legibility; avoid full enclosure where possible; clearly distinguish new work
3	Attachment of new partitions and structural elements to wall	Slight to Moderate Adverse	Physical intervention and potential obscuring of historic fabric	Minimise fixings; use reversible connections; avoid covering significant features
4	Introduction of upper level elements adjacent to wall	Moderate Adverse	Alters visual relationship and prominence of wall and bell tower	Set back new elements where feasible; maintain visual prominence of historic fabric

5	Demolition of approximately 62 linear metres of the north wall	Moderate to Significan t Adverse	Permanent loss of historic fabric and break in continuity of enclosure; reduces integrity of protected structure	Minimise extent of removal; record wall prior to demolition; salvage and reuse stone
6	Alteration of wall sections (if applicable)	Moderate Adverse	Localised removal and modification of historic fabric affecting enclosure	Limit interventions; retain maximum fabric
7	Construction of new hospital building within walled garden	Moderate Adverse	Introduction of large structure alters spatial character and reduces legibility of enclosure as a distinct historic space	Maintain visibility of retained walls; avoid unnecessary additional openings; clearly distinguish new from historic fabric
8	Reuse of salvaged stone within new development	Slight Positive	DRAFT Retains material continuity and reference to original structure	Ensure appropriate and legible reuse

5.4.1 IMPACT SUMMARY

The proposed development will result in a number of moderate to significant adverse impacts on the walled garden arising from the demolition of sections of the enclosure and the construction of a new hospital building within the space.

The removal of approximately 62 linear metres of the north wall will result in the permanent loss of historic fabric and a break in the continuity of the enclosure. The insertion of a large building within the garden will alter its spatial character and reduce its legibility as a distinct historic space.

While mitigation measures, including the reuse of salvaged materials and retention of portions of the enclosure, will reduce the extent of impact, the loss of fabric and change in spatial character cannot be fully mitigated.

The resulting impact is therefore considered to be moderate to significant adverse.

5.5 FARM BUILDING (NIAH 11202008 – REGIONAL SIGNIFICANCE)

The farm building located within the site is identified in the National Inventory of Architectural Heritage (NIAH) as being of regional significance. It forms part of the historic agricultural infrastructure associated with the estate and contributes to the understanding of the site's historic function and development.

The proposed development includes the complete demolition of this structure in order to facilitate the construction of the new hospital building.

Ref	Proposed Works	Impact	Reasoning	Mitigation
1	Demolition of farm building	Moderate Adverse	Complete loss of a structure of regional significance resulting in permanent removal of historic fabric and loss of part of the historic agricultural complex	Full measured and photographic recording; salvage and reuse of materials where feasible

5.5.1 IMPACT SUMMARY

The proposed demolition of the farm building will result in a permanent moderate adverse impact due to the complete loss of a structure of regional significance. While recording and salvage will retain a record of the building and allow limited reuse of materials, the loss of the structure itself cannot be mitigated.

This represents one of the principal adverse impacts arising from the proposed development.

5.6 Southern Boundary Wall

The proposed development includes the removal and relocation of approximately 190 linear metres of the southern boundary wall along Lucan Road.

While the associated junction improvement works do not form part of this application, the removal and reconstruction of the boundary wall itself is included within the proposed development.

A detailed Architectural Heritage Impact Assessment of these works has been prepared separately.

For the purposes of this report, it is noted that the removal and relocation of the boundary wall will result in a **moderate adverse impact** due to the alteration of the historic boundary alignment and loss of original fabric.

Mitigation measures, including careful dismantling, recording, and reconstruction using salvaged materials, will reduce the extent of impact, but the change in alignment and character cannot be fully mitigated.

5.7 Potential Cumulative Impacts

The proposed development has been assessed in combination with other existing, permitted and proposed developments within the surrounding area in order to determine whether cumulative impacts on the architectural heritage resource may arise.

The primary heritage impacts associated with the proposed development relate to:

- the demolition of a historic farm building;
- partial removal of sections of the protected walled garden;

- alteration and incorporation of the boundary wall and bell tower; and
- internal and external alterations to protected structures within the site.
- These impacts are **site-specific** and are confined to the St. Edmundsbury complex.

The surrounding area comprises a mixture of suburban development and institutional uses. While development has occurred in the wider area, no other known developments give rise to impacts on the same heritage assets or materially affect their setting in a manner that would combine with the proposed development to create additional or amplified effects.

The proposed works do not result in:

- cumulative loss of protected structures beyond the site;
- cumulative erosion of historic landscape character; or
- incremental degradation of the setting of heritage assets in the wider area.

Accordingly, no significant cumulative impacts on the architectural heritage resource have been identified.

5.8 Do Nothing Impact

The Boundary Wall and Bell Tower, the East Wall of the Walled Garden, the Barn and the Coach House are in urgent need of conservation and repair works. If the Barn and the Coach House are left vacant with no designated future use, they will fall into further disrepair and dereliction. In the absence of the proposed development, the site would remain in its current condition, with limited intervention beyond routine maintenance.

St. Edmundsbury House would likely continue in use, however opportunities for comprehensive refurbishment and upgrade of the building fabric and services would be reduced.

The Barn and Coach House, which are currently underutilised and in varying states of condition, would remain at risk of ongoing deterioration due to lack of viable long-term use. Without intervention, these structures may continue to degrade over time, resulting in incremental loss of historic fabric.

The walled garden and boundary structures would remain in place, but would not benefit from coordinated conservation works or investment associated with the proposed development.

While the do-nothing scenario would avoid the adverse impacts associated with demolition and alteration, it would also fail to secure the long-term conservation, reuse and active management of key historic structures within the site.

6 Conservation Strategy

The following mitigation measures are proposed to reduce the impact of the development on the architectural heritage resource. These measures should be read in conjunction with:

- Carrig Conservation Volume 1: Architectural Inventory, Condition Survey and Appraisal
- Carrig Conservation Volume 2: Conservation Repair Methodology and Specification

6.1 General Mitigation Measures

All interventions have been discussed as a part of regular design team meetings to consider the rationale of decisions with the view to balance the needs of the brief, economy, practicality, health and safety, accessibility and conservation. These meetings should be considered part of the assessment/mitigation process. Various mitigants have been put in place to ensure that the historic fabric and special architectural character of the complex's significant buildings and site are preserved during the repair and upgrading works

6.1.1 GENERAL MITIGATION.

General mitigation measures to be applied to all interventions require that:

- Proposed conservation works must be carried out by an experienced main contractor and specialist subcontractors or crafts people.
- The delivery of a heritage induction to all contractors and subcontractors should be carried out.
- Where repair and upgrading to historic fabric is required, the conservation method statement and guidelines of product manufacturers must be followed by the contractor so that works can be carried out appropriately.
- Works must be supervised by the design team.
- Works have been carefully designed and are guided by the international conservation principles.
- Historic fabric will be adequately protected during all site stages.
- Demolitions and strip out will be guided by the design team and carefully conducted to ensure the protection of historic fabric and features.
- To prevent damage to adjacent fabric or substrates, where possible, power tools will be avoided.
- In so far as is possible, MEP services will use pre-existing pathways or joist notching. New services will also be surface-mounted to ensure reversibility.
- Where historic building fabric cannot be reused within the complex for repairs, it will be salvaged and sent to a reputable salvage yard.
- If structural timbers such as joists are found to be non-performing, they will be retained and strengthened via coupling of members and or splicing. However defective timbers that show signs of spores/fungus attack or larvae will be removed to prevent the occurrence of a future breakout.
- To ensure quality, appropriate methods and materials, a series of samples will be required by the conservation and architectural teams including doors, joinery, sash windows, plaster removal and plastering, cornice running, and cleaning.
- The contractor will provide submittals of materials and products for the approval of the design team. Only high quality and fabric-compatible materials will be used during conservation and upgrades.
- Careful detailing is to be produced to provide a high-quality design and finish; this should be presented to the conservation consultant for comment where requested.
- All works undertaken will be monitored by qualified conservation architects and contractors.

All works to historic structures will be carried out in accordance with established conservation principles, including:

- Retention of historic fabric in situ wherever feasible
- Minimum intervention to existing structures
- Use of materials compatible with existing fabric, including lime-based mortars and breathable finishes
- Reversibility of interventions where practicable

- Clear distinction between historic and new fabric
- Execution of works by suitably qualified conservation contractors
- Ongoing supervision by a conservation architect

6.1.2 ST. EDMUNDSBURY HOUSE (RPS 003)

- Retain existing internal features including plasterwork, joinery and skirting where feasible
- Minimise removal of historic partitions and retain evidence of original plan form where possible
- Carefully detail new openings to avoid loss of significant fabric
- Route services through existing voids and avoid chasing into historic masonry
- Use breathable finishes and avoid impermeable materials on historic walls
- Undertake façade remediation following removal of the ward extension in accordance with conservation best practice

6.1.3 BARN AND COACH HOUSE (RPS 008)

- Limit the extent of new openings and ensure they are proportionate and appropriately located

- Retain existing masonry fabric and minimise cutting of walls
- Reuse existing roofing materials, including slates, where feasible
- Retain surviving structural timber where possible
- Design new structural elements to be independent where practicable and minimise intervention into historic fabric
- Ensure new floors and stairs are inserted in a manner that respects the character of the building
- Clearly distinguish new work from historic fabric

6.1.4 BOUNDARY WALL AND BELL TOWER (RPS 013)

- Minimise physical intervention into the historic wall
- Limit the number and size of new openings
- Retain the visual prominence and legibility of the bell tower
- Avoid full enclosure of the wall where possible
- Ensure new structural elements are reversible and use minimal fixings
- Clearly differentiate new construction from historic fabric

6.1.5 WALLED GARDEN (RPS 012)

- Minimise the extent of wall demolition
- Record all sections of wall prior to removal
- Salvage stone and reuse in a coherent and appropriate manner
- Maintain legibility of the original enclosure where feasible
- Avoid unnecessary additional openings
- Ensure remaining walls are conserved and repaired using appropriate materials

6.1.6 FARM BUILDING (NIAH)

- Undertake full measured and photographic recording prior to demolition
- Salvage materials including stone, brick and structural elements where feasible
- Reuse salvaged materials within the proposed development where appropriate

6.1.7 SOUTHERN BOUNDARY WALL (LUCAN ROAD)

- Carefully dismantle existing wall sections
- Record wall construction and features prior to removal
- Reconstruct wall using salvaged materials where feasible
- Maintain the character and material quality of the original wall

(Refer to separate AHIA for detailed assessment)

6.1.8 SITE-WIDE MEASURES

- Protect all retained historic structures during construction works
- Implement appropriate construction management procedures to avoid accidental damage
- Control vibration and excavation works in proximity to historic fabric
- Ensure all boundary treatments and landscaping works respect the character of the historic site

6.2 Recording of Fabric Scheduled for Demolition

Demolition is only proposed where necessary to facilitate the proposed new use or where its retention will compromise the overall progress of the development preventing the provision of a new mental health facility and in turn the conservation of the designated protected structures on the site.

In the event of the demolition of any heritage structure on the site irrespective of their origin and significance, it is recommended that they be preserved by record, by means of measured survey and photographic record of original features supplementing recording already undertaken in *Vol. 1: Conservation Report – Architectural Inventory, Condition Report and Appraisal*. This should be completed when the buildings are vacated and cleared of debris.

6.3 Salvage Strategy

It is proposed to salvage as much original fabric as possible to be reused in the proposed development.

6.4 Historic Boundaries and Landscaping Strategy

Where possible the new landscaping strategy will seek to reference the location, form and materiality of the historic plot and boundary conditions. Where robust historic materials can be reused, they will be integrated into the landscape design strategy.

7 Predicted Impact of the Proposed Development

In this section we will describe the impacts arising from the proposed development on the architectural heritage, on the basis that the mitigations in sections 5 and 6 above are applied. All proposed impacts described below are to be understood in the context of the wider principle of redevelopment and managed change.

Following the implementation of the mitigation measures set out in Section 6, the residual impacts on the architectural heritage resource are as follows:

7.1.1 ST. EDMUNDSBURY HOUSE (RPS 003)

Residual impacts will comprise slight to moderate adverse effects arising from internal alterations, including removal of partitions, insertion of new openings and installation of services.

These impacts are localised and are offset by the moderate positive effect of securing the continued use, repair and long-term maintenance of the building.

7.1.2 BARN AND COACH HOUSE (RPS 008)

Residual impacts will comprise moderate adverse effects arising from alterations to building fabric and form, including the formation of new openings, insertion of new structural elements and internal reconfiguration.

These impacts are balanced by moderate to significant positive effects associated with the adaptive reuse of the structures, which will secure their long-term conservation and maintenance.

7.1.3 BOUNDARY WALL AND BELL TOWER (RPS 013)

Residual impacts will comprise a moderate adverse effect due to the alteration of the wall's historic function and its incorporation into the new building.

While mitigation measures will reduce the extent of physical intervention and maintain visual legibility, the change in spatial character cannot be fully mitigated.

7.1.4 WALLED GARDEN (RPS 012)

Residual impacts will comprise **moderate to significant adverse effects** arising from the demolition of sections of the enclosure and the introduction of a new building within the space.

Mitigation measures will reduce the extent of fabric loss and retain partial legibility of the enclosure; however, the change in spatial character and loss of fabric will remain.

7.1.5 FARM BUILDING (NIAH)

Residual impact will be a **permanent moderate adverse effect** due to the complete loss of the structure.

Mitigation measures, including recording and salvage, will not offset the loss of the building itself.

7.1.6 SOUTHERN BOUNDARY WALL (LUCAN ROAD)

Residual impacts will comprise a **moderate adverse effect** arising from the removal and relocation of the wall and the alteration of its historic alignment.

While reconstruction using salvaged materials will retain aspects of the wall's character, the change in location and context will remain.

7.1.7 OVERALL RESIDUAL IMPACT

The proposed development will result in a combination of **moderate to significant adverse impacts** arising from demolition, alteration and new construction within the historic complex.

These impacts are balanced by **moderate to significant positive effects** associated with the conservation, repair and adaptive reuse of key historic structures, and the securing of their long-term viability.

On balance, the development will result in a **mixed residual impact**, with adverse effects offset by the long-term benefits of reuse and conservation.

8 Appendix 02 Southern Wall Architectural Heritage Impact Assessment Report

St Edmundsbury Hospital, Lucan

Architectural Heritage Impact Assessment

March 2026

Ref: 25030

CURRENT ISSUE DATE	RECIPIENT	ISSUE
		ISSUE 1

QUALITY CONTROL

Report prepared on behalf of The Governors of St. Patrick's Hospital and prepared by:

PREPARED FOR:	PREPARED BY:	CHECKED BY:
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The report adheres to national standard for conservation reports as set out in *Architectural Heritage Protection, Guidelines for Planning Authorities* (Department of Arts, Heritage and the Gaeltacht, 2011) and the European Standard for Condition Survey and Report of Built Cultural Heritage EN 16096-2012.

DOCUMENT ISSUE RECORD

ISSUE DATE	RECIPIENT	STATUS
31/03/2026	ST. PATRICK'S HOSPITAL	DRAFT

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1 INTRODUCTION AND SUMMARY

This Architectural Heritage Impact Assessment (AHIA) has been prepared to assess the impact of the proposed partial demolition and reconstruction of a section of the southern boundary wall at St. Edmundsbury Hospital, Lucan Road, Dublin.

The works form part of a wider redevelopment of the St. Edmundsbury campus and are specifically required to facilitate road realignment and junction improvement works as requested by the Roads Department of South Dublin County Council.

The assessment relates solely to the affected boundary wall, which forms part of the curtilage of Protected Structures within the St. Edmundsbury complex.

The wider site is a historically significant institutional landscape associated with the development of mental health care in Ireland, with origins as an 18th-century demesne later adapted for therapeutic use.

2 METHODOLOGY

2.1 BASIS OF ASSESSMENT

The architectural heritage appraisal will describe and evaluate the heritage values of those buildings and features within the application site and its immediate context, which are considered to be of heritage value. The following sources have been consulted to understand the development of the site and the significance of the affected assets:

- South Dublin City Development Plan 2022-2028
- Record of Protected Structures (Dublin City Development Plan 2022-2028)
- Architectural Heritage Protection Guidelines for Planning Authorities (2011)
- National Inventory of Architectural Heritage (NIAH)
- Record of Monuments and Places (RMP)
- Historic area maps

The design team consultants have contributed to this heritage appraisal and impact assessment with respect to the mitigation measures which form part of the design proposals.

2.1.1 STATUTORY PROTECTION

Under the Planning and Development Act 2000 (as amended), the definition of a Protected Structure extends to:

- The structure itself
- Its curtilage
- Attendant grounds and boundary features

The southern boundary wall forms part of the historic curtilage of St. Edmundsbury and associated Protected Structures and is therefore afforded statutory protection.

Accordingly, the removal or alteration of any portion of this wall constitutes works affecting the character of a Protected Structure.

2.1.2 POLICY CONTEXT

The South Dublin County Council Development Plan 2022–2028 requires:

- Retention of historic fabric
- Protection of curtilage structures
- Preservation of historic setting and boundary definition

2.2 Scope of the Assessment

This AHIA considers impacts arising from the proposed redevelopment works, including potential direct and indirect effects on:

- the material fabric and architectural character of the protected structures;
- the setting, curtilage, and legibility of the historic institutional ensemble; and
- historic boundary treatments and associated features, including the boundary wall affected by the separate road realignment proposal.

Impacts are assessed here as the physical and/or visual effects that the proposed works may reasonably be predicted to have on architectural heritage significance, including potential construction-phase impacts and the long-term operational outcome.

3 The Site and Existing Buildings [Baseline situation]

3.1 Outline Description of the Site

Cartographic and documentary evidence indicates that the boundary walls associated with the St. Edmundsbury estate, including the southern boundary, were established in the late 18th century and were already in place by the 1772 survey of the Vesey estate. This confirms that the wall forms part of the original demesne layout and is integral to the historic definition of the site.

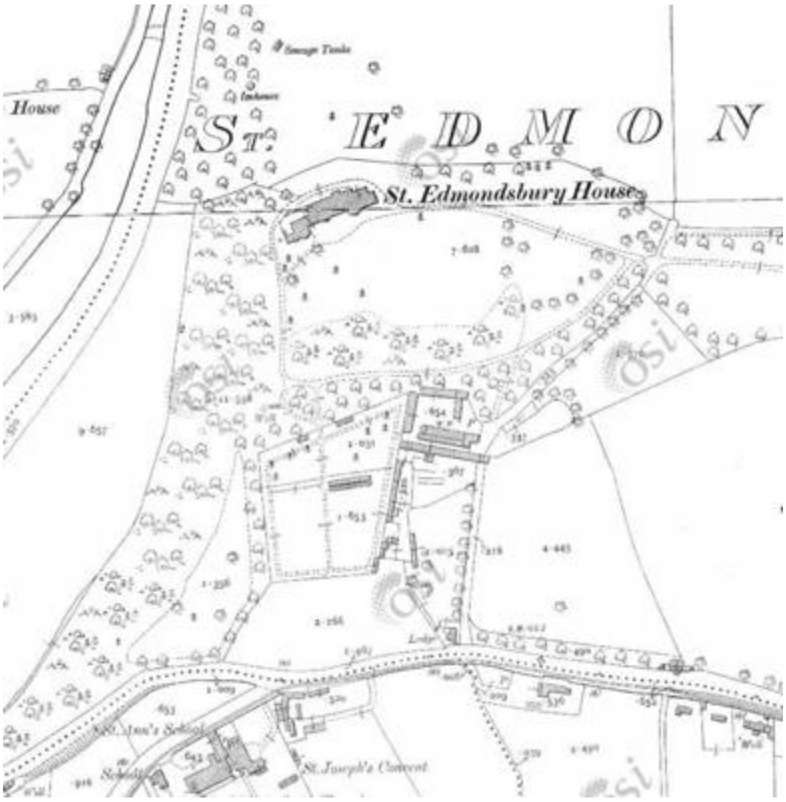


Figure 10: Ordnance Survey 25 inch: Surveyed 1888-1913.

Figure 11 Site Outline

3.2 HISTORICAL DEVELOPMENT OF THE SITE AND ITS ENVIRONS

Cartographic and documentary evidence indicates that the boundary walls associated with the St. Edmundsbury estate, including the southern boundary, were established in the late 18th century and were already in place by the 1772 survey of the Vesey estate.

This confirms that the wall forms part of the original demesne layout and is integral to the historic definition of the site.

3.3 LOCATION AND EXTENT

The southern boundary wall runs along the Lucan Road and defines the primary interface between the public realm and the historic institutional landscape.

The section subject to proposed works comprises approximately **180m**

Figure 12 Line showing the extents of the Southern Boundary Wall along the Lucan Road R835

3.4 Construction and Form

The southern boundary wall is of masonry construction; however, close inspection indicates that it is not a uniform or wholly original structure.

The wall exhibits clear evidence of phased construction and later intervention, including:

- Sections of coursed rubble masonry, distinct from more irregular earlier construction
- The use of cementitious materials, particularly in upper sections
- Defined junctions and vertical breaks, suggesting rebuilding in discrete sections
- Apparent construction joints, indicating interfaces between original and later fabric

These characteristics indicate that substantial portions of the wall have been reconstructed or repaired, likely at different stages during the evolution of the site.

Figure 13 Elevation to Lucan Rd. Showing clear distinction in building methods.

3.5 Evidence of Phased Development

A consistent horizontal line visible across sections of the wall suggests that the wall may have originally been constructed at a lower height and subsequently raised.

This is likely to correspond with the transition of the site from a private demesne to an institutional healthcare setting following its acquisition by St. Patrick's Hospital in the late 19th century, when increased enclosure and privacy would have been required.

This interpretation is consistent with the broader historical evolution of the site, which underwent adaptation from a country residence to a therapeutic institutional campus.

Figure 14 Clear distinction in stonework between upper and lower sections indicated by a datum which is consistent along the eastern and western sections of original wall.

3.6 Upper Wall Construction

The upper portion of the wall appears to be a later intervention, characterised by:

- The use of concrete and cementitious material
- A more uniform and consistent finish across the Lucan Road elevation
- A clear distinction between the lower lime-based masonry and the upper cement-based construction

This suggests that the wall has been raised and/or capped in more recent history, and that this element does not form part of the original historic construction.

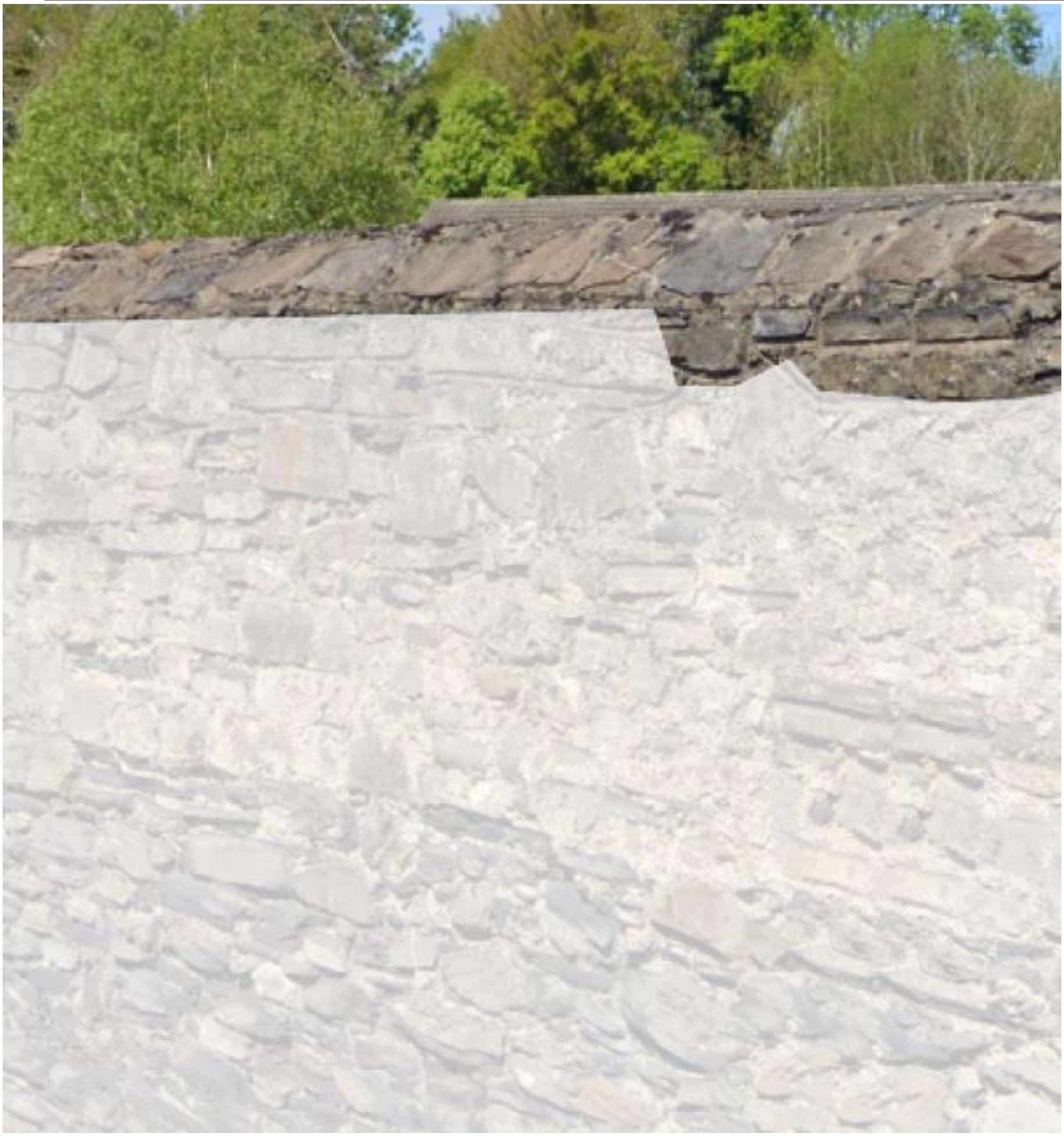


Figure 15 Upper section of wall which is consistent in profile along its entirety and shows a clear distinction in materiality between the lower sections suggesting modern addition

While the wall retains elements of historic fabric, it is evident that:

- The structure has undergone substantial alteration and partial reconstruction
- The upper sections are not original – though it is assumed that the line of the wall is largely intact this cannot be confirmed across its entirety
- The wall represents a composite structure of varying dates and materials

Figure 16 Indication of Non-historic Fabric of wall which has been re-built

4 Statement of Significance

4.1 Functional Significance

The wall defines the historic boundary of the St. Edmundsbury estate and establishes a controlled threshold between public roadway and institutional landscape.

4.2 Architectural Significance

The wall, though now significantly altered, is largely representative of traditional boundary construction associated with 18th-century demesne landscapes, utilising local stone and lime-based construction techniques.

4.3 Historical Significance

The wall forms part of the original estate layout and reflects historic landholding patterns associated with the Vesey and Pery ownership of the site.

4.4 Setting and Townscape Significance

The wall contributes significantly to:

- The sense of enclosure of the site
- The visual continuity along Lucan Road
- The legibility of the site as a distinct historic entity

The southern boundary wall is of Moderate significance

This reflects:

- Its role in defining the historic boundary of the site
- Its contribution to setting and enclosure
- The presence of partial historic fabric

However, its significance is moderated by:

- The extent of later reconstruction
- The loss of original fabric in upper sections
- The composite nature of its construction

5 Description of Proposed Works

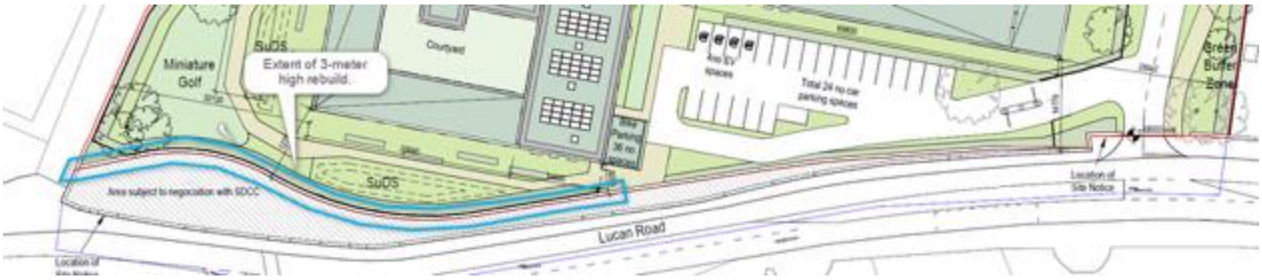


Figure 17 Image indicating Extent of Proposed 3m high Intervention

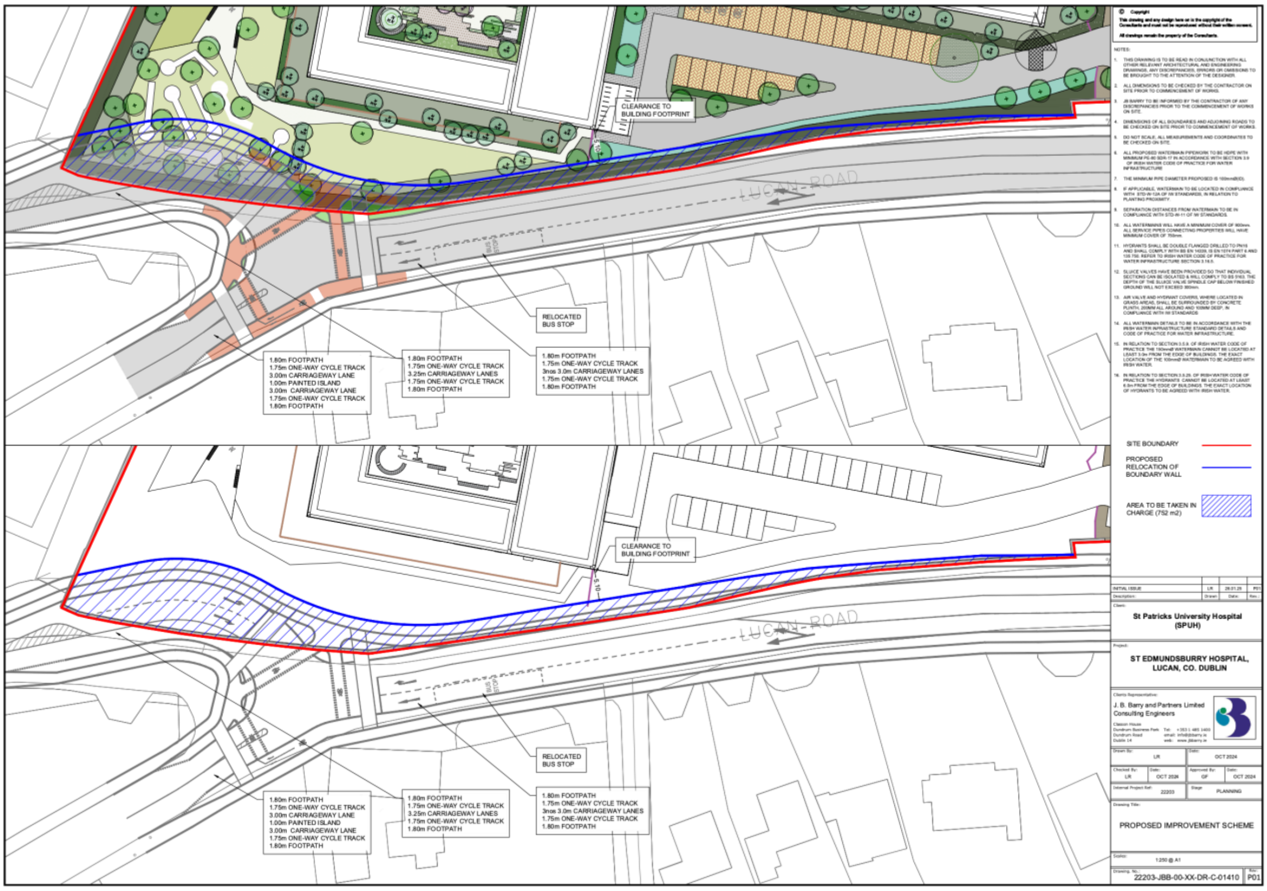


Figure 18 Detail of Road Realignment

The proposed works comprise:

- Partial demolition of a section of the existing southern boundary wall
- Realignment of the wall to accommodate road and junction improvement works
- Reconstruction of the boundary along a revised alignment

In addition to reinstatement, it is proposed that the reconstructed wall will incorporate **enhanced security measures**, including:

- Construction of a **masonry wall to the Lucan Road frontage**, maintaining the visual character of the existing stone boundary
- Construction of a **blockwork wall to the internal (hospital-facing) side**
- An **increase in wall height to approximately 3.0 metres** within the extent of the secure garden area

- A reduction in wall height beyond the garden access gate to relate to surrounding boundary conditions

This approach replaces an earlier design strategy which proposed:

- A **separate internal security fence**, approximately 3.0 metres in height
- Located approximately 2.0 metres inside the existing boundary wall

The revised proposal consolidates enclosure and security into a **single boundary structure**, in response to:

- Reduced available space arising from road realignment
- The need to avoid constriction at the garden and fire tender access point

The intention is to retain the visual character of the existing boundary wall while integrating functional security requirements into a single constructed element.

5.1 Justification for Removal and Realignment of Boundary Wall

The proposed removal and realignment of a section of the southern boundary wall arises from infrastructural requirements associated with the proposed road and junction improvement works along the Lucan Road frontage.

This requirement is set out in correspondence issued by South Dublin County Council, specifically within a Letter of Comfort dated 12/02/2025 from Michael McAdam, A/Director of Land Use, Transportation and Planning.

Under Point 4 of this correspondence, it is stated that:

"the partial demolition of the existing stone boundary wall and its reconstruction at a set-back position is required to facilitate the construction of a signalised junction."

The proposed works to the boundary wall are therefore **not discretionary in nature**, but arise as a direct response to the requirements of the Roads Authority.

The intervention is limited to the extent necessary to accommodate:

- The revised road alignment
- The formation of a signalised junction
- Associated visibility and access requirements

No additional removal of boundary wall is proposed beyond that required to satisfy these infrastructural requirements.

In this context, the proposed intervention is attempting to strike a balance between the protection of architectural heritage and the delivery of necessary public infrastructure. The assessment contained within this report considers the extent to which the required works impact upon the character, setting, and fabric of the boundary wall, and identifies appropriate mitigation measures to reduce that impact where feasible.

6 Impact Assessment

6.1 Assessment Framework

The assessment considers:

- Sensitivity (derived from significance)
- Magnitude of change
- Resulting significance of effect

Element	Impact Type	Description of Impact	Magnitude	Sensitivity	Significance of Effect
Historic Fabric	Direct Physical	Removal of surviving historic masonry	Slight–Moderate	Moderate	Slight–Moderate Adverse
Boundary Alignment	Setting	Realignment of historic boundary	Moderate	Moderate	Moderate Adverse
Wall Height	Visual / Spatial	Increase in height to approx. 3.0m	Moderate	Moderate	Moderate Adverse
Construction Method	Material / Authenticity	Change to composite wall build-up	Slight–Moderate	Moderate	Slight–Moderate Adverse
Streetscape	Visual	Increased enclosure along Lucan Road	Moderate	Moderate	Moderate Adverse

6.2 Summary of Impacts

The proposed development will result in:

- The loss of original historic fabric
- A permanent alteration to the historic boundary alignment
- A change in the visual and spatial relationship between the site and the public road

These impacts are inherently adverse and cannot be fully mitigated.

6.3 Height and Massing

The increase in wall height to approximately 3.0 metres within the secure garden area represents a **material alteration** to the established scale of the boundary.

While boundary walls of varying heights can form part of institutional landscapes, the proposed increase will:

- Alter the proportion and visual weight of the wall along the Lucan Road
- Change the perceived relationship between the site and the public realm
- Potentially increase the sense of enclosure at street level

6.4 Construction Typology

The proposed construction, comprising:

- Stone-faced outer leaf
- Blockwork inner leaf

represents a departure from traditional solid masonry construction.

While this approach is functionally driven, it introduces:

- A change in construction methodology
- A reliance on applied visual character, rather than inherent material authenticity

However, given the extent of existing reconstruction and alteration within the wall, this is not considered to give rise to a significant additional impact on historic fabric.

6.5 Security Integration

The integration of security requirements into the wall structure eliminates the need for a separate internal fence line.

This has the effect of:

- Reducing visual clutter within the site
- Avoiding the creation of a secondary enclosure line

However, it consolidates security expression at the primary boundary, increasing the **visual and physical prominence of the wall**.

7 Mitigation Measures

7.1 Recording

- Full photographic and measured survey prior to intervention – See Appendix 01
- Documentation of construction detail and condition

7.2 Dismantling Strategy

- Careful manual dismantling
- Salvage and cataloguing of all viable stone

7.3 Reconstruction

- Maximum reuse of original stone
- Matching new stone only where necessary

Reconstruction to reflect:

- Existing height
- Thickness
- General character

7.4 Materials

- Use of lime mortar compatible with existing fabric
- Avoidance of cementitious materials

7.5 Design Integration

- Maintain visual continuity of boundary
- Avoid engineered suburban detailing
- Ensure the wall remains the dominant boundary feature

7.6 Wall Proportion and Articulation

- The wall shall avoid a monolithic or continuous blank appearance
- Subtle variation in stone selection and laying pattern shall be used to reflect traditional character

7.7 Material Expression

- The external face shall be constructed using natural stone with a depth and irregularity consistent with traditional masonry
- The wall shall not read as a thin veneer or applied facing

7.8 Wall Head Treatment

The wall head shall be carefully detailed to avoid:

- Flat concrete capping
- Standardised engineered finishes

A simple and robust finish consistent with traditional boundary treatments shall be used

7.9 Height Transition

The transition between the higher wall and reduced height sections shall be:

- Gradual where feasible
- Located in visually appropriate positions (e.g. near gates or breaks)

8 Impact Assessment

The proposed works will result in the removal of a section of the existing boundary wall, including both historic and later fabric. Given the evidence of reconstruction and alteration, the proportion of original material affected is considered to be limited.

The principal impact arises from:

- The alteration of the established boundary alignment
- The change in the relationship between the site and the public road
- The modification of the existing streetscape condition

The impact on historic fabric is therefore considered to be less significant than the impact on setting and boundary definition.

9 Residual Impact

Following mitigation, the works will result in:

- Loss of sections of historic and later wall fabric
- Realignment of the historic boundary
- An increase in wall height within defined areas
- A change in construction approach

9.1 Residual impact:

Moderate Adverse

This arises primarily from:

- Alteration of boundary alignment
- Increased wall height and enclosure
- Changes to the visual relationship between the site and Lucan Road

This impact arises primarily from the change to the historic boundary alignment and setting, rather than from the loss of fabric alone.

10 Conclusion

The proposed works will result in the partial demolition and reconstruction of a section of a historically significant boundary wall forming part of the curtilage of Protected Structures at St. Edmundsbury.

The impacts include:

- Loss of late 18th-century fabric
- Alteration of historic boundary alignment
- Change to the established relationship between site and public realm

These impacts are adverse and material.

The works are driven by infrastructural requirements associated with road realignment. While this provides a planning justification, it does not remove the heritage impact.

Subject to:

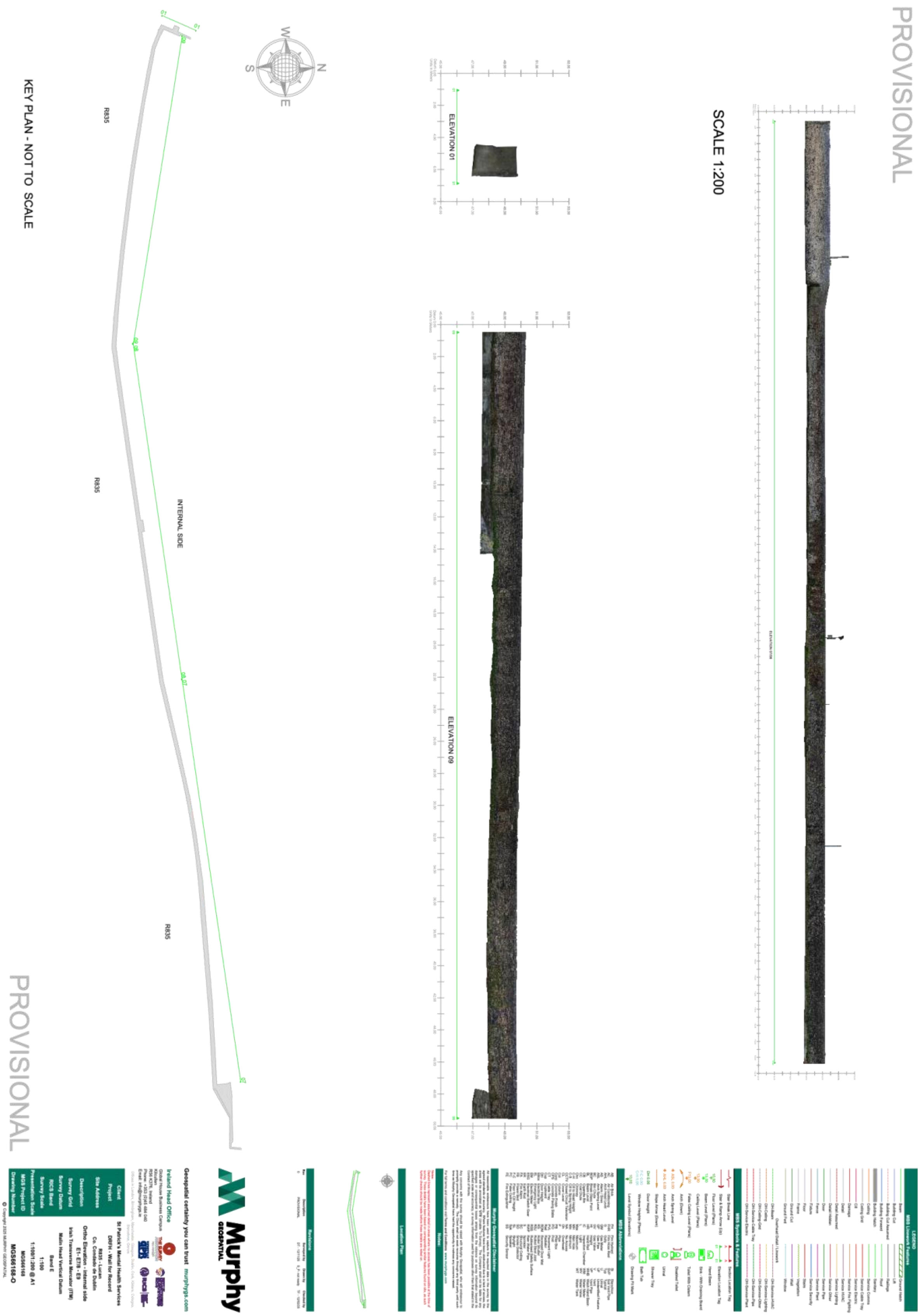
- Careful dismantling
- High-quality reconstruction
- Maximum reuse of original materials

the impact can be reduced but not eliminated.

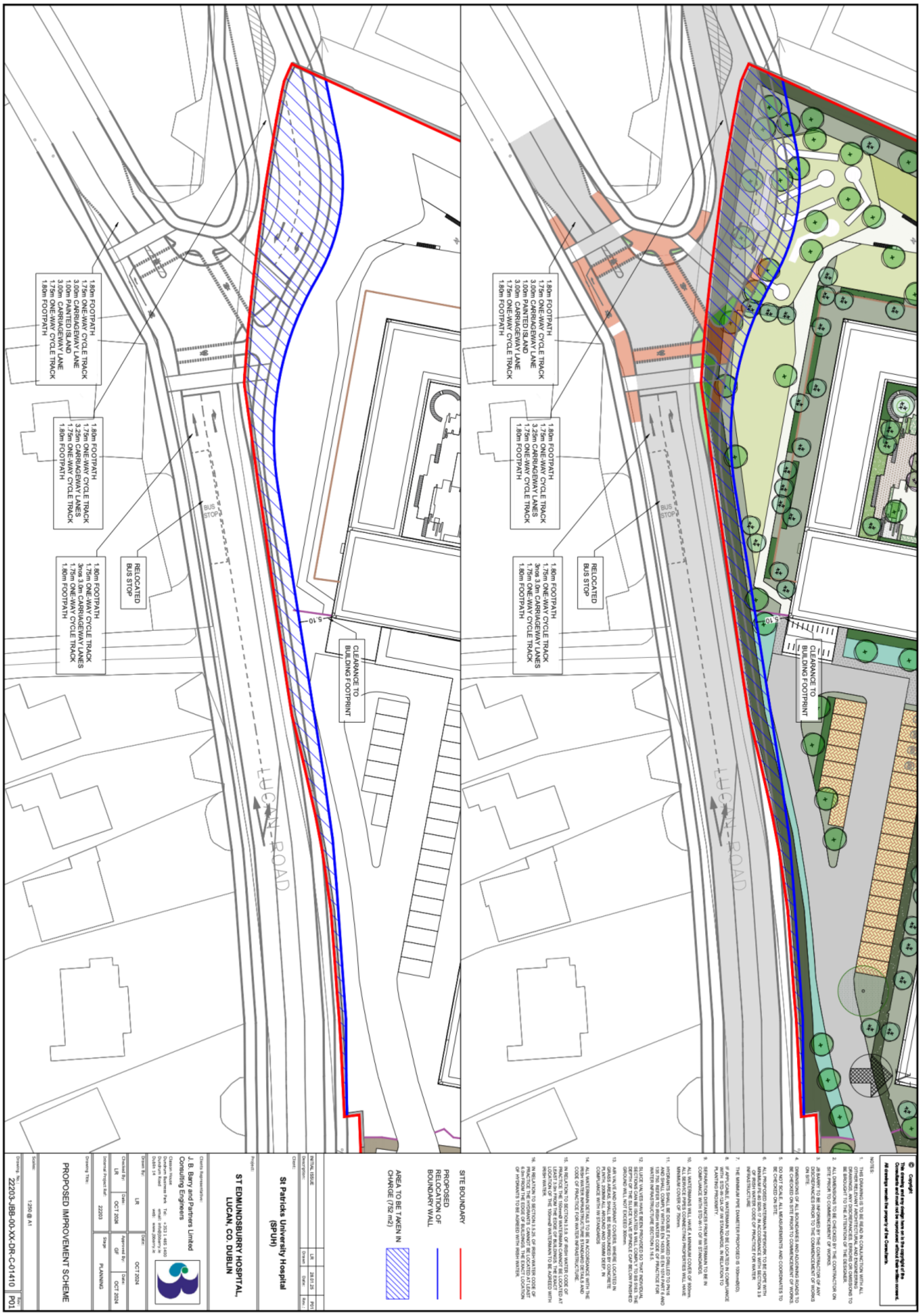
On balance, the proposal represents a managed intervention resulting in a moderate adverse impact, which may be considered acceptable only where the infrastructural requirement is demonstrably necessary and proportionate.

11 APPENDIX

APPENDIX 01 – ORTHOGRAPHIC SURVEY



APPENDIX 02 – PROPOSED REALIGNMENT



APPENDIX 03: CONSERVATION METHOD STATEMENT

11.1 Southern Boundary Wall – Dismantling and Reconstruction

11.1.1 GENERAL PRINCIPLES

All works to the southern boundary wall shall:

- Be carried out under the supervision of a **suitably qualified conservation professional**
- Follow best practice in accordance with the *Architectural Heritage Protection Guidelines for Planning Authorities (2011)*
- Minimise loss of historic fabric
- Retain and reuse existing materials wherever feasible

The works shall proceed on a **minimum intervention basis**, limited strictly to the extent required to facilitate the approved road realignment.

11.1.2 PRE-COMMENCEMENT REQUIREMENTS

Prior to any intervention, the following shall be completed:

A) RECORDED SURVEY

- High-resolution photographic record of the wall along its full extent
- Elevational record of the section to be removed
- Identification of construction phases, joints, and material variations

B) SETTING OUT

- Precise marking of the section of wall to be dismantled
- Agreement of limits of intervention with the design team and conservation advisor

C) PROTECTION MEASURES

- Protection of adjoining retained wall sections
- Installation of temporary supports where required to prevent collapse or movement

11.2 Dismantling Procedure

Dismantling shall be carried out **manually and sequentially**, as follows:

- No mechanical demolition shall be permitted for primary dismantling
- Wall shall be dismantled **from top down** in controlled lifts
- Individual stones shall be carefully removed to avoid breakage
- Mortar shall be gently broken away without damaging adjacent units

Particular care shall be taken at:

- Junctions between historic and later fabric
- Areas of weaker lime-bound masonry

11.3 Salvage and Storage

All recoverable materials shall be retained for reuse:

Stone shall be:

- Cleaned of loose mortar (without aggressive mechanical cleaning)
- Sorted by size, type, and condition
- Stored on pallets in a secure, dry location

- Original coping or larger stones (if present) shall be **clearly identified and reserved**

A record shall be kept of:

- Quantity of salvaged material
- Proportion suitable for reuse

11.4 Reconstruction

A) GENERAL APPROACH

The reconstructed wall shall:

- Follow the **approved revised alignment**
- Replicate the **general character, scale, and proportions** of the existing wall
- Avoid over-regularisation or artificial uniformity

B) MASONRY CONSTRUCTION

Salvaged stone shall be used as the **primary facing material**

New stone shall:

- Match existing in geology, colour, and texture
- Be used only where salvaged material is insufficient
- Masonry shall be laid:
- In a manner reflecting the existing wall character
- Avoiding overly formal coursing where not historically evident

C) MORTAR SPECIFICATION

Mortar shall be:

- Lime-based and compatible with existing fabric
- Free from cement

Indicative specification:

- Natural Hydraulic Lime (NHL 2 or NHL 3.5 depending on exposure)
- Well-graded sand appropriate to local character

Mortar shall be:

- Slightly recessed or flush finished
- Not ribboned or over-pointed

D) WALL HEAD / CAPPING

The wall head shall:

- Avoid the introduction of overtly modern detailing
- Reflect the existing condition where appropriate

Where reconstruction is required:

- Salvaged coping stones shall be reused where available
- Any new capping shall be visually consistent and not visually dominant

11.5 Interface with Retained Fabric

At junctions between new and existing wall:

- Transitions shall be **visually and structurally coherent**
- No abrupt or visually intrusive junctions shall be permitted
- Bonding shall be carefully executed to avoid structural weakness

11.6 Quality Control and Supervision

- Works shall be subject to periodic inspection by the conservation advisor
- Sample panels may be required prior to full reconstruction
- Any deviation from agreed methodology shall be approved in advance

11.7 Prohibited Works

The following shall not be permitted:

- Use of cement-based mortars
- Machine demolition of masonry (except where explicitly agreed for later fabric only)
- Use of artificial or reconstituted stone
- Overly neat or uniform pointing inconsistent with historic character
- Introduction of suburban or engineered finishes

11.8 Completion

On completion:

- The wall shall read as a **coherent continuation of the existing boundary**
- No visual distinction shall be apparent between retained and reconstructed sections beyond normal material variation

A final photographic record shall be submitted documenting:

- Dismantling
- Reconstruction
- Completed works

12 Appendix 03 – Archaeological Report

Aisling Collins Archaeology Services (ACAS)

DRAFT - to be incorporated into the monitoring report

Engineering investigations archaeology site inspection

for

Ground condition site Investigations at St Edmundsbury Hospital, Lucan.

In advance of planning application

Unlicensed

November

8-11-2023

For the Governors of St. Patrick's Hospital

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TP6 looking east.

Plate 8 TP7 looking north.

Plate 9 TP7 Looking south.

Project Team

Archaeological Assessment:

Archaeological Director:	Aisling Collins B.A, Pg Dip, MIAI
Archaeological Illustrator:	Kevin Weldon

Project Design Team:

Architects:	TOTP
Architectural consultants	Carrig Conservation International
Planning consultants	JBA Consulting

Executive Summary

On behalf of St Patrick's Mental Health Services Aisling Collins has undertaken archaeological inspection of the ground condition site investigations in advance of a planning application at St Edmundsbury Hospital, Lucan.

The following report comprises the results of the inspection

Please note that the recommendations given here are subject to the approval of the National Monuments Section of the Department of Housing, Planning and Local Government and South Dublin County Council

1. Introduction

13 1.1. Site Location

The site is in Lucan, Co. Dublin. The townland of St Edmundsbury lies within the civil parish of Lucan and the barony of Newcastle and was under the poor law union of Dublin south. It comprises an overall site area of 79,030m2 (c. 7.03 ha). The site comprises the grounds and premises of Saint Edmundsbury Hospital, and is bounded by greenfield to the North, by farm buildings and a school to the East, by Lucan Road to the South, and by the river Liffey to the West. It is within the Liffey Valley and is close to a bend in the river.

14 1.2. Site Description

The site comprises the grounds and premises of the Saint Edmundsbury Hospital, and is bounded by greenfield to the North, by farm buildings and a school to the East, by Lucan Road to the South, and by the river Liffey with its adjacent land to the West.

The main proposed development area is made up of flat green fields surrounded by a protected historic wall (plates A, B). In the northwest corner of the large field there is a small area of protected woodland with some overgrowth. There is a belltower in a section of the wall with several historic farmyard building located to the east of this wall (Plates C&D). The historic wall surrounding the site fronts onto Old Lucan Road on the southern side.

15 1.3. The Development

The proposed development will consist of:

- Demolition of existing modern extension to St Edmundsbury House, currently in use as a 52-bed adult facility.
- Construction of new 14-bed adolescent facility on the site of the modern extension to St Edmundsbury House, consisting of:
- Construction of new 200-bed in-patient adult facility to the south of the existing woodland consisting of:
- Soft landscaping including:
- Retention, refurbishment, and repurposing of existing historic farm buildings into Individual Therapy Consultation Suites, a Public Café, and Hospital Facilities Buildings.
- Hard landscaping including all footpaths, internal roadways, courtyards, and boundary treatments.
- Continued use of St Edmundsbury House for Adult Daycare/Group and Individual Therapy sessions in addition to associated consultant, administration, and support facilities.
- Refurbishment of existing kitchen facilities serving both Adolescent Unit and Staff.
- Removal of contemporary interfaces at St Edmundsbury House, and repair/reinstatement of historic façade.
- All ancillary features.

2. Baseline Survey

16 2.1. Introduction

To set the site within its wider archaeological and cultural heritage landscape, and to assess the archaeological potential of the site, a comprehensive paper survey of all available archaeological, historical and cartographic sources was undertaken.

2.2. Recorded archaeological sites and monuments.

The RMP Maps were consulted and the inventory listing all the RMP's. There are eight RMP's recorded within a 1km radius of the site. The zone of archaeological potential (ZAP) in the Record of Monuments and Places (RMP) for the Historic Town of Lucan (DU017-019) is located c. 300m to the southwest of the site. The river Liffey is located c. 85m to the west of the site at the nearest point. Appendix 1.

2.3. Recorded archaeological finds.

The topographical digital files in the National Museum of Ireland were consulted to determine if any archaeological artefacts had been recorded from the area. This is the National archive of all known finds recorded by the National Museum. It relates primarily to artefacts but also includes references to monuments and has a unique archive of records of previous excavations. Appendix 2

17 2.4. PREVIOUS EXCAVATIONS

The excavation bulletin website (www.excavations.ie) was consulted to identify previous excavations that may have been carried out within the study area. This database contains summary accounts of excavations carried out in Ireland from 1970-2010. Details of previous excavations are listed in Appendix 3.

18 2.5. CARTOGRAPHIC SOURCES

Reference to cartographic sources is important in tracing land use development within the area as well as providing important topographical information on sites and areas of archaeological potential. Primary cartographic sources consulted consisted of the RMP map, Rocque's Map of 1760, Taylors Map of 1815, Duncans Map and Ordnance Survey 6" maps first and later editions. Appendix 4.

3. Archaeological and Historical Background

Prehistoric period: Lucan, located on the banks of the river Liffey and at the junction of the river Griffeen, is located within a rich archaeological landscape where settlement activity is known to have occurred from Neolithic times. There is evidence of prehistoric settlement in Lucan as features that attracted early people such as river access, fishing, well-drained soil and hunting were all present. Finds of polished stone axe heads (NMI Reg. No. 1975:90) and worked flints (NMI Reg. No. 1975:90, 1966:4 & 1968:151-71) all point to possible tool use in the general area from at least as early as the Neolithic period (Deery, 2021).

Bronze Age activity in Lucan is reflected in finds such as a bronze stickpin, a bronze latchet-brooch and a bronze ring-pin (NMI 1960:5, 1992:264). Evidence of Bronze Age occupation in the surrounding landscape is indicated by the presence of a mound and reported finds of human skeletal material of uncertain date from the nearby townland of Astagob (RMP Ref: DU017-007).

There are ring-ditches recorded in Lucan Demesne (DU017-094); their function is unknown, but it is thought they may be the remains of ploughed out barrows, which are part of the Bronze/Iron Age burial tradition.

Early Medieval Period: Settlement expansion and population increase across the country led to the construction of many ringforts throughout this period. These are circular enclosures primarily functioning as habitation or farmsteads. The medieval landscape would also have had unenclosed settlements, farms and fields, and routeways. Two ringforts are located close to Lucan – one on the southside of Lucan (RMP Ref: DU017-021001) and a second located in Coldblow townland northwest of the town (RMP Ref: DU017-086). The nearest early ecclesiastical sites to Lucan are church sites at Clonsilla (RMP Ref: DU013-017) and Palmerstown (RMP Ref. DU017-026) downstream on the south bank of the river Liffey.

Medieval Period: The medieval manorial borough of Lucan is believed to have been established a short time after the Anglo-Norman invasion of 1169.

Initially the lands were awarded to Alard Fitzwilliam by King Henry II, but ownership changed hands several times over the next four centuries, being owned in succession by Werris de Peche (c.1204AD); Robert de Nottingham (c.1316AD); Sir Thomas Rokeby (late 1300sAD), the Fitzgerald earls of Kildare (c.1537AD) and subsequently the Sarsfields held possession until 1718 and thereafter the Veseys.

Lucan does not appear to have been a place of great economic importance in the medieval period and remained a manorial borough. The street plan of the town was linear and consisted mainly of one main street with burgage plots stretching back from this street on both sides. The modern main street follows the same route as the medieval main street. The manor would have had a castle, but its site is unknown – some believe it's located somewhere in the vicinity of the present Lucan House.

A tower house is recorded by the RMP (Ref: DU017-019001) within the demesne of Lucan House and the site of a second castle (RMP Ref: DU017-018) is recorded in the historic OS maps on the north bank of the Liffey near Lucan bridge. The residential tower attached to the north side of St. Mary's Church (DU017-019002) has sometimes been misidentified as a castle. There may also have been a second castle in the town as shown on the 1699 De Vesci map which may be incorporated within the fabric of 'Ard Garon' on Dispensary Lane.

Post-Medieval / Early Modern Period: During the reign of William III, a Protestant called William Fanshawe, claimed the Lucan estate on behalf of his stepdaughter, Charlotte Sarsfield. Through her marriage, the Lucan estate passed to the Vesey's who built Lucan House c. 1770 (Ball 1906; Joyce 1912), possibly on the site of the 'faire house' depicted on the seventeenth century Down Survey map of Newcastle Barony and the parish map of Lucan. After the death of his wife, Vesey established his rights over the estate by way of an Act of Parliament in 1712.

By 1772, his son, Agmondisham Vesey, started work on a grand new house with the help of English architect Sir William Chambers, and Lucan House is now recognised as one of the finest country homes in Ireland. In 1758, Vesey discovered a sulphur spring alongside the Liffey in Lucan Demesne, and thus began a period of development and prosperity for the village. Every Sunday numerous visitors came to test the therapeutic waters. By 1795 Lucan had established itself as equal to other prominent spa resorts. The village population was now growing with most inhabitants working on the estate or in the collection of mills that had sprung up along the Liffey. Lucan and the adjacent townland of Esker had six mills on the rivers Liffey and Esker powering the local linen, cotton, corn and flour mills. The only surviving mills is Shackleton's mill which ceased operation in 1999 having been in continuous operation since 1859. Mill races may survive below ground in the area.

4. Archaeological inspection results

Archaeological inspection of the engineering site investigations was carried out on the 18th, 19th and 20th of October 2023 by Aisling Collins and Jacqueline Mac Dermott. The contractors were Site Investigations Ltd. This work was carried out in advance of a planning application to determine the ground conditions, strength and formation level. This was unlicensed. The client was advised by the archaeologist that if any archaeological features were identified all works would cease immediately and the National Monuments Service would be notified.

A total of 16 pits were archaeologically inspected over three days. using a 5-tonne mechanical digger fitted with a 0.50 metre toothless bucket. The test pits were opened in regular intervals across the green field area. They measured between 2.30m and 3.20m long and were uniformly 0.60 metres in width, ranging in depth to between 1.8m and 2. 80m.

The boreholes were excavated out using shell and auger rigs and had a maximum depth of 20m.

It was not possible to excavate 3 of the proposed pits and two of the proposed boreholes that were located inside the fenced off farmyard area due to access difficulties.

The stratigraphy was consistent throughout the southern end of the site in pit nos. TP9, TP11-13 and TP16-19. It consisted of sod and topsoil to a depth of 0.40m below present ground level (PGL), overlying a 0.40m to 0.70m deep layer of orange-brown sandy cultivation soil containing small stones with small fragments of red brick, mortar, charcoal, and shell, with rare fragments of 18th-19th century transfer printed ware and brown-glazed red earthenware pottery. This overlay a grey-brown gritty sterile soil with occasional small and medium sized stones at a depth of c. 0.70m - 1.00m below PGL. A dark brown boulder clay with shattered limestone bedrock pieces was evident at c. 2.10m -2.80m.

19 Stratigraphical Profile of Trial Pits

TH1
Plate

Stratigraphy
00.00-00.05m grass and sod
00.05-00.30m topsoil
00.30-01.20m soft brown clay
No archaeological features were identified.

TH2
Plate
Oriented north-south - foundation trench along northern boundary wall (west)
Measured 2m x 60cm wide x 2.1m depth
Stratigraphy
00.00-00.05m grass and sod
00.05-00.30m topsoil
00.30-02.10m soft brown clay – wall foundations are at 1.8m

Note: At 4m south of the northern boundary wall and 1m east of TH2 an opening to a concrete lined culvert was visible. The corner bend of the culvert was at this location. The culvert is running north-south and east-west.

TP1
Plate
Oriented north-south (near northern boundary wall)
Measured 3.5m x 60cm wide x 2.1m depth.
Stratigraphy
00.00-00.05m grass and sod
00.05-00.30m topsoil
00.30-00.60m natural- light yellow/brown clay
00.60m a large limestone slab measuring c. 60cm x 60cm covering a culvert /drain. The culvert is oriented east-west and had red bricks visible. There was water present.
00.60m-02.10m natural – at 2.1m gravel and stone collapsing in.

TP2
Plate
Oriented east-west
Measured 2.3m x 60cm wide x 2.1m depth.
Stratigraphy
00.00-00.05m grass and sod
00.05-00.50m topsoil – redbrick and mortar visible
00.50-01.80m natural- hard sand and rock
No archaeological features were identified.

TP3
Plate
Oriented northeast-southwest
Measured 2.6m x 60cm wide x 1.8m depth.
Stratigraphy
Oriented north-south - foundation trench along northern boundary wall (east)

Measured 2m x 60cm wide x 1.2m depth

00.00m-00.05m grass and sod

00.05-00.30m topsoil –

00.30-00.70m light grey clay – few fragments of glass and modern pottery and some burnt fragments.

00.70-02.20m natural clay – at a depth of 1.2m water flowed into the trench with lots of stones – likely from a

TP5
Plate
Oriented east-west
Measured 2.6m x 60cm wide x 2.6m depth.
Stratigraphy
00.00m-00.05m grass and sod
00.05-00.30m topsoil –
00.30-00.70m light grey clay
00.70-02.60m natural clay
02.60m black boulder clay.
No archaeological features were identified.

TP6
Plate
Oriented east-west
Measured 2.8m x 60cm wide x 2.6m depth.
Stratigraphy
00.00m-00.05m grass and sod
00.05-00.30m topsoil - some mortar fragments and ceramic drainage pipe
00.30-02.50m brown/grey clay
02.60m black boulder clay.
No archaeological features were identified.

TP7?
Plate
Oriented east-west
Measured 2.8m x 60cm wide x 2.6m depth.
Stratigraphy
00.00-00.05m grass and sod
00.05-00.40m topsoil
00.40-02.50m natural- dark brown/grey clay with some small stones
02.60m black boulder clay.
No archaeological features were identified.

TP 9
Plate
Oriented east-west.
Measured 2.3m x 60cm wide x 2.3m depth.
Stratigraphy.
field drain.

02.60m black boulder clay.

No archaeological features were identified.

00.00m-00.05m	Grass and sod.
00.50m-00.40m	Topsoil.
00.40m-00.70m	Light orange sandy clay.

00.70m-02.30m Natural – dark brown/grey clay with some small stones

TP9 was located in the centre of testing area and did not reveal any archaeological features or finds.

TP10

Plate

Oriented east-west

Measured 2.3m x 60cm wide x 2.5m depth.

Stratigraphy

00.00-00.05m grass and sod

00.05-00.40m topsoil

00.40-00.70m light orange sandy clay

00.70m-02.50m natural- dark brown/grey clay with some small stones.
No archaeological features were identified.

Plate

Oriented east-west.

Measured 3.2m x 60cm wide x 2.6m depth.

Stratigraphy.

00.00m-00.05m Grass and sod.

00.50m-00.40m

00.40m-00.70m Light orange sandy clay.

00.70m-02.60m th th

TP12

Plate

Oriented east-west.

Measured 2.9m x 60cm wide x 2.7m depth.

Stratigraphy.

00.00m-00.05m Grass and sod.

00.50m-00.40m Topsoil.

00.40m-00.70m Light orange sandy clay.

00.70m-02.80m

TP12 was located to the east of TP11.

Nothing of archaeological interest was noted.

TP13

TP11

Topsoil containing a single sherd of brown glazed earthenware.

Natural – dark brown/grey clay with some small stones

TP11 was located in the western part of the field. No archaeological features were noted, and a single sherd of 18 -19 century brown glazed earthenware was recovered from the orange clay layer.

Natural – dark brown/grey clay with some small stones

Plate

Oriented north south.

Measured 3.2m x 60cm wide x 1.0m depth.

Stratigraphy.

00.00m-00.05m Grass and sod.

00.05m-00.40m Topsoil.

00.40m-1.00m Disturbed soil consisting of orange-brown sticky clay, with small stones, red-brick mortar, and charcoal fragments throughout, Limestone wall block and stone lined field drain in TP No. 13 cut into this layer at 0.40m and 0.80m respectively.

TP13 was located to the eastern side of the green field area, oriented north-south for a length of 3.20 metres. At its northern extreme two regular and smoothly cut limestone blocks were visible cutting into the orange-brown cultivation layer, 0.40 metres below BPGL and running under the north, east and west limits of the trench. The exact measurements were constricted by the extent of the trial pit but at minimum it was 0.53m (north-south) by 0.50m (east-west) and 0.15m in depth. It overlay a thin layer of red brick and mortar and had mortar adhering to the upper surface. 1.90 metres south of this at a depth of c. 0.80 metres, a field drain was noted running eastwest through the middle of the trench. It measured 0.20 metres in width and contained broken limestone pieces and fragments of red brick and cement. The soil directly above it was more disturbed with frequent larger pieces of brick with concrete adhering, suggesting the soil had been redeposited in this area. Excavation was stopped at this point and both features were left in situ.

Conclusion

The two archaeological features in TP13 are of post-medieval/early modern date. The location of the limestone wall feature corresponds to farm outbuildings represented on the 19th century OS map and is on a similar trajectory to the existing limestone and brick wall that is oriented north-south through the eastern section of the green field area.

Plate
Oriented north-south
Measured 2.4m x 60cm wide x 2.8m depth.

Stratigraphy

00.00-00.05m grass and sod
00.05-00.10m cobbled surface
00.10-00.30m topsoil
00.30-00.60 mixed clay/red brick
00.60 – water drain with water entering the trench – Yellow/brown clay visible

Conclusion
A cobbled surface was identified just below the topsoil level.

TP15

Plate
Oriented east-west
Measured 1.9m x 60cm wide x 2.5m depth.

Stratigraphy

00.00-00.05m grass and sod
00.05-00.30m topsoil
00.30-00.50 yellow/brown clay
00.50-02.50m yellow clay
2.5m black boulder clay.
No archaeological features were identified.

TP18

Plate
Oriented north south.
Measured 2.7m x 60cm wide x 2.8m depth.

Stratigraphy.

00.00m-00.05m	Grass and sod.
00.50m-00.40m	Topsoil.
00.40m-00.70m	Light orange sandy clay.
00.70m-02.80m	Natural – dark brown/grey clay with some small stones

TP18 was located to the south of TP13. No archaeological features were revealed, and a single sherd of 19th century Transfer printed ware pottery was noted in the orange clay layer.

Overall conclusion

The archaeological inspection of the engineering test trenches identified a number of features across the site. TP13 had a stone drain and a wall feature, TP14 had a cobblestone surface, TP 1 had a limestone culvert present and southeast of TH2 was a concrete culvert most likely connecting with the TP1 culvert. TP3 had some window glass and modern pottery.TP6 had some mortar fragments and modern drainage pipe. All the pottery identified dates to the 18th ,19th and later centuries and the features identified appear to be post medieval in date. See Figure 9.

TP14

Recommendations

It is recommended that archaeological monitoring to be undertaken by a suitably qualified archaeologist during all ground disturbance. Ground disturbance encompasses all engineering site investigations and other excavation works including enabling works, temporary works, site clearance and drainage works.

If archaeology is identified during monitoring the archaeologist shall evaluate, characterise, and determine the extent of remains... Thereafter, an agreed mitigation framework including a Method Statement and Programme of Works shall be required in order to adequately preserve and/or record the archaeological resource, with consultation from the National Monuments Service (NMS). Whilst determination is being sought to mitigate the find/feature, the area shall be appropriately buffered with temporary fencing and an adequate works exclusion zone created to minimize any potential indirect damage during the site works. Full excavation may subsequently be necessary depending on the recommendations of the planning authority and the Department of Housing Local Government and Heritage.

Please note that the recommendations given here are subject to the approval of the National Monuments Section of the Department of Housing Culture, Heritage and Gaeltacht and South Dublin County Council

A programme of site clearance must be agreed in advance with the contractor and the archaeologist. A systematic methodology should be agreed upon.

References and Consultations

Ball, F. E. (1906) History of County Dublin. Volumes 4 & 6. Dublin.

Bennett, I. 2000 *Excavations 1998: Summary Accounts of Archaeological Excavations in Ireland*. Wordwell: Bray.

K. Brady, 2009, *Shipwreck inventory of Ireland Louth, Meath, Dublin and Wicklow*, Dublin.

Deery, S. 2021 , *Lucan Public Realm Proposed Enhancement. The Demesne and Riverside. Archaeological Impact Assessment Report* Courtney Deerey Ltd,

Jackson, M., 2014. 'Hill's Mills Lucan, County Dublin 1914', Dublin Historical Record, Vol.67, No.2, pp 85-100.

Sites and Monuments Record National Monuments Division: The National Monuments Section of the Department of Culture, Heritage and Local Government.

Internet Sources:

wwwarchaeology.ie
www.excavations.ie
www.heritagemaps.ie
www.askaboutireland.ie

Appendix 1 - Record of Monuments and Places (RMP)

There are eight RMP's recorded within a 1km radius of the site. The zone of archaeological potential (ZAP) in the Record of Monuments and Places (RMP) for the Historic Town of Lucan (DU017-019) is located c. 300m to the southwest of the site. The river Liffey is located c. 85m to the west of the site at the nearest point (see Tables below)

RMP's in the surrounding area (within 1km)		
RMP	Description	Approximate proximity to site
DU017-006	Castle	747m east
DU017-016	Bridge	912m southwest
DU017-018	Castle	365m southwest
DU017-019	Lucan Historic Town	min/max 306m-1100m
DU017-076	Fish weir	546m northeast
DU017-088	Burial	413m northeast
DU017-097	Enclosure	856m east

RMP's within the Zone of Archaeological Potential (DU017-019- Lucan Historic Town)		
RMP	Description	Approximate proximity to site
DU017-019001	Castle - tower house	905m southwest
DU017-019002	Church	905m southwest
DU017-019003	Graveyard	905m southwest
DU017-019004	Cross	905m southwest
DU017-019005	Fish weir	453m southwest
DU017-019006	Bridge	553m southwest

Appendix 2 – Archaeological finds listed in the National Museum of Ireland Topographical files.

The National Museum of Ireland finds database (2010) is published on heritagemaps.ie and the finds listed below in Table 10.3 were obtained from this source and from the National Museum Topographical files which were provided by the Duty Officer on the 27th of September 2023.

National Museum of Ireland (NMI)Topographical files			
NMI reg	Find place	Description	Townland
1960:575	Bed of River Liffey.	Bronze latchet brooch fastener.	Lucan Demense
1873:34	Coin	Gold	Allenwood
1942:738	Lucan	Stone ball	Lucan
2758:Wk256	Lucan	Stone bottle	
E92:264	Lucan	Bronze ring pin	Lucan
P1310	Lucan	Bone motif piece	Near Lucan
P1310.1	Lucan	Stone bottle	Near Lucan
P1310.2	Lucan	Stone bottle	Near Lucan

Appendix 3: Previous Excavations

The excavation bulletin is a database of over 15,000 summary accounts of all the excavations carried out in Ireland – North and South – from 1970 to 2023. There has been one licensed excavation within 100m of the Proposed site and has been nine excavations within 600m of the site (see table below).

Excavation number	Location	Site type	Author	Approximate distance from site
14E0151	St Edmundsbury, Lucan (St Andrews NS)	No archaeological significance	Dermot Nelis	<100m
95E0057	Main St Lucan	No archaeological significance	DL Swan Archtech	<600m
98E0416	1 the Mall, Main St Lucan	No archaeological significance	Martin E Byrne	<600m
98E0416	10 Main Street	No archaeological significance	Martin E Byrne	<600m
96E0066	Lucan Main Street	No archaeological significance	Tim Coughlin	<600m
05E1395	6 Main Street, Lucan	No archaeological significance	John Kavanagh	<600m
02D025, 02R041	River Grifeen, Lucan	No archaeological significance	Rex Bangerter	<600m
96E0089	St Andrews Church, Lucan	No archaeological significance	Ronan Swan	<600m
n/a	The Square, Main St Lucan	No archaeological significance	Jim Higgins	<600m
E002032	Widening of N4	No archaeological significance	John Channing	<600m?

Appendix 4: Cartographic Analysis

Analysis of historic mapping can show human impact on landscape over a prolonged period. Relevant historical maps were consulted in the compilation of this assessment (see Table below).

Map	Date	Description
John Rocque's plan of the city of Dublin	1760	This shows a greenfield site with just one building fronting onto the Lucan Road. The land is divided into several fields. There is quarry depicted to the southeast of the site and the Castle of Ballydowd (DU017-006) is located to the south of the site with a number of houses close to the castle and fronting on to a road. Luttrels Park is to the east of the site. The site is undeveloped.
Taylor's map	1816	Edmondsbury house is marked on the map along with the woodland area. Iron mills are depicted to the southwest adjacent to the river. Lucan and the Hill of Lucan are also named on the map. The quarry depicted in Rocque's map is named as a sand hill and the house. There is a road to the east of the site with houses fronting onto it.
Duncans map	1821	Edmundsbury house is not clearly visible but may be in the woodland area. There is a driveway visible that forks into a curve. There are four rectangular shaped buildings and one U-shaped building shown in the southwestern part of the proposed site. There appears to be a small building at the entrance that is likely to be a gate lodge.
Ordnance Survey	1937-41	Edmundsbury House is clearly visible as are the historic farm buildings and historic wall. There is also a rectangular building-oriented east-west in the southern part of the site.
Ordnance Survey	1897-1913	It looks like there is a linear building along the northern boundary wall, and also a linear rectangular building in the centre of the site west of the farm buildings which are probably green houses. The building shown on the 1937 map is no longer visible.
Record of Monuments and Places map (RMP)	current	This map shows the nearest RMP sites in red and sites on the National Inventory of Architectural Heritage marked in blue. This historic zone of Lucan is shaded in grey.
Aerial image of the site	2023	Aerial image does not show any obvious features in the ground.

Appendix 5Underwater Archaeology

Shipwrecks are not included in the SMR as this dataset is maintained separately bythe Underwater Archaeology Unit of the National Monuments Service. The Wreck Inventory ofIreland Database (WIID) holds records of over 18,000 known and potential wreck sites in Irish waters. These can be viewed in the wreck viewer on www.archaeology.ieand in the Shipwreck inventory of Ireland. Both these sources were researched and there were no shipwrecks listed within thesection of the river Liffey that flows to thewest of the proposedsite.

A seventeenth century fish weir (DU017-076) is known from historical records at Yellow Walls weir to the north of St. Edmondsbury, and the medieval fishery of Lucan is believed to have been located on the site of a fish weir shown on the first edition Ordnance Survey map of 1837 (DU017-019005) adjacent to the present Lucan Bridge (DU019-006) to the west of the proposed site. No underwater archaeological work has been undertaken in the River Liffey at St. Edmundsbury . Previous underwater archaeological surveys of the Liffey at Fonthill and Astagob (01D0030) and Lucan (06D031) did not reveal in situ archaeological material.

Figure1sitelocaon&proposeddevelopement

Figure2recordofmonumentsandplcaesmap(RMP)

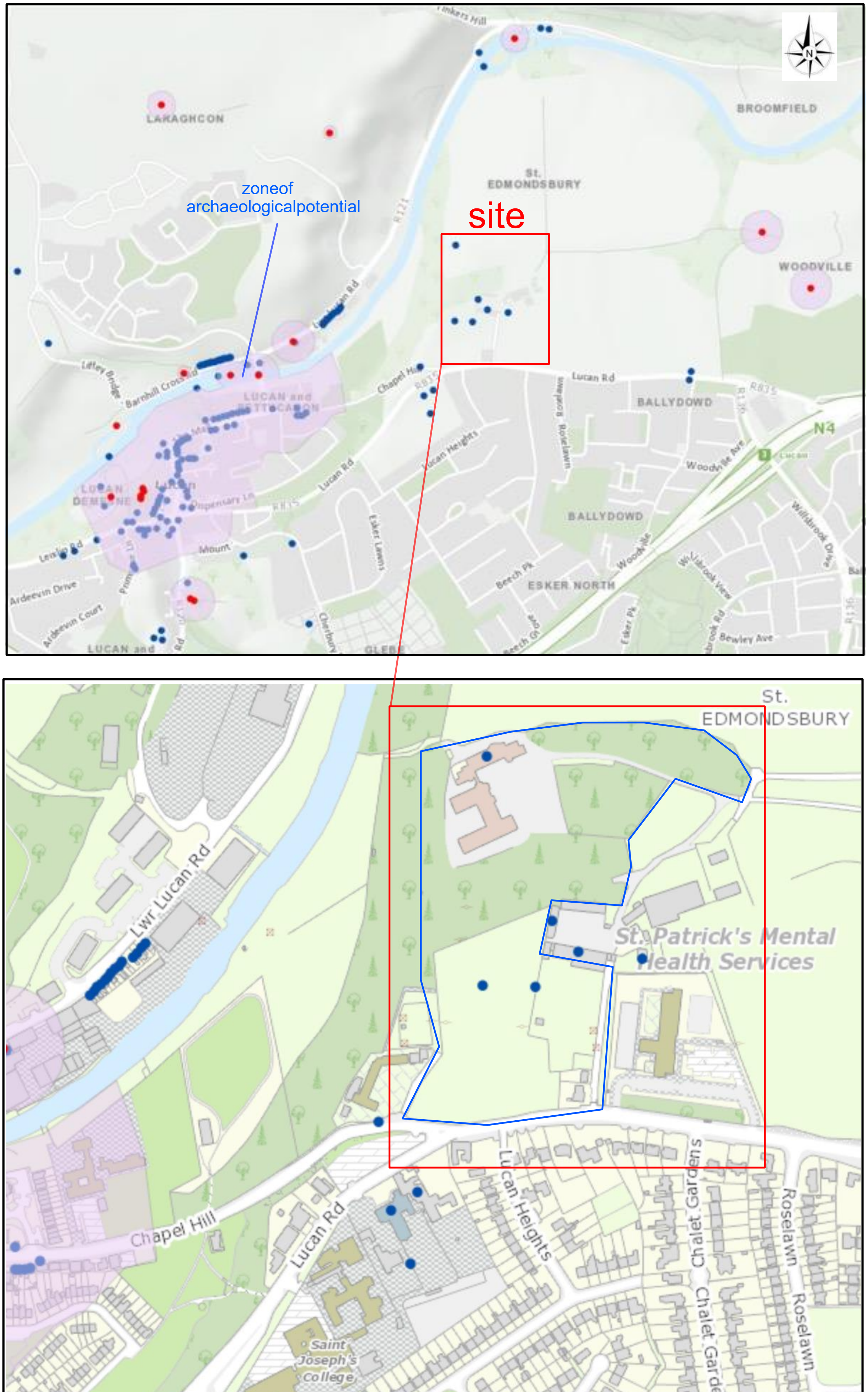


Figure3RocquesmapofLucandated1760

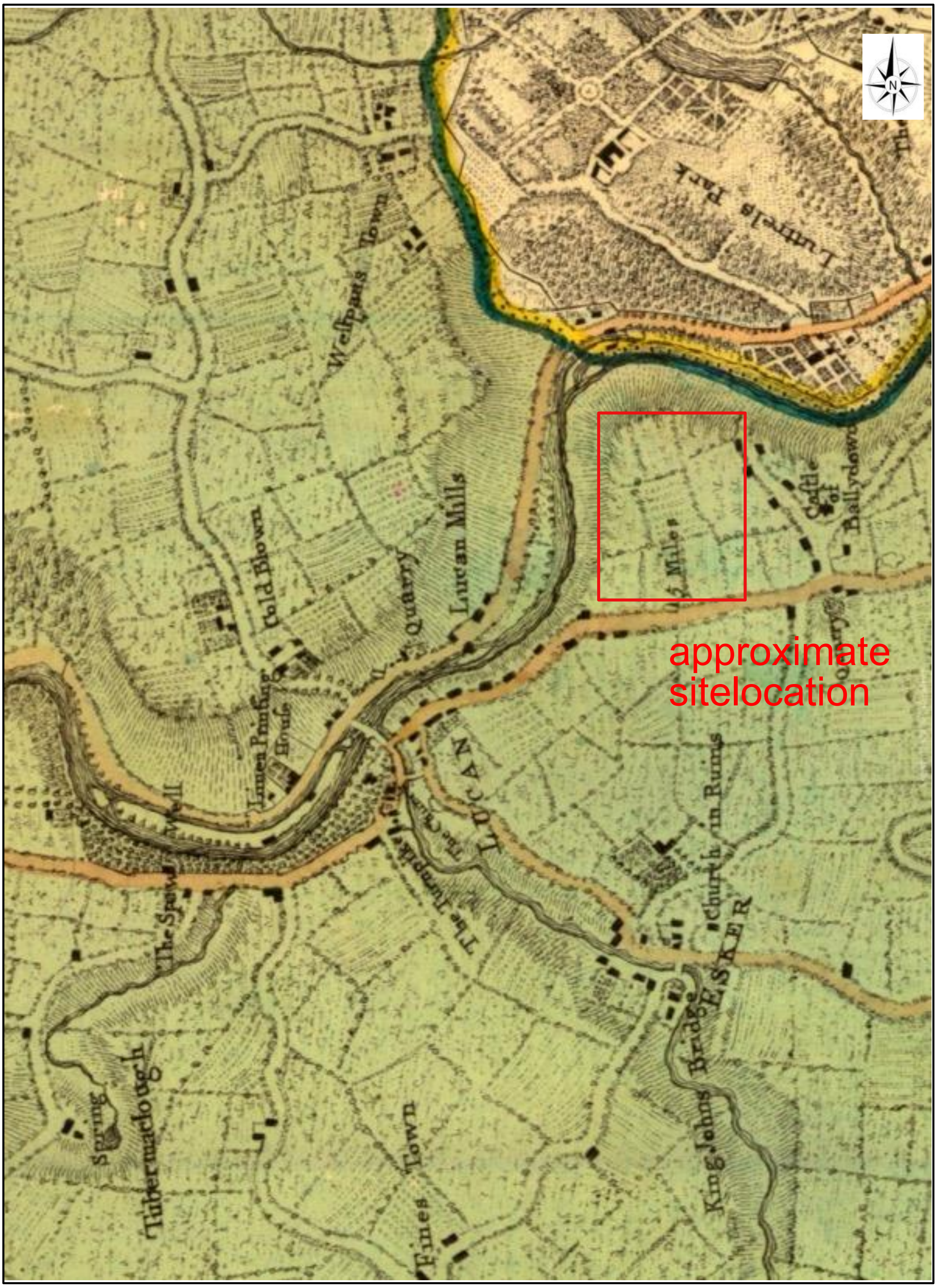


Figure4TaylorsmapofLucandated1816

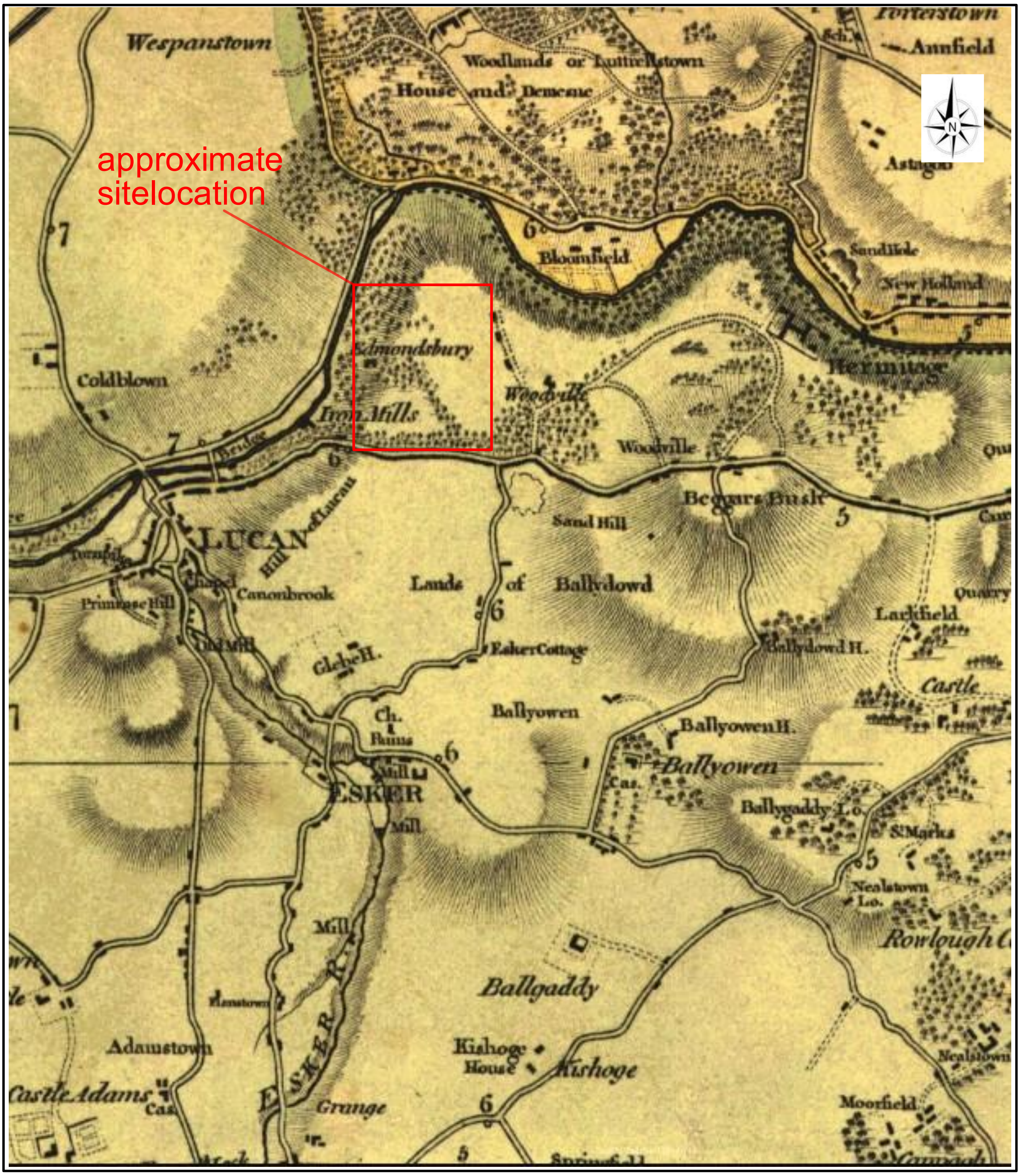


Figure5DuncansmapofLucandated1821

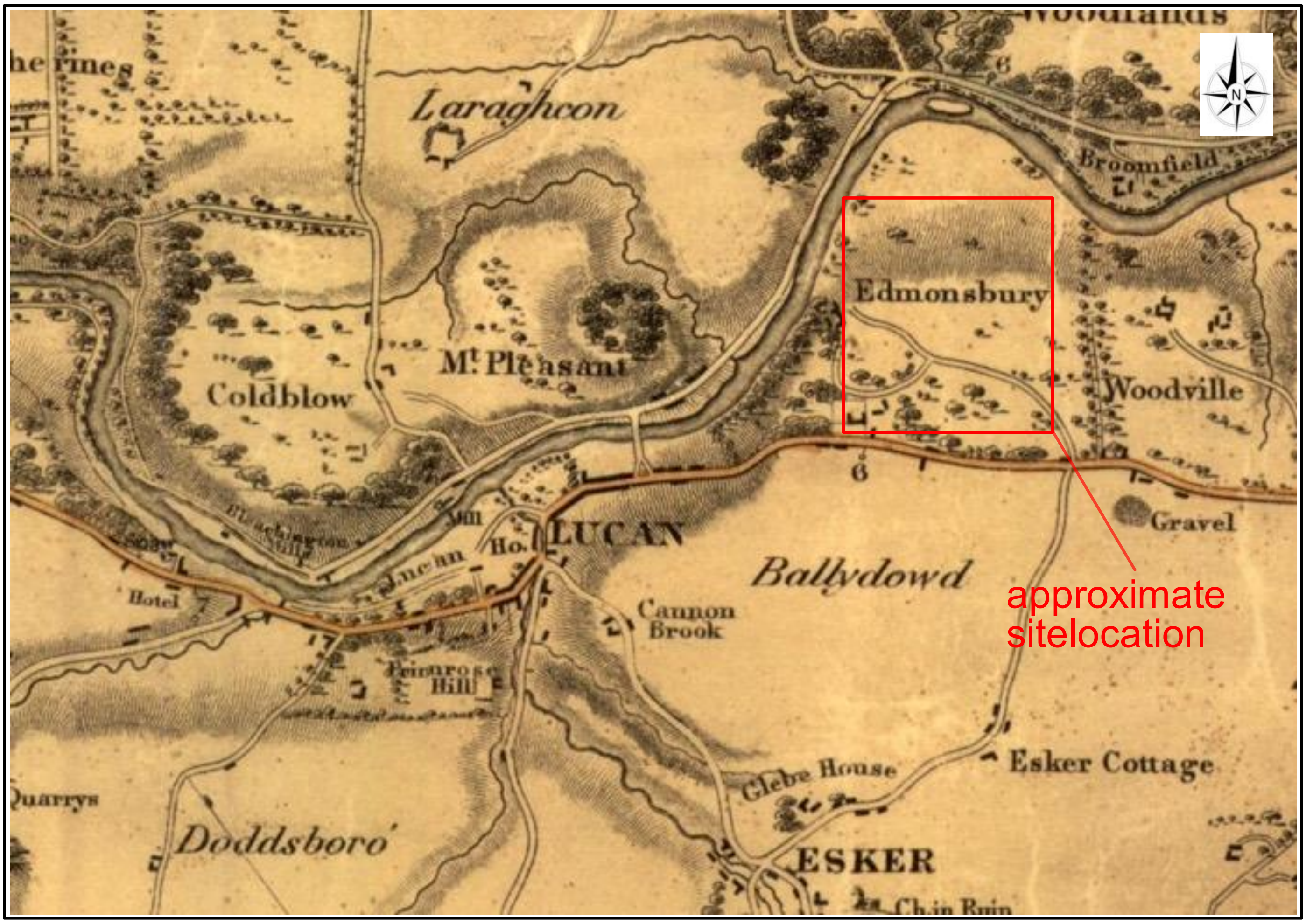


Figure6ordnancesurveymapdated1837-1841

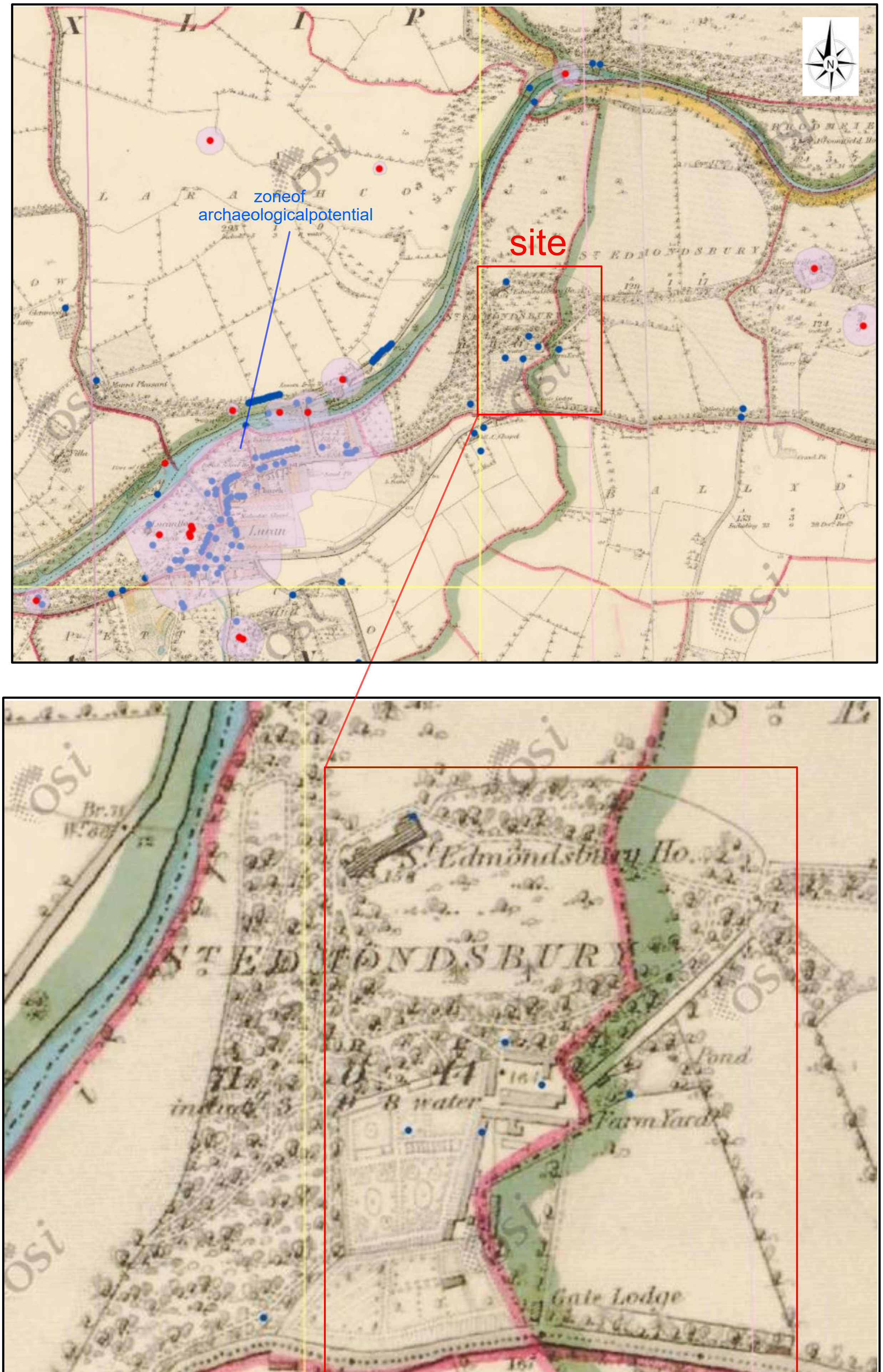


Figure7ordnancesurveymapdated1897-1913

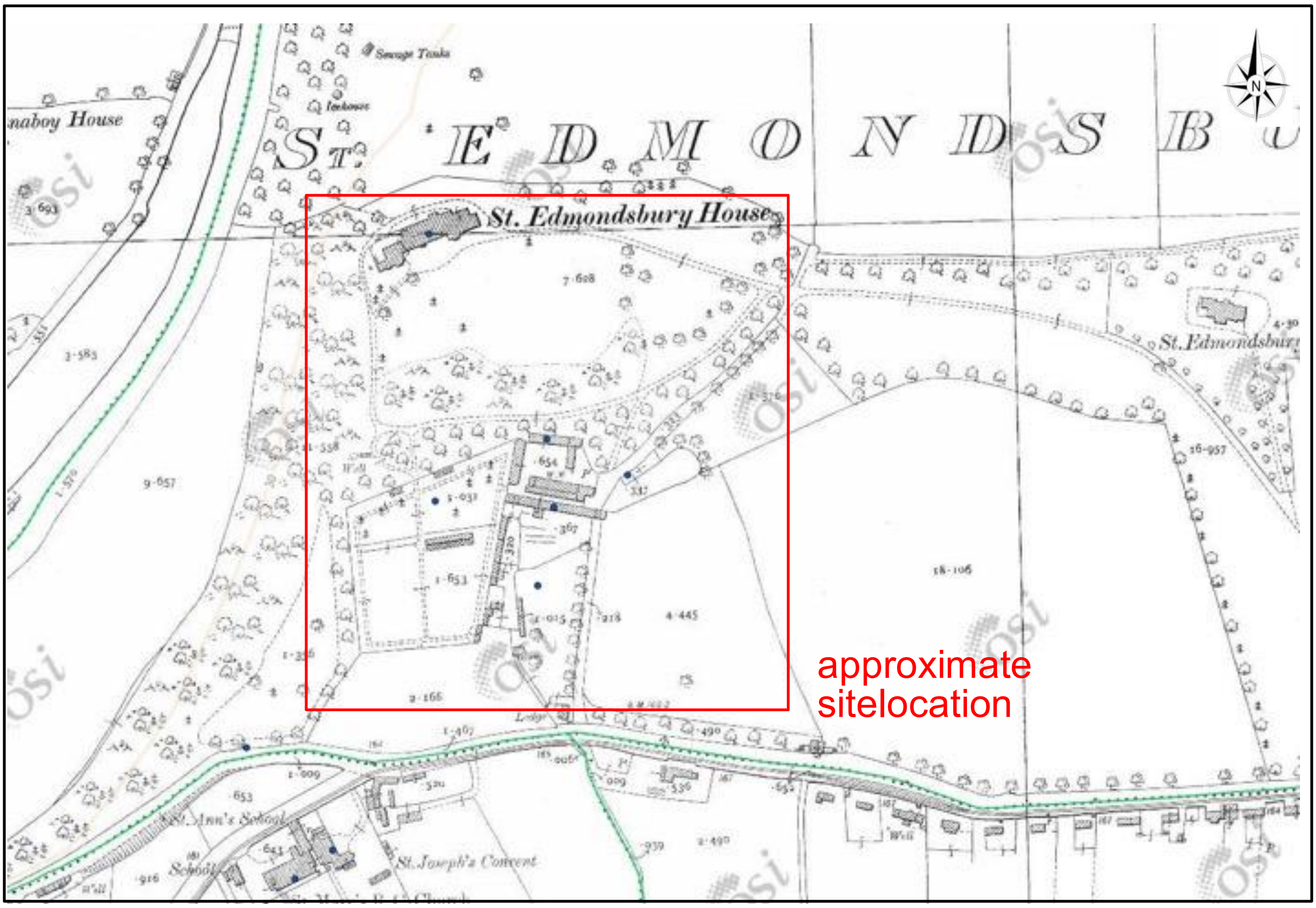


Figure 8 site locaon Google maps 2023

Figure 9 site test invesgaon trenches 2023

TH1 - 4M south of the boundary wall and 1m east of TH1 was a concrete culvert below ground.

TP1 - Culvert with limestone slab over top of it

TP13 - Wall feature and stone lined field drain

TP14 – Cobbled surface

Plate A: Open field with woodland area in distance and belltower edge of photo (looking northeast)

Plate B: Open field looking southwest.

Plate C: Farm buildings and protected wall looking west.

Plate D: Belltower and wall looking west.

Plate 1 General view of site looking south.

Plate 2 Tp1 with culvert

Plate 3 TP2 looking north.

Plate 4 Tp2

Plate 5 TP4 looking south.

Plate 6 TP6 looking north.

Plate 7 TP6 looking east.

Plate 8 TP7 looking north.

Plate 9 TP7 Looking south.

Plate 10 TP9 looking west.

Plate 11 TP 10 looking north.

Plate 12 TP11 looking east.

Plate 13 TP12 looking east.

Plate 14 TP no 13 - drain looking south with limestone block at its northern end

Plate 15 Tp14

Plate 16 TP 15

Plate 15 TP18 looking south.

Plate 16 Th1 east

Plate 17 Culvert 4m from wall and 1m east of TH2 – looking north.


Plate 18 TH2 west

APPENDIX 11

Chapter 11 Landscape and Visual Impact Assessment Verified Photomontages

EXISTING VIEW

Post processing for exposure has been used to improve the appearance of the image and bring it closer to what is perceived by the naked eye.

Viewpoint location plan

Viewpoint location

OS Grid Reference:	105079, 394267
Distance to site:	3m
Camera direction:	SW
Viewpoint elevation:	49mAOD
Camera model:	Canon EOS 5D mark II with full frame sensor
Date of Photography:	02/06/23

Camera lens:	50mm fixed lens
Crop factor:	1x
35 mm equivalent:	50mm fixed lens
Horizontal field of view:	65.5°
Height of Camera above ground:	1.65m
Weather Conditions:	Dry and clear

St. Edmundsbury Hospital Lucan EIAR

Vpt1 - View south west towards the Hospital Grounds

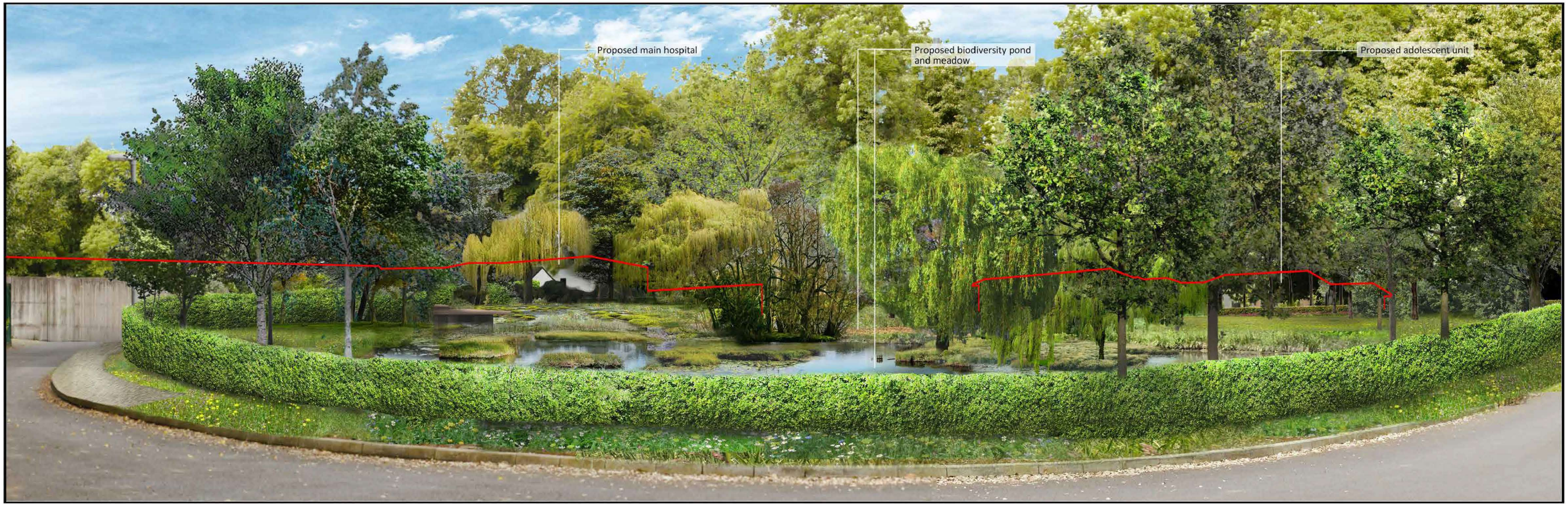
Drawing no.: KUE-JBAU-XX-XX-VS-L-0001-Photomontage_1

Sheet 1

Date: 16/10/2023

St Patricks Mental Health Services
St Edmundsbury Hospital EIAR
2023s0007

JBA consulting



ILLUSTRATIVE VISUALISATION OF PROPOSED HOSPITAL AND GROUNDS

Post processing for exposure has been used to improve the appearance of the image and bring it closer to what is perceived by the naked eye.

Viewpoint location plan

Viewpoint location

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Camera model:	Canon EOS 5D mark II with full frame sensor	Height of Camera above ground:	1.65m
Date of Photography:	02/06/23		
		Weather Conditions:	Dry and clear

St. Edmundsbury Hospital Lucan EIAR

Vpt1 - View south west towards the Hospital Grounds

Drawing no.: KUE-JBAU-XX-XX-VS-L-0001-Photomontage_1

Sheet 2

Date: 16/10/2023

St Patricks Mental Health Services
St Edmundsbury Hospital EIAR
2023s0007

JBA consulting

EXISTING VIEW

Post processing for exposure has been used to improve the appearance of the image and bring it closer to what is perceived by the naked eye.

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Viewpoint location

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Horizontal field of view:	65.5°
Height of Camera above ground:	1.65m
Weather Conditions:	Dry and clear

St. Edmundsbury Hospital Lucan EIAR

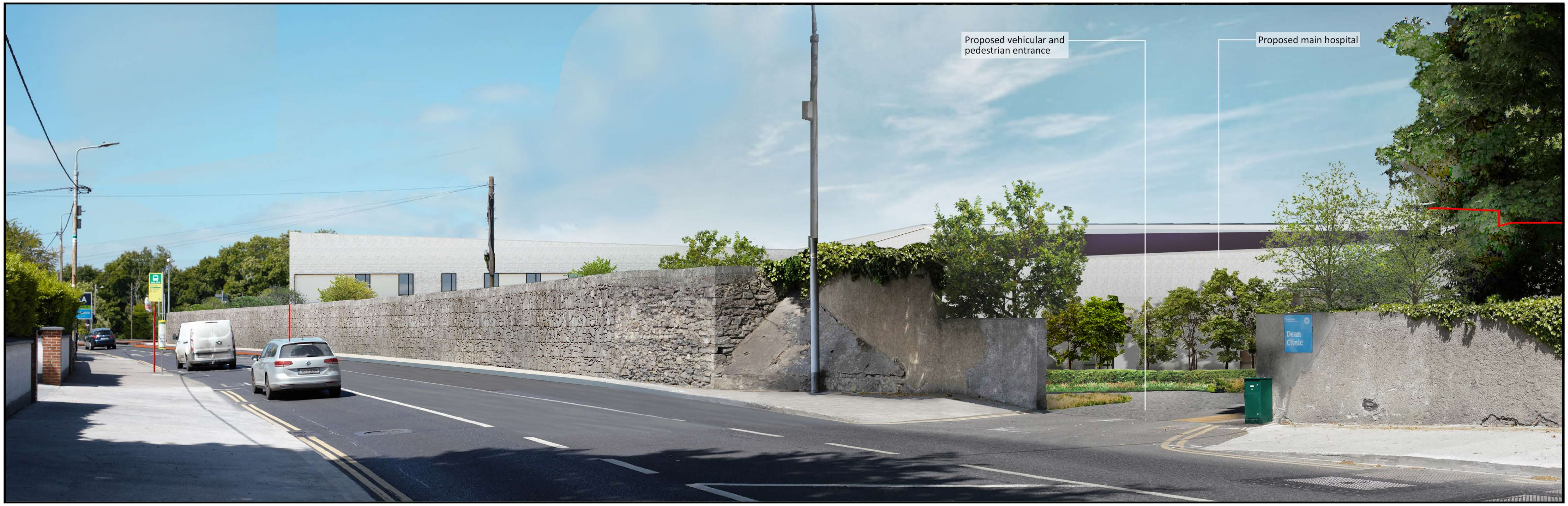
Vpt2 - View north west towards
the Main Hospital

Drawing no.: KUE-JBAU-XX-XX-VS-L-0002-Photomontage_2

Sheet 1

Date: 13/02/2026

St Patricks Mental Health Services
St Edmundsbury Hospital EIAR
2023s0007

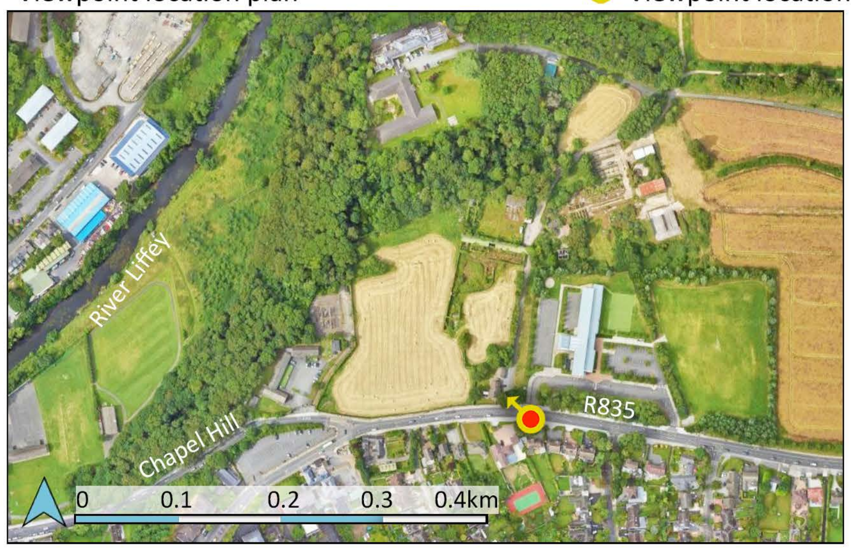


ILLUSTRATIVE VISUALISATION OF PROPOSED HOSPITAL AND GROUNDS

For illustrative purpose only. Post processing for exposure has been used to improve the appearance of the image and bring it closer to what is perceived by the naked eye.

Viewpoint location plan

Viewpoint location



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35 mm equivalent:	50mm fixed lens
Horizontal field of view:	65.5°
Height of Camera above ground:	1.65m
Weather Conditions:	Dry and clear

St. Edmundsbury Hospital Lucan EIAR

Vpt2 - View north west towards the Main Hospital

Drawing no.: KUE-JBAU-XX-XX-VS-L-0002-Photomontage_2

Sheet 2

Date: 13/02/2026

St Patricks Mental Health Services
St Edmundsbury Hospital EIAR
2023s0007

JBA consulting

EXISTING VIEW

Post processing for exposure has been used to improve the appearance of the image and bring it closer to what is perceived by the naked eye.

Viewpoint location plan

Viewpoint location

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Horizontal field of view:	65.5°
Height of Camera above ground:	1.65m
Weather Conditions:	Dry and clear

St. Edmundsbury Hospital Lucan EIAR

Vpt3 - View north towards the Main Hospital

Drawing no.: KUE-JBAU-XX-XX-VS-L-0003-Photomontage_3

Sheet 1

Date: 13/02/2026

St Patricks Mental Health Services
St Edmundsbury Hospital EIAR
2023s0007

ILLUSTRATIVE VISUALISATION OF PROPOSED HOSPITAL AND GROUNDS

For illustrative purpose only. Post processing for exposure has been used to improve the appearance of the image and bring it closer to what is perceived by the naked eye.

Viewpoint location plan

Viewpoint location

OS Grid Reference:	104861, 393974
Distance to site:	18m
Camera direction:	N
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Date of Photography:	02/06/23

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Horizontal field of view:	65.5°
Height of Camera above ground:	1.65m
Weather Conditions:	Dry and clear

St. Edmundsbury Hospital Lucan EIAR

Vpt3 - View north towards the Main Hospital

Drawing no.: KUE-JBAU-XX-XX-VS-L-0003-Photomontage_3

Sheet 2

Date: 13/02/2026

St Patricks Mental Health Services
St Edmundsbury Hospital EIAR
2023s0007

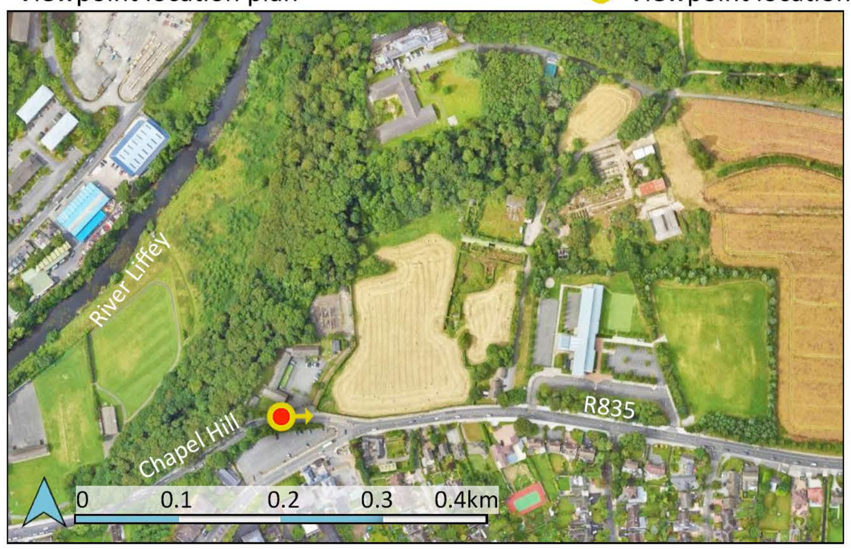
JBA consulting

EXISTING VIEW

Post processing for exposure has been used to improve the appearance of the image and bring it closer to what is perceived by the naked eye.

Viewpoint location plan

Viewpoint location



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Horizontal field of view:	65.5°
Height of Camera above ground:	1.65m
Weather Conditions:	Dry and clear

St. Edmundsbury Hospital Lucan EIAR

Vpt4 - View east towards the Main Hospital

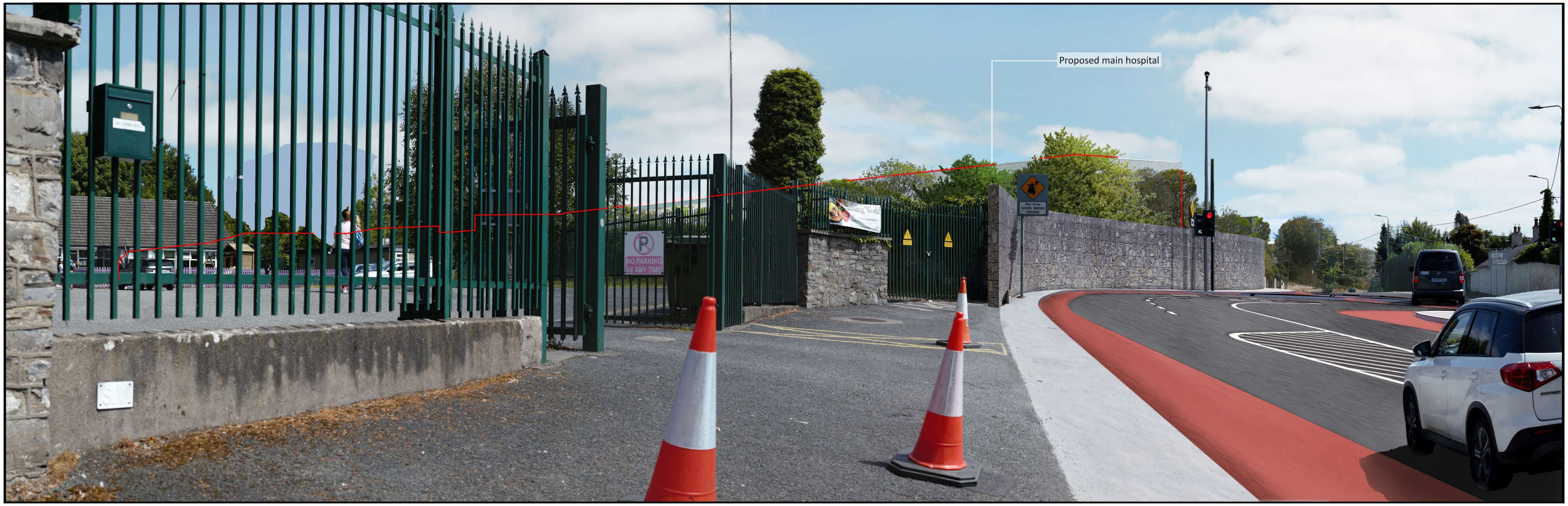
Drawing no.: KUE-JBAU-XX-XX-VS-L-0004-Photomontage_4

Sheet 1

Date: 13/02/2026

St Patricks Mental Health Services
St Edmundsbury Hospital EIAR
2023s0007

JBA consulting

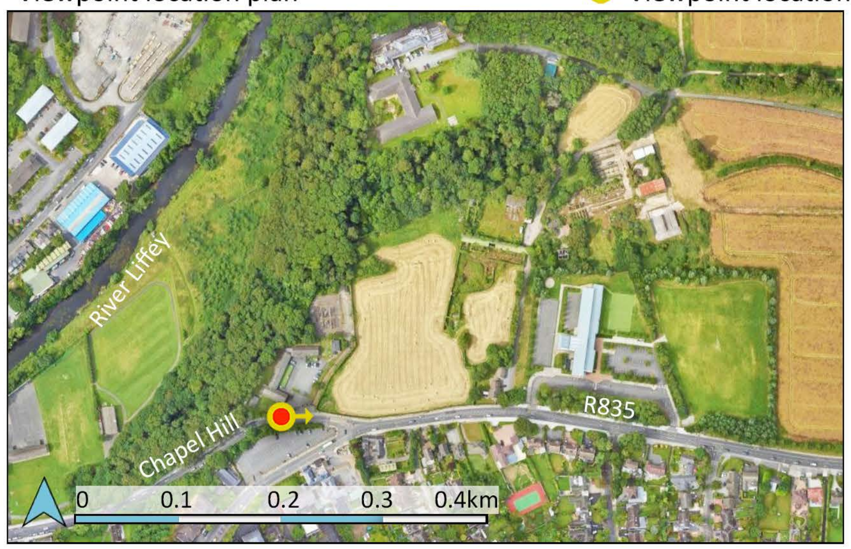


ILLUSTRATIVE VISUALISATION OF PROPOSED HOSPITAL AND GROUNDS

For illustrative purpose only. Post processing for exposure has been used to improve the appearance of the image and bring it closer to what is perceived by the naked eye.

Viewpoint location plan

Viewpoint location



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Date of Photography:	02/06/23

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Crop factor:	1x
35 mm equivalent:	50mm fixed lens
Horizontal field of view:	65.5°
Height of Camera above ground:	1.65m
Weather Conditions:	Dry and clear

St. Edmundsbury Hospital Lucan EIAR

Vpt4 - View east towards the Main Hospital

Drawing no.: KUE-JBAU-XX-XX-VS-L-0004-Photomontage_4

Sheet 2

Date: 13/02/2026

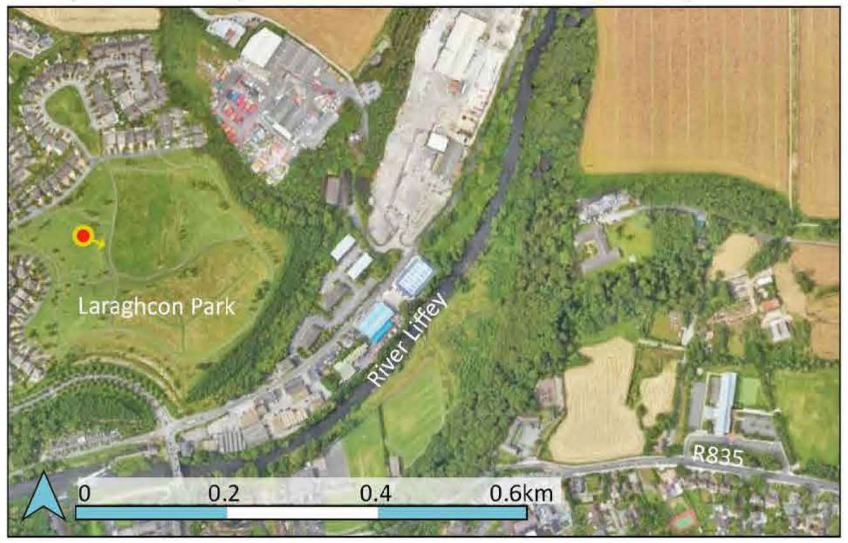
St Patricks Mental Health Services
St Edmundsbury Hospital EIAR
2023s0007

EXISTING VIEW

Post processing for exposure has been used to improve the appearance of the image and bring it closer to what is perceived by the naked eye.

Viewpoint location plan

Viewpoint location



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Camera model:	Canon EOS 5D mark II with full frame sensor
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Crop factor:	1x
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Horizontal field of view:	65.5°
Height of Camera above ground:	1.65m
Weather Conditions:	Dry and clear

St. Edmundsbury Hospital Lucan EIAR

Vpt5 - View south east towards the Main Hospital

Drawing no.: KUE-JBAU-XX-XX-VS-L-0005-Photomontage_5

Sheet 1

Date: 16/10/2023

St Patricks Mental Health Services
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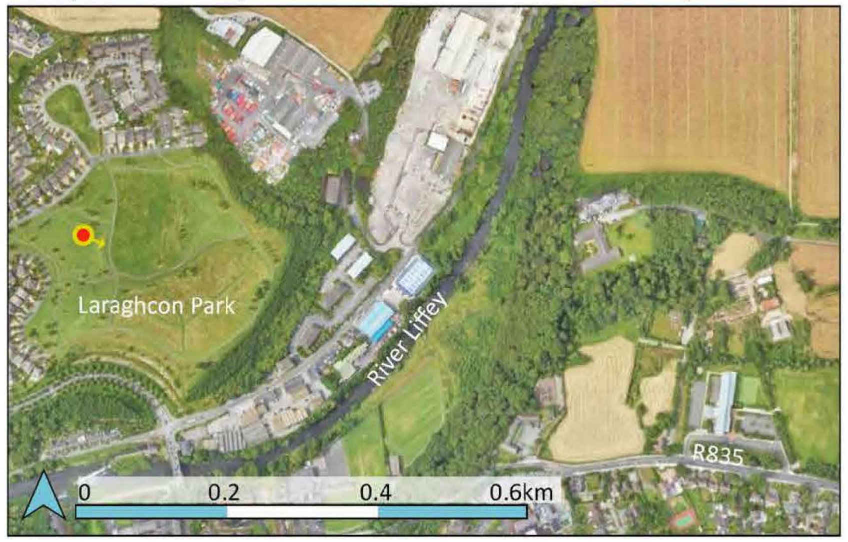
ILLUSTRATIVE VISUALISATION OF PROPOSED HOSPITAL AND GROUNDS

Post processing for exposure has been used to improve the appearance of the image and bring it closer to what is perceived by the naked eye.

Viewpoint location plan

Viewpoint location



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Date of Photography:	02/06/23		
		Weather Conditions:	Dry and clear

St. Edmundsbury Hospital Lucan EIAR

Vpt5 - View south east towards the Main Hospital

Drawing no.: KUE-JBAU-XX-XX-VS-L-0005-Photomontage_5

Sheet 2

Date: 16/10/2023

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APPENDIX 12
Chapter 12 Interactions
No Appendix

APPENDIX 13
Chapter 13 Cumulative Impacts
No Appendix

APPENDIX 14
Chapter 14 Schedule of Mitigation
No Appendix

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