

**PRESENTATION BUILDING REGENERATION
LIBRARY, CULTURAL, CIVIC, AND
LEARNING SPACE
TULLOW STREET CARLOW**

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN
Revised 22.01.21

CARR COTTER & NAESSENS ARCHITECTS



CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

1 INTRODUCTION

This chapter describes the construction operations and phasing, and outlines the measures to be taken to ensure that the impact of the construction activities is minimised. The detailed design of the project is ongoing, but it is considered that the design has been developed sufficiently to discuss the potential environmental impacts of the proposed construction methods. Contractors will be required to submit a construction management plan for review prior to award of contract.

2 CONSTRUCTION SITE DESCRIPTION

The project comprises the refurbishment of the existing Presentation Convent building, demolition of the single storey library extension and its replacement with a two-storey over basement structure with a total area of 1075m². The site is 0.15 hectares, and the new building footprint at ground level is 963m². The remainder of the site will be reinstated with bike parking, delivery bay and public thoroughfares. The extent of hoarded off site is indicated on drawing 20CLB PP145. As the site is a constrained urban site, the contractor will be required to carefully manage the allocation of the ancillary facilities required, such as the contractor's compound, sanitary and canteen facilities, deliveries, storage, waste management and truck turning. It is envisaged that site offices will be accommodated inside the existing buildings and materials stored under the new steel frame.

3 GEOTECHNICAL INVESTIGATION AND PRE-CONSTRUCTION SURVEYS

Geotechnical investigations including slit trenches, Trail Pits, boreholes, and rotary cores have been undertaken. Additional investigations including archaeological slit trenches are recommended following demolition of the modern library extension. A GPR survey (ref 20-074-009 issued 16.09.20) has also been carried out to identify the location and type of existing underground services throughout the site.

4 CONSTRUCTION DURATION AND PHASING

Construction is scheduled to be carried out over a period of approximately 14 months. However, the external envelope of the building will be complete after nine months, and much of the finishing, fit-out and commissioning will be fully enclosed.

The main stages of the construction schedule are anticipated to be as follows:

erection of site hoarding
demolition of existing buildings (stripping of non-structural elements, followed by structural demolition) and stripping out of Presentation Building including removal of lift
cap off and divert services and utilities as required
Secant piling at lift and stairs core
excavate along Presentation Place
installation of basement slab and walls and retaining walls
Installation of foundation pads
Installation of under-slab services
Installation of GF slab
erection of superstructure, columns, beams, walls and floors
installation of windows and glazing
cladding and roofing
First and second fix services installation

internal finishes
Third fix services installation and commissioning
fitting out
external works, including external lighting, road paving and landscaping

5 SITE EXCAVATION AND SPOIL MANAGEMENT

Approximately 1835 cubic metres of soil and 30 cubic metres of rock will be excavated, to construct the basement, below-ground structures and drainage. The following hierarchy will apply to all excavated material:

most favoured	reuse of material on site for structural fill or landscaping
intermediate	reuse of material off-site, on other suitable local site
least favoured	disposal of material to licensed waste management facility

It is predicted that most of the material will be transported off site. The building contractor will be required to prepare a Construction Traffic Management Plan, which will describe the measures that will be taken to ensure that vehicle movements associated with the construction activities will have negligible effects on the local road users.

6 MANAGEMENT OF CONTAMINATED OR HAZARDOUS MATERIALS

Based on the recorded history of the site, and the available geotechnical information, it is not expected that significant volumes of contaminated soil will be encountered on the site. and any contaminated material excavated from these areas will be handled and disposed of in full accordance with current waste management legislation.

7 DEWATERING OF EXCAVATIONS

Water arising from site dewatering will be tested to see if it is suitable for discharge to the Council stormwater drainage network. No offsite discharge of water arising from dewatering will be carried out without first securing an effluent discharge licence.

8 ARCHAEOLOGICAL MONITORING OF GROUND WORKS

The results of the archaeological impact assessment indicate that the development site as a whole is an area of archaeological potential. All sub surface groundworks associated with the proposed development (such as the breaking and removal of any floor slabs during demolitions, levelling of ground, bulk excavation and excavation of foundation trenches etc) shall be subject to a programme of archaeological monitoring. This should be carried out by a suitably qualified archaeologist under license and in accordance with the provisions of the National Monuments Acts 1930-2004.

If significant archaeological material is encountered during the course of archaeological monitoring, then resolution of any such significant material will be determined in consultation with the National Monuments Service (DoH/LGH). Where possible, every reasonable effort should be made to preserve in situ or reduce the impact on any identified archaeological material. Where preservation in situ cannot be achieved, either in whole or in part, then a programme of full archaeological excavation should be implemented to ensure the preservation by record of the portion of the site that will be directly impacted upon. This work should be carried out by a suitably qualified archaeologist under license and in accordance with the provisions of the National Monuments Acts 1930-2004.

9 CONSTRUCTION METHODS

The proposed development will be constructed following best practice in safety and efficiency.

The primary structure of the new building will comprise a steel frame, ensuring a shorter assembly time on site. The first floor slab and plant area roof deck will incorporate a profiled metal deck composite slab. The rest of the roof will be lightweight profiled metal deck on purlins.

Reinforced concrete will be used in foundations, walls, slabs, band beams, stairs and screeds. It is intended that Ground Granulated Blast Furnace Slag (GGBS) will be used in the concrete mix. GGBS is a by-product of the steel industry, and its production generates much less carbon dioxide than portland cement. In addition to a small contribution to a relative reduction in national carbon dioxide emissions, the use of GGBS will help to enhance the durability and strength of the concrete, providing an overall enhancement of the building life cycle. GGBS mixes are widely available from most concrete suppliers; the concrete will be specified in accordance with IS EN 206.

A crane will be required on site to handle large components such as steel sections, decking and plant and equipment.

Rock levels are high on site. The SI report indicates that the rock is between 3.2 and 3.95m below finished ground floor level. The basement floor level will be set to avoid rock breaking with the exception of localised areas such as the lift pit.

Prequalification assessments will be carried out for all tendering contractors to ensure that a competent Contractor is selected to construct the building.

10 CONSTRUCTION MATERIALS

Transportation of building materials can significantly contribute to their environmental impact, particularly in relation to fossil fuels, and emissions of pollutants and carbon dioxide. Within the necessary constraints of performance, durability and cost, construction material will be sourced from local suppliers and manufacturers, where possible. Minerals (rock, stone and sand material) will be procured from local quarries as required.

11 EMPLOYMENT AND ACCOMMODATION

Throughout the construction phase there will be some variation in numbers working on site. It is expected that the peak construction workforce will be approximately 30. Temporary office accommodation and other construction facilities will be provided within the site, local to the construction work for the construction phase. All temporary units will be of a high standard, and suitable for purpose. The coordination of people and materials on site will be one of the key activities throughout the construction phase. A construction phase Traffic Management Plan will be prepared, and kept regularly updated as required.

Normal working hours during the construction phase will be as follows:

8.00am to 7.00pm Monday to Friday and 8.00am to 1.00pm on Saturday

No activity on site on Sundays or Bank Holidays

No noisy activity to be carried out between 7.00pm and 8.00am

No deliveries of materials, plant or machinery before 8.00am in the morning, or after 7.00pm in the evening.

However, it may be necessary to work outside the working hours detailed above, including at nights and weekends, at certain stages. Working outside normal hours may be necessitated through considerations of traffic management, safety or weather and sub-contractor availability. It is not anticipated that particularly noisy activities would generally take place outside normal hours, and the amount of work outside normal hours will be strictly controlled. The Contractor will be required to put in place an effective communication plan ensuring that local residents and business owners are kept informed about the construction process and that they are consulted if work is to be carried on outside the working hours noted.

12 DUST, CONSTRUCTION NOISE AND TRAFFIC

12.1 DUST

The Contractor will take into account best available techniques such as those outlined in the BRE/DTI document Control of Dust from Construction and Demolition Activities, 2003. A dust control plan will be prepared and implemented by the building contractor during the construction phase of the project. Construction activities are likely to generate some dust emissions, particularly during the site clearance and excavation stages. The following control measures will be implemented as part of the dust control plan:

- Vehicle speeds will be limited within the construction site
- Additional controls including dust extraction, dampening or screening will be employed during dry/windy times or when dust generation activities are being carried out including the following:
 - During very dry periods, surfaces in heavily trafficked locations and other areas where dust generation is likely will be sprayed with water;
 - A mechanical road sweeper and wheel wash facilities, automatic where practicable, will be used to ensure that mud and other wastes are not tracked onto public roads. The wheel-washing facilities will be located away from any likely sensitive receptors;
 - When dust-emission is likely then topsoil and other dust-generating material being removed from site will be transported in covered trucks, and during dry weather conditions the area of removal will be sprayed on a regular basis using a mobile tanker to control dust emissions;
 - Exhaust emissions from vehicles operating within the site, including trucks, excavators, diesel generators or other plant equipment, will be controlled by the contractor through regular servicing of machinery;
 - Where activities (such as drilling or pavement cutting, grinding or similar types of stone finishing operations) that may be a significant local source of fine particulate emissions, particularly PM10, are taking place, measures such as screening will be used to control emissions and prevent a nuisance within the locality.
- If cement is stored in a silo on site, a filter will be fitted to the silo.
- Dust deposition monitoring will be conducted using the Bergerhoff method (German Standard VD 2119, 1972) at a number of locations on the site perimeter. Results will be monitored to ensure compliance with the TA Luft guidelines. Should an exceedance of the TA Luft limit eg of 350mg per m² per day, occur during the construction phase, additional controls including dust extraction, dampening or screening will be employed during dry/windy times or when dust generation activities are being carried out.

12.2 NOISE AND VIBRATION

The NRA guideline construction noise and vibration limits are considered appropriate limits for this project, and should be incorporated in project contracts. The guideline daytime noise limit is 70 dB(A). Any items of essential equipment left running at night time should not exceed 45 dB(A) at the nearest sensitive property.

Noise aspects of the project should be managed in accordance with BS 5228 'Noise Control on Construction and Open Sites', which should be explicitly stated in project contracts. This will require the contractors to carry out detailed quantitative noise assessments of each proposed construction activity in advance of the works, and to have appropriate technical and organisational mitigation measures in place at the time of the works.

The building design has incorporated measures to reduce concrete cutting – services shafts and raised access flooring reduce the requirement for cutting and drilling.

In addition to the limitations on working hours outlined above, general guidelines for limiting the disturbance which may be applicable to this development are as follows:

- Ensure excavations, piling and other noisy activities are adequately screened from the adjacent sensitive locations
- Use modern, silenced and well-maintained equipment conforming to EU directives.
- Shut down equipment when not in use, where practicable.
- Site semi-static equipment such as generators, mixers, and compressors as far away as possible from sensitive locations and ensure that the orientation is the optimum for low noise.
- Utilise buildings under construction as screening where possible.
- Ensure that all workers are given training with respect to minimising noise and disturbance.
- Liaise with residents and owners of adjacent buildings on timings of any particularly high noise or high vibration works to ensure potential for nuisance is minimised.

12.3 TRAFFIC

It is assumed that College Street and Tullow Road will continue to be used during the course of construction. Access will also be maintained down Presentation Place for pedestrians. Construction traffic will not be permitted to back up on the roadways and deliveries will be timed to minimise disruption. Drawing 191-284-005 illustrates the vehicle tracking analysis for delivery vehicles that will be able to access the site. The users of adjacent parking spaces will be consulted prior to removal of access or parking spaces and alternative arrangements agreed with Carlow County Council.

Local residents and business owners will be consulted regarding traffic and access and kept informed throughout the construction process on traffic movement.

A safe walking route will be provided for pedestrians during the construction period. It is envisaged that pedestrians will have crossing points at both sides of the entrance in order to prevent pedestrians from crossing the site access. The Construction Traffic Management Plan will be issued to the design team for review before it is forwarded to the County Council and the Gardai.

The Plan will address the following issues:

- The construction traffic will not be permitted to park locally. The contractors will make use of public transport, or a park and ride facility during the construction phase.
- Delivery times will be arranged around off-peak times to avoid traffic problems.
- Within the constraints of noise limitation, large deliveries and concrete pours will be arranged for early in the morning.
- Details of areas where sight lines are restricted will be included.
- No materials may be stored outside the boundary of the site.

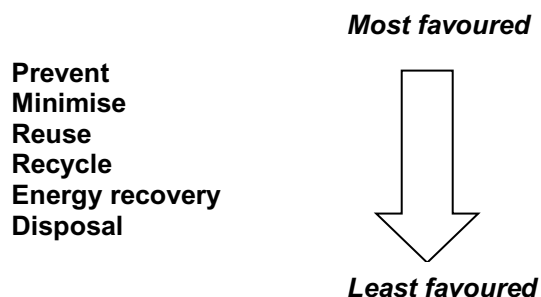
- Parking will not be allowed on public roads or footpaths.
- Only right turns will be permitted when leaving the site as College Street traffic is one-way.
- There will be adequate signage in place and it will comply with Chapter 8 of the Traffic Signs Manual and the Safety Health and Welfare (General Application) Regulations 2007. The signage will be maintained in position by the contractor for the duration of the project.
- Signage will include: Pedestrian and traffic directional signage, approach signage for construction Site, speed limits etc.
- The site entrance will be manned during working hours, with two operatives available to direct traffic and ensure safety of the public.

13 CONSTRUCTION WASTE

13.1 GENERAL

Construction and demolition waste will be generated from the demolition activities and from the construction of the proposed new development, including excavation of the basement level.

National Waste Reduction Targets have been set to reduce construction and demolition waste and to accelerate the transition to a circular economy between 2020 and 2025. Waste arising during the construction phase will therefore be carefully managed according to the following hierarchy:



This hierarchy would be implemented by identifying opportunities to firstly prevent waste from being produced, and secondly minimise the amount of waste produced. The practice of excessive purchase of materials and equipment to allow for anticipated wastage will be avoided. Where prevention and minimisation are not feasible, ways to reuse or recycle waste will be sought, preferably on-site to avoid the impacts caused by transporting it. If this is not feasible, then waste will be sent to an energy recovery facility, and only where there is no alternative, will waste be disposed of to landfill. It is predicted that most material will go off site and either an article 27 declaration will be sought or the material will be disposed of at a permitted licenced facility.

A senior manager will be responsible for waste management. The manager will be competent in waste management, and would receive training, where necessary, such as the CIF/FAS Construction and Demolition Waste Management module.

All waste removed from the site will be collected only by organisations with valid Waste Collection Permits (under the Waste Management (Collection Permit) Regulations 2007 and Amending Regulations 2008). All sites to which waste is taken will be checked in advance, to ensure that they have waste licences or permits allowing them to take the type of waste that is to be sent there (under the Waste Management Acts 1996-2011 and associated Regulations, Protection of the Environment Act 2003 as amended, Litter Pollution Act 1997 as amended and the Southern Region Waste Management Plan 2015-2021). This plan aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill wherever possible.

Hazardous waste will be prevented, minimised, and recovered where feasible, and only disposed of if this is not feasible, and this will be carried out in accordance with the National Hazardous Waste Management Plan 2014-2020.

Material that is likely to be surplus to requirements and disposed-of off-site may include excavated material, general construction debris, scrap timber and steel, machinery oils and chemical cleaning solutions. As part of contract requirements, the contractor will be required to develop, implement and maintain a Waste Management Plan during the construction works. The Waste Management Plan will document procedures for dealing with waste management including liaison with third parties, statutory bodies, undertakers and other companies. The Waste Management Plan will meet the requirements of the voluntary initiative by the construction industry. The National Construction and Demolition Waste Council has been established by the Forum for the Construction Industry on the recommendation of the Task Force B4 (Recycling of Construction and Demolition Waste), as approved by the Minister for Environment and Local Government in his letter dated the 11th December 2001.

13.2 PROCUREMENT STAGE

The contractor will consider how the products ordered might contribute to waste on site and aim to;

- choose suppliers who will take back all leftover or off-cut material; have packaging return systems; ensure that materials arrive on site in a 100% usable condition.
- establish whether suppliers are affected by the Waste Management (Packaging) Regulations 2003 and if they are members of Repak or self comply. Choose suppliers who are members of Repak, as packaging can be disposed free of charge.
- request suppliers take back excess, off-cut or damaged product waste
- have suppliers be responsible for supply of 100% usable product
- choose materials that can be supplied and laid with minimal damage and/or loss
- request that suppliers do not oversupply e.g. deliver roof timbers in lengths longer than requested
- plan ahead with site management and have materials delivered 'just on time'
- avoid products in excessive packaging
- work with suppliers to minimise packaging wastes, especially bricks, electrical fittings and interior tiles
- purchase materials in minimal, reusable, returnable, or recyclable packaging.

As well as suppliers, subcontractors will also be assessed under the same points. An approved list of subcontractors for tendering purposes will be prepared in conjunction with the design team. Prior to preparation of tender documentation for a package, a detailed Subcontract Package Pre-Tender Checklist will be prepared by the Contracts Manager and Contract Surveyor. The checklist will focus particularly on the subcontractors' willingness to participate in the project's Waste Management Plan.

13.3 DEMOLITION STAGE

The modern library extension, which is 430m², will be demolished.

It is unlikely that asbestos is present given the construction date of the extension in the 90s.

It is intended that the contractor will carry out source segregation of all construction and demolition waste which will include primarily:

- Concrete
- Steel
- Aluminium
- Timber
- Glass
- Gypsum products.

Waste will be consigned to licensed facilities and recyclable materials will be retrieved and diverted from landfill.

13.4 CONSTRUCTION STAGE

The construction of the basement will result in approximately 1865 cubic metres of excavated material.

It is proposed that waste arising during the construction stage will be segregated as follows:

- skip for timber
- skip for rubble
- skip for plaster
- skip for plastics
- bin for office paper.

Skips will be transported to licenced/permitted facilities. There will be general non-recyclable waste generated from demolition as well that must be disposed of at a licenced/permitted site.

Measures to ensure proper material handling and storage in order to reduce waste generation include the following:

- prevent damage during unloading
- prevent delivery to inappropriate areas of the site
- refuse to accept incorrect deliveries, specification or quantity
- avoid exceeding shelf lives
- prevent damage or contamination due to incorrect storage
- prevent loss, theft and vandalism
- prevent damage or spillage through incorrect or repetitive handling.
- locate skips/bins near work being carried out
- place waste material directly into container
- avoid double handling
- place waste material in correct labelled container
- ensure containers are covered if cover is provided to protect from weather damage
- reuse waste on site if possible
- make sure that as one skip is nearly full, the next one is on order.

The following elements will be produced following the appointment of a waste contractor:

- method and contractor arrangements for the removal of waste from site
- records of licences and waste collection/disposal permit
- estimates of percentage material waste against material usage, by material category
- final destination of waste
- percentage of waste going to each facility
- details of arrangements in place for handling subcontractors waste.

Details of arrangements in place for handling subcontractors' waste:

- subcontractors required to clean up after themselves and remove their own waste
- subcontractors to be made responsible for both the purchase of their materials and the disposal of their wastes, by the use of contract documents
- a limit to be set on the amount of waste that a subcontractor is allowed to generate
- inclusion of penalty clauses for losses above the limit, and bonus clauses for producing less waste
- subcontractors to be provided with both dedicated and adequate storage area
- subcontractors to be provided with a copy of the Waste Management Plan, and guidelines associated with their trade
- subcontractors to be made aware of the location of skips/bins.

Details of arrangements that will be developed for creating awareness amongst staff with regard to preventing, reducing and segregating waste:

- Waste Management Plan and relevant posters to be displayed in offices and canteen
- waste minimisation guidelines to be made available to different trades on site
- Waste Management Plan and trade guidelines to be sent to subcontractors

- all suppliers and subcontractors to be contacted with regard to The Waste Management (Packaging) Regulations 2003
- storage and waste areas to be highlighted to members of staff and subcontractors during meetings.

All site staff will be charged with following good practices and encouraged to provide feedback and suggestions for improvements in materials management. Everyone on site will be aware of who in the company has responsibility for devising materials management and handling protocols. This policy statement and its development over the course of the project will be discussed and reviewed during weekly progress meetings.

14 PREVENTION OF WATER POLLUTION DURING CONSTRUCTION

The employment of good construction management practices will serve to prevent contamination of soils, surface water or groundwater. The construction management of the site will take account of the recommendations of Control of Water Pollution from Construction Sites (CIRIA) to prevent contamination of soil, groundwater and surface water. Measures will include secure storage of materials. Bunded areas will be installed if required for containment of aqueous materials, however given the restrictions on the size of the compound, there will be very little storage on site, and as such this should not be an issue. Compound facilities, will be connected to a temporary supply to the existing services.

Method statements will be required for each activity listed below to ensure that adequate measures will be undertaken to contain any pollutants. Site activities considered include the following:

- demolition,
- excavation,
- earthmoving,
- dewatering of excavations and operating below the water table,
- piling and grouting,
- concreting operations,
- road surfacing,
- site drainage, and the control and discharge of surface water run-off from the site,
- works in and adjacent to watercourses and in special areas of conservation,
- oil and fuel delivery and storage,
- plant maintenance.

The protection measures include:

- training of site managers, foremen and workforce, including all subcontractors, in the pollution risks and the preventative measures,
- written procedures to address activities where there is a particular risk of pollution,
- emergency response plan,
- spill control equipment readily available,
- persons with responsibility for emergency response identified at the start of the project,
- control of site drainage and surface water runoff to remove silt and other potential contaminants,
- maintaining the site clean and tidy, with proper collection and storage of waste,
- storage of oils and fuel in bunds,
- drip trays for stationary plant,
- regular maintenance, and removal from site of leaking plant or equipment,
- dedicated refuelling locations for mobile plant.

Implementation of the CIRIA guide's recommendations will ensure that the risk of pollution of groundwater, soils and surface waters, resulting from the construction activities, is avoided.

Best practice in design and construction will be employed for the installation of storm water and sanitary drainage.

14.14 SITE TIDINESS

The following are some of the measures that will be taken to ensure that the site and surroundings are maintained to a high standard of cleanliness:

- a regular program of site tidying will be established to ensure a safe and orderly site.
- scaffolding will have debris netting attached to prevent materials and equipment being scattered by the wind.
- food waste will be strictly controlled on all parts of the site.
- mud spillages on roads and footpaths outside the site will be cleaned regularly and will not be allowed to accumulate.
- if space allows, there will be provision of wheel wash facilities for vehicles exiting the site
- in the event of any fugitive solid waste escaping the site, it will be collected immediately and removed to storage on site, and subsequently disposed-of in the normal manner.

15 CONSTRUCTION SAFETY

As required by the Health and Safety Regulations, a Health and Safety Plan (refer to Stage 2A Health and Safety Report) will be formulated which will address health and safety issues, from the design stage through to completion of the construction and maintenance phases. This plan will be reviewed as the development progresses. The contents of the health and Safety Plan will follow the recommendations of the Safety, Health and Welfare at Work (Construction) Regulations.

The building design incorporates fire resistant materials mainly but a strategy will be in place to deal with fire risk. A Fire Safety Plan will be developed dealing with suitable storage of materials, control of means of ignition, extinguisher types and location, emergency procedures etc.

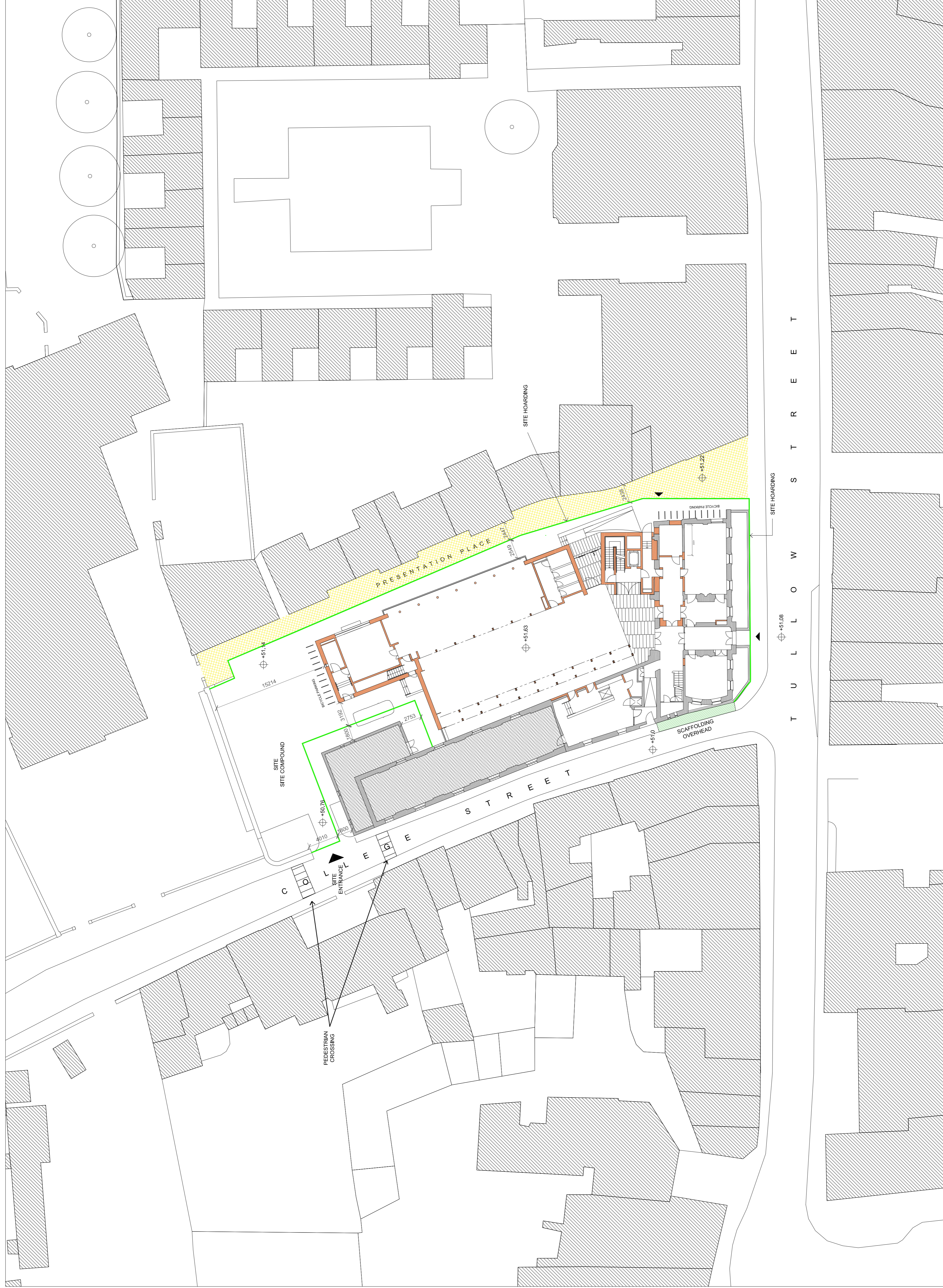
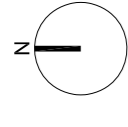
The contractor will control all works involving sparks and flame through use of a 'Hot Work Permit'. This ensures that flammable materials are removed where possible or otherwise suitably protected and that extinguishers are at hand.

Covid Management Plan

The Contractor will be required to submit a Covid Management Plan prior to commencement of the works. The Plan will include detailed proposals for managing the works safely in accordance with CIF Covid 19 Standard Operating Procedures and will need to be updated regularly to align with government restrictions in place during the construction programme. All personnel and visitors to the site should complete the CIF Covid19 induction programme.

APPENDIX

**SITE PLAN. 20CLB PP145
VEHICLE TRACKING PLAN 191-284-005
STAGE 2A HEALTH AND SAFETY PLAN**

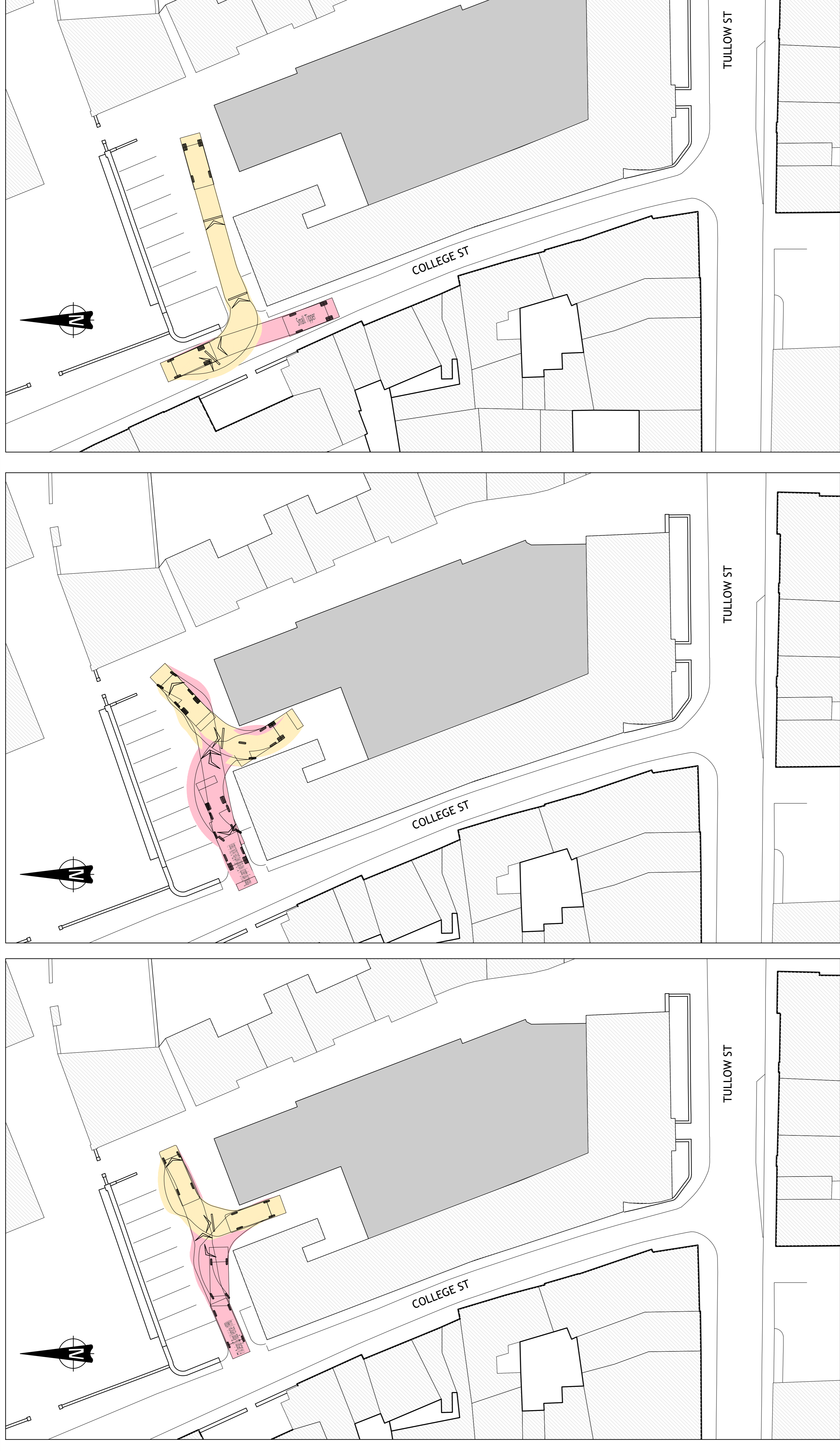


KEY
 — SITE BOUNDARY

Rev.	Description	Date
Project	PRESENTATION BUILDING REGENERATION LIBRARY, CULTURAL AND LEARNING SPACE TULLOW STREET, CORK	

Title
SITE HOARDING PLAN
 Project No. Drawing No. Date Scale @ A1
 20CLB PP_145 07.01.21 1:250

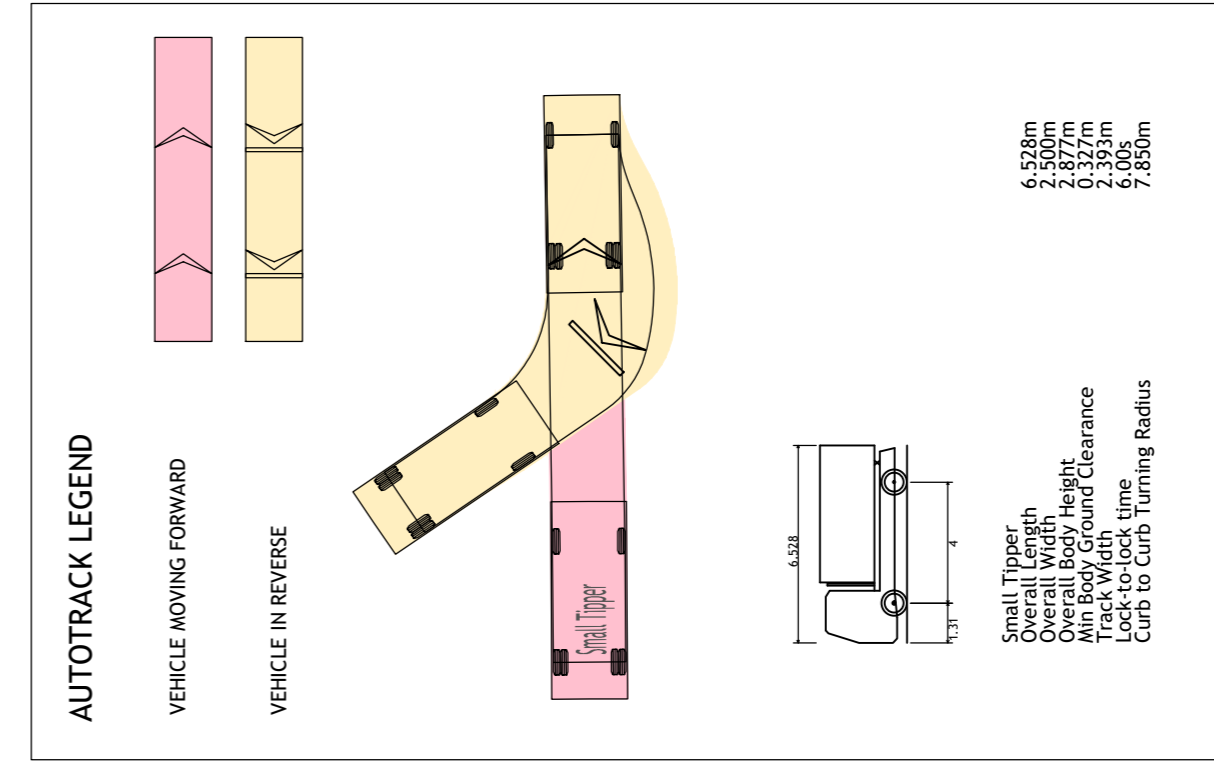
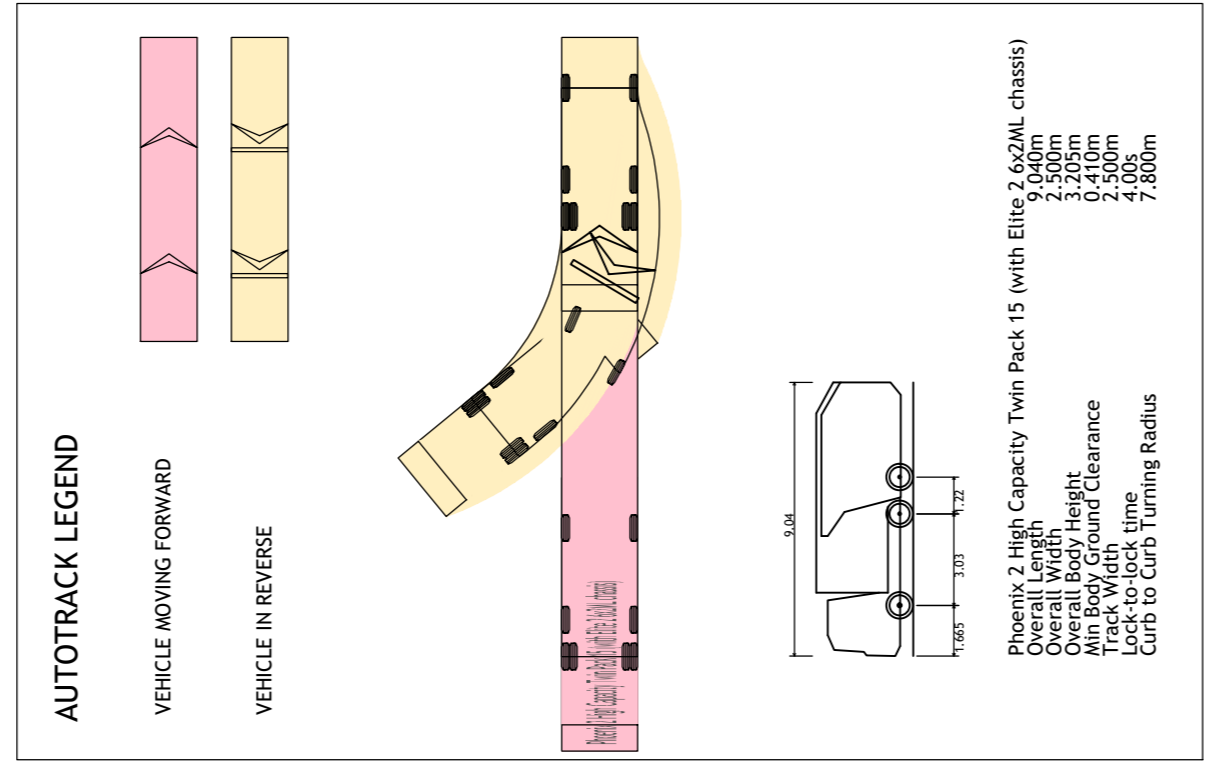
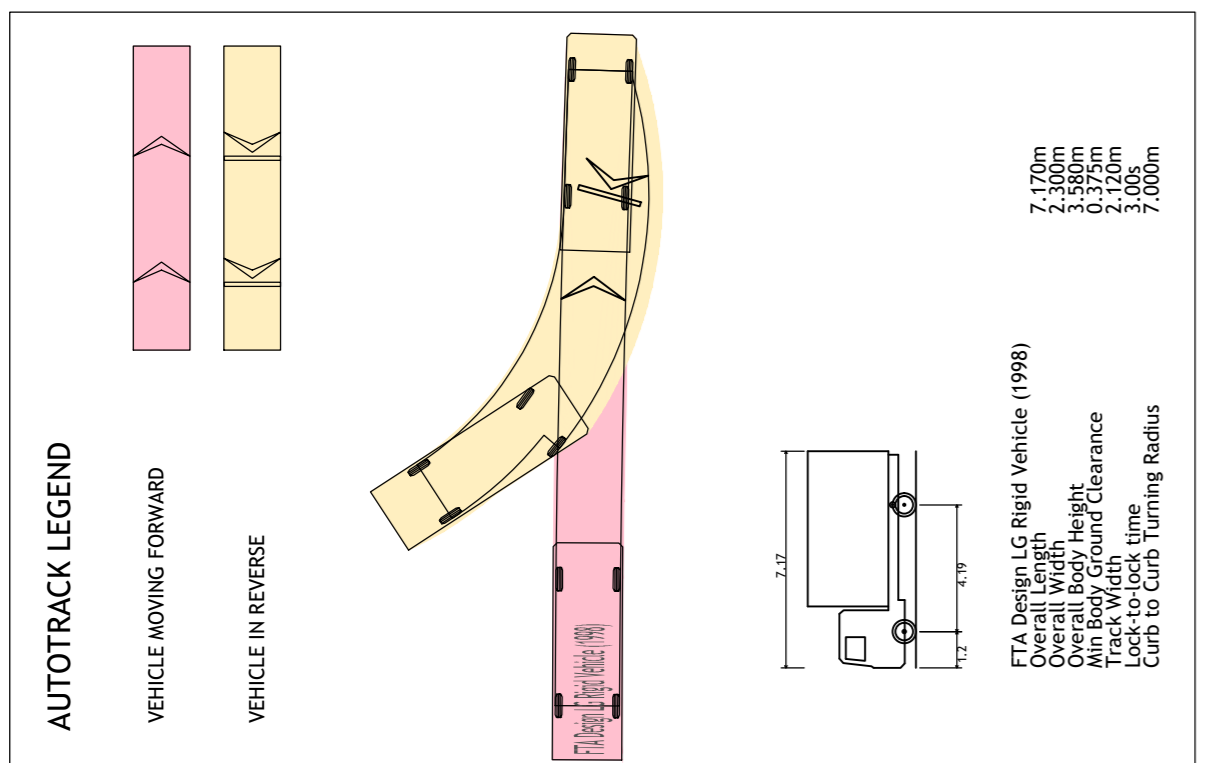
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 32 South Parade, Cork
 e: info@ccarrr.com
 w: ccarrr.com



SMALL RIGID TRUCK TURNING
SCALE 1:250

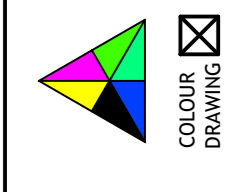
REFUSE VEHICLE TURNING
SCALE 1:250

SMALL TIPPER TRUCK ENTERING SITE
SCALE 1:250

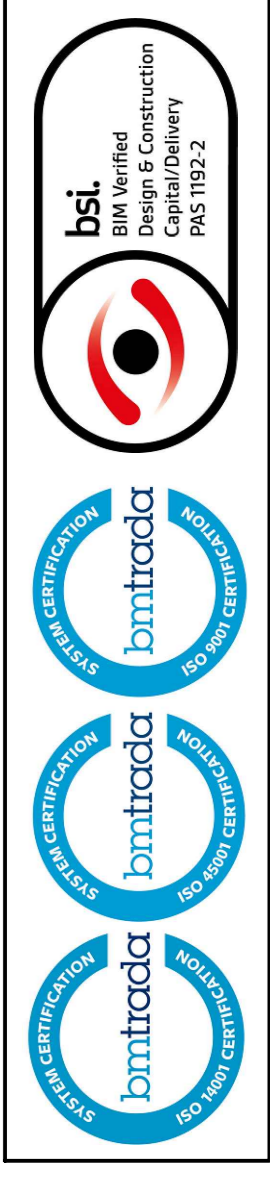


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Date Drawn: Nov 2020
Drawn By: R.A
Date Issued: Nov 2020
Issued By: D.F.



Rev	By	Date
PRO	DF	09/11/2020
PR1	DF	30/11/2020

Client:

Job: CARLOW COUNTY LIBRARY, TULLOW STREET, CARLOW.
Title: VEHICLE TRACKING ANALYSIS
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Stage: Preliminary
Scale @ A1: 1:250
Technician Check: P.M.J
Engineer Check: D.F.
Approver: C.O.B
Drawing No:
Rev: 191-284-005 PR1

Stage 2a Report



Project Title: Carlow Library Extension

Prepared For: Carlow County Council

Prepared By: Michael Gleeson

Date: July 2020

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1.0 STATUTORY REQUIREMENTS

1.1 AF1 Form

The AF1 form provides for notification of a project by the client to the Health and Safety Authority. A copy of completed AF1 Form is included in Appendix 1 of this Report.

1.2 Design Co-ordination and Co-operation

CMSE Consultancy as PSDP is satisfied that Design co-ordination is taking place. The Design Team share all pertinent reports and surveys.

We are satisfied with the level of co-operation achieved within the Design Team. Where recommendations are made to review designs or conduct further study these have been accepted in a spirit of co-operation.

1.3 Design in Accordance with the General Principles of Prevention

The current design was developed by the Design Team and we are satisfied that the team are considering the General Principles of Prevention as the design progresses.

A further schedule review will be required to ensure that the envisaged schedule of the final design is practicable and does not pose undue risks to the health and safety of persons performing the work.

Currently issues identified during the Design Team Meetings or from review of Designs are recorded in the preliminary risk assessments, which have been received from all design team members and can be provided on request. These issues will form the basis for the developed Design Risk Assessments at later stages in the project.

We do not foresee any unacceptable risks arising from the proposed designs as they currently stand and are satisfied, as far as we can be aware, that the design team is complying with their obligations under the Safety Health and Welfare at Work Act (2005) and in particular their responsibilities under the Safety Health and Welfare at Work (Construction) Regulations 2013.

1.4 Preliminary Safety and Health Plans

Preliminary Safety and Health Plans have been prepared and issued for the Site Investigation Works and Opening Up Works. These works were out in December 2020.

2.0 RISK IDENTIFICATION

2.1 The Project

The redevelopment of the existing library and museum will involve the construction of a significant new extension to provide additional space and facilities as well as the reconfiguration of the original 19th century building. The design team considered three options initially and a preferred option was selected during Stage 1.

The health and safety risks associated with the construction of the preferred design option have been reviewed. All risks associated with the site and building construction methods chosen will be incorporated into the Design Risk Assessments and Preliminary Safety and Health Plan to be issued at Tender Stage.

2.2 Construction Programme

It is important that timeframes are realistic as rushing a project can lead to accidents. A discussion will be facilitated by CMSE Consultancy between the design team members on setting a realistic time frame for completing the project. The outcome of this discussion will be detailed in the Preliminary Safety and Health Plan, however the final agreed programme will need confirmation from the Project Supervisor for the Construction Stage (PSCS) that it is practicable.

2.3 Design Safety

The purpose of maintaining Design Safety records is threefold:

1. Demonstrate Compliance with the General Principles of Prevention by recording Hazards eliminated during design.
2. Act as a mechanism for identifying hazards at an early stage in the design process so that they can be eliminated or mitigated at the earliest possible stage (design) where they can have the most impact (in terms of cost and choice).
3. Act as an aid to memoir during the design process to ensure that all hazards and issues considered during design are included in the Tender Issue Risk Assessments and Preliminary Safety & Health Plan.

Design Safety Records will be maintained during all stages of the project (including Construction). When an issue is identified it is assigned to one company from the Design Team/Contractor. All Designers Design Risk Assessments will be reviewed and approved during detailed design prior to incorporation into the Preliminary Safety and Health Plan.

2.4 Summary of Significant Risks

The Construction Sector has historically been a high risk sector in Ireland and it is important therefore that risks are identified and mitigated (with the General Principles of Prevention and the Hierarchy of Risk Control in mind).

Key Health and Safety Risks for any Construction Project include:

- Contact with Moving Vehicles and Machinery
- Working at Heights
- Manual Handling
- Housekeeping (Slips, Trips and Falls)
- Lifting and transport of loads
- Exposure to chemical agents (e.g. asbestos, silica dust)

The project poses a number of significant (but manageable) issues. The key risks for this specific project will include:

- Refurbishment or alterations to existing structures;
- Working on and adjacent to historic buildings
- Excavation works;
- Demolition work;
- Working at Height;
- Working with heavy prefabricated elements;
- Presence of existing services;
- Traffic Management.

Each of the risks will be addressed to the design team in the first instance to ensure that they are minimised where possible prior to the residual risks being handed over to the Construction Team. This risk reduction process will be actively managed at all stages of the project.

There is work at height required on the roof, upper floors, upper glazing units etc. Prefabricated components will also be required to be used and an assessment will be required on the space requirements for the use of cranes.

Two particular risks as per Schedule 1 of the current Construction Regulations are therefore currently identified:

1. Work which puts persons at risk of burial / falling from a height
2. Work involving the assembly of heavy prefabricated components.

Because of the location of the project in the centre of Carlow town, traffic management will also be a key risk requiring management by the contractor throughout construction to ensure that construction plant and deliveries do not pose a risk to construction workers, pedestrians and others.

Note: The project preliminary safety and health plan will be made available to all tendering contractors and should be used as the basis for the PSCS Construction Stage Safety and Health Plan.

2.5 Building Development Risks

The Existing Environment

- Access: The site is access from college street and there is an existing car park to the rear of the building. Pedestrians can access the site from either Tullow Street of College Street. The Contractor will be required to prepare a detailed traffic management plan prior to the commencement of construction clearly outlining the measures to be taken to protect pedestrians and members of the public from construction traffic and movements during the project. Separate pedestrian and construction site access points will be required.

- *Existing Structures:* The proposal comprises the redevelopment and extension of Presentation Building - Library and Cultural Hub at Tullow Street / College Street, Carlow. The structural engineers have carried out a visual inspection, which has not raised any significant concerns / issues. Further surveys and investigations will be required during detailed design to ensure that all hazards and risks associated with the existing buildings and site have been identified and assessed fully. Specialist surveys/investigations to include asbestos survey. It is noted that piling (contiguous or secant) will likely be required for the foundations where the basement abut the existing building and that the line of piles will help stabilise the ground under the existing structure and minimise settlement.
- *Existing Services:* There are existing services located adjacent to and on the site. A Ground Penetrating Radar (GPR) survey has been completed which indicates the locations of underground services around the site. This survey gives a clearer indication of existing underground services within the site and helps to confirm existing records and historical informational and inform the design. The Gas Networks Ireland (GNI) record drawing indicates a 63mm branch off the mains gas supply (on Tullow Street, College Street) along Presentation place within the rear car park of the Library. This existing service will require diversion.

All available information on underground services will be provided to the contractor prior to the commencement of works, however in order to control the risk the contractor will be required to ensure that all excavation works is carried out in accordance with the Health and Safety Authority (H.S.A.) Code of Practice for Avoiding Danger from Underground Services.

The Design

- The Architect has prepared design drawings for the proposed demolition and construction of the new building (including plans, sections and elevations). The form of construction will be reasonably straight forward and will not present any unusual or unforeseen hazards to a competent contractor.
- The design will comprise a structural steel frame with precast suspended floor slabs, lightweight metal deck roof and rendered blockwork infills. The glazed roof section will be a lightweight steel roof. The Engineers note also that the structure lends itself to an insitu reinforced concrete frame. The stability stair and lift cores will be insitu concrete.

Site Wide Elements

- The compound boundary will be secure at all times to risk of visitors entering compound area unknowingly.
- During detailed design a buildability review will be carried out. Possible traffic management (set down areas etc.) will also need to be reviewed further during detailed design.

2.6 Building Operation Risks

Cleaning and Maintenance

- The design team have carried out an extensive review of the designs (internal areas, facades and roof lights) with respect to access and maintenance and responded to all queries/concerns on access and maintenance. A flat gutter or walkway will be provided between the new pitched roof and the rooflight. The walkway will be designed to be suitable for periodic access and maintenance and will allow access for cleaning the glass and the gutters of the Museum roof. The latter will be enabled by the use of telescopic poles delivering.
- The use of a drone is recommended for periodic inspection of the roofs. Both slate and zinc roofs are designed for long life spans (60 years+) and if constructed in accordance with manufacturers recommendations, should not require frequent maintenance., unless there is storm damage. The flat roofed area adjacent to Presentation Place will also contain plant and will be accessible from the stairs core. Guarding will be provided at 1100mm.
- Inside the space, the requirement for access at height will be minimised by the use of suspended LED fittings which typically have a lifespan of 50,000 hours. The lighting may be accessed by MEWP or scissors lift which will influence the width of entrance doors. The high level glass louvres which provide natural ventilation will be operated by motorized actuators, controlled by the Building Management System via CO2 sensors. Access may be provided from the flat roof to the actuators for testing and maintenance. pressurized water through a u-shaped termination. Suitable products are made by Karcher, for example, which can be extended to 4 metres.

3.0 RISK MITIGATION

CMSE Consultancy will review the proposed programme and phasing of the project with the contractor to ensure that it does not pose a risk to existing building users and staff.

During the detailed design phase, CMSE Consultancy will attend design team meetings and maintain the Design Review Worksheet/Log. Designers will be challenged to ensure that their Designs comply with the General Principles of Prevention.

CMSE Consultancy will carry out further reviews of the designs during detailed design both from a future operations perspective (for compliance with the Safety Health and Welfare at Work (General Application) Regulations 2007 and appropriate Building Standards) as well as constructability and maintenance (Safety Health and Welfare at Work (Construction) Regulations 2013).


The risk register will be updated for inclusion in the Preliminary Safety & Health Plan and all Design Risk Assessments provided by all design team members will be reviewed. The Preliminary Safety and Health Plan will be developed for tender issue and include details of all known hazards and risks associated with the site along with the University's restrictions and specific requirements. The tender issue plan will also incorporate any specific conditions or requirements outlined in the Planning Permission, Fire Certificate and Disability Access Certificate Applications.

CMSE Consultancy will review the contractors traffic management plan and if necessary chair a specific traffic management review to ensure that suitable control measures are applied during construction.

During construction, the communications strategy for safety issues will be based primarily on the integrated relationship that the PSDP will have with the Clients Representative, Design Team, Contractors and PSCS. Where issues are identified these will be recorded in the Design Review Worksheet / Log which will be used to record all hazards. The content of this log is communicated on a periodic basis to the Contractor/PSCS.

Effective communication will be ensured through regular meetings with the PSCS. Temporary Works will be reviewed throughout the construction project. The PSCS will be required to provide a 2 week look ahead for temporary works designs. CMSE Consultancy will carry out a competency assessment of all proposed temporary works designers and ensure that there is co-ordination between the permanent works designers and temporary works designers through the use of the Temporary Works Design Certificate. Concerns in relation to site practices will be raised with the PSCS and the Client in a spirit of openness and honesty in order to ensure that the Safety Culture is fully developed and is reflected in the visible actions at site level.

APPENDIX 1: AF1 FORM SUBMITTED



Safety, Health and Welfare at Work (Construction) Regulations 2013

Approved Form (AF 1)

Regulation 10

Particulars to be notified by the Client to the Health and Safety Authority before the design process begins

NOTE:
This form is to be used to notify of any project covered by the Safety, Health and Welfare (Construction) Regulations 2013, which will last longer than 30 days or 500 person days. It can also be used to provide changes in appointments since initial notification of projects.
Any day on which construction work is carried out (including holidays and weekends) should be counted, even if the work on that day is of short duration. A person day is one individual, including supervisors and specialists, carrying out construction work for one normal working shift.
This Notification is to be made by Registered Post to HSA, Metropolitan Building, James Joyce Street, Dublin 1; or as may be directed by the Authority.

1 Client: Provide name, full address, telephone number and e-mail address for the Client. If more than one Client, please attach details of all Clients on a separate sheet.

Name:	Carlow County Council		
Address:	County Buildings Athy Road Carlow R93 E7R7		
Telephone:	059 9170300	E-Mail:	secretar@carlowcoco.ie

2 Project Supervisor Design Process and Health & Safety Coordinator: Provide name, full address, telephone number and e-mail address for the PSDP and Health & Safety Coordinator for the Design Process.

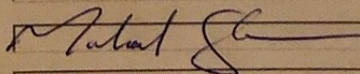
PSDP Name:	CMSE Consultancy	H&S C. Name:	
Address:	Ballymount House, Parkway Business Centre, Ballymount, Dublin 24	Address:	
Telephone:	015175270	Telephone:	
E-Mail:	michaelgleeson@cmse.ie	E-Mail:	

3 Project Supervisor Construction Stage and Health & Safety Coordinator, if known: Provide name, full address, telephone number and e-mail address for the PSCS and Health & Safety Coordinator for the Construction Stage.

PSCS Name:		H&S C. Name:	
Address:		Address:	
Telephone:		Telephone:	
E-Mail:		E-Mail:	

4 Information on Construction Work: Please provide your details of the following.

Description of Project:	The proposed works will involve the extension and development of the Presentation Building Library and Cultural Hub on Tullow Street, Carlow
Exact Address of Construction Site:	Presentation Building Tullow Street Carlow

Signed:  by or on behalf of the Client

Position: Consultant Date: 05-Jun-2020

APPENDIX 1: INITIAL DESIGNERS RISK ASSESSMENTS

DESIGN RISK ASSESSMENT	PROJECT NO: 20CLB	STAGE:1	CARR COTTER & NAESSENS ARCHITECTS	No. 32 South Terrace Cork Tel. 021 484 7213 Email: admin@cmsearchitects.net
Sheet: 1 of				

Project:... PRESENTATION BUILDING REGENERATION: LIBRARY CULTURAL CIVIC AND LEARNING SPACE...	Designers Risk Assessment to be completed by:		DESIGN TEAM:
Client:... CARLOW COUNTY COUNCIL.....	<input type="checkbox"/> Architect <input type="checkbox"/> Structural Eng <input type="checkbox"/> Civil Eng <input type="checkbox"/> Mechanical Eng <input type="checkbox"/> Electrical Eng <input type="checkbox"/> Landscape Arch	<input type="checkbox"/> QS <input type="checkbox"/> Specialist Des <input type="checkbox"/> Specialist Supplier <input type="checkbox"/> Temporary Works Designer <input type="checkbox"/> Contractor <input type="checkbox"/> Client <input type="checkbox"/> Other	Architects...CARR COTTER NAESSENS ARCHITECTS Structural Engineers...PUNCH CONSULTING ENGINEERS Civil Engineers...PUNCH CONSULTING ENGINEERS Mechanical and Electrical Engineer...VARMING CONSULTING ENGINEERS Quantity Surveyors...DEASY WALLEY PARTNERSHIP Archaeologist...RUBICON Conservation Consultant...CARRIG INTERNATIONAL
PSDP: ... CHRIS MEE GROUP..	Stage: Feasibility <input type="checkbox"/> Preliminary <input type="checkbox"/> Detail <input type="checkbox"/> Construction <input type="checkbox"/> Maintenance <input type="checkbox"/>		
Safety Coordinator: ... MICHAEL GLEESON ...			

Assessment Undertaken By: GAVIN MOLYNEAUX	Date of assessment: 10.09.20	Date returned to PSDP: 14.09.20	Sheet.... of ...	Checked By LOUISE COTTER
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Note: The following is a non-exhaustive generic list of possible hazards / risks for guidance purposes only. Assessor to augment as necessary.

HAZARDS	RISK			PERSONS WHO WILL BE AFFECTED				RISK CONTROL MEASURE TO BE UNDERTAKEN IN ORDER TO ELIMINATE HAZARD / REDUCE RISK TO AN ACCEPTABLE LEVEL	COMMENT / DESIGN INTERVENTION	RESIDUAL / PARTICULAR RISK TO BE PASSED ON TO AFFECTED PERSONS VIA RISK REGISTER AND PRELIMINARY SAFETY AND HEALTH PLAN.	
	Y	N	H	Public	Const Persons	Third Parties	Others			Y	N
Falling from height- exterior maintenance	X		H		X			X	Action: The proposed building footprint cuts off access to existing roof gutters via MEWP. The provision of a flat gutter accessible from the stairs core or Presentation Building will permit access to clean the rooflight and maintain the gutters of the Museum Building using an extended pole device. The new building will have a flat roof accessible from the stairs core and guarded at 1100mm.	X	Proposed methodology will be included in the Preliminary Health and Safety Plan
Falling from height- interior maintenance	X				X		X	X	Action: Specify LED lighting with long lifespan Source MEWP or scissor lift to facilitate access for maintenance and ensure doors are wide enough to accommodate	X	Proposed methodology will be included in the Preliminary Health and Safety Plan

I / We confirm that the above risks have been assessed in accordance with the Principles of Prevention as outlined in Schedule 3 of the SHWW Act 2005 and in accordance with Regulations 11 and 15 of the SHWW (Construction) Regulations 2013.

Designer(s)...CARR COTTER NAESSENS ARCHITECTS.

 Date: 14.09.20 PSDP Date: