3.01 - TECHNICAL REQUIREMENTS & SCOPE OF SERVICES

to	Design Team Services.
For	Mini Competition for the Appointment of a Design Team novated from an Existing Zone B enabling Framework for "Renovation/Refurbishment and fit-out of a light industrial unit for the decant of non-acute services from the UHG Campus"
For	Renovation/Refurbishment and fit-out of a light industrial unit for the decant of non-acute services from the UHG Campus"
For	Health Service Executive (HSE)
Version Nr.	v.1.00

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SECTION 1: INTRODUCTION

1. INTRODUCTION:

1.1 Introduction:

1.1.1 The Project:

This Technical Requirements and Scope of Services document describes:

- General provisions.
- Objectives of the service.
- Design Quality overview.
- Terms of Engagement for Consultants.
- Project Stages and their description.

Note1: The Technical Requirements and Scope of Services document should be read in conjunction with the Design Brief and the Standard Conditions of Engagement for Consultancy Services (Technical) and Schedules A&B issued as part of this framework and tender.

Note2: For the avoidance of doubt, where the word ***'shall'*** appear in this document it is to express a command or obligation on the parties cited.

1.2 General Provisions:

1.2.1 Comprehensive Service:

1.2.1.1 The tender proposal must take into account the service described herein and shall be comprehensive. In submitting, Tenderers are deemed to be sufficiently briefed to estimate all consultancies and services necessary to provide the outputs required by the Health Service Executive **[HSE]**. Tenderers must include all consultancies and services in their submission and fee bid. The Technical Requirements and Scope of Services are intended to form an understanding of the minimum service required. However, it is important to re-iterate that the Tenderer MUST provide all consultancies and services necessary to discharge their duties professionally, adequately, efficiently, effectively and in accordance with normal standards of practice, to achieve the outputs required.

1.2.1.2 Where a Principal Service Provider is required to provide Specialist Skills Services as part of their team (otherwise known as an Integrated Architectural Team (IAT)) any specific references made in this document to certain work stages, such separation is not intended to, and shall not, limit or affect the IAT's obligation generally to provide all the services required to fully achieve completion of each stage of the project in compliance with programme and budgets.

1.2.1.3 The Architect will fill the role of Design Team Lead on this project

Note1: *The Architect as Principal Service Provider is the design discipline who shall provide Specialist Skills Providers as part of their Integrated Architectural Team (IAT) 1) Planner (PL) and 2) BIM Information Manager (BIM)*

1.2.1.4 Principal Service Providers covered by this Technical Requirements document are:

1. Architect (including Specialist Skills Providers, Planner (PL) and BIM Information Manager (BIM)
2. Quantity Surveyor.
3. Building Services Engineer.
4. Civil / Structural Engineer.
5. Fire Safety Consultant.
6. Project Supervisor Design Process.
7. Employer's Representative.
8. Assigned Certifier.

9. Energy Efficient Design Facilitator

1.2.1.5 Whilst every effort has been made to describe herein the services required, Tenderers shall include not only the described services, but also any services:

1. That might reasonably be inferred there from or that could reasonably be contemplated to support the successful delivery of the project through to it being fully operational.

2. That are incidental to the services identified herein in relation to the Design Team (DT) services; and/or are required to complete this Project in accordance with the Project Brief.

3. That a reasonable professional service provider would contemplate or infer as being required as part of requirements for the Project, and/or

4. That are required to comply with the Capital Works Management Framework (CWMF), Infrastructure Guidelines (formerly Public Spending Code) and relevant public sector approval processes.

1.2.2 Resources:
Each Service Provider (including the Design Team Lead) must allocate and maintain adequate resources to comply with this agreement (which resources shall include the Key Team Members as identified by them in their Tenders) to the Contract. The Resources proposed must be capable of meeting the comprehensive requirements necessary to successfully deliver the services required for the project. It is a requirement that, for whatever reason, when an individual is absent or otherwise unable to fulfil a particular role, the service provider has available to the project suitably qualified and skilled personnel who are fully briefed on the project and its current status and are in a position to deputise.

1.2.3 Public Law:
The Client is subject to public law. The Design Team will also be subject to, and must comply with, public law in relation to any matter in connection with the contract associated with this tender process.

1.2.4 Ethical Conduct:
The service provider will be subject to the various codes and guidelines on ethics applicable to entities that are subject to public law and shall perform their duties professionally, adequately and in accordance with best practice and ethics to achieve the outputs required.

1.2.5 Certificates:
The DT shall provide all opinions, certificates and declarations of statutory, regulatory and other normal compliances to the Client prior to the issue of tender documentation to Works Contractors and at each relevant juncture during the project. On completion of each Project Stage of the Capital Works Management Framework (CWMF), the DT will issue the Client via the Design Team Lead a Stage Completion Certificate. Each Stage Completion Certificate must be signed by a designated lead for the provision of every service included within the DT.

A list of the designated signatories must be issued to the Client within one (1) week of appointment for approval and must comply with the resources identified within the DT tender.

1.2.6 Capital Works Management Framework (CWMF):
The Design Team shall carry out all works Iin compliance with the current applicable procedures as set out in the Capital Works Management Framework documents as published by the Department of Public Expenditure and Reform and in compliance with EU and Irish Regulations.

1.2.7 Compliance with the Infrastructure Guidelines and Public Sector Approval Processes:
The Design Team shall ensure all works comply with the Infrastructure Guidelines, which sets out the value for money guidelines for evaluating, planning, and managing public capital investment projects. Additionally, the service provider shall support all necessary public sector approval processes to ensure

the successful delivery of the project which will include all technical inputs required for the development of the draft and final Business Case for each project.

1.3 Useful Links:

Table Nr. 1.3: Useful Links:

Useful Links:	Links:
Capital Works Management Framework:	*https://constructionprocurement.gov.ie/capital-works-management-framework/*
Public Spending Code:	*https://www.gov.ie/en/publication/public-spending-code/?fl=en*
Infrastructure Guidelines:	*https://www.gov.ie/en/collection/e8040-infrastructure-guidelines/*
Filing Name Convention:	*https://www.hse.ie/eng/about/who/healthbusinessservices/estates/neis-file-naming-convention.pdf*

1.4 Objectives of the Service:

The DT shall deliver the project safely, on time, within budget and to the highest quality standards required and provide these services in a manner consistent with and directed at achieving these objectives.

1.5 Design Quality Overview:

1.5.1 The DT and the Client shall work together to achieve design quality of an appropriately high standard.

1.5.2 In summary, the Client requires:

1.5.2.1 Buildings, spaces and building services that comply with the briefed requirements, are suitable for their intended use, durable and are designed to be in compliance with current Building Regulations and best national and international practice.

1.5.2.2 Developments that appropriately respond to their surroundings.

1.5.2.3 Schemes that create spaces and places that people will enjoy and of which they will be proud.

1.5.2.4 The identified business needs, operational efficiencies, design efficiencies for clinical and non-clinical support service delivery and estate management to be fully addressed.

1.5.2.5 Ensure a positive addition to the location of the facility, the environment, and the wider community.

1.5.2.6 Ensure appropriate flexibility to cater for likely changes in the methods of service or process delivery.

1.5.2.7 Achieve a high design quality and aesthetic value.

1.5.2.8 Adoption of 'LEAN' design processes or equivalent.

1.5.2.9 Maximise overall value on a whole life basis.

1.5.2.10 Promote safe methods of construction and operation including maintenance.

1.5.2.11 Promote durability, sustainability and ecologically sound environments with maximised therapeutic benefit for the users and the wider community.

1.5.2.12 Minimise waste of materials, energy, and pollution both in construction and operation.

1.5.2.13 Proposals that respond to environmental imperatives, minimise energy usage and minimise their carbon footprint. As a public body we are required to lead the way in terms of Climate Action. Therefore, projects must incorporate the latest technologies to maximise efficiency, minimise carbon emissions and operate in the most sustainable manner possible, aspiring to international best practice. Design teams must design and model the design to demonstrate that it is Net Zero Carbon Ready. For clarity, the International Energy Agency (IEA) define a zero-carbon-ready building as follows: "A zero-carbon-ready building is highly energy-efficient and either uses renewable energy directly or uses an energy supply (e.g. electricity or district heating) that will be fully decarbonised by 2050."

1.5.2.14 Buildings and other related external spaces designed to be fully accessible to people with physical and sensory disabilities.

1.6 Terms of Engagement for Consultants:

1.6.1 The terms of engagement for consultants shall be included within this tender package and shall be the Department of Public Expenditure and Reform (DPER), Conditions of Engagement current ten (10) days prior to the receipt of tenders (see www.constructionprocurement.gov.ie for details).

1.6.2 The required DT Services for the project and the associated roles are listed in the '*Specific Project Information'* document accompanying this Technical Requirements (TR) document. DT Lead service shall include managing and co-ordinating all relevant aspects of project delivery, to ensure delivery of the projects on time, within budget and to the quality standards required, whilst advising the Client on all relevant matters.

1.6.3 The Design Team shall provide the Services in a manner consistent with and directed at achieving the project objectives. Work shall be executed in a competent and professional manner including the preparation of all documents and reports required by this Technical Requirements and Scope of Services document, the obtaining of all necessary Statutory and Client approvals all in accordance with this Technical Requirements and Scope of Services document or as otherwise modified by the Brief or other information.

1.6.4 Reports may be presented to the Client in PDF format but must be provided in editable format, where requested by the Client.

1.6.5 Design Team consultation with the Client should be an on-going process during the relevant stages and is included in the service provider's time for the performance of the stage (unless essential information or approvals are withheld by the Client without cause).

1.6.6 Only exceptional abnormal works which could not have been reasonably inferred from the Invitation to Tender will be considered for the purposes of fee adjustments. These include Client changes and unforeseen or disproportionate Planning or Fire Certificate conditions, further information requests or conditions which could not reasonably have been foreseen by the DT in their preparation of the initial application(s). Allowable fee adjustments for such changes will be allocated pro-rata across the applicable stages.

1.6.7 All changes to the scope of service will be dealt with under Clause 11 of the Conditions of Engagement. For a change increasing the Services for a stage or stages, the percentage fee tendered shall apply proportional to the increase in the value of the Services. Time charges will not normally apply. Where the scope of works is not well defined, the onus rests with the service provider to define the scope at the earliest possible stage, and not later than completion of Stage (i) Preliminary Design.

1.6.8 Changes to the Brief or additions to the Schedule of Accommodation (SoA) required by the Client or arising through the Brief Clarification process during Stage (i) of the project (and within a maximum of 15% of the *Briefed Area*) shall be regarded as included in the Stage (i) fee proposals by the DT Members.

Note1: The definition of "*Briefed Area*" is the Schedule of Accommodation (SoA) as part of the *Project Brief* expressed as the net floor area of each scheduled room. The cumulative net areas of these rooms shall be termed the "*Net Floor Area (NFA)*". The Design Brief which includes the SoA shall be developed into the *Definitive Project Brief*". Refer to Section *'1.21* ***Error! Reference source not found.***' and Section *'3.16.1 DT Review of Design Brief and formulation of Definitive Project Brief:'.*

1.7 Design Team Management:

1.7.1 The designated **Design Team Leader** will manage the entire design process from start to finish, co-ordinating the activities of the DT Members and specialists.

1.7.2 An individual who shall be a senior representative within the Design Team Leader's team shall be identified and shall be responsible for ensuring the role of design team lead is effectively implemented on the project(s).

1.7.3 The Architect as Principal Service Provider and Team Lead to the Integrated Architectural Team (IAT) of Specialist Skills Providers shall be wholly responsible for the provision of the consultancy services provided by their IAT and shall report to the project's Design Team Leader managing the entire design process.

1.7.4 Duties for the DT Lead (DTL) will include, but shall not be limited to:

1.7.1.1 Manage the Design Team through all stages of the Project.

1.7.1.2 Ensure that all DT members are aware of their responsibilities in providing the necessary inputs for compliance with the Infrastructure Guidelines and relevant public sector approval processes and ensure that all required inputs are provided in a timely and accurate manner.

1.7.1.3 Motivate and lead the Design Team to aspire to/achieve international best practice in terms of energy efficiency and low operational and embodied carbon.

1.7.1.4 Lead the DT to deliver a building which minimises overall floor area by creating an efficient design.

1.7.1.5 Ensure that all DT members are aware of their responsibilities in providing the necessary inputs for compliance with the CWMF, Infrastructure Guidelines and relevant public sector approval processes and ensure that all required inputs are provided in a timely and accurate manner.

1.7.1.6 Review Client's programme objective and prepare all required programmes of design / construction activities and manage progress through all project stages to completion.

1.7.1.7 Prepare a list of deliverables and co-ordinate list of deliverables for each member of the DT for each Stage of the Project.

1.7.1.8 Manage the implementation by the entire Design Team of the BIM Exchange Information Requirements (EIR) in full. Undertake all roles and responsibilities assigned to the Design Team Lead in the EIR and ensure all other Design Team members are undertaking their respective roles as per the EIR.

1.7.1.9 At the start of the project(s) implement a common drawing numbering system, in line with the HSE Naming Convention to the current Irish National Annex to I.S. EN ISO 19650-2:2018 or as agreed, and a room / space numbering system (in agreement with the Client) prior to

conclusion of Stage(ii)A. This will be applied during Stage(ii)B. Architects are to allow for 1Nr. full re-numbering of the project for all DT Members and for all separate design consultants and specialists.

1.7.1.10 In accordance with the Client's Exchange Information Requirements (EIR), a document is to be drawn up which defines the implementation of a set of common BIM and CAD guidelines across all DT Members and all separate design consultants and specialists. Co-ordinate and manage the BIM model and issue BIM drops at appropriate work stages as per the EIR and provide all data/model information as required by the Client's BIM representative.

1.7.1.11 Make full use of the CDE functionality to implement a common document register document control system across all DT Members and all separate design consultants and specialists. The DTL shall ensure that all DT design information is being distributed and stored appropriately on the Clients CDE.

1.7.1.12 Prepare and implement a common document register document control system and a common filing structure across all DT Members and all separate design consultants and specialists on the Client's Common Data Environment (CDE). The DTL shall ensure that all DT design information is being distributed and stored appropriately on the Clients CDE. Please note requirement to comply with the HSE Naming Convention.

1.7.1.13 Prepare and co-ordinate reports for and reporting to the Client as required and organise briefing sessions with Client personnel, as necessary to meet the Client's needs.

1.7.1.14 Establish and manage a consistent and appropriate roster of design meetings.

1.7.1.15 See that the design develops at all times consistent with and within the capital budget, taking whatever actions are necessary, and advising the Client in a timely manner.

1.7.1.16 Plan for and see that all necessary approvals and agreements are secured in a timely manner and that construction works are never impeded.

1.7.1.17 Co-ordinate preparation of all required BCAR certification and discharge of related duties in compliance with Building Control Acts in force at the time of issue of the Commencement Notice.

1.7.1.18 Proactively maintain oversight of the performance of all separate design consultants and specialists and take remedial action when/if required.

1.7.1.19 Coordinate the development of all design information produced by all members of the design team and other relevant design consultants and specialists. This includes completing a final coordination check when the design is complete across discipline tender information to ensure that cross referencing on drawings and between documents is correct. This includes but is not limited to:

1. Checking for the inclusion and consistency of specification references to drawings and particularly to details.

2. Cross referencing of details against GA plans. As an example, Partition Detail Drawings should be cross referenced against Partition Type Plans to easily identify the location of the requirements.

3. Cross referencing of Room Layout Sheets to the other same/similar rooms to which they apply.

4. Cross referencing of Equipment Codes against Fitted Furniture Types drawings (the latter to include the Equipment Code), including a cross-referenced schedule.

5. A derogations schedule should be provided to the Client confirming any deviations from the accepted standards e.g. Health Technical Memoranda (HTM) deviation.

6. A coordination report should be provided to the Client from the Design Team Lead outlining the process that has been followed to confirm a full coordination process has been completed, issues identified, how they were rectified and confirmation that a fully coordinated and complete tender pack has been provided.

1.7.1.20 Review all documentation (from whatever source or discipline) carrying out checks on the completeness, quality and consistency of that information and ensure that all drawings and documents are co-ordinated between all the DT members. Note the requirement above for a final coordination assessment. The DTL must also check with each discipline that they are completing designs in compliance with the latest TM guidance as the project progresses.

1.7.1.21 Coordinate the activities of individual DT members and specialists in order to efficiently deliver the services within timeframes as agreed to the Client. Note the requirement above for a final coordination assessment.

1.7.1.22 Co-ordinate and manage the DT's inputs to the tender process.

1.7.1.23 Co-ordinate input of all necessary information into the Energy Efficient Design (EED) Review process.

1.7.1.24 Ensure DT compliance with briefing information, guidance, laws and industry best practices.

1.7.1.25 Co-ordinate the provision of all required DT documentation and certification prior to substantial completion of the building contract.

1.7.1.26 Provide support as required into the management, organisation and design integration of the '% for Art Scheme'.

1.8 Design Team Collaboration:

The designated DT Leader shall be responsible for the delivery of the DT service including the direction and co-ordination of the work of the DT so that it proceeds with all reasonable expedition and in the best interests of the Client. Under the Conditions of Engagement, Clause 8 requires all DT Members have an individual and collective obligation to co-operate in a reciprocal manner. This duty shall be deemed to include reciprocal co-operation between the individual Members of the DT and individual Members of the DT shall include such issues as informed consultation, timing, taking account of parties' priorities to minimise problems and delays.so that the project progresses to completion in accordance the Client's programme.

1.9 Circular 01/2016:

The DT shall deliver their service with regard to Circular 01/2016 amendments which are listed in the table below.

Table Nr. 1.9.1: Circular 01/2016:

Ref:	Changes to Public Works Contracts:	Applicable to:
(a)	Mandatory production of a fully measured Bill of Quantities (BoQ).	PW-CF1 + PW-CF5
(b)	Direct tendering of specialist works packages.	PW-CF1 + PW-CF5
(c)	The inclusion of informal dispute resolution process.	PW-CF1 (<€10M + >€10M)
(d)	The introduction of a Standing Conciliator.	PW-CF1 (>€10M)

1.10 Building Services (M&E) Engineer Services Cost Control:

1.10.1 As a consequence of the production of a fully measured BoQ and the direct tendering of specialist works package the Contracting Authority shall require the Quantity Surveyor to be the lead DT member responsible for:

1.10.1.1 Total project budget development including Building Services budgets.

1.10.1.2 Total project budget management including Building Services budget management, and

1.10.1.3 Total project cost control throughout all the project stages including Building Services cost control.

1.10.2 The Building Services Engineer, in the provision of their service to the Contracting Authority, shall provide to the Quantity Surveyor all Building Engineering Services information necessary for the Quantity Surveyor to perform their function in this regard and as the Project Cost Consultant.

1.11 Safety, Health and Welfare:

1.11.1 The DT shall address all issues related to Health and Safety that may be associated with the design and works and shall perform its duties in accordance with the Safety, Health and Welfare at Work Act 2005 and the Safety, Health and Welfare at Work (Construction) Regulations 2013 as amended, including the oversight of all Employer obligations under the regulations. DT members must comply with the general principles of prevention outlined in Schedule 3 of the Safety Health & Welfare at Work Act, and where possible to design out issues which may present during construction, maintenance or operation of the building/ project. All DT members shall critically assess design proposals at an early stage and throughout the design process to identify health & safety risks. They must provide timely inputs into all necessary health, safety & welfare documentation including design risk assessments, preliminary and construction stage safety and health plans, the safety file and review of risk assessments and method statements. The DT must take account of any existing safety & health plans or safety files available for the site and collaborate and comply with directions given by the PSDP and co-operate with other designers in the interest of health & safety.

1.12 Compliance with the Infrastructure Guidelines (IG) and Public Sector Approval Processes

The DT shall ensure all works comply with the Infrastructure Guidelines, which sets out the requirements for evaluating, planning, and managing public capital investment. Additionally, the DT shall support all necessary public sector approval processes to ensure the successful delivery of the project.

1.13 Compliance with Standards and Building Control Regulations and BC(A)R:

1.13.1 The DT shall design the building(s) in compliance with all current National and International standards including current National Building Regulations, current relevant healthcare design standards, HSE Technical guidance documents, best national and international practice including HBNs, HTMs, and other relevant standards etc. Compliance with standards set out in current national building control regulations shall be regarded as a minimum requirement.

1.13.2 The project shall be carried out in compliance with procedures as set out in current Building Regulations the Building Control (amendment) Regulations SI 09 of 2014, the Code of Practice for inspecting and certifying building works, or subsequent versions of these documents current at the time the design or building work is being undertaken. The Assigned Certifier shall co-ordinate inspection of these works and shall certify their compliance with building regulations in conjunction with the builder prior to substantial completion of the project.

1.13.3 Roles and responsibilities arising under BC(A)R shall be included within this scope of service, as follows:

1.13.2.1 The Architect or other Design Consultant designated as DT Lead shall undertake the role of the **Design Certifier** and all DT Members as **Designers** shall provide ancillary certificates,

and all necessary service as outlined in **the Code of Practice for inspecting and certifying works** document.

1.13.2.2 Further details are listed in **Appendices 4 – 6.**

1.14 Part L Conservation of Fuel and Power (incorporating NZEB):

1.14.1 The building or works shall be designed to comply with the provisions of the current version of Part L of the Guidance Documents TGD (Building Regulations). Compliance with Part L shall be demonstrated using the National Calculation Method (NCM) as approved by SEAI. Designers shall pay particular attention to the specific provisions made for specialist ventilation systems and process loads, ensuring these are treated appropriately in the NCM, where applicable.

1.14.2 All buildings will require a detailed overheating analysis as part of the Part L compliance check, particularly where natural ventilation is proposed. This should be carried out according to the requirements of HSE Estates Guidance Document: Doc. Ref. *1.10 Indoor Environmental Conditions & Natural Ventilation Building Guidelines*, using Dynamic Simulation Modelling (DSM) and taking care to identify and accurately model all potential sources of thermal gain.

The amended performance requirement relating to the energy performance of buildings owned or occupied by Public Authorities shall apply. The Design Team shall design the building to comply with these provisions, achieving an **A3** energy rating as a minimum. The design team must demonstrate as part of the overheating analysis that the measures adopted to achieve an A3 energy rating do not introduce an unacceptable risk of overheating. The DT must also demonstrate that all possible passive measures have been exhausted before any mechanical ventilation or cooling are considered.

1.14.3 The Design team shall provide the following:

1.14.3.1 The design team shall complete all work necessary and provide all information required in order to successfully complete the BER(s) for the entire new building. This shall include all areas being fitted out and all areas designated for future fitout. Where the BER assessment requires M&E plant technical or performance data for shell and core areas, the design team shall complete all design work necessary to complete outline initial plant selections to facilitate completion of the BER(s)

1.14.3.2 BER Certificate and associated Advisory Report prior to issue of the Certificate of Compliance on Completion; achieving a minimum A3 BER rating; DT responsibility.

1.14.3.3 Display Energy Certificate on completion of the Defects Period; Building Operator responsibility with DT assistance.

1.15 Sustainability and HSE Climate Action Strategy 2023 - 2050:

1.15.1 It will be a project requirement that designs prepared by the DT shall be cognisant of all statutory requirements in all aspects of sustainability and achieve the highest levels of environmental effectiveness possible and result in the most advantageous Life Cycle Cost outcomes and Life Cycle Carbon outcomes.

1.15.2 The DT Lead shall co-ordinate with all Design Team members to ensure that the optimum holistic design approach to include architectural, structural, and environmental options are chosen to provide a safe environment that is cost effective, durable, and that flexible design solution are implemented. This includes the application of the Energy Efficient design Process aligned to IS399. This includes the requirement to design and model the design, to demonstrate that it is Net Zero Carbon Ready. This shall also include compliance with:

1.15.2.1 TGD Part L Conservation of Fuel and Power (incorporating NZEB) (See Section 1.14 above) and

1.15.2.2 The Government Climate Action Plan current version (including appendices and annex).

1.15.2.3 The Low Carbon Development (Amendment) Bill 2021.

1.15.2.4 The Health Service Executive (HSE) Embodied Carbon Assessment Scope. Refer to the **Appendix 13**.

1.15.3 The DT shall fully understand and take account of any benefits achieved (and projected) from de-carbonisation of the different utility infrastructures in completing the designs and reports for net zero carbon buildings.

1.15.4 The DT Lead shall liaise with the DT Building Service (M&E) Engineer and other members of the DT to utilise Dynamic Simulation Modelling to test and evaluate the various holistic design proposals to ensure optimum building design.

1.15.5 The DT shall refer to the HSE Climate Action Strategy 2023 – 2050, to address the strategic objectives contained therein and all other HSE policies and strategies for sustainability.

1.16 Energy Efficient Design (EED) Approach:

Commented [LS1]: Is LEED or BREEAM certification a requirement?

1.16.1 In accordance with SI 243 European Union (Energy Performance of Buildings) Regulations 2012 Public Bodies are obliged to formally integrate the principles of energy-efficient design into the development phase of public projects. Full provision of an Energy Efficient Design Review (EEDR) process in accordance with the latest edition of IS 399 and as outlined in this Section and Section 3.10 and described throughout the stage services shall be part of the required DT service for this project.

1.16.2 Refer **Appendix 15** of this document for scope requirements for the Energy Efficient Design Facilitator which complements information included throughout this document.

1.16.3 The DT Lead Consultant is responsible for ensuring participation from other DT disciplines. The EED Facilitator shall co-ordinate the EED process. The DT shall test the various design solutions in accordance with the process set out in standard IS 399, to identify the solution which achieves the minimum specified building performance with the lowest associated Life Cycle Cost (LCC) including the lowest whole life carbon and in accordance TGD Part L and Section 1.15 Sustainability above.

1.16.4 The EED Facilitator shall co-ordinate the EED process. The approach to EED involves initial preparatory work followed by workshops with all key stakeholders' present. The project, as a whole, is examined, and the design must be broken down into smaller parts each representing an individual building/system/process or piece of equipment. Each of these must be reviewed in terms of operational energy performance and energy related carbon emissions over the life cycle of the facility. The outputs of the workshops and agreed list of opportunities must be considered by the DT who must then further investigate the feasibility of each opportunity and test via modelling. The objective of this approach is that the testing of various design solutions identifies, at the early stages of the design, the solution which achieves the specified building performance with the lowest and most sustainable associated Life Cycle Cost (LCC) and the lowest Life cycle carbon and must clearly demonstrate that the Design is carbon zero ready (i.e. will be carbon zero when the electrical grid decarbonises). The EED review process shall run concurrently with the conceptual, basic, and detailed design phases. The latest EED Report must form part of all Stage Reports to confirm the progression of Energy Efficient Design Optioneering leading to the confirmed solution in the Stage (ii)C report.

1.16.5 EED Stage Reports shall meet the requirements of HSE Estates Document: *Doc. Ref. 1.11Energy Efficient Design (EED): Guidance for Design Teams & Design Stage Report Template*.

1.16.6 The Client requires that the DT shall, in addition, document performance requirements, specifications and environmental targets to be included in tender documentation with the objective of requiring the Contractor to achieve these agreed levels of sustainability and energy.

1.16.7 The DT is required to comply with all relevant European Union Directive and National Legislation and must also make themselves aware of the "Secondary Obligations" associated with EU Public Procurement Directives. They must be cognisant of the Client obligations/requirements and, where it applies to the project, by reference to the listed documents below and by any subsequent amendments to the below:

1.16.7.1 National Energy Efficiency Action Plan (NEEAP).

1.16.7.2 SI 426 European Union (Energy Efficiency) Regulations 2014.

1.16.7.3 SI 243 European Union (Energy Performance of Buildings) Regulations 2012.

1.16.7.4 SI 292 European Union (Energy Performance of Buildings) (No. 2) Regulation 2019.

1.16.7.5 I.S. 339:2014 Energy Efficient Design Management – Requirements with Guidance for Use.

1.16.7.6 Energy Efficiency Directive (EED) (EU/2023/1791).

1.16.7.7 Renewable Energy Directive (RED).

1.16.7.8 Ecodesign Directive (EU 2009/125). Soon to be replaced by new Ecodesign for Sustainable Products Regulation (ESPR).

1.16.7.9 Construction Products Regulation (CPR).

1.16.7.10 Circular Economy Action Plan 2 (March 2020).

1.16.7.11 SI No. 274/2025 European Union (Planning and Development) (Renewable Energy) Regulations

1.16.8 Application of the EED approach must ensure that that Green Public procurement (GPP) principles set out in the EPA Guidance (https://www.epa.ie/publications/circular-economy/resources/GPP-Guidance-for-the-Irish-Public-Sector.pdf) are considered and applied as part of the design, specification, procurement and construction process for new HSE projects and particularly in the referenced GPP areas of:

1.16.5.1 Energy Related Products.

1.16.5.2 Heating Equipment.

1.16.5.3 Indoor and Outdoor Lighting.

1.16.5.4 Design, construction and management of Office Buildings.

1.16.9 A half day Training course on the Energy Efficient Design (EED) process and its application will be provided by the HSE to all Design Team members. All Design Team members will be required to attend this training. Design Team member employees who do not have a certificate of attendance at this EED training will not be acceptable to provide services on HSE projects.

1.17 Embodied carbon

1.17.1 The DT are required to assess the embodied carbon impacts of suggested design solutions and recommend the cost optimal embodied carbon solution which achieves a carbon zero ready building and if concrete is being considered that low carbon cement material is specified as far as practicable. Refer to the **Appendix 13** where the scope requirements from the DT are outlined.

1.18 Construction Waste Management

1.18.1 The DT Lead Consultant will co-ordinate the design team to produce a resource and waste management plan (RWMP) in accordance with the EPA Best Practice Guidelines for the preparation of resource and waste management plans for construction and demolition waste (2021). The RWMP will be included as

part of the tender documentation for procurement of the Project Main Contractor. At Construction stage the Design Team will ensure that the Main Contractor complies with the RWMP.

1.19 Building Information Modelling (BIM):

1.19.1 The detailed requirements in relation to BIM are set out in **Appendices 7, 8 & 9**. The DT shall as a guide, review the Clients (Draft) OIR as a pathway to BIM needs (at an organization level) and subsequent AIR with a follow on to the contract PIR & EIR. The Client will furnish as needed associated BIM documents as laid out in ISO-19650 (1) Hierarchy of information requirements. The DT shall use a full Level 2 collaborative Building Information Modelling process to design and deliver this project.

1.19.2 It is expected that the use of a BIM system will offer qualitative advantages to project development and delivery by facilitating more efficient design option studies and development and co-ordination of design information.

1.19.3 The Design Team Lead will be required to present a draft BIM Execution Plan to the PCT and Client for review no later than 4 weeks following the DT appointment. Any comments issued must be addressed within 10 working days and a new version of the BIM Execution Plan presented. When the BIM Execution Plan has been approved by the Client, full compliance is expected by the DT. The Design Team Lead will be required to complete audits with the DT to verify full compliance.

1.19.4 BIM Information Manager in their oversight role will be another layer of control on this project to ensure the DT deliver on the Client Exchange Information Requirements (EIR) and the agreed BIM Execution Plan implemented. This will include assessing the models for compliance with the BIM Execution Plan (BEP) and completing regular reviews to confirm the DT are following the agreed BIM delivery strategy e.g. completion of clash detection workshops as outline in the BEP.

Note1: *Each design discipline has a responsibility under BIM and are reminded to review the Appendices in this respect.*

1.20 Inclusivity and Universal Design:

1.20.1 It is a given that all healthcare buildings will be visited and used by people across the full spectrum of ability and disability and the Client expect that the principles of inclusivity and universal design will be fully reflected in all aspects of new projects so that they can be accessed, understood, and used to the greatest extent possible by all people regardless of their age, size, ability, or disability. Design teams shall consider the diverse needs and abilities of all throughout the design process, so that the design is inclusive and meet the needs of all people and shall be accessible, usable, convenient and a pleasure to use.

1.20.2 In this context, Client regards full compliance with the requirements of the current version of Part M of the building regulations as a minimum standard to be achieved on projects. The requirements set out in *Buildings for Everyone* and other advice from the National Disability Association shall be followed. The Client also expects that the objectives of the National Disability Inclusion Strategy 2017 – 2021 shall be observed in all new buildings as well as in facilities undergoing refurbishment.

1.21 Outline Design Brief:

1.21.1 The Outline Design Brief which will be given to the DT on appointment will set out the Client's functional requirements for the project and any particular design requirements. The DT shall, in consultation with the Client, develop the Outline Design Brief into a *Definitive Project Brief* for the project, as part of DT Stage (i) services.

1.21.2 The Project Outline Design Brief shall comprise the following documents:

1.21.2.1 Clinical Output Requirements.

1.21.2.2 Works requirements including general requirements and site-specific requirements.

1.21.2.3 Schedule of Accommodation.

1.22 Campus Wide Issues:

1.22.1 The Design Team shall consider all campus issues, where relevant to the project design, including existing flows adjacencies links and campus services infrastructure, required phasing of works decanted accommodation, displaced car parking, road re-alignments or adjustments, cycle tracks, footpaths, mobility management, landscaped zones, and other related site matters.

1.22.2 The Design Team must also consider the suitability of the design solutions in the context of the entire campus and how these might integrate with campus roadmaps to achieve Net Zero Carbon. For example, the provision of district heating systems, geothermal heat pump systems, communal bike infrastructure, rainwater harvesting, green roofs, PV carport etc.

1.22.3 The Design Team shall consider and optimise the health and wellbeing of all persons (whether staff, patients, residents or visitors) using the building and the campus. The benefits of using spaces around and adjacent to buildings should be considered for the benefit of all those using the buildings and campus including as breakout spaces.

1.22.4 The Design Team shall consider and optimise the use of open spaces as green spaces in a sustainable manner using green and bio-diversity policies and strategies.

1.23 Existing Planning Context:

1.23.1 The Architect shall review and give due consideration to planning history all relevant planning issues associated with the site and the immediate vicinity of the site.

1.24 Wider Community Impacts:

1.24.1 The DT shall consider impacts of the project beyond the confines of the immediate project site and Hospital Campus and shall make provision for supporting engagement and communication with neighbouring owners' local representatives and other parties as appropriate. The DT may be asked to provide design material and/or attend community engagement sessions over the course of the service period.

Commented [LS2]: Sentence added

1.25 Campus Mobility Management Plan:

1.25.1 Where there is an existing Campus Mobility Management Plan the DT shall reflect all requirements in design proposals and shall liaise with the Mobility Manager or Hospital Management and/or their advisers with regard to Hospital undertakings in this regard.

1.26 Enabling Works Contract:

1.26.1 It is intended to have an advance enabling works contract in order to de-risk the site. The Block B Enabling Works design team will be expected to liaise with the design team for Block B.

1.27 Aspergillus Prevention Works:

1.27.1 Where relevant, the DT in consultation with the Client Infection Control Team shall assess the risk of aspergillus infection to immuno-compromised hospital patients of the host healthcare facility and shall advise the Client on the most effective strategies for addressing these risks by designing suitable protection systems in compliance with National Guidelines for the Prevention of Nosocomial Aspergillosis. The DT shall advise the Client where appropriate regarding the most efficient way to progress these matters from a cost, time, procurement, and safety perspective. Any such approved works will be managed by the DT.

1.28 Mock-Up Rooms:

1.28.1 The DT to include within their service all design costs, planning permission application preparation costs, tender costs, construction management costs - effectively all costs for CWMF stages (i) to (v) associated with the provision of 1Nr. mock-up room.

1.29 Room Information Sheets (RIS) and Room Loaded Drawings (RLD) Development:

1.29.1 The Architect with the assistance and advice of DT Members, in particular, the Building Services Engineer (M&E), shall provide an entire service in relation to the development of fully co-ordinated, detailed room designs and arrangements, including the identification and placement of all required equipment and Building Services (M&E) Engineering Services.

The development of the Room Loaded Drawing (RLD) by the DT shall be undertaken as follows:

1.29.1.1 Client to provide Room list.
DT to check and validate for completeness and identification of room types.

1.29.1.2 DT to prepare RIS for each room type.
DT to review with Client & User Groups. Please note that the DTL should clearly confirm the time required to prepare, present and complete amendments of RIS information to deliver on their tender programme.

1.29.1.3 DT to develop RIS into RDLs for each room type.
DT to review with Client & Stakeholders User Groups. Please note that the DTL should clearly confirm the time required to prepare, present and complete amendments of RLD's to deliver on their tender programme.

1.29.1.4 DT to develop RIS into RDLs for each room type. DT to develop Reflective Ceiling Plans for each room at the same time as RDLs.

1. Full Reflected Ceiling Plan (RCP) coordination between M&E and Architectural Disciplines to provide coordinated access hatches and lighting layouts for all spaces is required in parallel with the preparation of Room Layouts. RCP must also indicate coordination of structure and specialist equipment. All design team consultants to review and sign off on reflected ceiling plan.

1.29.3 The RIS and RLD development process shall involve at least 3 Nr. User Group meetings per Department. The Architect and DT shall provide and use a software programme to produce the RIS and RLD e.g., Activity Data Base, Codebook, which is deemed acceptable at the project outset by the Client. Preparation of the RIS and RLD, including equipping information, shall be undertaken in accordance with the provisions set out in more detail at **Appendix 10** and shall be finalised as part of Stage (ii)B and in any event, prior to tender.

1.30 Information & Communication Technology (ICT):

1.30.1 Significant reliance is placed upon the provision and use of a secure and reliable ICT network to support building, business, and clinical process systems within the proposed healthcare facility. The vision for the future is for a more modern, efficient health service designed around the needs of patients. The assumption in the design of the facility is that ICT will be deployed to all areas for use by staff, patients, and non-clinical services. This will enable real-time access to information, updated reporting, and will enable more efficient and informed decision making and operations within the organisation.
The Design Team shall liaise with the UHG IT Manager to determine the requirements for tie-in to the existing hospital ICT infrastructure and these requirements shall be incorporated into a fully detailed and coordinated ICT design.

1.30.2 The minimum ICT systems required to support delivery of care shall be to HIMMS level 6 and these are set out in **Appendix 11**. The final requirements will be developed through the design process.Design of IT cabling shall comply with the HSE National Cabling Standards Version 5.7 dated 21 May 2025.

1.31 Common Data Environment / Document Management System:

1.31.1 National Estates Information System (NEIS)

The NEIS provides digital solutions for the full project asset lifecycle under the pillars of Design, Architecture, Engineering, Construction and Operations (DAECO). The current systems are "Oracle Aconex" CDE to Design and Build the asset and "IBM Tririga" for Operational Management for the built environment and associated assets.

1.31.2 Common Data Environment (CDE)

1.31.2.1 The Client shall provide the DT with access to the CDE through the NEIS (National Estates Information System) which must be used by the DT and Works Contractors for all pre-contract and post contract stages and sub-stages of the project. Use of the CDE includes but is not limited to, filing, archiving, project communications, document collaboration, document reviews, reporting and all Tenderer and Contractor communications (other than procurement correspondence via the e-tenders portal). Further information can be obtained at the following link: https://www.hse.ie/eng/about/who/healthbusinessservices/estates/neis-introduction-to-aconex.pdf

1.31.2.2 The Aconex application which is provided by the Client and has been configured to take account of the various Government Construction Contracts Committee (GCCC) Public Works Contracts, as well as all of the technical requirements and procedures required to be adhered to by the Client.

1.31.2.3 Documents, drawings, models, and other information can be uploaded and shared with relevant Design Team members, Contractors, and Client as appropriate through the Aconex Oracle platform. It has the ability to retain and manage revision and version control of all documents. It manages communication in the form of pre-defined mail types. It allows for workflows to review documents through multiple parties. It offers a field module to manage inspections and punch lists. It has clash detection and issue management for models. Each design team discipline will be responsible for the production of their respective drawings, models etc. on the necessary Authoring Software (AutoCAD, Revit, Navisworks etc.) and uploading the drawings etc. when required for sharing. The platform has a built in PDF Document and 3D Model Viewer meaning all outputs should be uploaded in PDF as well as native format (e.g. .dwg, .rvt, .nwd etc.). It also allows for online viewing and editing of .xls and .doc.

1.31.3 Integrated Workplace Management System (IWMS):

1.31.3.1 The IBM 'Tririga' platform provides optimal asset, maintenance and environmental & sustainability management for full Lifecycle of the built environment. Tririga is the nominated IWMS system of the HSE Capital & Estates for the transfer of handover data for Operational lifecycle needs. It is the nominated platform to receive the handover information in the pre-defined NEIS AIR / Asset Register (current version) ~~or~~ and transferred digitally through the BIM Connector. The Design Team will not be required to engage with the IWMS, the requirement is to hand over the required information as per the agreed format.

1.31.3.2 The above sections (CDE & IWMS) must also be included within the tender requirements for the main contractor and any other relevant appointed parties.

1.32 Communication:

1.32.1 The Design Team Lead (DTL) shall take all instructions from and engage with the Client. They shall obtain permission from the Client to commence each stage of the services. The DTL shall determine lines of responsibility between all DT members including inputs and lines of communication, reporting formats and programme each work task for all stages.

1.32.2 The Design Team Lead (DTL) will be required to support the Client in managing communications with all relevant stakeholders involved in the Project including, inter alia, planning authorities, local authorities, utility companies, adjacent landowners, neighbours, statutory bodies, government departments and resident groups. The Client shall pre-approve all formal communications to statutory bodies.

1.32.3 The DTL must seek approval from the Client regarding any publications the DT team propose sharing about the project. As an example, no information about the project should be shared on any Consultant website or LinkedIn without explicit permission being provided in writing.

1.32.4 It is a Client requirement that **all** project and contract related communication will be delivered and managed on the NEIS platform. The DTL shall ensure all DT design information is being distributed and stored appropriately via the Employer's online electronic document management system.

1.32.5 NEIS has been set up to reflect the conditions of the various Public Works Contracts (PW-CF 1 – PW-CF 11).

1.32.6 The primary method of communication on the platform is by *system mail forms* and all project related communication should be carried out on the platform.

1.32.7 The system also includes mail types to enable Design Teams to submit their end of stage reports in compliance with these Technical Requirements and the Clients specific procedures approval protocols.

1.32.8 **Appendix 12** of this Technical Requirements Document introduces NEIS. This gives a brief outline of the platform together with information on how the Design Team members register for use of the NEIS, as well as how Design Team members can access support and training on the use of the NEIS platform.

1.32.9 The Client through the NEIS Support Team will organise training for all organisations on the configuration of the platform. It will be mandatory for each Design Team Member (all of the Consultants specific project team) to attend the required training on the use of the NEIS platform. There will be no exceptions to this (typically 2 - 3 x 2hr sessions).

1.32.10 The NEIS Support Team includes a System Administrator for the NEIS Platform who will be available to all Organisations to assist with any issues pertaining to the system set up and operation.

1.32.11 The Design Team will be required to communicate the use of the NEIS Platform to tendering Contractors and to advise of the requirements to comply with its use.

1.32.12 The Client has devised a **File Naming Convention** which will be used for all Document Numbering and the NEIS Platform (Aconex module) has been configured to suit this Naming Convention (refer *Doc Ref 1.07 NEIS File Naming Convention* as part of the tender documentation).

1.32.13 All Design Team members and Contractors will be required to comply with the Clients Naming Convention which is based on I.S. EN. ISO 19650-2: 2018 National Annex.

1.32.14 All costs and fees associated with the provision and maintenance of this system (CDE) shall be borne by the Client.

~~1.32.15~~ The DT Members shall include in their fee proposal for all the internal overheads including photocopying, printing, IT charges, travel subsistence, telephony and any other items required associated with the use of the CDE, including administration of same.

1.32.16 Each Design Team member organisation must register independently with NEIS Platform and individual DT member organisation configuration will be managed by their own Organisation Administrator.

1.33 Business Case Requirements:

1.33.1 Overview:

1.33.1.1 If required, The DT shall assist the Client in the preparation of a robust Business Case for projects. The Business Case shall be prepared in compliance with the Infrastructure Guidelines published by the Department of Public Expenditure, National Development Plan Delivery and Reform (December 2023). A link to the Guidelines for ease of reference: https://www.gov.ie/en/collection/e8040-infrastructure-guidelines/

1.33.1.2 The key deliverables are summarised into the following:

(a) Peer review of ongoing cost estimates.

(b) Peer review of ongoing risk management prepared at each of the appropriate Decision Gates.

(c) Produce a Longlist Assessment Report (LAR), for submission to the Approving Authority prior to the submission of the Preliminary Business Case (PBC), if required to do so.

1.33.1.3 The Business Case shall include all information and data necessary or reasonably inferred as necessary to comply with the Infrastructure Guidelines (latest at the time of Business Case development).

1.33.1.4 The Business Case shall account for all the constituent work packages of the project as outlined in the tender documents across the full programme.

1.33.1.5 The Business Case must provide robust and defensible information that can contribute to the successful advancement of the project to secure the necessary approvals for the scheme. The document will be subject to public and stakeholder interrogation.

1.33.2 Preliminary Business Case:

1.33.2.1 If required, The DT shall assist the Client and provide all technical inputs required to prepare a fully detailed and reasoned Preliminary Business Case (PBC) in accordance with the Infrastructure Guidelines (latest at the time of the Preliminary Business Case).

1.33.2.2 The PBC shall build on the Strategic Assessment (undertaken as part of the Strategic Assessment Report) and serve as a detailed appraisal of available options. The report shall establish the preliminary economic basis for the project and justify the reasoning for Approval in Principle to proceed to relevant gateway approval. Decision Gate 2 of the Infrastructure Guidelines – the Detailed Project Brief and Procurement Strategy. When stakeholder feedback is returned on the PBC, the DT shall address and incorporate those comments in the PBC, and resubmit the updated version to the Client, without causing delay to follow on deliverables.

1.33.2.3 The PBC will include, but not limited to, the following elements:

1. Set the context.
2. Define the need for intervention.
3. Set the programme objectives.
4. Assess the programme alignment with national and local policies.
5. Discuss lessons learned from similar previous or ongoing schemes.
6. Conduct demand analysis.
7. Create a Longlist of feasible solutions and interventions.
8. Conduct multi-criteria Analysis on longlist of options to derive shortlist of options.
9. Conduct financial appraisal, affordability assessment, and detailed appraisal of each shortlist option to identify preferred option.

10. Conduct risk assessment for shortlisted options and provide risk management strategy for preferred option.
11. Put forward a framework for monitoring and evaluation including Key Performance Indicators (KPIs).
12. Outline plan for procurement, implementation and operation.
13. Recommend whether to proceed with programme based on detailed appraisal, affordability assessment and risk assessment.

1.33.3 Final Business Case:

1.33.3.1 The Client shall prepare a Final Business Case (FBC) for submission for the Infrastructure Guidelines Decision Gate 3 'Approval to Proceed'. The FBC is the culmination of the ex-ante appraisal process for a programme and gives prominence to the preferred intervention option for a programme and is expected to outline in detail how the programme will be implemented, governed, and reviewed through an ex-post evaluation.

1.33.3.2 The contents of an FBC shall contain the following and the DT shall support the Client in the preparation of the FBC:

1. Review the preferred option rationale, strategic relevance and ability to achieve objectives.
2. Provide the Detailed Project Brief, with updates from the tendering process.
3. Elaborate on the scheme governance structures, with a detailed framework.
4. Establish the project or programme execution plan in detail using the latest version.
5. Review key information including demand estimates, costs and benefits, and other appraisal results, using information from the tendering process as necessary.
6. Re-examine affordability within existing resources, using update information following the tendering process.
7. Develop a Benefits Realisation Plan.
8. Develop an Evaluation Plan.
9. Provide a recommendation for the Approving Authority.

1.34 Presentations and Presentational Material:

1.34.1 The costs of attendance at meetings, presentations and hearings with stakeholders or community groups and the preparation of any material required shall be included in the DT members' tenders.

1.35 Stage Completion Reports:

1.35.1 Prior to completion of each project stage, the Design Team Lead assisted by the other DT Members shall prepare a fully co-ordinated stage completion report for the Client, recording all relevant issues considered during that stage, decisions made and implications for the project. Following Client review of the stage report the Client may approve the report and indicate approval for the DT to commence the next stage of the project or may request further clarification as appropriate.

1.35.2 These reports shall be set out on a discipline-by-discipline basis, include reference to actions relating to BIM, the EED process, floor area reconciliation and specific requirements at each development stage with reference to programme, feasibility, design brief, cost control, procurement issues, contract issues, construction, completion, and all other relevant issues.

1.36 Performance Evaluation and Post Project Review:

1.36.1 Each Consultant's and Contractor's overall performance will be reviewed during the project stages. A Post-Project Review will take place during the Defects Liability period, and this will determine eligibility for inclusion in future HSE Frameworks competitions. Full participation of each Consultant in these processes is compulsory and should be included in any tender bid.

1.37 Peer Reviews:

1.37.1 There will be a number of Peer Reviews for core disciplines undertaken during the design of the project, up to and including Stage (ii)C. Design disciplines will be expected to facilitate & support these reviews. The scope of the Peer Review shall be set by the Client. The Client may request a focused Peer Review on a specific design element(s) or a broader, general peer review of a design strategy or design discipline. The findings of the Peer Review will be shared with the relevant Design Disciplines for their review and comment.

1.37.2 As part of the Stage (ii)C Peer review, the Design Team Lead will be required to collate and issue a complete and coordinated tender pack to the Client for a final Peer Review prior to tender documents being issued. This must include but is not limited to document registers for each discipline, all drawings, specifications, schedules and schematics etc. as listed on the document registers, a background information pack which will be issued with tender documents (e.g. surveys, statutory consents, other information about a site etc.) and a complete and federated BIM model.

1.37.3 The final tender pack will be reviewed by an appointed Client Peer Reviewer who will collate comments, RFI's, observations or issues on a register that will be issued to the DTL for a response and / or action by the DT team. The DTL will coordinate and collate all responses to the Peer Reviewer queries. For clarity, the register of correspondence may be issued on several occasions until the Client is satisfied that all correspondence has been addressed. The DT will continue to provide responses as required until the process has concluded to the satisfaction of the Client.

1.37.4 The DT team will be required to attend meetings as required with the Peer Reviewer to explain / provide clarity on the responses proposed by the DT team to the Peer Reviewer comments, RFI's, observations or issues raised.

1.37.5 The DT team will be required to update the tender pack to address any issues identified by the Peer Reviewer at no additional cost to the Client.

1.37.6 At the end of the Stage (ii)C Peer review process, the DT will be required to provide a report confirming how all issues, comments, RFI's etc. have been addressed in the revised tender pack. The DT team (each discipline) will then be required to provide confirmation to the Client on a headed letter confirming that:

1.37.6.1 The tender package provided has been coordinated with other disciplines.

1.37.6.2 The tender deliverables as provided have been Checked and Approved in accordance with our Quality Control Process.

1.37.6.3 The tender package provided includes all design requirements relating to our Scope of Service.

1.37.6.4 The tender package provided is final and that no further revisions to tender documentation are anticipated.

1.38 Project Execution Plan (PEP):

1.38.1 The PEP is a key deliverable under the Infrastructure Guidelines. The DTL will prepare and issue a Project Execution Plan (PEP) for the project which aligns with the Capital Works Management Framework Guidance Note 1.1 Project Management. The DT will be required to support the DTL where required in the creation of this document so that a comprehensive structure for the project is defined when the document is complete. The DT will be required to follow the structure of the Project Execution Plan as the project progresses including but not limited to the communication process, change control process, document management and risk management etc., and as this will be a live document, updates will be required at each project stage. The DT will be required to support updates as required.

[End Section 1 - Introduction]

SECTION 2: GENERAL INFORMATION REGARDING THE PROJECT

1 GENERAL INFORMATION REGARDING THE PROJECT

2.1 Project Description:

2.2.1 Please refer to Technical Requirements ancillary document titled '*Specific Project Information'* for Project Description.

2.2 Project Design Team Requirement:

2.2.1 Please refer to Technical Requirements ancillary document titled '*Specific Project Information'* for:

2.2.1.1 The Project Design Team.

2.2.1.2 Particular Services by the Design Team.

2.2.1.3 Services which are to be Provided as part of Architectural Service.

2.2.1.4 Services which are to be Provided as part of the C&S Engineering Service.

2.2.1.5 Services which are to be Provided as part of Building Services Engineering Service.

2.2.1.6 Particular Service Requirements for the Project.

2.3 Performance Periods & Stages:

2.3.1 Please refer to Technical Requirements ancillary document titled '*Specific Project Information'* for:

2.3.1.1 Performance Periods & Stages.

2.4 Typical Meetings to be Provided:

2.4.1 Please refer to Technical Requirements ancillary document titled '*Specific Project Information'* for:

2.4.1.1 Table of Meetings envisaged for the project.

2.4.1.2 Notes in relation to meetings.

2.5 Schedule of Design Team Minimum Site Attendance:

2.5.1 Please refer to Technical Requirements ancillary document titled '*Specific Project Information'* for:

2.5.1.1 Schedule of Design Team Minimum Site Attendance during Stage (iv) Construction.

2.5.1.2 Schedule of Design Team Minimum Site Attendance during Stage (v) Defects Period.

2.6 General Items:

2.6.1 The following items are included with the Technical Requirements document:

2.6.1.1 Outline Design Brief (Section 1.21 of this document).

2.6.1.2 Campus Wide Issues (Section 1.22 of this document).

2.6.1.3 Existing Planning Context (Section 1.23 of this document).

2.6.1.4 Wider Community Impacts (Section 1.24 of this document).

2.6.1.5 Campus Mobility Management Plan (Section 1.25 of this document).

2.6.1.6 Enabling Works Contract (Section 1.26 of this document).

2.6.1.7 Aspergillus Prevention Works (Section 1.27 of this document).

[End Section 2 – Project Information]

SECTION 3: SCOPE OF SERVICES – DESIGN TEAM

3.0 SCOPE OF SERVICES – DESIGN TEAM:

3.1 Scope of Services – Design Team:

This section describes the typical scope of services required from the various named Design Team Consultants. The make-up of the Design Team for this project is set out in an ancillary document to this Technical Requirements document titled '*Specific Project Information '*.

3.2 Design Team Services:

A summary of the Services, and related Management Services, required for this contract is set out in this document and the Standard Conditions of Engagement for Consultants with completed Schedules A&B. The DT shall provide those services, and those more particularly described in this section of the Scope of Works for the relevant stages together with those services that may reasonably be regarded as consistent with the services required for a project of this size, nature, and complexity. It is required that each member of the design team reports on a monthly basis and on demand an updated project overview which should include project status, programme, decisions awaited and any other critical elements.

3.2.1 Design Team (DT) Lead Consultant:
The DT member designated to take on the role of DT Leader is noted in *Doc. Ref. 1.02 Specific Project Information* document as part of the tender pack and ancillary to this TR document. Their role is to manage the entire design team process from start to finish including their particular role in leading DT participation in the EED process also and ensuring the implementation of selected energy performance and net carbon zero initiatives into the design. (Refer also to Section 1.7, 1.14 & 2.13).

3.2.2 Architectural Service:
The detailed Architectural service is set out in this Scope of Works section. It shall also include but shall not be limited to any specialist services set out in *Doc. Ref. 1.02 Specific Project Information* document as part of the tender pack and ancillary to this TR document. Design services in respect of these disciplines are deemed to be included in the Architectural service either through in-house expertise or through the Architects sub-contractors.

3.2.3 Quantity Surveyor:
The DT Quantity Surveyor shall be the DT's Project Cost Consultant responsible for the total project budget development, budget management and cost control throughout all the project stages as set out in this Scope of Services and this responsibility will include the budget development, budget management and cost control of all Building Services (M&E) costs throughout all project stages.

3.2.4 Building Services (M&E) Engineer:
The Building Services (M&E) Engineer service is detailed in this Scope of Works section. Reference is made to their particular role as a key player in the EED process (refer to 3.10), and their key role in fully co-ordinating their design with the other Design Team members.

Commented [JM3]: Is there any point in noting a requirement to survey, relocate/remove with any M&E services which clash with the tie-in point of the new and existing buildings. This may well be resolved as part of EW works contract though I just wondered if some M&E kit remains in place until the last minute, ie post EW contract.

The M&E Engineer will survey and map all building services systems as necessary to complete the project, in particular, at interface locations where the new building connects to existing buildings. The M&E Engineer shall identify where there may be a requirement to tie-in or integrate with existing building services systems or client systems. Any requirement to disconnect, divert, relocate, remove or replace existing M&E plant or services shall be identified and all associated works included as part of this project.

The M&E Engineer will also identify where there may be a requirement to integrate other building or client ICT systems. The Building Services (M&E) Engineer will be responsible for the development and incorporation of a utility metering strategy and design. This metering design shall be compatible with the National HSE Capital & Estates Energy Monitoring System without any modifications/alterations required post install.

See that the following ICT systems are designed and delivered via the Capital project. It is the M&E Engineer's responsibility to design and specify these systems (non-exhaustive):

Capital Project:

Commented [JM4]: This section seems to discuss ICT items. Should we also be discussing other M&E items such as say, integration of systems such as fire alarm, medical gases, BMS etc.

1. Structured cabling.
2. Server room - Power/cooling.
3. Energy management system (part of Building Management System).
4. Building management system (BMS).
5. Building Security and Access Control/ Surveillance Infrastructure.
6. Fire alarm infrastructure (Should include an ESPA-X interface module for Integration).
7. Sensors (temp. motion etc.).
8. Building information modelling system (BIM).
9. Lift management.
10. Visitor management.
11. LAN containment.
12. Master clock.
13. Theatre control panel (if relevant).
14. Nurse Call.
15. Building, Clinical and Corporate Integration (Capital Interfaces).
16. Intelligent Patch Panels.
17. Digital patient engagement & Education (Displays only being installed by client).
18. Operating Theatre AV management and distribution system.
19. Ensure the building supports, fully integrates, and supports a hospital Baby tagging system.

3.2.5 Civil/Structural Engineer:
The Civil/Structural Engineer service requirements are set out in detail in this section of the Scope of Works. It shall include the civil and structural design of all aspects of the project, (including in-ground services as required) in compliance with all relevant codes, standards, and regulations. The civil and structural design shall be undertaken using BIM and shall be fully co-ordinated with the other DT members. The Civil/Structural Engineer service shall also include all necessary traffic and mobility engineering services, either by way of sub-consultant or in-house specialist if indicated in the '*Specific Project Information*' document as part of the tender pack and ancillary to this TR document.The Civil/Structural engineer shall be responsible for the procurement and management of all below ground surveys including but not limited to geotechnical survey, buried services survey, cctv survey of below ground drainage and watermain pipes. Payment of survey contractors shall be made by the client on the engineers recommendation.

3.2.6 PSDP Service and Safety, Health & Welfare at Work (Construction Regulations):
Services of the Project Supervisor for the Design Process (PSDP) under the Safety, Health & Welfare at Work (Construction) Regulations 2006, shall be an independent appointment. Please refer to **Appendix 1** of this document for Scope of Service for PSDP.

3.2.7 Fire Safety Consultant:
Where it is anticipated that a Fire Safety certificate is required, the services of a fire safety consultant will be retained. The scope of services for the Fire Safety Consultant is outlined in an **Appendix 2** to this document.

3.2.8 Planning Consultant:
The Planning Consultant shall provide all the professional services necessary to comply with the Employer's instructions and to ensure satisfactory completion of the project. The Planning Consultant shall provide expert planning advice from the beginning of the project to inform the planning consent route, with subsequent direction being required on the desired or appropriate option. **Appendix 3** of this document also relates.

3.2.9 Employers Representative (ER):
The resource designated to take on the role of ER is noted in the '*Specific Project Information'* document as part of the tender pack and ancillary to this TR document. Their role is to discharge all functions required of the Employer's Representative (ER) under the terms of the Public Works Contract.

3.2.10 EED Facilitator:
The EED facilitator shall report to the EED owner, coordinate the EED process, operate independently of the project design team, and have the responsibility and authority to challenge the design and ensure the EED process is applied throughout the design and construction process. The EED Facilitator shall also compile the EED Report at the required Stages.

3.2.11 All Design Team Members - General:
DT Members are responsible for all work (relevant to their discipline) required to design and construct the Project in a competent and professional manner (whether expressly stated or not). All disciplines are required to co-operate with each other and the DT Leader in a timely manner and provide all information and documentation needed to permit the other disciplines to complete their work.
All design team members are expected to review the documents prepared by other members of the design team to see that there is consistency in details across disciplines. Design team members are expected to review the sections of the Bill of Quantities relevant to their discipline, and point out any significant discrepancies to the Quantity Surveyor

DT Members are also required to operate a quality control system and co-ordinate all information and stage documentation with other DT Members and ensure compliance with the briefing information, contract documents including the Works Requirements and any authorised Client instructions.

The DT to see that provision is included in their service to allow for review of all contractor design proposals.

3.2.12 Specialist Services:
The DT are to include as part of their services and include in their tendered fees the costs of the following specialised services as necessary (this list is non-exhaustive):

3.2.12.1 Appropriate Assessment screening report (full AA excluded, unless already known they are required). This service to be provided by the Architect

3.2.12.2 Environmental Impact Assessment screening report**. This service to be led by the Civil and Structural Engineer

3.2.12.3 Ecological Impact Assessment with associated initial biodiversity surveys. This service to be provided by the architect

3.2.12.4 Initial biodiversity surveys including bat study, invasive species report, winter bird and summer bird survey as applicable. This service to be provided by the Architect.

3.2.12.5 Construction and Environmental Management Plan. This service to be provided by the Civil and Structural Engineer

3.2.12.6 Construction and Operational Waste Management Plan including Resource Waste Management Plan. This service to be provided by the Civil and Structural Engineer

3.2.12.7 Landscaping Visual Impacts Assessment & Graphics (incl. verified views and CGIS). This service to be provided by the Architect

3.2.12.8 Photomontages. This service to be provided by the Architect

3.2.12.9 Sunlight & Daylight Modelling - Impact Studies & Report. This service to be provided by the Architect

3.2.12.10 Road Safety Audit (All Stages). This service to be provided by the Civil and Structural Engineer

3.2.12.11 Archaeology Report. This service to be provided by the Architect

3.2.12.12 Drainage, Water Supply and Utility Records. This service to be provided by the Civil and Structural Engineer

3.2.12.13 Flood Risk Assessment. This service to be provided by the Civil and Structural Engineer

Commented [MM5]: Should we consider assigning roles to specific DT members? I've had a go in red

3.2.12.14 Digital Ordinance Survey-licensed tiles. This service to be provided by the Architect

3.2.12.15 Declarations of identity for boundary confirmation. This service to be provided by the Architect

3.2.12.16 Community, cultural and arts audit. This service to be provided by the Architect

3.2.12.17 Building / Development Lifecycle Report and Operational Management Statement. This service to be provided by the architect with contributions as relevant from other design team members

3.2.12.18 Wind Modelling & Report / Microclimate Assessment. This service to be provided ty the Civil and Structural Engineer

3.2.12.19 Building Energy Modelling. This service to be provided by the Buidling Services Engineer

3.2.12.20 Facade Specialist. This service is to be provided by the Architect

3.2.12.21 Conservation Report.

3.2.12.22 Lift proposal report.

3.2.12.23 Aviation Report

For all of the above services, the lead design team member is named. Other design team members shall contribute to the service as relevant to their discipline.

** *With respect to the Environmental Impact Assessment screening report, where as a result an EIAR is required to be submitted, the DT's tendered fees should include for the cost of coordinating and managing completion of the EIAR, the procurement and appointment of any specialist surveys required, and the DT resources required to complete the chapters of the EIAR; but the cost of any specialist surveys required for the preparation of the EIAR shall be established following the DT appointment and borne by the Contracting Authority.*

3.2.13 <u>Specialist Surveys:</u>

3.2.13.1 The DT are to include as part of their services, and include in their tendered fees, for the procurement, appointment, co-ordination and management of the following specialist surveys, as necessary (non-exhaustive list). The contracting authority will reimburse the cost of these specialist surveys.

Commented [MM6]: There has been an issue in the past with specific DT members not taking responsibility for specifying surveys assigned to 'DT'. C/S engineer did not consider procurement of the SI to be part of their responsibility. I've had a go in red

1. Topographical Survey*. This service is to be provided by the Civil and Structural Engineer

2. Measurement and condition surveys of existing structures*. This service is to be provided by the architect
3. Intrusive surveys*. This service is to be provided by the architect
4. Protected Structure fabric sampling and analysis*. This service is to be provided by the architect
5. Ground / Geotechnical Investigations (including Soil Infiltration Tests).*. This service is to be provided by the Civil and Structrual Engineer
6. Waste Acceptance Criteria Assessment*. This service is to be provided by the Civil and Structural Engineer
7. Utilities Survey (including GPR survey).*. This service is to be provided by the Building Services Engineer
8. CCTV Survey*. This service is to be provided by the Civil and Structural Engineer
9. Pressure Testing Watermains*. This service is to be provided by the Civil and Structrual Engineer
10. Archaeological Test Trenching & Monitoring*. This service is to be provided by the Architect with specailisd advice as required
11. Slit Trenching & Monitoring*. This service is to be provided by the Civil and Structural Engineer
12. Tree Survey & Report. This service is to be provided by the Architect
13. Biodiversity & Ecological Surveys (e.g. Bat& Bird Surveys, Mammals, Invasive Plant Survey), subsequent to the initial biodiversity & ecological surveys. This service is to be provided by the Architect
14. Traffic Survey. This service is to be provided by the Civil and Structural Engineer C&S
15. Contaminated Land & Remediation Specialist*. This services is to be provided by the Civil and Structural Engineer
16. Noise, dust and vibration monitoring and modelling*. This services is to be provided by the Architect
17. Air quality monitoring and modelling*. This service is to be provided by the Architect
18. Telecommunications Report. This services is to be provided by the Building Services Engineer
19. Glint and Glare and Bird Flights Report. This service is to be provided by the Architect
20. 3D survey at ceiling spaces at all interface locations with the existing hospital

3.2.13.2 The DT shall advise at the earliest possible stage of any other surveys that may be required for the project and shall scope and procure such surveys in consultation with the contracting authority.

For all of the above surveys, the lead design team member is named. Other design team members shall contribute to the service as relevant to their discipline.

For Specialist surveys above, the reimbursed cost relates only to the procured third-party specialist services. For each of the reimbursable surveys, a minimum of three quotations will be required together with an evaluation report which will be subject to approval by the Client.

* *The DT should note, in addition to the requirements set out above, the DT shall be responsible for identifying the issues to be addressed in each survey/report and for making relevant information available to each survey/report provider, as well as managing the timely delivery of the surveys. The DT shall ensure that each survey/report is addressed to the HSE and will allow the HSE to rely upon the report (and the accuracy of the same). Save as expressly set out here, the DT shall not be responsible for the content of any of these surveys/reports prepared by third parties.*

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3.3 DT Members roles in relation to Safety, Health and Welfare at Work (Construction Regulations):

3.3.1 All relevant members of the Design Team and designers shall co-operate with the Project Supervisor for Design Process (PSDP), providing all information necessary for the purpose of the PSDP fulfilling their duties under the current Safety, Health & Welfare at Work (Construction Regulations).

3.3.2 All relevant members of the DT shall discharge their duties under the regulations including carrying out designer's risk assessments eliminating or mitigating risks where possible and co-operating with the PSDP as appropriate throughout all stages of the project.

3.4 Procurement:

3.4.1 A Procurement strategy is critical to success of the delivery of project and programme deliverables, to ensure value for money and ensure compliance with law and regulation. Risk Assessment is a key consideration in the development of a procurement strategy.

3.4.2 Early consideration of procurement options is a requirement of the Infrastructure Guidelines (IG) which can ensure smoother execution of the project at later stages of the project lifecycle.

3.4.3 The DT shall assist the Design Team Lead and Client in the development and delivery of a procurement strategy, ensuring sound consideration of procedure options in accordance with regulations and the nature of the work being procured and selection of criteria in deciding outcomes of procurement processes.

3.4.4 There is a requirement for a clear written recommendation to the Client by the Design Team Lead with the required inputs by the other Design Team members in considering all of the viable procurement options and this requirement will be ongoing commencing at Stage (i) updated through Stage (ii)A and Stage (ii)B with a final recommendation at Stage (ii)C.

3.4.5 The Design Team Lead will lead this exercise and provide the necessary reports at each stage with a final report and recommendation at Stage (ii)C.

3.4.6 When the Procurement Strategy has been signed-off, the Design Team Lead will assist the Client in the delivery of same up to the necessary construction appointments. Refer Appendix 14 for full scope of service requirements relating to this role.

3.5 Risk Management:

3.5.1 The management of risk is critical to the success of any cost planning and cost control exercise. The combination of mitigation measures and financial assessment will play an important role in risk management and decision-making regarding project management.

3.5.2 For compliance with the Infrastructure Guidelines (IG), a risk management strategy is required for this project. The DT will support the Design Team Lead and Client in this process in its entirety, including but not limited to preliminary identification of risks, assessment of risks, development of the full risk management strategy and delivery of same. In addition to supporting the development and delivery of a full risk management strategy, the DT will also be required to support the calculation of optimism bias, as required in the Infrastructure Guidelines.

3.5.3 The DT Leader shall be advised by the DT Quantity Surveyor with the assistance of the other members of the DT, on Risk Management issues at and through all stages of the project, including:

3.5.3.1 Leading and participating in project risk analysis, in collaboration with the Client to identify all the relevant project risks from planning, design, construction, and operating risk.

3.5.3.2 Implement best practice risk management including the identification, assessment, evaluation, and mitigation of all relevant project risks.

3.5.3.3 Complete initial risk analysis identifying all the relevant project risks appropriate to each discipline. The risk matrix is to include:

1. A brief description of risk.
2. Probability/likelihood of risk materializing (as a percentage).
3. Timing of risk (construction period, operations period, etc.).
4. Risk category (retained, transferable or shared as between the public and the private sector).
5. Support the DT QS in calculating the commercial impact of the risk where appropriate.

3.5.3.3 Attend risk review meetings with the Client to review and update the Project Risk Matrix.

3.6 Value Management:

3.6.1 The DT Leader shall be advised by the DT Quantity Surveyor on value for money on proposed options to include future (projected) cost of carbon, in order to obtain optimum balance between benefits gained and investment made at and through all stages of the project.

3.6.2 The Infrastructure Guidelines mandates that all short-listed options must undergo a detailed financial appraisal to assess the affordability and financial impact of each option. In certain instances, the Approving Authority may advise that a detailed economic appraisal must be conducted to evaluate each option's value for money taking account of wider costs and benefits. The DT Quantity surveyor shall provide the appraisal team with inputs relating to project costs and risks to ensure all work is compliant with the Infrastructure Guidelines.

3.7 Value Engineering:

3.7.1 Project delivery within agreed budgets is a key objective of the project and where necessary the Architect assisted by the DT shall fully participate and input into the project value engineering exercise(s) to bring the overall estimated project budgets in line with the agreed Client budget. It shall be part of the scope of each service to contribute fully to discipline relevant value engineering. Consultants will participate with other members of the DT in co-ordinated value engineering and life cycle costing exercises as appropriate. Value Engineering shall apply through all stages of the project and shall be reported to the Client at appropriate intervals and particularly at Stage Reporting.

3.7.2 It is important that the value engineering process does not lead to opportunities with an overall positive Net Present Value being excluded without further consideration. Other opportunities with an intangible/unquantifiable benefit to the project, client, client staff and/or patients, or opportunities that contribute to the Client's overall Strategic Objectives must also be fully considered and weighed up by the project team before being excluded through the value engineering process.

3.8 Contingency Management:

3.8.1 Contingency Management is inextricably linked to risk management and the project programme. They are required to be managed in tandem to ensure the smooth and orderly transition through stages. The DT, through the Design Team Lead Consultant, shall manage the design contingency and the DT Quantity Surveyor shall report on the contingency through their cost reporting function.

3.9 Roles & Responsibilities arising under BC(A)R to be discharged by the Design Team:

3.9.1 Roles and responsibilities arising under BC(A)R shall be included within this Scope of Service and shall be discharged by the DT as follows:

3.9.1.1 The Design Team Lead shall undertake the role of the **Design Certifier** as outlined in **Appendix 4** to this document.

3.9.1.2 The **Assigned Certifier** as outlined in **Appendix 5** to this document is an individual discipline.

3.9.1.3 All DT Members as **Designers** shall provide ancillary certificates and all necessary service to the Design Certifier and the Assigned Certifier during all stages of the project, and as set out in **Appendix 6** to this document.

3.9.1.4 The DT Assigned Certifier shall co-ordinate inspection of the works and shall certify their compliance with building regulations in conjunction with the builder prior to substantial completion of the project.

3.10 Roles & Responsibilities arising under Energy Efficient Design Process:

3.10.1 The Client Project Manager shall be the EED Owner. This person is responsible for ensuring implementation of the requirements of EED process by the DT. The EED Owner shall be responsible on behalf of the Client for approving EED Summary Report and recommendations and outcomes.

3.10.2 The Design Team (DT) Lead Consultant role is to manage the entire design team process from start to finish including their particular role in leading the EED process and ensuring the implementation of selected energy performance initiatives and agreed outcomes of the EED Report into the design, with support from all DT members.

3.10.3 An EED Facilitator will be appointed who shall work closely with the Design Team Lead, and all members of the DT but shall remain independent of the day-to-day design activities.

3.10.4 The EED Facilitator shall lead and co-ordinate the EED process and the application of the EED methodology for the Client and, with the assistance of the DT, shall test the various design solutions in accordance with the current version of Standard IS 399 to identify the combination of solutions which achieve the specified building performance with the lowest and most sustainable associated Life Cycle Cost (LCC) while also being Net Carbon Zero Ready.

3.10.5 The EED Facilitator shall advise, liaise with and report to the EED Owner (Client).

3.10.6 All DT Members shall contribute in a co-ordinated manner, to the EED Reviews and shall provide all information necessary to allow the EED Facilitator to complete the EED Reports required at all stages of the design.

3.10.7 The DT Building Services (M&E) Engineer has a key role in identifying and implementing the EED outcomes and shall provide the computerised Dynamic Simulation Modelling (DSM) package required in assisting in the preparation of the EED Summary Report and, in addition to normal service requirements, shall supply all necessary information to support the EED Facilitator in progressing the EED Process.

3.10.8 The DT Quantity Surveyor with the assistance of the other DT Members and the Building Services (M&E) Engineer in particular, shall provide Life Cycle Costings and Cost Studies in relation to EED process and energy efficiency initiatives under consideration so that the Client may determine the optimal solution in relation to affordability.

3.10.9 As part of the Scope of Service the Building Services (M&E) Engineer shall retain the services of a suitably qualified BER Assessor, as a domestic appointment, to prepare and issue a provisional BER Certificate, a final BER Certificate and associated Advisory Report and assist the Building Operator in obtaining a Display Energy Certificate (DEC) on completion of the Defects Period. The BER Assessor must be included on the current SEAI register of approved certifiers.

3.11 Embodied Carbon:

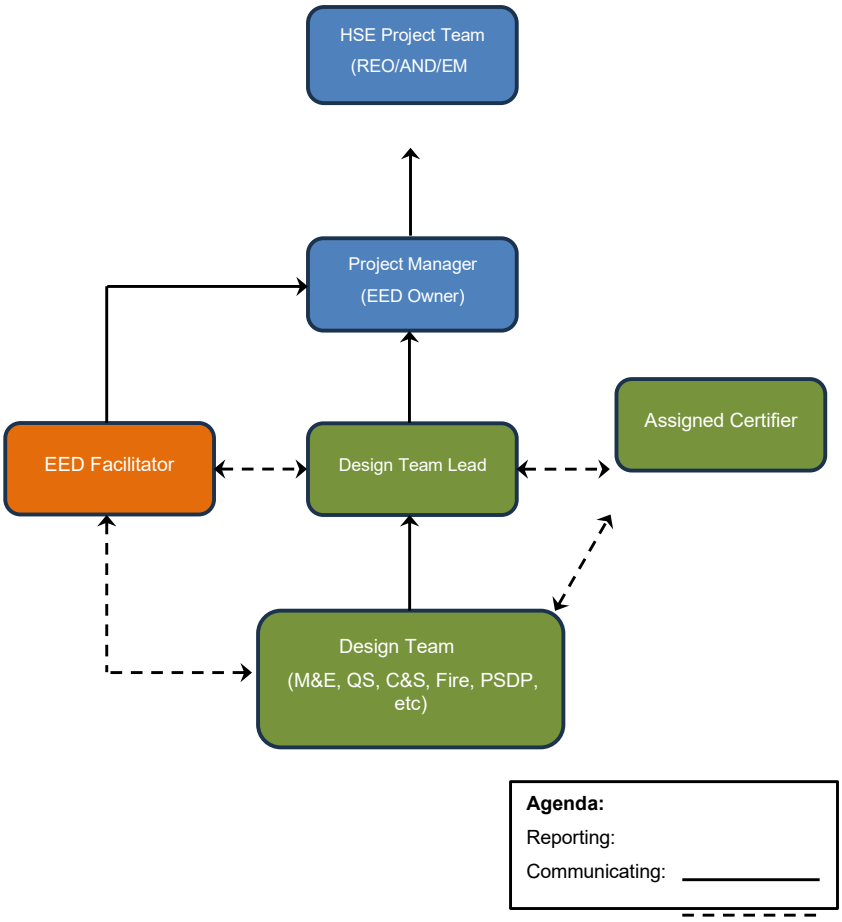
3.11.1 The DT are required to assess the embodied carbon impacts of suggested design solutions and recommend the cost optimal embodied carbon solution which achieves a carbon zero ready building. Refer to the **Appendix 13** where the scope requirements from the DT are confirmed.

3.12 Construction Waste Management:

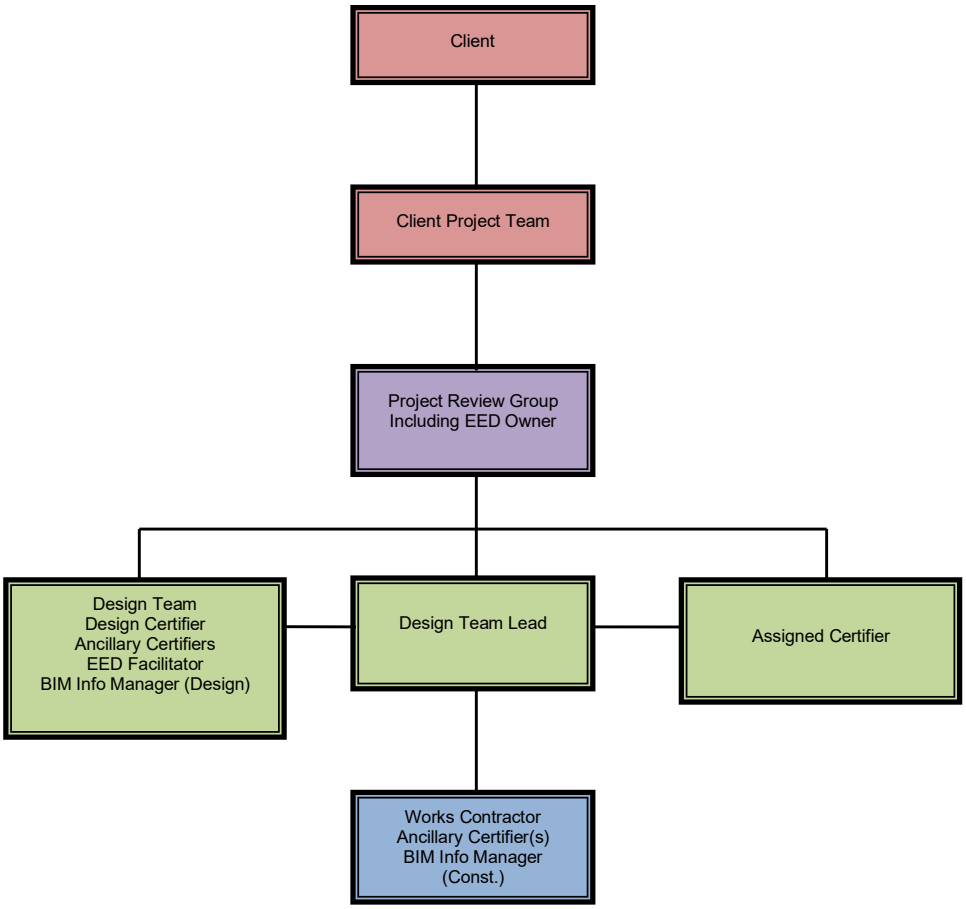
3.12.1 The DT lead will co-ordinate the design team to produce a resource and waste management plan (RWMP) in accordance with the EPA Best Practice Guidelines for the preparation of resource and waste management plans for construction and demolition waste (2021).

3.13 Project Reporting / Relationship Structure (Traditional Building Works):

3.13.1 Reporting / communicating structure for Energy Efficient Design Process:



3.13.2 Reporting / communicating structure for the Project:



3.14 Presentations and Presentational Material:

3.14.1 The Architect and DT shall assist Design Team Lead and the Client in all communications with and presentations to relevant parties which are necessary to help progress the project. Such meetings shall include but not be limited to planning meetings and hearings, Infrastructure Guidelines/public sector review and approval meetings, community engagement meetings and presentations to healthcare staff, patients, and users etc. The DT shall prepare relevant briefing and presentational materials required to support such communications e.g., drawings, electronic presentations etc.

3.14.2 This work shall include preparing such further concept layouts, elevations, 3-D visualisations, and photomontages as are required to support decision making, such as:

3.14.2.1 Planning Application, including 'in-context' visualisations.

3.14.2.2 Client-facing design development, e.g., Internal visualisations of selected principal public areas and clinical rooms.

3.14.2.3 Theatres, if relevant to the project.

3.14.2.4 Publications, newspapers, presentations etc. during and after development.

3.14.2.5 Interior Design, concept & design development including appropriate imagery to indicate interior design proposals such a material, colours, quality of finishes etc. for stakeholder groups.

3.14.2.6 Promotional purposes.

3.14.3 Requirements with regard to the use of BIM, 3D visualisations and 3D walkthroughs are part of the RLD design development process are set out in **Appendix 10**.

3.14.4 Should a physical model be required in agreement with the Client, even as a separate procurement, the DT, led by the Architect, shall organise procurement of it and provide the necessary information required, for no additional cost. While the Client will bear the cost of buying the model, the costs of the DT involvement detailed above are deemed to be included in their tendered fees.

3.15 Project Execution Plan:

3.15.1 The Design Team Lead shall prepare and issue a Project Execution Plan for the project which aligns with the Capital Works Management Framework Guidance Note 1.1 Project Management. As outlined in Guidance Note 1.1, the purpose of the Project Execution Plan is to:

3.15.1.1 Include the plans, procedures and control processes for project design and implementation and for monitoring and reporting progress.

3.15.1.2 Define the roles and responsibilities of all project participants, to ensure that everyone understands, accepts and completes their responsibilities; and

3.15.1.3 Outline the mechanisms for monitoring, review and feedback, by defining the reporting and meeting requirements, and the criteria for independent external review (where appropriate).

The Project Execution Plan should include but is not limited to administrative systems and procedures, Project control and assurance organisation and authority , cost plan and cost management procedures, programme definition, project budget/cost management the BIM Execution Plan, the change control process and the latest project risk register, project works activities, quality management, project administration, stakeholder management. Where required, the DTL will provide sections of the Project Execution Plan for inclusion e.g. BIM Execution Plan. The DTL will be required to update the Project Execution Plan (as required) at the beginning of each project stage.

3.15.2 The Design Team members input is required into the Project Execution Plan.

3.16 General Provisions and Services Applicable to all Stages (All Disciplines):

3.16.1 General Services/Design Parameters:

3.16.1.1 The Design Team Lead will be as indicated in the '*Specific Project Information'* document as part of the tender pack and ancillary to this TR document.

3.16.1.2 The DT will provide comprehensive design and other services including but not limited to, the general coordination, dissemination, collation and management of all technical information.

3.16.1.3 Each DT discipline shall assign a senior staff member who shall direct all relevant activities and attend key meetings including all Client facing meetings.

3.16.1.4 Each DT discipline shall respond to all queries comprehensively within 72 hours or less of receipt unless agreed otherwise by the Client.

3.16.1.5 Each DT discipline shall allocate adequate resources to comply with this agreement (which resources shall include the Key Team Members as identified by each of the DT members in their Tender). For any given period during the course of the Project, for the purposes of the Services, make available and deploy resources at levels at least equal to or greater than:

(a) The resources tendered by the DT for the relevant period save to the extent that the Client agrees otherwise.

3.16.1.6 Do all things reasonably required to ensure the delivery of the Project in compliance with the following constraints:

1. ***Continuity***: Plan and execute the project, and each phase thereof, in a manner that minimises the project's impact on the operations of the Hospital campus, patients, staff and public.
2. ***Cost***: Deliver the Project within the total development cost envelope set by the Client.
3. ***Performance***: Meet the brief and fit-for-purpose in accordance with the Definitive Project Brief agreed at Stage (i)
4. ***Time***: Deliver the accommodation, fully fitted, furnished equipped and occupied, by the dates provided within Doc. Ref. '*1.02 - Specific Project Information*' (subject to revision).

3.16.1.7 And to the extent of any conflict in these constraints (arising by reason of matters which have not resulted from any failure or breach by the DT of the Contract), the constraints shall be given priority in accordance with the order in which they appear above.

3.16.1.8 Deliver all services in an efficient, effective, courteous and professional manner, including methods of resolving issues that may arise.

3.16.1.9 Take instruction from the Client.

3.16.1.10 Advise the Client with regard to their responsibilities under the Health and Safety Regulations.

3.16.1.11 Participate and contribute to Risk Management Workshops throughout the project.

3.16.1.12 Participate and contribute to Value Management and Value Engineering Workshops throughout the project.

3.16.1.13 Utilise the Client's electronic document management system (Aconex) for receiving, reviewing and transferring documents from all DT Disciplines and the Client. The Design Team Lead will be responsible for arranging access for all DT Members. The Design Team Lead will coordinate this through the Client, who will issue access permissions.

3.16.1.14 Maintain and own all design information on electronic document management system including design related folder structures, correct usage including revision control, audits (no less than monthly) of information for appropriate signoffs, correctness and timeliness through all Project Stages including construction.

3.16.1.15 In the event that video conferencing platform is used for certain meetings, this will only be with the express consent of the Client. In such events, Microsoft Teams will be the platform used. All DT members must have access to Microsoft Teams.

3.16.1.16 In certain circumstances, the Client will record meetings / workshops to facilitate accuracy of records. Also, the Client may instruct the Design Team Lead to record meetings / workshops with the same aim. Such recordings will be deleted once the outcome of such meetings / workshop are documented. This will only occur in instances where expressly noted by and agreed with the Client.

3.16.1.17 The Design Team Lead is required to provide a list of any Contractor Design items for review and approval by the Client in sufficient time before the completion of tender documents. To be clear, the DT are required to fully coordinate and issue a complete tender pack with a complete design.

3.16.1.18 Develop and maintain a design document register, identifying all design deliverables, their name, status and location.

3.16.1.19 Establish and present to the Client a naming convention for all DT documentation. Ensure this is employed accurately by all DT members for all documentation throughout the project, at all times.

3.16.1.20 Perform the duties required of the PSDP as defined in the Safety, Health and Welfare at Work Act, 2005 and the Safety, Health and Welfare at Work (Construction) Regulations 2013.

3.16.1.21 All Disciplines shall comply with their obligations under the Safety, Health and Welfare at Work Act, 2005 and the Safety, Health and Welfare at Work (Construction) Regulations 2013 and shall provide the PSDP with a copy of all design risk assessment records.

3.16.1.22 In the event that any aspect of the Project appears likely to fail to achieve the Client's objectives, agree with the Client suitable corrective action and monitor its application.

3.16.1.23 Assist in the selection of other consultants/specialists as required by the Client for the Project, and:

1. As required, provide scope documents for the procurement of same.
2. Examine any proposed conditions of appointment of those consultants and advise the Client on same.
3. Check that all consultants' responsibilities/requirements are clearly stated for the purposes of any tender.

4. Advise the Client on the need for warranties and insurances.

3.16.1.24 Carry out all Services in compliance with all relevant Building Regulations and ensure that no materials or substances which are generally known at the time of specification or approval to be:

1. deleterious to:
   i. health and safety; or
   ii. the durability of the completed Project in the particular circumstances in which they are used; or
2. Otherwise:
   i. Compliant with any relevant Irish, British and European Standards, codes of practice or good building practice or techniques are recommended or selected for use in the Project.

3.16.1.25 Carry out all Services to ensure that the design fully complies with the relevant Health & Safety legislation including the Safety, Health and Welfare at Work (Construction) Regulations 2006 to 2013 ("**Construction Regulations**").

3.16.1.26 Ensure that all designs produced as part of the Services comply with any relevant Law, provided always that if after the date of the successful Tenderer's appointment there is a change of Law which was not foreseeable at the date of the successful Tenderer's appointment and which materially affects the Services, a fair and reasonable adjustment shall be made to the DT's remuneration for the Services.

3.16.1.27 At all stages of the Project's development, review and co-ordinate design information from all consultants engaged on the Project, commenting as appropriate, so that the design is fully co-ordinated, comprehensive and quantifiable. Ensure at all times that the design information produced is clear and appropriate to the stage of the Project.

3.16.1.28 Ensure awareness of (and that due regard is taken) of other projects being undertaken which may be affected or which may affect this Project.

3.16.1.29 Encourage consideration of alternative designs and solutions which might be beneficial to the Project without compromising the Clients requirements, available budget and agreed brief.

3.16.1.30 Make revisions to the design to address requirements of Planning, Fire Safety, Disability Access, Environmental authorities and Statutory Bodies and agree these revisions with the Client.

3.16.1.31 Make recommendations to the Client via the Design Team Lead for the training of the managers and staff who will be responsible for the operation, safety and maintenance of the new facility.

3.16.2 Specific Design Obligations:

3.16.2.1 Do all things or acts and perform all services identified in any part of the Form of Tender for each design discipline included with the Contract to the extent that such things, acts or services:

1. Are additional to any of the Services specified in this Annex 1; and/or
2. Provide a greater quality or level of service than otherwise contemplated in the Contract.

3.16.2.2 Throughout all stages of design development, the DT will be required to coordinate, and agree design specifics with relevant personnel within HSE Capital and Estates, or their Designates.

3.16.2.3 Prepare planning documentation required to achieve a final grant of permission from the local authority, in conjunction with the separately appointed planning consultant.

3.16.2.4 Prepare:

1. All documents required to obtain planning permission.
2. All documents required for any other necessary statutory consents (including the fire safety certificate, disability access certificate).
3. A detailed specifications and designs for inclusion in the Construction Contract.
4. Any other necessary tender documents in respect of the Construction Contract; and to enable the Project to progress to the successful selection of a preferred candidate from a tender process.

3.16.2.5 Assist in the preparation and co-ordination of the procurement strategy for the Project with the Client and any other consultants, which includes reviewing the key drivers i.e. constraints set by Client, cost & programme certainty, risk, accountability, responsibility, control, flexibility, buildability and design quality against various procurement routes.

3.16.2.6 It is anticipated the construction works will be performed using Public Works Forms of Contracts. It is anticipated that the procurement of Reserved Specialists will also be required.

3.16.2.7 The Project Supervisor Design Process shall undertake that role as set out in the Construction Regulations.

3.16.2.8 Each design discipline as part of the DT shall undertake the roles of Design and Ancillary Certifiers as appropriate under the Building Control (Amendment) Regulations 2016.

3.16.2.9 Provide all necessary information and Design Risk Assessments required under the Construction Regulations for incorporation into the Safety & Health Plan and Safety File. Provide or assist in the preparation of manuals or other documents describing the design, operation and maintenance of the Project.

3.16.2.10 Provide suitable and sufficient technical and design information for incorporation into the Pre-Tender Health & Safety Plan.

3.16.2.11 Provide all necessary services as set out in the '*Specific Project Information*' document as part of the tender pack and ancillary to this TR document. To reiterate the below services are required (non-exhaustive list):

1. Architecture.
2. Civil & structural engineering design.
3. Building services (including environmental) engineering design.
4. Landscape design. Architect lead, C&S and M&E to contribute as necessary
5. Traffic consultancy services. Civil and Structural Engineer
6. Façade design. Architect lead, C&S and M&E to contribute as necessary
7. Surveys - The DT shall identify all surveys required to facilitate the progression of the design process. This shall include but is not limited to geotechnical investigations, topographical surveys, façade surveys, surveys of existing services, etc. The DT shall prepare all necessary tender packages for the procurement of any and all surveys required to inform the design development process. See 3.2.13 for assigned discipline
8. Acoustic design services (in particular, prepare studies, reports and other requirements to satisfy user comfort issues in relation to noise). Architect
9. Fire engineering. Fire Safety Consultant

10. Interior design (the role of furniture design and selection by the DT will be a critical element within the interior design services and achieving the required sense of space, feel and functionality for the end user. This will be a fundamental design element from the outset of the project). Architect
11. Ergonomics. Architect
12. Universal design and accessibility design. Architect
13. Audio-visual design. M&E
14. Air-tightness design. Architect/ M&E
15. ICT. M&E
16. Project Supervisor Design Process. PSDP
17. Conservation report. Architect

3.16.2.12 It is a requirement of the Design Team Lead to complete a furniture, wayfinding and signage design and specification for the project using the expertise of an Interior Designer. Presentations (including mood boards) to end users and the Client Equipping Team will be required throughout the project stages to obtain comments, adjust accordingly and complete a final tender package of information. Signage must be compliant with the latest HSE specification for wayfinding including Irish translation braille, colouring etc.

3.16.2.13 Ensure correct and appropriate integration of all Project design packages, including (but not exhaustively) cladding / façade, structure, M&E services, AV, acoustics, interiors, air-tightness, fire, conservation, IT, fitout, etc.

3.16.2.14 Carry out computational fluid dynamic calculations and 3-dimensional modelling of the building as designed and update for changes in the Project.

3.16.2.15 Benchmark space and designs against recent similar schemes identifying reasons why the Project arrangement benchmarks are within/not within the anticipated overall range. Recommend reference benchmark facilities to the Client and arrange for benchmarking reviews. The DT will be required to prepare a benchmarking report covering the findings of the benchmarking tour which shall also include details of national and international best practice and trends for the approval of the Client.

3.16.2.16 Develop options for reconciling estimated cost with Cost Plan budgets if the proposals exceed affordability limits.

3.16.2.17 Throughout each stage of design, where required or requested, prepare any necessary board papers or presentation material that may be required in order for the Client to sanction release of subsequent design stage. Attend any meetings to present the prepared material. Ensure Client approval is documented.

3.16.2.18 Operate a quality management system in respect of all activities required to perform the services and communicate the principal features of that system to the other consultants and contractors.

3.16.2.19 Prepare a sustainability strategy for the Project, to drive design that promotes the use of sustainable resources, excellent thermal performance, air tightness, low carbon footprint and emissions, and low energy running profiles. Undertake carbon audits of the building and calculate its carbon tax from these profiles.

3.16.2.20 The DT Lead shall lead the implementation of the recommendations of the EED summary report, with assistance and co-operation of all DT members.

3.16.2.21 Produce a resource and waste management plan (RWMP) in accordance with the EPA Best Practice Guidelines for the preparation of resource and waste management plans for construction and demolition waste (2021).

3.16.2.22 Receive any revisions to Client requirements or brief. Where notification from the Client is verbal, confirm in writing with comment on anticipated effect on the design. This confirmation should be through the Project Change Management process.

3.16.2.23 Monitor and report on progress of the consultants and contractor procured for the Project against the Master or Design Programme as appropriate and instructed by the Client.

3.16.2.24 Ascertain any mandatory procedures applicable to the Project and binding on the Client and develop compatible and appropriate working methods and procedures accordingly.

3.16.2.25 Lead all consultations with authorities in relation to permits, licences, precautions and other permissions required to construct buildings, e.g., Planning, Fire Cert, and Disability Access Certification etc.

3.16.2.26 Advise the Client, through the Design Team Lead, on the necessity for studies, reviews, research, investigations, surveys, tests or the like. This must also include any work to be done on the composition of an Environmental Impact Assessment, Appropriate Assessment or similar environmental studies. Co-ordinate and collate the findings from such studies, and report these to the Client via the Design Team Lead.

3.16.2.27 Complete the actions required for Design and Ancillary Certifiers as required under the Building Control Amendment Regulations 2014. Ensure proactive and comprehensive coordination and liaison with the Assigned Certifier throughout all stages of the project.

3.16.2.28 The DT will comply with the provisions of the Building Control (Amendment) Regulations 2014 S.I. No.9 of 2014. Liaise directly with the Assigned Certifier on all matters relating to these regulations in the execution of these services.

3.16.2.29 Liaise with the Client/agents on relevant matters relating to leases, rates, statutory contributions and broad conditions of leases, not including advice that must be sought from a legal professional.

3.16.2.30 In the event that any aspect of the Project appears likely to fail to achieve the Client objectives, public obligations, business continuity obligations, budget and programme. Develop and agree with the Client suitable corrective action and monitor its application.

3.16.2.31 Report on the life expectancies of critical elements of the proposed works. Carry out life-cycle analyses of the materials, goods and plant to be incorporated. Consider issues including cost in use, maintenance and renewal requirements.

3.16.2.32 Review the design at all times during development against the Client brief to ensure compliance. Should there be any elements which either extend or reduce the brief then these are to be identified along with proposals to re-align the design with the brief. HSE approval should be sought before proceeding with any change.

3.16.2.33 Take an active part in regular Project reviews to ensure that communication and procedures are operating efficiently. Allow for one review following completion of each stage to explore experience gained and lessons learned for future projects. This Lessons Learned review will be conducted in accordance with the Capital Works Management Framework.

3.16.2.34 Provide to the Client as and when the Client may reasonably require or on completion of the services or on termination of the DT's appointment, whichever first occurs:

1. One complete set-in computer-generated format. This will comprise of the Revit model, CAD drawings and pdf issue

Of such of the documents / reports / drawings which have been prepared as part of the Services by or on behalf of the DT as the Client requires.

3.16.2.35 Provide 3-dimensional drawings/models, updated at each stage and as required to demonstrate the proposed designs of the building. The DT will integrate all matters raised by the planners in a final 3-dimensional drawings/models, which will have detail of all elements of building fabric greater than 100mm in size. Where glass is proposed, the 3-dimensional model will detail the interior of the building behind that glass to the same level of detail. The model will contain sufficient detail to enable an interior walk-through.

3.16.2.36 Provide 3-dimensional camera angle stills visualisations at requested resolutions upon request from the Client. Similarly, fly-bys or walkthroughs must be provided on request.

3.16.2.37 All 3-dimensional files will be provided to the Client in the source .3ds format including materials libraries and other files connected with any 3-d models made.

3.16.2.38 Contribute to and incorporate the principles of risk and value management at all times during the delivery of services.

3.16.2.39 Attend, contribute to ongoing workshops at key pre-agreed Stage points (all Stages) to review Project status and agree any remedial action necessary.

3.16.2.40 Keep updated the consultants and contractors on their duties, the scope of work required, the Project procedures and the Project itself to the extent needed to achieve the project brief.

3.16.2.41 Co-ordinate the ancillary certification by members of the design team and any other relevant bodies for the Certificate of Compliance on Completion. Pro-actively engage with the Assigned Certifier throughout the project and lead to the provision of all certificates / documentation from the DT as may be needed by the Assigned Certifier in the fulfilment of their duties.

3.16.2.42 Identify all design professionals and specialists, in conjunction with the Assigned Certifier and Contractor, from whom ancillary certificates are required.

3.16.2.43 Advise and assist the Client in obtaining the statutory and other licences necessary for the occupation / use of the Project. Advise the Client on any arrangements for phased handover of the Project, and on the logistics of taking possession of the Project. Coordinate the delivery of all such arrangements as relevant to the services provided.

3.16.2.44 Contribute and input as required to the development of a phasing strategy for the delivery of the project, including all aspects of the development and assessment of phasing strategies and options, and in the final recommendation of a phasing strategy for Client endorsement. This includes for preparation for constructability workshops, attendance and contribution at constructability workshops and DT input to constructability reports.

3.16.2.45 Provide all design services as may be required for temporary decant spaces for staff / patients / materials, should 'temporary decant facilities' be required based on the final phasing strategy adopted for the project.

3.16.2.46 Collect photographic evidence during all inspections, accompanied by detailed inspection reports, as evidence that inspections have taken place in accordance with the Inspection Plan. Hard copies of all evidence will also be supplied to our clients upon completion.

3.16.2.47 Liaise with any other design teams on the campus as required to fulfil the requirements of this appointment

3.16.3 Administrative Procedures:

3.16.3.1 Work within the communication protocol and systems established by the Design Team Lead in reporting and authorisation procedures between Client, consultants and contractors.

3.16.3.2 Monitor information to ensure that all consultants know not to circulate to third parties without the express permission of the Client.

3.16.3.3 Comply with Client's, and, where applicable, the Contractor's procedures for the following:

1. Change control.
2. Design Control (including deliverables and progress monitoring).
3. Document control and use or a shared Electronic Common Data Environment (detailed above).
4. Use of extranet services.
5. Design Information or Method Statements from Contractors.
6. Risk management.
7. Value Management.
8. Schedule Control.
9. Communications.

3.16.3.4 In circumstances where there is a conflict between any of these procedures the Client will decide which is to have priority.

3.16.3.5 Establish and agree with Client procedures for management and approval of design as follows:

1. Design control (including deliverables and progress monitoring).
2. Drawing procedures (including document numbering and preparation).
3. Reviewable design information or method statements from contractors.

3.16.3.6 All final (issued for construction) drawings and details will be provided in .dwg CAD format and Revit model to the Client and kept updated.

3.16.3.7 Maintain and own all design information on electronic document management system (Aconex) including design related folder structures, correct usage including revision control, audits (no less than monthly) of information for appropriate signoffs, correctness and timeliness through all Project Stages including construction.

3.16.3.8 All DT and other consultant fee invoices should be ratified by the Client, before issue to the Client's Account Department for payment. The time taken to carry out this ratification should be agreed between the Client and DT and consultants must accept this time addition to the payment period.

3.16.4 Third Party Liaison:

3.16.4.1 Identify and lead or support any necessary consultation with statutory or other third parties. Prepare drawings or technical information for applications under Planning, Fire Safety Certificate or other statutory or third-party requirements. Provide on-going support through to final approval of lodged submissions with third parties, including for the input to and development of responses to any further information requests from authorities or third parties, and full proactive coordination with the planning consultant in relation to same.

3.16.4.2 Assist the Client, other consultants and contractors in seeking to discharge any conditions of third-party approvals such as Planning, Fire Safety or Disability Access.

3.16.4.3 Advise the Client on the availability of any applicable grants, e.g., SEAI, provide assistance in the preparation of applications for grants and prepare cost analysis of expenditure in support of applications for grant payments.

3.16.4.4 Make all necessary approvals and consents on behalf of the Client, obtaining sufficient and suitable technical information from any other consultants in order to do so (and approval from the Client should be sought before making any application for approval).

3.16.4.5 Obtain prior approval from the Client before approaching any third party (and in this context third parties may also include but are not limited to owners of adjoining or nearby properties, other tenants or public authorities).

3.16.4.6 Do not circulate information to third parties without the express permission of the Client, received via the Design Team Lead.

3.16.4.7 Do not speak to the media or upload any project information to social media or other digital platform without express permission of the Client, received through the Design Team Lead

See that any matters relating to statutory consents are notified to the Client and permission is sought from the Client before corresponding on such matters with the statutory authorities.

3.16.5 Reporting:

3.16.5.1 Establish the format and content required for design information prior to reparation, particularly in the case of approvals.

3.16.5.2 Through all stages of the Project report via the Design Team Lead to the Client on the status of the Project and obtain decisions needed and inform the Client of the consequences of decision delays. Identify all such decision points in good time.

3.16.5.3 Initiate action in the event that any aspect of the Project appears to be likely to fail to achieve the Client's objectives, public obligations, business continuity obligations, budget and programme. Agree suitable corrective action and monitor its implementation.

3.16.5.4 Prepare, or assist in preparation of reports for auditors, funding agencies and other outside bodies, in formats to be prescribed by those agencies or the Client.

3.16.5.5 Attend meetings as set out above and as reasonably requested in connection with the design or progress of the Project. Provide regular reports as set out above on the progress of the design in relation to the programme.

3.16.5.6 Lead and coordinate the development and compilation of all Stage Reports and associated presentations. Make all such presentations to the Client. Manage all required inputs from other consultants. Stage Reports must be submitted to the Client via the Design Team Lead and receive Client approval to proceed to the next stage of the Capital Works Management Framework. Stage Reports shall align with the project stages of the Capital Works Management Framework. All Stage Reports will also include for site constructability assessments/reviews completed by the DT.

3.16.5.7 Report regularly and promptly to the Client through the Design Team Lead throughout the Project. Chair and direct design team and technical meetings and attend progress meetings with Client, and any other consultants, as required (unless direct otherwise by Client).

3.16.5.8 Submit in a previously agreed format a report which has been pre-agreed with the Design Team Lead, which would cover but not limited to progress, quality, cost, risk, design matters, health & safety, and any other elements as requested by the Design Team Lead or by the Client. The format and content of the report may be subject to change at the instruction of the project manager as the project progresses/evolved.

3.16.5.9 In conjunction with the Design Team Lead and other consultants, provide the Client with sufficient notice of all Client approvals, decisions on matters that require action by the Client and where appropriate, assist Client by providing recommendations and options.

3.16.5.10 At the end of each Stage of design, where required, prepare any necessary board papers or presentation material that may be required in order for Client to sanction release of subsequent design Stage. If required attend any meeting to present the prepared material. Ensure Client approval is documented.

3.16.5.11 Provide any required input / information / documentation as may be required by the Client in their preparation of reports to funders.

3.16.6 Studies & Surveys:

3.16.6.1 Liaise with the Client and other consultants to establish the need for and extent of initial viability studies.

3.16.6.2 In conjunction with the Design Team Lead and any other consultants, advise on the necessity for further studies, reviews, research, investigations, surveys, tests or the like. Assist in the appointment of suitable specialists to carry these out which shall include for the preparation of any necessary tender packages to procure such surveys, the management of such tender procedures and the contract administration requirements during such investigations etc.

Manage and/or witness such investigations and obtain or prepare an interpretive report of the findings with recommendations on action to be taken.
See section 3.2.13 of this document for information as to which Design Team member will lead the procurement and management of the various surveys.

3.16.6.3 Co-ordinate and collate the findings from such studies, and report these to the Client.

3.16.7 Registers:

3.16.7.1 Participate in Risk Workshops at appropriate junctures throughout the project, these workshops shall be facilitated by the Design Team Lead. Provide sufficiently detailed information to allow the preparation and regular update of a risk register, relating to relevant technical issues and where appropriate, assist with the identification of any commercial risks. Where possible, assist the Client and lead the other consultants in managing risks in order to minimise their effects.

3.16.7.2 Participate in Value Engineering and Value Management workshops. Provide sufficiently detailed information to allow the preparation and regular update of a value engineering register, assist with the identification of opportunities and develop such opportunities so that the Client can make an informed decision.

3.16.8 Cost Control:

3.16.8.1 Review draft cost plans with the Client prior to issue.

3.16.8.2 Advise the Client on value-engineering options for reconciling estimated cost with budget if the proposals exceed affordability limits.

3.16.8.3 Provide information sufficiently detailed to allow the preparation of estimates, cost plans or pre-tender estimate during the design Stages. The format of the information will be dependent on the design stage.

3.16.8.4 Assist the Client in preparing cost plans and estimates where required, including for the building engineering services.

3.16.8.5 Exercise the degree of skill, care and diligence required in order to monitor that the design adheres to the budget. Immediately warn the Client of changes to the design which might exceed any element of the budget.

3.16.8.6 Provide the necessary technical input to allow a design check against the budget or cost plan and the necessary updating to be carried out.

3.16.9 Programme Control:

3.16.9.1 Assist in the preparation and co-ordination of the Project programmes, including programmes for procurement, market testing and construction. Comment, within the scope of the services, on programmes prepared and submitted by contractors.

3.16.9.2 Prepare a detailed design programme fully addressing all necessary deliverables and approvals, with input from other consultants. The detailed design programme should be coordinated with the overall master programme for the project as prepared by the Design Team Lead. The detailed design programme should include for the following:

1. Planning Compliance submission.
2. Fire Cert Application.
3. Disability Access Certification.
4. Other statutory approvals e.g. EHO.
5. Elemental design breakdown e.g. substructure, superstructure etc.
6. Preliminary Design.
7. Surveys / Investigative Works.
8. Scheme Design.
9. Detailed Design incl. tender documentation preparation.
10. HSE Reviews & Sign Off's.
11. Room data sheet process.
12. Procurement requirements (if any).
13. Bill of Quantities preparation including pre-tender estimate (this task is by DT Quantity Surveyor, and to be identified within DT programme also, such that integration and coordination between the DT Members and DT Quantity Surveyor on this critical element is considered in and linked to the progress of design development).

3.16.9.3 Provide promptly all advice, consents, reports, comments, approvals, instructions, certificates and other information so as not to delay or disrupt the progress of the Project.

3.16.9.4 Receive regular status reports from the other consultants and review the actual progress of design against the anticipated, keeping the design programme up to date. Seek to achieve improvements to the design programme, where practical. The Design Team Lead will be required to present a programme update at each Design Team Meeting confirming actual progress vs. planned progress.

3.17 Stage (i): Preliminary Design:

STAGE: (i): PRELIMINARY DESIGN.
This stage shall consist of the items below. Please note this is a non-exhaustive list. The DT Members are expected to review the full scope outlined in the tender documents and account for all requirements in their tender submission. • Assist the Client in finalising the Definitive Project Brief and Stage (i) EED Report. • Review and interrogate all information provided, whether as part of the Brief or otherwise, and determine whether the project is viable. • Confirmation of the suitability or otherwise of the location(s) determined by the Client for the proposed works and establish and analyse all site factors which may impact on such suitability, including the design and cost implications of linking new and existing buildings. • Evaluation of the options available for meeting the Definitive Project Brief and to demonstrate, through comparison of options, that the recommended option achieves an acceptable balance between the design (architectural, engineering, environmental and sustainability and health & safety etc.), and economic requirements of the project. • Evaluation of options to achieve a carbon-zero-ready building using the Energy Efficient Design (EED) process and preparation of an EED report in the required format. • Progress and support the preparation of the Embodied Carbon Assessment Reports. Refer to Appendix 13. • BIM requirements from all DT Members as detailed in appendices 7, 8 and 9 and information included in the BIM Information folder. • Produce a Construction Waste Management Plan. • Provision of all required information for this stage in report format (pdf and native format) to be compliant with the Infrastructure Guidelines which shall include procurement strategy and costing thereof (all options) and risk management which shall include quantifying, evaluating, and costing of such risks.

3.17.1 DT Review of Design Brief and formulation of Definitive Project Brief:

3.17.1.1 The Outline Design Brief has been provided as part of the ITT, setting out the Client's functional requirements for the project and any particular design requirements and constraints.

3.17.1.2 The DT will, in consultation with the Client, interrogate, test, and develop the Design Brief into a Definitive Project Brief. The Design Team Lead must engage with the Client or their representative(s) to obtain clarification of the Outline Design Brief. The Design Team Lead and the DT Members must seek and confirm the technical background and planning development requirements to determine the Definitive Design Brief.

3.17.1.3 In addition to the foregoing, changes to the Outline Design Brief or additions to the Schedule of Accommodation required by the Client or arising through the Brief clarification process during Stage (i) of the project (and within a maximum stated in *Section 1.6 Item 7 "Terms of Engagement for Consultants Section"* of this document of the briefed area) shall not be considered to be a change to the service requirements provided by the DT Members. Incidental changes to the Design Brief or Schedule of Accommodation in the development of designs, in the subsequent stages, (which by its nature is an iterative process), will be deemed to be included in the required design services.

3.17.1.4 The Outline Design Brief is expressed in Net Floor Area (NFA). Where the Client states a Gross Floor Area (GFA) in the Outline Design Brief or any other documentation issued, this is for indicative purposes only. Should the DT use or rely on this GFA for any purpose, this shall be at the DT's own risk.

3.17.1.5 GFA, if issued by the Client, will have been based on the NFA with uplifts for Departmental Circulation (to suit the individual requirements of a project) and Inter-Departmental Communication spaces based on norms, plus plant space (if not already scheduled in the SoA). GFA is not to be construed as an absolute figure. The final extent of floor area will be an evolution of the design process. In developing a design solution, the DT shall be cognizant of this and investigate various design options within the Brief and area parameters and to be in a position to recommend the optimal solution for Client consideration at Stage (i). It may be necessary to modify the Brief following selection of the preferred option to achieve an affordable outcome.

3.17.1.6 The DT must review, familiarise themselves with and interrogate all the information provided (including any drawings, schedule of accommodation, Technical Reports, Outline / Protective Development Control Plans (ODCP / PDCP), surveys etc. from any source), satisfy themselves as to the completeness and accuracy of the information presented and where that information is incomplete and/or inaccurate that the DT shall suggest Client agreed amendments / inclusions to the Brief document. The DT shall confirm that any agreed amendments / inclusions to the Brief will not materially affect the viability or cost of the project or if so, the DT shall report the impact and recommend solutions to the Client.

3.17.1.7 The Definitive Project Brief must contain all the information that is necessary to enable the project to proceed to contract strategy and design development stage and must be clear and unambiguous. The DT led by the Architect will support the Client through the process of preparing the Definitive Project Brief, commencing at Stage (i), by engaging with the Client as necessary, and providing all necessary materials, reports, inputs etc. in support of this important project objective.

3.17.2 Management Control Plan:

Following this the Architect shall prepare, in consultation with the Design Team Lead and the other members of the DT, a management control plan indicating the time scales for the various activities and stages up to start on site (Refer to the '*Specific Project Information*' document accompanying this TR document for '*Performance Periods & Stages*').

3.17.3 Risk Management Strategy

The DT will support the development of a risk management strategy in line with Infrastructure Guidelines requirements. This includes, but is not limited to, preliminary identification of risks, assessment of risks, costing of risk, and development of the full risk management strategy and delivery of same. In addition to supporting the development and delivery of a full risk management strategy, the DT may also be required to support the calculation of optimism bias, as required in the Infrastructure Guidelines.

3.17.4 Cost Studies and Budget Verification:

3.17.4.1 The DT Quantity Surveyor as Project Cost Consultant, with the relevant contribution and assistance of the other DT Members, will advise the Design Team Lead, in relation to cost studies and budget verification which will also include Building Services (M&E) budgets/cost, cost inputs for economic and financial evaluations (Infrastructure Guidelines requirements), quantifying, evaluating, and costing risks and whole Life Cycle Cost analysis which shall include the cost of carbon. These studies shall, where relevant, consider revenue costs as well as capital cost implications.

3.17.4.2 The DT Quantity Surveyor shall:

(a) Clarify cost limits and assumptions made in the preparation of the cost limit.

(b) Establish capital costs for basic accommodation which is to include all associated Building Services costs.

(c) Prepare a verified Budget Cost Statement, which shall collate all capital costs in a Client agreed format, to include, comments on the cost implications of the proposed design solution and the Outline Cost Plan within which the design will be developed in more detail. The cost implications of any phasing proposals shall be included.

3.17.4.3 In assessing the design options, benchmark costs, including Building Services costs, should be utilised for the various cost holding categories based on costs per unit of measure (square metre) adjusted for the particular site and configuration and based on 'Departmental Costs' and 'On-Costs'. In addition, costs should be benchmarked against functional units as a cross-checking mechanism.

3.17.4.4 In addition to the functional costs discussed above, Order of Cost needs to be established for site specific / abnormal costs for each of the options being considered. These costs need to be separately identified (e.g., lump sum allowance based on historic information), and any assumptions stated.

3.17.4.5 For initial cost control purposes i.e., up to end of Stage (i), the cost of the project can be divided into two main categories i.e., 'Departmental Costs' and 'On-costs'.

(a) 'Departmental Costs' shall mean the cost of the hospital departments and all of the areas required for plant and switchgear and similar accommodation in the project or scheme.

(b) 'On-costs' shall mean the cost arising from the site and its uses. The DT Quantity Surveyor shall make a detailed assessment of 'On-costs' for the purpose of verifying the Budget Cost for the scheme.

3.17.5 Preliminary Procurement Strategy:

3.17.5.1 In line with the Infrastructure Guidelines, the DT Leader, with the advice, assistance and contribution of the DT Quantity Surveyor and the other members of the DT, shall advise the Client in relation to preliminary procurement options available for enabling works, building contractors, specialists, etc. including the time and cost implications for each option and a clear rationale underpinning the chosen preliminary procurement strategy. Refer also to Section 3.4 of this document regarding to this topic.

3.17.5.2 The Green Public procurement (GPP) principles set out in the EPA Guidance (https://www.epa.ie/publications/circular-economy/resources/GPP-Guidance-for-the-Irish-Public-Sector.pdf) are must be considered and applied as part of the design, specification, procurement and construction process for new HSE projects through the application of the EED process.

3.17.6 Statutory Requirements:

3.17.6.1 The Design Team Lead assisted by the Architect and the other DT Members, shall provide general advice to the Client on obtaining Planning Permission, Safety and Disability Access Certifications, complying with Building Regulations and legislative (both EU and National) energy efficiency and sustainable design targets to include compliance with current version of the Climate Action Plan, (for new buildings and refurbishment of existing buildings as appropriate) and any other statutory requirements, including those that relate to work in listed buildings, if applicable to the project. The Architect shall be advised by the Fire Consultant regarding fire safety matters where appropriate.

3.17.6.2 The Design Team Lead shall engage and correspond with the relevant planning authorities regarding any planning applications and approvals. Further details of this role are set out in **Appendix 3**.

3.17.6.3 The Architect shall also be responsible for advising on any statutory requirements in relation to working in a protected structure if applicable to the project. The Design Team Lead shall be assisted by the DT Quantity Surveyor in identifying and scoping the service and procuring all necessary specialists in relation to listed buildings if applicable to the project.

3.17.6.4 The DT Quantity Surveyor shall assist the Design Team Lead in providing all costing and procurement advice necessary in relation to the implications of Planning Permission, Fire Safety and Disability Access Certifications, EED, complying with Building Regulations, any other statutory requirements and works within a listed building, if applicable to the project.

3.17.7 Site Surveys and Appraisal:

3.17.7.1 All available survey information for sites will be made available to the DT. Nonetheless at design appointment stage the Design Team shall assess the available site information and advise the Client on any additional surveys required in order to progress the project. For these purposes the extent of project relevant areas to be surveyed shall, where relevant, extend beyond the extent of the project site as defined, especially where the proposed site is on an existing campus or in an urban or other densely developed location.

3.17.7.2 The DT will be responsible for setting the criteria, procuring, and managing the required specialists / surveys and reports, unless agreed otherwise. While the cost of all necessary specialists / surveys will be borne by the Client, the costs of the DT involvement are deemed to be included in their tendered fees.
See section 3.2.13 of this document for information as to which Design Team member will lead the procurement and management of the various surveys.

3.17.7.3 The Architect shall ensure that the relevant DT Members prepare a site plan to a scale of 1:500, indicating the existing features, contours at 0.5m intervals and showing:

(a) Levels/contours related to Ordinance Datum with any information currently available on main services, geological data, archaeological data, landscape etc.

(b) Existing external communications to the site, roads, services, and drainage.

(c) Existing internal communications within the site.

(d) Adjacent properties as necessary to assist the designers in making decisions within the site boundary, such as height restrictions, sightlines, wayleaves, rights of way, etc, including contextual elevations as required.

3.17.7.4 When considered necessary, the coordination and listing of any further surveys which are required by the design Team to progress the project shall be carried out by the Architect in consultation with the other DT members and presented to the Client for consideration.

3.17.7.5 Where required the Design Team shall procure tenders in compliance with public procurement. The tender shall detail the full scope of works, and the level of detail required. The Design Team Lead, in conjunction with the primary input of the relevant Design Team member(s), shall submit to the Client a tender report on the tender process with a clear recommendation for the Client's consideration.

3.17.7.6 The Client shall consider, select, and appoint the Tenderer based on the Design Team tender report. For geotechnical surveys or other invasive surveys, the services of the PSDP will be required. Condition Surveys, where required and unless otherwise stated, are part of the duties of the Design Team.

3.17.7.7 Where considered beneficial by the Client and to the project, a survey in formats compatible with the BIM process will be required.

3.17.8 Room Information Sheets (RIS) and Equipping – Stage (i):

3.17.8.1 The Architect in conjunction with the Client, Infection Control Team, User Groups and with the assistance and advice of the DT Members, in particular the Building Services Engineer (M&E), shall assess the preliminary room briefing information, including equipping information, provided by the Client, and informed by same, develop a preliminary set of project specific Room Information Sheets (RIS) for each room type within the proposed development. Further detail on the information to be included in the RIS is outlined in **Appendix 10**.

3.17.8.2 The positioning and location of all rooms shall be agreed in principle as part of Stage (i), and these shall be reflected in the chosen design layout and shall be in sufficient detail to permit the DT Quantity Surveyor to prepare a preliminary cost estimate of all the works and equipment (Group 1) required for the proper functioning of the facility.

3.17.9 Architectural Services & Deliverables – Stage (i):

3.17.9.1 Assemble information about the Site from the Client and other relevant sources. Review, verify and document all existing site conditions. Procure and review all necessary additional site investigative surveys.

3.17.9.2 Analyse, test, interrogate and critique the Preliminary Design Brief, develop a Final Design Brief Work with and assist the Client and Project Team in preparing a Definitive Project Brief.

3.17.9.3 Develop a set of preliminary Room Information Sheets (RIS) for each room type within the development.

3.17.9.4 Carry out an appraisal of the proposed site(s). Site appraisal shall take account of Outline / Protective Development Control Plans where relevant. Consider potential orientations to optimise daylight utilisation.

3.17.9.5 Where relevant review the need for enabling works contracts and prepare an enabling works strategy

3.17.9.6 Consult with Statutory Authorities. Provide advice on the statutory requirements for planning permission/SID, compliance with building regulations, DAC, Fire, and other relevant statutory requirements. Advise on any issues raised by the Authorities.

3.17.9.7 Advise the Client on options to progress the design, establishing the design concept in line with the Client Brief (to include provisions detailed in Section 1.15 Sustainability to facilitate a clear roadmap to net zero carbon emissions, incorporating input from consultants where relevant.

3.17.9.8 Hold BIM pre-start meeting. Take pre-contract BIM execution plans and co-ordinate them in an agreed overall “Post-Contract BIM Execution Plan”. Initiate model sharing with Design Team for strategic analysis and options appraisal.

3.17.9.9 Prepare outline proposals/design options and assist the Client in the selection of the final concept and departmental planning arrangement to be advanced to scheme design stage. Prepare a preliminary scheme design.

3.17.9.10 Prepare and optimise personnel, material and waste flow diagrams in each area and highlight relevant adjacencies etc., taking operational policies into account. In conjunction with hospital management prepare an outline of all public and private routes including way-

finding strategy and links to existing facilities.

3.17.9.11 Liaise with M&E consultant (including all Design Team members as appropriate) and complete a Stage (i) Dynamic Simulation Model for the project.

3.17.9.12 Provide advice, design inputs and all materials necessary to support the attainment of the briefed project requirements in respect of Energy Efficient Design Process. Advise on and agree design strategy for achieving design targets for energy efficiency and sustainability in general as outlined in the Clients Brief. Assist the EED Facilitator in the preparation of a dedicated EED Summary Report.

3.17.9.13 Provide all information necessary and support the preparation of the Embodied Carbon Assessment Reports. Refer to **Appendix 13**.

3.17.9.14 Advise on special criteria requirements as appropriate (e.g., Security, Catering, Acoustics, Sustainability, radiation protection/shielding etc.).

3.17.9.15 Produce a Construction Waste Management Plan.

3.17.9.16 Advise the Employer on any potential considerations with regard to third-party engagement (i.e., boundaries, access, wayleaves, etc.) which may exist requiring legal attention.

3.17.9.17 Assist the DT Quantity Surveyor preparing an order of magnitude cost for proposals and verifying the Clients cost limit.

3.17.9.18 Provide advice, design input, etc. in any value engineering, risk management and contingency management issues. As Lead Consultant, oversee the DT Members while taking advice from them on risk management and contingency issues and advise the Client on DT derived proposals.

3.17.9.19 Prepare a Report on Preliminary Procurement Approach and an Enabling Works Strategy in conjunction with the DT Quantity Surveyor and with the assistance and input from the other DT members as necessary.

3.17.9.20 Execute all responsibilities for designers under Health & Safety regulations, including preparation of designer's risk assessments and co-operating with the PSDP Consultant.

3.17.9.21 As DT Lead, provide to the Client and the appraisal team responsible for conducting economic and financial appraisals in report format (both pdf and native format) all of the required information to be compliant with the Infrastructure Guidelines. The report shall include such considerations as procurement strategy including all viable options, Risk Management including quantifying, evaluating, and costing of risk and any other support information relating to optimism bias as envisaged at this stage of the project.

3.17.9.22 In consultation with the Employer's professional advisers and project stakeholders, develop the feasibility and capacity of the site for the proposed scheme.

3.17.9.23 Present a project process plan for the feasibility stage for discussion and approval by the Client:

1. Collect and analyse baseline information.
2. Carry out urban design, landscape, and ecological analysis.
3. Develop a series of design and site layouts options, feasibility testing and development of site capacities.
4. Incorporate, in both the brief and design, any relevant comments provided by the stakeholders.

5. Develop design iterations, construction approaches and cost implications to achieve an environmentally & economically optimised design which fulfils the criteria of the Client brief.
6. Incorporate findings from consultation, engagement, surveys, and investigations into the masterplans, as appropriate.
7. Lead, proactively engage and manage the DT to review new technologies, innovative design, and methods of construction, obtaining working knowledge of Green and Smart Technologies etc. to achieve best practice design and construction solutions where relevant to the proposed project. Such engagement to include workshops and reporting if required to feed into sustainable and economic feasibility recommendations for the development.
8. Input relevant observations and findings into later phasing/design evolutions in both the brief and design, including any relevant comments provided by the stakeholders.

3.17.9.24 Master planning, feasibility studies, condition surveys and funding documentation support.

3.17.9.25 Condition report preparation. Survey existing buildings / structures on site to ascertain condition, dimensions, levels etc. or any required information to progress the design (including external survey for landscape design), following which determine scope of works, advise Client on any implications of works and report for Client review/agreement.

3.17.9.26 Implement surveys of existing facilities, measured building surveys and prepare all relevant drawings of the existing building and associated infrastructure.

3.17.9.27 Review current Statutory Consents, Local Authority area development plans and Authority masterplans in place in relation to the development site(s) to ensure proposals comply and amend/advise as required.

3.17.9.28 The DT Lead shall attend when requested review meetings in relation to issues associated with Infrastructure Guidelines and the report(s) provided.

3.17.9.29 The design team shall carry out comprehensive surveys to identify all services. At the conclusion of Stage 1, a full report will be required in order to progress the project.

3.17.10 <u>Civil/Structural (C&S) Engineering Services & Deliverables – Stage (i):</u>

3.17.10.1 Liaise with the Client and DT Lead for the confirmation of the Definitive Project Brief and make sure that relevant and appropriate factors are incorporated into the Project brief.

3.17.10.2 Liaise with the various design team consultants to inform the masterplan and urban design process and seek & provide relevant information to inform the decision-making process.

3.17.10.3 Assist the DT lead in the development of a Masterplan and in the delivery of their scope of services during this stage.

3.17.10.4 Liaise with the wider design team, contribute to a coordinated Detailed Project Programme as required.

3.17.10.5 Advise on the proposed design solution in terms of C&S Engineering principles of design including ease, appropriateness, and economy of construction.

3.17.10.6 Early engagement is required with Uisce Éireann to ensure capacity is available in the existing water supply and foul drainage networks. If capacity is unavailable, the Civil Engineer is required to present the options available in the Stage (i) Report and the recommended option.

3.17.10.7 Review and advise on the provisions of the Client's Enabling Works contract.

3.17.10.8 Assist in preparing such studies as may be necessary to determine the feasibility of the Client's requirements and the benefits of one design option under consideration over another. By means of advice, sketches, drawings, reports, and outline specifications provide sufficient preliminary structural and civil engineering information to enable the DT produce proposals, identify a preferred option and assist the DT Quantity Surveyor, as Project Cost Consultant, to finalise the outline cost plan.

3.17.10.9 Advise on the nature of the sub-soil and geotechnical issues substantiated by trial holes and/or borings and make recommendations on suitable substructures appropriate to the ground conditions. Prepare tender documents for geotechnical, cctv and other necessary surveys, manage the tender process and recommend appointment of survey company. Manage the site work of the surveyors.

3.17.10.10 Coordinate, support and prepare as required Flood Risk Assessment, Engineering Services Report, Sustainable Mobility Management Plan, Construction & Environmental Management Plan and Construction and Operational Waste Management Plan.

3.17.10.11 Where relevant, advise on the positions, levels, capacities, and conditions of any existing underground services (including drainage, Attenuation and SUDS) at or adjacent to the works so that they are used to best advantage, to minimise construction costs and possible disruption to the host Hospital.

3.17.10.12 Where relevant, advise on the condition and load-bearing capacity of existing structures under consideration in the context of any proposed works.

3.17.10.13 Where relevant, advise on the location condition and adequacy of water supply for consumption and firefighting, as well as surface water and sewage disposal.

3.17.10.14 Where relevant, advise on the location and adequacy of the proposed access, road layouts and car-parking designs and traffic issues and the mobility management plan.

3.17.10.15 Provide advice, design input, etc. in any value engineering, risk management and contingency management issues.

3.17.10.16 Advise on the sustainability of proposed design solutions to include provisions detailed in Section 1.15 Sustainability to facilitate a clear roadmap to net zero carbon emissions. Assist the Architect and provide all information necessary to allow the EED Facilitator to complete the Project Energy Balance Report and an EED Summary Report.

3.17.10.17 Advise on potential low carbon building materials that could be utilised and provide all information necessary to support the preparation of the Embodied Carbon Assessment Reports. Refer to Appendix 13.

3.17.10.18 Assist in the production of a Construction Waste Management Plan.

3.17.10.19 Provide the DT Quantity Surveyor, in their role as Project Cost Consultant, all necessary design information including options, etc., to develop a full and accurate project cost plan.

3.17.10.20 Provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead any relevant C&S information pertaining to the project that would impact project costs and risks to ensure appraisals are compliant with the Infrastructure Guidelines. All of the reports are to be issued in pdf and native format.

3.17.10.21 The design team shall carry out comprehensive surveys to identify all services. At the conclusion of Stage 1, a full report will be required in order to progress the project. The Civil & Structural (C&S) consultant shall be responsible for coordinating all services both above and below ground, with support from the M&E consultant.

3.17.11 Building Services (M&E) Engineer Services & Deliverables – Stage (i):

3.17.11.1 Arrange for specialist surveys and investigations to be carried out on existing services and consider and advise on the results. The format of surveys shall be in a BIM Format. Refer also to Section 1.19 '*Building Information Modelling (BIM)*' of this document.

3.17.11.2 Advise on the proposed design solution in terms of mechanical, electrical, and plumbing engineering principles of design, space allocations for engineering plantrooms, service risers and primary service distribution zones, public health issues, ease, appropriateness, and economy of solutions.

3.17.11.3 Provide input and advice to the Design Team Lead as required regarding Building Services (M&E) Engineering Services to assist in the development of project specific Preliminary Room Information Sheets (RIS) for each room type within the proposed development.

3.17.11.4 Advise on available fuels and recommended fuel strategy taking account of the latest Government policy in relation to fossil fuels and renewable energy sources.

3.17.11.5 The Building Services (M&E) Engineer will be responsible for the development and incorporation of a utility metering strategy and design.

3.17.11.6 Advise the Client regarding Lift strategy, design, and specifications.

3.17.11.7 Take account of existing services systems that may be present above and below ground on existing sites, e.g., security; fire safety systems; gases; water; electrical; ICT; heating; ventilation etc.

Commented [MM7]: Who is respoinsible for the GPR survey?

3.17.11.8 Liaise with the Design Team Lead to review building orientation, thermal performance of the building fabric (including glazing), passive design features, fuel options in order to achieve the optimum building performance and compliance with:

1. TGD Part L Conservation of Fuel and Power (incorporating NZEB) and
2. The Government Climate Action Plan and associated legislation.

3.17.11.9 Provide advice, design inputs and all materials necessary to support the attainment of the briefed project requirements in respect of achieving a minimum A3 Building Energy Rating.

3.17.11.10 Assist and advise the EED Facilitator and Design Team Lead in the preparation of the EED Review and Modelling; provide the appropriate Dynamic Simulation Modelling (DSM) package required in assisting in the preparation of the EED Summary Report. Assist in preparation of EED Summary Report with clear recommendations for Client approval and preparation of the Project Energy Balance Report.

3.17.11.11 Assist the Design Team Lead in the assessing design solutions. Identify and evaluate alternative and innovative Building Services (M&E) design concepts with respect to energy efficient and sustainable legislative targets.

3.17.11.12 Provide all information necessary for the preparation of the Embodied Carbon Assessment Reports. Refer to Appendix 13.

3.17.11.13 Assist in the production of a Construction Waste Management Plan.

3.17.11.14 Provide the DT Quantity Surveyor with sufficient and comprehensive information to assess revenue consequences of proposed schemes; proposed schemes to be co-ordinated with the Design Team Lead and the other DT members in their roles as designers.

3.17.11.15 Advise on duration of Building Services elements of construction programme.

3.17.11.16 Provide sufficient and comprehensive Building Services Engineering information to assist the DT Quantity Surveyor, as Project Cost Consultant, in the preparation of the services elements of their detailed elemental cost plan.

3.17.11.17 Advise Project Supervisor (Design Stage), as appropriate, in the preparation of the Preliminary Health & Safety Plan.

3.17.11.18 Provide advice, design input, etc. in any value engineering, risk management and contingency management issues.

3.17.11.19 Provide to the Client and the appraisal team responsible for conducting economic and financial appraisals through the DT Lead any relevant M&E information pertaining to the project that would impact project costs and risks to ensure appraisals are compliant with the Infrastructure Guidelines. All such reports are to be issued in PDF and native format. As part of the as-built package and to support future development, provide a calculation booklet for the Building Services (M&E) Engineering aspect of the project. This booklet shall provide details of the design development calculations carried out in support of the Building Services recommendations. This booklet shall be developed and updated through each of the design stages and submitted to the client on completion of each development Stage.

3.17.11.20 The design team shall carry out comprehensive surveys to identify all services. At the conclusion of Stage 1, a full report will be required in order to progress the project.

3.17.12 Quantity Surveying Services & Deliverables – Stage (i):

3.17.12.1 The DT Quantity Surveyor, as Project Cost Consultant, shall ensure at each design stage that the estimated costs of the project solutions are within the identified project budgets.

3.17.12.2 Where a Construction Cost Limit has been provided, this cost limit shall be tested and verified.

3.17.12.3 Prepare / establish a preliminary budget for the complete Stage (i) project design prepared by the DT, including the preparation of M&E services costs, taking necessary enabling works and other abnormal costs and equipping costs (Group 1) into account where relevant.

3.17.12.4 Prepare a detailed Schedule of Abnormal Costs with each abnormal item identified, justified, and costed (with comments by other Design Team members as necessary) and with evidence that all options have been adequately investigated so as to mitigate the extent of those Abnormal Works.

3.17.12.5 Prepare and report on the cost implications including cost of carbon of the preferred design solution compared to other possible design solutions under consideration including design solutions to facilitate a clear roadmap to net zero carbon emissions as outlined in Section 1.15 '*Sustainability*'. This shall include all abnormal works relating to the proposed design, with due regard to the individual comments of the other DT members. Alternative design solutions versus preferred design solution shall be supported by cost comparison.

3.17.12.6 Prepare and report on the cost implications of adopting any proposed sustainability strategies proposed in respect of EED by the DT and in response to the legislative requirements.

3.17.12.7 Prepare and report on the cost implications including cost of carbon of the preferred design solution compared to other possible design solutions under consideration including design solutions to facilitate a clear roadmap to net zero carbon emissions as outlined in Section 1.15 '*Sustainability*'. Alternative design solutions versus preferred design solution shall be supported by cost comparison.

3.17.12.8 Provide all information necessary and support the preparation of the Embodied Carbon Assessment Reports. Refer to Appendix 13.

3.17.12.9 For extension projects or work on an existing campus, the cost of decanting, phasing, or temporary accommodation (if unavoidable) required to keep the building in operation during construction must be taken into account and highlighted in the estimated cost and in cost comparisons of alternative solutions.

3.17.12.10 Prepare report and advise through the Lead Consultant on risk and contingency management, value management and value engineering all with the input and assistance of the other DT Members.

3.17.12.11 Provide and report at relevant intervals budget cost up-dates to the Client either directly or through the DT Lead Consultant.

3.17.12.12 Advise the Lead Consultant as required and as necessary regarding procurement matters.

3.17.12.13 Prepare and report on a completed Outline Cost (refer to Section 3.16.4 '*Cost Studies and Budget Verification*').

3.17.12.14 Provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead any relevant and requested information pertaining to the project costs and risks to ensure appraisals are compliant with the Infrastructure Guidelines. All such reports issued shall be in pdf and native format. Prepare cash flow projections to reflect the programme

3.17.12.15 DT QS shall attend when requested review meetings in relation to issues associated with Infrastructure Guidelines and the report(s) provided.

3.17.13 PSDP Services & Deliverables – Stage (i):

The Scope of Services for PSDP is outline in **Appendix 1** of this document.

3.17.14 Fire Safety Consultancy Services & Deliverables – Stage (i):

The Scope of Services for Fire Safety Consultancy is outline in **Appendix 2** of this document.

3.17.15 Planning Consultancy Services & Deliverables – Stage (i):

The Scope of Services for Planning Consultancy is outline in **Appendix 3** of this document.

3.17.16 Stage (i) Design Team Deliverables:

3.17.16.1 Preliminary Architectural, C&S Engineering and Services design drawings to reflect the developed and agreed scheme design and departmental planning arrangement for the proposed development.

3.17.16.2 Agreed Final Design Brief and Schedule of Accommodation (SoA) at all levels and by use, identifying gross internal areas, as defined by the Society of Chartered Surveyors Ireland - Measuring Practice Guidance Notes.

3.17.16.3 Agree and finalise the Definitive Project Brief and finalise the DT preferred project option for presentation and approval.

3.17.16.4 A Management Control Plan including a detailed programme for design service and construction phase in accordance with the Client Brief as well as a project risk register.

3.17.16.5 Advise the Client in relation to actions required to facilitate a clear roadmap to net zero carbon emissions. Refer to Section 1.15 Sustainability.

3.17.16.6 The EED Facilitator shall prepare an EED (incorporating Net Carbon Zero) Summary Report - Stage (i).

3.17.16.7 Embodied Carbon Assessment Reports. Refer to Appendix 13.

3.17.16.8 Construction Waste Management.

3.17.16.9 A Report on Preliminary Procurement Approach for enabling works, building contractors, specialists, etc. including the time and cost implications of all options and a clear rationale underpinning the chosen preliminary procurement strategy; all in line and compliant with the Infrastructure Guidelines. Reports to be issued in pdf and native format.

3.17.16.10 A Report on the project Risk Management Strategy, including preliminary identification of risks, assessment of risks and their management and costing of risk. Reports to be issued in pdf and native format.

3.17.17 Conclusion of Stage (i):

Design Stage (i) concludes with the presentation of the feasibility study options to the Client/Design Team along with a clear recommendation on the preferred solution to the Client for approval.

3.17.18 Stage (i) Report, Review Meeting and Client Approval:

When the Stage (i) services are complete, the Architect as DT Leader assisted by all the DT Members shall prepare the Stage (i) report in accordance with Section 1.27 '*Stage Completion Reports*' of this document. The Architect shall issue the Stage (i) report to the Client for review. The Client may approve the report or request further clarification.

[End of Stage (i) – Preliminary Design]

3.18 Stage (ii): Design – General

This Stage contains 3Nr. sub-stages as listed below. Refer to relevant section in this document for description of the Sub-Stage(s):

- Stage (ii)A: Scheme Design.
- Stage (ii)B: Developed Design & Planning.
- Stage (ii)C: Detailed Design & Tender Documentation.

3.19 Stage (ii)A - Scheme Design:

SUB-STAGE (ii) A: SCHEME DESIGN
This sub-stage shall consist of the following: • The Completion of a scheme design, meeting the requirements set out in the project Brief, the final Design Brief and Definitive Project Brief. • Preparation of an Energy Efficient Design (EED) Report in the required format including evaluation of options to achieve a Carbon Zero ready building using the Energy Efficient Design (EED) process. • Development of the Construction Waste Management Plan. • Preparation of the Embodied Carbon Assessment Reports. Refer to Appendix 13. • Preparation by the Quantity Surveyor of a completed Cost Plan (Elemental format) and reconciliation of Stage (ii)A versus Stage (i) costs. • BIM Requirement from all DT Members as detailed in Appendices 7, 8 and 9 and information included in the BIM Information folder. • Updating of all required information for this project stage in report format (pdf and native format) to be compliant with the Infrastructure Guidelines which shall include procurement strategy and costing thereof (all options) and risk management which shall include quantifying, evaluating, and costing of such risks.

3.19.1 Scheme Design Deliverables – Stage (ii)A:

3.19.1.1 The Scheme Design should evolve from the principles of the preliminary design agreed, by the Client at Stage (i). The scheme design should be developed in detail but should not vary substantively, from the principles in design, form, layout or area previously agreed unless by Client agreement but may require further development to address functional design issues arising as part of the design development process.

1. The Architect shall in conjunction with the other members of the DT, prepare a site plan to a scale of 1:500 and preliminary floor plans to a scale of not less than 1:100 illustrating how it is proposed to provide the accommodation as set out in the Brief. The plans shall be accompanied by sections and elevations indicating the floor and roof levels and the massing of the proposed building(s) and samples of proposed materials and outline specifications and the Stage (ii)A Report incorporating report for the Client which shall include reports for all disciplines and the EED Report.

2. The C&S Engineer shall prepare general arrangement drawings, [including plans, and sections of the buildings and underground services (including RW drainage, Attenuation and SUDS) to a suitable scale not less than 1:100] and detailed drawings appropriate to this stage of design, indicating C&S Engineering proposals including all aspects of structural design and site services for the building and the site.

3. The Services Engineer shall prepare Site Services site plan at not less than 1:500 scale.

GA services layout drawings to not less than 1:100 scale indicating all building services including the heating services, hot and cold water, ventilation services, soil, and waste services [above ground], lighting and general electrical services including ICT. Primary services distribution sizes should be detailed. Schematic layouts including controls for the heating, hot and cold water, gas, main power distribution and ventilation services including ventilation fans and ducts plans should be accompanied by key building cross sections (scale of 1:100 or larger) showing all of the M&E services, the ceiling type, service ducts and access to same.

4. The DT Quantity Surveyor shall develop a completed Cost Report and Cost Plan inclusive of all Architectural, Civil and Structural, M&E Building Services and all other specialists as relevant to the project including all appropriate FF&E and Group 1 and 2 equipment in elemental format for inclusion in the general Stage (ii)A Report.

   The completion of this sub-stage should result in the QS preparing an elemental cost plan in line with the DT outline design developed to meet the requirements set out in the definitive project brief, design brief and preliminary output specification.

5. An up-dated Management Control Plan including a detailed programme for design service and construction phase in accordance with the Client Brief as well as a project risk register; advice on requirements for any/all specialist performance criteria.

6. The EED Facilitator shall prepare an EED (incorporating Net Carbon Zero) Summary Report – Stage (ii)A.

7. The DT lead will co-ordinate the preparation of the Embodied Carbon Assessment Reports. Refer to Appendix 13.

8. The DT lead shall prepare a resource and waste management plan (RWMP) in accordance with the EPA Best Practice Guidelines for the preparation of resource and Waste Management Plans for construction and demolition waste.

3.19.2 User Group Consultation Process – Stage (ii)A:

3.19.2.1 The user groups are key stakeholders in the project. The DT shall engage with and manage meetings, workshops, presentations, and interfaces with all relevant User Groups and seek and gain approvals from the User Groups on the Design Teams' design layouts, adjacencies, links, departmental configurations, and all other relevant issues.

3.19.3 Room Information Sheets (RIS) and Equipping – Stage (ii)A:

3.19.3.1 During Stage (ii)A the Architect assisted by the DT as necessary shall, in consultation with the Client and User Groups, review the Preliminary RIS prepared in Stage (i) to agree the final version thereof for each room type within the project. This shall be done in sufficient detail to permit the DT Quantity Surveyor to further develop the cost estimate for all the works and all equipment (Group 1) required for the proper functioning of the Facility.

3.19.4 Named Specialists – Stage (ii)A:

3.19.4.1 Consideration shall be given at this stage to the requirements of Named Specialists for the project both (a) *Reserved Specialists* and (b) *Novated Specialists*. The Design Team Lead, with the assistance of the other DT Members, shall advise the Client regarding the Project requirement for these specialists, the process of procuring and costs associated. The Client shall be notified no later than Stage (ii)A of all Reserved Specialists required for the project. The DT Quantity Surveyor shall include and highlight the cost of these specialists in their Cost Plans.

3.19.5 Cost Planning – Stage (ii)A:

3.19.5.1 The DT Quantity Surveyor shall prepare an elemental Cost Plan(s) covering both the building and engineering aspects of the scheme (including EED elements) and shall report on same to the DT Leader.

3.19.5.2 This shall be based upon the verified Budget Cost submitted with the previous Stage (Stage (i) 'Preliminary') and shall be in accordance with the International Construction Measurement Standards 3rd Edition (ICMS3) mandated for use from the 1st January, 2024 or current standards at the time of tender.

3.19.5.3 Any elements with dual building/engineering services content shall have the individual components identified. Budget costs of all specialist's works (i.e., mechanical, electrical, lift, cladding, etc.) shall be separately identified in the Cost Plan; the associated builder's work/attendances, etc. shall be identified also.

3.19.5.4 In relation to any phasing of the works proposed, the cost implications of such phasing (if any) shall be clearly identified.

3.19.5.5 **All** members of the Design Team are to assist the DT Quantity Surveyor in preparing the Cost Plan by way of consultation, and the provision of relevant design information and specifications.

3.19.6 Floor Area Reconciliation & Analysis:

3.19.6.1 Reconciliation and analysis of floor areas shall form part of the Stage (ii)A Report and subsequent Stage Report up to and including Stage (ii)C and shall be provided by the Lead DT Consultant. The floor areas shall be tabulated under the following headings:

1. Departmental Areas.
2. Plant Space.
3. ICT Space.
4. Internal Partition Space.
5. Circulation Space and
6. Inter-departmental Communication Space.

3.19.6.2 The NFA shall be recorded by room type / service type and the other categories listed above shall be analysed in relation to the Net Floor Area (NFA).

3.19.7 Architectural Service & Deliverables – Stage (ii)A:

3.19.7.1 Prepare a developed scheme design incorporating and co-ordinating input from all relevant design consultants and stakeholders and users as appropriate.

3.19.7.2 Attend DT and Client Meetings the frequency as set out in this document. Provide monthly progress reports to the Client.

3.19.7.3 Consult with planning authorities, including An Bord Pleanála and the Local Authority Planning Department. Advise Client and DT on planning matters.

3.19.7.4 Consult with the relevant departments of the Local Authority on all relevant matters. Advise on other statutory issues.

3.19.7.5 Advise and update the Client on options to comply with provisions detailed in Section 1.15 Sustainability to facilitate a clear roadmap to net zero carbon emissions, incorporating input from consultants where relevant.

3.19.7.6 Co-operate with the Fire Consultant and reflect requirements for Fire Safety into design, taking into consideration the design and zoning of the fire detection and alarm system and emergency lighting. Reflect requirements for Disability Access in proposed designs.

3.19.7.7 Provide advice, design inputs and all materials necessary to support the attainment of the briefed project requirements in respect of EED, BER and cost-effective sustainable building solutions. Assist the Services Engineer in preparation of a Dynamic Simulation Model (DSM) for the whole building. The Architect shall facilitate this by working with the DT and the EED Facilitator to examine options for and making relevant building design decisions. The Architect and DT must exhaust all passive solutions to potential overheating before considering mechanical intervention such as cooling. Provide the necessary inputs to the EED Facilitator in the preparation of a Stage(ii) A EED (incorporating Net Carbon Zero) report.

3.19.7.8 Provide all information necessary and support the preparation of the Embodied Carbon Assessment Report. Refer appendix 13.

3.19.7.9 Advise on requirement for all relevant specialist performance criteria (e.g., Radiation Protection, Security measures, acoustic performance, specialist equipment requirements, etc.) and incorporate appropriate provisions into the design and outline specification.

3.19.7.10 In consultation with the Client and User Groups, review the Preliminary RIS prepared in Stage (i) to agree the final version thereof for each room type within the project. The agreed RIS will then form the basis for the Architect, assisted by the Design Team, to commence development of the RLD's for identified standard room types (in agreement with the Client).

3.19.7.11 The Design Team Lead assisted by the Architect, M&E Engineer and Fire Safety Consultant shall during Stage (ii)A agree layouts for the fire extinguishers throughout the building and shall design their integration into the building fabric taking healthcare and infection control issues into account.

3.19.7.12 Utilise efficient Hospital Design principles where appropriate. Prepare and optimise personnel, material and waste flow diagrams and highlight relevant adjacencies etc.; prepare an outline of all public and private routes including way-finding strategy and links to existing facilities.

3.19.7.13 Advise and report on requirement for and process relating to the procurement of *Named Specialists* (if relevant to the project).

3.19.7.14 Advise and report on the processes surrounding the Informal Dispute Resolution Process and the requirement, as necessary, of a Standing Conciliator.

3.19.7.15 Provide advice, design input, etc. in any value engineering, risk management and contingency management issues. As Lead Consultant, oversee the DT Members while taking advice from them on all value engineering, risk management and contingency issues and advise the Client on DT derived proposals.

3.19.7.16 Participate with other DT Members in updating the value management and life cycle costing exercises generated at Stage (i).

3.19.7.17 Prepare a report on the developed procurement strategy with advice from the DT Quantity Surveyor and with assistance as necessary of the other DT Members.

3.19.7.18 Update project programmes as appropriate.

3.19.7.19 Prepare a Construction Waste Management Plan.

3.19.7.20 Continue to work with the PSDP and to execute designers risk assessments.

3.19.7.21 As DT Lead, provide to the Client and the appraisal team responsible for conducting

economic and financial appraisals in report format (both pdf and native format) update on all of the required information to be compliant with the Infrastructure Guidelines for this stage of the project such as procurement strategy, risk management and optimism bias.

3.19.7.22 The DT Lead shall attend when requested review meetings in relation to issues associated with Infrastructure Guidelines and the report(s) provided.

3.19.8 Civil/Structural Engineering Service & Deliverables – Stage (ii)A:

3.19.8.1 Consult local or other authorities on matters of principle in connection with the C&S Engineering design of the Works (including all site services infrastructure RW drainage, Attenuation and SUDS).

3.19.8.2 Provide sufficient C&S design information by means of advice, sketches, and reports and/or outline specifications to enable the other design team members to develop more detailed design proposals and participate in the co-ordination of architectural and services designs with structural designs.

3.19.8.3 Attend and arrange for attendance of sub-consultants at Design Team meetings, reviews, and technical meetings to develop and resolve the Works Requirements including inter alia, structural design, capital cost, risk, traffic, utilities, sustainability, construction issues, phasing, specifications etc.

3.19.8.4 Advise on relevant Civil Engineering matters including road design (re-alignments), car parking layouts Traffic Management, Mobility Management, and a Construction Traffic Management Plan for the project.

3.19.8.5 Provide advice, design inputs and all materials necessary to support the attainment of the briefed (legislative) project requirements in respect of EED and BER rating and sustainable design strategy to include design provisions to facilitate a clear roadmap to net zero carbon emissions.

3.19.8.6 Advise on sustainable and low carbon building materials and provide all information necessary to support the preparation of the Embodied Carbon Assessment Report. Refer Appendix 13.

3.19.8.7 Assist in the preparation of a Construction Waste Management Plan.

3.19.8.8 Participate with other members of the Design Team in value management and life cycle costing exercises.

3.19.8.9 Provide advice, design input, etc., in any value engineering, risk management and contingency management issues.

3.19.8.10 Advise the Lead DT Consultant and the DT Quantity Surveyor in relation to the requirement of *Named Specialists* (if relevant to the project) for C&S Engineering works.

3.19.8.11 Provide C&S Engineering report for general Stage (ii)A report. C&S Engineering report should address inter alia the Civil/Structural Engineering design proposals for the following:

1. Building structure and foundations.
2. Site development and site services, site drainage (main drainage and water-main layouts), attenuation, etc.
3. Road layouts.
4. Carpark layouts.
5. Footpaths.
6. Traffic, Mobility Management.
7. Temporary Works or Structures.

3.19.8.12 Provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead any updates on relevant C&S information pertaining to the project that would impact project costs and risks to ensure appraisals are up-to-date and are compliant with the Infrastructure Guidelines. All of the reports are to be issued in pdf and native format.

3.19.9 Building Services (M&E) Engineering Service & Deliverables - Stage (ii)A:

3.19.9.1 Develop outline building services design proposals for the chosen design option. Explore the most suitable design approach having regard to budget, Client needs, linking with existing building systems, market requirements, planning or other site requirements, third party requirements such as local Authorities, ESB, BGE, SEI, etc.

3.19.9.2 Provide input as appropriate and where required to assist the Design Team Lead in the review and agreement of the Preliminary RIS developed in Stage (i), in consultation with the Client and User Groups.

3.19.9.3 Provide input as appropriate and where required to assist the Design Team Lead in the development of the RLD's for identified standard room types (in agreement with the Client).

3.19.9.4 Maximise the use of renewable energy where feasible.

3.19.9.5 The Building Services (M&E) Engineer will be responsible for the design and incorporation of the utility metering scheme.

3.19.9.6 Attend and arrange for attendance of Sub-consultants, if any, at technical meetings to develop and resolve the Works Requirements including inter alia, capital cost, risk, traffic, utilities, sustainability, construction issues, phasing, commissioning/handover, specifications, etc.

3.19.9.7 Provide information to discuss proposals with and incorporate input of other consultants (where appropriate). Agree, the principles of integrating the Building Services with the building structure and finishes, including agreement on distribution routes for service runs, "soft spots" and cross-over zones within the building Stage (ii)A; advise and report on any special provisions required for services systems to include any design provisions that may be required to facilitate a clear roadmap to net zero carbon emissions as detailed in Section 1.15 Sustainability. See that vertical and horizontal distribution of building services is coordinated with the structure so that adequate ceiling space is provided for services and structure cross over and that adequate risers/opes are provided in the floor structure for distribution of services.
The building and building services systems shall be designed to take into account clearance requirements for expansion of intumescent coatings to structural steel elements/members. Any building services systems such as pipework, ductwork etc shall be so designed to ensure that the entire system including brackets, collars, dampers, insulation shall maintain the clearance requirements for the expansion of intumescent coatings

3.19.9.8 Assess the chosen building design option in the context of EED, the existing campus services and infrastructure and advise the Client of the implications of the recommended services strategy for service installations within the existing Campus and buildings. The DT Building Services (M&E) Engineer shall be responsible for completing a Dynamic Simulation Model (DSM) for the whole building to ensure that the proposed building design performs to an acceptable level, that the building does not overheat and that the internal temperatures do not exceed those set out in HSE Estates Guidance Document: "*Indoor Environmental Conditions & Natural Ventilation Building Guidelines*", or other criteria defined by the client.

3.19.9.9 A comprehensive report shall be produced, providing details of the model inputs / outputs. The report should include a detailed overheating analysis using Dynamic Simulation Modelling (DSM) and taking care to identify and accurately model all potential sources of thermal gain. The report should provide recommendations that should inform the building

design and required modifications to meet acceptable internal temperature levels within the building all year round with the lowest Life Cycle Costings.

3.19.9.10 Carry out a preliminary Compliance check with Part L which shall be demonstrated using the National Calculation Method (NCM) as approved by SEAI. Designers shall pay particular attention to the specific provision made for specialist ventilation systems and process loads, ensuring these are treated appropriately in the NCM, where applicable.

3.19.9.11 The DT Building Services (M&E) Engineer must liaise with the Architect and EED Facilitator to contribute to and assist with the co-ordination of the EED review. Clear recommendations are required following a review of the results of the developed modelling and simulation exercises identifying any possible changes that can be made to the building fabric to improve performance and progress the design, drawings, specifications and/or calculations as are necessary to enable the other DT Members to finalise the developed sketch design and the DT Quantity Surveyor to finalise the cost plan.

3.19.9.12 Prepare schematic layouts for all relevant services including but not limited to mechanical, electrical, life safety, security, IT, building management and medical systems at concept phase for Client input and approval. Obtain Client's approval and sign-off.

3.19.9.13 Provide all information necessary and support the preparation of the Embodied Carbon Assessment Report. Refer Appendix 13.

3.19.9.14 Prepare designs for temporary diversion of existing site services as required for the Project.

3.19.9.15 Support equipment asset surveys by separately appointed specialists at existing facilities as appropriate.

3.19.9.16 Assist in the development of Room Information Sheets. Allow for integration of Groups 1, 2, 3, 4 equipment data to the design layouts and inclusion for all equipment interfaces.

3.19.9.17 Prepare a description of the fire detection and alarm system and emergency lighting system and any other key life safety components to achieve the fire strategy.

3.19.9.18 The Building Services (M&E) Engineer shall assist the Design Team Lead, Architect and Fire Safety Consultant during Stage (ii)A to agree layouts for the fire extinguishers throughout the building and in designing their integration into the building fabric taking healthcare and infection control issues into account.

3.19.9.19 Advise the Design Team Lead, Architect and the DT Quantity Surveying in relation to the requirement of *Named Specialists* (if relevant to the project) for Building Services (M&E and Lift) Engineering works.

3.19.9.20 Provide advice, design input, etc. in any value engineering, risk management and contingency management matter relating to services.

3.19.9.21 Assist in the preparation of a Construction Waste Management Plan.

3.19.9.22 Provide sufficient and comprehensive Building Services Engineering information to the Quantity Surveyor as Project Cost Consultant to assist them in their developing and managing services costs for inclusion in a detailed Stage (ii)A Cost Plan.

3.19.9.23 Provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead any updates on relevant M&E information pertaining to the project that would impact project costs and risks to ensure appraisals are up-to-date and are compliant with the Infrastructure Guidelines. All of the reports are to be issued in pdf and native format. As part of the as built package and to support future development, provide a calculation booklet for the Building Services (M&E) Engineering aspect of the project. This booklet shall provide details of the design development calculations carried out in support of the

Building Services recommendations. This booklet shall be developed and updated through each of the design stages and submitted to the client on completion of each development Stage.

3.19.10 Quantity Surveying Service & Deliverables - Stage (ii)A:

3.19.10.1 The Quantity Surveyor shall advise and report on the cost implications of the Scheme design with particular reference to any cost sensitive items (arising during Stage (ii)A).

3.19.10.2 Provide and report at relevant intervals cost up-dates to the Client either directly or through the DT Lead Consultant.

3.19.10.3 Prepare a completed Cost Plan together with outline specification notes.

3.19.10.4 Provide reconciliation between the Cost Plan (Stage (ii)A) and the Outline Cost Plan produced at Stage (i), including a detailed explanation of any deviations. The Cost Plan shall include an itemised list and description of the extent, scope and cost of all abnormal works and any anticipated Planning or Fire Safety Certificate conditions. This report shall also include costs for design solutions to facilitate a clear roadmap to net zero carbon emissions under a separate dedicated heading.

3.19.10.5 Prepare and report on the cost implications of adopting any proposed sustainability strategies proposed in respect of the EED process by the DT and in response to legislative requirements.

3.19.10.6 Prepare and report on the cost implications including cost of carbon of the preferred design solution compared to other possible design solutions under consideration including design solutions to facilitate a clear roadmap to net zero carbon emissions as outlined in Section 1.15 Sustainability. Alternative design solutions versus preferred design solution shall be supported by cost comparison.

3.19.10.7 Provide all cost information necessary and support the preparation of the Embodied Carbon Assessment Report. Refer Appendix 13.

3.19.10.8 Prepare a report(s) and advise, through the DT Lead Consultant, on risk and contingency management, value management and value engineering all with the input and assistance of the other DT Members.

3.19.10.9 Advise the DT Lead Consultant as required and as necessary regarding procurement matters.

3.19.10.10 Advise and report on the cost implications of achieving the Sustainability measures and objectives recommended by the Design Team for the project including achievement of the briefed requirements for EED and Net Carbon Zero. This report should include a cost benefit analysis of sustainability measures and should inform the overall sustainability strategy for the project.

3.19.10.11 Where appropriate, advise and report on the of cost work to existing buildings. This shall be costed separately with the relevant floor area clearly identified and the cost of this work analysed by reference to that floor area.

3.19.10.12 Provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead updates and ongoing support on all relevant and requested information pertaining to the project costs and risks to ensure appraisals are compliant with the Infrastructure Guidelines for this stage of the project. All such reports issued shall be in pdf and native format.

3.19.10.13 DT QS shall attend when requested review meetings in relation to issues associated with Infrastructure Guidelines and the report(s) provided.

3.19.11 PSDP Services & Deliverables – Stage (ii)A:

The Scope of Services for PSDP is outline in **Appendix 1** of this document.

3.19.12 Fire Safety Consultancy Services & Deliverables – Stage (ii)A:

The Scope of Services for Fire Safety Consultancy is outline in **Appendix 2** of this document.

3.19.13 Planning Consultancy Services & Deliverables – Stage (ii)A:

The Scope of Services for Planning Consultancy is outline in **Appendix 3** of this document.

3.19.14 Stage (ii)A Report, Review Meeting and Client Approval:

When the Stage (ii)A services are complete, the Architect as Design Team Leader assisted by the Design Team members shall prepare the Stage (ii)A report in accordance with Section 1.27 *'Stage Completion Report'* of this document. The Architect shall issue the Stage (ii)A report to the Client for review. The Client may approve the report or request further clarification.

[End of Stage (ii)A – Scheme Design]

3.20 Stage (ii)B - Developed Design / Planning Drawings / Technical Specifications / Statutory Compliance:

SUB-STAGE (ii) B: DEVELOPED DESIGN & PLANNING
This sub-stage shall consist of the following: • Development of design and attainment of planning permission. Progress scheme design, as approved or amended by the planning permission, appeals etc. to a point where design is complete and no items remain to be designed, except for any design related issues pertaining to Fire Safety and Disability Access Certificates. • Floor Area Reconciliation & Analysis: Prepare and issue a comprehensive analysis of project areas including NFAs and GFAs with information on the grossing factors achieved for departmental circulation, inter-departmental communications, plant and ICT room areas. This shall be included in the pre-tender report. • On completion of this stage **the design is frozen**, except for changes necessitated by the attainment of the Fire Safety and Disability Access Certificates. • Continual cost checking and preparation by the Quantity Surveyor of a completed Cost Plan and reconciliation of Stage (ii)B versus Stage (ii)A costs. • Preparation of an Energy Efficient Design (EED) Report in the required format. • Progress and support the preparation of the Embodied Carbon Assessment Reports. Refer to Appendix 13. • Prepare a construction waste management plan. • BIM Requirement from all DT Members as detailed in Appendices 7, 8 and 9 and information included in the BIM Information folder. • Updating of all required information for this project stage in report format (pdf and native format) to be compliant with the Infrastructure Guidelines which shall include procurement strategy and costing thereof (all options) and risk management which shall include quantifying, evaluating, and costing of such risks.

3.20.1 Statutory Approvals:

3.20.1.1 At Stage (ii)B the Design Team must further develop the design and obtain Planning Permission for the project including any temporary accommodation deemed necessary. The drawings and specifications submitted for these applications shall not vary in substance from those agreed at Stage (ii)A and the Design Stage (ii)A Review Meeting.

3.20.1.2 The Design Team must obtain the final grant of Planning Permission prior to commencing work on Stage (ii)C Tender Documentation.

3.20.1.3 The Design Team shall discharge all roles and responsibilities regarding the planning process as outlined in **Appendix 3**.

3.20.2 Client Report Prior to Planning Application:

3.20.2.1 The Design Team Lead shall provide a written Pre-Planning report in relation to the Planning Application and the development of all aspects of the design to Stage (ii)B which should include all relevant issues. The Client shall give approval to the DT prior to proceeding to submit for Planning Permission.

3.20.3 Client Report Post Planning Application:

3.20.3.1 Following receipt of a planning decision the Design Team Lead Consultant shall provide a written report in relation to the Planning Decision to include all relevant planning issues, outlining implications of decision, possible mitigation measures and cost and programme implications. The DT Quantity Surveyor, as Project Cost Consultant, shall develop and report, through the Lead Consultant, all cost implications relating to Planning Application(s).

3.20.3.2 The Design Team Lead Consultant, with the assistance where required from the other members of the DT, shall ensure that all measures required under conditions appended to any grant of planning consent received, are fully reflected in the detailed design drawings, specifications and BoQ(s) issued for tender. These costs shall also be reflected in Cost Plans / Cost Reports developed by the DT Quantity Surveyor.

3.20.4 Per-Cent for Art Scheme:

3.20.4.1 The Client, at this stage, shall initiate the procurement of artwork under the Public Art – Per Cent for Arts Scheme. The Architect, as lead consultant, shall be required to advise and assist the Client in the evaluation of submissions presented. The DT shall incorporate all structural, design, building services (M&E) and cost requirements that may be necessary for the inclusion of the selected artwork into the developed design for the building/works.

3.20.5 Room Information Sheets (RIS) and Equipping – Stage (ii)B:

3.20.5.1 During the period after lodgement of the planning application but before completion of Stage (ii)B, the DT Architect shall continue to develop RLD's, using the agreed RIS information, for identified standard room types within the development (in agreement with the Client). The RLD's shall be developed in sufficient detail to permit the DT Quantity Surveyor to accurately develop and report on a final detailed cost estimate of all the works, service requirements for all equipment groups and equipment (Group 1) required for the proper functioning of the Facility.

3.20.6 <u>Architectural Service & Deliverables – Stage (ii)B:</u>

3.20.6.1 Develop a detailed design from approved scheme design on Client's instructions. Coordinate design work by other DT Members.

3.20.6.2 Prepare all required planning documentation. Prepare a pre planning report for Client approval before lodgement. Lodge a Planning Application. On receipt of determination, advise Client, make revisions to scheme design to address planning conditions, etc. Issue post planning report.

3.20.6.3 Liaise with M&E consultant (including all DT members as appropriate) and complete a Stage (ii)B Dynamic Simulation Model for the project and issue to Client. This must be completed before final architectural designs are finalised for submission of planning application.

3.20.6.4 Assist the Fire Consultant in their detailed consultation with the Local Authority Fire Department and their formulation of a detailed Fire Strategy for the building which shall anticipate all Fire Department and regulatory fire safety issues.

3.20.6.5 Continue to review and develop EED requirements as well as ensuring design complies with briefed A3 BER (minimum) and incorporates development of appropriate sustainable and environmental design objectives and strategies agreed at Stage (ii)A.

3.20.6.6 Continue to review and develop the requirements detailed in Section 1.15 Sustainability to include as a separate report design provisions that may be required to facilitate a clear roadmap to net zero carbon emissions.

3.20.6.7 Complete the design reviews as part of the design for energy efficiency with consideration

given to operational phase, trouble-shooting Energy Factor reviews.

3.20.6.8 Assist the EED Facilitator on EED issues with the assistance of the DT on a regular basis and coordinate the inputs of the DT with the EED Facilitator in the preparation of EED Stage (ii)B Report for acceptance by the Client.

3.20.6.9 Progression of Embodied Carbon Assessment deliverables. Refer to Appendix 13.

3.20.6.10 Prepare a Construction Waste Management Plan.

3.20.6.11 Update Schedule of Accommodation and prepare floor Area Reconciliation & Analysis.

3.20.6.12 Provide advice, design input, etc. in any value engineering, risk management and contingency management issues to bring the project in line with the project cost. As DT Lead Consultant, oversee the DT Members while taking advice from them on all value engineering, risk management and contingency issues and advise the Client on DT derived proposals.

3.20.6.13 Initiate preparatory work on the Suitability Assessment Questionnaire (SAQ) and supporting documentation in anticipation of short-listing potential building contractors and specialists for the tender process.

3.20.6.14 Assist the Quantity Surveyor in updating the cost plan and cost report.

3.20.6.15 Production of RLD's for selected standard room types within the development (in agreement with the Client), based on the previously developed and agreed project specific RIS, to include consultation and agreement thereof with the Client/User Groups.

3.20.6.16 Update project programmes as appropriate.

3.20.6.17 Provide a final Procurement Strategy Report (Stage (ii)B) with the assistance and advice from the other DT Members and in particular the DT Quantity Surveyor.

3.20.6.18 As DT Lead, provide to the Client and the appraisal team responsible for conducting economic and financial appraisals in report format (both pdf and native format) update on all of the required information to be compliant with the Infrastructure Guidelines for this stage of the project such as procurement strategy, risk management and optimism bias.

3.20.6.19 The DT Lead shall attend when requested Review Meetings in relation to issues associated with Infrastructure Guidelines and the report(s) provided.

3.20.6.20 Stakeholder engagement to communicate any variation to the design as a result of any planning condition affecting the original agreed design.

3.20.7 Civil/Structural Engineering Service & Deliverables – Stage (ii)B:

3.20.7.1 Develop the detailed C&S Engineering design of the approved scheme in collaboration with the Architect and the other DT Members.

3.20.7.2 In conjunction with the Building Services Engineer, provide a set of suitably detailed C&S design drawings which are sufficient to enable the Architect to co-ordinate dimensional and detailed requirements; such requirements to include builders' works, provisions for building services etc., as well as, such final calculations, details and all necessary information relating to the Works as may be required for submission for Planning Approval (or later Building Regulation approval) including information supplied by specialist suppliers and/or contractors which need to be included in such submissions.

3.20.7.3 Prepare a set of structural layout plans, typical sections and structural details, and outline specifications of structures in sufficient detail, to permit a developed design to be finalised.

3.20.7.4 It shall be part of the scope of the C&S Engineers service to prepare any required designs for road layouts and site infrastructure (including underground drainage, Attenuation and SUDS) and to prepare submissions on traffic analysis and Mobility Management Plans if required by the Planning Authority or other statutory authorities.

3.20.7.5 Provide all C&S Engineering inputs required to support the EED process, and any design provisions required to facilitate a clear roadmap to net zero carbon emissions.

3.20.7.6 Progression of Embodied Carbon Assessment deliverables. Refer to Appendix 13.

3.20.7.7 Prepare required documentation to show compliance of design with Building Regulations and other statutory requirements.

3.20.7.8 Develop detailed designs, structure, materials, construction methods, servicing requirements, traffic, utilities, etc. Explore most suitable design approach having regard to budget, Client needs, market requirements, planning or other site requirements, third party requirements such as RPA, DCC, ESB, BGE, etc. Allow for 3D visualisations of options to support any decision making required.

3.20.7.9 Develop detailed designs for water supply, the foul and surface water drainage systems both internal and external to the site. Generate the utility services tie-in details for water, foul and surface water systems taking into account the nature of the existing operational campus requirements.

3.20.7.10 Assist in the preparation of a Construction Waste Management Plan.

3.20.7.11 Allow for integration of groups 1, 2, 3 and 4 equipment data to the design layouts, floor loadings, etc. Assist as necessary with Room Information Sheet process.

3.20.7.12 Provide C&S Engineering report addressing the above issues and additional relevant issues, for inclusion in the general Stage (ii)B Report.

3.20.7.13 Provide sufficient and comprehensive C&S Engineering information to the Quantity Surveyor to assist them, in their role as Overall Project Cost Consultant, in the preparation of a detailed Stage (ii)B Cost Plan; to include, if relevant, value engineering, risk and contingency matters.

3.20.7.14 Provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead any updates on relevant C&S information pertaining to the project that would impact project costs and risks to ensure appraisals are up-to-date and are compliant with the Infrastructure Guidelines. All of the reports are to be issued in pdf and native format.

3.20.7.15 Review the Building Services Engineers proposals for buried service ducts. Agree trench details (spacing of ducts etc) and prepare details. Agree manhole and chamber sizes with Building Services engineer and prepare details. Clearly identify any and all contractor designed elements

3.20.8 Building Services (M&E) Engineering Service & Deliverables – Stage (ii)B:

3.20.8.1 Prepare services design layouts of all mechanical, electrical, life safety, building management and medical engineering showing plant rooms, services zones, service risers, ducts etc. Clearly identify any and all contractor designed elements. Carry out a clash detection exercise using the BIM model. Coordination meetings will be required to review interfaces between structure, services and building elements and design these out so that no bulkheads or projections are required in ceilings.

3.20.8.2 Develop a full description/outline specification of all mechanical, electrical, and plumbing services systems, and a full set of design drawings for building services systems.

3.20.8.3 Provide advice, and services design inputs and all materials necessary to support the attainment of the agreed project requirements in respect of EED rating, BER (A2) and Sustainable design strategy. Update thermal building models and DSM analyses to confirm compliance with energy consumption and CO2 emissions targets and ensure there is no overheating. Compliance with Part L (NZEB) shall be demonstrated using the National Calculation Method (NCM) as approved by SEAI. Designers shall pay particular attention to the specific provisions made for specialist ventilation systems and process load, ensuring these are treated appropriately in the NCM.

3.20.8.4 Maximise the use of renewable energy where feasible.

3.20.8.5 Progression of Embodied Carbon Assessment deliverables. Refer to Appendix 13.

3.20.8.6 Assist in the preparation of a Construction Waste Management Plan.

3.20.8.7 Advise the Architect and Design Team Lead on design provisions that may be required to facilitate a clear roadmap to net zero carbon emissions as detailed in Section 1.15 Sustainability.

3.20.8.8 Advise the Design Team Lead, Architect and Fire Safety Consultant in the preparation of the Fire Certificate submission (where relevant), including preparation of layout drawings and outline specification for emergency lighting, fire alarms, etc.

3.20.8.9 Advise the Design Team on the preparation of the Planning application, i.e., requirements for boiler houses, plant rooms, flues, noise control screens, services compounds or any other matters which may affect the Planning application.

3.20.8.10 Agree with the DT the principles of integrating the building services with the building structure and finishes, including agreement on distribution routes for service runs, "soft spots" and cross-over zones within the building. See that adequate ceiling space is provided for all cross over zones whilst giving due consideration to structural beams/columns which may impinge on the available void spaces. See that the precise locations of any floor openings greater than 400x400mm are provided to the structural engineer so that trimming details can be prepared for these openings. All floor openings must be strategically positioned and fully coordinated to avoid clashes with fitted furniture, medical equipment and main circulation routes

Commented [JM8]: All floor openings must be strategically positioned and fully co-ordinated to avoid clashes with fitted furniture, medical equipment and main circulation routes.

3.20.8.11 Assist the Architect in finalising Room Information Sheets and Schedules. Carry out full technical reviews and verification of equipment sizing and design generally.

3.20.8.12 Arrange through the Design Team Lead for a detailed review of the Building Services drawings and specifications as above with the Architect and Client, and formally confirm that they have been prepared in accordance with the agreed Brief and that they are consistent with drawings prepared by the other members of the DT. All floor openings must be strategically positioned and fully coordinated to avoid clashes with fitted furniture, medical equipment and main circulation routes. Revise and submit revisions for Design Team Lead / Architect / Client approval. In advance of this review, see that the Civil/Structural engineer has reviewed the drawings and agreed details relevant to them. Revisions to be reviewed and agreed by the Civil/Structural engineer.

3.20.8.13 Prepare and provide to the DT Quantity Surveyor details of builder's works and attendances (general and special) associated with building services for inclusion in main contract.

3.20.8.14 Provide a commentary on any design developments/changes that have occurred during statutory processes which may impact on the previously submitted Stage (ii)A Report and in particular any cost sensitive items which require to be costed and included by the DT Quantity Surveyors in the Stage (ii)B Cost Plan.

3.20.8.15 Examine conditions of Planning permission and consult with the DT Lead and, as necessary, with the nominated Local Authority Officers, i.e., the Fire Officer, Medical Officer, and

Environmental Health Officer to ensure that the requirements of the planning approval are incorporated in the Works Requirements.

3.20.8.16 Review safe access for maintenance and advise the Design Team Lead and Architect.

3.20.8.17 Prepare plans for the temporary or permanent diversion of services on site, as necessary for the Project.

3.20.8.18 Continue to develop the M&E services design while monitoring quality, energy efficiency (EED), cost, programme, and risk related matters.

3.20.8.19 Provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead any updates on relevant M&E information pertaining to the project that would impact project costs and risks to ensure appraisals are up-to-date and are compliant with the Infrastructure Guidelines. All of the reports are to be issued in pdf and native format.

3.20.9 Quantity Surveying Services & Deliverables – Stage (ii)B:

3.20.9.1 Continual cost checking and reporting on any issues that have/will impact on the project cost. The Stage (ii)B Cost Plan shall follow the format of Stage (ii)A.

3.20.9.2 During this sub-stage the QS shall carry out cost checks on building elements as the design is developed and lead the undertaking of value engineering workshops should they be required.

3.20.9.3 Provide a report on the cost implications of any design developments/changes including M&E building services elements that have occurred during statutory processes which may have impacted the Stage (ii)A Report previously submitted. Any increased or additional costs should be accompanied by a detailed explanation and justification with supporting evidence from the other DT Members as required. This report shall also include costs for design solutions to facilitate a clear roadmap to net zero carbon under a separate dedicated heading.

3.20.9.4 Report on any remedial action(s) required and, in collaboration with the other DT Members, agree cost control procedures for formal agreement with the Client.

3.20.9.5 Assist in the preparation of a final Procurement Strategy Report (Stage (ii)B).

3.20.9.6 Report on construction inflation that may impact the project; construction inflation costs to be reported separately within the Stage (ii)B report.

3.20.9.7 Continue to develop the M&E services design while monitoring quality, energy efficiency (EED), cost, programme, and risk related matters.

3.20.9.8 Provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead updates and ongoing support on all relevant and requested information pertaining to the project costs and risks to ensure appraisals are compliant with the Infrastructure Guidelines for this stage of the project. All such reports issued shall be in pdf and native format.

3.20.9.9 DT QS shall attend when requested review meetings in relation to issues associated with Infrastructure Guidelines and the report(s) provided.

3.20.10 PSDP Services & Deliverables – Stage (ii)B:

The Scope of Services for PSDP is outline in **Appendix 1** of this document.

3.20.11 Fire Safety Consultancy Services & Deliverables – Stage (ii)B:

The Scope of Services for Fire Safety Consultancy is outline in **Appendix 2** of this document.

3.20.12 Planning Consultancy Services & Deliverables – Stage (ii)B:

The Scope of Services for Planning Consultancy is outline in **Appendix 3** of this document.

3.20.13 Stage (ii)B Report, Review Meeting and Client Approval:

The Design Team having completed all the required Stage (ii)B deliverables, the Architect, as DT Lead Consultant, assisted as necessary by the other DT Members, shall present an up-date report to the Client on relevant Stage (ii)B issues including all cost and programme issues and thereby obtain Client approval prior to commencing Stage (ii)C.

Note1: At this sign-off stage, the design is now frozen. Changes shall not be permitted save in exceptional circumstances or as required in respect of reflecting requirements of conditions included in statutory consents; such changes shall be fully addressed prior to completion of Stage (ii)C.

[End of Stage (ii)B – Developed Design & Planning]

3.21 Stage (ii)C – Detailed Design / Specification / Tender Documentation / Pricing Documents:

SUB-STAGE (ii) C: DETAILED DESIGN & TENDER DOCUMENTATION
This sub-stage shall consist of the following: • Where required submit and attain Fire Safety and Disability Access Certificates. At this point the developed design, as approved or amended by the Fire Safety and Disability Access Certificates, shall become the detailed design and shall be frozen where no items remain to be designed. • Compliance with National and EU procedures in respect of preparation and publishing of Contract Notice and Suitability Assessment Questionnaire documentation, managing and finalising the pre-qualification process, culminating in an approved shortlist of suitable Building Contractors, Specialist Contractors (and equipment suppliers where necessary). • Prepare a complete and comprehensive set of tender documentation, to enable Building Contractors and Specialist Contractors to prepare an accurate tender price for the project. • Prepare an accurate pre-tender report incorporating an accurate cost estimate prior to issue of tenders and report. • BIM Requirement from all DT Members as detailed in appendices 7, 8 and 9 and information included in the BIM Information folder. • Include all agreed EED measures in the tender documents. • Provision of a Construction Waste Management Plan for inclusion in the tender documents. • Provision of all required information in report format (pdf and native format) for the draft Final Business Case in compliance with the Infrastructure Guidelines.

3.20.1 Fire Safety Certificate (FSC) Application – Stage (ii)C:

3.20.1.1 The Fire Safety Consultant with the assistance where required of the other members of the DT, shall prepare and lodge a fire safety certificate application, answering any requests for information from the statutory authority and keeping the Client apprised of all developments and their implications throughout the process.

3.20.2 Disability Access Certificate (DAC) Application – Stage (ii)C:

3.21.1.2 The DT Lead Consultant, with the assistance where required from the other DT Members, shall advise on the need for a DAC and where appropriate prepare and lodge a DAC application, answering any requests for information from the statutory authority and keeping the Client appraised of all developments and their implications throughout the process.

3.21.2 Dispute Management Procedure – Stage (ii)C:

3.20.2.1 The DT Lead Consultant with input from the other DT Members shall advise the Client in relation to the requirements and formation of a Project Board. The DT on behalf of the Client shall include in the tender documentation the Client's requirements in relation to the formation of the Project Board.

3.20.2.2 Should the project require a Standing Conciliator, the DT Lead Consultant shall advise the Client in relation to the obligations of retaining a Standing Conciliator.

3.20.2.3 The Quantity Surveyor as the Project Cost Consultant shall provide for the cost of a Standing Conciliator within the construction costs (Building Contractor's liability) and advise the Client of their financial obligations in this regard also (50/50 split).

3.20.3 Pre-Qualification Process of Building Contractor(s) / Named Specialist(s) – Stage (ii)C:

Note1: The Client through their Procurement Administrator shall publish all Contract Notices including pre-qualification documentations prepared by the Design Team to the eTenders website. The Client shall also manage the Q&A module for the pre-qualification process through eTenders, uploading agreed responses to the market.

3.20.3.1 The Design Team Lead with assistance from the Architect, Quantity Surveyor and other members of the design team shall co-ordinate, implement and manage, with the approval of the Employer, the pre-qualification of suitable candidates (Building Contractors/Specialist Contractors) for inclusion on a tender list(s) through the procedures as set out in the OGP guidance documents which can be located at www.constructionprocurement.gov.ie and all in accordance with the National and E.U. procurement directives.

1. **Building Contractor(s):** The Architect with the assistance and advice of the DT Quantity Surveyor shall carry out Suitability Assessment process to compile a short-list of Building Contractors tenderers.

2. **Named Specialist(s):** The relevant DT Members shall carry out Suitability Assessment to compile a short-list of tenderers for specialist works packages including coordination with the Architect and the Quantity Surveyor to ensure consistency with the main building contract documentation (e.g., cross checking contract notices, Suitability Assessment Questionnaires, etc.) and dealing with all queries arising.

Note2: The Suitability Assessment process for Named Specialists shall be carried out by the relevant DT Member.

3.20.3.2 Regarding Named Specialists, the Design Team Lead shall coordinate with the Architect and relevant design discipline to commence pre-qualification of suitable candidates. The Building Contractor and Named Specialists shall be procured through separate procurement procedures. The Quantity Surveyor shall advise the Architect and other relevant DT Members on the pre-qualification procedures relating to both the Building Contractor and the Named Specialists.

3.20.4 Confirmation of Cost Plan(s):

3.20.4.1 Following the production of the projects' detailed Cost Plan by the Quantity Surveyor and where cost issues arise, the Design Team Lead shall coordinate with the Architect and other members of the DT to modify the building design, if necessary, to achieve the cost limit and this shall be done in a prompt manner. This information shall be relayed to the DT Quantity Surveyor.

3.20.4.2 Any major modification to design must be prior approved by the Client.

3.20.4.3 The relevant DT Members shall provide information to the DT Quantity Surveyor to assist in the estimation of the Reserved Sums for Specialist works for inclusion in the Bill of Quantities (BoQ).

3.20.5 Tender Documents – Stage (ii)C:

3.20.5.1 The DT is responsible for the preparation of the design in sufficient detail for the preparation by the DT Quantity Surveyor of BoQ for both the main contract and the specialist packages and to issue Tender Documentation for the Main Building Contract and Specialist Packages to the market. The Tender Documentation shall include all detailed design, general arrangement drawings, details, schedules, and specifications as appropriate for each of the design disciplines and BoQ.

3.20.5.2 Specialist tender packages shall also be prepared by the relevant design disciplines and the responsibility lies with the relevant design discipline for the preparation of the specialist design in sufficient detail and the provision of appropriate information, including adequate background information of the main building works and the context of the specialist package with the main works for the Specialist Contractor(s) to provide a comprehensive and valid tender. The Design Team Lead shall coordinate with the relevant design disciplines regarding the preparation of tender documentation and cross-checking the specialist tender packages with the main contractor's work tender.

3.20.5.3 The onus and responsibility remain with the Design Team to ensure that the design drawings and other tender documentation are suitably complete in accordance with the Planning Permission, DAC and Fire Certificate obtained, and comply with the current Building Regulations.

3.20.5.4 Items of work with an element of design based on a performance specification are permissible. However, the specification must be clear and based on objective measurable standards. For example, a lift installation might be specified in terms of the dimensions, carrying capacity and relevant standards.

3.20.5.5 Where the contractor or a sub-contractor is to be responsible for elements of design, this shall be clearly outlined in the DT drawings along with a note outlining which member of the design team will review the contractor design. This applies to items such as (non-exhaustive list)

- fixings into concrete for suspended equipment, ceilings, containment, etc
- supports for suspended items of sanitary ware
- supports for windows across large cavities
- precast concrete elements designed by the contractor
- structural steel connections where design responsibility is allocated to the contractor
- Freestanding external signs

3.20.5.6 If the visual appearance is important, this too should be specified (e.g., brushed steel surrounds, type, and size of control panel, etc.). Naming specific products or suppliers is not permitted.

3.20.5.7 The following is a typical set of tender documentation:

1. Invitation to Tender Cover Letter.
2. Instructions to Tenderers (ITT).
3. Volume A: Works Requirements.
4. Volume B: Form of Tender and Schedules.
5. Volume C: Bill of Quantities.
6. Volume D: Any Novated Design Documents.
7. Background Information or documents for information purposes only.

3.20.5.8 The above documents must be in accordance with CWMF template documentation current at the time of going to tender. Particulars and details in the model forms must be reviewed and agreed with the Client prior to issue to tenderers.

3.20.5.9 <u>Tender Documentation:</u>
Following the Client indication of approval to the developed design, the Design Team Lead in association with the Architect and other members of the DT shall prepare, complete, and submit, to the Client for approval, the full suite of tender information/documentation prepared for tender issue. These tender documents must be issued to the Client in electronic (both portable document format (pdf) and native format) and hardcopy format.

3.20.5.10 Bill of Quantities (BoQ):
The Design Team Lead shall coordinate with the Architect and other DT members to provide the DT Quantity Surveyor with all information necessary in the preparation of the Bill of Quantities in a timely manner.

All DT members shall provide comprehensive information, sufficiently detailed, to the DT Quantity Surveyor to enable the preparation of a full and accurate Bill of Quantities inclusive of the M&E Building Services in accordance with the Agreed Rules of Measurement current at the time of its preparation. The DT QS shall direct the DT regarding the format and order of such information issues. Changes to detailed documentation shall also be affected, where required, by the DT members in sufficient time for incorporation into the Bill of Quantities in advance of tender documentation issue.

3.20.5.11 Direct Tendering of Specialist Works Packages:
The Architect shall:

1. Coordinate with the Building Services Engineer, Civil Structural Engineer, and the DT Quantity Surveyor in relation to preparing, by the relevant Design Team member, of separate works specialist tender packages (including general preliminaries applicable to these works and co-ordination with the Main Contractor's works). This shall include cross checking specialist works with the Main Contractor's works (i.e., '*clash*' points).
2. Input into the evaluation and award of tenders and the publication of Award Notice(s) for the relevant works specialist as required.

3.20.6 Architectural Service & Deliverables – Stage (ii)C:

3.20.6.1 Detailed Design: The Architect, in conjunction with the other DT Members (as required) shall prepare a suitably comprehensive set of detailed design drawings and detailed specifications describing all areas of the proposed development to an agreed scale and in sufficient detail to permit the contractors to accurately prepare a comprehensive quotation for the project and to price and construct the complete works to standards consistent with Clients Works Requirements which shall be fully reflected in the DTs design, detailed specifications and BoQ.

3.20.6.2 Energy Efficient Design: The Architect in conjunction with the EED Facilitator and other DT Members shall ensure that the requirements of current I.S. 399 continues to be adopted and implemented particularly in relation to the Tender Documentation and shall maintain engagement and communication with the Client through their EED Owner on EED matters relating to the project.

Progress Embodied Carbon Assessment Report requirements. Refer to Appendix 13.

3.20.6.3 Construction Waste Management Plan: Produce a Resource and Waste Management Plan (RWMP) in accordance with the EPA Best Practice Guidelines for the preparation of Resource and Waste Management Plans for construction and demolition waste (2021). The RWMP will be included as part of the tender documentation for procurement of the Project Main Contractor.

3.20.6.4 Compliance with Statutory Consents: The Architect and Fire Safety Consultant, in conjunction with the DT Civil & Structural Engineer and Building Services (M&E) Engineer (as required) shall examine conditions of planning permission, Fire Safety Certificate and Disability Access Certificate and consult with each other as necessary, and with the nominated Local Authority Officers, e.g. the planning officer, the Fire Officer, Environmental Health Officer to ensure that the requirements of the planning approval and other statutory consents are incorporated in the tender design; Any changes in the design that affect the agreed scope of works shall be agreed with the clinical service.

The Architect, as Lead Consultant, and the other DT Members shall be responsible for informing the Quantity Surveyor, as Lead Cost Consultant, of all issues that impact on the cost of the project.

The Architect, in his role as Assigned Certifier, in conjunction with the other DT Members (as required), shall prepare a suitably comprehensive Preliminary Inspection Plan (PIP).

Note1: The position of the principal articles of furniture and equipment (i.e., Groups 2, 3 & 4) intended to be placed in the proposed building shall be indicated on layouts and scheduled as appropriate.

3.20.6.5 Final Specification: The Architect, in conjunction with the DT C&S Engineer and Building Services (M&E) Engineer (as required), shall prepare a full and detailed specification for the building. The use of proprietary names is not permitted.

3.20.6.6 Schedule of Accommodation: The Architect shall prepare an updated and final Schedule of Accommodation. The architect shall also prepare and issue a comprehensive analysis of project areas including analysis of Net and Gross floor areas for the project with information on the grossing factors achieved for communications, departmental circulation, plant, and ICT room areas. This shall be included in the pretender report.

3.20.6.7 Common Data Environment / Electronic Document Management System: The Architect shall include a detailed paper within the draft Tender Documents outlining the requirements of Tendering Contractors to use the Project CDE (NEIS) for all project related document control and communication. This paper will outline the controls and configuration required on all parties to the contract. The paper will detail the training required by the successful Contractor which is to be included in their tender price. All contract related communication will be via the NEIS.

3.20.6.8 Detailed Design Drawings: The following is a non-exhaustive list of required Detailed Design drawings, to be provided by / coordinated by the Architect:

1. Plans at foundation level, each floor level, and roof level of every building to a scale of not less than 1:100.
2. Elevations and sections to the same scale to fully describe each building.
3. The above documents shall be supplemented with detailed drawings, to a scale of not less than 1:50, of sections of the building requiring detailed layouts.
4. Room Loaded Drawings (RLD) for every room in the facility, as per the requirements set out in **Appendix 10**, describing major equipment components in detail which together with specifications and Equipment Schedules will permit the contractor to accurately price all the works and equipment required for the proper functioning of the Facility. Such RLD's will have been reviewed and agreed in consultation with the Client and User Groups.
5. The position of the principal articles of furniture and equipment intended to be placed in the proposed building shall be indicated (i.e., Groups 2, 3 and 4 equipment).
6. Site plan showing final proposals for external communications, levels, alterations to site services landscaping, etc.
7. A suitably detailed and comprehensive set of detailed drawings for all areas of the buildings to an agreed scale shall be produced as necessary to permit the contractors to price and complete the works.

3.20.6.9 Compliance with Climate Action Plan: The Architect in conjunction with the DT shall provide a separate dedicated report detailing steps that have been incorporated into the building design to facilitate a roadmap to net zero carbon emissions and/or to clearly identify additional steps that may be required (including Cost Plan) to facilitate a net zero carbon ready building as detailed in Section 1.15 Sustainability.

The Design Team shall fully understand and take account of any benefits achieved (and projected) from de-carbonisation of the different utility infrastructures in completing the designs and reports for net zero carbon buildings.

3.20.6.10 Construction Waste: The Architect shall, with input from the DT, develop the Construction Waste Management requirement which shall be included in the tender documents.

3.20.6.11 Draft Final Business Case: As DT Lead, provide to the Client and the appraisal team responsible for conducting economic and financial appraisals, all required information for the draft Final Business Case compliant with the Infrastructure Guidelines; information to be in report format (both pdf and native format).

The DT Lead shall attend when requested review meetings in relation to issues associated with Infrastructure Guidelines and the report(s) provided.

3.21.7 Civil/Structural Engineering Service & Deliverables – Stage (ii)C:

3.21.7.1 Tender Documentation - Final Detailed Specification & Drawings: The DT Civil & Structural Engineer shall prepare a sufficiently detailed set of design and detail drawings including plans, sections, construction work schedules, and specifications where appropriate, for the structural engineering work including, but not limited to all foundations, columns, floors, roofs, staircases, and other structural members of buildings in reinforced concrete, structural steel, masonry, structural timber or other structural medium.

3.21.7.2 Provide schematic layouts, typical details and outline specifications for external civil/structural engineering works e.g. layout plan(s) and details of roads, car parks etc.; details of external water mains, fire mains and hydrants, main underground foul and surface water sewerage (including, Attenuation and SUDS), external ducts, site subsoil drainage; details (where appropriate) of any earthworks, retaining walls, water storage tanks or tower, boiler house chimney, sewage treatment works or pumping plant required necessary for the information of the Building Contractor to enable him to carry out the Works.In conjunction with the Building Services Engineer, prepare details for trenches and manholes required for underground Mechanical and Electrical services

3.21.7.3 A full and detailed specification for the structural components of the project shall be produced. The use of proprietary names is not permitted. The tender documents shall indicate elements of structure for which specialist contractor design is required (primary and secondary structure)

3.21.7.4 Embodied Carbon Assessment: Progress Embodied Carbon Assessment Report requirements - Refer to Appendix 13. Provide all information required to the Architect, necessary to develop the Construction Waste requirements.

3.21.7.5 Draft Final Business Case: Provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead all relevant C&S information pertaining to the project that would impact project costs and risks to ensure appraisals are compliant with the Infrastructure Guidelines in relation to the draft Final Business Case. All such reports are to be issued in pdf and native format.

3.21.7.6 Planning Compliance: Prior to tender issue, engagement is required with statutory bodies including NTA and Local Authority with regards discharging the planning conditions and reaching agreement on any works that may be required off campus.

3.21.8 Building Services (M&E) Engineering Services & Deliverables – Stage (ii)C:

3.21.8.1 Tender Documentation:
The DT Building Services (M&E) Engineer shall consult with and assist the Architect in the preparation of RLD's for every room within the proposed development, providing advice and

input as required in relation to the Building Services (M&E) Engineering Services. Such RLD's will have been reviewed and agreed in consultation with the Client and User Groups.. Prepare a schedule and drawings of builders work opes in the floor structure at all levels so that the Civil and Structural engineer can assess these locations and ope sizes and provide trimming details.

The DT Building Services (M&E) Engineer shall consult with the Architect and the DT Quantity Surveyor regarding conditions of contract, forms of tender and warranties to be used on the project and shall prepare tender documents for their specialist work packages, including pricing documents where appropriate and shall prepare a schedule of builders' works and attendance for inclusion in the main contract.

Examine conditions of planning permission and consult with and advise the Architect and, as necessary, with the nominated Local Authority Officers, e.g., the Fire Officer, Environmental Health Officer, to ensure that the requirements of the planning approval are incorporated in the tender design.

A full M&E design for all services will be required. From Stage 2 (ii)B onwards, schematic design will not be accepted. The M&E consultant must provide a complete set of specifications along with the corresponding drawings.

3.21.8.2 Embodied Carbon Assessment:
Progress Embodied Carbon Assessment Report requirements. Refer to Appendix 13.

Provide all information required to the Architect, necessary to develop the Construction Waste requirements.

3.21.8.3 Draft Final Business Case:
Provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead all relevant M&E information pertaining to the project that would impact project costs and risks to ensure appraisals are compliant with the Infrastructure Guidelines in relation to the draft Final Business Case. All such reports are to be issued in pdf and native format.

3.21.9 Quantity Surveying Service & Deliverables - Stage (ii)C:

3.21.9.1 Tender Documentation – Bill of Quantities (Pricing Document):
The Client, having indicated approval to proceed on the basis of the developed design, specification and cost plan, the DT Quantity Surveyor shall, in accordance with the most-up-to-date approved method of measurement, prepare the following:

1. A full and accurate BoQ based on the Agreed Rules of Measurement or subsequent approved edition relevant at time of tender, with no amendments other than those required for use with the Public Works Contracts.

2. Fully measured and accurate BoQ for the M&E building services installation in accordance with the Agreed Rules of Measurement approved at the time of tendering the project to the market.

3. During the production and on completion of tender design information / documentation by the other Design Team disciplines the DT QS shall produce a fully measured and accurate Bill of Quantities (BoQ) for all design disciplines including building services. The deliverable of a fully measured, complete and accurate BoQ by the DT QS is fully and wholly dependent on the other design disciplines providing their full and complete design services culminating in a full and complete set of tender documents.

4. The DT QS deliverable of a complete and accurate Pre-Tender Cost Check is also dependent on the rest of the design team providing a full and complete pack of 'tender ready' design information/pack. It is the responsibility of the DT QS to report, comment

and declare to the Client that they can provide both a 'tender ready' BoQ and a Pre-tender Cost Check by the agreed date of the Stage (ii)C stage report. At regular intervals during Stage (ii)C the DT QS must report and comment to the Design Team Lead and the Client on the QS ability to meet programme date for the Stage (ii)C stage report submission. In relation to Pre-tender Cost Check also refer to sub-section below '*Confirmation of Cost Plan(s)'*.

Note: All tender information must be checked for accuracy and consistency prior to issuing the invitation to tender and all design team members must attest to having read the entire set of tender documents and understood all aspects, checking for errors where appropriate to their skills. The Design Team Lead is responsible for making this has occurred and to report same to the Client.

3.21.9.2 The Design Team Lead shall coordinate with the other DT Members to provide the Quantity Surveyor with all information necessary in the preparation of the BoQ in a timely manner.

3.21.9.3 Confirmation of Cost Plan(s):
The DT Quantity Surveyor shall prepare the following:

1. Cost Plan Confirmation: Pre-Tender Cost Plan, complete with detailed back up, based on the full and accurate final tender documents from the other members of the DT and the BoQ. It shall be based on the market conditions prevailing at the time of tendering. This shall be prepared in the same format as previously described, include building services costs, and shall detail any variances from the approved cost limit.

2. Pre-Tender Cost Check: Comprehensive commentary regarding the market conditions, inflation factors, etc. prevailing at time of tendering and the impact on the tender returns.

Should any cost issues arise at this stage, the Architect, and the other members of the DT, in a coordinate manner, shall resolve such issues in a prompt manner and shall relay this information to the Quantity Surveyor.

Any major modification to design must be prior approved by the Client.

3.21.9.4 Direct Tendering of Specialist Works Packages:
The Quantity Surveyor shall:

1. Coordinate with the Building Services Engineer, Civil Structural Engineer, and the Architect in relation to preparing, by the relevant Design Team member, of separate works specialist tender packages (including general preliminaries applicable to these works and co-ordination with the Main Contractor's works). This shall include cross checking specialist works with the Main Contractor's works (i.e., '*clash*' points).

2. Input into the evaluation and award of tenders and the publication of Award Notice(s) for the relevant works specialist as required.

3.21.9.5 Provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead all relevant and requested information pertaining to the project costs and risks to ensure appraisals are compliant with the Infrastructure Guidelines and the draft Final Business Case. All such reports issued shall be in pdf and native format.

3.21.9.6 DT QS shall attend when requested review meetings in relation to issues associated with Infrastructure Guidelines and the report(s) provided.

3.21.10 PSDP Services & Deliverables – Stage (ii)C:

The Scope of Services for PSDP is outline in **Appendix 1** of this document.

3.21.11 Fire Safety Consultancy Services & Deliverables – Stage (ii)C:

The Scope of Services for Fire Safety Consultancy is outline in **Appendix 2** of this document.

3.21.12 Planning Consultancy Services & Deliverables – Stage (ii)C:

The Scope of Services for Planning Consultancy is outline in **Appendix 3** of this document.

3.21.12 Employers Representative Services and Deliverables - Stage (ii)C

The ER shall review the tender documents so that he is familiar with the documents in advance of the commencement of construction. The ER shall comment on the completeness of the documents and point out any contents of the documents which in his/her opinion may give rise to contractor claims during the course of construction.

Stage (ii)C Report, Review Meeting and Client Approval:

3.21.12.1 Pre-Tender Report:

The Design Team Lead with the assistance from the Architect and the other DT Members, shall prepare a pre-tender report which shall incorporate the Pre-tender Cost Plan confirmation and Cost Check.

This report will confirm to the Client the adequacy, and completeness of the tender documentation; that all the component parts are in place; that it is in accordance with Budget and Programme and confirm the tender in relation to any relevant changes to market conditions.

All reasonable alternative proposals suggested/recommended by the Design Team Lead in conjunction with the members of the DT regarding procurement (e.g., phasing, number of contractors, etc.) shall be considered by the Client.

The Design Team Lead with the assistance of the other members of the DT shall prepare and submit proposals for inviting tenders for approval in sufficient time to enable the Client to take appropriate action on the recommendations therein in accordance with the Management Control Plan. All M&E services and other specialists (if any) will form part of the main contract and will be included in the pricing document.

[End of Stage (ii)C – Detailed Design & Tender Documentation]

3.22 Stage (iii) – Tender Issue, Evaluation & Award:

STAGE (iii): TENDER ISSUE, EVALUATION & AWARD
This stage shall consist of the following: • Issue tender documentation, including the works requirements, to the pre-qualified list of contractors and named specialists. • Review and evaluation of returned tenders and preparation of a comprehensive report to the Client on the outcome of the works procurement process. • The completion of this stage should result in the placing of a suitable contract with a suitable building contractor within the approved budget. • BIM Requirement from all DT Members as detailed in appendices 7, 8 and 9 and information included in the BIM Information folder. • Provision of all required information in report format (pdf and native format) for the Final Business Case in compliance with the Infrastructure Guidelines.

3.21.1 Tender Issue:

3.21.1.1 Having obtained approval of the Pre-Tender Cost Check report and tender documentation from the Client, the Design Team Lead shall coordinate with the other DT Members and the DT Quantity Surveyor regarding issuing tender documents to the pre-selected short-listed Building Contractors and Named Specialists; all in a timely manner.

3.21.1.2 The Design Team Lead shall assemble all relevant Main Building Contractor tender documentation from the DT Members and issue to the DT Quantity Surveyor to collate the Final Tender Issue Pack. The Client's Procurement Lead will fully utilise eTenders web site tendering functionality for publishing to pre-selected candidates and for any Named Specialist tendering required.

3.21.2 Tender Procedure, Assessment and Evaluation – Main Building Contractor and Named Specialists:

3.21.2.1 The Design Team Lead in conjunction with the other DT disciplines, where relevant, shall co-ordinate, implement and manage the Building Contractors tender assessment and evaluation process, all in accordance with National and E.U. procurement directives and Client requirements. Where required, this process shall also be implemented for any Named Specialists.

3.21.2.2 The overall tender procedure and appointment of Named Specialists has been set out in more detail in *Guidance Note 2.3.3 – Specialists and the Public Works Contract* published by the OGP (refer www.constructionprocurement.gov.ie). It details the necessity for coordination of the overall procedure and interconnection of the separate tendering process for the Main Contractor and Named Specialists.

3.21.2.3 The Design Team Lead, along with all DT members and the Employers Representative should particularly note the procedures, interconnection between all stages of tender process between that of Main Contractor and Named Specialists, the standstill periods, programme information and communication with the tenderers and the like, all of which impact on the programme of the overall tender process. The Letter of Acceptance can only be issued to the Main Contractor by the Client once signed contracts between the Main Contractor and Named Specialists are agreed and in place.

3.21.2.4 The Design Team Lead, together with the other members of the DT and the Employers Representative, will be responsible for assessing the Building Contractors' tenders together with assessing the contractors' response to the tender requirements including EED.

3.21.2.5 The DT Quantity Surveyor shall assist the Design Team Lead in checking for qualified offers, seeking clarifications, if necessary and evaluating bona fide tenders.

3.21.2.6 The QS shall review and evaluate the price criterion of returned tenders.

3.21.2.7 The DT Civil & Structural Engineer and Building Services (M&E) Engineer shall assist the Design Team Lead in assessing the technical suitability for carrying out the Works of persons and firms tendering for the main contract and for any specialist contracts involving the supply and/or installation of parts of the Works.

3.21.2.8 The DT PSDP shall carry out a full safety evaluation of the construction safety strategy and policies issued by Tenderers, as outlined in Appendix 1.

3.21.2.9 The evaluation of tenders MUST include for the assessment for abnormally low characteristics within tenders and this also applies to any subsequent abnormally low tenders and issues arising from this process.

3.21.3 Tender Evaluation Report:

3.21.3.1 Tender evaluation reports are required at each point of the process advising on progress, the evaluation process, and the recommendation for the selection of the Main Contractor and Named Specialists, where relevant and the final recommendation to proceed with the issue of the Letter of Acceptance to the Main Contractor.

3.21.3.2 The Evaluation Team(s) will review the received valid tenders for both the Main Building Contractor work and the Named Specialist Works Packages, and complete reviews of the BoQs of the apparently successful Tenderers, including the holding of tender clarification meetings as appropriate, finally incorporating the preferred Named Specialist(s) tender sum. The Evaluation Team/DT, through the Design Team Lead shall submit the reports to the Client for approval.

3.21.3.3 The DT shall be mindful of the overall duration of this process given the various points in the tender process where reports with selection recommendations are issued to the Client for their approval prior to moving to the next stage of the process.

3.21.3.4 The detailed tender reporting process shall include:

1. Evaluation reports which provide details of the procurement process completed, recommendation and reasons for the selection of:

   i. The Main Contractor.

   ii. The Named Specialists and other specialists.

2. Report on Tender for the Main Contract is issued once a detailed review of the tenders has been completed. This report shall set out the Tender amount against the approved Budget, advise on market conditions prevailing, provide a review of the proposed programme, proposed resources, and quality of the tender submission. The Design Team Lead shall prepare the overall tender report with the detailed cost evaluation section being prepared by the DT Quantity Surveyor.

3. Supplemental Report on Tenders incorporating the preferred Named Specialists tenders after a detailed evaluation process. The Reserved Sums shall be substituted for the tender amounts of the preferred specialist tenderers. The Design Team Lead shall prepare the overall report which shall incorporate the detailed report of the DT Quantity Surveyor's report which shall incorporate tender reports from the relevant DT member(s) for the specialist elements.

3.21.4 Placing of the Construction Contract:

3.21.4.1 Following approval, by the Client, to the appointment of the Main Building Contractor and the Named Specialists, the Design Team Lead, when instructed by the Client, shall make all arrangements for acceptance of tenders by the Client, finalisation of contract details, agreement of the construction programme, etc, necessary to enable the contract to proceed.

3.21.4.2 The Design Team Lead, with the assistance of the other members of the DT, shall ensure the preparation and safe keeping of the full complement of Contract documents before the Project starting date.

3.21.4.3 The Design Team Lead and where appropriate, the other members of the DT through the Design Team Lead, shall assist the Client in providing feedback and debriefing (documentation and meetings) to Tenderers as required.

3.21.5 Dispute Management Procedure:

3.21.5.1 The Design Team Lead shall ensure that the Works Requirements include all necessary information for tendering contractors in relation to the project Board (refer OGP's GN 3.1.1).

3.21.5.2 The DT Quantity Surveyor, in coordination with the Architect, shall also ensure that the BoQ includes all necessary information for tendering contactors in relation to the Project Board (refer OGP's GN 3.1.1).

3.21.5.3 Should the project require a Standing Conciliator, the DT Quantity Surveyor shall include in the BoQ for the Building Contractor's liability regarding retaining a Standing Conciliator.

3.21.6 Room Information Sheets and Equipping – Stage (iii):

3.21.6.1 The Design Team Lead assisted as necessary by the Design Team shall review and assess equipment included in main contract, prior to preparation of a recommendation and tender report for Client consideration. The Design Team shall also assist the Client in consideration of tenders for all other equipment to be procured separately as appropriate.

3.21.7 Final Business Case:

3.21.7.1 The DT Lead shall provide to the Client and the appraisal team responsible for conducting economic and financial appraisals, all required information for the draft Final Business Case compliant with the Infrastructure Guidelines.

3.21.7.2 The DT Civil and Structural Engineer shall provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead all relevant C&S information pertaining to the project that would impact project costs and risks to ensure appraisals are compliant with the Infrastructure Guidelines in relation to the draft Final Business Case.

3.21.7.3 The DT Building Services (M&E) Engineer shall provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead all relevant M&E information pertaining to the project that would impact project costs and risks to ensure appraisals are compliant with the Infrastructure Guidelines in relation to the draft Final Business Case.

3.21.7.4 The DT QS shall provide to the Client and appraisal team responsible for conducting economic and financial appraisals through the DT Lead all relevant and requested information pertaining to the project costs and risks to ensure appraisals are compliant with the Infrastructure Guidelines and the draft Final Business Case.

3.21.7.5 All such reports issued shall be in pdf and native format.

3.21.7.6 The DT Lead and DT QS shall attend when requested review meetings in relation to issues associated with Infrastructure Guidelines and the report(s) provided.

[End of Stage (iii) – Tender Issue, Evaluation & Award]

3.22 Stage (iv) – Construction:

STAGE (iv): CONSTRUCTION
This stage shall consist of the following: • Lodgement a valid Commencement Notice with supporting documentation and design certificates on the online Building Control Management System. Advise the Client of the Notice Validation Number. • Administration of the contract Works in accordance with the Conditions of Contract, including performing the duties of the ER and taking part in the informal dispute resolution process as appropriate and delivery of the Project in complete accordance with the Client Brief/Works Requirements • Cost control of the Contract in line with the Contract Sum including setting up and maintaining a Change Order register. • Manage the Works Programme in line with the approved programme. • Monitor Contractor Compliance with Environmental, Construction Waste and Traffic Management Plans. • Inspect and establish adequacy of all Project Works including equipment and services systems. Obtain all required supporting documentation including inter alia, all necessary certification, as well as comprehensive safety file and O and M manuals. Establish validity of documentation prior to issue to Client and End Users. • Prepare and upload the executed Certificate of Compliance on Completion along with supporting documentation and ancillary certificates, ensuring its validation and inclusion on the Local Authority Building Control Register prior to issue of the Certificate of Substantial Completion. • BIM Requirement from all DT Members as detailed in appendices 7, 8 and 9 and information included in the BIM Information folder.

3.22.1 Contract Administration - General:

3.22.1.1 The Employers Representative shall be aware of, shall allow for and be responsible for the relevant co-ordination of the duties set out below to ensure the execution of same and, with the assistance of the other DT Members, shall check that all the Client's obligations in relation to the contract are delivered.

3.22.2 Contract Administration and the Employers Representative:

3.22.2.1 The contract administration is carried out by the Employers Representative (ER), with the assistance of the other DT members. This Contract Administration role is set out in the relevant Public Works Contract and the Capital Works Management Framework guidance notes as published by the OGP.

3.22.2.2 The ER serves to protect the Client with project certainty, value for money and efficiency of delivery. The limitations of the ERs authority are set out in the Contract.

3.22.2.3 The duties include, but are not limited to:

1. Administering the contract on behalf of the Employer.
2. Issuing instructions, objections, clarifications, opinions, assessments, and directions.
3. Determining Contract Sum Adjustments and issuing change orders.
4. Issuing instructions in relation to dangerous and urgent events.
5. Certificates: Reviewing the monthly progress reports and statements from the Building Contractor and issuing interim and final payment certificates based on these, on the recommendation of the DT Quantity Surveyor.
6. Delay and compensation events.
7. Assessing any claims for time extensions or cost increases submitted by the Building Contractor.
8. Meetings, schedules, and minutes of regular meetings with the Building Contractor (Reference Section – "*Typical Meetings to be Provided in the PIM*").
9. Limitations of authority.
10. Monitoring, auditing, and spot checking the works.
11. Rights of delegation.
12. Keep records
13. Programme oversight and reporting to client any concerns regarding the programme
14. Health and safety and risk management issues that could affect programme, cost or quality

3.22.3 General Design Team Duties:

3.22.3.1 The following general duties shall be provided by the Design Team Lead with the assistance of the other DT Members:

1. Assist the ER in the overall management of the project.
2. Monitor the Main Contractor compliance with the Resource and Waste Management Plan (RWMP).
3. Attend a pre-commencement meeting to confirm the post contractual procedures, agree the Inspection Plan with the Assigned Certifier, Ancillary Certifiers and Contractor, communication protocols and the systems for change management, on the recommendation of the DT Quantity Surveyor.
4. Provide advice on the preparation of formal contract documents relating to accepted tenders for carrying out the Works or any part of them.
5. Develop a detailed system of contractual procedures in conjunction with the Building Contractor to give full effect to the contract.
6. Establish communication protocols to facilitate the communication of information, identifying the personnel within the communication network and the routes for the various type of information.
7. Implement the Change Management procedures during the construction stage.
8. Operate the contract to ensure the risk allocation is protected through the procedures, communication protocols and the project management of the project.

9. Issue interim and final payment certificates based on monthly progress reports and statements from the Building Contractor.

10. Agree with the Building Contractor at the start of the contract a schedule of dates to manage the interim valuation process. Periods for interim valuation in line with the dates identified in the contract.

11. Inspect and manage the building process to provide a snag free building at handover.

12. Advise on maintenance contracts and setting up these with the subcontractors.

13. Arrange commissioning and demonstrations for the Client and the building users/managers are essential part of the handover process.

14. Advise in adequate time on insurance policies and transfers of responsibility for insurance along with valuations and changes of value upon equipping.

15. Advise and manage equipping and fit out as may be required as part of Stage (iv) or Stage (v) services.

16. Ensure the energy saving opportunities identified and agreed as part of the EED Review Process are properly implemented.

17. Ensure that the Client required BER rating for the project is achieved and issue BER Certificate.

18. The Design Team Lead and M&E Engineer shall engage with installers, suppliers, and specialist sub-contractors to further develop and refine the design for energy efficiency to account for the operational requirements to manage and control energy use. This shall include the metering strategy for the building.

19. Monitor Contractor Compliance with Contractor Environmental, Waste and Traffic Management Plans.

20. Approve mock up room and samples. Coordinate samples with end users before fitout commences

21. Design coordination workshops with the service as necessary to sign.

22. All design team members are to allow for full review and commentary of any Contractors RAMS and methodology before any submissions to the UHG Maintenance team.

3.22.4 Specific Design Team Duties:

3.22.4.1 The Design Team Lead assisted by the DT Members and by the DT Consulting Engineers (C&S Engineer and Building Services (M&E) Engineer) in particular, shall:

1. Provide advice to the Client/ER in relation to the need for special inspections or tests arising during the construction of the Project.

2. Report to and advise the Client/ER on the necessity for the appointment of supervisory site staff. Assisting Client/Lead Consultant in the selection of supervisory site staff.

3. Review and comment on the Building Contractor's proposals or submittals in relation to building design, civil and structural design, and Building Services (M&E) Engineering Services design where required by the building contract documents,

(including EED proposals) to establish compliance with the statutory requirements and/or briefed requirements.

4. Review and comment on shop fabrication drawings prepared by the Building Contractor, his sub-contractors or suppliers for the Works, or a part thereof, in respect of general dimensions and structural adequacy of members and connections; to establish compliance with the statutory requirements and/or briefed requirements.

5. Attend the relevant site meetings in order to assist the ER to monitor that the Works, are being executed generally in accordance with the contract and advising the ER on the need for instructions to the Building Contractor. The frequency of site visits is detailed in the '*Specific Project Information'* document. Allowance should also be made for off-site workshop, paint shop; structural steel fabrication and specialist manufacturer/supplier visits.

6. Perform any services which any DT Member may be required to carry-out under any contract for the execution of the Works including where appropriate the witnessing of any specified test, provided that the DT Consulting Engineer has approved the terms of the contract.

7. The Fire Safety Consultant shall carry out the duties relevant to this stage as described in **Appendix 2**, "Duties of the Fire Safety Consultant".

8. The PSDP shall carry out the duties relevant to this stage as described in **Appendix 1**, "Duties of the PSDP".

9. The Design Team Lead assisted by the DT as necessary shall ensure that all Group 1 equipment is procured, delivered, installed commissioned and brought into use in accordance with project programme, budgets, and project requirements. In addition, they will ensure that building is suitably constructed to allow the easy delivery, installation commissioning and bringing into use of all Client procured equipment.

10. Ensure alignment with the Infrastructure Guidelines by providing timely and accurate reporting (including forward-reporting against target scheme cost and target completion data) and risk management information as required.

The above list is not exhaustive.

3.22.5 Dispute Management Procedure:

The following shall be as required as necessitated by the project type and value:

3.22.5.1 Project Board:
Where relevant, a Project Board shall be established in accordance with OGP Guidance Note 3.1.1 (available at www.constructionprocurement.gov.ie). The DT shall not be members of the Project Board.

However:

1. The Design Team Lead shall attend a Project Board meeting, on average once a month, for the duration of the construction stage. Provision by the Design Team Lead of information and supporting documentation in relation to items in dispute is part of the normal service.

2. The Quantity Surveyor shall attend a Project Board meeting, on average once a month for the duration of the construction stage. Provision by the Quantity Surveyor of information and supporting documentation in relation to items in dispute is part of the normal service.

3. The Building Services Engineer shall provide to the Project Board, information and supporting documentation in relation to items in dispute as part of the normal service.

4. The C&S Engineer shall provide to the Project Board, information supporting documentation in relation to items in dispute as part of the normal service.

3.22.5.2 Standing Conciliator:
For Project with an anticipated Contract Sum greater than €10M a Standing Conciliator shall be appointed together with the above Project Board.

In addition to the DT requirements for the Project Board listed above the following will also be required:

1. Design Team Lead:
The Design Team Lead shall ensure that the Works Requirements include all necessary information for tendering contractors in relation to the Project Board and the Standing Conciliator (refer Office of Government Procurement's Guidance Note 3.1.1).

The Design Team Lead shall ensure that the Standing Conciliator is issued with a complete set of Contract Documents via the Client's Common Data Environment upon appointment of the Standing Conciliator.

The Design Team lead shall co-operate with the Standing Conciliator and facilitate him/her with regard to site visits that may be necessary in order to gain an understanding of issues arising in relation to disputes.

The ER shall include a Standing Conciliator in all correspondence surrounding Clause 4.9, 4.10 and 4.15 of the Contract.

2. Quantity Surveyor:
The Quantity Surveyor, in coordination with the Architect, shall ensure that the BoQ includes all necessary information for tendering contractors in relation to the Project Board and the Standing Conciliator (refer Office of Government Procurement's Guidance Note 3.1.1).

3. Building Services (M&E) Engineer:
The Building Services Engineer shall provide information and supporting documentation in relation to items in dispute as part of the normal service.

4. Civil/Structural Engineer:
The C&S Engineer shall provide information and supporting documentation in relation to items in dispute as part of the normal service.

3.22.6 Documents:

3.22.6.1 The ER shall ensure that all project documents are issued, received, processed etc. via the Client's Common Data Environment and maintained securely. These documents, used to control and deliver the project in accordance with the terms of the contract will include:

(a) ER instructions.
(b) Logs.
(c) Value Engineering (VE) proposals.
(d) Other control documents.

3.22.6.2 The ER shall ensure that the Building Contractor provides (via the CDE) the Client with on-site access to the following documents:

a) A set of contracts documents.
b) A log of all instructions (issued by the ER).
c) All publications referenced in the contract documents and in the building.
d) Contractor's documents, when required by the ER.

3.22.7 Works:

3.22.7.1 The Design Team Lead in conjunction with the other members of the DT shall use best endeavours to ensure that the Building Contractor executes the works in accordance with the contract.

3.22.8 Site Inspection Staff:

3.22.8.1 Where required and requested to do so, the Design Team shall procure the services of a suitably qualified Clerk of Works/Site Inspector/Site Engineer. The Design Team shall submit to the Client a report with a clear recommendation for the Client's consideration. Upon approval, the preferred Clerk of Works/Site Inspector /Site Engineer shall be engaged by and shall report directly to the Contracting Authority. For clarity, the procurement and administrative duties associated with the selection, of the Clerk of Works/Site Inspector /Site Engineer shall be the responsibility of the Design Team Lead and the associated costs shall be deemed included within the Tender Sum for the Design Team Lead. The direct fees of the Clerk of Works/Site Inspector Site Engineer shall be borne by the Contracting Authority. At the appropriate stage of the contract, the design team will be expected to procure a suitably qualified Building Services Clerk of Works/ Site Inspector/Site Engineer

3.22.8.2 The DT Civil & Structural Engineer and Building Services (M&E) Engineer shall assist the Design Team Lead, in advising on the necessity for appointing site inspection staff and required specialists.

3.22.9 Employment Records:

3.22.9.1 Under the Contract, the Client has the right, whenever it is deemed necessary, to seek the production of any records on pay and conditions for work persons employed on the site. Additionally, the Client may conduct random checks on these records where the option to so do is selected in the Contract. These checks are mandatory where the duration of the work is expected to exceed eighteen (18) months.

3.22.9.2 The ER shall carry out on behalf of the Client discretionary checks when deemed necessary and all mandatory checks. The DT shall assist the ER in this matter.

3.22.10 Access & Facilities:

3.22.10.1 The ER and the other members of the DT and the PSDP shall use best endeavours to ensure that the Building Contractor maintains suitable access routes to and within the site.

3.22.11 Quality Assurance:

3.22.11.1 The Design Team assisted by the ER, to monitor and carry out spot checks and audits of the Building Contactor's quality assurance procedures and systems.

3.22.12 Standards of Workmanship and Works Items:

3.22.12.1 All workmanship and work items:

1. Are carried to appropriate standards and are executed in accordance with the Contract, the Works Requirements, and the Works Proposals.
2. Comply with the Contract and any legal requirements.

3.22.12.2 All materials and goods:

1. Are of good quality and new (unless otherwise agreed).

2. They must be suitable for the intended purpose. All works items selected or designed by the Building Contractor (or by any subcontracted specialist) must be fit for their intended purpose in the works.

3.22.13 Archaeological Objects & Human Remains:

3.22.13.1 Refer to Contract procedures for dealing with the discovery of Archaeological Objects and Human Remains.

3.22.14 Progress Reports:

3.22.14.1 The ER shall specify the topics to be included in the Building Contractor's monthly progress reports, and in accordance with those set out in the Contract.

3.22.15 Client Progress Reports:

3.22.15.1 The Design Team Lead shall, with the assistance of the other DT Members, prepare and issue to the Client progress reports on a monthly basis (or at alternative agreed intervals). Topics to include:

1. Description of the progress of each stage of the works compared with the Building Contractor's current programme including progress of named specialists and suppliers.
2. Details and a description of compliance with the inspection plan sign-off of agreed items, include updated inspection plan if applicable.
3. Details, status, and cost of change orders.
4. Details of delay or compensation events that have occurred or are unresolved.
5. Details of all incidents involving environmental issues, labour issues, public relations issues, and health and safety issues that might adversely affect the works.
6. Details of any Client's work items and other things that are required.
7. Quality issues on site.

3.22.16 Interim Payment Recommendations/Certificates:

3.22.16.1 The ER in their preparation of interim payment certificates and the DT Quantity Surveyor in their preparation of interim payment recommendations shall be advised and assisted where necessary by the other members of the DT. The Client (assisted by the ER and Design Team) may evaluate the Works contractor's performance at each payment stage and such evaluation will form the basis of the contractor's overall performance review at completion.

3.22.16.2 The QS will assist the ER with the valuation of change orders being determined and prepare monthly Interim Recommendations of Payment for the Works completed under the contract.

3.22.17 Cost Reports:

3.22.17.1 The DT Quantity Surveyor shall prepare, with the relevant input and assistance from the other members of the DT and in particular the DT Building Services (M&E) Engineer, and issue to the ER, monthly (or at agreed periods) cost reports providing an up-to-date record of commitments and expenditure and a forecast of financial commitments in a structured format for monitoring and controlling the project.

3.22.17.2 The DT Quantity Surveyor will be responsible for developing, managing, and reporting all project costs through the cost reporting structure which shall include the M&E Building Services costs.

3.22.17.3 The Design Team Lead shall review and submit the cost reports to the Client at agreed intervals.

3.22.18 Change Order Management:

3.22.18.1 The cost, programme and contractual implications of proposed change orders should be first evaluated, and alternatives assessed prior to formal instruction being given. Where cost savings are achieved, they should be clearly identified to the Client Team who should then decide the most cost-effective use of the savings in managing the overall budget for the project.

3.22.18.2 A schedule of approved and anticipated change orders should be used to manage the works change orders. The schedule should clearly identify the cause and need for change order, the solution or instruction to be issued, the consequence of the change order in terms of cost, programme and contract and the implementation and outcome of the change order. Anticipated change orders once approved should be put on the schedule of approved change order and managed accordingly.

3.22.18.3 The Architect and the other members of the DT shall comply with the Contracting Authority thresholds in relation to the issue of change orders as listed in Schedule A of the Government Standard Conditions of Engagement for Construction Consultants.

3.22.18.4 The ER shall manage the change orders and advise the Client with the assistance of the DT Quantity Surveyor with relevant contribution of the other DT Members, on the cost, programme and contractual implications of proposed variations and alternatives.

3.22.19 Contingency Management:

3.22.19.1 The ER, with the assistance of the DT Quantity Surveyor, and where required, the other DT Members shall manage any allocated contingency fund. A clear rationale will be communicated through the ER where an allocation of the contingency fund is sought.

3.22.20 Site Visits:

3.22.20.1 During the course of construction, the Design Team Lead and the other members of the DT shall make such periodic visits of inspection to the site as are necessary to ensure that the project is progressing in accordance with the Building Contractors programme and that there is adherence to the design and specification.

3.22.21 Compliance:

3.22.21.1 The Design Team Lead, with the assistance of the other members of the DT, must ensure compliance with relevant Hospital/Employer Permit to Work Procedures and Commissioning Procedures, all to be in accordance with current standards.In particular, the design team shall take note of the Method Statement Protocol for the UHG campus. This protocol is included in these tender documents and it is critical that it is complied with for all elements of work that may have an impact on the hospital.

3.22.22 Dispute Resolution – Stage (iv):

3.22.22.1 The ER shall with the assistance and contribution of the other DT Members, support the risk management process in anticipating and managing potential and actual dispute events if and when they arise. While the contract provides mechanisms for resolving major disputes, the dispute management process should strive to avoid these measures where possible.

3.22.23 Technical commissioning:

3.22.23.1 Technical Commissioning refers to the activities to be undertaken by representatives of the contracting parties, leading up to the Substantial Completion and prior to the handover of the building to the Client for occupation and includes the following (not an exhaustive list):

1. A fully detailed Commissioning programme reflective of the scale and complexity of the project.
2. Commissioning method statements for all mechanical, electrical, public health and life safety systems and or items of plant.
3. Ensure the building and equipment are ready for occupancy and use, i.e., fit for purpose.
4. Ensure that the new equipment meets all mandatory requirements.
5. Train staff in the operation of new equipment and safety procedures. Practical and classroom elements shall be provided, as necessary. Training content and presentation shall be mindful of the intended audience e.g., clinical, engineering, ward based etc.
6. Final inspection.
7. Systems checks and validation.
8. Defects lists.
9. Defects' rectification.
10. Receive all warranties and procedure manuals.

3.22.23.2 The Design Team Lead with the assistance of the other DT Members shall ensure that the contractor strictly complies with and enforce the Employer Permit to Work Procedures and Commissioning Procedures in accordance with current "HSE Guidelines on Handover and Completion Procedures", all in accordance with current best practice and standards.

3.22.24 Third Party Verification:

3.22.24.1 The ER shall with the assistance and contribution of the DT Building Services (M&E) Engineer, facilitate a Client appointed independent *Third-Party Verifier* to validate and verify elements of or all building systems testing and commissioning results to confirm the proper functioning of the building systems during the scheduled testing and commissioning phases of the project.

3.22.24.2 Third party verification shall be carried out on the following systems as a matter of course:

1. Fire Detection Alarm System.
2. Emergency Escape Lighting.
3. Medical Gas Pipe Systems (in-house verification by hospital Authorised Person MGPS).

3.22.24.3 At the discretion of the Client, additional systems to those listed above can be selected for Third Party Verification.

3.22.25 Handover to the Client on Completion:

3.22.25.1 Handover Documentation:

1. All handover documentation shall be collated on a single document management platform managing to store and manage all handover information. This platform will be used to progressively develop the Project Safety File, Digital O&M Manuals and building systems 'Test Packs' collectively known as the 'Handover Dossier'. All asset data, maintenance schedules and inspection procedures (ISO-19650-1) that form part of the HSE C&E AIR Rev 8 (current version) shall be furnished through the AIR and / or digitally transferred via the Tririga BIM connector.

2. The Digital O&M and Safety Files must be formatted according to the NEIS & HSE Capital & Estates guide document (current version) – Safety & Operations File template.

3. The DT shall co-ordinate the compilation and issue of the Handover Dossier to the Client at Handover of the Works stage on the Client-provided Common Data Environment (this list is non exhaustive):

3.22.25.2 Handover Dossier – (*Contents typical)*

1. Substantial Completion Certificate.
2. Completion Certificates and all supporting ancillary certification.
3. Certificate(s) of Compliance, Letters of Conformity etc.
4. Certificates of design, installation commissioning and handover as listed in I.S. 3217.
5. Certificates of design, installation, commissioning, and handover as listed in I.S. 3218.
6. Project Safety File.
7. O&M Manuals. All documents must be in English
8. System Test Packs.
9. As Built Drawings for all disciplines.
10. Plant Schedules and Asset Inventory (AIR).
11. List of Warranties and supporting letters.
12. Copy of BIM model in native and IFC Model format, where relevant – refer to the Exchange Information Requirements for further information.
13. Copy of Time Lapse Video files.
14. Collateral Warranties.
15. NEIS Asset Information Requirements.

3.22.25.3 Handover to the Client on Completion:

1. The Design Team Lead shall provide Certificate of Compliance with Planning Permission and a Certificate of Compliance on Completion (BC(A)R) with all required supporting documentation, in respect of the completed building. *Refer to Section 1.13 "Building Control Regulations" and Appendices 4 – 6 inclusive) of this document for more details.*

2. The Architect with the assistance of relevant members of the DT shall:
   i. Deliver upon request to the Client/Lead Consultant on the completion of the Works, copies of the drawings supplied to the Building Contractor for the purpose of carrying out the Works.

   ii. Obtain from the Building Contractor all tests, and commissioning reports, required to verify the correct operation of the systems involved having witnessed commissioning tests.

   iii. Review the test and commissioning reports and confirm that this work has been completed satisfactorily.

   iv. Submit all documents outlined in the Handover Documentation section.

   v. Advise the Client regarding the need to enter maintenance contracts for the various systems installed under the Contract(s).

   vi. Manage the snagging and de-snagging process.

   vii. Undertake a review of the final draft 'Handover Dossier'.

   viii. Attend final system walkdowns / system inspections.

   ix. Assist the ER in settling any dispute or difference relating to the Works that may arise between Client and the Building Contractor.

   x. Inspect and establish the adequacy of all Project Works. Obtain all required supporting documentation including inter alia, all necessary certification, as well as comprehensive safety file and digital O&M manuals. Establish validity of documentation before issue to Client and End-Users.

   xi. Prepare and upload the executed Certificate of Compliance on Completion along with supporting documentation and ancillary certificates, ensuring its validation and inclusion on the Local Authority Building Control Register prior to issue of the Certificate of Substantial Completion.

3.22.26 Handover – The Process:

3.22.26.1 Handover Documentation:

1. The DT shall assist the ER to co-ordinate the compilation and issue of the following documentation to the Client at Handover of the Works stage via the Client's Common Data Environment:

   i. Digital O&M Manuals.

   ii. As Built Drawings.

   iii. Copy of BIM model in IFC Model format, where relevant.

   iv. Safety File.

   v. Certificates of Compliances on Completion and all supporting ancillary certification.

   vi. Substantial Completion Certificate.

   vii. Collateral Warranties, etc.

   viii. NEIS Asset Information Requirements.

3.22.27 As-Built Project Information and Drawings:

3.22.27.1 The Design Team Lead and the other DT Members shall receive from the Building Contractor and his sub-contractors "As built" drawings describing the completed building and its components to enable the facility to perform and be maintained efficiently, effectively, and safely for the term of its life cycle. The information shall be at least as follows and to a scale of not less than 1:200:

1. Floor plans.
2. Elevations and Sections.
3. Single line and schematic drawings for Mechanical, Electrical, Public Health, Life Safety, IT and Security systems etc.
4. Mechanical, Electrical, Public Health, Life Safety plant and equipment schedules.
5. Site services drawings including all utility drawings, energy efficient design.
6. Architectural schedules e.g., sanitary ware, windows, doors, flooring and finishes etc.

3.22.27.2 The foregoing information shall be in hardcopy (2) and electronic copy via the Client provided Common Data Environment in PDF and "AutoCAD" or a compatible CAD format.

3.22.27.3 In addition, the Design Team Lead and DT shall receive from the Building Contractor a copy of the as built BIM Model in native and Industry Foundation Classes (IFC) formats (refer also to the Exchange Information Requirements).

3.22.27.4 The Design Team shall validate the As-Built data and hand to the Client.

3.22.28 Operation and Maintenance Manuals (O&M manuals):

3.22.28.1 The Digital O&M and Safety Files must be formatted in a manner that aligns with the NEIS & HSE Capital & Estates guide document (current version) – Safety & Operations File template. This document was provided with the tender documents (Doc. Ref.: 1.20 EH Health and Safety File Template V 1.2 2022_01 (1)).

3.22.28.2 The Design Team Lead shall receive from the Building Contractor, his sub-contractors, and Named Specialists via the Client's Common Data Environment, the O&M Manuals for the completed building and its technical installations.

3.22.28.3 The O&M Manuals should:

1. Identify key design elements, systems and materials which are critical to long term quality and performance.
2. Develop, collect, and coordinate information on operation and maintenance of components. All documents must be in English.
3. List all maintenance and services requirements.

3.22.28.4 The Design Team Lead assisted by the DT members shall review the content of the O&M manuals and satisfy themselves of their adequacy prior to recommending their acceptance to the Client.

3.22.28.5 The Design Team Lead and the other DT Members shall specify within the construction contract, that all Operating & Maintenance Manuals, safety files, drawings, specifications are stored on a computerised library system compatible with the existing NEIS system at the handover stage. The DT Quantity Surveyor shall specify same within the construction contract (i.e., Bill(s) of Quantities).

3.22.29 Plant Schedules and Asset Inventory:

3.22.29.1 The HSE will be furnished with a digital Asset Register as set out in the HSE C&E AIR Rev 8 (current version), Planned Maintenance schedule and procedural inspection data at handover. The data will be issued in the Format of the NEIS Digital AIR Rev 8 (current version) or transferred digitally from the BIM model through the BIM Connector from the Asset Information Model (AIM) which will support the required CoBie data in parallel. It is a requirement that all core maintainable assets, referenced in the Health Technical Memoranda's HTM's and the Maintenance Standards Database SFG20 are named as per the NEIS Asset naming convention and with an allocated GS1 code. Each asset will be tagged pre-handover with a GS1 QR tag and allow for the operational team to digitally scan the tag to upload the asset details including:

1. Asset Details.
2. O&M Manual.
3. Asset Maintenance History.
4. Asset Location.

3.22.29.2 Asset handover data will be transferred to the NEIS IWMS IBM Tririga platform via pre-defined NEIS Asset Register (current version) or transferred digitally through the BIM Connector from Revit to Tririga. The Operations Assets Information Advisor will fully validate and accept the data prior to handover and ensure that it is fully aligned with fully aligned with HSE operational needs.

3.22.29.3 The Design Team Lead shall request from the Contractor that at handover they (the Contractor) shall provide a detailed database to support the operation and maintenance of the facility. The Asset Inventory shall be populated on NEIS Asset Register (current version) and include detailed plant and equipment schedules for all mechanical, electrical, life safety and public health systems. The plant / equipment schedules shall be generated on a per system basis and contain fundamental performance and operational criteria, including for example but not limited to:

1. Unique Plant Identifier number.
2. Location.
3. Quantity.
4. Manufacturer Model Number.
5. Rating, Capacity, Duty.
6. Size & Dimensions.
7. Operational and Performance set points (temperature, pressure etc.).

3.22.29.4 The Building Contractor shall include plant and equipment schedules for all Group 1 and Group 2 equipment.

Note: The HSE C&E AIR master data set defines the key headings that the contractor needs to populate for asset management.

3.22.30 Warranties

3.22.30.1 The Design Team Lead with the assistance of DT member shall provide a list of all warranties including details / conditions of warranty, scope of warranty (system or plant item etc.), date of commencement of warranty, duration of warranty, provider of warranty etc. This list should be provided to the client on a per discipline basis.

3.22.30.2 The warranty schedule shall be transferred via the NEIS warranty template for upload to the NEIS IWMS system. Refer to document reference: *1.20 EH Warranty Contracts – Data Load Template – v0.3.*

3.22.31 Insurances:

3.22.31.1 The Design Team Lead shall assist the ER/Client in ensuring that the facility is insured for appropriate risk at handover and that there is no break in insurance cover between the Building Contractor's insurances ceasing and the Client's insurances being on cover. This process shall be completed in a timely manner and in advance of handover.

3.22.32 Safety File:

3.22.32.1 The Digital O&M and Safety Files must be formatted in a manner that aligns with the NEIS & HSE Capital & Estates guide document (current version) – Safety & Operations File template. This document was provided with the tender documents (Doc. Ref.: *1.20 EH Health and Safety File Template V1.2 2022_01 (1)*).

3.22.32.2 The PSDP, with the assistance of the other DT Members, shall use best endeavours to ensure that, on completion, the safety file is delivered to the Client (as final owner of the structure) to which the safety file relates.

3.22.32.3 The Safety File contents will be agreed in advance with the Client and shall include a format of 'As-Built' drawings and O&M manuals that are acceptable and consistent with the host hospital / Authority's existing records. The Design Team Lead assisted by the DT Members shall review the content of the Safety File and satisfy themselves of their adequacy prior to recommending their acceptance to the Client.

3.22.33 Record Photographs:

3.22.33.1 The Design Team Lead shall provide an electronic set of high-resolution professional photographs, as a record of the facility at project completion, to the Client. Photographs shall reflect the principal features of the project internally and externally including principal public, clinical and operational spaces as well as any project specific feature. Photography shall include aerial drone photography of the facility where relevant.

[End of Stage (iv) – Construction]

3.23 Stage (v) – Handover, Final Account & Defects Period:

STAGE (v): HANDOVER, FINAL ACCOUNT & DEFECTS PERIOD
Refer below.
SUB-STAGE (v)A: HANDOVER & FINAL ACCOUNT
This stage shall consist of the following: • Agree the Final Account, in line with the Contract Sum (save for any Client approved changes) and in line with the contract timelines set. • Dynamic Simulation Model (DSM) to be handed over to the Client. • BIM Requirement from all DT Members as detailed in Appendices 7, 8 and 9 and information included in the BIM Information folder.
SUB-STAGE (v)B: COMPLETION OF DEFECTS PERIOD
This stage shall consist of the following: • Inspect the Works as required and issue the Defects Certificate upon satisfactory execution of the Works. • Support the Building Operator in monitoring and analysing the energy consumption and usage patterns of the building during Defects Period. Advise on optimising energy performance on completion of the Defect Period issue an Energy Consumption Report confirming that the objectives of the EEDR process have been achieved and support the Building Operator in achieving a Display Energy Certificate (DEC) for the project. • BIM Requirement from all DT Members as detailed in appendices 7, 8 and 9 and information included in the BIM Information folder.

Note1: *Please note that the 'Defects Period' encompasses the 'Handover & Final Account' period as a time period but to facilitate DT fee sub-stage payment Stage (v) has been broken down into milestones i.e., Stage (v)A Handover & Final Account and Stage (v)B Completion of the Defects Period.*

3.23.1 Final Account:

3.23.1.1 The DT Quantity Surveyor shall prepare and issue to the ER, a Final Account Report for the project(s) including specialist works (if any,) reconciling expenditure with the approved budget and any approved adjustments thereto. In their role as Project Cost Consultant, the Quantity Surveyor shall prepare and issue as part of the overall Final Account the Building Services (M&E) final costs.

3.23.1.2 The Architect shall receive from the DT Quantity Surveyor, review, and report on the Final account to the Client, endeavouring to resolve outstanding issues, reconciling with the approved budget and any approved adjustments thereto.

3.23.1.3 The Final Account shall be structured in a suitable format for the particular project type and shall facilitate cost reporting to a cost data base in an agreed format (for future cost planning and sectorial benchmarking). The contract budget structure should be used in the Final Account to give clear accounting of the performance of individual budgets for the various elements of the project and this shall include any Specialist work packages. Variances between budgets and final costs should be identified. The Final Account should incorporate the schedule of approved variations. The schedule of variations should be reported in chronological order and also in elemental order and Client Request order. The approvals protocols should be attested to or evidenced in the schedules of approved variations. The Final Account sign off should be made by the Employers' Representative certifying the accuracy and completeness of the final account.

3.23.2 Defects Period:

3.23.2.1 On issue of Substantial Completion, the Architect, and the other members of the DT (as required) shall carry out an inspection of the Works. Agreement shall be reached on the extent of the work required and its execution.

3.23.3 Defects Certification:

3.23.3.1 The Architect with the assistance of the DT Members shall issue the Defects Certificate for the works to the Building Contractor and the Client. Prior to issue of the Defects Certificate the Architect and the other DT Members shall inspect the works and supervise any work requiring satisfactory completion in relation to the Defects Period.

3.23.4 Equipping – Stage (v):

3.23.4.1 The Architect assisted as necessary by the DT shall ensure that any relevant defects arising in equipment installation or operation are addressed by relevant parties and advise the Client regarding suitable maintenance contracts and insurance policies where appropriate.

3.23.5 Energy Consumption Report and DEC:

3.23.5.1 The Design Team Lead, Building Services (M&E) Engineer assisted by the other DT Members as appropriate and the EED Facilitator in particular shall:

1. Prepare a comprehensive energy report demonstrating how the building(s) has performed by monitoring and analysing the energy consumption and usage patterns of the building(s) compared with design targets, for a 24 Month period post Substantial Completion.

2. Advise the Building Operator on measures to optimise energy performance and keep a log of same for a period of 24 Months post Substantial Completion.

3.23.5.2 On completion of the Defects Period the Building Services (M&E) Engineer with the assistance of the DT Members primarily the EED Facilitator shall:

1. Issue an Energy Consumption Report confirming that the objectives of the EEDR process have been achieved.

2. Support the Building Operator in achieving a DEC for the project for a twenty-four (24) Month period.

3.23.6 Post-Project Review:

3.23.6.1 A post-project review will take place during the Defects Liability Period. Each Design Team Consultant should note that full participation of each Consultant in the post-project review process is compulsory and should be included in any tender bid. The following areas should be examined:

1. Final cost versus original project budget.

2. Programme deficits and reasons for same.

3. Project Management procedures.

4. Resource deficits (including service provider interaction) if any.

5. Documentation deficit.
6. Design Team performance.
7. Contractor(s) performance.
8. Service provider feedback.
9. Review of equipment delivery.
10. The energy and carbon performance of the building in accordance with the design intent (see Section 3.23.5 Energy Consumption Report and DEC.)
11. Recommendations for future similar projects.

[End of Stage (v) – Handover, Final Account & Completion of Defects Period]

SECTION 4: APPENDICES

Appendix 1: Project Supervisor Design Process (PSDP)

1. APPENDIX 1: PROJECT SUPERVISOR DESIGN PROCESS:

1.1 PSDP Statutory Duties and Client Requirements:

1.1.1 Generally:

The PSDP shall provide the following services, without limitations:

1.1.1.1 Perform the statutory duties of the PSDP as specified in the Safety Health and Welfare at Work (Construction) Regulations ensuring full statutory compliance with the Health & Safety regulations.

1.1.1.2 Notify each member of the Design Team in writing of their responsibilities as outlined by the Act and the associated Regulations, and that they must take into account the general principles of prevention.

1.1.1.3 At the conclusion of each stage the PSDP shall provide two (2) hard copies and a digital version of the Health & Safety report for that stage.

1.1.1.4 The PSDP shall coordinate the health and safety design elements of decanting, phasing and/or enabling works including temporary works design.

1.1.1.5 Report to and take instructions from and co-ordinate with the Client at all stages of the Project and in particular prepare a dedicated report on project Health & Safety which will form part of the overall Design Team project stage report.

1.1.1.6 Attend, report to and provide input to meetings established by the Client [applies to all sub-consultants as well].

1.1.1.7 Attend site meetings as required. Regular attendance at meetings by the PSDP is necessary to ensure that the role is undertaken successfully and competently, and the PSDP has the opportunity to input into detailed design decisions undertaken by designers.

1.1.1.8 Liaise, meet, and consult with project stakeholders.

1.1.1.9 Establish briefing sessions for the Client and all design team members, as required.

1.1.1.10 Liaise and co-ordinate with the design team and other specialist designers and consultants.

1.1.1.11 Organise design health and safety workshops during Stage (i), Stage (ii)A, Stage (ii)B and Stage (ii)C to review and coordinate the health and safety aspects of the design. These workshops shall be attended by all design team members.

1.1.2 Stage (i): Preliminary:

1.1.2.1 Ensure that the approved form AF1 is submitted to the Health and Safety Authority before the design process beings.

1.1.2.2 Ascertain from the Lead Consultant what safety files are available and relevant to the works and have been issued by the Client. Review all available information including drawings and third-party infrastructural drawings and information and highlight any pertinent issues to the other design team members.

1.1.2.3 Ensure that the work of all designers is co-ordinated to ensure that health and safety is considered in the overall design review.

1.1.2.4 Organise co-operation between designers to ensure safety on the Project.

1.1.2.5 Review all drawings produced by designers during preliminary design to identify hazards arising from the design or from the technical, organisational, planning, scheduling, or the

time related aspects of the project and that the general principles of prevention have been applied to them.

1.1.2.6 Coordinate the health and safety aspect of surveys to be carried out at this stage and prepare preliminary safety and health plans for those surveys if required. Review and comment on method statements provided by surveyors

1.1.2.7 Ensure that all designers (both permanent and temporary works designers) are identified and that they understand their statutory duties.

1.1.2.8 Identify and assess any adjacency risks associated with the Project.

1.1.2.9 Carry out design safety risk assessments considering the general principles of prevention and document the results of these assessments or review and collate design safety risk assessments carried out by designers; ensure all foreseeable construction and maintenance risks are considered in these assessments.

1.1.2.10 Preparation of an overall Design Safety Report to be issued to the Client and the Design Team Lead summarising the risk assessments of all the designers (and the actions arising there from) and commenting on the extent to which safety has been considered at the design stage.

1.1.2.11 Agree the format of the Safety File with Capital & Estates. Prepare and agree a format, layout, table of contents and delivery of the future Safety Files and gain their approval for the indicative table of contents.

1.1.3 Stage (ii): (ii)A, (ii)B & (ii)C (Design Stages generally):

The PSDP shall provide the following:

1.1.3.1 Ensure that the work of all designers is co-ordinated to ensure safety on the Project.

1.1.3.2 Organise co-operation between designers to ensure safety on the Project.

1.1.3.3 Ensure that all designers (both permanent and temporary works designers) are identified and that they understand their statutory duties.

1.1.3.4 Review all drawings produced by designers during preliminary design to identify hazards arising from the design or from the technical, organisational, planning, scheduling or the time related aspects of the project and applied the general principles of prevention to them.

1.1.3.5 Identify and assess any adjacency risks associated with the Project.

1.1.3.6 Carry out design safety risk assessments and document the results of these assessments or review and collate design safety risk assessments carried out by designers.

1.1.3.7 Review and sign Permanent Works Design Certificates prepared by designers.

1.1.3.8 Prepare a written Preliminary Safety & Health Plan for the Project and issue this plan to the Client for approval. The Plan should be issued in time to enable it to be provided to every person tendering for the role of PSCS. The Preliminary Safety & Health Plan must contain, as a minimum, the following (non-exhaustive):

1. A general description of the Project.
2. Any other work activities taking place on site.
3. Work involving particular risks referred to in Schedule 1 of the Construction Regulations but not limited to this list.
4. The timescale for the Project and the basis of which the time frame was established.

5. Conclusions drawn by designers and the PSDP having taken into account the General Principles of Prevention and any other relevant Safety & Health Plan or Safety File.

6. The location of electricity, water, and sewage connections so as to facilitate early establishment of welfare facilities.

7. Mechanism for on-going liaison e.g., for design activity during construction including temporary works design.

1.1.3.9 Update the Preliminary Safety & Health Plan, as required, during the course of the Project.

1.1.3.10 Ensure the Safety File format agreed with the Client is included in the tender documentation.

1.1.3.11 Further develop the design safety risk assessments and document the results of these assessments or review and collate design safety risk assessments carried out by designers.

1.1.3.12 Further development of the overall Design Safety Report to be issued to the Client and the Design Team Lead summarising the risk assessments of all the designers (and the actions arising there from) and commenting on the extent to which safety has been considered at the design stage.

1.1.3.13 Keep records of coordination, hazard elimination and risk assessment for the safety file. Identify residual risks and proposals for dealing with same

1.1.4 Stage (iii): Tender Issue, Evaluation & Award:

In addition to preparing the preliminary Safety & Health Plan for inclusion as part of the tender documentation, the PSDP shall provide the following:

1.1.4.1 Prepare works requirements for issue to Tenderers for the role of PSCS for the project.

1.1.4.2 Participate in pre-qualification of contractors under the restricted procedure including input to the drafting of PQQ questionnaires and reviewing the safety competence of candidates and assessing the sufficiency of resources to fulfil the statutory roles of H & S Co-Ordinator and PSCS, during the evaluation stage, assessing the competence of the Specialist Contractors to act as domestic sub-contractors (where relevant) to the pre-qualified Main Contractor.

1.1.4.3 Advise on the need for any special conditions, site constraints or other restrictions and obligations to be incorporated in the works requirements.

1.1.4.4 Assist with query handling and responses to RFIs from Tenderers during the tender process.

1.1.4.5 Carry out a full safety evaluation of the works proposals issued by Tenderers, including allocation of scoring for tender evaluation.

1.1.5 Stage (iv): Construction:

The PSDP shall:

1.1.5.1 Ensure that the approved form AF2 and Commencement Notices are submitted to the Health and Safety Authority by the PSCS before construction commences.

1.1.5.2 Liaise with the Designers, Contractors and PSCS and attend meetings as necessary to coordinate and review changes to design. Carry out design safety assessments and document the results of these assessments for such design changes.

1.1.5.3 Attend site meetings as required to fulfil the role of PSDP and dependent on the operations being planned and undertaken on site.

1.1.5.4 Review and comment on the Construction Safety & Health Plan as prepared by the PSCS.

1.1.5.5 Review on-going works to ensure adequate co-ordination of both permanent and temporary works with regard to safety and health and ensure that both permanent and temporary works design certificates are completed as appropriate.

1.1.5.6 Review and comment on method statements provided by contractors for elements of works which have an impact on the functioning of the hospital

1.1.5.7 Review and sign Temporary Works Design Certificates and issue to the PSCS.

1.1.5.8 Monitor all designs for late design changes through e.g., monitoring correspondences, attendance at site meetings, safety and health review workshops and safety and health meetings.

1.1.5.9 Monitor the progress of the PSCS in compiling information from contractors, request this information for the Safety file. Review the contractor submissions and compile the safety file for handover to the client

1.1.5.10 Notify the Health & Safety Authority, Client of any non-compliance with any direction issued, during the Project.

1.1.6 Stage (v): Handover & Final Account:

The PSDP shall:

1.1.6.1 Coordinate the design team members' input into the safety file such as gathering the last construction issue drawings and specifications, and reports and identifying any remaining risks associated with the works.

1.1.6.2 Prepare and hand over the Safety Files for the completed Project to the Client as soon as possible after practical completion of the works.

1.1.6.3 Issue directions to designers or contractors or others, where appropriate, in order to comply with the Regulations.

1.1.6.4 The Safety File should include all relevant information to enable the building to be occupied and maintained safely and future changes to be made with full knowledge of the hazards and risks.

1.1.6.5 Where appropriate, it should incorporate details of the building, or the M&E services systems, manufacturers' operational instructions, supplier references, checklists, test certificates and other maintenance details.

1.1.6.6 The ER should check with the PSDP before issuing the Substantial Completion Certificate. All substantive elements sufficient to allow safe occupation of the building] of the Safety File should be complete before Substantial Completion, and any supplementary information must be in place within three months of that date.

1.1.6.7 Where substantive elements of the Safety File are incomplete due to the failure of the Contractor or Project Supervisor (Construction Stage) to cooperate or provide the requisite information, the PSDP should so advise the ER who should not issue Substantial Completion until the relevant information is provided.

1.1.7 Other Health and Safety services required of PSDP:

1.1.7.1 The PSDP shall provide the following:

1. Develop an outline Aspergillus prevention plan for inclusion in the Preliminary Safety and Health Plan.

2. See that appropriate Aspergillus prevention measures have been developed and agreed with local Client management for installation by the contractors.

3. See that Asbestos Refurbishment and Demolition surveys as appropriate on buildings built prior to 2000 have been carried out. Review the risks attached to such surveys given their invasiveness. Ensure survey information is included in the Design Risk Assessment and has been provided within the tender documentation.

1.1.7.2 Where additional Health & Safety support is required, the PSDP shall provide the following:

1. Monitor the results of Site Audits and monitor the follow-up of these audits.

2. Review and comment upon monthly audits during the Construction stage in order to maintain safety standards and promote a safety culture.

3. Attend the Sites with the PSCS and accompany the H.S.A. Inspectorate when the H.S.A. carryout planned site inspections.

4. Review the completion of accident and incident reports occurring on the Sites, on behalf of the Client.

1.1.8 Client Duties:

1.1.8.1 A Client must, for every project, appoint in writing before design work starts a Project Supervisor for the Design Process (PSDP) who has adequate training, knowledge, experience, and resources. If the Client appoints a PSDP without first verifying the PSDP's competence, the Client is guilty of a criminal offence. To be suitable to act as PSDP on a project an individual must both be aware of his/her responsibilities under the Safety, Health and Welfare at Work Act 2005 and the Safety Health & Welfare at Work (Construction) Regulations 2013 (or subsequent legislation/regulations) and have the resources and competency to carry them out.

1.1.8.2 The Client must notify the Authority promptly of the Appointment of the PSDP where construction work is likely to take more than 500 person days or 30 working days.

1.1.9 Design Team Duties:

1.1.9.1 The Architect, the DT and specialist designers (where required) shall comply with their duties as specified in the Safety Health and Welfare (Construction) Regulations 2013 and shall provide all required assistance to the Project Supervisor for the Design Process in the provision of the (PSDP) duties under that legislation.

1.1.9.2 Designers must comply with all directions issued by PSDP in their role as Project Supervisor Design Process. These directions must be reasonable, in the context of the duty with which the Designer is required to comply.

[End of Appendix 1]

Appendix 2: Fire Safety Design

2. APPENDIX 2: FIRE SAFETY DESIGN:

2.1 Fire Safety Consultancy Services Duties:

2.1.1 General Provisions – Fire Safety Consultancy Services Applicable to All Stages:

2.1.1.1 Provide full Fire Safety Consultancy services in accordance with the current GCCC Standard Conditions of Engagement for Consultancy Services.

2.1.1.2 The Fire Safety Consultant must have due regard to the GCCC Public Works Contracts during the execution of this appointment.

2.1.1.3 Allocate competent and qualified personnel at the commencement and for the duration of the Project and ensure continuity of service between personnel.

2.1.1.4 Provide a full Fire Safety Services throughout all stages of the project to include enabling works, building works, building fit-out including specialist fit-out, site and infrastructure works.

2.1.1.5 This includes the preparation of the relevant applications for Fire Safety Certificate, associated Fire Safety Reports, and documentation in respect of the Project, preparation of supplementary applications and / or compliance submissions as required. Track FSC conditions and see that they are incorporated into the project

2.1.1.6 Consult with the Local Authority Fire Officer as required in relation to design issues and the Fire Safety Certificate application, approval conditions, and other related matters as they arise.

2.1.1.7 Observe and participate in the implementation of the DT's sustainability and environmental objectives for the project.

2.1.1.8 Attend DT meetings, progress meetings, site meetings or other meetings as required and provide appropriate design support, assistance, and advice in relation to safety matters as they affect the project.

2.1.1.9 Develop in conjunction with the Hospital Fire Safety Manager, DT disciplines and local HSE Fire Officer, a Fire Strategy Document, including compartmentation strategy, means of escape, alarm response procedures, evacuation plan & procedures, etc.

2.1.1.10 Liaise with the M&E Engineer regarding project design strategy for siting of fire safety signage (emergency escape lighting) throughout the building to ensure a fully coordinated and integrated design with the wider emergency lighting design.

2.1.1.11 At all stages of the project review, comment and record all agreed variations or project specific system requirements. See that any such variations or requirements are signed off by the client Fire Safety Officer. As example only, omitting void detection over escape routes, reducing fire alarm sounder dB levels at patient beds etc. All variations to be fully listed in the Fire Detection Alarm System – Certificate of Design.

2.1.1.12 Liaise with the M&E Engineer and hospital Fire Safety Manger during all stages of design with regards to developing the Fire Alarm Cause & Effect Matrix. A robust and fully complete Cause & Effect Matrix is required at end of Stage (ii)C.

2.1.1.13 Through all stages cooperate with the Architect in promoting teamwork, demonstrating appreciation of cost, programme and quality parameters, compliance with deadlines, effective resource management and problem solving.

2.1.1.14 Co-ordinate with any other DT Consultants and advisors appointed to the Project.

2.1.1.15 As part of this service, assess the design proposals and fire engineering analysis of design options, and advise on design solutions and details as they relate to fire safety. Participate

in the development of design options / alternatives and value engineering options as may reasonably be required.

2.1.1.16 Advise on risks and management of risks and how to minimise same. Assist in the preparation of the preliminary Safety & Health Plan, risk register etc., as required. Assist in preparation of design and building maintenance risk assessments as required throughout the Project.

2.1.1.17 Allocate adequate resources to achieve program dates / timelines.

2.1.1.18 Liaise, co-ordinate and co-operate with all DT Members and 3rd parties in providing clear drawings / design and information for costs etc.

2.1.1.19 Incorporate all relevant Building Regulation Acts, Irish, British, and European standards in relation to building specification and design, as required.

2.1.1.20 Carry out periodic inspections during construction, witnessing of testing and commissioning, issue of ancillary Certificate of Compliance with building regulations (Fire Safety) and issue of Fire Safety Management manual on completion.

2.1.1.21 At all stages, provide such other services as are reasonably incidental to the services identified herein and as may reasonably be required from time to time by the Architect.

2.1.1.22 At early Design Stages ((ii)A / (ii)B) work with the M&E Engineer to agree a layout for Fire Extinguishers and their integration into the building design and into Room Information Sheets.

2.1.1.23 Assist and advise the Architect in the preparation of the EED Review and Modelling; preparation of EED Summary Report with clear recommendations for Client approval and preparation of the Project Energy Balance Report.

2.2 Fire Safety Designer – The Project Stages:

2.2.1 Stage (i) – Preliminary Design:

2.2.1.1 Advise the DT on performance requirements / levels of coverage of key elements of fire protection in buildings (fire ratings / sprinklers / smoke control etc.) and site access and fire hydrant requirements etc. to assist in feasibility and Cost Plan preparation.

2.2.1.2 Commence to develop with all relevant stakeholders and DT Disciplines the project Fire Strategy Document.

2.2.1.3 Obtain Design Team Lead's / Architect's stage approval / sign off.

2.2.2 Stage (ii) – Design: Sub-Stage (ii)A – Scheme Design:

2.2.2.1 Attend project meetings as required and provide appropriate design support, assistance, and advice in relation to fire safety matters as they affect the project.

2.2.2.2 Advise the DT specifically on the Passive Fire Protection requirements (Fire door sets, Compartmentation, Fire stopping & Structural Elements) and Active Fire Protection Systems requirements (smoke control, fire alarm system).

2.2.2.3 Develop in conjunction with M&E Engineer a Cause & Effect matrix for the fire detection alarm system and interfaces / interlocks with relevant third-party systems, HVAC, Lifts, Lighting, Access Control, Sprinkler, and other suppression systems, AOVs and smoke relief equipment etc.

2.2.2.4 Coordinate with the M&E Engineer siting of fire safety signage (emergency escape lighting) throughout the building to ensure a fully coordinated and integrated design with the wider emergency lighting design.

2.2.2.5 Record all project variations or project specific system requirements to be included in the Fire Detection Alarm System - Certificate of Design.

2.2.2.6 Prepare in conjunction with M&E Consultants a Cause & Effect schedule / strategy for the fire alarm system, electrically operated access control systems, emergency lighting, safety/exit signage and any other third-party interfaces, and internal firefighting facilities.

2.2.2.7 Produce and review design alternatives and value engineering options as may reasonably be required for active fire protection systems.

2.2.2.8 Consult / negotiate with the Local Authority Fire Officer during the Fire Safety Certificate application period and prepare supplementary compliance submissions if necessary.

2.2.2.9 Review all Design Certification appropriate to this stage e.g., Fire Detection and Alarm System, Emergency Lighting Systems etc.

2.2.2.10 Obtain Design Team Lead's / Architect's stage approval / sign off.

2.2.3 <u>Stage (ii) – Design: Sub-Stage (ii)B+(ii)C – Developed Sketch Design & Planning Application:</u>

2.2.3.1 Attend project meetings as required; provide appropriate design support, assistance, and advice in relation to fire safety matters as they affect the project.

2.2.3.2 Carry out the Fire Safety Review of all design proposals and different design options.

2.2.3.3 Undertake as necessary fire engineering analysis to test the viability of different design options. Carry out Value Engineering exercises with the entire DT.

2.2.3.4 Consult, as necessary, with the Local Authority Fire Officer on key design issues and prepare the Fire Strategy Report for submission with Planning.

2.2.3.5 Consult with the Local Authority Fire Officer as required in relation to design issues and any other related matters as they arise in the development of the design.

2.2.3.6 Finalise, review and agreed with M&E Engineer, the hospital Fire Safety Officer and other relevant stakeholders the final signed off Cause & Effect matrix for the fire detection alarm system including interfaces / interlocks with all relevant third-party systems.

2.2.3.7 Finalise with the M&E Engineer the siting of fire safety signage (emergency escape lighting) throughout the building to ensure a fully coordinated and integrated design with the wider emergency lighting design.

2.2.3.8 Provide information to Design Consultants to enable quantification for preparation of cost estimates and Cost Plan.

2.2.3.9 Provide information as required into the preparation of outline specification of materials for the project.

2.2.3.10 Liaise, co-ordinate and co-operate with all members of the DT, Client and 3rd parties as required on the documentation required for the Fire Safety Certificate application.

2.2.3.11 Carry out the Fire Safety Review of all detailed design proposals and advise on necessary changes vis-à-vis achievement of compliance with relevant requirements of Part B (Fire) of the current Building Regulations.

2.2.3.12 Undertake as required fire engineering analysis including computer simulation modelling to test the viability of alternative design options in relation to, Structural Fire Engineering Design, Egress Analysis, Smoke movement and control.

2.2.3.13 Prepare a Compliance Report including smoke control design for submission with the Fire Safety Certificate application drawings (and other supporting documentation) demonstrating compliance with the relevant requirements of Part B (Fire) of the current Building Regulations.

2.2.3.14 Carry out detailed review of all drawings to be lodged with the Fire Safety Certificate Application. Note: Fire Consultant is responsible for drawings, however, backgrounds (xrefs) will be provided by relevant DT Members.

2.2.3.15 During the preparation of the application, consult with the Local Authority Fire Officer as required in relation to design issues and any other related matters as they arise on the project. Review and agree with the Local Authority Fire Officer all project variations or project specific system requirements to be included in the Fire Detection Alarm System - Certificate of Design.

2.2.3.16 Provide any updated / further information as required into the preparation of detailed specification of materials for the project.

2.2.3.17 Consult / negotiate with the Local Authority Fire Officer during the Fire Safety Certificate processing period and prepare supplementary compliance submissions if necessary.

2.2.3.18 Review the Disability Access Certificate (DAC) documentation and ensure that the Fire Safety consequences of these requirements have been taken into account by the designers.

2.2.3.19 Issue to the M&E Engineer the list of all project variations or project specific system requirements to be included in the Fire Detection Alarm System - Certificate of Design.

2.2.3.20 Issue in conjunction with the M&E Engineer and Hospital Fire Safety Officer the final Cause & Effect Matrix for the Fire Detection Alarm system.

2.2.3.21 Obtain Design Team Lead's/ Architects Stage approval / sign off.

2.2.1 <u>Stage (iii) – Tender Issue, Evaluation & Award:</u>

2.2.1.1 Liaise, co-ordinate and co-operate with all DT Members in the preparation of specifications and other tender / design documentation in relation to passive and active fire protection systems and check that Tender documents reflect Fire Safety Regulation requirements.

2.2.1.2 Advise on Fire Safety in relation to Construction and all necessary Fire Safety provisions for incorporation in the tender documentation.

2.2.1.3 Advise on and participate, if required, in Tender prequalification and suitability assessment process incorporating Contractor / Specialist credentials and suitability questionnaire, in particular in relation to Fire Safety matters.

2.2.1.4 Assist in the preparation and documentation of responses to any technical queries arising during the tender period. Participate in mid-tender or post-tender Contractor / Specialist interviews, as required.

2.2.1.5 Obtain Design Team Lead's / Architect's stage approval / sign off.

2.2.2 Stage (iv) – Construction:

2.2.2.1 Attend as deemed necessary by the Architect relevant DT / site meetings in order to assist the Architect in monitoring that the works are being executed in accordance with the requirements of Part B (Fire) of the current Building Regulations and the approved design on which the Fire Safety Certificates are based.

2.2.2.2 Carry out review and validation, in conjunction with the DT Consultants, of completion/commissioning certificates for fire protection systems and passive fire protection elements (i.e., fire-stopping, fire door-sets, etc.) including carrying out periodic inspections and review at regular intervals during construction of the fire protection elements such as fire doors, structural steel work fire protection, fire stopping, cavity barriers and fire walls / partitions.

2.2.2.3 Review any change orders affecting the Approved Design (i.e., the design as set out in the Fire Safety Certificate Application) arising during the course of the works. Consult as necessary with the Local Authority Fire Department and prepare submission of additional Fire Safety Certificate applications as required.

2.2.2.4 Witness, in conjunction with the M&E Consultants / Contractors, the integrated testing of the Fire Protection Systems to ensure compliance with the approved fire strategy i.e., smoke control, evacuation signalling, etc.

2.2.2.5 Issue Certificate of Compliance with the relevant requirements of Part B (Fire) of the Building Regulations 1997 as applicable to the proposed development. The Certificate of Compliance will take account of completion / commissioning certificates from the relevant contractors /consultants responsible for the detailed design and installation of the fire protection systems. It is noted that the detailed design, commissioning, and certification of the protective systems will be undertaken by the M&E Consultants and M&E Contractor and will be reviewed by the fire consultant.

2.2.2.6 Note: A wrap up fire safety certificate may be required and therefore please allow for this within your price for the works.

2.2.2.7 Obtain Architect's stage approval / sign off.

2.2.3 Stage (v) – Handover of the Works:

2.2.3.1 To ensure that compliance with the Fire Services Act 1981, Health, Safety & Welfare at Work Act 2005, and other relevant legislation/regulations is achieved in the management and operation of the facility, the consultant is required to prepare the Fire Safety Management manual for the Development.

2.2.3.2 The Fire Safety Management manual for the Development shall deal with the following:

1. Fire safety policy statement.
2. Fire alarm response procedures.
3. Routine maintenance of fire protection systems.
4. Routine fire precautions and housekeeping.
5. Designation of duties of key personnel and staff training.
6. Evacuation procedures complete with departmental Evacuation Drawings.
7. Necessary documentation to complete the pre fire planning program with the Local Authority Fire Department.

2.2.3.3 The Fire Safety Designer shall, with assistance and input from the M&E Engineer and Hospital Fire Safety Officer produce a complete set of Fire Evacuation / Way Finding drawings. The Fire Evacuation drawings shall align with the Fire Strategy Document and Hospital fire evacuation procedures.

2.2.3.4 Obtain from the Main Contractor / installer a complete set of 'as wired' drawings showing, Panel/Loop/Device numbers.

2.2.3.5 Obtain from the Main Contractor / installer 'as wired' topology system schematics design.

2.2.3.6 Obtain from the Main Contractor / installer all cable continuity and resistance measurements recorded.

2.2.3.7 Obtain from the Main Contractor the Certificates of Installation and Commissioning as per I.S. 3218.

2.2.3.8 Obtain from the FDAS Designer (M&E Engineer) the Certificates of Design and Handover as per I.S. 3218.

2.2.3.9 Obtain from the Designer or Commissioner a full set of Zone Charts for the fire detection alarm system.

2.2.3.10 Obtain from the Main Contractor / commissioning specialist a full set of Detection Zone Listing and Address Information for the installed system. To be provided in MS excel format.

2.2.3.11 Obtain from the Main Contractor / commissioning specialist Battery Calculations.

2.2.3.12 Obtain from the Main Contractor documentation relevant for User Training, System Logbook and User Instructions (fixed adjacent to FAPs).

2.2.3.13 Obtain from the Main Contractor a full set of Operation & Maintenance (O&M) Manuals including:

1. Full detailed planned preventative maintenance task documents and frequencies.
2. Manufacturers operating and maintenance instructions for all items of equipment.
3. Manufacturer's literature and instruction on the installation.
4. Data sheets on all significant components forming part of any plant, equipment, or system within the installation.
5. Narrative description of fire alarm system operation for all systems or subsystems forming part of the fire alarm system installation.

[End of Appendix 2]

Appendix 3: Planning Processes (Traditional) – Design Team Roles & Responsibilities & Costs

3. APPENDIX 3: PLANNING PROCESSES (TRADITIONAL) – DESIGN TEAM ROLES & RESPONSIBILITIES:

3.1 Planning Stage (i) & Stage (ii)A:

3.1.1 Planning Expertise and Advice:

3.1.1.1 The Design Team Lead / Architect assisted by the Planning Consultant (where included in the DT) shall provide the Client with Planning expertise and advice on all Planning matters. Where no Planning Consultant is included as part of the team all such advice shall be deemed to be fully within the scope of service of the Architect.

3.1.2 Strategic Infrastructure Development (SID):

3.1.2.1 At project initiation the Design Team Lead / Architect shall verify whether SID planning procedures apply to the project. Where there is any doubt as to whether the project is an SID project or not, the Architect assisted by the Planning Consultant shall obtain a determination from An Coimisiún Bord Pleanána (ACP).

3.1.3 Environmental Impact Statement (EIS):

3.1.3.1 The Design Team Lead / Architect assisted by the Planning Consultant shall in consultation with the Planning Authority establish at an early whether an Environmental Impact Statement (EIS) is required under current statutory requirements. In the event of an EIS being required because of the nature of the project, the Architect assisted and advised by the Planning Consultant shall be responsible for agreeing the scope of the EIS with relevant parties, preparation of architectural elements of the report and also the co-ordination of each DT Members (including sub-specialists) input into an EIS. The DT Members shall prepare in-puts to the EIS relevant to their particular disciplines. Where specialist reports beyond the remit of the core Design Team are required, the Architect may agree with the Client, the retaining of specialist consultants.

3.1.4 Planning Authority Consultation:

3.1.4.1 The Design Team Lead / Architect and Planning Consultant shall attend pre-planning meetings with the Client and assist in the presentation and negotiations with the relevant Planning Authority in relation to design proposals. They shall also attend meetings with the Local Authority Planning Department, Statutory Bodies, or other concerned parties. Prepare all briefing information required to assist or inform the planning process.

3.1.4.2 They shall ensure that the developed sketch proposals will meet the requirements of that Local Authority Planning Departments and other relevant Local Authority Departments.

3.2 Stage (ii)B Planning Application:

3.2.1 Planning Application Documentation:

3.2.1.1 At Stage (ii) B the DT are required to further develop the Scheme Design in sufficient detail to lodge a planning application and obtain Planning Permission for the project(s). The drawings and specifications submitted for these applications shall not vary in substance from those approved at Stage (ii)A and the Design Stage Review Meeting. The planning application shall include any enabling works, temporary accommodation and/or demolitions that are considered necessary to progress the project. A full copy of the submitted Planning, DAC and fire certificate applications are required by the Client in electronic and paper formats. The electronic copy shall be in native format, where requested by the Client.

3.2.2 Computer Generated Images (CGI's):

3.2.2.1 The Architect shall be responsible for the preparation of 3D images/photomontage to demonstrate the visual impact of the building in its setting for the Client. 3D images / photomontage should be suitable for submission to the Planning Authority and fulfil the Planning Authorities' requirements in this regard. The number of CGIs prepared by the Architect shall be appropriate for the scale of the project for which consent is being sought.

3.2.3 Communication at Local Level:

3.2.3.1 The Design Team Lead, Architect, Planning Consultant, and other DT Members as required shall engage with and make presentations to all parties relevant to the planning process, on behalf of the Client. These parties may include but are not limited to representatives of the Government, Local Council or Residents Associations or the general public or individuals of the neighbouring areas.

3.2.4 Pre-Planning Report:

3.2.4.1 The Design Team Lead shall provide a written report in relation to the Planning application addressing relevant issues including contributions and levies prior to lodgement of the application. The Client shall give approval to the DT to proceed to submit for planning permission.

3.2.5 Request for Further Information:

3.20.5.1 In the event of a request for further information (RFI) by the Planning Authority the Architect as DT Leader, shall co-ordinate the preparation of the response to such requests which will be prepared by the relevant consultants and advise the Client in relation to issues raised and on contingency proposals to mitigate any likely delay as a result of same. The costs and time associated with this work are part of the terms of engagement of the DT.

3.20.5.2 Where specialist consultant(s) are deemed necessary to respond to RFIs within the planning process the Architect as DT Lead Consultant with the approval of the Client, and with the assistance of the other members of the DT shall scope, procure, and engage these specialists as necessary.

3.2.6 Lodgement of Planning Application:

3.2.6.1 The Design Team Lead / Architect shall be responsible for the preparation checking and co-ordination of all parts of the planning application. All costs of preparing and lodging the planning application other than those noted below shall deemed to be included in this tender for services.

3.2.7 Site Notices:

3.2.7.1 It is the responsibility of the DT Leader to prepare, erect, submit and manage all site notices required. The costs and time associated with this work are part of the terms of engagement of the DT.

3.2.8 Public Notices / Newspaper Notices, etc.:

3.2.8.1 It is the responsibility of the DT Leader to prepare and submit and manage all public notices/newspaper notices, etc., required. The costs for these shall be borne by the Client.

3.2.9 Statutory Fees:

3.2.9.1 All planning, DAC and fire certificate application fees will be borne by the Client. The DT Leader must give sufficient notice (minimum one (1) month) to the Client before payment of the application fee will be required. The design team leader must also inform the client of the quantum of certificate application fee and the basis for same

3.3 Planning Period:

3.3.1 Client Progress Reports:

3.20.5.1 The Design Team Lead in conjunction with the DT members must keep the Client informed on a monthly basis of progress and any issues which will affect the programme throughout the planning process.

3.3.2 Oral Hearings:

3.2.9.2 Where the Planning Authority determines that an oral hearing should be held as part of the planning process, the Design Team Lead, Architect and DT shall on behalf of the Client prepare and issue all necessary documents to all relevant parties and attend the hearing as necessary, so as to allow the oral hearing to progress and to be determined without undue delay. The costs and time associated with this work are part of the terms of engagement of the DT.

3.3.3 Conditions requiring substantial change to the Brief:

3.3.3.1 Where any conditions requiring a substantive change to the Brief or giving rise to un-anticipated additional costs are attached to the Notification of Decision to Grant Planning Permission or other consent, the Design Team Lead in conjunction with the DT members shall inform the Client immediately with recommendations as to the appropriate action including a recommendation to appeal if appropriate. This advice shall take the form of a costed option report with recommendations and advice on the implications for the project programme. The Design Team Lead in conjunction with the DT members shall recommend to the Client cost mitigation actions where appropriate.

3.3.4 Planning Refusal:

3.3.4.1 Where Planning Permission is refused, the Design Team Lead shall report to the Client in writing including a copy of the refusal notice and conditions

3.3.5 Client or Third-Party Appeals:

3.3.5.1 Where under standard planning procedures an appeal is recommended by the DT, or where an appeal is registered by a third party, the DT shall on behalf of the Client prepare and issue all necessary documents to all relevant parties so as to allow the appeal to be determined without undue delay. Where the reasons for appeal should have been anticipated, such work is deemed to be part of the scope of work of the DT.

3.3.6 Revised Submission:

3.3.6.1 Where, in the view of the DT, a revised submission has a reasonable likelihood of obtaining permission, the DT shall, with the Client's Authorities agreement, consult with the Statutory Authority and re-submit an amended proposal. Where the reasons for refusal should have been anticipated, such work is deemed to be part of the scope of work of the DT.

3.4 Design Team Expenses:

3.4.1 All DT expenses (travelling, printing, subsistence or other) associated with the preparation, submission and management required to obtain all relevant statutory permissions are part of the terms of engagement of the DT.

3.5 Additional Design Teamwork:

3.5.1 Additional DT work including revision to design proposals arising from Planning, Fire and Disability Access Certificate conditions which should have been foreseen at Sketch Design stage are deemed to be part of the Technical Requirements and Scope of Services, and not a change to the Conditions of Engagement.

3.6 Post Planning Report:

3.6.1 Once the statutory processes have been completed the Design Team Lead in conjunction with the DT members shall prepare a written report on the outcome to provide a written record of the planning process. This report is required for all projects, both to record the planning decision obtained the conditions appended and how they will be addressed and details and outcome of appeals where relevant.

3.7 Advice on Levies and Contributions:

3.7.1 The Design Team Lead in conjunction with the Architect and the Planning Consultant shall advise the Client on planning contributions, charges and levies.

3.8 Certificate of Compliance with Planning Consent:

3.8.1 The Design Team Lead / Architect assisted by the Design Team shall ensure that all aspects of the project construction fully comply with the terms of planning consents obtained from the Planning Authority and shall issue a Certificate of Compliance for the project when the substantial completion is achieved.

[End of Appendix 3]

Appendix 4: Scope of Services for Design Certifiers required under BC(A)R Regs S.I. 9 of 2014

4 APPENDIX 4: SCOPE OF SERVICE: DESIGN CERTIFIER:

4.1 Design Certifier's Duties:

4.1.1 The Design Certifier's duties in accordance with Regulations and draft Code of Practice are summarised as follows as a guide. Tenderers are to satisfy themselves upon review of the legislation as to what the duties entail and how they apply to this project.

4.2 Stages (i), (ii)A, (ii)B & (ii)C inclusive:

4.2.1 The Design Certifier shall:

4.2.1.1 Comply with the Building Control (Amendment) Regulations 2014: S.I. No. 9 of 2014 and the associated Code of Practice September 2016 as it pertains to their role in the Project.

4.2.1.2 Sign the Design Certificate and provide same to the Assigned Certifier along with any necessary Ancillary Design Certificates from members of the design team all to be lodged with the Commencement Notice as necessary and appropriate by the Assigned Certifier.

4.2.1.3 Be responsible for co-ordinating, compiling and scheduling of the plans, calculations, specifications, and particulars in support of the Design Certificate and shall provide all required documentation to the Assigned Certifier for lodgement with the Local Authority with the Commencement Notice.

4.2.1.4 Collaborate with the Design Team, and other Designers that they have coordinated, to identify all the relevant design professionals and specialists from whom ancillary certificates are required and maintain a tracking register of all ancillary certificates.

4.2.1.5 Prepare preliminary reviews of the requirements of the inspection plan inspection and the certification anticipated to be required for the project.

4.2.1.6 In compiling the plans and documentation and in preparing the Design Certificate shall review the scope of requirements of the Building Regulations that apply to the building work concerned.

4.2.1.7 Where elements of the Design have not been completed, these shall be clearly set out with an undertaking that when complete, these too will be certified and submitted to the Building Control Authority.

4.2.1.8 The lodgement of the Commencement Notice together with plans and supporting documentation is the responsibility of the Assigned Certifier.

4.3 Stage (iii): Tender Issue, Evaluation & Award:

4.3.1 The Design Certifier shall:

4.3.1.1 Obtain them all Ancillary Certification required in support of the Design Certificate. The Ancillary Certification shall be in the form of the Standard Ancillary 'Badged' Certificates prepared and agreed by the Professional institutions.

4.3.1.2 Assist in the assessment of Tenders.

4.4 Stage (iv): Construction:

4.4.1 The Design Certifier shall:

4.4.1.1 Execute the statutory Form of Certificate of Compliance (Design) for inclusion with the Commencement Notice submitted by the Assigned Certifier to the Local Authority Building Control Authority at commencement stage.

4.4.1.2 Assist the Assigned Certifier in coordinating the issue of the Form of Certificate (Design) at commencement stage.

4.4.2 Design work that is due for completion and specialist design that is not available for submission at commencement stage or design work where Designers wish to modify designs after the Commencement Notice has been issued (subject to Client ER and Design Certifier agreement) should be certified and submitted at a later stage. Drawings and documentation for these designs should be submitted before the relevant work commences, with Ancillary Certificates of Compliance, where appropriate. Similarly, drawings and documentation for changes or omissions should be certified and submitted before the relevant work commences.

[End of Appendix 4]

Appendix 5: Scope of Services for Assigned Certifiers required under BC(A)R Regs S.I. 9 of 2014

5 APPENDIX 5: ASSIGNED CERTIFIER: SCOPE OF SERVICE:

5.1 Generally:

5.1.1 In discharging Client responsibilities arising under the Building Control (Amendment) Regulations, S.I. No. 9 of 2014 and the associated Code of Practice (September 2016) for Inspecting and Certifying Buildings and Works, February 2014 (the Code of Practice), the Client wishes to retain the services of a suitably qualified and experienced Assigned Certifier.

5.1.2 The Assigned Certifier is the person or body corporate assigned by the Building Owner as is required under the Building Control (Amendment) Regulations. The Assigned Certifier undertakes to inspect, and to coordinate the inspection activities of others during construction, and to certify the building or works on completion. The Assigned Certifier shall work closely with all relevant parties to the design and construction of the project, throughout all stages and shall be the single point of contact with the Building Control Authority during construction. The assigned certifier is responsible for coordinating the ancillary certificates from all designers and contractors before completion

5.1.3 It shall be the responsibility of the Assigned Certifier to collate and keep adequate records of all the Certificates and supporting documentation, including deliberations, design reviews, inspections and reports, etc. These should be sufficient to enable the Assigned Certifier to demonstrate compliance with building regulations.

5.1.4 The Scope of Service required from the Assigned Certifier will be in accordance with the services and obligations required under the Building Control (Amendment) Regulations 2014 (BC(A)R), S.I. No. 9 of 2014 and the associated Code of Practice and any subsequent revisions of these documents, in force, at the time of the tendering process.

5.1.5 Tenderers are to satisfy themselves upon review of the legislation as to what the duties entail and how they apply to this project; Tenderers shall make allowance in their tender quotation, for the cost of providing all aspects of the services that might reasonably be anticipated as part of the required service.

5.1.6 Where this document amplifies the 'Assigned Certifier' Services required over and above those described in the base legislation and guidance, the requirements in this document shall take precedence. In all other cases the requirements of SI 9 and the Code of Practice shall be deemed to be the minimum requirement.

5.2 Assigned Certifier's Role:

5.2.1 The Assigned Certifier duties in accordance with Regulations and draft Code of Practice are summarised as follows as a guide. Tenderers are to satisfy themselves upon review of the legislation as to what the duties entail and how they apply to this particular project. Duties shall include but are not limited to the following: (Refer Section 3.9. '*Roles & Responsibilities arising under BC(A)R to be discharged by the Design Team*').

5.2.1.1 In consultation with members of the design team, develop the Preliminary Inspection Plan including testing requirements prior to tender; the Assigned Certifier is responsible for determining an appropriate frequency and robustness of inspections based on the particular characteristics and risk level of the project.

5.2.1.2 Review all documentation prepared by the Design Team for inclusion with the Commencement Notice including certification and supporting documentation and shall highlight any concerns he may have with the Design Teams strategy for demonstration of compliance of their designs with current Building Regulations insofar as this is possible at Commencement Notice stage.

5.2.1.3 As part of the Inspection plan and before commencement of work on site, agree with the Building Owner, Design Team, and Builder an Inspection Notification Framework (INF), taking account of the building works involved and other factors. The INF will identify generally the stages or items of work the individual certifiers wish to be notified of, as and when they are ready for inspection.

5.2.1.4 Assisted by the Design Certifier and Design Team Members co-ordinate and issue the Form of Commencement Notice including all the project particulars and relevant documents which must be filed electronically via the online Building Control Management System as set out in Article 9 of S.I. Nr 9 of 2014.

5.2.1.5 Identify all design professionals and specialists, in conjunction with the Builder, from whom certificates are required.

5.2.1.6 Be the single point of contact with the Building Control Authority (BCA) during construction with respect to this process; Responds to the Building Control Authority (BCA) on information requests.

5.2.1.7 Oversee adherence to the implementation of the Inspection Plan during Construction.

5.2.1.8 Identify all certificates required and receive them.

5.2.1.9 Co-ordinate the ancillary certification by members of the design team and other relevant bodies for the Certificate of Compliance on Completion.

5.2.1.10 Co-ordinate and collate all certification of compliance for completion in conjunction with the Builder and receive these as formal submissions at agreed intervals and dates.

5.2.1.11 Provide and sign the relevant statutory Certificate of Compliance - Form of Undertaking and the Certificates of Compliance at Completion.

5.2.1.12 Upload all documents to the Building Control Management System to facilitate timely validation of the submission by the BCA and its logging onto the register.

5.2.1.13 Hand over to the building owner all certification prepared, and inspection reports carried out.

5.2.1.14 Keep the necessary records and evidence of inspection for all ancillary certificates Maintain records of inspection, for 6 years minimum after completion.

5.2.1.15 Report to the Client at appropriate intervals during the project on Building Control related issues generally, including compliance of design with building regulations, records of inspection of the works, and on any substantive matters arising in regard to the compliance of the Client's project with Building Regulations. In the Client reports the Assigned Certifier shall advise the Client in relation to any deficiencies or non-conformances encountered with the design or construction of the works or with adherence of relevant project members with the Inspection plan and on all actions being taken to address such issues. During construction it is envisaged that such reports would be presented at not greater intervals than monthly.

5.2.1.16 Where relevant attend all site meetings, design team meetings, project meetings or other relevant meetings as scheduled in this document.

5.2.1.17 Seek advice from the Building Control Authority in respect of compliance matters, relating to the building or works, where disputes or differences of opinion arise between the parties to the project and pro-actively contribute to the resolution of such discussions with respect to the timely delivery of the Certificate of Compliance on Completion and its inclusion on the Building Control Register.

5.2.1.18 On termination or relinquishment of this appointment make available to the Building Owner all certification prepared and inspection reports carried out.

5.3 Assigned Certifier Qualifications and Experience:

5.3.1 The standards of qualification and experience required to comply with the minimum requirements of this competition are as defined in the Suitability Assessment Questionnaire and in any event shall not be less than those specified in the code of practice.

5.4 Definitions:

5.4.1 For the purposes of this competition definitions will be as set out in Section 2 of the Code of Practice.

5.5 Disbursements:

5.5.1 In pricing the required service, Tenderers shall include all aspects of disbursements which may be anticipated.

5.5.2 These may include but not be limited to:

5.5.2.1 Printing, reproduction or purchase costs of all documents, drawings, maps, models, photographs and other record, including all those used in communication between the Building Owner, Design Team, the Builder and Specialist Contractors, Testers and Suppliers notwithstanding any obligation on the part of the Assigned Certifier to supply such documents to those concerned.

5.5.2.2 Hotel and travelling expenses, including mileage allowance for cars.

5.5.2.3 All payments made on behalf of the Building Owner by the Assigned Certifier.

5.6 Additional Services:

5.6.1 In the delivery of the service Tenderers are expected to allow for all requirements of the Assigned Certifier service that might reasonably be anticipated. Where aspects of the required service have not been anticipated at tender stage, the Assigned Certifier may make an application to the Client regarding costs of same.

5.6.2 The service as set out in the pricing documents anticipates that the Assigned Certifier will use best endeavours to achieve optimal efficiency in relation visits to site for inspections etc., by planning agreeing and maintaining adherence to a robustly planned and managed Inspection Plan and notification framework.

5.7 Assigned Certifier – The Project Stages:

5.7.1 Stages (i), (ii)A, (ii)B: Preliminary Design, Scheme Design, Developed Design & Planning:

5.7.1.1 The Assigned Certifier shall:

1. Read and review all existing project documentation with the objective of becoming fully conversant with all relevant elements of the project.

2. Consult with the Building Control Authority as necessary.

3. Consult with the Building Owner, Architect (or Design Team leader) and Design Team as necessary, anticipating requirements of the Building Control process and Assigned Certifier role in later stages.

5.7.2 Stages (i), (ii)A, (ii)B: Preliminary Design, Scheme Design, Developed Design & Planning:

5.7.2.1 The Assigned Certifier shall:

1. Continue to consult with Building Control Authority, Building Owner, Design Certifier and Design Team as necessary.

2. Obtain discipline relevant inspection notification frameworks from each relevant Design Team member and co-ordinate them in an **Inspection Notification Framework (INF)** for the overall project. Issue the INF to the Design Team Leader for inclusion in the tender documentation. The INF should describe all the Inspection Requirements, the required notice period, and required ancillary certification which the builder must price in his tender return. A standard notice period of 10 days shall be required in the INF. This may be varied at the discretion of relevant members of the Design Team responsible for particular inspections subject to agreement in writing between the Contractor and the relevant Design Team member.

3. Obtain all required information from the Design Team and specialist Designers. Prepare the **Preliminary Inspection Plan including testing requirements (PIP)** in conjunction with the Design Team. Issue to the Design Team Leader for inclusion in the tender documents. The PIP shall set out the requirement for ancillary certification required from specialists, sub-contractors, and suppliers.

4. The Preliminary Inspection Plan will have regard to specific risk issues such as building scale and complexity, ground conditions, structural design solution, building use, site constraints, design of fire prevention and detection solution, programme, experience of contractor, level of design innovation, etc.

   Its purpose is threefold:

   (a) As a key management tool in coordinating the inputs of all those involved in delivering the project to ensure that inspections are carried out at the appropriate time thereby minimising uncertainty and potential for delays in the programme.

   (b) It will be examined by the Building Control Authority to establish whether an appropriate level of oversight is being adopted on the project (section 9(1) (b) (IV) of SI 9 of 2014)

   And

   (c) It is used by the Assigned Certifier as the basis of their certification on the building or works (section 7 of the Certificate of Compliance on Completion).

5. During this stage the Design Team and the Assigned Certifier must set out the ancillary certificates upon which the Assigned Certifier proposes to rely when signing the Certificate of Compliance on Completion. The ancillary completion certificates required from the Contractor – whether provided by the Contractor, Specialists, subcontractors, suppliers, or designers - must be listed in the Works Requirements, where known.

6. Obtain and comment on drawings and documentation prepared by the Design Certifier and Design Team to indicate general compliance of design with building regulations.

7. Obtain and comment on amended preliminaries for inclusion in tender documentation which suitably reflect the augmented roles and responsibilities of the building contractor and his team including sub-contractors and specialist Designers, (under SI 9 of 2014 and the code of practice September 2016 for inspecting and certifying buildings and works).

8. In conjunction with the Design Certifier and the Design Team, review, and comment on the BCAR tender preliminaries which should include an explanation of the new roles and requirements of Current Building Control legislation, e.g., the revised requirements with regard to achievement of substantial completion, inspections, notifications, and certification etc. The Preliminaries should also identify all bodies including design professionals and specialists, from whom it is anticipated certificates are required and outline the nature and adequacy of Ancillary Certificates which must be provided.

5.7.3 Stage (iii): Tender Issue, Evaluation & Award:

5.7.3.1 The Assigned Certifier shall:

1. During assessment of the Tenders, Review, and comment on the competence of the proposed Contractor and any proposed specialist sub-contractors who will undertake a design role and will therefore be required to act as Ancillary Certifiers.

2. During assessment of the Tenders, Comment on the builder's Construction Programme with regard to the Inspection Plan and the Inspection Notification Framework.

3. In advance of the submission of the Commencement Notice, liaise with the Architect Design Team and Builder and coordinate and update both the Preliminary Inspection Plan including testing requirements and the Inspection Notification Framework, with the builders own tender Preliminary Inspection Plan including testing requirements and Construction Programme. The Assigned Certifier is responsible for determining an appropriate frequency and robustness of inspections based on the particular characteristics and risk level of the project.

4. The Assigned Certifier will provide and execute the form of Undertaking by the Assigned Certifier, and they shall obtain the form of Undertaking by the Builder from the successful Tenderer prior to his appointment.

5. Assisted by the Design Certifier and the Design Team members the Assigned Certifier shall assemble and co-ordinate the information required to support **the Form of Commencement Notice** as set out in Article 9 of S.I. No 9 of 2014 and shall submit the commencement on the BCMS when all material is duly provided and collated.

5.7.4 Stages (iv): Construction:

5.7.4.1 The Assigned Certifier shall commence this stage by lodging the Commencement Notice and all required associated documentation electronically via the online Building Control Management System.

5.7.4.2 The online submission at commencement stage will typically include the following:

1. Commencement Notice (or 7-day notice).
2. Plans, calculations, specifications, and particulars as are necessary to outline how the building proposed works or building will comply with the requirements of the Second Schedule to the Building Regulations relevant to the works or building concerned, and including:
   i. General arrangement drawings – including plans, sections, and elevations.
   ii. A schedule of such plans, calculations, specifications, and particulars as are currently designed or are to be prepared at a later date.
   iii. The completion of an online assessment, via the Building Control Management System, of the proposed approach to compliance with the requirements of the Second Schedule to the Building Regulations (Parts A to M).
3. The Preliminary Inspection Plan including testing requirements prepared by the Assigned Certifier.
4. A Design Certificate (with a schedule of Ancillary Certificates by members of the design team, who should also sign their certificate).
5. A Notice of Assignment of Assigned Certifier by the Building Owner.
6. A Notice of Assignment of Builder by the Building Owner.
7. Form of Undertaking by the Assigned Certifier.
8. Form of Undertaking by the Builder and
9. The appropriate fee.

5.7.4.3 The Assigned Certifier shall:

1. Obtain and retain a record of the Commencement Notice and all ancillary documentation as noted above which is filed electronically via the online Building Control Management System.
2. In consultation with the members of the Design Team and Builder, plan and agree the Inspection Plan and testing regime and oversee adherence to this plan, during Construction; and will develop the Preliminary Inspection Plan including testing requirements; and amend as necessary. The Assigned Certifier is responsible for determining an appropriate frequency and robustness of inspections based on the particular characteristics and risk level of the project.
3. Use best endeavours to achieve optimal efficiency in relation to requirement for visits to site for inspections etc., to keep these to a reasonable level, by planning agreeing and maintaining adherence to a robustly planned and managed Inspection framework.

4. On termination or relinquishment of their appointment make available to the Building Owner all certification prepared and inspection reports carried out.

5. Act as the single point of contact with the Building Control Authority during construction.

6. Collaborate with the Design Team and the Builder to develop and finalise the list of all design professionals and specialists, from whom compliance/ancillary certificates (Design, Inspection or Completion) are required and obtain them. The Certificates shall be in the form of the Standard Ancillary 'Badged' Certificates prepared and agreed by the Professional Institutions.

7. Co-ordinate the ancillary certification and supporting documentation by members of the Design Team and other relevant bodies which will support the Certificate of Compliance on Completion.

8. Obtain suitable Ancillary Certification in respect of all relevant elements of the work at 4-6-week intervals or as appropriate and upload to the BCMS system. Liaise with the ER and Design Team Leader with regard to co-ordination of receipt of ancillary certificates in advance of payment of relevant contractor claims.

9. Co-ordinate and collate all certification of compliance for completion in conjunction with the Builder.

10. Provide and sign the relevant statutory Certificate of Compliance - Form of Undertaking and the Certificates of Compliance at Completion.

11. Uploads all documents to the Building Control Management System to facilitate timely validation of the submission by the BCA and its logging onto the register.

12. Hand over to the building owner all certification prepared, and inspection reports carried out.

13. Report to the Client at appropriate intervals during the project on Building Control related issues generally, including records of inspection of the works, and on any substantive matters arising in regard to the compliance of the Clients project with Building Regulations. In the Client reports the Assigned Certifier shall advise the Client in relation to any deficiencies or non-conformances encountered with the design or construction of the works or with adherence of relevant project members with the Inspection plan, on all other relevant matters arising, and on all actions being taken to address such issues. During construction it is envisaged that such reports would be presented at not greater intervals than monthly.

14. Seek advice from the Building Control Authority, in respect of compliance matters relating to the building or works where disputes or differences of opinion arise between the parties to the project.

15. Maintain records of inspection and at completion hand over to the building owner all certification prepared, and inspection reports carried out in hard and electronic formats.

5.8 Design Change during Construction:

5.8.1 Design work that is prepared during construction and specialist design that is not available for submission at commencement stage should be certified and submitted at a later stage. Drawings and documentation for these designs should be submitted when available, with Ancillary Certificates of Compliance, where appropriate, when available but before the relevant work commences. Similarly, drawings and documentation for changes or omissions that are agreed with the design team and the ER should be certified and submitted when agreed.

5.9 Submission at Completion:

5.9.1 At completion stage, the Assigned Certifier shall prepare and execute the Certificate of Compliance on Completion in conjunction with the Builder and submit to the Building Control Authority to facilitate validation and inclusion on the register in advance of issue of completion certification and handover of the project.

5.9.2 The information required to be issued to the Building Control Authority through the online Building Control Management System hosted by the local Government Management Agency includes but is not limited to the following:

5.9.2.1 A Certificate of Compliance on Completion signed by the Builder (at Part A) and by the Assigned Certifier (at Part B) and all relevant supporting ancillary certification being relied upon in the issue of this certificate, including Ancillary Certificates for Design, Inspection and Completion from all designers who are part of the DT as well as those who are contractors or sub-contractors.

5.9.2.2 Plans, calculations, specifications, and particulars, showing how the completed building has achieved compliance with the Building Regulations must be lodged on the Building Control Management System when the Certificate of Compliance on Completion is submitted or at an earlier date. Where design documents have changed or supersede design documents previously lodged with the Building Control Authority with the Commencement Notice or at a later date, any such difference should be clearly identified.

5.9.2.3 The Inspection Plan as implemented by the Assigned Certifier in accordance with this Code of Practice.

5.9.2.4 Where the project has a phased completion or separate enabling works the Designers shall issue the requisite number of "sectional" Certificates required to facilitate the phased completion. The Architect shall facilitate the Assigned Certifier in issuing a Prior Notification of Submission of Completion Certificate where this is necessary to facilitate handover of the project on a phased basis for the beneficial use of the owner on or before the contracted date.

Note1: The Certificate of Compliance on Completion must be validated and registered by the Building Control Authority before the building it relates to may be opened, used, or occupied. If rejected by Building Control Authority within twenty-one (21) days, the certificate is not valid.

5.10 Nominated Date for Registration of Certificate:

5.10.1 The Assigned Certifier shall make provision for the submission and validation of documentation at a time consistent with the Client's programme, using, where necessary the "Nominated date for registration of Certificate" process outlined in the Code of Practice.

5.10.2 The Assigned Certifier shall liaise with the Builder and Design Team in issuing a Prior Notification of Submission of Completion Certificate where this is necessary to facilitate handover of the project for the beneficial use of the owner on or before the contracted date.

5.11 Stage (v): Handover and Defects Period:

5.11.1 Archiving of Records:

5.11.1.1 Arrangements should be put in place by the Assigned Certifier to co-ordinate with the Builder to assemble records relating to the full service they provided to individual projects, (see points A-C above and to retain these records for a minimum period of six (6) years after completion.

5.11.2 Defects Period:

5.11.2.1 During the Defects period the Assigned Certifier shall advise the Client with regard to any matters that come to the attention of the AC, that relate to non-compliance with building regulation requirements.

[End of Appendix 5]

Appendix 6: Scope of Services for Designers required BC(A)R Regulations S.I. Nr. 9 of 2014 and associated Code of Practice.

6 APPENDIX 6: SCOPE OF SERVICE: DESIGNERS (IN ACCORDANCE WITH THE BUILDING CONTROL (AMENDMENT) REGULATIONS 2014, S.I. NR. 9 OF 2014 AND THE ASSOCIATED CODE OF PRACTICE).

6.1. Generally:

6.1.1 The Scope of Service required from the various Design Team members, (in their roles as Designers) in accordance with the services and obligations required under the Building Control (Amendment) Regulations 2014, S.I. No. 9 of 2014 and the associated Code of Practice 2016 are summarised below as a guide.

6.1.2 Tenderers are to satisfy themselves upon review of the legislation as to what the duties entail and how they apply to this project; Tenderers shall make allowance for the cost of providing all aspects of the services that might reasonably be anticipated in their tender quotation.

6.2. Scope of Service, Designers:

(Architect, Quantity Surveyor, C&S Engineer, M&E Engineer, Landscape Architect, Fire Safety Consultant, etc.)

6.2.1 The Designers duties in accordance with the Building Control (Amendment) Regulations and the associated Code of Practice 2016 are summarised as follows as a guide. Tenderers are to satisfy themselves upon review of the legislation as to what the duties entail and how they apply to this project.

6.2.2 Designers shall:

6.2.2.1 Design their respective elements of work in accordance with the applicable requirements of the Second Schedule to the Building Regulations.

6.2.2.2 Provide the Design Certifier with the necessary plans, specifications and documentation that is required for lodgement at commencement stage.

6.2.2.3 Arrange to provide sufficient information to the Assigned Certifier to enable them to fulfil their role.

6.2.2.4 As agreed with the Assigned Certifier, carry out work inspections which are pertinent to their elements of the Design, and liaise with the Assigned Certifier in terms of this and the required ancillary certification.

6.2.2.5 Notify the Assigned Certifier of their proposed inspection regime for inclusion in the overall Inspection Plan.

6.2.2.6 Provide the Ancillary Certificates when required by the Assigned Certifier and Design Certifier, including Ancillary Certificates for Design Inspection, and Completion. These certificates shall be in the format agreed by the professional institutions for their relevant discipline. Refer Section 3.9 '*Roles & Responsibilities arising under BCAR to be discharged by the Design Team*'.

6.2.2.7 Maintain records of inspection.

6.3. Stage (i), (ii)A + (ii)B:

6.4.1 The Designers shall:

6.3.1.1 Advise the Client on the need to comply with the Building Control (Amendment) Regulations 2014, S.I. No. 9 of 2014 and the associated Code of Practice 2016, and on the duties of the Client arising under the legislation, including the need to appoint a competent Design Certifier, Assigned Certifier and Builder.

6.3.1.2 Design their respective elements of work in accordance with applicable requirements of the second schedule of the building regulations. Designs shall comply with current Building Regulations.

6.3.1.3 Arrange to provide sufficient information to the Assigned Certifier and Design Certifier to enable them to fulfil their role.

6.3.1.4 Consult with the Building control Authority as necessary.

6.3.1.5 Consult with the Assigned Certifier and Design Certifier as necessary.

6.4. Stage (ii)C: Detailed Design & Tender Documentation:

6.4.1 The Designers shall:

6.4.1.1 Develop the detailed design and production information for the project in consultation with the other Design Team members ensuring that the design remains compliant with the requirements of all relevant current building regulations.

6.4.1.2 Continue to consult with the Building Control Authority and Assigned Certifier as necessary.

6.4.1.3 Advise the Client on the need to engage suitably competent consultants, builders, specialists, sub-contractors, and suppliers to act as Ancillary Certifiers under the Building Control Regulations.

6.4.1.4 Prepare and issue a discipline relevant Inspection Notification Framework (INF**)** to the Assigned Certifier. The Assigned Certifier will review and co-ordinate the Designers inspection notification framework into a project **Inspection Notification Framework (INF)**. The Architect shall include the INF in the tender documentation. The INF shall describe all the Inspection Requirements and ancillary certification which the builder must price in his tender return.

6.4.1.5 Prepare a discipline specific inspection plan and provide this to the Assigned Certifier for inclusion in the **Project Inspection Plan (PIP)**. The finalised PIP shall be included in the tender documents. The inspection plan shall set out the requirement for ancillary certification for specialists, sub-contractors, and suppliers.

6.4.1.6 Develop documentation to indicate general compliance of design with current Building Regulations.

6.4.1.7 Prepare amended preliminaries for inclusion in tender documentation which suitably reflect the augmented roles and responsibilities of the building contractor and his team including sub-contractors and specialist Designers, (under SI 9 of 2014 and the associated Code of Practice for Inspecting and Certifying Buildings and Works 2016).

6.5. Stage (iii): Tender Issue, Evaluation & Award:

6.5.1 The Designers shall:

6.5.1.1 Continue to consult with the Building Control Authority and Assigned Certifier as necessary.

6.5.1.2 During assessment of the Tenders comment on the builder's Construction Programme with regard to the Inspection Notification framework.

6.5.1.3 In advance of the submission of the Commencement Notice, the Employer's Representative, Design Team Lead / Architect shall meet the appointed Contractor the Assigned Certifier and Design Team and coordinate and update both the Preliminary Inspection Plan and the Inspection Notification Framework, with the builders own tender preliminary Inspection Plan and Construction Programme.

6.5.1.4 Develop drawings and documentation to show compliance of design with Building Regulations. Provide the Design Certifier with the necessary plans, specifications and documentation that is required for lodgement of the Commencement Notice.

6.5.2 The Architect and other Designers shall complete and sign **Ancillary Certificates** (Design) and provide the Ancillary Certificates when required by the Assigned Certifier and the Design Certifier. The Certificates shall be in the form of the Standard 'Badged' Ancillary Certificates prepared and agreed by the Professional Institutions.

6.6. Stage (iv): Construction:

6.6.1 The Designers shall:

6.6.1.1 Continue to consult with the Assigned Certifier as necessary.

6.6.1.2 The Designers shall carry out the work inspections as agreed with the Assigned Certifier and in accordance with the Project Inspection Plan, Inspection Notification Framework (INF) and contract documents. The Inspection Plan shall be of appropriate frequency and intensity.

6.6.1.3 The Designers shall report on his inspections to the Assigned Certifier. The Designers shall provide all ancillary certificates or test results which they have obtained to the Assigned Certifier at appropriate intervals. They shall advise the Assigned Certifier of any proposed amendments to his inspection plan during the course of the work.

6.6.1.4 The Designers shall maintain adequate records of inspections.

6.6.1.5 Design work that is due for completion and specialist design that is not available for submission at commencement stage or design work where Designers wish to modify designs after the Commencement Notice has been issued (subject to Client Architect and Design Certifier agreement) should be certified and submitted at a later stage. Drawings and documentation for these designs should be submitted before the relevant work commences, with Ancillary Certificates of Compliance, where appropriate. Similarly, drawings and documentation for changes or omissions should be certified and submitted before the relevant work commences.

6.6.1.6 On completion or when requested the Architect shall provide the Assigned Certifier with plans, calculations, specifications, and particulars to show compliance with Building Regulations.

6.6.1.7 On Completion the Designers shall sign and issue an **Ancillary Certificate** (Completion). The Certificates shall be in the form of the Standard Ancillary 'Badged' Certificates prepared and agreed by the Professional institutions.

6.6.1.8 Where the project has a phased completion or separate enabling works the Designers shall issue the requisite number of "sectional" Certificates required to facilitate the phased completion. The Architect shall facilitate the Assigned Certifier in issuing a Prior Notification of Submission of Completion Certificate where this is necessary to facilitate handover of the project on a phased basis for the beneficial use of the owner on or before the contracted date.

[End of Appendix 6]

Appendix 7: BIM Exchange Information Requirements & DT Roles + Responsibilities.

7 APPENDIX 7: BIM REQUIREMENTS & DESIGN TEAM ROLES & RESPONSIBILITIES.

7.1. Building Information Modelling (BIM):

7.1.1 BIM Requirements:

7.1.1.1 The use of a full level 2 collaborative BIM process, as defined in the PAS 1192 suite of standards and as superseded by international standards for BIM ISO 19650-1 (concepts and principle) and 19650-2 (delivery phase and assets) is a requirement of this competition for Design Team (DT) Services. It is expected that the use of a BIM system will offer qualitative advantage to project development and delivery by facilitating more efficient design option studies and development and co-ordination of design information. As the design of the new building will be developed in BIM the DT shall, where appropriate, procure a fully co-ordinated 3D BIM survey.

7.1.1.2 The Design Team Lead assisted by the Architect and the DT shall write the specification for the BIM Survey outlining all information and level of detail required. See also Section 3.17.

7.1.1.3 With the Tender Documents provided, the Contracting Authority have provided the following:

1 A Draft Template Organisational Information Requirements – doc ref: 1.22 EH_HSE C&E OIR Draft Live.

2 A Draft Template Asset Information Requirements – doc ref: 1.23 EH_HSE_C&E_ NEIS_AIR_ Draft Live.

3 A Draft Template Information Management Plan Appointing Party – doc ref: 1.24 EH_HSE_C&E_IMP_Appointing Party_Draft Live.

4 A Draft Template Information Management Plan Organisational Party - doc ref: 1.25 EH_HSE_C&E_IMP_Organisational_Draft Live.

5 A Draft template Project Information Standard_File Naming – doc ref: 1.26 EH_HSE_C&S_PIS_FileNaming_Draft Live.

6 A Draft template Organisational Information Requirements (OIR) – doc ref: 1.22 EH_HSE C&E OIR Draft Live.

7.1.1.4 All of the above documents have been provided for information purposes only. It is a requirement of the DT Team, led by the BIM Information Manager, to develop the documents above in conjunction with the Contracting Authority Digital Team. The DT BIM Information Manager will be required to progress the documents and submit the documents at relevant project stages for approval. Note: some of the templates provided have been populated with information for information purposes only to explain how each section should be populated. The information has no correlation to any project.

7.1.1.5 It is also a requirement of the DT team to develop a detailed BIM Specification for issue to the Contractor at Tender Stage. The BIM Specification (EIR) will set out clearly to the Contractor the Employer expectations regarding BIM delivery and handover requirements in relation to Asset Information and Operations and Maintenance linkage with the BIM Model.

7.1.2 BIM Exchange Information Requirements (EIR):

7.1.2.1 In addition to complying with the provisions of this summary description of BIM Services the DT shall comply with requirements outlined in the separate Exchange Information Requirements (EIR), BIM Protocol, Annex to the BIM Protocol, and the Master Production and Deliver Table (MPDT) and Responsibility Matrix documents which shall be provided as part of the competition documentation. This shall include maintaining the EDMS on the Client's Common Data Environment by the Architect, as DT Lead, and the management of inputs to the BIM model by consultant disciplines and relevant supply chain members.

7.1.3 BIM Data Ownership and use of Industry Foundation Classes (IFC) Data Model:

7.1.3.1 The level 2 BIM model for this project and all associated digital information derived from it (COBie, AIM data, Digital O&M's, etc.), shall be fully owned by the Client and shall be fully interoperable in order to maximise its usefulness to the Client before during and after construction stage. To ensure these requirements are achieved the federated BIM model prepared by the DT for each data drop shall be an Industry Foundation Classes (IFC) Data Model and shall also be provided in the relevant Native software format where applicable. The IFC data model shall comply with the requirements of the official international standards ISO16739:2013.

7.1.3.2 All DT members or other parties working on the Model or providing data for input to the model shall utilise formats compatible with this requirement, during all project stages. Coordination in this regard will be led by the Design Team Lead~~,~~ and the BIM Information Manager (Design) and supported by the relevant BIM Managers for each discipline. For trenches, pipework and other underground elements, the Civil and Structural Engineer shall be responsible for initiating and coordinating the BIM model

7.1.3.3 At tender stage the Design Team Lead and BIM Information Manager (Design), assisted by all DT members shall ensure that all relevant tender documents reflect the requirement for the main contractor to adopt and develop the BIM model in compatible IFC formats. The tender documents shall make clear that, at project completion, the contractor shall issue the completed as built information in an IFC Data model and native format.

7.1.4 BIM Information Manager – Design and Construction:

7.1.4.1 The BIM Process requires BIM information Managers. This role is outlined in **Appendix 8**. The Architect, as DT Lead, shall discharge the role of BIM Information Manager (Design) during design stages (i), (ii) and (iii) – an individual must be assigned by the Architect to this role. For Stage (iv) (Construction Stage) the Contractor must also identify a BIM Information Manager (Construction). The BIM Information Manager (Design) will coordinate with the BIM Information Manager (Construction) until the Stage (iii) Federated BIM model is fully handed over to the Contractor.

7.1.4.2 The BIM Information Manager (Design) will continue to manage any employer led design changes that are not the responsibility of the Contractor and will coordinate with the BIM Information Manager (Construction) to facilitate their integration into the Stage (iv) Federated Model. The BIM Information Manager (Design) and the BIM Information Manager (Construction) will coordinate the handover of the complete "as built" BIM model at Stage (v). The BIM Information Manager (Design) will coordinate the review for completeness of the "as built" model by the relevant DT disciplines and will liaise with the BIM Information Manager (Construction) in respect of any updates or changes required to be undertaken by the contractor arising from this review.

7.1.5 BIM Managers:

7.1.5.1 All parties and DT disciplines with Design Input and using the BIM Model for Outputs or inputs must identify a BIM Manager. The role of the BIM Manager is set out in **Appendix 9**.

7.1.5.2 **Note1:** The role of BIM Manager is separate and distinct from that of the BIM Information Manager. Therefore, the Architect, as DT Lead, must identify both a BIM Information Manager (Design) and BIM Manager role. The scale of the project will determine the resource or resources needed in this regard.

7.1.6 BIM Execution Plan:

7.1.6.1 As part of the quality submission in the DT competition, each tenderer is asked to outline their methodology for how they intend to comply with these Technical Requirements in respect to BIM. This methodology should summarise proposed BIM IT resources, BIM Personnel Resources and BIM Capabilities including BIM project experience.

7.1.6.2 On appointment, the successful company shall prepare fully detailed post, pre-contract BIM Execution Plans (BEP), and they shall issue to the BIM Information Manager (Design) in the DT Lead Company who shall co-ordinate them into an overall "Post Contract BIM Execution Plan", in accordance with Project BIM requirements. This document will govern how BIM is delivered on the project.

7.1.7 Common Data Environment:

7.1.7.1 The Client shall provide a project specific Client's Common Data Environment (CDE) which will enable successful project execution, information exchange and collaboration. The Design Team shall manage the CDE in line with the requirements of IS EN ISO 19650. The CDE system/application will be the National Estates Information System (Aconex Platform).

7.1.8 BIM Post Design Stage:

7.1.8.1 The Building Information Model shall be compatible with the NEIS IWMS system, IBM Tririga.

7.1.8.2 The DT shall also assist the Client in identifying and setting out suitable performance requirements (for inclusion in the Contractors tender documents). The project requirements will specify the adoption of the DT's BIM Model, by the Contractor after contractor appointment. Project Requirements will specify that the contractor will continue to develop the BIM model during the construction stages and that the BIM will be issued in appropriate and agreed formats (IFC) by the contractor to the Client / Hospital End Users for use in building and facilities management prior to project completion as part of project completion documentation.

7.2. BIM Design Stage Service Requirements:

7.2.1 BIM Stage (i):

7.2.1.1 The Architect shall designate a BIM Information Manager (Design) - (see **Appendix 8** for role of BIM Information Manager).

7.2.1.2 All relevant DT members shall issue upon appointment a pre-contract BIM Execution Plan to the BIM information Manager. Each Consultant shall appoint a BIM Manager for his company (refer to **Appendix 9** for role of BIM Manager). For trenches, pipework and other underground elements, the Civil and Structural Engineer shall take the lead in the preparation of the specific BIM Execution plan for underground works.

7.2.1.3 Where relevant to the project the Design Team Lead in conjunction with the Architect and all relevant DT members shall write suitable specification for a BIM survey of existing buildings including external landscaping and features as appropriate. The DT will define in the specification the Level of Detail required in the survey for each of its constituent parts. Obtain quotations, make recommendations to the Client, and appoint successful tenderer. BIM Survey shall form the basis of the BIM model for the design.

7.2.1.4 The BIM Information Manager (Design) assisted by the DT Lead shall hold a BIM pre-start meeting. Take pre-contract BIM execution plans and co-ordinate them in an agreed overall "Post-Contract BIM Execution Plan". Initiate model sharing with DT for strategic analysis and options appraisal.

7.2.1.5 Prepare co-ordinated Post Contract BIM Execution Plan for the Project.

7.2.1.6 The DT shall initiate a federated BIM model developed to a level appropriate to Stage (i), as well as the specified stage (i) drawings set out below, which shall be derived from the building information model, along with relevant digital data.

7.2.2 BIM Stage (ii)A:

7.2.2.1 The Architect, BIM Information Manager (Design), and all relevant DT members (including the Structural Engineer and Services Engineer, etc.) shall develop a federated BIM model to a level appropriate to Stage (ii)A, as well as the Stage (ii)A drawings specified below which shall be derived from the building information model, along with relevant digital data. For trenches, pipework and other underground elements, the Civil and Structural Engineer shall take the lead in developing the federated BIM model. All other consultants, in particular M&E, must engage fully in this process at all stages.

7.2.3 BIM Stage (ii)B:

7.2.3.1 The Architect, BIM Information Manager (Design), and all relevant DT members (including the Structural Engineer and Services Engineer, etc.), shall develop a federated BIM model to a level appropriate to Stage (ii)B, as well as the Stage (ii)B drawings specified below which shall be derived from the building information model, along with relevant digital data. For trenches, pipework and other underground elements, the Civil and Structural Engineer shall take the lead in developing the federated BIM model. All other consultant in particular M&E must engage fully in this process at all stages.

7.2.4 BIM Stage (ii)C:

7.2.4.1 The Architect, BIM Information Manager (Design) and all relevant DT members (including the Structural Engineer and Services Engineer, etc.), shall complete the Final Federated BIM model developed to the appropriate level of Stage (ii)C as well as the Stage (ii)C drawings and schedules noted below derived from the model. These shall be integrated into the

Tender documentation along with a suitable performance specification. For trenches, pipework and other underground elements, the Civil and Structural Engineer shall take the lead in finalising the federated BIM model. developing the federated BIM model. All other consultants, in particular M&E, must engage fully in this process at all stages.

7.2.4.2 The Specification above shall outline the requirements of the Contractor in taking the coordinated DT BIM model and developing it into the final BIM model to be handed over to the Hospital's FM team in Industry Foundation classes' data model format, on completion of the project.

7.2.5 BIM Stage (iii):

7.2.5.1 The Architect, BIM Information Manager (Design) and all relevant DT members (including the Structural Engineer and Services Engineer, etc.), shall ensure the Contractor understands the project requirements with respect to BIM.

7.2.6 BIM Stage (iv):

7.2.7.1 The Architect shall Issue the integrated BIM model to the contractor. Refer to section 7.1.4 for the on-going requirements during this stage in respect of coordination between the DT and BIM Information Manager (Design) with the Contractor and their BIM Information Manager (Construction).

7.2.7 BIM Stage (v):

7.2.7.1 The Architect, BIM Information Manager (Design) and all relevant DT members (including the Structural Engineer and Services Engineer, etc.) shall review the adequacy and completeness of the BIM model issued by the Main Contractor to the Client in accordance with the performance specification issued by the Architect. The model shall be an IFC Data model.

7.2.8 Quantity Surveyor BIM Stage Service Requirements – Stages (i) to (v) inclusive:

7.2.8.1 During all stages the Quantity Surveyor (QS) shall utilise the BIM model, and the drawings and schedules from all DT disciplines derived therefrom, to develop the relevant cost information appropriate to each stage - this includes, but it not confined to, development of the Bill of Quantities at Stage (ii)C for inclusion in the tender. The BIM Information Manager (Design) shall coordinate the provision of complete and coordinated information to the QS by the relevant DT members.

[End of Appendix 7]

Appendix 8: Roles & Responsibilities of the Project BIM Information Manager (Design)

8 APPENDIX 8: ROLE AND RESPONSIBILITIES FOR THE PROJECT BIM INFORMATION MANAGER (DESIGN).

Note: The Project BIM Information Manager (Design) is a single appointment to the Architect.

8.1. The roles and responsibilities of the Project BIM Information Manager (Design) include:

8.1.1 Develop, implement, obtain client approval for, and maintain a BIM Protocol.

8.1.2 Ensure all stakeholders are in alignment with the BIM Protocol.

8.1.3 Create and maintain a BIM Coordination Programme that is aligned with the Project Programme.

8.1.4 Identify any impact on the BIM Coordination Programme arising from errors in the transmission and use of information during the BIM process.

8.1.5 Establish BIM Coordination workshops and report progress at the Project Design Team meetings.

8.1.6 Keep a record of BIM models and their status.

8.1.7 Keep a record of any deliverables which are not are not derived from the models.

8.1.8 Keep a record of transfers of element ownership i.e., columns transferring from the Architect to the Structural Engineer. BIM Coordination Records.

8.1.9 Establish quality control procedures to check that all of the models are accurate, the level of detail is fit for purpose; common title blocks are distributed and updated as necessary and presentation styles across the project is consistent.

8.1.10 Identify and document clashes between different discipline models using clash detection software (Collaborative BIM Data Sharing).

8.1.11 Ensure that each organisation has published an archived version of the model for each significant milestone stage as identified in the BIM Coordination Programme.

8.1.12 Record and monitor shared data and relationships between models e.g., grids, floor levels, shared project coordinates.

8.1.13 Identify and agree any co-located or shared technical infrastructure needs, software package interoperability requirements and standards to be used by each team member to deliver BIM project.

8.1.14 Administer the agreed Common Data Environment.

8.1.15 Establish if project specific BIM content is available or required.

8.1.16 Exclusive responsibility and power to issue binding instructions on BIM related issues.

8.1.17 Co-ordinate handover of model and data to the Client and/or contractor as appropriate, at the agreed milestones in the BIM Coordination Programme.

8.1.18 In the event of the Project BIM Information Manager (Design) role transferring to another person, provide all associated documents and fully Brief incoming personnel on the protocols and history of the collaboration.

8.1.19 During Stage (ii)C develop a detailed BIM Specification confirming Employer expectations to the Contractor regarding BIM delivery and handover requirements in relation to Asset Information and Operations and Maintenance linkage with the BIM Model.

8.1.20 During Stage (iv), manage any employer led design changes that are not the responsibility of the Contractor and will coordinate with the BIM Information Manager (Construction) to facilitate their integration into the Stage 4 Federated Model.

8.1.21 During Stage (iv), arrange regular workshops with the BIM Information Manager (Construction) to monitor progress of the model over the lifecycle of the project.

8.1.22 Co-ordinate receipt and DT review, by the relevant DT disciplines, of the completeness of the "as built" model issued by the contractor at Stage (v).

8.1.23 Liaise with the BIM Information Manager (Construction) in respect of any updates or changes required to be undertaken by the contractor arising from the DT review referred to previously.

8.1.24 Assist in the coordinating, configuring and preparation of Project Outputs (e.g., data drops).

Note1: The Project BIM Information Manager is responsible for the management of information, information processes and compliance with agreed procedures, not the coordination of design.

[End of Appendix 8]

Appendix 9: Role of the Project BIM Manager for individual Design Team Companies

9 APPENDIX 9: ROLE OF BIM MANAGER FOR INDIVIDUAL DESIGN TEAM COMPANIES.

9.1. BIM Manager for Each Design Team Consultancy:

Note: Each organisation using the BIM Model for outputs or inputs must identify a BIM Manager as part of their design discipline team for each project.

9.1.1 The roles and responsibilities of the BIM Manager include:

9.1.1.1 Ensure that organisation BIM Protocols support the BIM Execution Plan.

9.1.1.2 Ensure that the project is adequately resourced in terms of hardware and software.

9.1.1.3 Liaise with the Project BIM Information Manager to ensure that BIM Outputs and Inputs are compliant with the BIM Execution Plan or otherwise notify the Project BIM Information Manager immediately.

9.1.1.4 Liaise with the Project Lead/Designer on issues relating to BIM Management and any impacts on the organisation project programme.

9.1.1.5 Notify the Project BIM Information Manager of any impacts on the BIM Coordination Programme arising from errors in the transmission and use of information during the BIM process.

9.1.1.6 Attend BIM Coordination Workshops.

9.1.1.7 Notify the Project BIM Information Manager on the status of BIM models.

9.1.1.8 Notify the Project BIM Information Manager of transfers of element ownership e. g. columns transferring from the Architect to the Structural Engineer.

9.1.1.9 Notify the Project BIM Information Manager of shared data and relationships between models e.g., grids, floor levels, shared project coordinates.

9.1.1.10 Ensure that data exchange protocols between different software/hardware systems are verified through sample testing to ensure data integrity is maintained.

9.1.1.11 Validate the model prior to the model data being issued.

9.1.1.12 Generate and issue a clash detection report for each of the Clash Detection Sets generated from the agreed clash detection software at agreed milestones on the BIM Coordination Programme.

9.1.1.13 Take appropriate action for clashes identified in their clash detection reports.

9.1.1.14 Publish models and outputs from the model to the agreed document and model sharing/publication system.

9.1.1.15 Ensure that data exchange protocols between different software/hardware systems are verified through sample testing to ensure data integrity is maintained.

9.1.1.16 Prior to handover of the BIM model to the contractor at the construction phase, ensure that the contractor completes and signs-off on the 'Hold Harmless Agreement for Access to Building Information Model' document.

[End of Appendix 9]

Appendix 10: Service Requirements for Room Information Sheets and Equipping

10 APPENDIX 10: SERVICE REQUIREMENTS FOR ROOM INFORMATION SHEETS (RIS) AND ROOM LOADED DRAWINGS (RLD) DEVELOPMENT (INCLUDING EQUIPPING).

10.1. Room Information Sheets (RIS):

10.1.1 The Architect with the assistance and advice of the Design Team members, in particular, the Building Services Engineer [M&E], is required to provide an entire service in relation to development of project specific Room Information Sheets (RIS). The Architect and DT shall provide and use a software programme for the production of the RIS and RLD e.g., Activity Database, Codebook, which is deemed acceptable at the project outset by the Client.

10.1.2 RIS shall be prepared by the Design Team and agreed through consultation with the Client and User Groups as part of the Stage (i) and Stage (ii)A design processes, for each room type within the development. This engagement will be undertaken as part of Stage (i) and Stage (ii)A building design development in order to evolve with the design intent as the whole project progresses.

10.1.3 The RIS shall be used as the basis for the development of Room Loaded Drawings (RLD) (the graphical representation) for every room in the project. As the design process progresses, the Design Team will be responsible for updating the information database arising in accordance with the developed design through to the commencement of Construction. This raw database along with component placement reports in excel shall be made available to the Project Team to facilitate the Group 2,3 and 4 equipment procurement process.

10.1.4 Each room type within the Facility should have a project specific RIS developed which includes, non-exhaustively, the following information:

10.1.4.1 Description of the clinical/non-clinical activities for which the room is designed to facilitate, including the room area and occupancy. The RIS is also required to identify any critical or preferred room adjacencies and/or any particular room requirements or notes.

10.1.4.2 A comprehensive schedule of all environmental and Building Services (M&E) Engineering Services requirements and pertinent data for the room type, including the applicable environmental quality/parameters.

10.1.4.3 Information on fixtures and finishes of all Group 1 items in the room.

10.1.4.4 Schedule of Components and Equipment, listing all Group 1, 2, 3 and 4 equipment or components within each room type, including a succinct description of each, their sizing dimensions, quantities, support M&E services, group number and unique identifying code.

10.1.5 The RIS shall:

10.1.5.1 Be benchmarked against relevant healthcare facilities and in compliance with the current Health Building Notes, Health Technical Memorandums, Building Regulations and HSE guidance.

10.1.5.2 Allow interface and integration with the relevant BIM software.

10.1.5.3 Be a source of reference and checklist throughout the design stage.

10.1.5.4 Have the ability to track change during the procurement process.

10.1.5.5 Facilitate the export or upload of Microsoft Word, PDF, Excel, Comma Separated Values (CSV), HTML and XML files.

10.1.5.6 Have the facility to include the cost data for each item of equipment/ component.

10.1.5.7 Be set up to facilitate the automatic generation of procurement schedules and asset schedules for Client use either by room, department, or component/equipment.

10.1.6 Following completion of development of the RIS at the conclusion of Stage (ii)A, the Design Team shall issue the full RIS database in the native format of the programme used for the production of the RIS (ADV, Codebook, etc) and also individual RIS for each room type in PDF format to the client.

10.2. Room Loaded Drawings (RLD):

10.2.1 Information shown on the RLD developed for every room within the project shall include, but not be limited to, the following:

10.2.1.1 Description of space.

10.2.1.2 Room key plan (indicating position of subject room in overall plan).

10.2.1.3 GA floor plan (dimensioned with levels, to a scale not less than 1:50).

10.2.1.4 GA reflected ceiling plan (dimensioned with levels, to a scale not less than 1:50).

10.2.1.5 GA Elevations and Sections (dimensioned, aligned with room key plan, to a scale not less than 1:50).

10.2.1.6 All Equipment – both illustrated and in schedule format.

10.2.1.7 Finishes (including all surfaces, joinery items etc.).

10.2.1.8 Services points and requirements (such as power points, data points, medical gas points, etc. lighting heating and cooling installations etc.) with symbol/key legend as appropriate.

10.2.1.9 Equipment Groups 1, 2, 3 & 4 (as described above).

10.2.1.10 Furniture.

10.2.1.11 Radiation protection.

10.2.1.12 Fire Extinguishers.

10.2.2 The RLD's should be produced on sheet sets sized to facilitate legibility and ease of review by the Client and User Groups. The project specific RIS and RLD produced by the Design Team shall be in sufficient detail to permit the DT QS and Client QS assess equipment and other costs appropriate to each project stage.

10.2.3 As part of the RLD stakeholder and user-group engagement, BIM and the 3D model are to be used innovatively and in an interactive manner, including (non-exhaustively) 3D BIM interactive walkthroughs, presentations, real-time annotation/update of 3D BIM model, etc, for each individual room type.

10.2.4 Upon finalisation of the RLD process, at completion the fully loaded BIM model in native format with all rooms fully equipped will be issued to Client. Final RLDs, in PDF format, for each room type will be issued to the client at this stage also. At this stage also, the Design Team will update the RIS database and all RIS sheets to take account of changes that may have occurred during the RLD process and re-issue the updated RIS database in native format, and individual RIS for each room type in PDF format to the client.

10.3. Equipment Groups / Services:

10.3.1 All equipment including clinical equipment is central to the operation of the required healthcare facilities. Due to the significant value of equipment and the need to obtain the latest equipment models available for the project, the development, in suitable detail, of all equipment requirements by the Design Team in conjunction with the Client is important for management of project quality, cost and programme.

10.3.2 Equipment is classified into 4 groups for the purposes of specification, procurement and installation as follows:

10.3.2.1 Group 1 Equipment: Items supplied and fixed by the Building Contractor. Group 1 equipment to be included as part of the building contract.

10.3.2.2 Group 2 Equipment: Items to be supplied by the Client and fixed by the Building Contractor. The delivery and fixing of these items to be included in the building contract.

10.3.2.3 Group 3 Equipment: Items supplied and fixed by the Client. Service connections which may be required for Group 3 equipment (i.e., power sockets, etc.,) are to be included in the building contract.

10.3.2.4 Group 4 Equipment: All other items for which the Building Contractor has no responsibility.

10.3.3 The Architect with the assistance and advice of the Design Team members in particular the Building Services Engineer [M&E] is required to provide a full service in relation to development of equipping information, which shall be captured in the project specific RIS and RLD.

10.3.4 The Design Team shall liaise with the Client and user groups with regard to their final equipment requirements and shall assess the equipment for compatibility with room function and infection control. The Architect assisted by the Design Team shall ensure that the building, structure and services design is fully co-ordinated with equipment requirements and that Employer Equipment Fit Out is fully integrated with them. The Civil/structural engineer shall see that the load from heavy suspended items can be supported by the floor from which the item is suspended. The structural engineer shall liaise with the equipment supplier in relation to the design of fixings for suspended items of equipment. The DT shall provide equipping information in sufficient detail to permit the DT QS and Client QS assess the equipping costs appropriate to each project stage.

10.3.5 The Design Team is entirely responsible for the preparation of specifications of all Group 1 equipment for inclusion in the tender documents. Where needed the Design Team will manage all engagement with stakeholders and user-groups with regard to the preparation of specifications for specialised Group 1 equipment.

[End of Appendix 10]

Appendix 11: Project ICT Requirements

11 APPENDIX 11: PROJECT ICT REQUIREMENTS.

11.1 Information & Communications Technology (ICT):

11.1.1 Significant reliance is placed upon the provision and use of a secure and reliable ICT network to support both clinical and business processes within the proposed healthcare facility. The vision for the future is for a more modern, efficient health service designed around the needs of patients. The assumption in the design of the facility is that ICT will be deployed to all areas for use by staff, patients, and non-clinical services. This will enable real-time access to information, updated reporting, and will provide more efficient and informed prospective and retrospective decision making and operations within the organisation.

11.1.2 Clinical systems will be used to provide clinicians and support staff with accurate up-to-date clinical and patient information to assist with diagnosis, treatment, and care. This system also needs to support research and education in an integrated way with clinical services to reflect an academic health sciences approach to service delivery. It is also imperative that information can be shared between teams and across organisations; therefore, the requirement for a robust network infrastructure is key.

11.1.3 From a business perspective, ICT will be required to deliver better data, decision support and business intelligence and analysis in relation to the performance and operations of HBS Estates. Access to this information will assist with the future planning of services.

11.1.4 ICT will play a vital role in the delivery of integrated services to patients in delivering the programmatic approach to care that is envisaged. The integrated ICT system will extend out on the national network. Additionally, ICT can enable training, education, and research. The ICT guiding principles will be set out in sections A and D of the Design Brief.

11.1.5 As a minimum, the following client business and clinical ICT systems will be delivered to support care and must be supported by the design of the new hospital, the final requirements will be developed through the design process:

11.1.5.1 Electronic Health Record (EHR), to include e-pathways supporting programmes of care, education, and research.

11.1.5.2 E-prescribing to include pharmacy stock control and dispensing (closed loop system).

11.1.5.3 Picture and Archiving System (PACS) or other picture archiving system to store all patient photographic images.

11.1.5.4 Electronic Document Management (EDM) for – clinical and organizational document management (this will include archiving of all patient records).

11.1.5.5 E-scheduling for outpatient appointments, scheduling for all management of elective work within the organization including the satellites.

11.1.5.6 E-rostering for effective workforce planning and management.

11.1.5.7 Clinical Decision Support access at point of care.

11.1.5.8 Point of Care testing.

11.1.5.9 E-learning and research.

11.1.5.10 Individual email access for all staff.

11.1.5.11 Voice recognition used to support key administrative functions such as reporting.

11.1.5.12 Interactive hospital paging system – VoIP; and

11.1.5.13 Teleconferencing links to other regional and international sites.

11.1.5.14 RFID (Radiofrequency Identification Device) track patients/ new-born children/ babies.

11.1.5.15 Electronic Patient appointment, queueing, management systems.

11.1.5.16 IoT Predictive Maintenance to gather and analyse real-time data on, systems performance, environmental conditions, statutory equipment operational parameters and critical medical assets.

11.1.6 From an ICT perspective the Design Team must consider the role ICT plays in fulfilling the brief and client requirements. The Design Team Lead in conjunction with the other Design Team members must liaise with the Client and any identified Client ICT representatives to capture the specific ICT requirements of the various operational processes, from a building design perspective.

11.1.7 The context of ICT within the Hospital and the (non-exhaustive) areas of responsibility for the Design Team are outlined in the Summary Design Brief so as to assist the Design team understand the scale and the level of integration required within the design process. This will be addressed in further detail in the Preliminary Design Brief issued at Design Team appointment.

11.1.8 The ICT technical design will principally be undertaken by the M&E Consultancy Service supported by the wider Design Team. The Architectural Consultancy Service/Design Team Lead Service will coordinate and lead the ICT Design in terms of wider project implications, impacts, programme, and incorporation into the overall hospital design.

11.1.9 A distributed antenna system will be required, which must provide mobile phone coverage throughout the building, must be compatible with all operators providing mobile phone service in Ireland, must provide 5G data coverage.

11.1.10 The Architectural Consultancy Service/Design Team Lead Service will lead all engagement with the client and user-groups to ensure that a siloed approach to the ICT technical design is not taken and that ICT is fully considered in all aspects of the hospital design, including (non-exhaustively) room/departmental layouts, equipping, wider campus integration, etc.

11.1.11 The Design Team must:

11.1.11.1 Work with the Client and any Client ICT representatives to integrate the ICT vision and guiding principles into the building design.

11.1.11.2 Liaise with the Client and any Client ICT representatives mentioned above.

11.1.11.3 Design and specify all ICT infrastructure (active and passive), connections and software systems needed to support the operation of the building and the integration of the building into the existing campus. These ICT requirements are non-exhaustively summarised in the Summary Design Brief and shall be addressed in further detail in the Preliminary Design Brief to be issued to the Design Team at appointment.

11.1.11.4 Liaise with the Client and any Client ICT representatives and obtaining all information required for design of the ICT infrastructure.

11.1.11.5 At an early stage in the project the M&E Consultancy Service in conjunction with the Client and any Client ICT representatives shall assess the adequacy of the existing ICT infrastructure to accommodate the proposed ICT Systems and Requirements and shall advise the Client with respect to the need infrastructural upgrades (fibre etc.). The M&E Consultancy Service shall advise on the required specifications and the QS shall advise on any likely costs arising. The Design Team will take an approach that any such wider knock-on infrastructural upgrades should be kept to the absolute minimum necessary to allow the

new building to function to the required standard set out in the Summary Design Brief (and expanded upon in the Preliminary Design Brief to be issued to the Design Team at appointment).

11.1.11.6 Design the ICT infrastructure to permit equipment communications with relevant data management packages.

11.1.11.7 Design the ICT infrastructure in order to provide flexibility in the provision of data outlets to service the Client data management requirements, and patient / staff communication security and comfort requirements.

11.1.11.8 Design the ICT infrastructure to utilise and integrate with existing hospital campus systems and HSE National strategies for ICT where appropriate and where these are available or anticipated in the short-term, (e.g., NIMIS).

11.1.11.9 The Design Team will be required to work with the Client and any Client ICT representatives to identify all touchpoints and interfaces between the existing campus and the new building. The ICT Architecture will be designed to integrate with existing ICT systems as deemed necessary by the Client and any Client ICT representatives. The Design Team shall design the ICT Infrastructure to facilitate these requirements.

[End of Appendix 11]

Appendix 12: Introduction to National Estates Information System (NEIS)

12 APPENDIX 12: INTRODUCTION TO NATIONAL ESTATES INFORMATION SYSTEM (NEIS).

12.1 Introduction to National Estates Information System (NEIS):

12.1.1 As part of the National Estates Information System (NEIS) HSE Capital & Estates is introducing a new Construction Management Platform to all Estates Offices. This new platform, Oracle Aconex, will be used on **all** projects and provide standardisation and consistency of approach for all Offices.

12.1.2 All members or participating organisations on the project will be required to register on the Aconex platform and **all** project and contract related communication will be managed via the mail function on the platform. This will become the default communication tool for each project (replacing traditional email).

12.1.3 The platform has a document management function and includes model, drawing, and document viewers. Whilst HSE Estates & Capital NEIS Team have endeavoured to configure the system to align with the relevant public works contracts Aconex will be used ONLY as a tool to aid document control and communication. In no circumstances will the use of Aconex relieve any party to a Contract of their obligations to comply with the provisions of the Contract. Any discrepancies in the set up or use of the Aconex platform MUST be brought to the attention of the System Administrator with immediate effect. The Form of Contract, Conditions of Contract and Contract Documents take precedence in all instances. In accordance with Clause 4.14 Communications of the Public Works Contract (PW-CF1) the term email will be deemed to include Aconex Mail in the context of any communication to be given or received under the Contract [including a notice, decision, objection, approval, certificate, determination, instruction, or request].

[End of Appendix 12]

Appendix 13: HSE Embodied Carbon Assessment Scope Designer Scope

13 APPENDIX 13: HEALTH SERVICE EXECUTIVE (HSE) EMBODIED CARBON ASSESSMENT SCOPE DESIGNER SCOPE

13.1 Key Definitions

Term:	Definition:
Embodied Carbon:	This refers to the emissions from upfront carbon (i.e. carbon emissions up to practical completion), the use stage (i.e. emissions from replacing materials, refrigerant leakage emissions etc.), and the end-of-life stage (i.e. emissions associated with deconstruction and demolition of the proposed building at the end of its life). This may commonly be referred to as a cradle to grave analysis. In accordance with EN 15978, this is Life Cycle Modules A1-C4, excluding operational energy (module B6) and operational water (module B7).
Life Cycle Modules:	Life Cycle Modules define the different stages where carbon impacts may occur throughout the life of a building. These are defined by EN 15978, and diagrammatised within EU Level(s) Indicator 1.2: Life Cycle Global Warming Potential and RICS 2nd Edition Whole Life Carbon Assessment for the Built Environment.
Product Stage Carbon:	This refers to impacts from the raw material supply, transport to a manufacturing site, and the manufacturing of the product itself. This information is typically reported within Environmental Product Declarations (EPDs) as a minimum, with generic carbon factors available from carbon tools such as One Click LCA. In accordance with EN 15978, this is Life Cycle modules A1-A3.
Sequestered Carbon:	Sequestered carbon refers to carbon stored within bio-based building materials, such as timber. This is typically excluded and reported separately from Upfront Carbon emissions, however, are included within Embodied Carbon emissions reporting.
Upfront Carbon:	This refers to the embodied carbon emissions associated with the product stage, transport to site, and construction stage. Upfront carbon therefore includes carbon emissions up to the practical completion of a building. In accordance with EN 15978, this is Life Cycle Modules A1-A5. The calculation of upfront carbon excludes sequestration benefits, which arise from carbon stored within timber building elements.
Whole Life Carbon:	Whole Life Carbon refers to the embodied carbon impact and the operational carbon impact (associated with the operational energy and operational water impacts) of a development.

13.2 Design Team Lead:

13.4.1 Stage (i): Preliminary Design:

13.4.1.1 At early stages of a project, the greatest reduction in embodied carbon can be achieved. According to Irish Green Building Council, as a project progresses, it becomes more challenging and more costly to make design changes to reduce embodied carbon. As such, it is recommended that consideration of designing out embodied carbon at the Preliminary Design stage is prioritised. This should include as a minimum:

1. Documentation of preliminary design decisions that reduce embodied carbon.

2. Input to the EU Level(s) Indicator 1.2: Life Cycle Global Warming Potential, Level 1 checklist. This includes providing responses for how the following decarbonisation principles have been incorporated within the preliminary design:

   (a) Efficient building shape and form.

   (b) Optimised Near Zero Energy Building (NZEB) Construction.

(c) Optimised material utilisation and circular value.

(d) Extending building and component service lives.

(e) Design for adaptability.

(f) Design for deconstruction.

13.4.1.2 Liaise with the carbon consultant to ensure that lessons learnt from similar healthcare projects are incorporated within the preliminary design stage decision making process to reduce embodied carbon and if concrete is being considered that low carbon cement material is specified as far as practicable.

13.4.1.3 Where applicable, holistically review and prioritise potential options for reuse of existing buildings (for example through retrofit) or reuse of existing building materials and structures. A section of the preliminary design report should be dedicated to the exploration of reuse, detailing the methods for how this has been prioritised within Stage (i).

13.4.2 Stage (ii)A: Scheme Design:

13.4.2.1 At scheme design stage, sufficient design information should be available to provide an early estimation of the total embodied carbon within the proposed development. It is proposed that optioneering exercises are undertaken at this stage to quantify embodied carbon reductions possible from key decarbonisation opportunities. Design team to define methodology and database. This applies to all disciplines

13.4.2.2 The carbon consultant shall lead on the calculation of embodied carbon with the input required from the design team as below:

1. Provide estimated material quantities for architectural building elements (façade, roof, finishes, etc.) for the proposed design along with estimations for proposed specifications of these elements. This should be provided in as much detail as feasible to inform Stage (ii)A embodied carbon calculations, and the setting of embodied carbon budgets and aspirational targets.

2. Discuss and agree core design assumptions with the carbon consultant to inform the calculations.

3. Provide a minimum of 2Nr. alternative architectural options to reduce embodied carbon within architectural building elements. Options provided should focus on embodied carbon hotspots identified as part of the embodied carbon calculations of the proposed design. These options should be provided to the carbon consultant in an agreed format, which will likely comprise material quantities and specification changes.

4. Provide estimated material quantities for external works building elements, in conjunction with the C&S Engineer. In addition, provide material quantities and/or specification changes for at least 2Nr. alternative options for external works in conjunction with the C&S Engineer to reduce embodied carbon within the external works. This may include changes to site layouts, or material selection to reduce embodied carbon.

5. Design team to provide pro/con analysis. Justification should be provided for why each option was or was not chosen to be taken forwards.

13.4.2.3 Agree with the carbon consultant:

1. Baseline carbon budget: Minimum targets that should be achieved based on the embodied carbon of the proposed design and optioneering exercise undertaken. The baseline carbon budget should be in the form of $kgCO_2e/m^2$ GIA and in line with RIAI benchmarks

2. Aspirational targets. It is recommended that aspirational targets are included which should represent a minimum of a 20% improvement on the baseline carbon budget. The aspirational target should be in the form of $kgCO_2e/m^2$ GIA and in line with RIAI benchmarks.

13.4.2.4 Based on the optioneering undertaken, a route to achieving the aspirational target should be discussed and agreed with other members of the design team, and the carbon consultant.

13.4.3 Stage (ii)B: Developed Design:

13.4.3.1 Assessing embodied carbon is an iterative process, and as such it is important that embodied carbon impacts are measured and reduced at each stage of design. At Stage (ii)B: Developed Design, a further embodied carbon assessment led by the carbon consultant should be undertaken, with progress monitored against the carbon budgets and aspirational targets established at Stage (ii)A.

13.4.3.2 Throughout Stage (ii)B, designers should factor embodied carbon into the decision-making process. This may include investigating and considering the embodied carbon impact of products they are specifying, with a view to reduce the embodied carbon impact of materials specified within the design. Designers should familiarise themselves with Ireland's Environmental Product Declaration (EPD) Platform to begin developing an understanding of product-specific embodied carbon impacts across high-impact materials. This exercise will be supported by the carbon consultant.

13.4.3.3 Works at Stage (ii)B should therefore include as a minimum:

1. Provide estimated material quantities for architectural building elements (façade, roof, finishes, etc.) for the proposed design along with estimations for proposed specifications of these elements. This should be provided in as much detail as feasible to inform Stage (ii)B embodied carbon calculations, and the setting of embodied carbon budgets and aspirational targets.

2. Discuss and agree core design assumptions with the carbon consultant to inform the calculations.

13.4.3.4 Agree with other design team members and the carbon consultant 4Nr. suitable options to model that reduce embodied carbon emissions. This may include:

1. Structural building elements (e.g. substructure, frame, upper floors etc.).

2. Building envelope (e.g. façade, roof, etc.).

3. Building services (e.g. heating, ventilation, and air conditioning, etc.).

13.4.3.5 Options provided should focus on embodied carbon hotspots identified as part of the embodied carbon calculations of the proposed design. These options should be provided to the carbon consultant in an agreed format, which will likely comprise material quantities and specification changes.

13.4.3.6 Justification should be provided for why each option was or was not chosen to be taken forwards.

13.4.3.7 Identify any risks with not achieving the carbon budgets and flag these on a risk register, with appropriate measures outlined to enable achievement of this target. Routes to achieving the aspirational target should be discussed and agreed with the carbon modeller and HSE.To include a risk register for mitigation actions, responsible parties, and deadlines/programme

13.4.4 Stage (ii)C: Detailed Design:

13.4.4.1 At Stage (ii)C, the design should be sufficiently progressed that a more accurate assessment of the embodied carbon is possible. At this stage, there is less flexibility to inform decarbonisation, however, considerations of embodied carbon impacts within design changes should be considered, particularly as part of the value management process. This is to ensure that carbon budgets set are achievable, and carbon impacts are factored into decision making process. Therefore, works at Stage (ii)C should include as a minimum:

1. Regular liaison with the carbon consultant to monitor and inform low embodied carbon decision-making.

2. Provide specifications of materials to the carbon modeller in an agreed format. Discuss and agree core design assumptions with the carbon consultant to inform the calculations. Where necessary, provide material quantity information to inform the calculations.

3. Compare results to carbon budgets and aspirational targets established. Any risks with not achieving the carbon budgets should be flagged on a risk register, with appropriate justification provided as to why the target is not achieved alongside measures outlined to enable achievement of this target. A comparison should also be made to with the aspirational target set, with a commentary provided outlining the routes required to achieving this and justification provided as to why this was not deemed to be achievable should that be the case.

4. Work with the carbon consultant to incorporate product-stage (Life Cycle Modules A1-A3) carbon targets within specifications for the top 10 highest upfront carbon (Life Cycle Modules A1-A5) materials.

5. Ensure that carbon is factored into the decision-making process throughout any value management exercises undertaken. This includes the provision of material quantities and specification changes that may occur through the value management process, thereby enabling the carbon consultant to calculate the embodied carbon impact of changes.

13.4.5 Stage (v): Commissioning and Handover:

13.4.5.1 To drive continual improvement across HSE project, lessons learned from the project should be disseminated back to the constructor, designers, HSE and the wider value chain where applicable. The designer should attend and provide feedback into a lessons learned workshop hosted by the carbon modeller to further support the continual feedback loop.

13.4 Civils & Structures:

13.4.1 Stage (i): Preliminary Design:

13.4.1.1 At early stages of a project, the greatest reduction in embodied carbon can be achieved. According to Irish Green Building Council, as a project progresses, it becomes more challenging and more costly to make design changes to reduce embodied carbon. As such, it is recommended that consideration of designing out embodied carbon at the Preliminary Design stage is prioritised. This should include as a minimum:

1. Documentation of preliminary design decisions that reduce embodied carbon.

2. Input to the EU Level(s) Indicator 1.2: Life Cycle Global Warming Potential, Level 1 checklist. This includes providing responses for how the following decarbonisation principles have been incorporated within the preliminary design:

   (a) Efficient building shape and form.

   (b) Optimised Near Zero Energy Building (NZEB) Construction.

   (c) Optimised material utilisation and circular value.

   (d) Extending building and component service lives.

   (e) Design for adaptability.

   (f) Design for deconstruction.

13.4.1.2 Liaise with the carbon consultant to ensure that lessons learnt from similar healthcare projects are incorporated within the preliminary design stage decision making process to reduce embodied carbon.

13.4.1.3 Where applicable, holistically review and prioritise potential options for reuse of existing buildings (for example through retrofit) or reuse of existing building materials and structures. A section of the preliminary design report should be dedicated to the exploration of reuse, detailing the methods for how this has been prioritised within Stage (i).

13.4.2 Stage (ii)A: Scheme Design:

13.4.2.1 At scheme design stage, sufficient design information should be available to provide an early estimation of the total embodied carbon within the proposed development. It is proposed that optioneering exercises are undertaken at this stage to quantify embodied carbon reductions possible from key decarbonisation opportunities. The carbon consultant shall lead on the calculation of embodied carbon with the input required from the design team as below:

1. Provide estimated material quantities for structural building elements (substructure, frame, upper floors, etc.) for the proposed design along with estimations for proposed specifications of these elements. This should be provided in as much detail as feasible to inform Stage (ii)A embodied carbon calculations, and the setting of embodied carbon budgets and aspirational targets.

2. Discuss and agree core design assumptions with the carbon consultant to inform the calculations.

3. Provide a minimum of 2Nr. alternative structural options to reduce embodied carbon within building's structure. Options provided should focus on embodied carbon hotspots identified as part of the embodied carbon calculations of the proposed design. These

options should be provided to the carbon consultant in an agreed format, which will likely comprise material quantities and specification changes.

4. Justification should be provided for why each option was or was not chosen to be taken forwards.

13.4.2.2 Agree with the carbon consultant:

1. Baseline carbon budget: Minimum targets that should be achieved based on the embodied carbon of the proposed design and optioneering exercise undertaken. The baseline carbon budget should be in the form of $kgCO_2e/m^2$ GIA and in line with RIAI benchmarks.

2. Aspirational targets. It is recommended that aspirational targets are included which should represent a minimum of a 20% improvement on the baseline carbon budget. The aspirational target should be in the form of $kgCO_2e/m^2$ GIA and in line with RIAI benchmarks .

13.4.2.3 Based on the optioneering undertaken, a route to achieving the aspirational target should be discussed and agreed with other members of the design team, and the carbon consultant.

13.4.3 Stage (ii)B: Developed Design:

13.4.3.1 Assessing embodied carbon is an iterative process, and as such it is important that embodied carbon impacts are measured and reduced at each stage of design. At Stage (ii)B: Developed Design, a further embodied carbon assessment led by the carbon consultant should be undertaken, with progress monitored against the carbon budgets and aspirational targets established at Stage (ii)A.

13.4.3.2 Throughout Stage (ii)B, designers should factor embodied carbon into the decision-making process. This may include investigating and considering the embodied carbon impact of products they are specifying, with a view to reduce the embodied carbon impact of materials specified within the design. It is recommended that designers should familiarise themselves with Ireland's Environmental Product Declaration (EPD) Platform to begin developing an understanding of product-specific embodied carbon impacts across high-impact materials. This exercise will be supported by the carbon consultant.

13.4.3.3 Works at Stage (ii)B should therefore include as a minimum:

1. Provide estimated material quantities for structural building elements (substructure, frame, upper floors, etc.) for the proposed design along with estimations for proposed specifications of these elements. This should be provided in as much detail as feasible to inform Stage (ii)B embodied carbon calculations, and the setting of embodied carbon budgets and aspirational targets.

2. Discuss and agree core design assumptions with the carbon consultant to inform the calculations.

3. Agree with other design team members and the carbon consultant 4no. suitable options to model that reduce embodied carbon emissions. This may include:

   a. Structural building elements (e.g. substructure, frame, upper floors etc.).

   b. Building envelope (e.g. façade, roof, etc.).

   c. Building services (e.g. heating, ventilation, and air conditioning, etc.).

13.4.3.4 Options provided should focus on embodied carbon hotspots identified as part of the embodied carbon calculations of the proposed design. These options should be provided to the carbon consultant in an agreed format, which will likely comprise material quantities and specification changes. To include a risk register for mitigations, responsible parties and deadlines.programme.

13.4.3.5 Justification should be provided for why each option was or was not chosen to be taken forwards.

13.4.3.6 Identify any risks with not achieving the carbon budgets and flag these on a risk register, with appropriate measures outlined to enable achievement of this target. Routes to achieving the aspirational target should be discussed and agreed with the carbon modeller and HSE.

13.4.4 Stage (ii)C: Detailed Design:

13.4.4.1 At Stage (ii)C, the design should be sufficiently progressed that a more accurate assessment of the embodied carbon is possible. At this stage, there is less flexibility to inform decarbonisation, however, considerations of embodied carbon impacts within design changes should be considered, particularly as part of the value management process. This is to ensure that carbon budgets set are achievable, and carbon impacts are factored into decision making process. Therefore, works at Stage (ii)C should include as a minimum:

1. Regular liaison with the carbon consultant to monitor and inform low embodied carbon decision-making.

2. Provide specifications of materials to the carbon modeller in an agreed format. Discuss and agree core design assumptions with the carbon consultant to inform the calculations. Where necessary, provide material quantity information to inform the calculations.

3. Compare results to carbon budgets and aspirational targets established. Any risks with not achieving the carbon budgets should be flagged on a risk register, with appropriate justification provided as to why the target is not achieved alongside measures outlined to enable achievement of this target. A comparison should also be made to with the aspirational target set, with a commentary provided outlining the routes required to achieving this and justification provided as to why this was not deemed to be achievable should that be the case.

4. Work with the carbon consultant to incorporate product-stage (Life Cycle Modules A1-A3) carbon targets within specifications for the top 10 highest upfront carbon (Life Cycle Modules A1-A5) materials.

5. Ensure that carbon is factored into the decision-making process throughout any value management exercises undertaken. This includes the provision of material quantities and specification changes that may occur through the value management process, thereby enabling the carbon consultant to calculate the embodied carbon impact of changes.

13.4.5 Stage (v): Commissioning and Handover:

13.4.5.1 To drive continual improvement across HSE project, lessons learned from the project should be disseminated back to the constructor, designers, HSE and the wider value chain where applicable. The designer should attend and provide feedback into a lessons learned workshop hosted by the carbon modeller to further support the continual feedback loop.

13.4 Mechanical, Electrical & Plumbing (MEP):

13.4.1 Stage (i): Preliminary Design:

13.4.1.1 At early stages of a project, the greatest reduction in embodied carbon can be achieved. According to Irish Green Building Council, as a project progresses, it becomes more challenging and more costly to make design changes to reduce embodied carbon. As such, it is recommended that consideration of designing out embodied carbon at the Preliminary Design stage is prioritised. This should include as a minimum:

1. Documentation of preliminary design decisions that reduce embodied carbon.

2. Input to the EU Level(s) Indicator 1.2: Life Cycle Global Warming Potential, Level 1 checklist. This includes providing responses for how the following decarbonisation principles have been incorporated within the preliminary design:

   a) Efficient building shape and form.

   b) Optimized Near Zero Energy Building (NZEB) Construction.

   c) Optimized material utilization.

   d) Extending building and component service lives.

   e) Design for adaptability.

   f) Design for deconstruction.

13.4.1.2 Liaise with the carbon consultant to ensure that lessons learnt from similar healthcare projects are incorporated within the preliminary design stage decision making process to reduce embodied carbon.

13.4.1.3 Where applicable, holistically review and prioritise potential options for reuse of existing buildings (for example through retrofit) or reuse of existing building materials and structures. A section of the preliminary design report should be dedicated to the exploration of reuse, detailing the methods for how this has been prioritised within Stage (i).

13.4.2 Stage (ii)A: Scheme Design:

13.4.2.1 At scheme design stage, sufficient design information should be available to provide an early estimation of the total embodied carbon within the proposed development. It is proposed that optioneering exercises are undertaken at this stage to quantify embodied carbon reductions possible from key decarbonisation opportunities. The carbon consultant shall lead on the calculation of embodied carbon with the input required from the design team as below:

1. Provide estimated material quantities for MEP building elements (heating, ventilation, air conditioning, etc.) for the proposed design along with estimations for proposed specifications of these elements. This should be provided in as much detail as feasible to inform Stage (ii)A embodied carbon calculations, and the setting of embodied carbon budgets and aspirational targets.

2. Discuss and agree core design assumptions with the carbon consultant to inform the calculations.

3. Provide a minimum of 2Nr. alternative MEP options to reduce embodied carbon within building's MEP design. Options provided should focus on embodied carbon hotspots identified as part of the embodied carbon calculations of the proposed design. These options should be provided to the carbon consultant in an agreed format, which will likely comprise material quantities and specification changes.

4. Justification should be provided for why each option was or was not chosen to be taken forwards.

13.4.2.2 Agree with the carbon consultant:

1. Baseline carbon budget: Minimum targets that should be achieved based on the embodied carbon of the proposed design and optioneering exercise undertaken. The baseline carbon budget should be in the form of $kgCO_2e/m^2$ GIA.

2. Aspirational targets. It is recommended that aspirational targets are included which should represent a minimum of a 20% improvement on the baseline carbon budget. The aspirational target should be in the form of $kgCO_2e/m^2$ GIA.

13.4.2.3 Based on the optioneering undertaken, a route to achieving the aspirational target should be discussed and agreed with other members of the design team, and the carbon consultant.

13.4.3 Stage (ii)B: Developed Design:

13.4.3.1 Assessing embodied carbon is an iterative process, and as such it is important that embodied carbon impacts are measured and reduced at each stage of design. At Stage (ii)B: Developed Design, a further embodied carbon assessment led by the carbon consultant should be undertaken, with progress monitored against the carbon budgets and aspirational targets established at Stage (ii)A.

13.4.3.2 Throughout Stage (ii)B, designers should factor embodied carbon into the decision-making process. This may include investigating and considering the embodied carbon impact of products they are specifying, with a view to reduce the embodied carbon impact of materials specified within the design. It is recommended that designers should familiarise themselves with Ireland's Environmental Product Declaration (EPD) Platform to begin developing an understanding of product-specific embodied carbon impacts across high-impact materials. This exercise will be supported by the carbon consultant.

13.4.3.3 Works at Stage (ii)B should therefore include as a minimum:

1. Provide estimated material quantities for MEP building elements (heating, ventilation, air conditioning, etc.) for the proposed design along with estimations for proposed specifications of these elements. This should be provided in as much detail as feasible to inform Stage (ii)B embodied carbon calculations, and the setting of embodied carbon budgets and aspirational targets.

2. Discuss and agree core design assumptions with the carbon consultant to inform the calculations.

3. Agree with other design team members and the carbon consultant 4Nr. suitable options to model that reduce embodied carbon emissions. This may include:

   a. Structural building elements (e.g. substructure, frame, upper floors etc.).

   b. Building envelope (e.g. façade, roof, etc.).

c. Building services (e.g. heating, ventilation, and air conditioning, etc.).

13.4.3.4 Options provided should focus on embodied carbon hotspots identified as part of the embodied carbon calculations of the proposed design. These options should be provided to the carbon consultant in an agreed format, which will likely comprise material quantities and specification changes. To include a risk register for mitigation actions, responsible parties and deadlines/programme

13.4.3.5 Justification should be provided for why each option was or was not chosen to be taken forwards.

13.4.3.6 Identify any risks with not achieving the carbon budgets and flag these on a risk register, with appropriate measures outlined to enable achievement of this target. Routes to achieving the aspirational target should be discussed and agreed with the carbon modeller and HSE.

13.4.4 Stage (ii)C: Detailed Design:

13.4.4.1 At Stage (ii)C, the design should be sufficiently progressed that a more accurate assessment of the embodied carbon is possible. At this stage, there is less flexibility to inform decarbonisation, however, considerations of embodied carbon impacts within design changes should be considered, particularly as part of the value management process. This is to ensure that carbon budgets set are achievable, and carbon impacts are factored into decision making process. Therefore, works at Stage (ii)C should include as a minimum:

1. Regular liaison with the carbon consultant to monitor and inform low embodied carbon decision-making.

2. Provide specifications of materials to the carbon modeller in an agreed format.

3. Discuss and agree core design assumptions with the carbon consultant to inform the calculations. Where necessary, provide material quantity information to inform the calculations.

4. Compare results to carbon budgets and aspirational targets established. Any risks with not achieving the carbon budgets should be flagged on a risk register, with appropriate justification provided as to why the target is not achieved alongside measures outlined to enable achievement of this target. A comparison should also be made to with the aspirational target set, with a commentary provided outlining the routes required to achieving this and justification provided as to why this was not deemed to be achievable should that be the case.
5. Work with the carbon consultant to incorporate product-stage (Life Cycle Modules A1-A3) carbon targets within specifications for the top 10 highest upfront carbon (Life Cycle Modules A1-A5) materials.

13.4.4.2 See that carbon is factored into the decision-making process throughout any value management exercises undertaken. This includes the provision of material quantities and specification changes that may occur through the value management process, thereby enabling the carbon consultant to calculate the embodied carbon impact of changes.

13.4.5 Stage (v): Commissioning and Handover:

13.4.5.1 To drive continual improvement across HSE project, lessons learned from the project should be disseminated back to the constructor, designers, HSE and the wider value chain where applicable. The designer should attend and provide feedback into a lessons learned workshop hosted by the carbon modeller to further support the continual feedback loop.

[End of Appendix 13]

Appendix 14: Procurement Management

14 APPENDIX 14: PROCUREMENT MANAGEMENT

14.1 General Services to fulfil the role of Procurement Management by the Quantity Surveyors assisted by members of the Design Team and the Employer's Representative:

14.1.1 Develop a comprehensive strategy, appropriate to the scope and scale of the works programme for the procurement of the works to ensure delivery in line with the core objectives of time, cost, quality, programme, and patient safety.

14.1.2 Lead workshops with HSE Estates and such other stakeholders as may be either necessary or required to inform discussion and analysis of the various available options. A minimum of 4 in-person workshops must be allowed for. Virtual meetings will take place as required to review individual issues.

14.1.3 Undertake a needs assessment to identify project requirements and stakeholder expectations.

14.1.4 Evaluate the market to assess supplier capabilities, availability and competition.

14.1.5 Undertake risk analysis as required informing the strategy development process.

14.1.6 Develop a tailored procurement strategy aligned with project objectives and legal requirements.

14.1.7 Determine the most appropriate procurement procedure based on project complexity and value.

14.1.8 Assess the optimum contract structure, including contract type.

14.1.9 Integrate sustainability considerations into the procurement process to promote responsible sourcing and sustainable development goals.

14.1.10 The final procurement strategy is to include a recommendation for the most appropriate delivery mechanism for the project. This is to include a full analysis of the available options with a detailed recommendation of the best procurement strategy, including form of contract.

[End of Appendix 14]

Appendix 15: Energy Efficient Design Facilitator

15 APPENDIX 15: ENERGY EFFICIENT DESIGN FACILITATOR

15.1 Energy Efficient Design Facilitator Requirements:

15.1.1 Generally:

15.1.1.1 The EED Facilitator is responsible for the day-to-day execution, coordination and management of the EED activities during the project lifecycle. They shall carryout the functions outlined below from Stage (i) Preliminary Design to Stage (v) Handover of the project.

15.1.2 Implementation Plan:

15.1.2.1 The EED Facilitator will issue an Implementation Plan **within one (1) month** of appointment as EED Facilitator. The Implementation Plan should include the following headings as a minimum:

1. Introduction:
   a. Define minimum energy performance & associated codes i.e. current Part L.

2. Confirm Roles (EED Owner, EED Facilitator):
   a. Include table with names and contact details.
   b. Include revision nr. and date for each report.

3. Energy Efficiency Objectives:
   a. Is 3rd party funding applicable e.g. EXEED, EEOS, BEC.
   b. Outline approach to developing Optimal Performance Criteria for:
      i. Passive Measures.
      ii. Equipment Efficiencies.
      iii. Renewable technology (reviewed / accessed).

4. Process for Implementing EED:
   a. Outline communication flow among team members from project inception to completion. Include flowchart to represent this.
   b. Outline process for considering/approving/disregarding design proposals In line with the HSE Estates document; Energy Efficient Design (EED): Guidance for Design Teams and Design Stage Report template
   c. EED report approval process.

15.1.2.2 The EED Facilitator as part of their core duties are also required to review and opine on the design proposals required to comply with the Government Climate Action Plan (latest version) (including Appendices and Annex), published by Department of the Environment, Climate and Communications, as detailed in Section 1.13 and 1.14 of the Scope of Services. Compliance with the CAP falls into two distinct categories (1) new builds and (2) refurbishment of existing facilities. The performance requirements are as follows:

1. New Building:
   a. Compliance with TGD Part L (NZEB).
   b. Ensure design provides and will facilitate a clear roadmap to net zero carbon in accordance with the HSE obligations for 2030 and 2050 i.e., 50% carbon reduction and net zero carbon respectively.

2. Existing Buildings must achieve:
   a. a minimum B BER rating.
   b. a minimum 50% improvement in energy efficiency against baseline carbon emissions.
   c. a minimum 50% reduction in carbon emissions against baseline carbon emissions.
   d. Ensure design provides and will facilitate a clear roadmap to net zero carbon in accordance with the HSE obligations for 2030 and 2050.
   e. Baseline energy and carbon emissions is the annual average consumption data for the years 2016 – 2018 inclusive.

15.1.2.3 The Design Team and EED Facilitator shall fully understand and take account of any benefits achieved (and projected) from de-carbonisation of the different utility infrastructures in completing the designs and reports for net zero carbon buildings.

15.1.2.4 The DT will provide an update as part of their contractual obligations on CAP compliance at Stage (i), Stage (ii)A, Stage (ii)B and Stage (ii)C for the EED Facilitator to review.

15.1.3 <u>Design Stages:</u>

15.1.3.1 The EED Facilitator will issue 3 Nr. detailed EED Reports for each of the Design Process Stages (Stage (i), Stage (ii)A and Stage (ii)B) as well as an EED Stage (v) Summary Report in line with the Project Programme.

15.1.3.2 Each of the design stage EED reports should include the following headings as a minimum:

1. Introduction.
2. Part L Compliance Declaration:
   a. Provisional BER.
3. Energy Data.
4. Calculate and Develop Energy Balance.
5. Create an Energy Balance Report.
6. Identify Significant Energy Users:
   a. System (lighting, heating, etc).
   b. Energy source (gas, electricity, etc).
   c. Annual Cost.
7. Develop a Register of Opportunities:
   a. Access & Evaluate Opportunities:
      i. Capital Cost.
      ii. Energy Saving kWh.
      iii. Cost Saving kWh.
      iv. ROI.
   b. Provide recommendations based on review. Results of Design Modelling using DSM and overheating analysis
      i. Agree Targets for the next phase of the Project (if applicable).

15.1.4 Construction Stage:

15.1.4.1 The duties of the various project team members in relation to the EED process during the construction phase are as follows:

1. The IDT must review all technical submissions issued by the Contractor and issue a report on project design compliance.
2. The EED Facilitator will undertake an independent review of the report.
3. This will be on-going throughout the Construction Stage.
4. ***Approval of technical submittals will remain the responsibility of the IDT members.***

15.1.5 Handover Stage:

15.1.5.1 The EED Facilitator will review handover documentation (commissioning certs, O&M's, safety file) and provide an independent report and analysis of the Energy Management protocol and submit a final EED Project Summary Report.

[End of Appendix 15]

Appendix 16: Quantity Surveying Stage Requirements/Services

16 APPENDIX 16: QUANTITY SURVEYING STAGE REQUIREMENTS/SERVICES

16.1 Quantity Surveying Stage Requirements - General:

16.1.1 **Note:** The following Quantity Surveying stage specific requirements are to be read in conjunction with those included in the body of this document.

16.2 Stage Specific Quantity Surveying Stage Requirements:

16.1.2 Stage (i) – Preliminary:

16.1.2.1 On or before the execution of the Contract provide executed collateral warranties from:

1. any sub-consultant to the QS for the benefit of both The Contracting Authority and any funder to the Project; and

2. the QS for the benefit of any funder to the Project in accordance with the ITT.

16.1.2.2 Visit the site and establish any factors likely to influence cost in relation to Project delivery.

16.1.2.3 Engage with the Contracting Authority, Design Team to evaluate costs for a range of project options.

16.1.2.4 Prepare an Outline Cost Plan, suitable at order of magnitude cost estimations for Stage (i). Develop the Cost Plan to a stage where it may be formally agreed with the Client as soon as possible. This cost service is to include all cost control and estimating also.

16.1.2.5 Subsequently, prepare initial budget estimates/cost models for all options under consideration. This cost service is to include all cost control and estimating also.

16.1.2.6 Advise on the cost of non-construction heads of cost to be incorporated into Cost Plan or development appraisal.

16.1.2.7 Advise on the economics of alternative designs, techniques of construction.

16.1.2.8 Advise on the cost implications of alternative construction and/or development programmes.

16.1.2.9 Agree assumed form of procurement (including any contractor designed elements of the scheme) and adjust the Cost Plan to suit.

16.1.2.10 Carry out Value Management workshop(s) in conjunction with the Design Team to support the Client in the development of the Design brief of the Project focussing on key Project deliverables.

16.1.2.11 Carry out a Value Engineering workshop (facilitated by fully qualified specialists) and publish consolidated schedule of Value Engineering suggestions, actions and timescales.

16.1.2.12 Convene further formal (facilitated) VE/VM workshops as reasonably required by The Contracting Authority.

16.1.2.13 Carry out initial Risk Management Workshop and produce initial Risk Register incorporating risk owners, likelihoods, impacts and Nominal Exposure.

16.1.2.14 Manage the risk review workshops, regularly update the risk register; advise and prepare appropriate cost provisions for the items included in the risk register through the use of industry standard cost risk tools (i.e. Monte Carlo simulation tool). Based on risk register advise on level of contingency to be included.

16.1.2.15 Advise, prepare and review with the Design Team Lead all aspects of the QS's required information to be included in the Stage report(s) for submission to the Client for their approval. Refer Section '*1.27: Stage Completion Reports*'.

16.1.2.16 Such other services:

1. as are reasonably incidental to the services identified above in relation to this stage of the services, and/or which are required to complete this stage of the QS services such that the Project can be completed in accordance with the Client's requirements.

2. as a reasonable QS would contemplate or infer as being required as part of this stage of the services for the Project; and

3. as are listed in the section "Such Other Services' as part of Stage (i) – (v) to the extent that those services apply or are relevant to this stage of the Services or any part thereof.

16.1.3 Stage (ii) – Design:

16.1.3.1 Direct the application of the principles of value management to design. Present Value Management analysis to Client and prepare iterations as required to arrive at decision. Pairwise and value-tree analyses, along with value tree and weighted option-criteria scoring matrices will be required.

16.1.3.2 Carry out regular cost checks as the detailed design and working drawings progress and provide cost intervention where necessary to maintain the project on budget.

16.1.3.3 Contribute to the updating of the project programme (by the Design Team Lead) with particular reference to tasks and associated durations and information requirements for QS services deliverables.

16.1.3.4 Assess and control the possible cost implications of proposed design changes.

16.1.3.5 Advise the Client / Design Team Lead regarding the constituent elements and tasks for the decided procurement strategy and programme for project construction phase. Make clear recommendations to the Client / Design Team on the number and scope of contracts, risk allocation and terms of payment. Assist the Design Team Lead / ER in executing the Client's relevant mandatory procedures.

16.1.3.6 Co-ordinate the evaluation / shortlisting of suitable contractors to invite to tender. Advise the Client on advertising for tenders, taking up references and conducting pre- qualification evaluations and/or clarification interviews.

16.1.3.7 In conjunction with the Design Team Lead and the other members of the DT, benchmark net to gross area efficiencies and other key factors highlighting opportunities for increasing efficiencies (or provisions that appear inadequate). Seek international education benchmarks if necessary for comparison.

16.1.3.8 In conjunction with the Design Team Lead advise on departures from HEA and/or international space norms.

16.1.3.9 In conjunction with the Design Team Lead advise on tendering and contractual arrangement to be adopted.

16.1.3.10 Produce alternative costings for alternative design solutions proposed for various parts of the building/Projects.

16.1.3.11 Prepare high level Life Cycle/Whole Life Cost studies and estimates of annual running/maintenance costs.

16.1.3.12 Prepare expenditure cash flow forecasts, including inflation prediction and revise as appropriate.

16.1.3.13 Provide cost advice on alternative design solutions or techniques of construction.

16.1.3.14 Prepare detailed high level Life Cycle/Whole Life Cost studies and estimates of annual running/maintenance costs.

16.1.3.15 Prepare costings for alternative sustainable design solutions and facilitate the Client's wishes for costed options within the tender.

16.1.3.16 Review all drawings/specifications produced during the Employers requirements /performance specification / detailed design / production information stages to ensure that designs are being developed in line with cost plan allowances.

16.1.3.17 Produce the Bill of Quantities (BQ), Form of Tender & Schedule and Invitation to Tender documents. The BoQ must include the Building Services elements measured in accordance with the relevant measuring rules applying at the time.

16.1.3.18 Provide advice to the Client in relation to the Building Contract and the works or the performance or execution thereof.

16.1.3.19 Advise on the procedures for the selection and method of appointment of the contractor and novation of any consultants to the contractor, is applicable.

16.1.3.20 Prepare Pre-Tender Estimate based on the completed Tender Pack including the Bills of Quantities.

16.1.3.21 Advise, prepare and review with the Design Team Lead all aspects of the QS's required information to be included in the Stage report(s) for submission to the Client for their approval. Refer Section '*1.27: Stage Completion Reports*'.

16.1.3.22 Such other services:

1. as are reasonably incidental to the services identified above in relation to this stage of the Services, and/or which are required to complete this stage of the Services such that the Project can be completed in accordance with our requirements.

2. as a reasonable QS would contemplate or infer as being required as part of this stage of the Services for the Project.

3. as are listed in the section "Such Other Services' as part of Stage (i) – (v) to the extent that those services apply or are relevant to this stage of the Services or any part thereof.

16.1.4 <u>Stage (iii) – Tender Action, Evaluation and Award:</u>

16.1.4.1 Assist and advise on the procurement process for the selection of prospective tenderers / MEAT Tender for the building works required for the Project.

16.1.4.2 Advise on the need for warranties to be provided by the building contractor and its subcontractors. Advise on processes when warranties are required by lending institutions to the Client / Contracting Authority.

16.1.4.3 Advise on the need for Performance Bonds or Parent Company Guarantees to be provided by the building contractor and its sub-contractors.

16.1.4.4 Collate the formal tender document pack including collating design information by others.

16.1.4.5 Agree the requirement for performance bonds, collateral warranties and guarantees in favour of the Client / Contracting Authority.

16.1.4.6 Assist with the coordination and preparation of contract documents.

16.1.4.7 Prepare Form of Tender, instructions to tenderers and other forms required for contract.

16.1.4.8 Invite tenders on behalf of The Contracting Authority.

16.1.4.9 Administer tender queries and tender addenda.

16.1.4.10 Attend any selection, mid-bid or post tender interviews with tenderers.

16.1.4.11 Check tender submissions for arithmetical accuracy, level of pricing and compliance with the tender documentation and instructions incorporating comments from the DT in respect of compliance with design intent, specifications and other design information provided as part of the tender process.

16.1.4.12 Conduct tender assessments as required on any works tenders suspected as being abnormally low.

16.1.4.13 Prepare reports on tenders incorporating appropriate recommendations.

16.1.4.14 Advise on any errors and qualifications included within tender submissions and administer the process for clearing these in accordance with the agreed processes.

16.1.4.15 Monitor the procurement progress against the current Cost Plan and Master Programme and initiate appropriate action in the event that tender prices exceed the Cost Plan or where the Master Programme is in delay.

16.1.4.16 Advise the Client regarding risks and insurance of the construction stage of the Project and check that agreed insurances are put in place.

16.1.4.17 Recommend suitable procedures to control variations and monitor that these are correctly implemented.

16.1.4.18 If required, produce an overall Project Cashflow Forecast incorporating all Project expenditures.

16.1.4.19 Check the building contractor's detailed cashflow projections based upon his anticipated programme and feed these into the overall Project Cashflow Forecast.

16.1.4.20 Provide advice in relation to The Contracting Authority's entitlement to deduct liquidated and ascertained damages.

16.1.4.21 Provide general advice in relation to the terms of the contract entered into between The Contracting Authority and the building contractor(s).

16.1.4.22 Prepare a full elemental cost analysis for the Project based upon tender or out-turn cost as appropriate.

16.1.4.23 Agree with The Contracting Authority the definition of the split between main contract works and any direct works contracts.

16.1.4.24 Prepare Tender Report on tenders received, assessment and appraisal of same and provide recommendations as appropriate.

16.1.4.25 Co-ordinate the preparation and signature of all building contract documents.

16.1.4.26 Agree the requirement for performance bonds, collateral warranties and guarantees in favour of The Contracting Authority.

16.1.4.27 Agree the requirement for performance bonds and guarantees. Agree the requirement for collateral warranties in favour of third parties. Report the progress of the procurement of the same.

16.1.4.28 Such other services:

1. as are reasonably incidental to the services identified above in relation to this stage of the Services, and/or which are required to complete this stage of the Services such that the Project can be completed in accordance with the Client's requirements.

2. as a reasonable QS would contemplate or infer as being required as part of this stage of the Services for the Project; and

3. as are listed in the section "Such Other Services' as part of Stage (i) – (v) to the extent that those services apply or are relevant to this stage of the Services or any part thereof.

16.1.5 Stage (iv) – Construction:

16.1.5.1 Draw up building contracts (and associated documentation) for formal execution by contractors.

16.1.5.2 Implement an appropriate cost management procedure(s) for the construction stage.

16.1.5.3 Obtain warranties and guarantees from contractors and sub-contractors in favour of The Contracting Authority. Advise The Contracting Authority on his/her rights under the warranties and limitation periods.

16.1.5.4 Implement an agreed Change Management process ensuring that all potential variations are costed and approved by The Contracting Authority before being formally issued.

16.1.5.5 Maintain a log of all changes proposed clearly identifying those that have been instructed, those which have been rejected and those which are pending. Review this schedule regularly with The Contracting Authority and design team.

16.1.5.6 Assist the ER in monitoring, evaluating and agreeing, in accordance with the contract, and report on any delay and compensation events that occur.

16.1.5.7 Visit the site and check contractors progress applications and prepare monthly interim recommendations for payment to contractors.

16.1.5.8 Advise The Contracting Authority as is practicable on the cost and programme implications of proposed changes to the Employer's Requirements in accordance with the change management system.

16.1.5.9 Advise on any contractual matters arising during the construction stage.

16.1.5.10 Prepare monthly cost reports following an agreed standard template (in conjunction with The Contracting Authority) at agreed intervals ensuring that the cost report takes account of all future instructions or other matters affecting cost and ensuring that the report includes and adequate contingency level taking into account of the specific Project circumstances and programme.

16.1.5.11 Update expenditure cash flow forecasts, monitoring actual expenditure against planned and reporting on same to the Contracting Authority.

16.1.5.12 Actively assist the ER in the dispute resolution process in line with the contract and actively

assist in the resolution of contractor claims / disputes as they occur.

16.1.5.13 Provide input and assistance to the maintenance of the "live" Risk Register.

16.1.5.14 Carry out evaluation in relation to partial / sectional completion of the works if required in accordance with the terms of the Contract.

16.1.5.15 Such other services:

1. as are reasonably incidental to the services identified above in relation to this stage of the Services, and/or which are required to complete this stage of the Services such that the Project can be completed in accordance with the requirements.

2. as a reasonable QS would contemplate or infer as being required as part of this stage of the Services for the Project; and

3. as are listed in the section "Such Other Services' as part of Stage (i) – (v) to the extent that those services apply or are relevant to this stage of the Services or any part thereof

16.1.6 Stage (v) – Handover of Works:

16.1.6.1 Advise the Contracting Authority regarding insurance values and other insurance related matters of completed Projects.

16.1.6.2 Prepare a preliminary review of claims/delay days etc and provide advice to The Contracting Authority with respect actions necessary to progress agreement.

16.1.6.3 Assist the ER regarding the settlement of contractual disputes.

16.1.6.4 If instructed to do so, carry out a full ascertainment of any loss claims submitted by the contractor/s.

16.1.6.5 Ascertain final value of all instructions for inclusion in the Final Statement.

16.1.6.6 Issue draft Final Account report to The Contracting Authority for review.

16.1.6.7 Review contractor's comments and issue Final Statement formally.

16.1.6.8 Obtain final agreement of contractor.

16.1.6.9 Provide services in connection with the preparation of an opening Statement / Response to Claim, forming part of a dispute resolution procedure.

16.1.6.10 Participate in a project completion review, to define the causes and lessons of the Project successes and problems, using the CWMF and best practices available.

16.1.6.11 Provide advice on closing matters in the form of contract and reconcile the Contracting Authority's / HSE accounting system balance tables for the Project with the cost plans.

16.1.6.12 Such other services:

1. as are reasonably incidental to the services identified above in relation to this stage of the Services, and/or which are required to complete this stage of the Services, such that the project can be completed in accordance with our requirements.

2. as a reasonable QS would contemplate or infer as being required as part of this stage of the Services for the Project.

3. as are listed in the section "Such Other Services' as part of Stage (i) – (v) to the extent that those services apply or are relevant to this stage of the Services or any part thereof

[End of Appendix 16]

Appendix 17: Schedule of Project Deliverables

APPENDIX 17: SCHEDULE OF DELIVERABLES.

Stage (i): Preliminary Design:	Stage (ii) A: Scheme Design:	Stage (ii) B: Developed Design & Planning:	Stage (ii) C: Detailed Design & Tender:	Stage (iii) Tender Issue, Evaluation & Award:	Stage (iv): Construction:	Stage (v): Handover and Final Account:
• Feasibility Cost Study. • BIM Site survey. • Clarification of Client's Preliminary Brief and complete full Design Brief. • Management Control Plan. • Risk Management Strategy • Complete Project Energy Balance Report and EED Summary Report with recommendations as per EED IS 399:2014. • Report on Climate Action Plan compliance and project Design route to net carbon zero • Budget Verification. • Site Studies and Site Appraisal and Report. • Preliminary H&S Plan (PSDP). • BIM Survey and Execution Plan. • Report on specialist surveys and investigations • Preliminary Room Information Sheets, equipment schedules to include all equipment types (Groups 1, 2, 3 &4) • Evaluation of options to achieve a Carbon Zero ready building using the Energy Efficient Design (EED) process and preparation of an EED report in the required format. • Progress and support the preparation of the Embodied Carbon Assessment Reports. Refer Appendix 13 • Produce a construction waste management plan. • Preliminary Procurement Approach Report • Stage (i) Report.	• Scheme design including Preliminary Floor Plans, Sections, Elevations. • Scheme design by Civil & Structural Consulting Engineers. • Scheme design by Building Services (M&E) Consulting Engineers. • Determine planning strategy including declarations, contributions, and levies, obtain determination on SID. • Preparation of an Energy Efficient Design (EED) Report in the required format including evaluation of options to achieve a Carbon Zero ready building using the Energy Efficient Design (EED) process. • Commence design for energy efficiency in operation as per EED IS 399. • Report on Climate Action Plan compliance and project Design route to net carbon zero • BIM Model. • Elemental Cost Plan(s) on Scheme Design. • Room Information Sheets, equipment schedules to include all equipment types (Groups 1, 2, 3 & 4). • Development of the Construction Waste Management Plan • Preparation of the Embodied Carbon Assessment Reports. Refer to Appendix 13. • Updating both Risk Management and Preliminary Procurement Approach in line with Infrastructure Guidelines. • Stage (ii)A Report.	• Obtaining all necessary regulatory/statutory approvals complete including Request for Further Information (RFIs), including appeals, reviews etc. • Procurement of any necessary specialist consultants. • Developed design including EED and BIM model. • Outline Specification. • Continuous cost checking with a final cost check on the developed design. • Commencement of 'Per Cent for Arts Scheme'. • Finalised Room Information Sheets, equipment schedules and Room Loaded Drawings to include all equipment types (Groups 1, 2, 3 & 4). • Stage (ii)B Pre-Planning Report incorporating complete design reviews as part of design for energy efficiency in operation, operational phase, troubleshooting and Energy Factors Review. • Report on Climate Action Plan compliance and project Design route to net carbon zero. • Updating both Risk Management and Preliminary Procurement Approach in line with Infrastructure Guidelines. • Stage (ii) B Pre & Post Planning Reports with provisional BER Certificate. • Part L Compliance Check + overheating analysis. • Note: Design is frozen at the completion of this sub-stage except for changes necessitated by the attainment of the Fire Safety and Disability Access Certificates. • Preparation of an Energy Efficient Design (EED) Report in the required format. • Progress and support the preparation of the Embodied Carbon Assessment Reports. Refer to Appendix 13. • Prepare a construction waste management plan • BIM Requirement from all DT Members as detailed in appendices 7, 8 and 9 and information included in the BIM Information folder	• Final detailed Specification; include EED Recommendations. • Report on Climate Action Plan compliance and project Design route to net carbon zero. • Completion of Tender documentation including Bill of Quantities in accordance with current agreed measurement rules. • Final Cost Check. • Pre-qualification of building contractor(s) and Named Specialists including Design Team Report with clear recommendation in relation to pre-qualified building contractors and Named Specialists. • Working drawings. • BIM Model & updated EIR for inclusion in tender documents. • Provision of a construction waste management plan for inclusion in the tender documents. • Stage (ii)C Report. • Updating both Risk Management and Preliminary Procurement Approach in line with Infrastructure Guidelines. • Pre-tender Report to include report on adequacy and completeness of tender documentation and the budget and relevant changes relating to market conditions, report on programme.	• Issuing of Tender documentation to Building Contractors and Named Specialists including Health & Safety Plan where necessary and EED. • Tender Review and Report to include clear recommendation of most economical advantageous tenders and cost comparison with budget cost. • Assess the EED requirements (aligned to IS 399) included in MEAT Tender. • Assess Contractors inspection notification framework and programme. • Preparation of contracts for signing. • Updating Infrastructure Guidelines information for draft Final Business Case.	• Statutory compliance including the issue of Commencement Notice. • Client Progress Reports to include cost report, programme, and contractual implications at monthly or agreed intervals. • Interim Payment Recommendations / Certificates at monthly or agreed intervals. • Site visits and inspections at reasonable timely and required intervals. • Continual monitoring of implementation of EED. Ensure the energy saving opportunities are properly implemented. • Delivery of asset tagging on core maintainable assets. • Complete and deliver asset data aligned to the NEIS Data Asset Register (AIR current version) or via digital transfer through the BIM integrator. • Issue digital safety file, O & M manuals and, advise on maintenance contracts and insurance. • Transfer of BIM model to Contractor and Specialists. • Certificates of Compliance with Planning Consent and Certificate at completion (Building Regulations) BER Certificate and registration on BC register. • Achieve Substantial Completion after comprehensive snagging of the building. • Monitor Contractor Compliance with Environmental, Construction Waste and Traffic Management Plans. • Engage with installers, suppliers, and specialist sub-contractors to further develop and refine the design for efficiency in operation and energy performance verification.	• On-going inspection of the Works; production of comprehensive snag list; supervision of satisfactory completion of the Works. • Draft Final Account. • Final Account. • Final Payment Recommendation / Certification. • Receipt from building contractor the complete Safety File which shall include 'As-Built' drawings (to include building and service installations) and Operation and Maintenance (O&M) manuals including validation of same. • Facilitate Client equipping and fit out. • A copy of the BIM model in native and IFC Data model format. • Transfer of asset data to NEIS Data Asset Register (AIR current version) or via digital transfer through the BIM integrator. • Report on insurances. • Formal hand-over of Works to the Client. • Report on energy consumption achieved post occupancy. Issue energy consumption report and DEC. • DSM model to be handed over to Client.