

SDCC Planning Response Report

St Edmundsbury – Strategic
Infrastructure Development (SID)
at Lucan, Co. Dublin

Prepared for:

**The Governors of St. Patrick's
Hospital**

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The Secretary
An Coimisiún Pleanála
64 Marlborough Street
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18th August 2026
[By email to laps@pleanala.ie]

Dear Sir/Madam

Re: RESPONSE TO AN COIMISIUN PLEANALA REQUEST, DATED 22 JULY 2026 (ACP REF. PA06S.324264) IN RESPECT OF THE PROPOSED STRATEGIC INFRASTRUCTURE DEVELOPMENT AT ST. EDMUNDSBURY HOSPITAL, LUCAN, CO. DUBLIN.

1.0 INTRODUCTION

The Governors of St. Patricks Hospital ('the applicant') have retained Tom Phillips + Associates (TPA) along with the multi-disciplinary team of TOT Architects, JBA Consulting and Carrig Conservation to prepare this First-Party Submission in response to a request issued by An Coimisiún Pleanála (ACP). This request invited the applicant to comment on a Report issued by South Dublin County Council (SDCC) submitted on the Strategic Infrastructure Development (SID) application for a proposed new Mental Health Hospital Facility and associated facilities, in the grounds of the existing St. Edmundsbury Hospital site in Lucan, Co. Dublin. This was requested via email on the 22nd of July, and this response has been submitted before the stated deadline of midnight on 18th August 2026. A hard copy of this response has also been provided.

The response has been prepared in a structured format to respond to the Planning Report and associated departmental appendices, cross-referencing the relevant sections of the submitted application that address the observations and matters raised. The submission does not include any additional reports. An architectural response to some of the design considerations is appended, alongside the letter of support received from South Dublin County Council in advance of lodgement of the application. This is outlined further in this document.

2.0 EXECUTIVE SUMMARY

The Applicant welcomes South Dublin County Council's recommendation that planning permission be granted for the proposed development. However, the Applicant is concerned by the recommendation that consideration be given to amending the design of the proposed development to remove the identified encroachment into the proposed Natural Heritage Area designation. In this regard, the proposed development would affect approximately 181m² of woodland within the Liffey Valley pNHA, representing just 0.01% of the total pNHA area of approximately 165 hectares (1.65 million m²).

The proposed development is the culmination of a comprehensive design process undertaken over a number of years, informed by extensive pre-application engagement and consultation with South Dublin County Council and its officials. This iterative process considered all key design parameters, including the siting, layout and overall design of the development. **Following this engagement, South Dublin County Council issued correspondence on 12th February 2025 confirming its support for the proposed development, thereby providing the Applicant with the basis to proceed with the lodgement of the application, which is appended to this response.** It is noteworthy that the design of the proposed development has remained materially unchanged since that time.

The Applicant is therefore disappointed and frustrated that amendments to the design are now being suggested, particularly having regard to the extensive consultation undertaken throughout the design development process and the support previously conveyed by the planning authority.

The Applicant is also disappointed that similar comments have been raised by elected members, on foot of the review of the SDCC Report. As detailed within the EIAR, significant efforts were made to engage proactively with elected representatives during the evolution of the proposal and in advance of the application being lodged. The Applicant considered this engagement to be constructive and undertaken in good faith to ensure that stakeholders were fully informed of the rationale underpinning the proposed development and its design approach.

As noted in the application documentation, the proposed development seeks to expand and enhance existing mental health facilities on an established healthcare campus, responding to a recognised and growing demand for specialist mental health services at both a local and national level. In this context, we note that a limited level of public objection may be considered indicative of a broad recognition of the importance of the essential services currently provided on the site and the clear public benefit associated with their continued expansion and improvement.

It is also noted that the Applicant undertook an extensive programme of public consultation in advance of the lodgement of the application, as detailed within the Environmental Impact Assessment Report (EIAR). This consultation process provided meaningful opportunities for engagement with the local community, elected officials, and relevant stakeholders, enabling the proposed development to be informed by feedback received prior to the submission of the application.

The proposal now before the Coimisiún is therefore the product of a comprehensive and robust planning process and represents a carefully considered response to the planning, environmental and operational requirements of the site.

The appended letter, which confirms the Council's support in principle for the proposed development and its willingness to work collaboratively with the Applicant in relation to the proposed development. This also facilitates coordination between SDCC, the Applicant and Transport Infrastructure Ireland in progressing the wider upgrade works along the Lucan Road corridor in the future. The Letter demonstrates that the proposal has been developed through a proactive and constructive engagement process with the Planning Authority and provides a clear indication of the Council's recognition of the merits of the scheme. A copy of the correspondence is enclosed for ease of reference. This letter states;

“SDCC wish to inform the client of the proposed St. Patrick’s hospital development that it is broadly supportive of the intended planning application subject to the several additional planning conditions outlined below being attached to any decision on planning permission.”

It is within this context that the Applicant is particularly disappointed that South Dublin County Council is now recommending design amendments, which would fundamentally alter the proposed development. The suggested amendments are not capable of being reasonably accommodated within the constraints of the site and would materially undermine the delivery of much-needed, nationally important healthcare facilities, which also serve the immediate community, that the development is intended to provide.

The Applicant also notes that certain comments contained within the Planning Authority's report suggest that the supporting documentation submitted as part of the application may not have been fully considered. This is particularly concerning where doubt has been cast on the quality and adequacy of the Environmental Impact Assessment Report (EIAR) submitted with the application. The Applicant firmly rejects this characterisation and is satisfied that the EIAR has been prepared to the highest professional standards, in accordance with all relevant statutory and best practice requirements. The mitigation measures outlined within the EIAR include the creation of new woodland habitat using the existing seedbank and the clearance and long-term management of the invasive species within the pNHA. These will minimise direct impacts to the woodland and improve the quality of the pNHA for native and protected species.

In this regard, it is noteworthy that the Department of Housing, Local Government and Heritage, in its capacity as a prescribed body, made a submission on the application and did not object to the proposed development. Rather, the Department recommended that any grant of planning permission be subject to appropriate conditions requiring the implementation of the mitigation measures outlined in the EIAR, rather than suggesting a fundamental redesign.

The Applicant confirms its willingness to comply with such a condition, including the incorporation of ecological protection and mitigation measures within the Construction Environmental Management Plan and associated construction documentation.



It should also be noted that Section 4.6 of the submitted EIAR (Biodiversity Mitigation) already sets out a comprehensive programme for the implementation of the proposed mitigation measures, all of which the Applicant has committed to implementing throughout the construction and operational phases of the development.

Furthermore, should An Coimisiún Pleanála consider it appropriate that additional ecological measures identified within the Conservation Impact documentation be incorporated into the construction management framework, the Applicant is agreeable to updating the Construction Environmental Management Plan accordingly. Such revisions could be prepared and submitted for agreement with the Planning Authority through the standard compliance process in advance of the commencement of development.

This approach would ensure the full implementation of all necessary ecological safeguards while avoiding the need for fundamental alterations to a proposal that has been subject to extensive design development, environmental assessment and stakeholder consultation over a number of years.

Notwithstanding the above, we have reviewed the SDCC Report in detail and offer a response to the Report overleaf.

3.0 SECTION 1: INTRODUCTION

This section of the report outlines the requirements of SDCC under the *Planning and Development Act 2000* (as amended) to assess and respond to the planning application, which is to be determined by An Coimisiún Pleanála. The legislation specifies that the Chief Executive shall, prior to lodging a report with ACP, submit it to the elected members and seek the views of the members on the proposed development.

The elected members may, by resolution, decide to attach recommendations to the report (and where recommendations are attached, the meeting administrator's record shall also be attached). This report is therefore presented to the members of South Dublin County Council in the first instance, and, with any recommendations they might add, to An Coimisiún Pleanála. The report then outlines the relevant issues to be addressed in the planning authority report and notes the contents broadly of the application, as submitted.

4.0 SECTION 2: PROPOSED DEVELOPMENT AND CONTEXT

The Report then notes in broad terms the nature of the proposed development and application site, as well as the need/rationale for the project and project objectives. The Report states;

“The Planning Statement provides a further rationale for the proposed development at St. Edmundsbury detailing the demand for such a facility in light of the increasing prevalence of mental health issues, as well as the current shortfall in appropriate mental healthcare facilities. The proposal will deliver a facility of regional and national importance, serving a wide catchment extending beyond the immediate area. The consolidation and expansion of services on a single campus will facilitate the delivery of a centre of excellence in mental healthcare, aligned with Government policy and investment priorities. The Planning Statement also details how the proposed development accords with the historic use of the wider site in connection with the hospital. The report states that the proposed development will align with both the historic uses of its lands and clear proven treatment means regarding the positive effects of such a setting within nature on psychiatric care and healing.” [Our Emphasis]

The report then assesses the site description and the environmental and policy sensitivities pertaining to the site. These are noted in detail, including previous relevant enforcement history from the early 2000s.

5.0 SECTION 3: RELEVANT PLANNING HISTORY

The Report then assesses the planning application history of the subject site and the applications that are in proximity to the proposed development. This is noted.

6.0 SECTION 4: RELEVANT NATIONAL, REGIONAL AND LOCAL PLANS, POLICIES AND OBJECTIVES

The Report then assesses relevant national, regional and local planning policy to the proposed development. This includes analysis of the relevant policies pertaining to the subject site outlined in the *South Dublin County Development Plan 2022-2028*. This is the relevant statutory plan for the site.

7.0 SECTION 5: PLANNING AUTHORITY'S ASSESSMENT OF THE PROPOSED STRATEGIC INFRASTRUCTURE DEVELOPMENT

The Report notes that reports were received from the following internal departments of South Dublin County Council:

- Environmental Health – Report Received.
- Heritage Officer – Report Received.
- Parks and Public Realm – Report Received.
- Water Services – Report Received
- Roads - Report Received
- Architectural Conservation – Report Received
- Waste Management – Report Received.
- Public Lighting – Report Received.

The main considerations assessed in the Report are as follows:

- Principle of the Proposed Development
- Council Policy
- Architectural Conservation
- Landscape, Natural Heritage and Green Infrastructure
- Water Services
- Transport
- Environmental Assessments
- Development Contributions

These are assessed in turn below.

7.1 Principle of the Proposed Development

The Report acknowledges the zoning of the site, which is HA-LV, which has an objective to;

“To protect and enhance the natural character and amenity of the Liffey Valley.”

The Report notes that ‘hospital’ is not a permitted use under that zoning. The Report then outlines that the proposed development could be considered under the non-conforming use policy of the development plan, due to the existing hospital having been in existence prior to October 1964. The Report states;

“In relation to Section 12.2.1 of the County Development Plan it is noted that uses that were in existence on 1st October 1964 (prior to planning legislation) can be categorised as a ‘Non-Conforming Use’. Having regard to the application documentation (including historical mapping), and the history of the site, St Edmundsbury Hospital was in existence before 1st October 1964. The submitted Planning Statement, prepared by Tom Phillips & Associates, confirms that from historical mapping, the first available historical map which details both the hospital and walled garden area and buildings is recorded within the Survey of the Estate of Amongdisham Vesey (1772) as displayed in Figure 1 below.

Furthermore, there are clear connections present from the Hospital (historically known as St. Edmundsbury House) to the southern part of the site as depicted in maps from 1843, 1912 and 1938 (Figure 2 below) which detail the direct paths to the hospital to the agriculture lands to the south.

The Planning Statement also provides evidence of the use of the southern part of the site, which were gardens and then agricultural lands, in connection with the hospital use both physically and operationally. Therefore, it can be ascertained from the historical mapping of the site that the use was in existence on 1st October 1964 and therefore can be categorised under category 1 as a 'Non- Conforming Use'. It can also be determined that the wider site, including the southern part of the site, was used in connection with the hospital." [Our Emphasis]

Accordingly, the proposed development is to be assessed under the non-conforming use policy, which states that intensification of this use will only be permitted where it would not be detrimental to the amenities of the surrounding area, the development accords with the principles of proper planning and sustainable development and includes the integration of land use and transport.

The Report then notes that the issue of material contravention was raised by An Coimisiún Pleanála during pre-planning discussions in advance of the lodgement of the application. In this regard, SDCC state;

"The applicant has stated in their submitted Planning Statement that the potential of a material contravention to the South Dublin County Development Plan 2022-2028 in relation to conflict with the land use zoning of the site was raised by ACP at preplanning. The applicant details in this report that they believe that the proposed development is compliant with the County Development Plan, however, in the event that ACP determines that there is a material contravention sets out the grounds under Section 37(2)(b) to justify any grant of permission.

As stated previously in this report, it is the view of the Planning Authority that the proposed development can be considered a non-conforming use, the intensification of which is permitted under the County Development Plan only where the proposed development would not be detrimental to the amenities of the surrounding area and would accord with the principles of proper planning and sustainable development. This includes the integration of land use and transport planning." [Our Emphasis]

The Report then assesses whether the proposed development confirms with Policy NCBH7, Objective 2, part (iii) which states that development will only be permitted where it;

"preserves the amenity values of the river valley, including its biodiversity value, its landscape value, and views or vistas of the river valley, and views or vistas of the river valley."

The Report then notes;

"The proposed development is for the provision of mental health services and accommodation on the St Patrick's Hospital lands at St Edmundsbury. It is noted that the proposal was subject to pre-planning consultation with South Dublin County Council prior to lodgement of this application.



The proposal comprises of a comprehensive plan for development of the subject lands. It is acknowledged that regard has been had to the setting and integrity of the Protected Structures onsite and the Architectural Conservation Officer has addressed this in their report below."

In this regard the Report notes that a condition should be included that a route through the site along the route of the existing entrance lane be always maintained and open to the public. We note that a public access route has been appropriately identified and is included with the Landscape Masterplan documentation prepared by DFLA. The Applicant is willing to accept this condition, should it be applied, as per the documentation submitted.

Concerns are raised by the Parks and Public Realm, Heritage Officer and Planning Department in relation to the proposal's regard to the sensitive environmental characteristics of the Liffey Valley and the site's Green Infrastructure principles. The proposed development and its capacity to achieve the above Specific Local Objectives are further assessed in subsequent sections of this response report. Subject to this being appropriately addressed, it is considered that a development of this nature could be facilitated onsite as a non-conforming use in compliance with the County Development Plan policies and objectives, including the applicable SLOs. This is assessed greater below and overleaf.

7.2 Healthcare Facilities

The Report notes that the application has generally addressed the requirements noted in the healthcare facilities policy of the development plan in respect of documentation and information requirements. Having regard to the above, it is considered that the proposal has demonstrated compliance with development plan policies and objectives relating to healthcare facilities.

7.3 Architectural Conservation

The Report notes the relevant protected structure and conservation designations applicable to the subject site. This section of the Report concludes;

"It is considered that the impact assessment provides details on the level of loss, interventions and how the existing building will be integrated as part of the proposed new build. The works required to achieve the end goal for this integration and also the mitigation measures required.

It is felt that the approach has been conservation lead and allows for a balance between the existing structures and setting of St. Edmundsbury House in providing a purpose built new development to continue the established use of the site and provide a much needed new Mental Health Hospital to serve on a National level. A number of conditions are recommended which include the adherence to the Conservation Reports and methodology for works to Protected Structures and the submission of a Schedule of Works and Method Statement. It is also recommended that a condition be attached which involves the engagement of a suitably qualified conservation architect/consultant to ensure that the architectural features are protected, and a Schedule of Materials and specifications should be agreed prior to construction." [Our Emphasis]



Accordingly, conditions are recommended and these are discussed later in this Response.

7.4 Landscape, Natural Heritage and Green Infrastructure

7.4.1 Visual Impact and Landscape Character

The Report then assesses the proposed development in respect of landscape and amenity orders applicable to the subject site. There are no designated views or prospects adjoining or in proximity to the site under the County Development Plan. It then assesses the EIAR which includes verified views and assessment on landscape and visual amenity. The Report states;

“Alternative options for the design of the proposed development were assessed. The applicant cites that the finalised approach to the design was to provide for single storey-built form as far as possible. The reasons for this, cited in the application documentation, include that it is considered best practice for clinical purposes, maximises internal accessibility through the building, for access and connection to surrounding environment, reduces perception of height or institutional scale and visual impact, and minimises overlooking, both internally and externally. The applicant has also noted that the proposed location of the building adjacent to woodland would promote a calming and relaxed atmosphere for patients.

Due to siting, scale, form and design, the current proposed built form would not have a significant adverse impact on the visual amenities of the area.” [Our Emphasis]

The Report then notes concerns regarding the environmental sensitivities of the site and area in terms of potential impact on *“natural features and characteristics of the area.”* This assessment states;

“The building footprint extends through the northern section of the walled garden into the existing woodland area through the centre of the site, reducing the amount of natural and soft landscape across the site. This section of woodland is part of the proposed Natural Heritage Area (pNHA) and the proposal represents an encroachment into a highly environmentally sensitive part of the site which the Planning Authority considers should be avoided through revised design and layout. The Planning Authority considers that further justification and design refinement is required. The overall design approach should be reconsidered including relocating building and hard surfaces away from this particularly sensitive part of the site.”

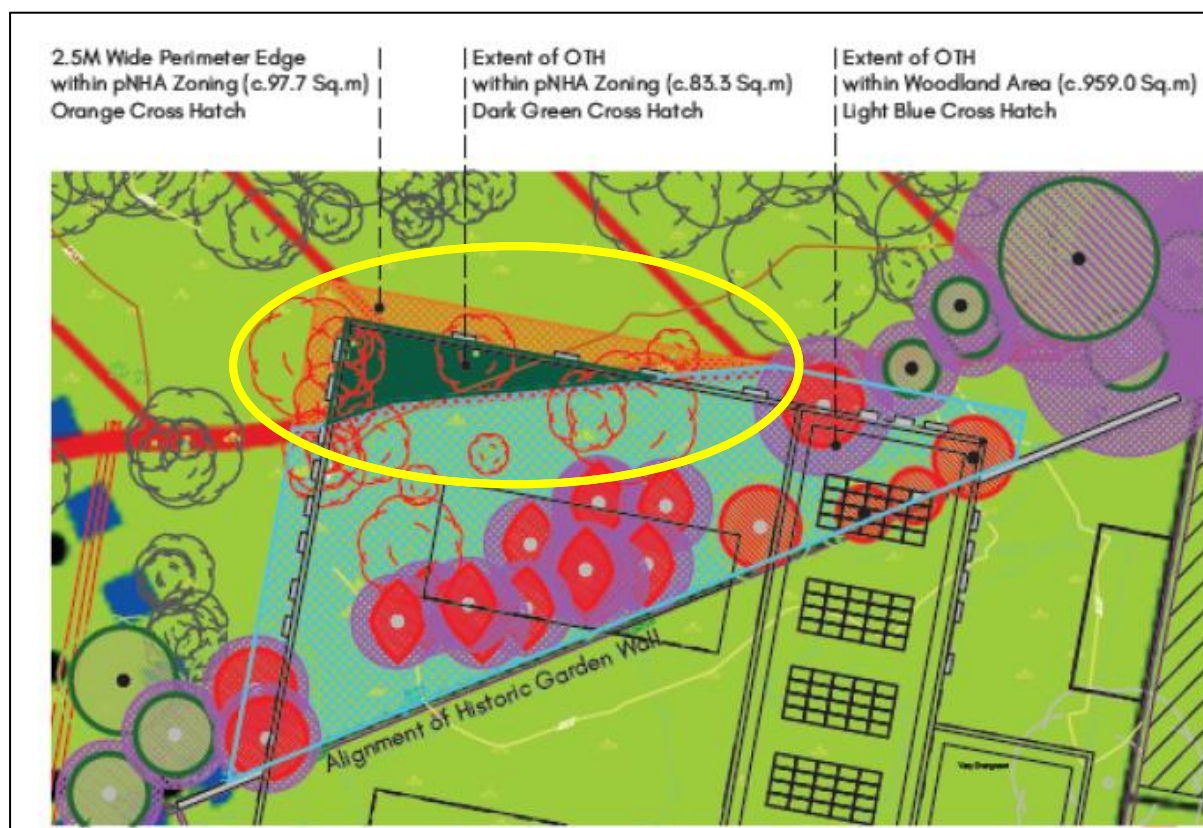


Figure 7.0 – Extract of overlay of the OTH Footprint onto woodland and pNHA. In this regard, the proposed development would affect approximately 181m² of woodland within the Liffey Valley pNHA, annotated in a yellow circle TPA, representing 0.01% of the total pNHA area of approximately 165 hectares (1.65 million m²) [Source: TOT Architects, 2026]

From the extract noted above, the extent of the proposed development within the pNHA has been carefully quantified and assessed. **The total area of encroachment within the pNHA amounts to approximately 181 m²**, comprising:

- 97.7m² of peripheral works within the pNHA (identified in figure 7.0 as the orange cross-hatched area), representing a c. 2.5m perimeter edge treatment which may be delivered as a permeable Grasscrete-type arrangement;
- 83.3m² of hard building element within the pNHA (identified as the dark green cross-hatched area).

In addition, c. 959 m² of the proposed Occupational Therapy Hub (OTH) development within the woodland area and the proposed open courtyard area of approximately 207m² (identified as the light blue cross-hatched area). 5 no. ash category C2 trees of mature age class are proposed to be felled in the pNHA area.

The overall area of OTH development extending into the woodland is therefore approximately 1,140m². The footprint of the building extending into the woodland, without perimeter edge and courtyard is c. 752sqm



Notwithstanding the above, the area directly affected by the building footprint represents a very limited proportion of the wider Liffey Valley pNHA. As previously outlined in the application documentation, the pNHA extends to approximately 165 hectares (1.65 million m²) and the scale of development must therefore be considered in the context of the overall designation.

Furthermore, the proposed development has been designed to minimise impacts on woodland habitat to the greatest extent practicable, with a comprehensive package of mitigation, landscaping and biodiversity enhancement measures proposed to offset and compensate for the limited areas affected. The works within the pNHA require the removal of 5 No. trees in total.

In this regard, the proposed development would affect approximately 181m² of woodland within the Liffey Valley pNHA, representing 0.01% of the total pNHA area of approximately 165 hectares (1.65 million m²).

It is further noted that the ecological condition and quality of this particular area are not representative of the wider pNHA designation. While the lands are located within the designated boundary, the designation in this location is considered to be somewhat arbitrary and does not fully reflect the reality of the site as it currently exists, having regard to its condition, habitat quality and ecological function. The limited extent of habitat loss, together with the comprehensive mitigation and compensatory biodiversity measures proposed, should therefore be considered in the context of both the scale of the wider pNHA and the overall biodiversity gains to be delivered by the development.

As outlined in the EIAR, the area of woodland to be lost contains a number of dead Ash trees, Ash trees impacted by Ash dieback, and non-native Sycamore plus several healthy mature Ash trees present within this area. The loss of these trees, and the ground flora beneath, is considered to be an adverse impact, however the EIAR mitigates the loss of ground flora through the translocation of the topsoil to the east of this area to expand the existing woodland and retaining the underlying seed bank.

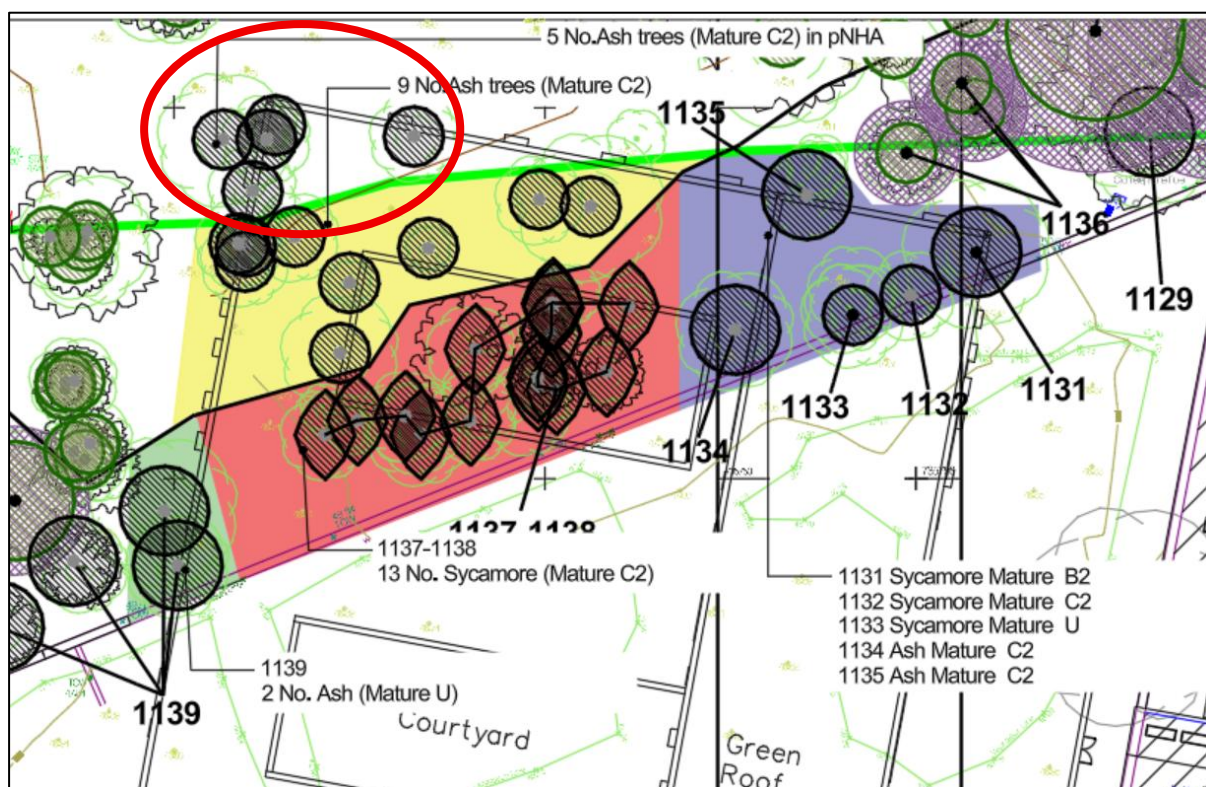


Figure 7.1 – Extract of arboricultural impact assessment, undertaken by Arborcare. The 5 no. ash trees to be felled are highlighted in a red circle, annotated by TPA [Source: DFLA, 2026]

More importantly as noted within the EIAR, several invasive plant species are present within the pNHA's extent within the site boundary (see figures of photos on site overleaf), which the proposed development will remove, and manage over the operational period. These species include Butterfly-bush *Buddleja davidii*, Cherry Laurel *Prunus laurocerasus*, Rock Cotoneaster *Cotoneaster horizontalis*, and the garden escapee Spotted Laurel *Aucuba japonica*. Cherry Laurel is extensive within the woodland on site, and its removal is considered to be critical for improving the health of the pNHA woodland habitat, and will improve the area's ability to support sensitive ground flora and reduce pressure on native tree saplings.

The EIAR also outlines compensatory measures for local fauna that will mitigate the loss of the pNHA woodland habitat. This includes the creation of new woodland further to the east of the pNHA, installation of green roofs on top of all of the proposed buildings, bat and bird boxes across the site, and insect hotels which will serve to minimise impacts in both the short and long-term for local fauna. The creation of the new woodland area to the east will also critically connect the pNHA to the proposed wetland area allowing fauna to commute safely to this area. The proposed wetland area will enhance the site specifically for local fauna.

Additionally, the EIAR outlines extensive monitoring measures, before and during construction, as well as into the operational phase, for key ecological receptors present on site that are associated with the pNHA. The recommendations outlined in the SDCC Heritage Officer's response, including a Biodiversity Action Plan (BAP) and a Species-Specific Management Plan (SMP) for the Hairy St John's-wort are welcomed and can be conditioned into planning. These will further strengthen the measures outlined in the EIAR.

The BAP and SMP will be updated during the construction period and continue into the operational period of the proposed development for a minimum period of 10 years to ensure the effective establishment of the proposed woodland areas and management of invasive species.

Additional species-specific surveys, including springtime flora and bat surveys are also complimentary to the existing measures set out within the EIAR and can be conditioned into planning and included in the BAP. These surveys will be conducted by suitably qualified ecologists.



Figure 7.2 – Invasive Cherry Laurel and Rock Cotoneaster stands present along the stonewall, taken from the north of the walled garden in the woodland area [Source: JBA, 2026]



Figure 7.3 – Invasive stand of Cherry Laurel present within woodland area [Source: JBA, 2026]



Figure 7.4 – Invasive Spotted Laurel present within Liffey Valley pNHA [Source: JBA, 2026]



In addition, in this regard it is again noted that the Applicant has engaged extensively with South Dublin County Council (SDCC) over a prolonged period in relation to the proposed development of the site. This engagement has included, inter alia, a pre-planning meeting with SDCC on 9 March 2021 (Ref. PP018/21), a multi-disciplinary site meeting with relevant SDCC departments on 8 May 2023 (Ref. PP061/23), discussions with the Parks Department regarding landscape proposals on 14 July 2023, and a meeting involving Planning and the Biodiversity Officer on 2 August 2023.

While the foregoing does not represent an exhaustive record of consultations, it demonstrates a consistent and ongoing pattern of engagement with SDCC concerning the development potential of the site and the evolution of the proposed scheme.

In this context, it is noteworthy that, throughout these engagements, the applicant was not explicitly requested to fundamentally redesign the proposed development, nor was development within the proposed Natural Heritage Area (pNHA) identified as an overriding or fundamental constraint to development. The Applicant's approach, incorporating mitigation measures and compensatory biodiversity enhancement, has remained consistent since the earliest stages of engagement with SDCC and was maintained throughout the pre-application process.

Furthermore, as discussed above, it is noted that SDCC issued a letter of support in February 2025, in advance of the submission of the planning application, a copy of which is enclosed as Appendix A. This letter was provided with full knowledge of the Applicant's proposed approach to biodiversity mitigation and enhancement and should be considered in assessing both the evolution of the scheme and the consultation process undertaken.

7.4.2 Nature Conservation

The Report then repeats the SAAO and zoning pertaining to the subject site and restates the assessment of the pNHA. The Report states;

“The northern element of the proposed main hospital building and proposed substation would encroach into the existing woodland and pNHA onsite. There is also lighting proposed at the edge of the woodland.

The Biodiversity Chapter of the EIAR states ‘The mixed woodland present within the boundary of the Liffey Valley pNHA is considered to have national ecological importance, while the woodland located beyond these boundaries is considered to have county level ecological importance given its potential to reach the quality of the neighbouring designated woodland as it continues to establish a greater diversity of understorey woodland flora and alongside the maturation of the existing trees’. In relation to impacts of the proposed development on the pNHA, it is summarised in the Biodiversity Chapter of the EIAR that there would be ‘irreversible permanent habitat loss’ and ‘part of the woodland associated with Liffey Valley pNHA will be cleared and become an artificial building and surfaces, this will result in a permanent alteration of the Liffey Valley pNHA, reducing the overall woodland cover of the pNHA by roughly 1500m²’. This report also states that there is a required clearance and maintenance 5m buffer around the building.

To address this, mitigation measures are proposed by the applicant, which include a pNHA Woodland Relocation. The appropriateness of the proposed mitigation measures is discussed further below by the Heritage Officer and Parks and Public Realm Department.”

The area of woodland to be cleared for the proposed development, including the area within the pNHA, is approximately 1,140m². The portion of this woodland falling within the pNHA is 181m². Proposed woodland to be created using the translocated topsoil is estimated at 1,740m².

The removal of the invasives as previously mentioned will expand the effective natural woodland area and promote the growth of native ground flora and tree saplings. Additionally, the translocation of the topsoil from the pNHA as specified in the EIAR will preserve the existing valuable seedbank, and the long-term monitoring and management plan for this area will ensure no invasive species present within the seed bank become established in the newly created woodland area.

The SDCC Report then notes that the appended Heritage Officer Report makes recommendations for the proposed design to be amended in order to remove the intrusion of the north-western corner of the proposed development into the regenerated woodland buffer and pNHA woodland.

In this regard, it is important to emphasise that the design of the proposed development has evolved through a detailed and iterative design process which has consistently prioritised the delivery of high-quality patient care and the creation of an appropriate therapeutic setting, having regard to the sensitive nature of the proposed use.

Throughout this process, careful consideration was given to the environmental context of the site, with the layout, siting and design refined to minimise impacts on the adjoining woodland and the proposed Natural Heritage Area to the greatest extent practicable, while still enabling the delivery of the essential healthcare services proposed. Where impact is noted, the design team have sought to offset this impact and mitigate accordingly.

The final design therefore represents a carefully balanced solution, informed by clinical, operational, environmental and planning considerations. The scheme was also the subject of extensive engagement and consultation with South Dublin County Council over a prolonged period, during which the design approach and its rationale were discussed in detail.

As noted in this Response, following this comprehensive consultation process, South Dublin County Council issued correspondence in February 2025 confirming its support for the proposed development, thereby enabling the Applicant to progress to the formal lodgement of the application. The Applicant considers this support to be a significant acknowledgement of the appropriateness of the design approach ultimately adopted. In this regard, the project architect, TOT Architects, notes the following;

“A defining feature of the proposed development is an emphasis on the overall landscape setting and its biophilic and restorative qualities, rather than on isolated natural features. This is achieved through a consistent and integrated design approach, supported by landscape, ecological, environmental and conservation measures delivering a measurable Green Space Factor gain compared with the existing condition, and which are sensitively designed as a contemporary repurposing



of an historic setting. Furthermore, the area that the OTH occupies is mitigated through the extension and enhancement of woodland habitat to the northeastern edge of the pNHA. This approach will also deliver removal and long-term management of invasive species, which will improve the habitat's ability to support native species and ecological benefits across the wider site through the long-term stewardship of SPMHS."

Further information on design considerations is noted in Appendix B, prepared by TOT Architects.

Additionally, the Heritage Officer report makes recommendations for the submission of a Biodiversity Management Plan, the retention and protection of existing trees and hedgerows, a more detailed assessment of potential impacts on bats and additional bat survey work and clarification is recommended to be sought from NPWS regarding the appropriate process for the application of derogation licences to disturb protected species. The applicant is satisfied to accept these conditions.

We also note that the Department of Housing, Local Government and Heritage, which has control of the National Parks and Wildlife Service under their Heritage Division, did not object to the proposals, nor did they recommend redesign of the proposed development, rather they recommended conditions related to construction management and a nature conservation plan and archaeological monitoring.

While it is agreed that existing trees and hedgerows should be retained on site insofar as possible, it is acknowledged that some removal will be necessitated to facilitate the proposed development, including the widening of the entrance driveway and walkway.

Therefore, where tree removal is proposed, sufficient mitigation and compensatory measures shall be proposed. Any tree/hedgerow removal should be clearly detailed in an arboriculture plan which, as noted elsewhere in this Report, does not appear to be included with the application documentation despite references to same.

In this regard we note that ample compensatory measures have already been proposed and this is outlined in greater detail in Section 7.4.3 and 7.4.4 of this Response.

Bat Surveying

In addition, it is to be noted that upon receipt of the SDCC Report, additional bat surveys were undertaken on site on 7th and 11th August 2026 by Wingspan Ecology, to determine whether there had been any material change in the suitability of structures for roosting bats or in bat usage of the site since the previous surveys completed in 2025.

It is noted that An Coimisiún Pleanála has requested that no additional reports form part of this Response. Accordingly, the updated bat survey report is not being formally submitted at this stage. However, a summary evaluation of the findings is provided below for completeness. Should the Inspector or An Coimisiún Pleanála wish to review the full report, the Applicant would be pleased to make it available upon request.

The updated surveys confirmed the presence of bat roosts within two buildings located to the east of the proposed development site (Buildings K and L), **which are outside of the development site**, comprising small numbers of common pipistrelle, soprano pipistrelle and

a possible brown long-eared bat. **Importantly, no bats were recorded emerging from St. Patrick's Hospital Building (Building J), and no evidence of bat roosting was identified within any of the structures located within the proposed development site itself.** While the structures proposed for redevelopment contain some crevices and cavities which could potentially be used by individual bats on a temporary basis, no evidence of current occupation was recorded. Additional surveying can be undertaken prior to the commencement of development, if requested through compliance, as noted in the EIAR documentation.

Activity monitoring undertaken using static bat detectors at three locations across the site confirms that bat activity is generally associated with the retained woodland and open habitat areas. The highest activity levels within woodland were recorded within the main retained woodland area, while activity levels within the section of woodland proposed for removal were comparatively lower (which equates to .01% of the pNHA designated area.)

The survey notes that this area is dominated by mature stands of invasive Cherry Laurel with limited ground vegetation, resulting in reduced habitat quality and lower insect abundance for foraging bats.

Bat activity recorded within the open habitats to the south of the site was dominated by common pipistrelle, soprano pipistrelle and Leisler's bat, species typically associated with open and edge habitats. A small number of brown long-eared bat recordings were also obtained. Overall, the survey findings indicate that the areas of greatest ecological value for bats are the retained woodland habitats and landscape features that will continue to be protected and enhanced as part of the proposed development.

The updated survey results are consistent with the conclusions of the 2025 surveys and do not identify any significant change in baseline conditions that would alter the ecological assessment of the proposed development. Furthermore, the proposed woodland enhancement measures, including the removal of invasive Cherry Laurel, native woodland enhancement planting, habitat diversification, new wetland habitats, intensive green roof provision and the installation of bat boxes, will improve the overall quality of bat foraging and commuting habitat within the site. Accordingly, the updated survey findings further support the conclusion that the proposed development will not result in significant adverse effects on local bat populations, subject to the implementation of the mitigation and enhancement measures already proposed.

Nature Conservation Response Continued

The Heritage Officer notes that the submitted EIAR and ecological report present insufficient data and contain contradictions, particularly in relation to the dates of the carried out ecological walkovers and the proposed mitigation measures. It is therefore recommended that additional botanical surveys be submitted and that the EIAR be reviewed and mitigation measures strengthened.

The Applicant strongly refutes the assertion that the Environmental Impact Assessment Report, prepared by JBA Consulting provides insufficient baseline data or assessment to inform the determination of the application. The EIAR has been prepared over a number of years by a multidisciplinary team of appropriately qualified specialists and is informed by an extensive programme of site investigations, environmental surveys and technical assessments.

The environmental assessment process has been iterative in nature, informing the evolution of the proposed development and ensuring that environmental considerations have been integrated into the design process from an early stage.

The EIAR is supported by additional documentation, including a bat report submitted by Gannon & Associates, and a bat-friendly lighting design completed by Varming Consultant Engineers, all of which were prepared in accordance with relevant legislation, published guidance and established professional practice. Collectively, these documents provide a robust and comprehensive evidence base to inform the assessment of potential environmental effects associated with the proposed development.

In relation to the ecological surveys undertaken for the site, the Applicant can confirm that ecological walkover surveys were completed on the following dates:

- JBA conducted ecological surveys on 01/02/2023, 05/07/2023; 29/09/2023; 13/06/2025; and 08/08/2025 (Habitats), 05/07/2023; 17/07/2025; and 08/08/2025 (Rare & Protected Flora), 01/02/2023; 05/07/2023 and 17/06/2025 (non-volant mammals), 21/04/2023; 08/05/2023; 12/06/2023; 06/06/2025; 13/06/2025; and 17/06/2025 (Static deployment 06/06/2025 - 11/06/2025) (Breeding Birds), and 29/09/2023 and 08/08/2025 (Breeding Bird Nest-Count Survey [Farm Courtyard Buildings]).
- Where survey dates overlap, notably on 05/07/2023 (Habitats, Rare & Protected Flora, non-volant mammals), 17/06/2025 (Rare & Protected Flora, non-volant mammals, Breeding Birds), 01/02/2023 (Habitats, non-volant mammals), and 08/08/2025 (Habitats, Rare & Protected Flora, Breeding Bird Nest-Count Survey [Farm Courtyard Buildings]), surveys were conducted concurrently.
- Additionally, Ganon & Associates conducted roost inspection surveys on 22/09/2022, 07/07/2023, 27/07/2023, 13/05/2025, and 29/09/2025. Ganon & Associates also conducted bat emergence surveys on 22/09/2022, 07/07/2023, 27/07/2023, 06/09/2023, 13/05/2025, 29/09/2025, and 01/10/2025.
- As noted above, additional bat surveys have been undertaken August 2026, and we are happy to provide these if required.

These surveys, together with the supporting ecological investigations and assessments undertaken, informed both the EIAR and the accompanying ecological and conservation documentation submitted as part of the application. The Applicant is satisfied that the extent and timing of the survey effort is appropriate to the nature of the site, the receiving environment and the proposed development.

With regard to the recommendations made in relation to additional mitigation measures, the Applicant notes that the EIAR already includes a detailed package of avoidance, mitigation and monitoring measures designed to ensure that any potential effects on biodiversity and ecological receptors are avoided, reduced or appropriately managed. These measures are set out in detail within the relevant chapters of the EIAR and are committed to by the Applicant.

The recommendations made by the Heritage Officer, notably the inclusion a Biodiversity Management Plan and Species-specific Management Plan for Hairy St John's-wort are welcomed and can be conditioned into planning. These measures will strengthen the existing

mitigation measures and monitoring plan included within the EIAR, which can be integrated into both reports. Additional species-specific surveys, including springtime floral surveys and bat roost assessment, activity, and emergence surveys are also welcomed and will further strengthen the existing mitigation within the EIAR. The existing mitigation includes the retention of the existing topsoil and seedbank present within the encroached woodland area. This will be translocated to the northeast of the existing woodland on site, preserving any woodland flora present within this area and allowing them to re-establish in the future. This area will also be managed and monitored during the operational phase, preventing the establishment of invasive/non-native species. The detailed 6-step methodology is outlined within sub-section 4.6.2.2 of the Biodiversity Chapter within the EIAR. Furthermore, the construction phase mitigation measures, outlined in sub-section 4.6.3 of the Biodiversity Chapter within the EIAR will minimise impacts on the retained woodland habitat on site. This will reduce any potential impacts on woodland flora.

The applicant is happy to condition the recommendations outlined by SDCC pertaining to a Biodiversity Management Plan, and species-specific management plan for Hairy St John's-wort.

Without prejudice to the adequacy of the assessment undertaken, the Applicant remains committed to ensuring the highest standards of environmental protection throughout the construction and operational phases of the development. Accordingly, where additional recommendations have been made in respect of ecological mitigation or construction management procedures, the Applicant is willing to incorporate such measures, where appropriate, into the Construction Management Plan and other relevant management plans to be agreed through the compliance process. This approach will ensure the effective implementation of ecological safeguards while recognising that the environmental assessment submitted in support of the application is comprehensive, robust and fully capable of informing the decision-making process.

7.4.3 Parks and Public Realm

The Report then assesses the proposed development and relevant designations applied to the site and adjoining area. It is noted that as per Policy G15 Objective 4 of the County Development Plan the applicant is required to demonstrate that the minimum Green Space Factor (GSF) has been achieved. The proposed development would achieve a GSF of 0.72 (minimum for HA-LV is 0.7). The Report then notes that details of the arboricultural impact assessment are sought from the Applicant.

The comments are concerned primarily with the proposed buildings within the Liffey Valley pNHA and the overall protection of the existing woodlands, tree protection and preserving the existing biodiversity and landscape character of the site. Additionally, the report makes recommendations for the submission of a detailed Tree Survey, Green Infrastructure, natural SUDS Plan and a detailed planting plan that all comply with the requirements of the SDCC SUDS Design Guide and with relevant policies in the development plan. The Parks and Public Realm department note that the implementation of natural SUDs will help mitigate the impact of this development in the landscape.

In this regard, we note the following was states in the submitted Landscape Masterplan, prepared by DFLA, which stated;

“The retention and enhancement of the existing woodland and associated green infrastructural elements are a key consideration within the proposals...

There is the possibility in the future to provide accessible links to a future Liffey Valley Park to the north-east of the site from the existing roadway that runs through the site. This location is considered to have the least impact on the existing protected woodland that is contained within the site, and steers visitors away from the sensitive nature of the proposed hospital...

Further planting of native hedgerows and the inclusion of a pond and seasonal wetland area also contribute towards enhancing the existing biodiversity and habitat of the site. Car parking and roadways are proposed to be permeable solutions, with extensive sustainable drainage proposals within available planting spaces...

It is proposed to actively manage and enhance this existing woodland resource to ensure its future viability and longevity. Further biodiversity enhancements include a new water body and seasonal wetland within the proposed woodland area with public access to a new open space area with interpretive signage outlining the ecology and active biodiversity measures undertaken in the area. Extensive native hedgerow planting is also proposed throughout this area, further increasing the existing biodiversity...

The Arboricultural Impact Assessment (AIA) by Arbor Care specifies measures to be undertaken to ensure the ongoing health of trees to be retained within the development site, and their protection during the construction process. Protective fencing barriers will be employed throughout the duration of the construction phase to ensure the trees and their rooting areas are protected.

These barriers will also form protection zones for sensitive ecological areas of the site, the AIA further notes that the proposed development can be successfully carried out without having a negative impact on the character or appearance of the surrounding landscape provided the recommendation and methods outlined in the report are adhered to...” [Quotes extracted for emphasis]

In this regard it is also worth noting the Green Space Factor requirement included within the *South Dublin County Council Green Space Factor Guidance Note – August 2022*, which appears to have limited assessment in the Report prepared by the local authority is also addressed in the Masterplan document. This states;

“The Green Space Factor ‘is a measurement that describes the quantity and quality of landscaping and GI across a defined spatial area.’ (South Dublin County Council Green Space Factor Guidance Note – August 2022)

The landscape proposals within the proposed development have taken this into account from the initial concept stages, with the inclusion of high value biodiversity measures incorporated into the open spaces. This includes SuDS measures, substantial areas of green roof, a biodiversity pond and wetland area, new woodland and extensive tree planting, among other measures. The minimum required GI score as designated by SDCC within the site is 0.7.

The landscape proposals have achieved a score of 0.72 which passes the required score. It is noted that initial high level assessment of the existing site, based on the current ecological mapping by JBA Consultants, the site scores 0.62, which is under the minimum required score. This amounts to an approximate 14% increase from existing landscape conditions to proposed. [Our Emphasis]

The Parks and Public Realm Report considers that that protection/mitigation measures in relation to biodiversity, the riparian corridor, woodland and the Liffey Valley SAAO and Liffey Valley pNHA should be integrated into the construction and operational phases of the proposed development through a final agreed Construction Management (Environmental) Plan and Landscape and Ecological Management Plan. Monitoring was included for specific sensitive flora and fauna and invasive species in the EIAR. The monitoring plan will be directly incorporated into the biodiversity action plan, which can be conditioned in this regard.

7.4.4 Landscape, Natural Heritage and Green Infrastructure Summary

This section of the Report summarises that;

“With regards to the proposed development, the Planning Authority find the overall design to be of a high architectural standard and promote the adaptive re-use of existing protected structure on site.”

The Report then states that the encroachment of c. 83.3 sq m of the development into the pNHA would result in the irreversible loss of the habitat and impact on the existing landscape character of the high amenity lands, notwithstanding that the assessment outlined by SDCC noted above that the current proposed built form would not have a significant adverse impact on the visual amenities of the area, as a part of the assessment on landscape impact.

The Report then states;

“Alternative design iterations were assessed by the applicant that provides for this use in a manner that promotes and utilises the existing landscape character of the pNHA without resulting in any impact on the pNHA. These alternative options were not further pursued, reasons being impact on the internal connectivity of the hospital building, internal overlooking and the appropriateness of ensuring privacy for certain parts of the hospital, and visual impact. While this is noted, based on the information submitted it is considered that the proposed design strategy would benefit from further justification and refinement due to impact on existing habitat onsite. The interface of the proposed built form and the woodland / pNHA is considered to require amendment.

The Planning Authority acknowledges the operational requirements of the proposed hospital; however, it considers that additional design amendments should be explored to further reduce impacts on the pNHA and strengthen compliance with the environmental objectives of the County Development Plan, particularly under Policy NCBH4, to “Protect the ecological, visual, recreational, environmental and amenity value of the County’s proposed Natural Heritage Areas and associated habitats and species” and NCBH4 Objective 2 which restricts the types of development permissible within or adjacent to pNHAs.

Notwithstanding this impact, the Planning Authority considers that the impacts on the pNHA could be avoided by design/layout changes in the context of the overall development. The design and layout approach for the northern part of the proposed development should be reconsidered, including relocating building and hard surfaces away from this particularly sensitive part of the site to be fully contained south of the existing east-west wall which separates the main site from the wooded pNHA area to the north."

In this regard we note that alternative design layouts were not pursued for a number of reasons. It is noted that the previously submitted architectural design rationale outlines a number of design iterations that were assessed throughout the evolution of the proposed development. From the outset, the core objective of the project team was to deliver a purpose-built, nationally significant, state-of-the-art mental health facility capable of meeting modern clinical, operational and therapeutic requirements. This objective was carefully balanced against the recognised heritage, environmental and ecological constraints associated with the site.

As detailed within the application documentation, contemporary best-practice guidance for mental health facility design generally favours a predominantly single-storey layout where site conditions permit. The principal benefits of such an approach include the creation of a more domestic-scale and therapeutic environment; enhanced access to natural light, outdoor amenity spaces and therapeutic gardens; reduced environmental complexity for service users experiencing acute mental health difficulties; improved observation and supervision opportunities for staff; universal accessibility through level access circulation; and simplified emergency evacuation procedures.

These principles have informed the design approach adopted for the proposed development. However, early design assessments undertaken in respect of the St. Edmundsbury site identified significant constraints arising from the site's conservation sensitivities, ecological considerations and wider planning context.

These factors presented challenges to the delivery of a wholly single-storey facility of the scale required to accommodate the operational and clinical needs of the proposed hospital.

Consequently, the design process focused on identifying those core clinical and operational functions that necessitate a ground-floor location, while considering which ancillary uses could be accommodated at first-floor level without compromising the safe and efficient functioning of the facility. This approach sought to balance the operational requirements of a modern mental health hospital with the need to minimise building footprint, reduce impacts on sensitive landscape and ecological features, and appropriately manage building height, visual impact and heritage considerations.

Furthermore, the adopted design strategy aims to avoid replicating the operational inefficiencies associated with the existing St Patrick's Mental Health Services facility at James's Street, where the historic multi-storey building form, constrained urban setting and decades of incremental expansion have created well-documented operational challenges.

Importantly, this design rationale was extensively discussed and presented to South Dublin County Council over several years of pre-application engagement and consultation, as noted in the submitted documentation and this response.

The principles underpinning the proposed building form, including the balance struck between predominantly single-storey accommodation and limited upper-floor development, were clearly outlined during these discussions. The project team considers that this approach was accepted by the planning authority as evidenced by the Letter of Support issued by South Dublin County Council prior to the lodgement of the application, which is appended.

Accordingly, it is difficult to reconcile the conclusions contained within the Planning Authority and Departmental reports with the position previously adopted during the extensive pre-application process and the support expressed by South Dublin County Council prior to the submission of the application.

In this regard, it is again important to acknowledge the significant time, resources and expense invested by the Applicant in engaging proactively with the Planning Authority over a number of years to comprehensively assess the site constraints, test alternative layouts and refine the design of the proposed facility. The current proposal is the product of an iterative design process informed by detailed consultation with the Council and specialist input across planning, architecture, ecology, landscape, heritage and other disciplines.

Against this background, the Applicant questions the reasonableness and proportionality of seeking further fundamental redesign of the scheme at this advanced stage in the process, particularly where the key design principles underpinning the proposal were discussed extensively with the Planning Authority during pre-application engagement and where such redesign would have significant implications for the operational requirements of the hospital. The Applicant respectfully submits that the scale of changes now suggested would not represent a refinement of the proposed development but would instead necessitate a fundamental reconsideration of the design approach, which is neither practical nor capable of being accommodated without undermining the clinical and operational objectives of the project, as outlined in detail in this Response.

Furthermore, as demonstrated throughout this Response and the accompanying technical assessments, every effort has been made to avoid, minimise and mitigate potential impacts on the pNHA, woodland areas and associated ecological receptors.

The evolution of the design has resulted in substantial reductions in environmental impact when compared with earlier design iterations, with development being carefully positioned and configured to avoid sensitive areas wherever possible.

Where residual effects remain, these are comprehensively addressed through a robust package of avoidance, mitigation and compensatory measures. As set out in the landscape, ecological and Green Space Factor assessments, the proposed development will deliver significant enhancements to the quality, functionality and biodiversity value of the site.

Indeed, the Green Space Factor assessment demonstrates that the proposal will improve upon the existing baseline condition through the delivery of enhanced habitat areas, biodiversity-focused landscaping, sustainable drainage measures and long-term ecological management initiatives. The Applicant therefore submits that the proposed development represents a carefully balanced and environmentally responsible response to a uniquely constrained site, delivering a nationally important healthcare facility while achieving a demonstrable net improvement in the overall environmental quality and ecological function of the lands.



7.5 Water Services

7.5.1 Availability and Capacity of Public Surface Water Drainage Facilities

The Water Services Department of SDCC reviewed the proposed development and have raised concerns with regards to the use of underground attenuation, which is further reflected in the Parks and Public Realm report as noted above. It is noted that the applicant has proposed a number of above ground sustainable urban drainage measures, including green roofs, etc. in line with Council policy, consideration should be given to further above ground sustainable urban drainage measures to reduce the reliance on underground attenuation where possible.

While considerable above ground natural sustainable measures have been proposed, the volume of storm water storage required to avoid flooding necessitates the utilisation of sub-surface attenuation. In addition, storm water run off from vehicle areas, will allow for interception and natural cleaning of run off to improve the quality of water being discharged to the surface water system.

Catchments Overview

The proposed development (c.7.98ha) is divided into 4 No. Catchments (C1, C2, C3, C4) for surface water management, as shown in Figure 7.5 and Table 7.0 overleaf

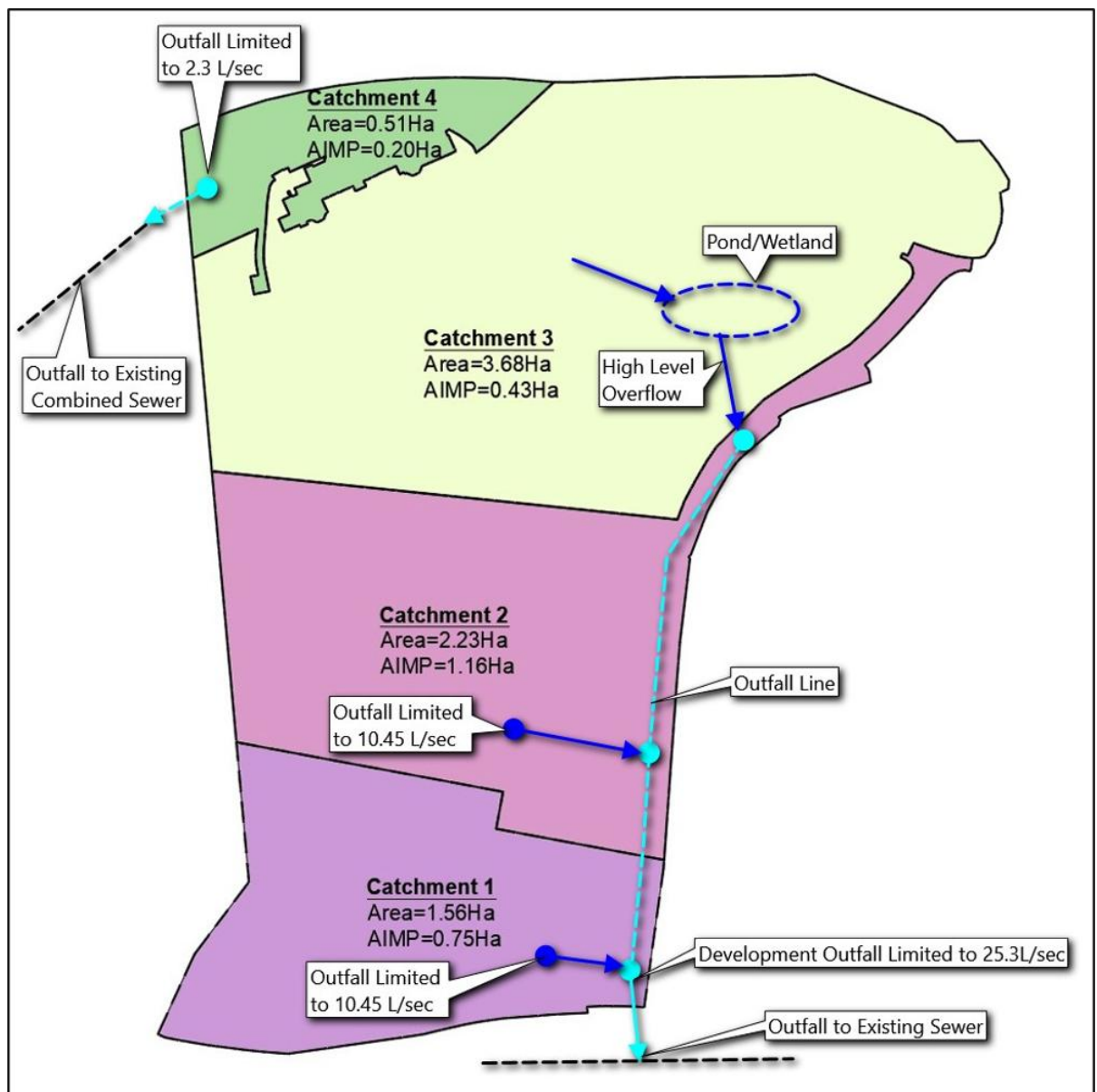


Figure 7.5 - Catchment Areas [Source: Egis Consulting Engineers, 2026]

Catchment No.	Area (Ha)	Impermeable Area (Ha)	Limited Discharge Rate (l/sec)
Catchment 4 -> Existing Outfall	0.51Ha	0.20Ha	2.3l/sec to existing combined sewer outfall
Catchment 3 -> outfall line	3.68Ha	0.43Ha	High Level Overflow from Pond/Wetland
Catchment 2 -> outfall line	2.23Ha	1.16Ha	10.45l/s
Catchment 1 -> outfall line	1.56Ha	0.75Ha	10.45l/s
Outfall to existing storm sewer			25.3l/sec

Table 7.0 - Catchment Areas & Associated Discharge Rates [Source: Egis Consulting Engineers, 2026]

Surface Water - Drainage Strategy

Catchments 1, 2 and 3 – Southern Outfall

Attenuated flows from Catchments C1, C2 & C3 will discharge to an existing stormwater sewer located outside the existing entrance to the site at a limited discharge rate of 25.3l/s via hydro-brake flow control device.

Catchment 4 – Northern Outfall

Attenuated flows from Catchment C4 will discharge to an existing combined sewer outfall to the northwest with a limited discharge rate of 2.3l/s via hydro-brake flow control device.

Surface Water and Analysis

The surface water network for the overall development, including 2 No. outfalls to the North and South has been modelled using the Micro Drainage Suite of Programmes, for the 1 in 100 year critical storm event including a 20% allowance for Climate Change, in accordance with the requirements of Volume 2, New Development, Greater Dublin Strategic Drainage Study (GDSDS).

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.

Refer to Appendix C for surface water calculations and appendix D for micro drainage analysis, which were lodged with the application, but appended for ease of reference.

The proposed surface water design is a conservative design which includes the use of above ground solutions which work in conjunction with the underground attenuation measures proposed to obtain the required limited discharge rates and avoid flooding for the critical 1 in 100-year storm event + 20% climate change.

Due to the confluence of flows, spatial restrictions and limited discharge rates from each catchment, the use of the below ground attenuation is required in close proximity to each of the outfall locations for the associated volumes for the more extreme rainfall events (1 in 100 year + 20% Climate Change).

The SDCC SuDS Design Guide makes specific reference to properly designed Underground Storage as part of a SuDS Management Train. The proposed Stormtech sub-surface attenuation system has been used nationwide and provides management of surface water on the site both for water quality and water quantity.

It should also be noted that the effective storage volumes provided within the analysis is based on a conservative assumption that there is no infiltration. In the event that additional infiltration to the subsoil is available, this will be leveraged thus enhancing the attenuation measures proposed.

For smaller storm events, the above ground systems have sufficient capacity to cater for the associated flows and limited discharge rates.

Standards

The storm water system will be in accordance with “*The Regional Code of Practice for Drainage Works*” and the requirements of *Volume 2, New Development, Greater Dublin Strategic Drainage Study (GDSDS)*.

The foul and storm sewer networks, as indicated on Drawing No. 22203-JBB-00-XX-DR-C-01401 will be separate systems. No foul effluent will discharge to the storm water system and vice versa.

7.5.2 SUDS Strategy

The Treatment Train Schematic as indicated on Drawing No. 22203-JBB-00-XX-DR-C-01402 and in Figure 7.6 below outlines the proposed SuDS devices from the various catchment areas working in series prior to discharge to the existing drainage networks to the North and South.

As noted above, flows from the northern outfall (Catchment 4) and southern outfall (Catchments C1, C2 & C3) will be limited to 2.3 l/sec & 25.3l/sec via hydro-brake flow control devices located within manholes S4.1 (North) and S1.2 (South) for the 1 in 100 Year critical storm event + 20% allowance for climate change in accordance with GDSDS requirements.

The SuDS strategy adopted for this development provides a comprehensive approach to the management of storm water on the site in line with the SuDS four pillars approach namely, water quality, water quantity, biodiversity and amenity. The treatment train approach has been adopted for the design of the storm water system for this development. This approach uses suitable SuDS measures in providing source, site and regional controls.

The storm water run-off from the development will pass through a minimum of 3 SuDS Devices. This treatment train approach complies with Volume 2, New Development, GSDSDS.

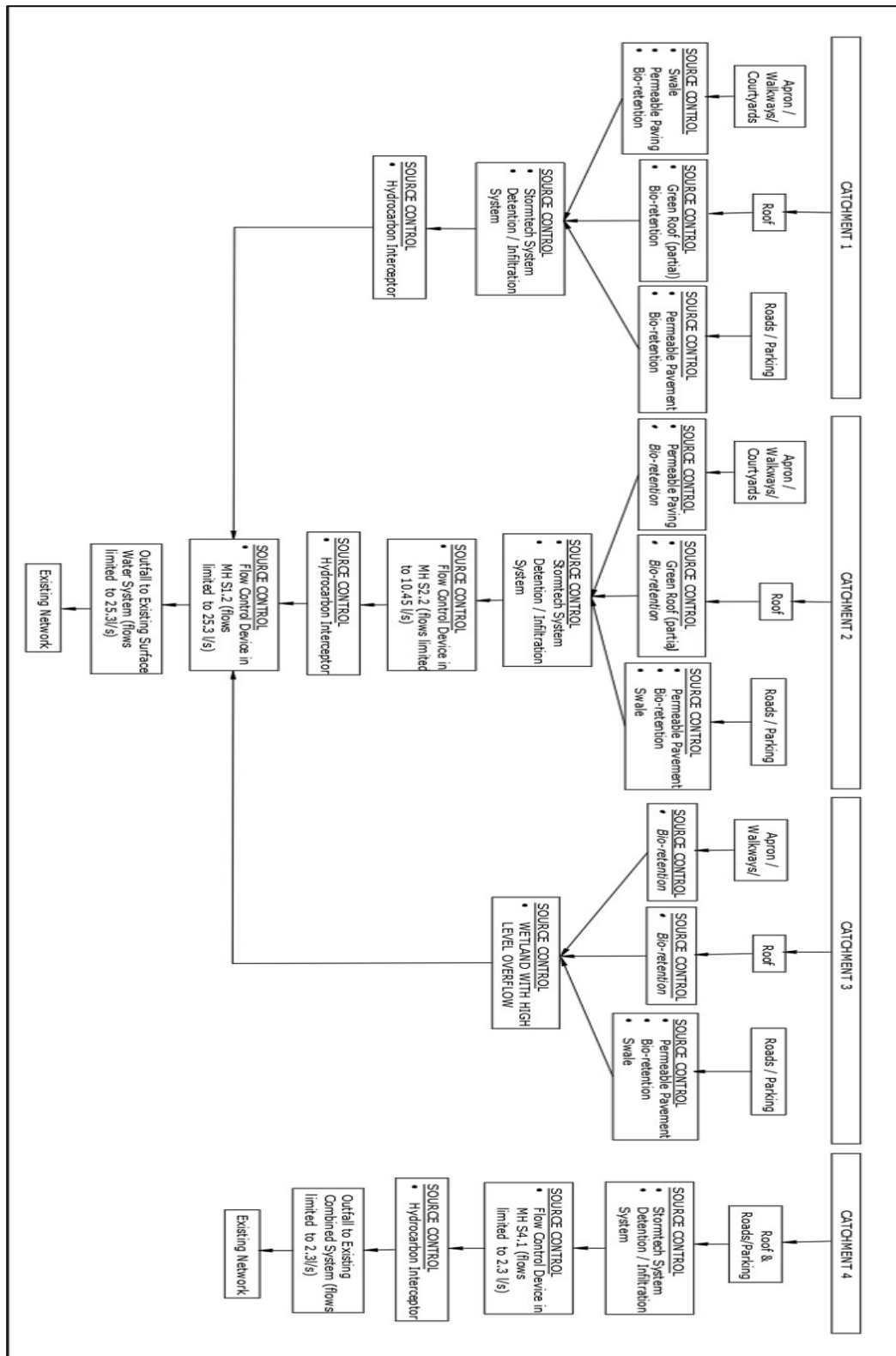


Figure 7.6 - SuDS Treatment Train Schematic [Source: Egis Consulting Engineers, 2026]



7.5.3 Flood Risk

No objection is noted in respect of flood risk considerations.

7.5.4 Public Water Supply and Sewerage Infrastructure

No objection is noted in respect of public water supply.

7.6 Transport

7.6.1 Access Road and Layout

To minimise traffic disruption of west bound traffic on Lucan Road, it is proposed that road marking at the Western Vehicular Access will be modified in order to provide a right turning pocket to the proposed development. The applicant is satisfied to accept a condition in this regard.

It is considered that the junction upgrade to Chapel Hill/Lucan Road is necessary to ameliorate both existing traffic at this location and the exacerbating impact on traffic that the proposed development will have on the surrounding road network. It is noted that the junction upgrade works are outside the site boundary and are not proposed to be carried out by the applicant, except for the realignment of the southern boundary wall of the subject site to provide space for the future junction upgrade. Given the proposed works will involve public infrastructure which will benefit the proposed development and are specific exceptional costs not covered by *SDCC's Development Contribution Scheme 2026-2028*, it is considered appropriate that a special contribution be applied. The Applicant is satisfied to accept a condition in this regard.

It is noted that the application includes proposals for continued public access through the subject site, along its eastern boundary, as indicated on the Proposed Site Plan as "*St. Edmundsbury Walking Loop*". This reflects the established public use of the subject site and the requirements of the specific local objectives applicable to the lands to provide appropriate public access to the lands in the Liffey Valley. A condition is recommended accordingly and the Applicant is satisfied to accept a condition in this regard.

7.6.2 Car Parking and Traffic Impact

Having regard to the details submitted with the application and the assessment of the SDCC Roads Department, it is considered that the operational hours and shift patterns of the proposed hospital will entail a majority of travel to/from the facility outside peak hours in early morning and late evening when public transport frequency will be reduced. In this regard, application of the car parking standard for the proposed development in line with Zone 1 is considered to be acceptable by the local authority.

The Report notes that the Applicant has proposed a number of mitigation measures to encourage active travel and use of public transport, and the Planning Authority considers that these should be implemented.



It is recommended that a detailed mobility management plan and car parking management strategy be implemented for the proposed development to be addressed by way of condition in the event of a grant of permission. The Applicant is satisfied to accept a condition in this regard.

7.6.3 Bicycle Parking

No objection is noted in respect of bicycle parking.

7.7 Other

7.7.1 Public Lighting

The Report notes;

“There does not appear to be public lighting proposed within the application site.”

This assertion is not correct. As detailed within the submitted application documentation, a public lighting scheme is proposed as part of the development. The locations of all proposed lighting infrastructure are clearly identified within the Landscape Masterplan and integrated landscape drawings, where the proposed lighting columns and fixtures are annotated by way of pink circles.

The lighting strategy has been developed by Varming Consulting Engineers and has been subject to ecological review by JBA Consulting, the project ecologists. JBA have confirmed that the proposed lighting scheme is acceptable having regard to bat populations and bat activity recorded within and adjoining the site. The lighting design has been informed by the ecological surveys undertaken and has been developed to ensure that impacts on bat commuting, foraging and roosting habitat are avoided or minimised.

Furthermore, detailed drawings of the proposed public lighting scheme prepared by Varming are included within the EIAR Appendices. These drawings provide the proposed layout and design rationale for the lighting strategy, together with indicative luminaire specifications and performance criteria.

While detailed technical specifications and final fixture selections will ultimately form part of the detailed design process, it is standard practice for such matters to be addressed through planning condition compliance and agreement with the relevant Local Authority departments. Accordingly, sufficient information has been provided at application stage to demonstrate that an appropriate public lighting scheme can be delivered, that the ecological sensitivities of the site have been fully considered, and that there will be no significant adverse effects on bat populations arising from the proposed lighting strategy.



It is noted that due to the nature of the proposed development that community gain conditions are not warranted in this instance.

The Planning Authority notes the screening report submitted and has no further comments on this.

In relation to same, SDCC notes the following main areas of relevance or concern with the EIAR, as submitted:

- Population and Human Health
- Biodiversity
- Land and Soil



- Water
- Air and Climate
- Noise and Vibration
- Material Assets
- Cultural Heritage
- Landscape and Visual Impact

Alternative options were explored by the applicant under the EIAR and are detailed in this document and the Architectural Design Statement.

There are a number of concerns in relation to the themes raised in the EIAR, and conditions are proposed which would mitigate those concerns. The Heritage Officer has raised concerns in relation to the adequacy of the surveys and assessment that were provided as part of the Biodiversity Chapter of the EIAR, as raised previously in this report. Save for these issues which SDCC considers can be addressed by further surveys and amendments to the design/layout, SDCC generally considers the EIAR to be adequate.

The applicant agrees with SDCC that the EIAR is adequate, and that the concerns raised can be addressed by further surveys, which have been recommended in the SDCC Heritage Officer's response.

7.8.3 Water Framework Directive Assessment

The Planning Authority notes the assessment report submitted and has no further comments on this.

7.8.4 Environmental Health

No objection is noted in respect of environmental health. Conditions are recommended in this regard, which the applicant is satisfied to accept as a condition of planning.

7.8.5 Waste

No objection is noted in respect of waste management. Conditions are recommended in this regard, which the applicant is satisfied to accept as a condition of planning. This can be incorporated in to the delivery services management plan at compliance stage.

7.9 Development Contributions

In respect of Section 48/49 development contributions, it is noted that the Governors of St. Patrick's Hospital is a registered charity and therefore the development would meet the exemption category.

8.0 SECTION 6: DECISION TO BE MADE BY AN COIMISIUN PLEANALA AND RECOMMENDED CONDITIONS IN THE EVENT OF A GRANT OF PLANNING PERMISSION

The Report notes that the proposed hospital development is supported by national, regional and local planning policy and the principle of the proposed development at this location is dependent on its compliance with the relevant policies and objectives of the *South Dublin County Development Plan 2022-2028*, including the HA-LV land use zoning objective, the policy for non-conforming uses, the policy for healthcare uses and the specific local objectives which apply to these lands.

Having reviewed the conditions attached to the recommendation from SDCC, which notes that they generally consider that the proposed development meets the relevant policies and objectives and can support the proposal in principle, the applicant is satisfied to accept all conditions, save for the following;

"3. Amendment - The design shall be amended to remove the intrusion of the north western corner of the proposed development into the regenerated woodland buffer and the pNHA woodland. Revised plans/ further information shall be submitted to ACP to amend the design and layout of the proposed development to facilitate the relocation of the floorspace away from the pNHA boundary to avoid any intrusion through the existing east-west wall currently separating the woodland and pNHA from the lands to the south."

The Applicant respectfully submits that the proposed condition requiring the redesign and relocation of the north-western **c. 181 sq m** corner of the development, which is partially located in the pNHA should not be attached to any grant of permission, nor should further information be requested in this regard.

As noted repeatedly above, the proposed development is the result of an extensive and iterative design process undertaken over a number of years, informed by detailed environmental assessment, specialist ecological input, operational requirements and ongoing engagement with South Dublin County Council.

The siting and layout of the proposed building have been carefully developed to strike an appropriate balance between the delivery of essential healthcare facilities and the protection of the receiving environment, including the adjoining woodland and proposed pNHA.

Throughout the design process, considerable effort was made to minimise encroachment into environmentally sensitive areas and to maintain the integrity of the existing woodland edge insofar as practicable. The current design reflects the outcome of this process and represents the optimum solution having regard to the physical constraints of the site, patient care requirements, accessibility considerations and environmental protection objectives.

The Applicant does not agree that the proposed amendment is either necessary or justified. The condition appears to be based on the premise that the identified area of interaction would result in unacceptable impacts on the adjoining woodland and pNHA. However, the comprehensive ecological assessments submitted with the application, including the EIAR, Appropriate Assessment and supporting ecological documentation, demonstrate that the proposed development can be accommodated subject to the enclosed Appropriate Assessment Screening.

Furthermore, the Department of Housing, Local Government and Heritage, in its submission as a prescribed body, did not seek the redesign or relocation of the proposed development. Rather, the Department recommended that ecological mitigation and protection measures identified within the submitted environmental documentation be secured through appropriately worded conditions. This approach acknowledges that any potential ecological impacts can be effectively managed through mitigation and construction controls without necessitating fundamental alterations to the approved design.

The Applicant is particularly concerned that the amendment sought would require a substantial redesign of the development and could have significant implications for the operational functionality of the facility, resulting in the loss of critical floorspace and the reduction of much-needed healthcare services.

In reality this redesign would make the scheme unviable. Such amendments would fundamentally alter a design that has been subject to extensive consultation with the Planning Authority and its officials and which was supported by South Dublin County Council prior to lodgement of the application.

In these circumstances, the Applicant submits that the proposed condition fails to satisfy the tests of necessity, relevance and reasonableness. The environmental effects associated with the development have been comprehensively assessed and appropriate mitigation measures have been identified and committed to by the Applicant.

The Applicant therefore respectfully requests that An Coimisiún Pleanála not attach the proposed condition to any grant of permission and instead rely on the implementation of the ecological mitigation, monitoring and protection measures already set out within the EIAR and accompanying environmental documentation, together with any appropriate compliance conditions considered necessary by the An Coimisiún.

As a Strategic Infrastructure Development application, An Coimisiún's assessment is required to extend beyond a consideration of environmental effects alone and must also have regard to the strategic need for the proposed development, the significant public interest benefits associated with its delivery, and the broader planning and sustainable development considerations arising.

In this regard, the Applicant submits that the documentation accompanying the application clearly demonstrates that the design of the proposed development has been subject to a rigorous and iterative refinement process over a number of years. This process has been informed by detailed environmental assessment, specialist ecological input, operational healthcare requirements and extensive consultation with South Dublin County Council and other stakeholders. As a consequence, the proposed design represents a carefully balanced solution that seeks to minimise impacts on the receiving environment while facilitating the delivery of essential healthcare infrastructure.

The Applicant is satisfied that impacts on the adjoining woodland and proposed Natural Heritage Area have been avoided and minimised to the greatest extent reasonably practicable, having regard to the physical constraints of the site and the functional requirements of the facility. The environmental assessments submitted with the application identify appropriate mitigation measures to address residual effects and demonstrate that the proposed development can proceed without giving rise to significant adverse impacts.

Importantly, no feasible alternative design solution has been identified that would achieve the operational requirements and strategic objectives of the project while simultaneously reducing the limited area of interaction identified by the Planning Authority. The redesign proposed under Condition 3 would result in a fundamental alteration of the scheme, with consequential impacts for the delivery of much-needed healthcare services and the overall functionality of the facility as outlined in TOT Architects Statement. (Please refer to Appendix B).

While the Applicant acknowledges and respects the concerns raised by SDCC, it is considered that the conclusion reached does not fully reflect the extensive environmental analysis, mitigation strategy and design evolution undertaken as part of the application process.

Having regard to the comprehensive body of information before An Coimisiún, the strategic importance of the development, and the absence of any reasonable or practicable alternative solution, the Applicant submits that there is a clear and defensible basis for An Coimisiún Pleanála to conclude that the proposed development strikes an appropriate balance between environmental protection and the delivery of substantial public benefit, and that the redesign sought under the proposed condition is neither necessary nor justified.

The Report then concludes that South Dublin County Council's overriding view is that the proposed development is acceptable subject to revised plans, further information and compliance with the conditions recommended.

9.0 APPENDIX 1A: ARCHITECTURAL CONSERVATION OFFICER

The Architectural Conservation Officer's Report reviews the site context, historic background and the proposed development. It also analyses the submitted architectural design statement which included a conservation strategy for the protected structures and architectural features. The Report references the collaborative engagement with SDCC by the design team;

"It should be noted that a number of preplanning meetings were held with the Planning Authority during May 2023 and a pre-planning document 20-77 was submitted. On-site meetings were held with the Councils Architectural Conservation Officer to discuss the proposals with regard to the Protected Structures on site and how the existing structures would be incorporated into the proposed scheme.

The Design Team and the Councils Architectural Conservation Officer walked the site to discuss the interventions, retention and design concepts overall in allowing the proposed new build to sit sensitively within the scheme. Pre-Planning discussions were based on the Design concepts and plans submitted at the time which are similar to the overall concept and proposals developed under ACP-324264-26.

At the time of pre-planning meetings/discussions the Councils Architectural Conservation Officer advised that the overall concept was acceptable in principle and the integration and reuse of the protected structures within the site was welcomed and considered to be in line with good conservation and design practices." [Our Emphasis]

In this regard we note that the design actually had not substantially changed since the discussions with SDCC.

The Report then assesses the works and refurbishment proposed to historical features within the site, including removal of a section of the walled garden at the north to accommodate the new hospital building. The Report then requests information in relation to relocation of the boundary wall to the Lucan Road. This relocation is proposed to facilitate the future road upgrades planned by South Dublin County Council/TII, these roadworks do not form part of this application. Notwithstanding this, should information be requested by compliance, we are satisfied that the applicant can comply with this request.

The Report notes that the level of information provided in the EIAR allows for a full and proper assessment to be made in relation to the overall impact of the proposed development on the historic structures and setting.

The Report then assesses the new build elements impact on the setting and landscape. The Report notes;

“The site’s many features, such as the woodlands, meadows, and historical structures, allow the new building to interact with them and become positive additions to the scheme...”

The design elements and form described has been well thought out in providing a new building which sites sensitively within the site...

Interpretating the design concept and rational outlined above it is felt that the overall design and their merits have been well considered and provide a sensitive approach for the retention and integration of the existing structures and features. The new build design, height and scale will sit within the site without directly impacting on St. Edmundsbury House. The design will be of high quality and will sit as a contemporary addition to the site allowing architectural interest and variation to the existing site...

The proposed development also gives careful consideration to the design of the public realm, aiming to create a welcoming and accessible environment that respects both the needs of the local community and the surrounding natural setting. The layout of the site balances the clinical requirements of the facility with opportunities for public use, quiet enjoyment, and landscape improvement. Overall, it is considered that the design approach for the new hospital buildings and the reuse of the Main House including the integration of existing protected structure elements has been guided by good design ethics and the requirements for a purpose built Mental Health Hospital development within the constraints of a Protected Structure site. A balanced approach is evident within the overall design in finding the best solution to facilitate the requirements of the proposed development while retaining the architectural and historical significance of the site and the connections of the protected structures and their landscape setting.” [Quotation cropped for emphasis]

The Report then concludes;

“It is felt that the approach has been conservation lead and allows for a balance between the existing structures and setting of St. Edmundsbury House in providing a purpose built new development to continue the established use of the site and provide a much needed new Mental Health Hospital to serve on a National level.”

The Report then concludes and recommends conditions, which the applicant is satisfied are acceptable.

10.0 APPENDIX 1B: HERITAGE OFFICER REPORT

The Heritage Officer Report sets out at the outset the recommendations for inclusion of compliance conditions to be attached to the proposed development. In this regard the applicant is satisfied to comply with these, save for the recommendation regarding a redesign of the proposed development where c. 181 sq m of the building encroaches on the pNHA. For reasons already outlined in this Report, we are not satisfied with this recommendation from the Heritage Officer and refute it for the following reasons;

- The current proposal is the product of an extensive and iterative design process undertaken over a number of years involving significant engagement with South Dublin County Council, statutory consultees and specialist advisors across planning, architecture, ecology, landscape, heritage and healthcare disciplines.
- The design approach was developed specifically in response to the unique constraints of the site, including the presence of protected woodland, ecological sensitivities, heritage considerations, visual impact concerns and the operational requirements of a modern mental health facility. The proposed layout therefore represents a carefully considered balance between competing objectives rather than a design that can be substantially altered without consequence.
- The rationale for the proposed building form and layout was repeatedly presented to and discussed with South Dublin County Council during the pre-application process, culminating in the issuance of a Letter of Support prior to lodgement. The Applicant therefore considers it unreasonable that fundamental redesign measures are now being sought which appear contrary to the position previously adopted during the extensive consultation process.
- The proposed development has already evolved considerably from earlier design iterations, with substantial modifications undertaken to reduce environmental and ecological impacts, minimise encroachment into sensitive areas, manage visual impacts and respond to concerns raised by various stakeholders throughout the design process.
- The suggested redesign would compromise the operational and clinical requirements of the proposed hospital. The current configuration has been informed by best-practice mental healthcare design principles and seeks to maximise ground-floor accommodation while accommodating site constraints. Further significant redesign would undermine these carefully considered operational arrangements.
- The proposal incorporates a comprehensive package of avoidance, mitigation and compensatory measures, including woodland enhancement, invasive species removal, substantial native planting, habitat creation, biodiversity enhancement measures, sustainable drainage features and long-term ecological management. These measures ensure that impacts have been minimised to the greatest extent possible and that the overall ecological value of the site will be enhanced compared to the existing baseline condition.

- The Applicant submits that the environmental effects of the development must be assessed in light of the proposed mitigation and enhancement measures, rather than on the basis of existing conditions alone. The evidence presented demonstrates that the development will deliver measurable ecological and landscape improvements while facilitating the delivery of a nationally important healthcare facility.

Accordingly, the Applicant considers that the proposed development already represents an optimal and carefully balanced design solution for this constrained site and that a fundamental redesign is neither justified nor proportionate having regard to the extensive assessment, consultation and refinement already undertaken.

The Report then states;

“The submitted ecological report indicates that ‘a targeted protected floral survey was conducted of woodlands within and adjacent to the proposed site’. However, while the ecological report as submitted indicates that an initial ecological walkover was conducted on the 01/02/2023, dates for subsequent surveys appear not to have included an early season spring survey which could have targeted early spring flora of conservation interest, such as Yellow Archangel and other plant species known to be associated with the Liffey Valley woodland type. This represents an insufficiency of woodland survey data, particularly as the proposed development encroaches into the pNHA and its regenerated woodland buffer.”

JBA notes that additional springtime (April-May) botanical survey will be undertaken in 2027, and the results used to inform a Biodiversity Action Plan for sensitive springtime flora, including Toothwort and Yellow Archangel. This is in line with the recommendations outlined within the SDCC Heritage Officer’s response.

In addition to this and as part of a sensitive springtime flora conservation management plan, springtime surveys (April-May) can then be undertaken during the construction phase and initial operational phase (10 years post construction). These will be undertaken by a suitably qualified ecologist. Both the initial additional springtime botanical surveys and the addition of long-term springtime monitoring surveys for the duration of the construction phase and initial operational phase (10 years) can be conditioned into planning.

The Report then states;

“The report identifies that predominant bat foraging areas were correlated with areas of scrub and tall grasses, which harboured high concentrations of flying insects. No detailed invertebrate survey was undertaken. The submitted development design, however, proposes to extensively replace this grassland and scrub/trees with development. The loss of this extensive bat feeding area to the proposed development has not been adequately assessed in the submitted report, nor has sufficient mitigation for this loss been proposed. In addition, the ecological report, suggests that there is a high probability that a bat roost is located close-by in the adjacent property, to the east of the proposed development site. No assessment was made however, of the potential impact of the loss of the feeding and commuting opportunities that the proposed development site currently offers to local bats. Neither has an assessment been presented of the potential impact on the possible adjacent roost from the proposed increase in external lighting.”

This is considered a significant failure in the impact assessment process for protected species. It is noted that uncertainty remains regarding the presence of a bat roost on the site, given the High suitability for the St. Patrick's Hospital building for roosting bats and for the requirement for pre-demolition bat surveys for all external buildings/sheds."

As outlined in the EIAR, the green roofs included within the design of both buildings will provide additional foraging resources for local terrestrial invertebrates. This will provide increase potential prey species for local bats, which will partially offset the loss of foraging resources from the clearance of the proposed grassland. Additionally, the use of insect hotels within the site will provide nesting resources for invertebrate prey species, in turn partially offsetting the loss of nesting habitat due to the clearance of the existing habitats on site. Furthermore, the creation of new woodland habitat to the east of the site will provide additional foraging and commuting activities for local bats. This will also bolster connectivity between the existing woodland habitat and the proposed wetland area.

The creation of the pond in particular will serve the dual function of providing compensatory foraging resources for local bats as well as creating a new habitat type on site. Ponds are critical habitats for bats, providing drinking resources and serving as a breeding ground for invertebrate prey species. The addition of the pond will also improve the site's suitability for Daubenton's Bat, which is the only native bat species in Ireland which exhibits the distinctive behaviour of foraging over calm water surfaces, using its tail membrane and hind feet to collect insects from the water's surface.

As outlined in the EIAR, the loss of potential roosting features for bats will be partially mitigated in the short-term with the addition of bat boxes, and in the long-term through the creation of new woodland habitat which have the future potential to provide roosting features to bats in the event of limb breakage and/or hollowing of a limb.

JBA agrees with the SDCC Heritage Officer's recommendation for additional emergence and activity surveys to strengthen the existing mitigation measures, which can be conditioned into planning. Supplementary activity surveys will be carried out during the optimum bat activity window (June to August inclusive) by a suitably qualified bat Ecologist and in this regard, we again note the updated surveying undertaken in August 2026 in advance of lodgement of this Response. The results of these surveys will be included within a bat conservation management plan, which will be included within the biodiversity action management plan, which can be conditioned into planning. Further surveys will be carried out to definitively assess the potential impacts of lighting on potential roosting features. These will include additional emergence surveys of the previously identified roosting features within the optimum bat activity window (July-August) that can be conducted in 2026 and 2027 by a suitably qualified Bat Ecologist. The results of these surveys will be provided to the onsite ecological clerk of works and will be used by the contractor to update the site-specific CEMP.

In the event a roost is identified, either during these additional surveys or within the monitoring surveys outlined within the EIAR, derogation license(s) will be applied for where appropriate (i.e. the identification of an active roost(s)). Applications will be submitted prior to the commencement of any pre-enabling or construction phase works.

The Report then states;

“The EIAR accords a high ‘County Level’ ecological value for a number of habitats and species on the site. It is considered, however, that the EIAR’s conclusions regarding potential impact and the mitigation measures proposed do not reflect this high value, and that not sufficient avoidance and mitigation has been proposed.

Some of the mitigation measures as proposed appear contradictory e.g. the proposed appropriate timeframe for the felling of trees deemed necessary for the protection of possible roosting bats (between April and September) coincides with bird nesting period, during which time vegetation should not be disturbed.”

JBA believes that the mitigation measures outlined within the EIAR are appropriate and the issues raised by the SDCC Heritage Officer can be addressed by the recommended additional surveys, a biodiversity action plan, and species-specific management plan for the Hairy St John’s-wort.

As outlined within the EIAR, all vegetation removal will take place outside the bird nesting period (September to March inclusive). The timeframe for felling trees was incorrectly quoted within the bat report as between April and September, which will be ignored.

11.0 APPENDIX 1C: ROADS AND FORWARD PLANNING

The Report from Roads and Forward Planning assess the proposed development and how this will integrate into the surrounding road and pedestrian network.

The Report then notes that a Section 48 Development Contribution be applied to the grant of permission, should this be issued. In this regard the applicant is satisfied to accept same.

The Report then assesses pedestrian permeability, car parking requirements and bicycle parking facilities. It then notes the following in relation to taking in charge;

“The applicant intends to relocate the existing stone boundary on the northern side of the R835. This will leave a space between the existing footpath and the new boundary wall. The existing footpath is narrow in some locations; this should be widened to 2.0m where necessary. There are existing road signs and utilities that will need to be relocated. The nature of the new public area has not been determined. It is unclear when the works will begin on the new junction and what the area will look like in the interim. This area should be offered to SDCC in a taking in charge process and constructed to a taking in charge standard.”

In this regard, the project engineer, EGIS Consulting, confirm that the area will be constructed to an appropriate agreed finish compliant with SDCC TIC requirements.

The Report then assess construction related impacts noted in the submitted EIAR and concludes that the proposed development will not result in significant adverse air quality or health impacts.

The Report then assesses the submitted traffic impact assessment and associated modelling, as well as the impact on junction capacity and mitigation. This appears to be acceptable within

the Report in terms of methodology and assumptions applied. The Report then assesses the construction management plan, which also appears to be acceptable.

12.0 APPENDIX 1D: PARKS AND PUBLIC REALM

The Report from Parks and Public Realm assess the proposed development and how this will integrate into the surrounding landscape and public realm network.

The Report recommends conditions to be applied at the outset. In this regard the applicant is satisfied to comply with these, save for the request to remove the proposed building from both the woodland (c. 959 sq m of building) and building within the pNHA (c. 181 sq m of building and buffer area).

We note the on-the-ground reality of the lands affected, which have been included within the pNHA mapping despite comprising an existing access road with associated lighting infrastructure, as well as cherry laurel infestation, as noted above.



Figure 12.5 – Existing road and lighting present within the pNHA boundary to the east of the woodland habitat
[Source: JBA, 2026]

In addition, the 5 no. trees are identified for removal in this area. Having regard to the existing condition and limited ecological functionality of these features, the rationale for their inclusion within the mapped pNHA area is not readily apparent and warrants careful consideration in the assessment of potential impacts.

This limited intervention is more than offset by a comprehensive landscape and ecological enhancement strategy which includes the planting of approximately 510 new standard and multi-stem trees, 1,980 native tree whips and 1,435 sq.m of native hedgerow planting, together with woodland enrichment measures and the removal of invasive Cherry Laurel. Accordingly, while 47 trees are proposed for removal across the wider site, the development will deliver a significant net gain in native planting, habitat diversity, ecological connectivity and overall landscape quality. Furthermore, having regard to the existing condition of certain areas within the mapped pNHA, including sections dominated by invasive species and exhibiting limited ecological functionality, the proposed works will actively improve the long-term ecological value and resilience of the site through habitat restoration, management and enhancement measures.

The Report then requests an arboricultural impact assessment. This was undertaken to inform the submitted landscape design, prepared by Arborcare Ltd. This is referenced extensively in the submitted EIAR.

The Report then notes;

“We would like to see a detailed GI, natural SuDS Plan and a detailed planting plan for the site. Underground attenuation is not accepted by SDCC. Stormwater will need to be attenuated using natural suDS measures. The applicant shall submit a drainage scheme which complies with the requirements of the SDCC SuDS Design Guide and with relevant policies in the CDP 2022-2028. Implementing natural SuDS will help mitigate the impact of this development in the landscape.”

As noted elsewhere in this Report, information on SuDS strategies is detailed within the Water Services Report and the Proposed SuDS Devices Layout drawing 22203-JBB-00-XX-DR-C-01402, prepared by Egis. A SuDS Treatment Train Schematic is included in this drawing.

While considerable above ground natural sustainable measures have been proposed, the volume of storm water storage required to avoid flooding necessitates the utilisation of sub-surface attenuation. In addition, storm water run off from vehicle areas, will allow for interception and natural cleaning of run off to improve the quality of water being discharged to the surface water system. In addition, it is noted that SDCC’s preference is to implement natural solutions where possible but it would be inaccurate to suggest that underground attenuation is not accepted by SDCC. Rather, the SDCC SuDS Design Guide makes specific reference to properly designed Underground Storage as part of a SuDS Management Train.

The Report then states;

“This plan should set what protection / mitigation measures will be put in place in order to ensure the protection of the riparian corridor, woodland and to ensure that the Liffey Valley SAAO and Liffey Valley pNHA are not impacted during the construction phase.”

This information was submitted and was included in Chapter 4 of the EIAR, prepared by Egis. The Chapter outlines both construction and operational phase mitigation measures for the Liffey Valley pNHA, including additional ecological surveys and monitoring of sensitive ecological receptors, such as woodland flora, Badger, Bat roost assessment, activity, and emergence, and breeding bird nest check surveys.



Additionally, the Chapter outlines the monitoring and removal of invasives species from the pNHA, the creation and subsequent management of new woodland habitat to the east using translocated topsoil from the encroached woodland area, pollution spill prevention and response measures, and the erection of hoarding along the boundary of the retained woodland. These measures will minimise potential construction phase impacts to the pNHA woodland and downstream riparian corridor/habitats, as well as provide compensatory measures for the loss of woodland from the pNHA. While the newly created woodland will fall outside the pNHA boundary, it will be connected to the pNHA by the existing woodland present on site, helping to increase the overall woodland cover present within the site. Furthermore, the removal and management of invasive species present within the pNHA, notably Cherry Laurel, will improve the existing quality of the pNHA woodland and increase the suitability of the area for native species.

The Construction Management Plan submitted states that Sediment traps, silt fences, or settlement tanks will be used to treat surface water runoff before discharge. This will be detailed further within the contractor's Construction Management Plan

The Report then states;

"This plan should be a site-specific document which details the immediate and long-term commitments to manage the planting, protection and enhancement of biodiversity in and around development site."

As noted elsewhere in this Report, this information was submitted and was included in the Landscape Masterplan Report, prepared by DFLA (Section 6.0)



Figure 12.1 – Image of Landscape Plan Proposals. [Source: DFLA, 2026]

As noted in the masterplan document, the proposed development incorporates a comprehensive Landscape and Ecological Management Strategy designed to protect, enhance and strengthen the ecological value of the site while delivering a nationally important healthcare facility. The strategy places particular emphasis on the long-term management and enhancement of the pNHA woodland corridor between the proposed hospital and St. Edmundsbury House, recognising its ecological significance and contribution to the character of the site.

Key measures include the protection and enhancement of existing woodland areas through long-term management, enrichment planting and the removal of invasive species, including Cherry Laurel.

The landscape proposals provide for substantial biodiversity gains through the planting of approximately 510 new standard and multi-stem trees, 1,980 native tree whips and approximately 1,435 sq.m of native hedgerow planting. While 47 no. trees are required to be removed across the site, 5 no. of which are to be felled in the pNHA, to facilitate development, this is significantly outweighed by the proposed replacement and additional planting, which will increase habitat diversity and landscape quality across the site.

The scheme further incorporates a range of biodiversity enhancement measures, including the establishment of new native woodland, species-rich meadow grassland, native hedgerows, wetland habitats and SuDS features. A new pond and wetland area is proposed in the north-eastern portion of the site, providing valuable habitat for birds, bats, amphibians and invertebrates, while contributing to the site's sustainable drainage strategy.

Ecological enhancement measures also include the provision of bat boxes and bird nesting boxes throughout the site, as advised by the project ecologist. In addition, the existing seedbank present within areas of higher-quality species-rich grassland currently will be utilised to create the green roofs, ensuring the retention of the existing seed bank and minimising the loss of foraging resources for bats, birds, and terrestrial invertebrates.

During the pre-enabling works and construction phase, an Ecological Clerk of Works will oversee implementation of ecological protection measures, while tree protection fencing and exclusion zones will safeguard retained trees, root protection areas and sensitive ecological habitats and the applicant is satisfied to accept a condition requiring this.

Collectively, these measures demonstrate that the proposed development has been designed not only to minimise impacts on existing ecological resources but also to secure long-term biodiversity enhancement through habitat creation, woodland restoration, invasive species control and the establishment of a robust landscape management regime. The proposed works will result in a substantial improvement over the existing baseline condition of the site and support the delivery of measurable ecological and landscape benefits over the lifetime of the development.

13.0 APPENDIX 1E: WATER SERVICES

The Report from Water Services assess the proposed development and how this will integrate into the surrounding water services network. This Report notes at the outset;

“Surface water shall be attenuated using above ground SuDS system (Sustainable Drainage system). The proposed Underground attenuation (Stormtech attenuation) are not SuDS system and are not permitted. SuDS system shall be designed as per South Dublin County Council Sustainable Drainage Explanatory Design and Evaluation Guide 2022 (Suds Guide) available online at SDCC Sustainable Drainage Systems. Submit a drawing in plan and cross sectional view to show how and where surface water will be attenuated.”

As noted elsewhere in this Report, rationale for SuDS and attenuation design was included in the Water Services Report, prepared by Egis and in the responses above. The SDCC SuDS Design Guide makes specific reference to properly designed Underground Storage as part of a SuDS Management Train. Proposed SuDS Devices Layout drawing 22203-JBB-00-XX-DR-C-01402 details the sustainable drainage elements along with sub-surface attenuation storage.

The Report then requests surface water attenuation calculations. This was provided in the documentation prepared by Egis and in this regard we can confirm these were included within the water services report and are attached included in appendices c and d for convenience.

The Report then requests the maximum surface water discharge from the site shall be limited to 16.08 litres/sec instead of proposed 25.3 litres/sec and requests we submit a drawing to show maximum surface water discharge from the site in litres/sec at the discharge point to public surface water sewer.

The Report then notes in sections 1.4, 1.5 and 1.6 requirements for suds details, conveyance of surface water arrangements and a buffer requirement with the River Liffey.

No objections are noted in relation to flood risk.

14.0 APPENDIX 1F: HSE ENVIRONMENTAL HEALTH OFFICER

No objections are noted from the HSE Environmental Health Officer. Conditions are recommended in relation to construction management. These have been reviewed by Egis Consulting and we can confirm these are acceptable.

15.0 APPENDIX 1G: PUBLIC LIGHTING DESIGN

The Report notes that the public lighting department could not access public lighting design information. A response to this is already outlined in section 7.7.1 of this Response. Public lighting details were indeed submitted and assessed by several design team members including landscape architecture and the project ecologist in advance of lodgement.

16.0 APPENDIX 1H: WASTE MANAGEMENT

No objections are noted in relation to waste management.

17.0 APPENDIX 2: MEMBERS RECOMMENDATIONS AND THE MEETING ADMINISTRATORS RECORD OF THE MEMBERS VIEWS ATTACHED TO THE CHIEF EXECUTIVES REPORT FOLLOWING THE COUNCIL MEETING OF 13TH JULY 2026

At their meeting held 13th July, 2026, the elected members SDCC considered the CE Report the proposed development. A discussion was held with input from Councillors J Tuffy, C Brady, D Loftus, E Murphy and L O'Toole.

We are disappointed that those elected members who attended both the public consultation event and the subsequent briefing for elected representatives do not appear to have contributed to this discussion. We are equally concerned that a number of the comments received from the elected members referenced above appear to reflect views expressed by individuals who did not attend the briefing session convened by the applicant in good faith prior to the lodgement of the application, as outlined in the EIAR.

The purpose of this engagement was to provide a clear overview of the strategic nature of the proposed development, the planning rationale underpinning it, and the wider public benefits

that will accrue, including benefits for residents within the constituencies represented by the elected members concerned. In this context, it is regrettable that the information presented during these engagement events does not appear to have informed the representations now being advanced.

In this regard, it is noted that St. Patrick's Mental Health Services already provides a range of community-based mental health services to members of the wider community. The proposed development seeks to build upon and support this established role through the provision of publicly accessible spaces, including reception and café facilities in the proposed scheme, which can facilitate non-clinical mental health and wellbeing initiatives in the community.

Facilitation of this use in these spaces reflects the evolving approach to mental healthcare provision, which increasingly emphasises prevention, early intervention, community engagement and the promotion of positive mental wellbeing.

While the detailed operation, management and programming of these community mental health services will evolve over time in response to local needs and service demands, the Applicant is committed to ensuring that the spaces are available to support appropriate community-focused activities. Detailed arrangements relating to the management, scheduling, availability and use of these facilities can be agreed through an Operational Management Plan, or alternatively secured by way of an appropriately worded planning condition requiring confirmation of operational details prior to commencement or occupation of the development.

Accordingly, the Applicant submits that the proposed development will provide significant community benefit beyond its core healthcare function and will contribute positively to the delivery of integrated, community-based mental health and wellbeing services within the area.

Again, the applicant is satisfied to accept these recommendations, save again for the recommendation that the scheme be redesigned to remove accommodation proposed in the woodland and pNHA.

The report notes that a part of the wall is to be removed and that this be reconsidered, notwithstanding the explicit assessment of the SDCC conservation officer and her acceptance that this is acceptable in principle.

They then request that a permanent protected woodland buffer be established along the pNHA boundary, the extent of which shall be approved by ecological and arborist assessments. In this regard, the project environmental specialist, JBA Consulting, notes sub-section 4.6.2.2. of the Biodiversity Chapter of the EIAR includes the erection of 2.4m high hoarding along the boundary of the retained woodland sections, including around the extent of the woodland encroachment area. This will minimise construction phase impacts and will be present for the duration of the pre-enabling works and construction phase. During operation, the woodland will be permanently fenced off from the public and managed to prevent any encroachment of invasive species into this habitat.

We can also confirm that no construction compound or haul roads are to be located in this area.

The resolution also requests;



“Prior to commencement of development, an updated Transport Assessment shall assess the cumulative transport impacts of the proposed development together with already committed, permitted, and planned development within the wider Lucan, Adamstown and Clonburris area. Where material cumulative impacts are identified beyond those addressed in the Chief Executive’s Report, appropriate additional mitigation measures shall be agreed with the Planning Authority and all the relevant transport authorities and implemented as part of the development.”

We confirm that a traffic and transport assessment was provided and will be updated prior to commencement.

The resolution then notes;

“The Construction Phasing Programme and Construction Traffic Management Plan shall, insofar as reasonably practicable, programme the most traffic-intensive construction activities outside school terms and avoid Heavy Goods Vehicle movements during school opening and closing times at the five schools closest to the site. A dedicated Community Liaison Officer shall be appointed before development commences and retained throughout the construction period, to provide a single, accessible point of contact for residents, schools and local stakeholders, issue advance notification of significant construction activities and traffic changes and maintain a record of complaints and corrective actions for review by Planning Authority.”

We confirm that such a plan will be implemented in collaboration between the council, design team and contractor with full input from the hospital and all relevant stakeholders and that a dedicated Community Liaison Officer will be appointed to oversee same and provide an accessible single point of contact.

18.0 CONCLUSION

Having reviewed the South Dublin County Council (SDCC) Report in respect of the application, Tom Phillips + Associates, on behalf of the Applicant, has considered the matters raised and provides commentary, where considered appropriate.

It is respectfully submitted that the issues identified do not, in the main, give rise to concerns that would materially alter the planning assessment of the proposed development, undermine the conclusions reached within the application documentation, or warrant the submission of a request for further information. This position appears to be broadly reflected in the overall assessment.

The principal exception relates to the recommendation that the proposal be redesigned to eliminate any encroachment into the woodland and pNHA-designated area. For the detailed reasons set out above in this Response, such an approach is considered neither reasonable nor justified in the circumstances of this case. Furthermore, requiring a redesign of the proposal on this basis would jeopardise the delivery of a critically important piece of national healthcare infrastructure for which there is an established and urgent need.

This recommendation is particularly disappointing in light of the extensive and proactive engagement undertaken with SDCC throughout the design development process, including consultation with both Council members and relevant Council departments. In this regard, we again draw attention to the letter of support issued by SDCC to the Applicant in February 2025, appended accordingly. Notably, the proposed design has remained materially unchanged since that time, and it is therefore difficult to reconcile the current position with the Council's earlier support for the scheme.

In these circumstances, it is submitted that the proposed development has been comprehensively assessed, that its strategic and public benefits are clear, and that no substantive planning basis has been identified which would justify a fundamental redesign of the scheme. The planning application, together with the accompanying Environmental Impact Assessment Report, AA screening and supporting technical documentation, provides a comprehensive and robust basis upon which An Coimisiún Pleanála can complete its assessment of the proposed Strategic Infrastructure Development.

We also strongly refute any suggestion that the application documentation submitted was not comprehensive. In particular, any criticism of the Environmental Impact Assessment Report (EIAR) is considered unfounded, having regard to the extensive body of work undertaken in support of its preparation over a number of years.

The EIAR was informed by detailed baseline studies, specialist environmental assessments, and comprehensive field surveys carried out across multiple disciplines and seasonal periods, as appropriate. The assessment process involved the collection and analysis of a substantial volume of environmental data to ensure that the likely significant effects of the proposed development were robustly identified, assessed, and transparently reported.

It is therefore submitted that the EIAR, together with the broader suite of application documentation, provides a comprehensive and proportionate assessment of the proposed development and fully satisfies the relevant statutory and regulatory requirements.

The documentation submitted provides a sound and reliable basis upon which the competent authority can undertake its assessment of the application, and there is no evidential basis to suggest that the information provided is deficient or inadequate in any material respect.

The provision of a mental health facility at this location represents an important and much-needed investment in healthcare infrastructure. The proposal relates to the expansion of an existing, established operation and will contribute to addressing the growing demand for mental health services, both nationally and within the region, where access to appropriate treatment and support facilities remains a significant concern. In this context, the development will deliver a clear social and community benefit through the enhancement of essential healthcare services.

Having regard to the significant need for such facilities, the established nature of the use on the site, and the sensitive and comprehensive manner in which the proposed development has been designed, it is respectfully submitted that the application merits favourable consideration by An Coimisiún Pleanála.

Notwithstanding the above, should An Coimisiún Pleanála consider that any further clarification or additional information would assist its assessment, the Applicant would be pleased to provide such information in a timely manner. If you have any queries in relation to any aspect of this letter, please do not hesitate to contact me.

Yours Sincerely,



Órla Casey
Associate
Tom Phillips + Associates



Appendix A – Letter of Support From SDCC A/Director Land Use Transportation and Planning

Connecting You to



Garry Flood,
Egis
Energy and Sustainable Cities
Director Structures Ireland

Date: 12/02/2025

Letter of Comfort - Proposed Strategic Infrastructure Development application St. Patrick's Hospital, Lucan

Dear Mr. Flood,

SDCC wish to inform the client of the proposed St. Patrick's hospital development that it is broadly supportive of the intended planning application subject to the several additional planning conditions outlined below being attached to any decision on planning permission.

Extensive discussions have taken place between South Dublin County Council and the applicant to resolve the traffic congestion concerns related to the proposed planning application.

The existing Lucan Road /Chapel Hill Road junction is overcapacity at peak travel times.

While it is accepted that much of the congestion is existing background traffic, the Council remained concerned about adding additional traffic to the overloaded junction without upgrading the junction to allow the proposed development to take place.

Therefore, the Council proposes that the applicant contribute a proportion of the costs of the junction upgrade.

Additional Roads and Traffic Conditions:

1. The developer shall pay a special contribution to the planning authority in respect of specific exceptional public infrastructure costs for facilities that will benefit this development within the area of the planning authority, that is provided, or intended to be provided by or on behalf of the authority, in accordance with Section 48 (2) c of the Planning and Development Acts 2000 (as amended).
Accordingly, the developer shall pay a special contribution of €150,000 to South Dublin County Council as part of the financial cost required to install a fully signalised junction at the Lucan Road / Chapel Hill Road junction.



2. South Dublin County Council shall build the signalised junction at the Lucan Road /Chapel Hill junction within an agreed timeframe.
3. The applicant shall sell the required additional land to South Dublin County Council necessary to build the fully signalised junction. The applicants engineering consultants (Egis), have produced a drawing outlining the setback required for the proposed signalised junction with cycle and pedestrian linkages included. The value of the land ceded to the Council shall be taken off the €150,000 contribution. The value of the land ceded will be calculated by an independent chartered land valuer.
4. The applicant shall, as part of their works, demolish part of the existing stone boundary wall and rebuild it set back sufficiently, to allow the building of the signalised junction.

SDCC would appreciate an acknowledgement of this letter and confirmation that the client is happy with the proposed additional conditions to be applied to the forthcoming SID application.

Yours sincerely,



Date: 14/02/2025

Michael McAdam
A/Director Land Use Transportation and Planning
South Dublin County Council
County Hall
Tallaght



Appendix B – Architectural Response to SDCC Report, prepared by TOT Architects

**SDCC Planning Report Response
St Edmundsbury – Strategic Infrastructure Development (SID)
At Lucan, Co. Dublin.**

Prepared for:

The Governors of St Patricks Mental Health Services,
James St,
Dublin 8,
D03 K7YW.

Prepared By:

TOT Architects,
49 Upper Mount St,
Dublin 2,
D03 FR83.

The following responds to SDCC's concerns regarding the positioning of the Occupational Therapy Hub (OTH) on a section of pNHA, its rational, relationship with the adjacent woodland, and the character of the area. A defining feature of the proposed development is an emphasis on the overall landscape setting and its biophilic and restorative qualities, rather than on isolated natural features. This is achieved through a consistent and integrated design approach, supported by landscape, ecological, environmental and conservation measures delivering a measurable Green Space Factor gain compared with the existing condition, and which are sensitively designed as a contemporary repurposing of an historic setting. Furthermore, the area that the OTH occupies is mitigated through the extension and enhancement of woodland habitat to the northeastern edge of the pNHA. This approach will also deliver removal and long-term management of invasive species, which will improve the habitat's ability to support native species and ecological benefits across the wider site through the long-term stewardship of SPMHS. It also creates the possibility of formally expanding the pNHA zoning eastward in time. Please refer to Figures 1 and 2 overleaf for location and area extents of same.

To reiterate, best-practice mental health facility design generally favours a single-storey approach where site constraints permit. The principal benefits of this approach typically include:

Domestic-Scale Environment: Single-storey, horizontally arranged accommodation can avoid the institutional character often associated with larger multi-storey buildings, minimising issues of overlooking and helping to create a more homelike setting that supports dignity, comfort and recovery. This concept runs throughout the proposed hospital design.

Connection to Nature and Natural Light: A single-storey design enables direct access from many internal spaces to secure courtyards and therapeutic gardens, maximising exposure to natural light, fresh air and opportunities for connection with the surrounding landscape.

Reduced Anxiety and Stress: Minimising reliance on lifts and stairwells can reduce environmental complexity and potential sensory overload for service users experiencing acute mental distress.

Observation and Safety: Single-level layouts can facilitate improved visibility of circulation routes and communal spaces that support efficient staff supervision, thus reducing the operational challenges associated with managing multiple floors.

Universal Accessibility: Level-access circulation removes many physical barriers and fall risks, ensuring activity rooms, treatment areas and communal spaces are readily accessible to all users.

Simplified Emergency Evacuation: Ground-floor accommodation can support more straightforward progressive horizontal evacuation procedures, particularly for individuals with limited mobility or those experiencing significant psychological distress.

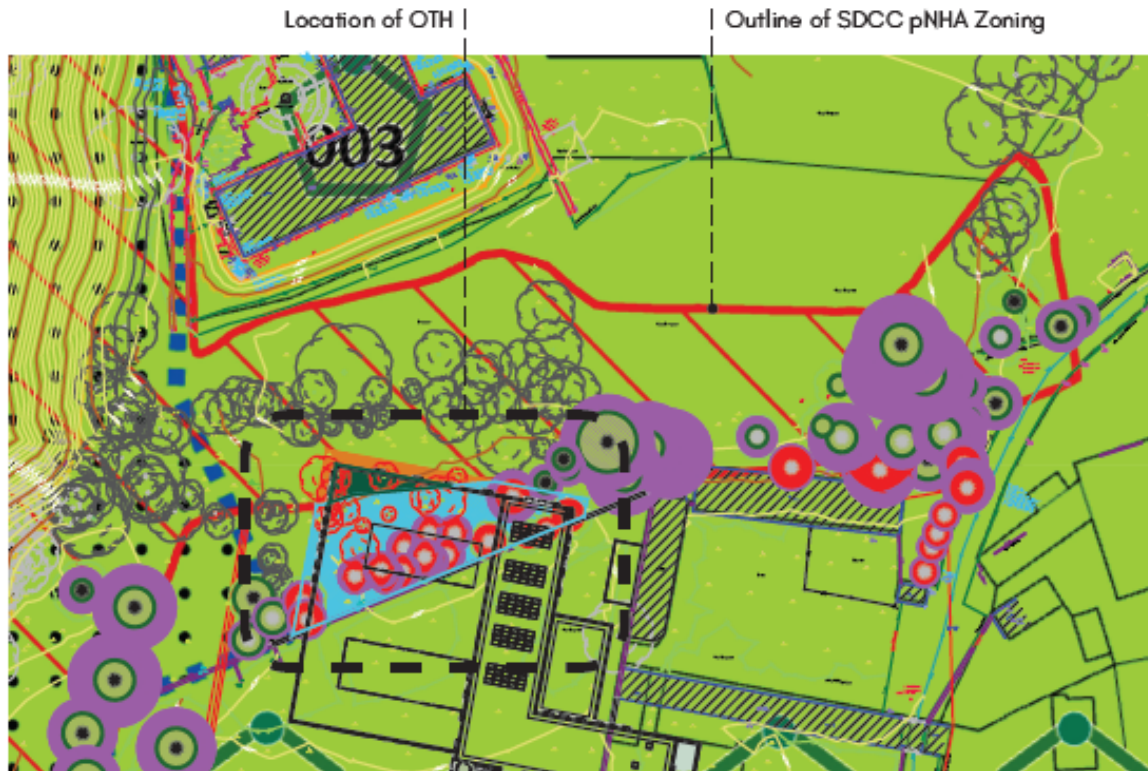


Fig 1. Overlay of Proposed Hospital OTH & Tree Survey onto SDCC Development Plan (Map 1) Extract

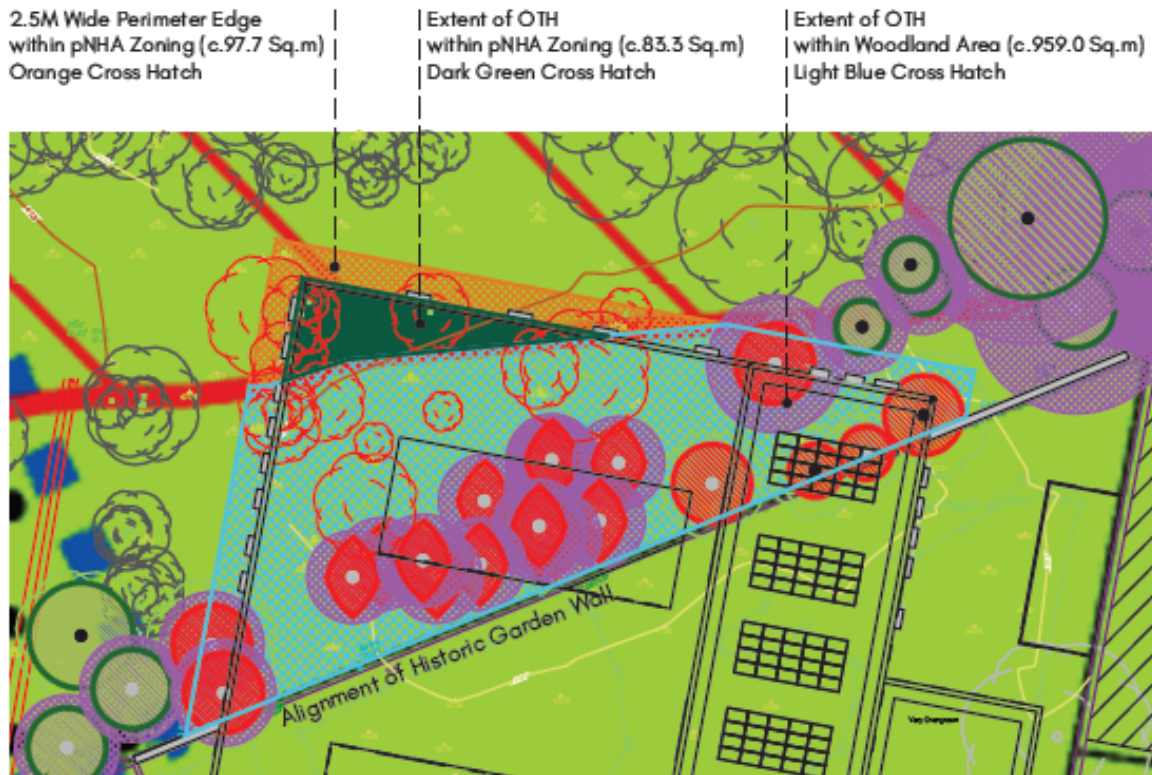


Fig 2. Overlay of OTH Footprint onto Woodland & pNHA Zoning.

Early design stage responses to Saint Edmundsbury presented not only conservation and ecological challenges but also highlighted constraints on the viability of a wholly single-storey development. Consequently, the design process has prioritised the identification of core hospital functions that must be located at ground floor level, alongside those that could be accommodated at first floor level without adversely affecting the hospital's operation. This approach also balances operational requirements with site-specific constraints, such as building height and visual impact considerations. It also aims to avoid replicating the operational complexities experienced within the SPMHS James' Street facility, which originated from its historical multi-storey context, within a tight urban setting and decades of unstructured ad hoc expansion. Further, in an era where mental health design was not considered beyond that of a general hospital environment with shared ward arrangements, the current and necessary standard provides for single bedroom / en-suite arrangements, thus requiring more space provision.

The resulting design comprises of seven wards of single bed en-suite provision, three of which are located at first floor level. While locating wards at first floor level is not ideal from a best practice perspective, these upper floor wards (Stella, Kilroot and Temple) are dedicated for general psychiatric and addiction inpatient care accommodating service users assessed as; presenting a lower risk to themselves, other patients and staff. As a result, they are generally permitted access to the hospital's shared spaces, secure upper courtyards and therapeutic gardens et al. It is also noted that two of the first-floor wards adopt a dogleg central-corridor arrangement. This is in response to mitigate building mass, visual impact and overlooking onto more sensitive ward areas and hospital functions located at ground floor level, and to maintain functional courtyard and lightwell spaces throughout. While a central corridor configuration is not uncommon, it departs from current best-practice ward design principles, which generally favour courtyard or circular layouts that provide for improved access to natural daylight, views of the sky and surrounding landscape, greater flexibility in ward operation (including more flexible swing-bed arrangements in response to a changing cohort or clinical demand), and stronger sense of openness. They also create additional breakout spaces and opportunities for personal reflection outside of bedroom and communal living areas by way of window seat arrangements, most pertinent in secure ward environments.

While the ground floor accommodates key hospital services including the main entrance, reception, admissions, canteen, kitchens, housekeeping facilities, therapy gardens, as well as repurposed historic farm structures, the overall building arrangement is primarily driven by the configuration of specialist ward areas and essential supporting facilities such as the OTH which is clinically aligned with ward functions. These requirements establish the relationships between departments and inform the public, private and secure zoning strategy. With exception of inpatient accommodation and hospital management functions located on the first floor, the ground floor serves as the principal hub of daily activity, supporting a wide range of interactions among inpatients, outpatients, staff, visitors and education programmes.



Fig 3: Existing Bell Tower Feature.



Fig 4: Bell Tower Incorporated into Public Entrance Reception Interior.

A breakdown and general description of the ground floor ward requirements is identified as follows:

Special Care Unit: (Dean Swift Ward) located to south of site.

Patient profile:

- Individuals experiencing acute mental health crises
- High levels of distress, disorientation, or risk behaviours
- Requirement for intensive observation and rapid clinical response

Spatial requirements:

- Immediate access to secure outdoor space for de-escalation
- Clear, controlled circulation for staff supervision
- Dedicated and discrete external access to the south of site for admissions and emergency transfers or tribunal hearings.

Note: Separate access is essential to allow ambulance and clinical transfers to occur safely and discreetly, without passing through shared hospital areas.

Age Care Unit: (Vanessa Ward) located to the southwest, front of site.

Patient profile:

- Residents with age-related mental health conditions
- Reduced mobility and reliance on assistive devices
- Cognitive impairment, including dementia

Spatial requirements:

- Step-free access throughout
- Simple, legible layouts to support orientation
- Direct access to outdoor space for physical and cognitive wellbeing

Note: Located nearest to St Andrews N.S., evidence-based design suggests Junior school environments naturally trigger autobiographical memory recall in older adults through the sounds of outdoor play, which helps reduce the agitation and anxiety frequently associated with dementia and associated cognitive conditions.

General Adult Unit (Delaney Ward) Located to centre west of site.

Patient profile:

- Adults with a broad range of mental health conditions, can also demonstrate a higher acuity care requirement.
- Generally mobile but benefiting from structured secure environments.
- Engaged in recovery-oriented care.

Spatial requirements:

- Open ward model supporting autonomy and supervised movement.
- Direct access to secure courtyards and outdoor spaces essential.
- Clear and legible internal organisation (circular arrangement)

Note: Direct access to secure outdoor space is integral to daily routine and therapeutic engagement. Lesser acute ward located at first floor, follows a matching footprint.

Eating Disorder Unit: (Clara Ward) located to north of site.

Patient profile:

- Individuals undergoing structured, multidisciplinary treatment
- Requiring carefully managed daily routines
- Benefiting from controlled and supportive environments

Spatial requirements:

- Direct access to a dedicated courtyard
- Space for therapeutic activities such as gardening and food-growing
- Controlled and supervised movement within a calm setting.

Note: Ability to step or climb can be very limited / exhausting. Ground floor positioning enables therapeutic use of outdoor space and appropriate supervision within a highly sensitive environment.



Fig 5: Existing Derelict Historic Coach House Building.



Fig 6: Repurposed Coach House into Consultants Building & Café.

The OTH provides a critical function within the proposed hospital environment and is sited in such a manner that allows service users to visually immerse with the pNHA in no less a manner than that of a member of the public experiencing the proposed enhanced environs of St Edmundsbury. In considering the siting of the OTH within the proposed development, it is important to understand its role as a key therapeutic resource that supports both on-ward and in particular, off-ward recovery programmes. The OTH is used daily by both inpatient and outpatient service users and therefore requires a location that supports accessibility, engagement, and therapeutic benefit. Located at the northern end of the main hospital campus, the OTH's position provides several strategic and therapeutic benefits:

- The primary function of the Occupational Therapy Hub is to restore daily functioning, develop practical coping strategies, and promote recovery through meaningful engagement in every day, and creative activities.
- The OTH provides a welcoming, therapeutic, and safe environment that is intentionally distinct from the more clinical inpatient ward setting, supporting a sense of normality and recovery.
- Its location encourages movement and activity along the hospital's main street, promoting social interaction and engagement with key hospital amenities such as the shop, canteen, public courtyards, and exhibition spaces. This journey to and from the OTH forms part of the therapeutic experience, encouraging participation in everyday social environments.
- As the OTH serves both inpatient and outpatient service users, its location away from inpatient ward areas, apart from Clara, which is designed as a self-contained secure unit, is important. This positioning allows convenient access while minimising disruption to ward operations and supporting the efficient management of appointments and daily activities.
- The SPMHS model of care places significant emphasis on art and art therapy as components of recovery and wellbeing. This commitment is reflected in the permanent display of service user and selected artists' work within the dedicated exhibition space along the hospital street, and in the inclusion of purpose-designed art and creative activity spaces within the OTH.



Fig 7: Proposed extension of woodland and public amenity to northeast of pNHA.

In addition to the clinical space requirements and hospital arrangements outlined above, locating the OTH within a mature woodland setting is also considered an important biophilic design opportunity that supports the site's integrated design strategy and strengthens service user visual connectivity. This is particularly significant as occasional, transient, or isolated exposure to nature provide only limited benefits that may not deliver the intended therapeutic outcomes when considering the time spent by service users within an occupational therapy environment. Effective biophilic design requires interventions that are integrated with, and responsive to, the wider landscape setting. In this context, locating dedicated therapy spaces within a section of the pNHA / woodland creates opportunities for meaningful and sustained engagement between service users, staff, and the natural environment. Such engagement can help reduce stress, improve cognitive function and creativity, enhance overall well-being, and support recovery through the following mechanisms.

- Visual connection with nature (flora & fauna)
- Non-rhythmic sensory stimuli.
- Dynamic and diffuse natural light.
- Connection with natural systems and natural analogues.
- Biomorphic forms and patterns.
- Natural material connections.
- Complexity and order engagement.

The necessary siting of the OTH within a section of the pNHA and woodland area is not viewed as a negative intervention. Notwithstanding clinical benefits, proposed propagation measures (as presented with the application and further highlighted as part of this collective response) are sensitively relocated to an extended area northeast of the pNHA, along with the inclusion of water features and extensive greening throughout the site. The overall width between proposed buildings (OTH and Adolescent Unit) will stand at c.40meters at its narrowest point, increasing rapidly to c.70 meters due to orientation of structures. As the OTH is effectively a single storey construct, the space allocation to the perimeter edge during construction and for future servicing / maintenance requirements can conceivably be reduced to 2.5-meters (Refer to Figures 1 and 2). It is further noted that use of modern methods of construction can significantly reduce the time required and associated distribution on site. Concerns around artificial lighting can be easily and readily managed internally from the OTH by way of integrated blinds and it is noted that hours of use are typically limited up to 5:30 pm. No artificial lighting has or is proposed within the pNHA, nor is any public or staff access proposed or permitted within the pNHA save for occasional maintenance purposes.

In consideration of this response and having regard to the significant need for the proposed facility, the established nature of use on the site, and the sensitive and comprehensive way the proposed development has been designed, it is respectfully submitted that the application merits favourable consideration by An Coimisiun Pleanála.

Yours Sincerely,



Des Smyth,

Director - B.Arch, Prof Dip Arch, Dip Arch Tech, Dip Arb, MRIA



Appendix C - Surface Water Calculations

PROJECT: St Edmundsbury Hospital, Lucan

DESCRIPTION: Preliminary Surface Water Attenuation Volume Calculations
(Overall Development - Discharge Rates)

DATE: 04/06/2024 SHEET 1, 30, 100 Year +20%



Overall Development - Catchments 1 to 4

Sheet 1

Catchment Characteristics

Site Area 7.98 ha
 SAAR 934 mm
 Soil Category 2 SOIL = 0.3
 M5-60 17.4 mm
 M5-2D 57 mm
 r = M5-60 / M5-2d = 0.31

QBAR = 0.00108 (Area^{0.89})(SAAR^{1.17})(Soil^{2.17}) for CA>50 ha

If CA<50 ha, apply it for 50 ha and get value for smaller catchment by linear interpolation (refer page 70, Vol. 2 of GDSDS, RDP).

Let the Area be 50 ha
 Qbar for 50 ha area = 0.1277 m³/s 127.69 l/s
 Qbar for the given area = 0.0204 m³/s 20.38 l/s
 (Overall Development 4.28ha)

For Dublin Region, 1 year factor 0.85 Qvalue 0.0173 m³/s 17.3 l/sec
 30year factor 2.13 0.0434 m³/s 43.4 l/sec
 100 year factor 2.61 0.0532 m³/s 53.19 l/sec

Return Period = 1 yr

Developent Area = 7.98 ha

Impervious Area = 2.856 ha <--(Roof, Road & Footpath)

Rainfall duration hrs	Rainfall depth (R1) mm	(R1)*1.2 mm	Total volume of runoff m ³	Average flow m ³ /s	Permsble Flow m ³ /s	Flow to be stored m ³ /s	Storage Volume m ³
0.25	5.6	6.7	191.92	0.213	0.0173	0.196	176
0.5	7.3	8.8	250.19	0.139	0.0173	0.122	219
1	9.5	11.4	325.58	0.090	0.0173	0.073	263
2	12.3	14.8	421.55	0.059	0.0173	0.041	297
4	16.1	19.3	551.78	0.038	0.0173	0.021	302
6	18.8	22.6	644.31	0.030	0.0173	0.013	270
12	24.5	29.4	839.66	0.019	0.0173	0.002	91
24	32	38.4	1096.70	0.013	0.0173	-0.005	-400
48	38.9	46.7	1333.18	0.008	0.0173	-0.010	-1660
Required Volume = Maxum of storage volume, V1 =							302 m ³

Return Period = 30 yr

Developent Area = 7.98 ha

Impervious Area = 2.856 ha <--(Roof, Road & Footpath)

Rainfall duration hrs	Rainfall depth (R30) mm	(R30-R1)*1.2 mm	Total volume of runoff m ³	Average flow m ³ /s	Permsble Flow m ³ /s	Flow to be stored m ³ /s	Storage Volume m ³
0.25	17.2	13.9	397.56	0.442	0.0261	0.416	374
0.5	21.5	17.0	486.66	0.270	0.0261	0.244	440
1	26.9	20.9	596.33	0.166	0.0261	0.140	502
2	33.7	25.7	733.42	0.102	0.0261	0.076	546
4	42.2	31.3	894.50	0.062	0.0261	0.036	519
6	48.1	35.2	1004.17	0.046	0.0261	0.020	441
12	60.2	42.8	1223.51	0.028	0.0261	0.002	97
24	75.4	52.1	1487.40	0.017	0.0261	-0.009	-766
48	85.1	55.4	1583.37	0.009	0.0261	-0.017	-2924
Required Volume = Maxum of storage volume, V30 =							546 m ³

Return Period = 100 yr

Developent Area = 7.98 ha

Impervious Area = 2.856 ha <--(Roof, Road & Footpath)

Rainfall duration hrs	Rainfall depth (R100) mm	(R100-R30)*1.2 mm	Total volume of runoff m ³	Average flow m ³ /s	Permsble Flow m ³ /s	Flow to be stored m ³ /s	Storage Volume m ³
0.25	24.4	8.6	246.76	0.274	0.0098	0.264	238
0.5	30.2	10.4	298.17	0.166	0.0098	0.156	281
1	37.3	12.5	356.43	0.099	0.0098	0.089	321
2	46.1	14.9	424.97	0.059	0.0098	0.049	355
4	57	17.8	507.23	0.035	0.0098	0.025	366
6	64.6	19.8	565.49	0.026	0.0098	0.016	354
12	79.8	23.5	671.73	0.016	0.0098	0.006	249
24	98.7	28.0	798.54	0.009	0.0098	-0.001	-47
48	108.9	28.6	815.67	0.005	0.0098	-0.005	-875
Required Volume = Maxum of storage volume, V100 =							366 m ³

Total volume = V1 + V30 + V100 = 1214 m³

Long Term Storage Volume (100 year, 6 hour storm event) 366

Total attenuation volume = 1581 m³

PROJECT:

St Edmundsbury Hospital, Lucan

DESCRIPTION:

Peliminary Surface Water Attenuation Volume Calculations
(Catchments 1 to 3 -> Discharge Rates)

DATE:

04/06/2024

SHEET

1, 30, 100 Year +20%



Southern Outfall - Flows Limited to Catchments 1 to 3 Discharge Rate

Sheet 2

Catchment Characteristics

Site Area

7.58 ha

SAAR

934 mm

Soil Category

2

SOIL =

0.3

M5-60

17.4 mm

M5-2D

57 mm

r = M5-60 / M5-2d =

0.31

QBAR = 0.00108 (Area^0.89)(SAAR^1.17)(Soil^2.17) for CA>50 ha

If CA<50 ha, apply it for 50 ha and get value for smaller catchment by linear interpolation (refer page 70, Vol. 2 of GDSDS, RDP).

Let the Area be

50 ha

Qbar for 50 ha area =

0.1277 m3/s

127.69 l/s

Qbar for the given area =

0.0194 m3/s

19.36 l/s

(Overall Development 4.28ha)

For Dublin Region,

1 year factor

0.85

0.0165 m3/s

16.5 l/sec

30year factor

2.13

0.0412 m3/s

41.2 l/sec

100 year factor

2.61

0.0505 m3/s

50.52 l/sec

Return Period =

1 yr

Development Area =

7.58 ha

Impervious Area =

2.656 ha

<--(Roof, Road & Footpath)

Rainfall duration	Rainfall depth (R1)	(R1)*1.2	Total volume of runoff	Average flow	Permsble Flow	Flow to be stored	Storage Volume
hrs	mm	mm	m3	m3/s	m3/s	m3/s	m3
0.25	5.6	6.7	178.48	0.198	0.0165	0.182	164
0.5	7.3	8.8	232.67	0.129	0.0165	0.113	203
1	9.5	11.4	302.78	0.084	0.0165	0.068	244
2	12.3	14.8	392.03	0.054	0.0165	0.038	274
4	16.1	19.3	513.14	0.036	0.0165	0.019	276
6	18.8	22.6	599.19	0.028	0.0165	0.011	244
12	24.5	29.4	780.86	0.018	0.0165	0.002	70
24	32	38.4	1019.90	0.012	0.0165	-0.005	-402
48	38.9	46.7	1239.82	0.007	0.0165	-0.009	-1604
Required Volume = Maxum of storage volume, V1 =							276 m3

Return Period =

30 yr

Development Area =

7.58 ha

Impervious Area =

2.656 ha

<--(Roof, Road & Footpath)

Rainfall duration	Rainfall depth (R30)	(R30-R1)*1.2	Total volume of runoff	Average flow	Permsble Flow	Flow to be stored	Storage Volume
hrs	mm	mm	m3	m3/s	m3/s	m3/s	m3
0.25	17.2	13.9	369.72	0.411	0.0248	0.386	347
0.5	21.5	17.0	452.58	0.251	0.0248	0.227	408
1	26.9	20.9	554.57	0.154	0.0248	0.129	465
2	33.7	25.7	682.06	0.095	0.0248	0.070	504
4	42.2	31.3	831.86	0.058	0.0248	0.033	475
6	48.1	35.2	933.85	0.043	0.0248	0.018	399
12	60.2	42.8	1137.83	0.026	0.0248	0.002	67
24	75.4	52.1	1383.24	0.016	0.0248	-0.009	-758
48	85.1	55.4	1472.49	0.009	0.0248	-0.016	-2809
Required Volume = Maxum of storage volume, V30 =							504 m3

Return Period =

100 yr

Development Area =

7.58 ha

Impervious Area =

2.656 ha

<--(Roof, Road & Footpath)

Rainfall duration	Rainfall depth (R100)	(R100-R30)*1.2	Total volume of runoff	Average flow	Permsble Flow	Flow to be stored	Storage Volume
hrs	mm	mm	m3	m3/s	m3/s	m3/s	m3
0.25	24.4	8.6	229.48	0.255	0.0093	0.246	221
0.5	30.2	10.4	277.29	0.154	0.0093	0.145	261
1	37.3	12.5	331.47	0.092	0.0093	0.083	298
2	46.1	14.9	395.21	0.055	0.0093	0.046	328
4	57	17.8	471.71	0.033	0.0093	0.023	338
6	64.6	19.8	525.89	0.024	0.0093	0.015	325
12	79.8	23.5	624.69	0.014	0.0093	0.005	223
24	98.7	28.0	742.62	0.009	0.0093	-0.001	-60
48	108.9	28.6	758.55	0.004	0.0093	-0.005	-847
Required Volume = Maxum of storage volume, V100 =							338 m3

Total volume = V1 + V30 + V100 =

1118 m3

Long Term Storage Volume (100 year, 6 hour storm event)

338

Total attenuation volume =

1456 m3

PROJECT:

St Edmundsbury Hospital, Lucan

DESCRIPTION:

Peliminary Surface Water Attenuation Volume Calculations
(Catchments 1 & 2 -> Discharge Rates)

DATE:

04/06/2024

SHEET

1, 30, 100 Year +20%



Southern Outfall - Flows Limited to Catchments 1 & 2 Discharge Rate

Sheet 3

Catchment Characteristics

Site Area

3.8 ha

SAAR

934 mm

Soil Category

2

SOIL =

0.3

M5-60

17.4 mm

M5-2D

57 mm

r = M5-60 / M5-2d =

0.31

QBAR = 0.00108 (Area^0.89)(SAAR^1.17)(Soil^2.17) for CA>50 ha

If CA<50 ha, apply it for 50 ha and get value for smaller catchment by linear interpolation (refer page 70, Vol. 2 of GDSDS, RDP).

Let the Area be

50 ha

Qbar for 50 ha area =

0.1277 m3/s

127.69 l/s

Qbar for the given area =

0.0097 m3/s

9.70 l/s

(Overall Development 4.28ha)

For Dublin Region,

1 year factor

0.85

0.0082 m3/s

8.2 l/sec

30year factor

2.13

0.0207 m3/s

20.7 l/sec

100 year factor

2.61

0.0253 m3/s

25.33 l/sec

Return Period =

1 yr

Development Area =

3.8 ha

Impervious Area =

2.656 ha

<--(Roof, Road & Footpath)

Rainfall duration	Rainfall depth (R1)	(R1)*1.2	Total volume of runoff	Average flow	Permsble Flow	Flow to be stored	Storage Volume
hrs	mm	mm	m3	m3/s	m3/s	m3/s	m3
0.25	5.6	6.7	178.48	0.198	0.0082	0.190	171
0.5	7.3	8.8	232.67	0.129	0.0082	0.121	218
1	9.5	11.4	302.78	0.084	0.0082	0.076	273
2	12.3	14.8	392.03	0.054	0.0082	0.046	333
4	16.1	19.3	513.14	0.036	0.0082	0.027	394
6	18.8	22.6	599.19	0.028	0.0082	0.019	421
12	24.5	29.4	780.86	0.018	0.0082	0.010	425
24	32	38.4	1019.90	0.012	0.0082	0.004	307
48	38.9	46.7	1239.82	0.007	0.0082	-0.001	-186

Required Volume = Maxum of storage volume, V1 =

425 m3

Return Period =

30 yr

Development Area =

3.8 ha

Impervious Area =

2.656 ha

<--(Roof, Road & Footpath)

Rainfall duration	Rainfall depth (R30)	(R30-R1)*1.2	Total volume of runoff	Average flow	Permsble Flow	Flow to be stored	Storage Volume
hrs	mm	mm	m3	m3/s	m3/s	m3/s	m3
0.25	17.2	13.9	369.72	0.411	0.0124	0.398	359
0.5	21.5	17.0	452.58	0.251	0.0124	0.239	430
1	26.9	20.9	554.57	0.154	0.0124	0.142	510
2	33.7	25.7	682.06	0.095	0.0124	0.082	593
4	42.2	31.3	831.86	0.058	0.0124	0.045	653
6	48.1	35.2	933.85	0.043	0.0124	0.031	666
12	60.2	42.8	1137.83	0.026	0.0124	0.014	601
24	75.4	52.1	1383.24	0.016	0.0124	0.004	310
48	85.1	55.4	1472.49	0.009	0.0124	-0.004	-674

Required Volume = Maxum of storage volume, V30 =

666 m3

Return Period =

100 yr

Development Area =

3.8 ha

Impervious Area =

2.656 ha

<--(Roof, Road & Footpath)

Rainfall duration	Rainfall depth (R100)	(R100-R30)*1.2	Total volume of runoff	Average flow	Permsble Flow	Flow to be stored	Storage Volume
hrs	mm	mm	m3	m3/s	m3/s	m3/s	m3
0.25	24.4	8.6	229.48	0.255	0.0047	0.250	225
0.5	30.2	10.4	277.29	0.154	0.0047	0.149	269
1	37.3	12.5	331.47	0.092	0.0047	0.087	315
2	46.1	14.9	395.21	0.055	0.0047	0.050	362
4	57	17.8	471.71	0.033	0.0047	0.028	405
6	64.6	19.8	525.89	0.024	0.0047	0.020	425
12	79.8	23.5	624.69	0.014	0.0047	0.010	423
24	98.7	28.0	742.62	0.009	0.0047	0.004	340
48	108.9	28.6	758.55	0.004	0.0047	0.000	-46

Required Volume = Maxum of storage volume, V100 =

425 m3

Total volume = V1 + V30 + V100 =

1515 m3

Long Term Storage Volume (100 year, 6 hour storm event)

425

Total attenuation volume =

1941 m3

PROJECT: St Edmundsbury Hospital, Lucan

DESCRIPTION: Preliminary Surface Water Attenuation Volume Calculations
(Catchment 1)

DATE: 04/06/2024 **SHEET** 1, 30, 100 Year +20%, @ 10.45ls



Southern Outfall - Catchment 1

Sheet 4

Catchment Characteristics

Site Area 1.568 ha
 SAAR 934 mm
 Soil Category 2 SOIL = 0.3
 M5-60 17.4 mm
 M5-2D 57 mm
 r = M5-60 / M5-2d = 0.31

QBAR = 0.00108 (Area*0.89)(SAAR*1.17)(Soil*2.17) for CA>50 ha

If CA<50 ha, apply it for 50 ha and get value for smaller catchment by linear interpolation (refer page 70, Vol. 2 of GDSDS, RDP).

Let the Area be 50 ha
 Qbar for 50 ha area = 0.1277 m3/s 127.69 l/s
 Qbar for the given area = 0.0040 m3/s 4.00 l/s
 (Overall Development 4.28ha)

For Dublin Region, 1 year factor 0.85 Qvalue 0.0034 m3/s 3.4 l/sec
 30year factor 2.13 0.0085 m3/s 8.5 l/sec
 100 year factor 2.61 0.0105 m3/s 10.45 l/sec

Return Period = 1 yr
 Development Area = 1.568 ha
 Impervious Area = 0.838 ha <--(Roof, Road & Footpath)

Rainfall duration hrs	Rainfall depth (R1) mm	(R1)*1.2 mm	Total volume of runoff m3	Average flow m3/s	Permissible Flow m3/s	Flow to be stored m3/s	Storage Volume m3
0.25	5.6	6.7	56.31	0.063	0.0034	0.059	53
0.5	7.3	8.8	73.41	0.041	0.0034	0.037	67
1	9.5	11.4	95.53	0.027	0.0034	0.023	83
2	12.3	14.8	123.69	0.017	0.0034	0.014	99
4	16.1	19.3	161.90	0.011	0.0034	0.008	113
6	18.8	22.6	189.05	0.009	0.0034	0.005	116
12	24.5	29.4	246.37	0.006	0.0034	0.002	99
24	32	38.4	321.79	0.004	0.0034	0.000	28
48	38.9	46.7	391.18	0.002	0.0034	-0.001	-197
Required Volume = Maxum of storage volume, V1 =							116 m3

Return Period = 30 yr
 Development Area = 1.568 ha
 Impervious Area = 0.838 ha <--(Roof, Road & Footpath)

Rainfall duration hrs	Rainfall depth (R30) mm	(R30-R1)*1.2 mm	Total volume of runoff m3	Average flow m3/s	Permissible Flow m3/s	Flow to be stored m3/s	Storage Volume m3
0.25	17.2	13.9	116.65	0.130	0.0051	0.124	112
0.5	21.5	17.0	142.80	0.079	0.0051	0.074	134
1	26.9	20.9	174.97	0.049	0.0051	0.043	157
2	33.7	25.7	215.20	0.030	0.0051	0.025	178
4	42.2	31.3	262.46	0.018	0.0051	0.013	189
6	48.1	35.2	294.64	0.014	0.0051	0.009	184
12	60.2	42.8	359.00	0.008	0.0051	0.003	138
24	75.4	52.1	436.43	0.005	0.0051	0.000	-6
48	85.1	55.4	464.59	0.003	0.0051	-0.002	-421
Required Volume = Maxum of storage volume, V30 =							189 m3

Return Period = 100 yr
 Development Area = 1.568 ha
 Impervious Area = 0.838 ha <--(Roof, Road & Footpath)

Rainfall duration hrs	Rainfall depth (R100) mm	(R100-R30)*1.2 mm	Total volume of runoff m3	Average flow m3/s	Permissible Flow m3/s	Flow to be stored m3/s	Storage Volume m3
0.25	24.4	8.6	72.40	0.080	0.0019	0.079	71
0.5	30.2	10.4	87.49	0.049	0.0019	0.047	84
1	37.3	12.5	104.58	0.029	0.0019	0.027	98
2	46.1	14.9	124.69	0.017	0.0019	0.015	111
4	57	17.8	148.83	0.010	0.0019	0.008	121
6	64.6	19.8	165.92	0.008	0.0019	0.006	124
12	79.8	23.5	197.10	0.005	0.0019	0.003	114
24	98.7	28.0	234.30	0.003	0.0019	0.001	68
48	108.9	28.6	239.33	0.001	0.0019	-0.001	-93
Required Volume = Maxum of storage volume, V100 =							124 m3

Total volume = V1 + V30 + V100 = 429 m3

Long Term Storage Volume (100 year, 6 hour storm event) 124

Total attenuation volume = 553 m3

PROJECT:

St Edmundsbury Hospital, Lucan

DESCRIPTION:

Peliminary Surface Water Attenuation Volume Calculations
(Catchment 2)

DATE:

04/06/2024

SHEET

1, 30, 100 Year +20%, @ 14.86ls



Southern Outfall - Catchment 2

Sheet 5

Catchment Characteristics

Site Area

2.23 ha

SAAR

934 mm

Soil Category

2

SOIL =

0.3

M5-60

17.4 mm

M5-2D

57 mm

r = M5-60 / M5-2d =

0.31

QBAR = 0.00108 (Area^0.89)(SAAR^1.17)(Soil^2.17) for CA>50 ha

If CA<50 ha, apply it for 50 ha and get value for smaller catchment by linear interpolation (refer page 70, Vol. 2 of GDSDS, RDP).

Let the Area be

50 ha

Qbar for 50 ha area =

0.1277 m3/s

127.69 l/s

Qbar for the given area =

0.0057 m3/s

5.70 l/s

(Overall Development 4.28ha)

For Dublin Region,

1 year factor

0.85

0.0048 m3/s

4.8 l/sec

30year factor

2.13

0.0121 m3/s

12.1 l/sec

100 year factor

2.61

0.0149 m3/s

14.86 l/sec

Return Period =

1 yr

Development Area =

2.23 ha

Impervious Area =

1.345 ha

<--(Roof, Road & Footpath)

Rainfall duration	Rainfall depth (R1)	(R1)*1.2	Total volume of runoff	Average flow	Permsble Flow	Flow to be stored	Storage Volume
hrs	mm	mm	m3	m3/s	m3/s	m3/s	m3
0.25	5.6	6.7	90.38	0.100	0.0048	0.096	86
0.5	7.3	8.8	117.82	0.065	0.0048	0.061	109
1	9.5	11.4	153.33	0.043	0.0048	0.038	136
2	12.3	14.8	198.52	0.028	0.0048	0.023	164
4	16.1	19.3	259.85	0.018	0.0048	0.013	190
6	18.8	22.6	303.43	0.014	0.0048	0.009	199
12	24.5	29.4	395.43	0.009	0.0048	0.004	186
24	32	38.4	516.48	0.006	0.0048	0.001	98
48	38.9	46.7	627.85	0.004	0.0048	-0.001	-209

Required Volume = Maxum of storage volume, V1 =

199 m3

Return Period =

30 yr

Development Area =

2.23 ha

Impervious Area =

1.345 ha

<--(Roof, Road & Footpath)

Rainfall duration	Rainfall depth (R30)	(R30-R1)*1.2	Total volume of runoff	Average flow	Permsble Flow	Flow to be stored	Storage Volume
hrs	mm	mm	m3	m3/s	m3/s	m3/s	m3
0.25	17.2	13.9	187.22	0.208	0.0073	0.201	181
0.5	21.5	17.0	229.19	0.127	0.0073	0.120	216
1	26.9	20.9	280.84	0.078	0.0073	0.071	255
2	33.7	25.7	345.40	0.048	0.0073	0.041	293
4	42.2	31.3	421.25	0.029	0.0073	0.022	316
6	48.1	35.2	472.90	0.022	0.0073	0.015	315
12	60.2	42.8	576.20	0.013	0.0073	0.006	261
24	75.4	52.1	700.48	0.008	0.0073	0.001	71
48	85.1	55.4	745.67	0.004	0.0073	-0.003	-514

Required Volume = Maxum of storage volume, V30 =

316 m3

Return Period =

100 yr

Development Area =

2.23 ha

Impervious Area =

1.345 ha

<--(Roof, Road & Footpath)

Rainfall duration	Rainfall depth (R100)	(R100-R30)*1.2	Total volume of runoff	Average flow	Permsble Flow	Flow to be stored	Storage Volume
hrs	mm	mm	m3	m3/s	m3/s	m3/s	m3
0.25	24.4	8.6	116.21	0.129	0.0027	0.126	114
0.5	30.2	10.4	140.42	0.078	0.0027	0.075	135
1	37.3	12.5	167.86	0.047	0.0027	0.044	158
2	46.1	14.9	200.14	0.028	0.0027	0.025	180
4	57	17.8	238.87	0.017	0.0027	0.014	200
6	64.6	19.8	266.31	0.012	0.0027	0.010	207
12	79.8	23.5	316.34	0.007	0.0027	0.005	198
24	98.7	28.0	376.06	0.004	0.0027	0.002	140
48	108.9	28.6	384.13	0.002	0.0027	-0.001	-88

Required Volume = Maxum of storage volume, V100 =

207 m3

Total volume = V1 + V30 + V100 =

722 m3

Long Term Storage Volume (100 year, 6 hour storm event)

207 m3

Total attenuation volume =

930 m3

PROJECT: St Edmundsbury Hospital, Lucan

DESCRIPTION: Preliminary Surface Water Attenuation Volume Calculations
(Catchment 3)

DATE: 04/06/2024 **SHEET** 1, 30, 100 Year +20%, @ 24.58ls



Southern Outfall - Catchment 3

Sheet 6

Catchment Characteristics

Site Area 3.687 ha
 SAAR 934 mm
 Soil Category 2 SOIL = 0.3
 M5-60 17.4 mm
 M5-2D 57 mm
 r = M5-60 / M5-2d = 0.31

QBAR = 0.00108 (Area*0.89)(SAAR*1.17)(Soil*2.17) for CA>50 ha

If CA<50 ha, apply it for 50 ha and get value for smaller catchment by linear interpolation (refer page 70, Vol. 2 of GDSDS, RDP).

Let the Area be 50 ha
 Qbar for 50 ha area = 0.1277 m3/s 127.69 l/s
 Qbar for the given area = 0.0094 m3/s 9.42 l/s
 (Overall Development 4.28ha)

For Dublin Region, 1 year factor 0.85 Qvalue 0.0080 m3/s 8.0 l/sec
 30year factor 2.13 0.0201 m3/s 20.1 l/sec
 100 year factor 2.61 0.0246 m3/s 24.58 l/sec

Return Period = 1 yr
 Development Area = 3.687 ha
 Impervious Area = 0.428 ha <--(Roof, Road & Footpath)

Rainfall duration hrs	Rainfall depth (R1) mm	(R1)*1.2 mm	Total volume of runoff m3	Average flow m3/s	Permsble Flow m3/s	Flow to be stored m3/s	Storage Volume m3
0.25	5.6	6.7	28.77	0.032	0.0080	0.024	22
0.5	7.3	8.8	37.50	0.021	0.0080	0.013	23
1	9.5	11.4	48.80	0.014	0.0080	0.006	20
2	12.3	14.8	63.19	0.009	0.0080	0.001	6
4	16.1	19.3	82.71	0.006	0.0080	-0.002	-33
6	18.8	22.6	96.58	0.004	0.0080	-0.004	-76
12	24.5	29.4	125.86	0.003	0.0080	-0.005	-220
24	32	38.4	164.39	0.002	0.0080	-0.006	-527
48	38.9	46.7	199.84	0.001	0.0080	-0.007	-1183
Required Volume = Maxum of storage volume, V1 =							23 m3

Return Period = 30 yr
 Development Area = 3.687 ha
 Impervious Area = 0.428 ha <--(Roof, Road & Footpath)

Rainfall duration hrs	Rainfall depth (R30) mm	(R30-R1)*1.2 mm	Total volume of runoff m3	Average flow m3/s	Permsble Flow m3/s	Flow to be stored m3/s	Storage Volume m3
0.25	17.2	13.9	59.59	0.066	0.0121	0.054	49
0.5	21.5	17.0	72.95	0.041	0.0121	0.028	51
1	26.9	20.9	89.39	0.025	0.0121	0.013	46
2	33.7	25.7	109.94	0.015	0.0121	0.003	23
4	42.2	31.3	134.08	0.009	0.0121	-0.003	-39
6	48.1	35.2	150.52	0.007	0.0121	-0.005	-110
12	60.2	42.8	183.40	0.004	0.0121	-0.008	-337
24	75.4	52.1	222.95	0.003	0.0121	-0.009	-818
48	85.1	55.4	237.34	0.001	0.0121	-0.011	-1845
Required Volume = Maxum of storage volume, V30 =							51 m3

Return Period = 100 yr
 Development Area = 3.687 ha
 Impervious Area = 0.428 ha <--(Roof, Road & Footpath)

Rainfall duration hrs	Rainfall depth (R100) mm	(R100-R30)*1.2 mm	Total volume of runoff m3	Average flow m3/s	Permsble Flow m3/s	Flow to be stored m3/s	Storage Volume m3
0.25	24.4	8.6	36.99	0.041	0.0045	0.037	33
0.5	30.2	10.4	44.69	0.025	0.0045	0.020	37
1	37.3	12.5	53.43	0.015	0.0045	0.010	37
2	46.1	14.9	63.70	0.009	0.0045	0.004	31
4	57	17.8	76.03	0.005	0.0045	0.001	11
6	64.6	19.8	84.76	0.004	0.0045	-0.001	-13
12	79.8	23.5	100.69	0.002	0.0045	-0.002	-95
24	98.7	28.0	119.70	0.001	0.0045	-0.003	-271
48	108.9	28.6	122.27	0.001	0.0045	-0.004	-659
Required Volume = Maxum of storage volume, V100 =							37 m3

Total volume = V1 + V30 + V100 = 112 m3

Long Term Storage Volume (100 year, 6 hour storm event) 37

Total attenuation volume = 149 m3

PROJECT: St Edmundsbury Hospital, Lucan

DESCRIPTION: Preliminary Surface Water Attenuation Volume Calculations
(Catchment 4)

DATE: 04/06/2024 **SHEET** 1, 30, 100 Year +20%, @ 3.4Is



Northern Outfall - Catchment 4

Sheet 7

Catchment Characteristics

Site Area 0.5104 ha
 SAAR 934 mm
 Soil Category 2 SOIL = 0.3
 M5-60 17.4 mm
 M5-2D 57 mm
 r = M5-60 / M5-2d = 0.31

QBAR = 0.00108 (Area*0.89)(SAAR*1.17)(Soil*2.17) for CA>50 ha

If CA<50 ha, apply it for 50 ha and get value for smaller catchment by linear interpolation (refer page 70, Vol. 2 of GDSDS, RDP).

Let the Area be 50 ha
 Qbar for 50 ha area = 0.1277 m3/s 127.69 l/s
 Qbar for the given area = 0.0013 m3/s 1.30 l/s
 (Overall Development 4.28ha)

For Dublin Region, 1 year factor 0.85 Qvalue 0.0011 m3/s 1.1 l/sec
 30year factor 2.13 0.0028 m3/s 2.8 l/sec
 100 year factor 2.61 0.0034 m3/s 3.40 l/sec

Return Period = 1 yr
 Development Area = 0.5104 ha
 Impervious Area = 0.200 ha <--(Roof, Road & Footpath)

Rainfall duration hrs	Rainfall depth (R1) mm	(R1)*1.2 mm	Total volume of runoff m3	Average flow m3/s	Permissible Flow m3/s	Flow to be stored m3/s	Storage Volume m3
0.25	5.6	6.7	13.44	0.015	0.0011	0.014	12
0.5	7.3	8.8	17.52	0.010	0.0011	0.009	16
1	9.5	11.4	22.80	0.006	0.0011	0.005	19
2	12.3	14.8	29.52	0.004	0.0011	0.003	22
4	16.1	19.3	38.64	0.003	0.0011	0.002	23
6	18.8	22.6	45.12	0.002	0.0011	0.001	21
12	24.5	29.4	58.80	0.001	0.0011	0.000	11
24	32	38.4	76.80	0.001	0.0011	0.000	-19
48	38.9	46.7	93.36	0.001	0.0011	-0.001	-98

Required Volume = Maxum of storage volume, V1 = 23 m3

Return Period = 30 yr
 Development Area = 0.5104 ha
 Impervious Area = 0.200 ha <--(Roof, Road & Footpath)

Rainfall duration hrs	Rainfall depth (R30) mm	(R30-R1)*1.2 mm	Total volume of runoff m3	Average flow m3/s	Permissible Flow m3/s	Flow to be stored m3/s	Storage Volume m3
0.25	17.2	13.9	27.84	0.031	0.0017	0.029	26
0.5	21.5	17.0	34.08	0.019	0.0017	0.017	31
1	26.9	20.9	41.76	0.012	0.0017	0.010	36
2	33.7	25.7	51.36	0.007	0.0017	0.005	39
4	42.2	31.3	62.64	0.004	0.0017	0.003	39
6	48.1	35.2	70.32	0.003	0.0017	0.002	34
12	60.2	42.8	85.68	0.002	0.0017	0.000	14
24	75.4	52.1	104.16	0.001	0.0017	0.000	-40
48	85.1	55.4	110.88	0.001	0.0017	-0.001	-177

Required Volume = Maxum of storage volume, V30 = 39 m3

Return Period = 100 yr
 Development Area = 0.5104 ha
 Impervious Area = 0.200 ha <--(Roof, Road & Footpath)

Rainfall duration hrs	Rainfall depth (R100) mm	(R100-R30)*1.2 mm	Total volume of runoff m3	Average flow m3/s	Permissible Flow m3/s	Flow to be stored m3/s	Storage Volume m3
0.25	24.4	8.6	17.28	0.019	0.0006	0.019	17
0.5	30.2	10.4	20.88	0.012	0.0006	0.011	20
1	37.3	12.5	24.96	0.007	0.0006	0.006	23
2	46.1	14.9	29.76	0.004	0.0006	0.004	25
4	57	17.8	35.52	0.002	0.0006	0.002	27
6	64.6	19.8	39.60	0.002	0.0006	0.001	26
12	79.8	23.5	47.04	0.001	0.0006	0.000	20
24	98.7	28.0	55.92	0.001	0.0006	0.000	2
48	108.9	28.6	57.12	0.000	0.0006	0.000	-51

Required Volume = Maxum of storage volume, V100 = 27 m3

Total volume = V1 + V30 + V100 = 89 m3

Long Term Storage Volume (100 year, 6 hour storm event) 27

Total attenuation volume = 115 m3

PROJECT: Residential Development
DESCRIPTION: Ormond Site, Rathoath Road
 Preliminary Surface Water Attenuation Volume Calculation
 (Catchment 1)
DATE: 04/06/2024 **SHEET** 100 Year +20%, @ 10.45ls



Southern Outfall - Catchment 1

Sheet 8

Catchment Characteristics

Site Area 1.568 ha
 SAAR 934 mm
 Soil Category 2 SOIL = 0.3
 M5-60 17.4 mm
 M5-2D 57 mm
 r = M5-60 / M5-2d = 0.31

Permissible flow = 10.45 l/s

Calculation of attenuation volume for the 100-year return period storm event at 2 l/s

Developent Area = 1.568 ha
 Impervious Area = 0.750 ha

Rainfall duration hrs	Rainfall depth (R100) mm	Including CCF (R100)*1.2 mm	Total volume of runoff m3	Average flow m3/s	Permsble Flow m3/s	Flow to be stored m3/s	Storage Volume m3
0.25	24.4	29.3	219.60	0.244	0.0105	0.234	210
0.5	30.2	36.2	271.80	0.151	0.0105	0.141	253
1	37.3	44.8	335.70	0.093	0.0105	0.083	298
2	46.1	55.3	414.90	0.058	0.0105	0.047	340
4	57	68.4	513.00	0.036	0.0105	0.025	362
6	64.6	77.5	581.40	0.027	0.0105	0.016	356
12	79.8	95.8	718.20	0.017	0.0105	0.006	267
24	98.7	118.4	888.30	0.010	0.0105	0.000	-15
48	108.9	130.7	980.10	0.006	0.0105	-0.005	-826

Required Volume = Maxum of storage volume, V100 = 362 m3

Total attenuation storage required (m3) = 362 m3

PROJECT: Residential Development
Ormond Site, Rathoath Road
DESCRIPTION: Preliminary Surface Water Attenuation Volume Calculation
(Catchment 2)
DATE: 04/06/2024 **SHEET** 100 Year +20%, @ 14.86ls



Southern Outfall - Catchment 2

Sheet 9

Catchment Characteristics

Site Area 2.230 ha
SAAR 934 mm
Soil Category 2 SOIL = 0.3
M5-60 17.4 mm
M5-2D 57 mm
r = M5-60 / M5-2d = 0.31

Permissible flow = 14.86 l/s

Calculation of attenuation volume for the 100-year return period storm event at 2 l/s

Developent Area = 2.230 ha
Impervious Area = 1.157 ha

Rainfall duration hrs	Rainfall depth (R100) mm	Including CCF (R100)*1.2 mm	Total volume of runoff m3	Average flow m3/s	Permsble Flow m3/s	Flow to be stored m3/s	Storage Volume m3
0.25	24.4	29.3	338.77	0.376	0.0149	0.362	325
0.5	30.2	36.2	419.30	0.233	0.0149	0.218	393
1	37.3	44.8	517.87	0.144	0.0149	0.129	464
2	46.1	55.3	640.05	0.089	0.0149	0.074	533
4	57	68.4	791.39	0.055	0.0149	0.040	577
6	64.6	77.5	896.91	0.042	0.0149	0.027	576
12	79.8	95.8	1107.94	0.026	0.0149	0.011	466
24	98.7	118.4	1370.35	0.016	0.0149	0.001	86
48	108.9	130.7	1511.97	0.009	0.0149	-0.006	-1057

Required Volume = Maxum of storage volume, V100 = 577 m3

Total attenuation storage required (m3) = 577 m3

PROJECT: Resiedntial Development
DESCRIPTION: Ormond Site, Rathoath Road
 Preliminary Surface Water Attenuation Volume Calculation
 (Catchment 3)
DATE: 04/06/2024 **SHEET** 100 Year +20%, @ Zero Discharge



Southern Outfall - Catchment 3 (Zero Discharge rate)

Sheet 10

Catchment Characteristics

Site Area 3.687 ha
 SAAR 934 mm
 Soil Category 2 SOIL = 0.3
 M5-60 17.4 mm
 M5-2D 57 mm
 r = M5-60 / M5-2d = 0.31

Permissible flow = 0.00 l/s

Calculation of attenuation volume for the 100-year return period storm event at 2 l/s

Developent Area = 3.687 ha
 Impervious Area = 0.428 ha

Rainfall duration hrs	Rainfall depth (R100) mm	Including CCF (R100)*1.2 mm	Total volume of runoff m3	Average flow m3/s	Permsble Flow m3/s	Flow to be stored m3/s	Storage Volume m3
0.25	24.4	29.3	125.35	0.139	0.0000	0.139	125
0.5	30.2	36.2	155.14	0.086	0.0000	0.086	155
1	37.3	44.8	191.62	0.053	0.0000	0.053	192
2	46.1	55.3	236.82	0.033	0.0000	0.033	237
4	57	68.4	292.82	0.020	0.0000	0.020	293
6	64.6	77.5	331.86	0.015	0.0000	0.015	332
12	79.8	95.8	409.95	0.009	0.0000	0.009	410
24	98.7	118.4	507.04	0.006	0.0000	0.006	507
48	108.9	130.7	559.44	0.003	0.0000	0.003	559
Required Volume = Maxum of storage volume, V100 =							559 m3

Total attenuation storage required (m3) = **559** m3

PROJECT: Residential Development
DESCRIPTION: Ormond Site, Rathoath Road
 Preliminary Surface Water Attenuation Volume Calculation
DATE: 04/06/2024 **SHEET** 100 Year +20%, @ 2.3ls



Northern Outfall - Catchment 4

Sheet 11

Catchment Characteristics

Site Area 0.510 ha
 SAAR 934 mm
 Soil Category 2 SOIL = 0.3
 M5-60 17.4 mm
 M5-2D 57 mm
 r = M5-60 / M5-2d = 0.31

Permissible flow = 2.30 l/s

Calculation of attenuation volume for the 100-year return period storm event at 2 l/s

Developent Area = 0.510 ha
 Impervious Area = 0.200 ha

Rainfall duration hrs	Rainfall depth (R100) mm	Including CCF (R100)*1.2 mm	Total volume of runoff m3	Average flow m3/s	Permsble Flow m3/s	Flow to be stored m3/s	Storage Volume m3
0.25	24.4	29.3	58.56	0.065	0.0023	0.063	56
0.5	30.2	36.2	72.48	0.040	0.0023	0.038	68
1	37.3	44.8	89.52	0.025	0.0023	0.023	81
2	46.1	55.3	110.64	0.015	0.0023	0.013	94
4	57	68.4	136.80	0.010	0.0023	0.007	104
6	64.6	77.5	155.04	0.007	0.0023	0.005	105
12	79.8	95.8	191.52	0.004	0.0023	0.002	92
24	98.7	118.4	236.88	0.003	0.0023	0.000	38
48	108.9	130.7	261.36	0.002	0.0023	-0.001	-136
Required Volume = Maxum of storage volume, V100 =							105 m3

Total attenuation storage required (m3) = **105** m3

PROJECT:	St Edmundsbury Hospital, Lucan		
DESCRIPTION:	Peliminary Permeable Paving Calculations <i>Souther Outfall - Carpark Areas</i>		
DATE:	04/06/2024		
			Sheet 12
Southern Outfall - South Car Park Area			
Permeable Paving Area	908	m ²	
Minimum depth of Proposed Permeable Paving sub-base:	0.30	m	
Void factor:	30%		
Attenuation volume available:	81.7	m ³	
Southern Outfall - Central Car Park Area			
Permeable Paving Area	2234	m ²	
Minimum depth of Proposed Permeable Paving sub-base:	0.30	m	
Void factor:	30%		
Attenuation volume available:	201.1	m ³	
Southern Outfall - North Car Park Area			
Permeable Paving Area	1285	m ²	
Minimum depth of Proposed Permeable Paving sub-base:	0.30	m	
Void factor:	30%		
Attenuation volume available:	115.7	m ³	
Total Volumes			
Total Volume Provided Within Permeable Paving For Carparking	398.4	m ³	
Note: The volume noted above is in addition to the attenuation volumes provided within the development (Stormtech, Wetland, Bio-Retention, Swales etc)			



Appendix D - Micro Drainage Analysis

J.B. Barry & Partners Ltd		Page 1
Classon House Dundrum Business Park Dublin 14	Saint Edmundsbury Hospital 1, 30, 100 YR + 20% @ 25.L/sec (C1, C2 & C3 @ C1/C2 Rate)	
Date 06/06/2024	Designed by SW	
File 22203-JBB-00-XX-MD-C-00901_C1_C...	Checked by SW	
Innovyze	Network 2020.1.3	

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)	100	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												
« - Indicates pipe capacity < flow												
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
S3.000	10.537	0.105	100.3	0.030	5.00	0.0	0.600	o	225	Pipe/Conduit		
S4.000	29.237	0.295	99.1	0.100	5.00	0.0	0.600	o	225	Pipe/Conduit		
S3.001	63.132	0.316	199.8	0.120	0.00	0.0	0.600	o	300	Pipe/Conduit		
S3.002	56.886	0.284	200.3	0.132	0.00	0.0	0.600	o	375	Pipe/Conduit		
S3.003	29.511	0.074	398.8	0.159	0.00	0.0	0.600	o	450	Pipe/Conduit		
S3.004	52.348	0.087	601.7	0.275	0.00	0.0	0.600	o	450	Pipe/Conduit		
S3.005	28.603	0.194	147.4	0.065	0.00	0.0	0.600	o	225	Pipe/Conduit		
S5.000	12.597	0.047	268.0	0.017	5.00	0.0	0.600	o	300	Pipe/Conduit		
S5.001	64.676	0.240	269.5	0.100	0.00	0.0	0.600	o	300	Pipe/Conduit		
S5.002	56.580	0.210	269.4	0.100	0.00	0.0	0.600	o	300	Pipe/Conduit		
S5.003	28.967	0.107	270.7	0.100	0.00	0.0	0.600	o	300	Pipe/Conduit		
S5.004	43.309	0.162	267.3	0.050	0.00	0.0	0.600	o	300	Pipe/Conduit		
S6.000	26.999	0.045	600.0	0.379	5.00	0.0	0.600	o	600	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)	
S3.000	50.00	5.13	45.810	0.030	0.0	0.0	0.0	1.31	51.9	4.1	
S4.000	50.00	5.37	46.000	0.100	0.0	0.0	0.0	1.31	52.2	13.5	
S3.001	50.00	6.32	45.630	0.250	0.0	0.0	0.0	1.11	78.4	33.9	
S3.002	50.00	7.06	45.239	0.382	0.0	0.0	0.0	1.28	141.0	51.7	
S3.003	50.00	7.55	44.880	0.541	0.0	0.0	0.0	1.01	160.9	73.3	
S3.004	50.00	8.61	44.806	0.816	0.0	0.0	0.0	0.82	130.7	110.5	
S3.005	50.00	9.05	44.719	0.881	0.0	0.0	0.0	1.07	42.7«	119.3	
S5.000	50.00	5.22	46.300	0.017	0.0	0.0	0.0	0.96	67.5	2.3	
S5.001	50.00	6.35	46.253	0.117	0.0	0.0	0.0	0.95	67.4	15.8	
S5.002	50.00	7.34	46.013	0.217	0.0	0.0	0.0	0.95	67.4	29.4	
S5.003	50.00	7.85	45.803	0.317	0.0	0.0	0.0	0.95	67.2	42.9	
S5.004	50.00	8.60	45.696	0.367	0.0	0.0	0.0	0.96	67.6	49.7	
S6.000	50.00	5.46	45.280	0.379	0.0	0.0	0.0	0.99	279.0	51.3	

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
S5.005	28.917	0.048	602.4	0.067	0.00	0.0	0.600	o	600	Pipe/Conduit	
S5.006	15.060	0.025	600.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S5.007	9.172	0.015	600.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S5.008	58.554	0.098	597.5	0.527	0.00	0.0	0.600	o	600	Pipe/Conduit	
S5.009	12.449	0.021	600.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S5.010	67.764	0.502	135.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S3.006	2.613	0.015	174.2	0.007	0.00	0.0	0.600	o	225	Pipe/Conduit	
S7.000	18.000	0.050	360.0	0.270	5.00	0.0	0.600	o	375	Pipe/Conduit	
S7.001	30.000	0.083	360.0	0.012	0.00	0.0	0.600	o	375	Pipe/Conduit	
S7.002	46.012	0.077	600.0	0.065	0.00	0.0	0.600	o	600	Pipe/Conduit	
S7.003	23.988	0.040	600.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S7.004	80.000	0.133	600.0	0.021	0.00	0.0	0.600	o	600	Pipe/Conduit	
S7.005	14.085	0.123	114.5	0.059	0.00	0.0	0.600	o	600	Pipe/Conduit	
S7.006	20.109	0.002	10000.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S7.007	20.109	0.002	10000.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S7.008	45.000	0.075	600.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S7.009	11.000	0.018	600.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S7.010	31.118	0.052	600.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S7.011	51.126	0.085	600.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S7.012	57.078	0.095	600.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S7.013	72.143	0.120	600.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S3.007	15.767	0.093	169.5	0.000	0.00	0.0	0.600	o	300	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)
S5.005	50.00	9.09	45.234	0.813	0.0	0.0	0.0	0.98	278.5	110.1
S5.006	50.00	9.35	45.186	0.813	0.0	0.0	0.0	0.99	279.0	110.1
S5.007	50.00	9.50	45.161	0.813	0.0	0.0	0.0	0.99	279.0	110.1
S5.008	50.00	10.49	45.146	1.340	0.0	0.0	0.0	0.99	279.6	181.5
S5.009	50.00	10.70	45.048	1.340	0.0	0.0	0.0	0.99	279.0	181.5
S5.010	50.00	11.70	44.027	1.340	0.0	0.0	0.0	1.12	44.7«	181.5
S3.006	50.00	11.75	44.525	2.228	0.0	0.0	0.0	0.99	39.3«	301.7
S7.000	50.00	5.32	44.258	0.270	0.0	0.0	0.0	0.95	104.8	36.6
S7.001	50.00	5.84	44.208	0.282	0.0	0.0	0.0	0.95	104.8	38.2
S7.002	50.00	6.62	43.900	0.347	0.0	0.0	0.0	0.99	279.0	47.0
S7.003	50.00	7.03	43.823	0.347	0.0	0.0	0.0	0.99	279.0	47.0
S7.004	50.00	8.38	43.783	0.368	0.0	0.0	0.0	0.99	279.0	49.9
S7.005	50.00	8.48	43.650	0.428	0.0	0.0	0.0	2.27	643.2	57.9
S7.006	50.00	9.91	43.527	0.428	0.0	0.0	0.0	0.23	66.1	57.9
S7.007	50.00	11.35	43.525	0.428	0.0	0.0	0.0	0.23	66.1	57.9
S7.008	50.00	12.11	44.956	0.428	0.0	0.0	0.0	0.99	279.0	57.9
S7.009	50.00	12.29	44.881	0.428	0.0	0.0	0.0	0.99	279.0	57.9
S7.010	50.00	12.82	44.863	0.428	0.0	0.0	0.0	0.99	279.0	57.9
S7.011	50.00	13.68	44.811	0.428	0.0	0.0	0.0	0.99	279.0	57.9
S7.012	50.00	14.65	44.726	0.428	0.0	0.0	0.0	0.99	279.0	57.9
S7.013	50.00	15.86	44.630	0.428	0.0	0.0	0.0	0.99	279.0	57.9
S3.007	50.00	16.08	44.510	2.656	0.0	0.0	0.0	1.20	85.1«	359.6

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)
S3.000	o	225	S1.9	47.200	45.810	1.165	Open Manhole	1200
S4.000	o	225	S1.8A	47.200	46.000	0.975	Open Manhole	1200
S3.001	o	300	S1.8	47.200	45.630	1.270	Open Manhole	1200
S3.002	o	375	S1.7	47.200	45.239	1.586	Open Manhole	1350
S3.003	o	450	S1.6	47.200	44.880	1.870	Open Manhole	1350
S3.004	o	450	S1.5	47.200	44.806	1.944	Open Manhole	1350
S3.005	o	225	S1.4	47.200	44.719	2.256	Open Manhole	1350
S5.000	o	300	S2.11	47.200	46.300	0.600	Open Manhole	1200
S5.001	o	300	S2.10	47.200	46.253	0.647	Open Manhole	1200
S5.002	o	300	S2.9	47.200	46.013	0.887	Open Manhole	1200
S5.003	o	300	S2.8	47.200	45.803	1.097	Open Manhole	1200
S5.004	o	300	S2.7	47.200	45.696	1.204	Open Manhole	1200
S6.000	o	600	S2.6A	47.000	45.280	1.120	Open Manhole	1500
S5.005	o	600	S2.6	47.000	45.234	1.166	Open Manhole	1500
S5.006	o	600	S2.5	47.000	45.186	1.214	Open Manhole	1500
S5.007	o	600	S2.4	47.150	45.161	1.389	Open Manhole	1500
S5.008	o	600	S2.3	47.150	45.146	1.404	Open Manhole	1500
S5.009	o	600	S2.2	47.500	45.048	1.852	Open Manhole	1500
S5.010	o	225	S2.1	47.570	45.027	2.318	Open Manhole	1500
S3.006	o	225	S1.3	48.020	44.525	3.270	Open Manhole	1200

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)
S3.000	10.537	100.3	S1.8	47.200	45.705	1.270	Open Manhole	1200
S4.000	29.237	99.1	S1.8	47.200	45.705	1.270	Open Manhole	1200
S3.001	63.132	199.8	S1.7	47.200	45.314	1.586	Open Manhole	1350
S3.002	56.886	200.3	S1.6	47.200	44.955	1.870	Open Manhole	1350
S3.003	29.511	398.8	S1.5	47.200	44.806	1.944	Open Manhole	1350
S3.004	52.348	601.7	S1.4	47.200	44.719	2.031	Open Manhole	1350
S3.005	28.603	147.4	S1.3	48.020	44.525	3.270	Open Manhole	1200
S5.000	12.597	268.0	S2.10	47.200	46.253	0.647	Open Manhole	1200
S5.001	64.676	269.5	S2.9	47.200	46.013	0.887	Open Manhole	1200
S5.002	56.580	269.4	S2.8	47.200	45.803	1.097	Open Manhole	1200
S5.003	28.967	270.7	S2.7	47.200	45.696	1.204	Open Manhole	1200
S5.004	43.309	267.3	S2.6	47.000	45.534	1.166	Open Manhole	1500
S6.000	26.999	600.0	S2.6	47.000	45.235	1.165	Open Manhole	1500
S5.005	28.917	602.4	S2.5	47.000	45.186	1.214	Open Manhole	1500
S5.006	15.060	600.0	S2.4	47.150	45.161	1.389	Open Manhole	1500
S5.007	9.172	600.0	S2.3	47.150	45.146	1.404	Open Manhole	1500
S5.008	58.554	597.5	S2.2	47.500	45.048	1.852	Open Manhole	1500
S5.009	12.449	600.0	S2.1	47.570	45.027	1.943	Open Manhole	1500
S5.010	67.764	135.0	S1.3	48.020	44.525	3.270	Open Manhole	1200
S3.006	2.613	174.2	S1.2	47.920	44.510	3.185	Open Manhole	1500

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)
S7.000	o	375	S3.12	45.600	44.258	0.967	Open Manhole	1350
S7.001	o	375	S3.11	45.400	44.208	0.817	Open Manhole	1350
S7.002	o	600	S3.10	45.240	43.900	0.740	Open Manhole	1500
S7.003	o	600	S3.9	45.480	43.823	1.057	Open Manhole	1500
S7.004	o	600	S3.8	46.260	43.783	1.877	Open Manhole	1500
S7.005	o	600	S3.7	46.260	43.650	2.010	Open Manhole	1500
S7.006	o	600	S_Outfall Pond	46.340	43.527	2.213	Open Manhole	1500
S7.007	o	600	S-Wetland	46.800	43.525	2.675	Open Manhole	1500
S7.008	o	600	S3.6	46.800	44.956	1.244	Open Manhole	1500
S7.009	o	600	S3.5	47.000	44.881	1.519	Open Manhole	1500
S7.010	o	600	S3.4	46.740	44.863	1.277	Open Manhole	1500
S7.011	o	600	S3.3	46.880	44.811	1.469	Open Manhole	1500
S7.012	o	600	S3.2	47.000	44.726	1.674	Open Manhole	1500
S7.013	o	600	S3.1	47.600	44.630	2.370	Open Manhole	1500
S3.007	o	300	S1.2	47.920	44.510	3.110	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)
S7.000	18.000	360.0	S3.11	45.400	44.208	0.817	Open Manhole	1350
S7.001	30.000	360.0	S3.10	45.240	44.125	0.740	Open Manhole	1500
S7.002	46.012	600.0	S3.9	45.480	43.823	1.057	Open Manhole	1500
S7.003	23.988	600.0	S3.8	46.260	43.783	1.877	Open Manhole	1500
S7.004	80.000	600.0	S3.7	46.260	43.650	2.010	Open Manhole	1500
S7.005	14.085	114.5	S_Outfall Pond	46.340	43.527	2.213	Open Manhole	1500
S7.006	20.109	10000.0	S-Wetland	46.800	43.525	2.675	Open Manhole	1500
S7.007	20.109	10000.0	S3.6	46.800	43.523	2.677	Open Manhole	1500
S7.008	45.000	600.0	S3.5	47.000	44.881	1.519	Open Manhole	1500
S7.009	11.000	600.0	S3.4	46.740	44.863	1.277	Open Manhole	1500
S7.010	31.118	600.0	S3.3	46.880	44.811	1.469	Open Manhole	1500
S7.011	51.126	600.0	S3.2	47.000	44.726	1.674	Open Manhole	1500
S7.012	57.078	600.0	S3.1	47.600	44.630	2.370	Open Manhole	1500
S7.013	72.143	600.0	S1.2	47.920	44.510	2.810	Open Manhole	1500
S3.007	15.767	169.5	S1.1	47.920	44.417	3.203	Open Manhole	0

Classon House Dundrum Business Park Dublin 14	Saint Edmundsbury Hospital 1, 30, 100 YR + 20% @ 25.L/sec (C1, C2 & C3 @ C1/C2 Rate)	
Date 06/06/2024	Designed by SW	
File 22203-JBB-00-XX-MD-C-00901_C1_C...	Checked by SW	
Innovyze	Network 2020.1.3	

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
3.000	-	-	100	0.030	0.030	0.030
4.000	-	-	100	0.100	0.100	0.100
3.001	-	-	100	0.120	0.120	0.120
3.002	-	-	100	0.132	0.132	0.132
3.003	-	-	100	0.159	0.159	0.159
3.004	-	-	100	0.275	0.275	0.275
3.005	-	-	100	0.065	0.065	0.065
5.000	-	-	100	0.017	0.017	0.017
5.001	-	-	100	0.100	0.100	0.100
5.002	-	-	100	0.100	0.100	0.100
5.003	-	-	100	0.100	0.100	0.100
5.004	-	-	100	0.050	0.050	0.050
6.000	-	-	100	0.379	0.379	0.379
5.005	-	-	100	0.067	0.067	0.067
5.006	-	-	100	0.000	0.000	0.000
5.007	-	-	100	0.000	0.000	0.000
5.008	-	-	100	0.527	0.527	0.527
5.009	-	-	100	0.000	0.000	0.000
5.010	-	-	100	0.000	0.000	0.000
3.006	User	-	100	0.007	0.007	0.007
7.000	User	-	100	0.270	0.270	0.270
7.001	User	-	100	0.012	0.012	0.012
7.002	User	-	100	0.024	0.024	0.024
	User	-	100	0.042	0.042	0.065
7.003	-	-	100	0.000	0.000	0.000
7.004	User	-	100	0.021	0.021	0.021
7.005	User	-	100	0.059	0.059	0.059
7.006	-	-	100	0.000	0.000	0.000
7.007	-	-	100	0.000	0.000	0.000
7.008	-	-	100	0.000	0.000	0.000
7.009	-	-	100	0.000	0.000	0.000
7.010	-	-	100	0.000	0.000	0.000
7.011	-	-	100	0.000	0.000	0.000
7.012	-	-	100	0.000	0.000	0.000
7.013	-	-	100	0.000	0.000	0.000
3.007	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				2.656	2.656	2.656

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)
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S3.007	S1.1	47.920	44.417	0.000	0	0
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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 Coefficient	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	4	Number of Storage Structures	3	Number of Real Time Controls	0

Synthetic Rainfall Details

J.B. Barry & Partners Ltd		Page 6
Classon House Dundrum Business Park Dublin 14	Saint Edmundsbury Hospital 1, 30, 100 YR + 20% @ 25.L/sec (C1, C2 & C3 @ C1/C2 Rate)	
Date 06/06/2024	Designed by SW	
File 22203-JBB-00-XX-MD-C-00901_C1_C...	Checked by SW	
Innovyze	Network 2020.1.3	

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: S1.4, DS/PN: S3.005, Volume (m³): 11.7

Unit Reference	MD-SHE-0145-1050-1300-1050
Design Head (m)	1.300
Design Flow (l/s)	10.5
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	145
Invert Level (m)	44.719
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.300	10.5	Kick-Flo®	0.834	8.5
Flush-Flo™	0.386	10.5	Mean Flow over Head Range	-	9.1

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	5.2	0.800	9.0	2.000	12.9	4.000	17.9	7.000	23.4
0.200	9.8	1.000	9.3	2.200	13.5	4.500	18.9	7.500	24.2
0.300	10.4	1.200	10.1	2.400	14.0	5.000	19.9	8.000	25.0
0.400	10.5	1.400	10.9	2.600	14.6	5.500	20.8	8.500	25.7
0.500	10.4	1.600	11.6	3.000	15.6	6.000	21.7	9.000	26.4
0.600	10.2	1.800	12.2	3.500	16.8	6.500	22.6	9.500	27.1

Hydro-Brake® Optimum Manhole: S2.2, DS/PN: S5.009, Volume (m³): 20.5

Unit Reference	MD-SHE-0172-1490-1200-1490
Design Head (m)	1.200
Design Flow (l/s)	14.9
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	172
Invert Level (m)	45.048
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1500

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.200	14.9	Kick-Flo®	0.808	12.3
Flush-Flo™	0.368	14.9	Mean Flow over Head Range	-	12.8

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	6.1	0.800	12.5	2.000	19.0	4.000	26.4	7.000	34.6
0.200	14.0	1.000	13.6	2.200	19.8	4.500	28.0	7.500	35.8
0.300	14.8	1.200	14.9	2.400	20.7	5.000	29.4	8.000	36.9
0.400	14.8	1.400	16.0	2.600	21.5	5.500	30.8	8.500	38.0
0.500	14.6	1.600	17.0	3.000	23.0	6.000	32.1	9.000	39.1
0.600	14.3	1.800	18.0	3.500	24.8	6.500	33.4	9.500	40.1

Classon House
Dundrum Business Park
Dublin 14

Date 06/06/2024
File 22203-JBB-00-XX-MD-C-00901_C1_C...

Innovyze

Saint Edmundsbury Hospital
1, 30, 100 YR + 20% @ 25.L/sec
(C1, C2 & C3 @ C1/C2 Rate)

Designed by SW
Checked by SW

Network 2020.1.3



Hydro-Brake® Optimum Manhole: S-Wetland, DS/PN: S7.007, Volume (m³): 11.0

Unit Reference MD-SHE-0290-5000-1400-5000
Design Head (m) 1.400
Design Flow (l/s) 50.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 290
Invert Level (m) 43.525
Minimum Outlet Pipe Diameter (mm) 375
Suggested Manhole Diameter (mm) 2100

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.400	50.0	Kick-Flo®	1.009	42.7
Flush-Flo™	0.491	49.8	Mean Flow over Head Range	-	41.8

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	9.0	0.800	47.8	2.000	59.4	4.000	83.1	7.000	109.1
0.200	29.8	1.000	43.2	2.200	62.2	4.500	88.0	7.500	112.8
0.300	47.8	1.200	46.4	2.400	64.8	5.000	92.6	8.000	116.5
0.400	49.4	1.400	50.0	2.600	67.4	5.500	97.0	8.500	120.0
0.500	49.8	1.600	53.3	3.000	72.2	6.000	101.2	9.000	123.4
0.600	49.4	1.800	56.4	3.500	77.9	6.500	105.2	9.500	126.7

Hydro-Brake® Optimum Manhole: S1.2, DS/PN: S3.007, Volume (m³): 26.0

Unit Reference MD-SHE-0199-2530-2400-2530
Design Head (m) 2.400
Design Flow (l/s) 25.3
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 199
Invert Level (m) 44.510
Minimum Outlet Pipe Diameter (mm) 225
Suggested Manhole Diameter (mm) 1800

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.400	25.3	Kick-Flo®	1.453	19.9
Flush-Flo™	0.694	25.1	Mean Flow over Head Range	-	22.0

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	6.9	0.800	25.0	2.000	23.2	4.000	32.3	7.000	42.3
0.200	18.8	1.000	24.5	2.200	24.2	4.500	34.2	7.500	43.7
0.300	22.4	1.200	23.3	2.400	25.3	5.000	35.9	8.000	45.1
0.400	23.8	1.400	20.9	2.600	26.2	5.500	37.6	8.500	46.4
0.500	24.6	1.600	20.8	3.000	28.1	6.000	39.2	9.000	47.7
0.600	25.0	1.800	22.0	3.500	30.3	6.500	40.8	9.500	49.0

Storage Structures for Storm

Cellular Storage Manhole: S1.4, DS/PN: S3.005

Invert Level (m) 44.719 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.67
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	490.8	490.8	1.100	490.8	616.0	1.101	0.0	616.0

Cellular Storage Manhole: S2.2, DS/PN: S5.009

Invert Level (m) 45.048 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.67
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	653.4	653.4	1.100	653.4	789.6	1.101	0.0	789.6

Tank or Pond Manhole: S-Wetland, DS/PN: S7.007

Invert Level (m) 43.525

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	65.0	0.600	171.0	1.200	278.0	1.800	278.0	2.400	278.0
0.100	80.0	0.700	185.0	1.300	278.0	1.900	278.0	2.500	278.0
0.200	95.0	0.800	200.0	1.400	278.0	2.000	278.0		
0.300	110.0	0.900	215.0	1.500	278.0	2.100	278.0		
0.400	125.0	1.000	230.0	1.600	278.0	2.200	278.0		
0.500	140.0	1.100	245.0	1.700	278.0	2.300	278.0		

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)
S3.000	S1.9	1.572	0.419	0.000	1.991
S4.000	S1.8A	1.357	1.162	0.000	2.520
S3.001	S1.8	1.776	4.463	0.000	6.238
S3.002	S1.7	2.807	6.283	0.000	9.090
S3.003	S1.6	3.321	4.693	0.000	8.014
S3.004	S1.5	3.427	8.326	0.000	11.752
S3.005	S1.4	3.551	1.137	361.814	366.503
S5.000	S2.11	1.018	0.890	0.000	1.908
S5.001	S2.10	1.071	4.572	0.000	5.643
S5.002	S2.9	1.342	3.999	0.000	5.342
S5.003	S2.8	1.580	2.048	0.000	3.628
S5.004	S2.7	1.701	3.061	0.000	4.762
S6.000	S2.6A	3.039	7.634	0.000	10.673
S5.005	S2.6	3.121	8.176	0.000	11.297
S5.006	S2.5	3.206	4.258	0.000	7.464
S5.007	S2.4	3.515	2.593	0.000	6.108
S5.008	S2.3	3.542	16.556	0.000	20.098
S5.009	S2.2	4.334	3.520	481.702	489.555
S5.010	S2.1	4.494	2.694	0.000	7.188
S3.006	S1.3	3.953	0.104	0.000	4.057
S7.000	S3.12	1.921	1.988	0.000	3.909
S7.001	S3.11	1.706	3.313	0.000	5.020
S7.002	S3.10	2.369	13.010	0.000	15.378
S7.003	S3.9	2.928	6.783	0.000	9.711
S7.004	S3.8	4.377	22.619	0.000	26.997
S7.005	S3.7	4.613	3.982	0.000	8.595
S7.006	S_Outfall Pond	4.972	5.686	0.000	10.657
S7.007	S-Wetland	5.788	5.686	773.487	784.960
S7.008	S3.6	3.259	12.723	0.000	15.982
S7.009	S3.5	3.745	3.110	0.000	6.855
S7.010	S3.4	3.318	8.799	0.000	12.116
S7.011	S3.3	3.657	14.456	0.000	18.112
S7.012	S3.2	4.019	16.139	0.000	20.158
S7.013	S3.1	5.248	20.398	0.000	25.645
S3.007	S1.2	6.026	1.114	0.000	7.140
Total		111.670	226.394	1617.003	1955.067



Micro
Drainage

Simulation Criteria

Number of Input Hydrographs	0	Number of Offline Controls	0	Number of Time/Area Diagrams	0
Number of Online Controls	4	Number of Storage Structures	3	Number of Real Time Controls	0

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

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

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

PN	US/MH Name	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S3.000	S1.9	0.000	0.28		12.1	SURCHARGED	
S4.000	S1.8A	0.000	0.74		36.0	SURCHARGED	
S3.001	S1.8	0.000	1.11		82.9	SURCHARGED	
S3.002	S1.7	0.000	0.94		123.5	SURCHARGED	
S3.003	S1.6	0.000	1.24		170.6	SURCHARGED	
S3.004	S1.5	0.000	0.42		50.4	SURCHARGED	
S3.005	S1.4	0.000	0.26	306	10.5	SURCHARGED	
S5.000	S2.11	0.000	0.13		7.1	SURCHARGED	
S5.001	S2.10	0.000	0.63		40.7	SURCHARGED	
S5.002	S2.9	0.000	0.90		57.3	SURCHARGED	
S5.003	S2.8	0.000	1.37		83.2	SURCHARGED	
S5.004	S2.7	0.000	1.50		95.1	SURCHARGED	
S6.000	S2.6A	0.000	0.11		24.3	SURCHARGED	
S5.005	S2.6	0.000	0.22		49.7	SURCHARGED	
S5.006	S2.5	0.000	0.34		47.4	SURCHARGED	
S5.007	S2.4	0.000	0.29		46.2	SURCHARGED	
S5.008	S2.3	0.000	0.32		79.7	SURCHARGED	
S5.009	S2.2	0.000	0.11	360	14.8	SURCHARGED	
S5.010	S2.1	0.000	0.34		14.8	OK	
S3.006	S1.3	0.000	0.92		25.3	SURCHARGED	
S7.000	S3.12	0.000	0.07		6.4	SURCHARGED	
S7.001	S3.11	0.000	0.07		6.5	SURCHARGED	
S7.002	S3.10	0.000	0.03		7.6	FLOOD RISK	
S7.003	S3.9	0.000	0.04		6.9	SURCHARGED	
S7.004	S3.8	0.000	0.03		7.3	SURCHARGED	
S7.005	S3.7	0.000	0.02		8.5	SURCHARGED	
S7.006	S_Outfall Pond	0.000	0.08		8.5	SURCHARGED	
S7.007	S-Wetland	0.000	0.16		16.5	SURCHARGED	
S7.008	S3.6	0.000	0.07		16.2	OK	
S7.009	S3.5	0.000	0.11		15.4	OK	
S7.010	S3.4	0.000	0.06		13.9	OK	
S7.011	S3.3	0.000	0.00		0.3	OK	
S7.012	S3.2	0.000	0.00		0.7	OK	
S7.013	S3.1	0.000	0.00		1.1	OK	
S3.007	S1.2	0.000	0.34		24.4	SURCHARGED	

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)
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S1.003	S	41.200	39.000	0.000	0	0
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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 Coefficient	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

