CHAPTER TWENTY THREE SUMMARY OF MITIGATION MEASURES

23.1 INTRODUCTION

This chapter provides a summary of mitigation measures proposed in Chapters 6.0 to 21.0. The appointed contractor will be required to adhere to the mitigation contained in the EIAR for the protection of the environment and to ensure sustainable development.

23.2 INCORPORATED DESIGN MITIGATION

A number of mitigation measures have been incorporated into the design proposal, following an iterative assessment during the design stage. These mitigatory measures have shaped the design of the scheme, including the juxtaposition, height and materiality of the buildings; the design of site services including surface water management; the extent and provision of green corridors, biodiversity enhancement and urban parklands and the extent of demolition proposed.

The design rationale and detail employed seeks to mitigate potential negative effects on a series of environmental factors and considerations.

23.2.1 Population & Human Health

- Development of land and provision of residential units in an area that is located outside of identified flood risk areas;
- Modifications to site layout plan to accommodate greater pedestrian and cycle connectivity between the different development zones, in particular the Salesians and Quarry zones.
- Modifications to site layout to accommodate an increase in density, providing for a greater number of residential units to meet housing need demand and ensure compact growth in the city centre;
- Adaption of the reservoir to accommodate water based and recreational activities whilst also providing biodiversity islands.

23.2.2 Biodiversity

- The design of the proposed development was informed by the findings of bat surveys undertaken at the site, which found the quarry area to be the focus of commuting and foraging bat activity
- 2841m^2 of perennial planting, 87m^2 of wetland planting, 1611m2 of swale and 4527m^2 of grassland are proposed across the site, and will mitigate for the removal of the existing low-diversity scrub, grassland and recolonising bare ground.
- The epimural vegetation along the quarry walls will be allowed to revegetate following any removal of existing invasive species and ivy (If any) that may be required.
- The landscape design includes for the retention of the roost identified within the quarry walls. The reservoir arches will also be retained and not illuminated.
- Lesser Horseshoe Bats (LHB's) were recorded utilising the site for roosting.. Three bat houses were included in the design to provide choice availability in various weather, season, and life-cycle conditions and will replace the smaller Cathedine roosts put in place prior to demolitions.

- The reservoir will accommodate a biodiverse planting mix replacing the existing low diversity scrub and recolonising bare ground which will maintain connectivity along the identified commuting corridors.
- Phytoremediation islands will also be introduced to help purify surface water and will be planted with native flowering mixes to attract invertebrates and boost biodiversity. The planting mixes around the reservoir will promote prey availability for bats.
- A tree canopy will be re-established along the proposed steps into the quarry, which will replace the existing semi-mature gardens of the Victorian terrace. It was not possible to retain the existing trees as their roots extend below derelict buildings to be demolished.
- The quarry walls will be revegetated with climbing mixes where removal of existing vegetation during construction was necessary, to maintain prey availability and commuting features in this area.
- Tree canopy will be added to existing treelines adjacent to the Shipyard to strengthen potential commuting and foraging routeand increase prey availability in this area.
- Site specific lighting is used throughout he development for the batter visual comfort of wildlife including reduced outdoor lighting colour temperature of 2700K luminaires .
- Locations for the swift boxes have been included into the northern elevations of Block 2B – Central Wing and Block 2A – West Wing, within the Quarry Site
- An invasive species management plan has been prepared to remove the Japanese knotweed recorded within in proximity of the reservoir prior to construction.

23.2.3 Cultural Heritage - Architecture

- A ‘heritage led process’ has been adopted which has informed proposals for change ranging from demolition through to minor changes to existing walls, many of which are ruins. This has informed the resolution of a conservation strategy .
- Selective demolition focused on buildings of little or negative significance necessary to enable the successful reuse of the wider site.
- Removal of hazardous material from the site making access and use safer and permitting the progression of repair works.
- Building recording and the salvaging of fabric of interest is proposed. Material is to be set aside and reuse in the landscape and in the repair of the retained historic structures.
- Where elements are wholly new, they are intentionally designed to be read as such. Complimentary materials ensure no loss of quality.
- Structural interventions to consolidate the boundary walls along the North Circular Road have been designed to avoid and minimise potential impact to the historic walls.
- The line of the site boundary has been preserved. While the boundary wall is noted for reduction in height and partial removal, the threshold between the street and mill site will remain clearly legible.
- The articulation of the building facades, respond to the character of its area while also reflecting the close relationship to the Mill Complex.
- The massing, height and scale of all buildings is seeking to respond to the character of its area while also reflecting the close relationship to the Mill Complex.

23.2.4 Water & Hydrogeology

- SuDS methods have been designed for the development with the aim to minimise the final discharge rate, mitigate flood risk, and to ensure that the final discharge flow rate does not exceed the current levels. Additionally, SuDS will help to maintain or improve runoff water quality and minimise the use of buried attenuation tanks.
- Excess runoff from sites and SuDS will be routed to the reservoir for attenuation. Surface water calculations prove that there is sufficient capacity in the reservoir to attenuate excess runoff for a 1:100 year storm (plus 30% climate change and 10% urban creep) from adjacent sites.
- Optimising design depths of proposed infrastructure so that excessive excavations are avoided.

23.2.5 Landscape & Visual

- Establishing an integrated relationship between the proposed development and surrounding buildings and the broader urban landscape, incorporating aspects of prevalent built forms, scale, texturing, colour and materials.
- The insertion, positioning and detailed modelling of the buildings in order to assist in the visual assimilation of their mass;
- Appropriate architectural detailing to assist in the integration of the external building facades – including the modulation of openings and fenestration in a manner that reflects building function and harmonises with current local proportions and rhythms, in particular the Flaxmill.
- Simplification and rationalisation of the proposed roof lines.
- The use of appropriate materials to reflect the existing context and ensure a harmonious balance is achieved.
- Employing a subtle variation of tone, colour, texture and reflectiveness across the facades, particularly where the buildings may be seen from greater distance and the use of appropriate and harmonising colour, tones and materials to integrate with other buildings nearby and within the existing scheme, in order to reduce the apparent massing of the buildings.
- The provision, maintenance and management of an associated and sensitively considered soft landscape design for the development, which assists in the visual integration and screening of the buildings within the existing landscape - the introduction of appropriate new planting to such effect.
- Rationalisation of all services elements and any other potential visual clutter, its incorporation internally within building envelopes (as far as practically possible) and the inclusion of integrated screening at roof level to conceal plant etc, where this is not possible. It should be noted in this regard that the specific siting of communications antennae on top of PBSA Block 2A localises and limits their visual impact and the finishes proposed for them are effective in reducing their visibility on the skyline.

23.2.6 Climate

- The development has been designed to reduce operational energy demand where possible and will be a Nearly Zero Energy Building (NZEB) in accordance with the 2021 Part L requirements.
- The development has been designed to the Home Performance Index (HPI) Gold Standard, developed by the Irish Green Building Council.
- Flood risk areas are avoided where possible,
- Highly vulnerable uses such as residential development are in areas at lower risk (Flood Zone C) or raised to a higher level. Residential uses are primarily proposed within the Salesian and Stonetown Terrace sites. Where residential development is proposed in areas at risk of tidal

flooding (O'Callaghan Strand, Quarry site), the development will be raised above flood levels and sleeping accommodation will be located on higher floors,

- Safe access and egress for emergency vehicles are provided to all buildings.
- Finished floor levels are raised above the flood protection level with an allowance for climate change where possible. Raising of levels shall be considered in conjunction with compliance with the Building Regulations for access for all, economics of the development, aesthetics, and practical design.

23.2.7 Microclimate – Sunlight Daylight & Shadow Analysis

- Design optimisation solutions were tested in an attempt to improve daylight to the proposed apartments which included alterations to layouts an increase openings.
- With regards to the existing neighbouring properties and in particular the Lansdowne Hall apartments, mitigation measures were taken with regards to the proposed design of the Stonetown Terrace apartment block to protect these existing neighbouring apartments daylight. The mitigation measures included sculpting of the massing on the upper floors; reduction to the base floor levels from 11m to 9.5m to bring the overall building height down; and moving the building away from the existing Lansdowne Hall building by half a meter.

23.2.8 Material Assets – Traffic & Transport

- Focused provision on connections to future transport links including Bus Connects.
- Provision of bicycle, car and motorcycle spaces in accordance with the requirements of the Limerick Development

23.2.9 Material Assets – Resources & Waste Management

- Reuse of excavated material on site insofar as possible;
- Redesign of pipe network to avoid areas of significant rock where possible and mitigate excessive rock breaking on site;
- Design depths of proposed infrastructure are to be optimised to existing excavated levels so that excessive excavations are avoided where possible;
- Products and materials are supplied locally where possible; and
- Provision of Waste Storage Areas (WSA's) to facilitate segregation of waste types generated during construction.

23.3 CONSTRUCTION PHASE MITIGATION

23.3.1 Population & Human Health

No mitigation proposed

23.3.2 Biodiversity

23.3.2.1 Aquatic Features

a. Prior to proposed works within the reservoir, fish will be caught using electrofishing and all fish collected will be released into the River Shannon.

23.3.2.2 Terrestrial Habitats

b. Vegetation clearance along the quarry walls will be limited to necessary removal of clematis, ivy and buddleia species which overwhelm other existing vegetation and provide potential issues to the wall structure.

23.3.2.3 Fauna

c. A derogation licence (DER-BAT-2025-169) is in place for Phase I works relating to the remediation works on the Flaxmill building, where LHB roosts were identified. Mtigations apply to this phase and shall continue to be implemented during construction of the Application Site (Phase II)
d. Lighting during works in adjacent buildings shall be limited so as to provide alternative dark environments in buildings adjacent to the Flaxmill.
e. A derogation licence from the NPWS will be in place for the project. The derogation licence is issued by NPWS on a yearly basis, and therefore it is expected that multiple licences will be necessary. Each licence will be informed by monitoring undertaken at the site and will be specific to the works to be undertaken during the calendar year. NPWS will be informed of any progress made during construction with regular updates.
f. Prior to commencement, inspections and bat activity surveys will be carried out to ensure no bats are present within the buildings. These will be catered to each specific building. If these cannot rule out the presence of bats, precautions will be taken during the demolitions (manual removal of materials such as slates, delayed use of machinery to allow escape) and these will be undertaken under the supervision of an ecologist.
g. Demolition works will not be carried out during the bat activity season (April-September) within buildings where active day roosts are found. Where pre-commencement surveys identify any alternative roosts, similar timing mitigations will be applied.
h. A toolbox talk will be carried out by the project ecologist to inform working crews of the potential effects of the works on resident bats, and known roosting locations will be clearly pointed out.
i. Prior to demolitions being carried out, alternative roosting resources will be set up to retain roosting availability on site. These will be in the form of three cathedine bat houses, suitable for LHB.
j. A 5m buffer will be created around the roost in the north-western corner of the Quarry Site to avoid stockpiling and machinery in its immediate vicinity.
k. Other available roosting spaces will be retained along the quarry wall, under the reservoir tunnels and in buildings not proposed for demolition. The permanent bat houses included in the design will also be set up prior to demolition or as soon as possible following site clearance.
l. The use of the site by LHB will be monitored during construction using passive static detectors left on site and tuned to the specific frequency calls of the species, to reduce battery and storage usage. A minimum of three detectors at the proposed bat house locations, or nearby, are proposed.
m. A bat pole will be erected along the northern boundary of the Salesians, in the proposed public gardens, to be of use to pipistrelle species currently utilising the convent's yard.
n. As part of Phase 1 works on the Flaxmill, following remediation of the building, an unused attic space above the buildings' exterior staircase will be retained and isolated from the building. Access via bat slates will be provided into the space.
o. The provision of bat slates on the Flaxmill has also been included in the design to allow space for crevice dwellers to roost on the roof. These will not provide access to the interior.

p. Two bat boxes suitable for bridges will be erected under one of the tunnel arches to increase roosting suitability in this area. Access into the tunnels will be restricted to prevent disturbance and tampering.
q. A minimum of three woodcrete bat boxes will be installed within the site, with final locations to be determined by an ecologist following construction. Provisional locations include on or in proximity to the bat houses along the quarry walls.

23.3.2.4 Bat Disturbance

r. Plant machinery will be turned off when not in use and all plant and equipment for use will comply with the Construction Plant and Equipment Permissible Noise Levels Regulations (S.I. No. 632 of 2001).
s. Where construction is required in close proximity to installed temporary or permanent LHB roosts, these will be monitored by the appointed ecological clerk of works to assess whether they are occupied. If occupied, works will be avoided if possible until the roost is vacant.
t. Site clearance to facilitate the construction phase of the proposed development will be undertaken outside of the nesting bird season (1st March – 31st August) to ensure compliance with the Wildlife Act.
u. Vegetation clearance of non-native species and ivy in proximity of the soprano pipistrelle roost identified within the quarry walls will be avoided, where unjustified. If vegetation clearance is required in this area, it will be carried out outside the bat activity season (April-October) and all clearance works supervised by an appropriately qualified ecologist.
v. If lighting is required (likely only in early evening and morning during winter months), directional lighting will be used to prevent overspill on to sensitive areas, namely the reservoir and quarry areas. Exterior lighting during construction, shall be designed to minimize light spillage, thus reducing the effect on areas outside the Proposed Project, and consequently on bats. The luminaries will be of the type that prevent upward spillage of light and minimize horizontal spillage away from the intended lands.
w. the applicant commits to the use of lights during construction (such that they are necessary) in line with the following guidance that is provided in the Dark Sky Ireland Lighting Recommendations:
x. Every light needs to be justifiable,
y. Limit the use of light to when it is needed,
z. Direct the light to where it is needed,
aa. Reduce the light intensity to the minimum needed,
bb. Use light spectra adapted to the environment,
cc. When using white light, use sources with a “warm” colour temperature (less than 3000K, ideally 2700K).

23.3.2.5 Bird Habitat

dd. Cement or woodcrete materials will be utilised to ensure durability of Swift box nesting habitats.
ee. Site clearance to facilitate the construction phase of the proposed development will be undertaken outside of the nesting bird season (1st March – 31st August) to ensure compliance with the Wildlife Act. If vegetation clearance is required during the nesting bird season, this will be preceded by a nesting bird survey to ensure no nesting birds are present and all clearance works supervised by an appropriately qualified ecologist.

ff. Access to feral pigeon nesting areas will be prevented prior to demolition to ensure that no birds with young that have not fledged are present at the time of demolition.

23.3.2.6 Otter

gg. All plant and equipment for use will comply with Statutory Instrument No 359 of 1996 “European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations 1996”.
hh. Operating machinery will be restricted to the proposed works site area.
ii. Construction works will be limited to daylight hours and artificial lighting to facilitate works will not be permitted.
jj. The best means practical, including proper maintenance of plant, will be employed to reduce the noise produced by on-site operations.
kk. All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract.
ll. Compressors will be of the “sound reduced” models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.
mm. Machines which are used intermittently will be shut down or throttled back to a minimum during those periods when they are not in use.
nn. Any plant such as generators or pumps which are required to work outside of normal working hours will be surrounded by an acoustic enclosure.

23.3.2.7 Biosecurity

oo. All of the identified Japanese knotweed within the proposed development site will continue to be treated and any remaining contaminated soil will be removed from site to a licenced waste facility prior to construction works commencing. In the same way, any contaminated soil in proximity of the Shipyard found to be contaminated with Himalayan knotweed will be removed prior to any earthworks in this area.

23.3.3 Cultural Heritage - Archaeology

a. A pre-construction programme of targeted archaeological test trenching under licence by the National Monuments Service, will be undertaken within the proposed Masterplan site inclusive of the proposed development site. Test excavation at predevelopment phase will identify the nature, scope and survivability of subsurface archaeological, industrial and maritime heritage. This will assist in quantifying the extent of the subsurface heritage and ensure that a well-planned and structured or phased approach to monitoring and, where applicable, archaeological excavation occurs to minimise or eliminate any adverse impacts upon construction schedules.
b. Archaeological monitoring of construction shall be undertaken subject to the findings of the test excavation.

23.3.4 Cultural Heritage – Architecture

a. Technical designs shall be resolved in sufficient detail to provide the contractor with the information needed to protect built heritage. These shall inform adjustments to the designs to ensure conservation principles can be applied to preserve the assets special interest.
b. Consultation with the Conservation Officer including submission of reports, detailing compliance status and any incidents or corrective actions shall be taken.

c. Prior to demolition, a conservation surveyor / architect shall be employed to offer guidance on the process for preservation of interest where the removal of structures and features from site is proposed.
d. A demolition methodology shall be prepared by the contractor in consultation with the accredited conservation architect / surveyor. This must reflect the philosophy set out in the design documents and as described in sections 2.5 of the Architectural Design Report based on the method of dismantling to ensure the maximum retention of fabric for reuse. The methodology shall be agreed and in place prior to the commencement of demolition.
e. A comprehensive record of findings relative to the existing architectural heritage shall be maintained. This will be through the augmentation of the record created to support the design development. The record shall include the following:
   - Statement of Significance – *periodic updates when new information comes forward*
   - Building Records – *update with enhanced record obtained via observations of dismantling / demolition.*
   - Salvage and Reuse – *coupled with Building Recording, development of the salvage record with design review to allow for materials to be retained and utilised within the repair works.*
   - Social History & Interpretation – *a consultant must be employed to lead on the development of the site's social history. Findings must inform site-wide interpretation.*
f. Designs for the consolidation and repair of structures within the Flaxmill Complex that possess special interest shall be undertaken by a conservation accredited architect / surveyor prior to the commencement of demolition. These shall be executed in accordance with conservation principles by appropriately qualified, experienced and skilled crafts people.
g. Prior to demolition stabilisation measures and repairs shall be implemented as soon as is practicable during construction to ensure retained structures are stabilised, including work to stabilise the Main Mill shall secure vulnerable fabric.
h. Protected structures that have yet to be stabilised prior to the progression of new development shall be assessed and secured to minimise the risk of construction phase activity giving rise to unintended loss.
i. A Construction Phase Plan shall be prepared by the contractor prior to commencement of demolition, including current assessments of the condition of the historic buildings identified for retention and that have potential to be negatively impacted by construction activity. The plan shall include measures to prevent unintended loss such as that which would arise from a vehicle colliding with a building. It shall include the preparation of briefing packs for all parties involved in works on site to ensure the workforce are aware of the sites special interest.
j. Where historic fabric is to be addressed by the works, temporary measures shall be designed to first avoid impact and second to minimise loss and impact. A team of experienced conservation specialist shall be in place to support the contractor so that risk of adverse impacts on the heritage can be minimised.
k. The contractor shall have an appropriately qualified heritage manager to help ensure protection and care of the site's heritage is managed.
l. Salvage of materials shall be led by a conservation specialist to ensure maximum retention for reuse and / or appropriate crating where fabric has to be stored.
m. The contractor and interpretation consultant shall work closely together to develop a construction phase interpretation plan, using scaffold and site hoarding as a canvas for interpretation This can be used in co-ordination with LTTs communications strategy.

23.3.5 Land & Soils

23.3.5.1 Asbestos

a. The mitigation specific measures as proposed by Phoenix Environmental Safety Ltd in their 2025 Asbestos Survey Report shall be implemented, including:
   - Asbestos containing materials shall be removed prior to the commencement of any works;
   - A licensed asbestos removal contractor should be contracted for removal and disposal of asbestos waste; and,
   - All asbestos removal works shall be undertaken in full compliance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006–2010 (S.I. No. 386 of 2006).

23.3.5.2 Excavation & Waste

b. Stripping and management of hardstanding, made ground, subsoil and C&D waste materials arising from the demolition of existing buildings and structures will be carried out in a controlled way, coordinated with the proposed staging for the development, and will be removed from Site as soon as possible.

c. All waste material will be removed for offsite disposal or reused to a suitably licenced / permitted waste facility, or via. Article 27 (where applicable), in accordance with the Construction & Demolition Resource and Waste Management Plan (CDRWMP) (ARUP 2025), submitted as part of this planning application, The Contractor(s), in consultation with the Client and the Engineer, will be responsible for removing and replacing with suitable material as required.

d. All waste arising from the proposed development, during the Demolition and Construction phase (including enabling works) will be managed in line with the principles and objectives set out in the Construction & Demolition Resource and Waste Management Plan (CDRWMP) (ARUP 2025), submitted as part of this planning application, ensuring compliance with best practice in prevention, segregation, recovery and disposal and align with regional waste infrastructure principles and policy.

e. A project specific Detailed Resource and Waste Management Plan (developed in accordance with relevant 2021 EPA Guidance, and the CDRWMP (ARUP, 2025)) shall be fully implemented onsite for the duration of the project.

f. The duration that subsoil layers are exposed to the effects of weather will be minimised. Disturbed subsoil layers will be stabilised as soon as practicable (e.g., backfill of service trenches, construction of road capping layers, construction of building foundations and completion of landscaping).

g. Material at the following locations requires excavation, and will not be reused onsite:
   - **Stonetown Terrace Building** – all onsite C&D material; and made ground / subsoils to a depth of 1.5m BGL (existing ground level) or to the maximum excavation / piling depth of foundations (if greater).
   - **O'Callaghan Strand Building** – all made ground / subsoils to a depth of 1.0m BGL (existing ground level) or to the maximum depth of excavation for foundations (if greater).
   - **Flax Mill site (PBSA / Quarry Building)** - all made ground / subsoils to a depth of 3.0m BGL (existing ground level) or to the maximum depth of excavation for foundations (if greater).
   - **Main Shipyard site** – all made ground / subsoils excavated to facilitate the installation of proposed utilities (including drainage), tanks and any proposed underground structures in this area.

   This material will be classified, managed, transported and disposed of offsite in accordance with the requirements of the Waste Management Act 1996, as amended, the Waste Framework

Directive 2008/98/EC of the European Parliament and Council on waste and any relevant subsequent waste management legislation.

h. At all other locations onsite, excavation of material will be minimised as much as possible to reduce the impact on land, soils and geology. Where soil material is unsuitable for use or where excess soil is generated with no certainty for use, soils (including Made Ground) will be appropriately sampled and tested prior to offsite removal. Soils will be classified in accordance with the EPA Guidance (2019). It will be the contractors responsibility to ensure that all waste soils are classified correctly and managed, transported and disposed of offsite in accordance with the requirements of the Waste Management Act 1996, as amended, the Waste Framework Directive 2008/98/EC of the European Parliament and Council on waste and any relevant subsequent waste management legislation.

23.3.5.3 Concrete Crushing

i. Temporary concrete crushing activity will be carried out by the Contractor(s) in accordance with the requirements of Limerick City and County Council / EPA, ensuring that all required statutory permits / licences (Waste Facility Permit, Certificate of Registration, or EPA Licence) are in place prior to commencement of such operations, and compliance of same during the relevant period of works.

23.3.5.4 Prevention of Soil / Bedrock Contamination

j. The contractor will be responsible for ensuring the following measures are fully implemented. The measures will be incorporated (as required) during Detailed Design Stage and will form part of a site-specific CEMP which will be implemented during the Demolition and Construction Stage (including initial Site preparatory / enabling works).
   i. Health and safety risk assessments, method statements (RAMS) and the use of appropriate Personal Protective Equipment (PPE) will be adhered to by all site personnel and site visitors;
   ii. Earthworks / piling plant and vehicles delivering construction materials to site will be confined to predetermined haul routes around the site for each phase of the proposed development;
   iii. The need for vehicle wheel wash facilities will be assessed by the Contractor depending on the phasing of works and onsite activity and will be installed as needed, near any site entrances and road sweeping implemented as necessary to maintain the road network in the immediate vicinity of the site;
   iv. Dust suppression measures (e.g., dampening down) will be implemented as necessary during dry periods;
   v. All excavated materials will be stored away from the excavations / immediate works area, in an appropriate manner at a safe and stable location. The maximum height of temporary stockpiles will be 3m;
   vi. A comprehensive monitoring and supervisory regime including monitoring of all excavations and stability assessments as required will be put in place to ensure that the proposed construction works do not constitute a risk to the stability of the site;
   vii. In the event that any additional evidence of ground contamination is encountered beneath the site, during the construction works, works within that specific area will cease. Advice will be sought from an experienced contaminated land specialist to assess any associated potential environmental and/ or human health risks associated with this material and to ensure that any such material is managed and disposed of in accordance with the requirements of the Waste

Management Act 1996, as amended, the Waste Framework Directive 2008/98/EC of the European Parliament and Council on waste and any relevant subsequent waste management legislation.

viii. The employment of good construction management practices will serve to minimise the risk of pollution from construction activities at the Proposed Development in line with the Construction Industry Research and Information Association (CIRIA) publication entitled, Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, CIRIA - C532 (2001)

ix. Temporary onsite groundwater and gas monitoring wells should be either suitably protected for the duration of the works and / or appropriately decommissioned in accordance with best practice guidance (SEPA guidance document "Good Practice for Decommissioning Redundant Boreholes and Wells").

x. All fill material imported to the site for the proposed development will be clean, uncontaminated, suitable engineering grade fill material.

xi. Specifically, regarding pollution control measures, the following will be adhered to; - Fuels, lubricants and hydraulic fluids for equipment used on the construction site, as well as any solvents, oils, and paints will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to best codes of practice.

xii. Waste oils and hydraulic fluids to be managed in accordance with best practice requirements and pollution measures as detailed in the CEMP.

xiii. Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised on-site is in good working condition. Any equipment not meeting the required standard will not be permitted for use within the site. This will minimise the risk of soils and bedrock becoming contaminated through site activity.

xiv. The highest standards of site management will be maintained and utmost care and vigilance followed to prevent accidental contamination or unnecessary disturbance to the site and surrounding environment during construction. A named person will be given the task of overseeing the pollution prevention measures agreed for the site to ensure that they are operating safely and effectively.

23.3.6 Water & Hydrogeology

a. The CEMP (AtkinsRealis, 2025) submitted as part of this planning application will be fully complied with by the Contractor(s) for the full duration of the demolition & construction phase and will be added to as required by the Contractor(s) (to take account of relevant planning conditions, any specific stakeholder requirements etc). In advance of commencement of works, a detailed construction management plan will be set out by the Contractor(s) within their Construction and Environmental Management Plan (CEMP). This will include management of extracted material and monitoring of rainfall conditions when planning construction activities to minimise runoff.

23.3.6.1 Surface Water & Groundwater

b. A Stockpile Management Plan will be developed by the Contractor(s), and provided to the Client and Employers Representative, in advance of commencement of construction. Stockpiled materials will not be located immediately adjacent to the onsite Reservoir, onsite drains, or any temporarily exposed groundwater (in the event that groundwater is encountered). Aggregate

materials such as sands and gravels will be stored in clearly marked receptacles within a secure compound area to prevent contamination. Movement of material will be minimised to reduce the degradation of soil structure and generation of dust.

c. Temporary silt fencing will be erected around the onsite Reservoir prior to the commencement of any onsite works.
d. A buffer zone of 20m will be implemented around the onsite Reservoir, where no onsite storage or use of fuels / chemicals or stockpiled materials (including soils, C&D waste) will be permitted. This will be strictly monitored and enforced by the Contractor and Employers Representative.
e. To facilitate the removal of the concrete piers from the reservoir, surface drainage will be temporarily redirected from the reservoir to allow it to be drained. During the draining of the reservoir, the existing water will be temporarily pumped and will discharge via. the existing discharge outfall (as per the existing baseline scenario). All surface water outlets from Salesians, Stonetown Terrace and the Quarry will be connected directly to the discharge pipe from the reservoir to the River Shannon.
f. When the reservoir is empty, a comprehensive survey will be conducted of any exposed pipework / infrastructure which may indicate the presence of the reported historic connection to the Westfield Wetlands Spring, or any additional discharge points to the River Shannon. If viable historic pipeline connections to the Westfield Wetlands / River Shannon are uncovered, these will be further evaluated to understand the extent of the historic pipework, and if deemed suitable following assessment, such pipework will be decommissioned and sealed.
g. During the temporary infilling of the onsite Reservoir to facilitate the construction works, clean imported material will be used which have been double washed at source. This will be confirmed by the supplier and regular visual checks will be carried out during the works to verify this.
h. Temporary flood protection measures will be implemented within the extent of the flood zone at the Shipyard site – these measures are detailed within the CEMP (AtkinsRealis, 2025) submitted as part of this planning application. The Contractor(s) will adhere to all temporary flood management measures as per the CEMP, for the full duration of the demolition and construction works.
i. Storage areas (for diesel, oil, paint, thinners and other chemicals stored on site) will be located at all times away from the identified flood zone at the Shipyard site.
j. There will be no in-water works permitted at the River Shannon (Limerick Dock waterbody, Lower River Shannon SAC, and River Shannon & River Fergus Estuaries SPA).
k. During detailed design, a shut-off valve at the nearest manhole to the existing discharge outfall (from the reservoir to the River Shannon) will be incorporated into the drainage regime for the proposed development. These proposed drainage works will be completed as soon as feasible within the construction programme.
l. Excavations will remain open for as little time as possible before the placement of fill.
m. Excavated materials will be visually assessed for signs of possible contamination such as staining or strong odours and sampling. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.
n. With the exception of the existing discharge pipe to the River Shannon SAC (via. the onsite Reservoir), there will be no discharge of water permitted directly to the River Shannon SAC, under any circumstances, during the demolition and/ or construction works.

23.3.6.2 Asbestos & Waste Management

o. Demolition material that is deemed hazardous will be treated at an authorised facility either in Ireland or abroad.

p. All waste and material management and disposal / reused will be carried out in strict accordance with the C&DRWMP (Arup, 2025), submitted as part of this application.

q. Contaminated soil will be excavated and removed for offsite disposal during the enabling works phase, and in advance of the excavation of foundations. This is to mitigate the potential risk of groundwater impacts via. existing onsite contamination.

23.3.6.3 Groundwater & Gas Monitoring Wells

r. Temporary onsite groundwater and gas monitoring wells shall be either suitably protected for the duration of the works and / or appropriately decommissioned in accordance with best practice guidance (SEPA guidance document “Good Practice for Decommissioning Redundant Boreholes and Wells“

23.3.6.4 Soil & Sediment Management

s. For the prevention of contamination of receptors by mobilised soil and sediment, the following measures will be taken:

- The creation of steep slopes will be avoided to prevent runoff from precipitation.
- Heavy discharges of water onto the soil will be avoided.
- Prevention of over-watering of loose areas for dust suppression.
- Site traffic will be restricted to designated routes.
- Regular leak monitoring and maintenance of dewatering pipes will be undertaken
- The recommended maximum vehicle weightings will be maintained to avoid destabilization and subsequent erosion of soil surface
- Disturbed land or stockpiles will be progressively rehabilitated by establishing temporary or permanent vegetation supported by irrigation.
- Excess work areas will be covered with geotextile type liners.
- Collection systems will be provided under machinery or equipment during wash down to prevent erosion from runoff.
- Flow attenuation - mechanisms to control run off of precipitation such as temporary structures to slow running water to facilitate pollutant removal and infiltration and reduce runoff will be installed.
- Sediment traps will be placed on all drainage lines such as geotextile lining.
- Collection channels capable of collecting all runoff water during storms if it contains fine clay particles will be constructed.
- A contained control facility will be used for concrete washout.
- Runoff water from reservoir will be treated and discharged at a controlled flow rate through storm water discharge network (subject to agreement with LCCC).
- Collection channels and reservoir will be inspected and cleaned on a regular basis to prevent sediment build up.
- The site will be stabilised as soon as possible after construction.

23.3.6.5 Fuel & Chemical Management

t. For the prevention of contamination of receptors by fuel or chemicals used on site, the following measures will be taken:
   - Regular inspections/audits of hazardous materials usage, handling and storage areas and regular/thorough maintenance of vehicles and hydraulic systems and inspections of sanitary facilities and disposal will be carried out by contractors.
   - All contractors handling hazardous materials will keep appropriate spill clean-up material adjacent to storage and maintenance areas.
   - The amount of diesel, oil, paint, thinners and other chemicals stored on site that pose potential spillage environmental hazards will be minimised. materials that minimise environmental impact such as lead-free paints, asbestos free materials etc. will be used.
   - Collection systems will be provided/bunded if necessary, under machinery or equipment that may leak hydrocarbons/hazardous substances.
   - The contractor shall be responsible for training all staff in the procedures for handling spills and shall provide all staff with appropriate personal protective equipment.
   - The contractor shall provide all staff with appropriate personal protective equipment.
   - Impacting adjacent sites will be avoided by ensuring all contractors activities, equipment and waste storage is confined to the allocated site boundary.
   - Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in a designated area or within the construction compound which will be away from the onsite Reservoir, surface water gulleys or drains with a minimum 20 m buffer zone. In the event of a machine requiring refuelling outside of this area, fuel will be transported in a mobile double skinned tank. An adequate supply of spill kits and hydrocarbon adsorbent packs will be stored in this area.
   - Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area.
   - Oil and fuel storage tanks shall be stored in designated areas, and these areas shall be stored within temporary bunded areas, doubled skinned tanks or bunded containers to a volume of 110% of the capacity of the largest tank/container. Drainage from the bunded area(s) shall be diverted for collection and safe disposal.
   - Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage. All drums to be quality approved and manufactured to a recognised standard. If drums are to be moved around the Site, they will be secured and on spill pallets; and drums will be loaded and unloaded by competent and trained personnel using appropriate equipment.

u. In the event of a spill, the following procedure will be followed:
   - Identify and stop the source of the spill and alert people working in the vicinity;
   - Notify the Environmental Manager immediately giving information on the location, type and extent of the spill so that they can take appropriate action;
   - If applicable, eliminate any sources of ignition in the immediate vicinity of the incident;
   - Contain the spill using spill control materials, track mats or other materials as required. Do not spread or flush away the spill;
   - If possible, cover or bund off any vulnerable areas where appropriate such as the onsite Reservoir, drains, watercourses and/or sensitive habitats;
   - If possible, clean up as much as possible using the spill control materials;
   - Contain any used spill control material and dispose of used materials appropriately using a fully licensed waste contractor with appropriate permits so that further contamination is limited;

- The Environmental Manager shall inspect the site as soon as practicable and ensure the necessary measures are in place to contain and clean up the spill and prevent further spillage from occurring; and
- The Environmental Manager will notify the appropriate stakeholders such as Limerick City & County Council, National Parks and Wildlife Service and/or the EPA.

23.3.6.6 Flooding

v. All fuels, chemicals, oils, paints and any other hazardous materials will be stored within the construction compound at the Flaxmill site, which is located outside of the predicted flood zone.

w. To mitigate flood risk (or unacceptable residual flood risk) during the construction period, the contractor will employ the following mitigation measures as part of the site preparation for the construction phase (ARUP, 2025):
   - Elevating the site compound / site storage areas at the Shipyard site via fill placement to an appropriate level (i.e. 5.7m AOD based on the outcome of the FRA (ARUP, 2025).
   - Constructing and/or implementing temporary flood defences at the Shipyard site (i.e. civil works and/or proprietary flood defence products, or a combination of both) to an appropriate level (i.e. 5.7m AOD based on the outcome of the FRA (ARUP, 2025).
   - In the event of a tidal flood warning, materials stored in the Shipyard site compound shall be removed immediately to avoid the risk of flooding to neighbouring properties.

x. A Flood Emergency Response Plan for Construction Phase (FERP-CP) shall be prepared by the Contractor(s) for the project, which will contain a detailed response plan to a tidal flood event on the Shannon occurring while construction wis active on the site, which will include the following mitigation measures (noting this not necessarily to be an exhaustive list of measures) (ARUP, 2025):
   - Definition of designated roles within the construction team / firm, and associated responsibilities with regard to the implementation of the FERP-CP;
   - Having an appropriate nominated person (e.g. site manager) who will be responsible for monitoring weather warnings, flood warnings, and storm-tide warnings (i.e. the 'Construction Phase Flood Manager') – this will be a part-time role that would only ever come into play on a periodic basis (or maybe not at all over the course of the construction phase);
   - Communication protocols to the site team to alert them to the possibility of a flood and the need to move any machinery, plant, equipment, etc, to an appropriate location within the site/site compound if safe to do so, and to evacuate the site;
   - General protocols around where and how machinery, plant, other equipment and materials are stored / stockpiled / located within the site compound(s), noting that all fuels, chemicals, oils, paints and any other hazardous materials will be stored within the construction compound at the Flaxmill site, which is located outside of the predicted flood zone.
   - Signage and other information on site drawing awareness to FERP-CP protocols (e.g. materials / plant / equipment storage, evacuation routes, etc).
   - The level of the compound and the materials storage areas are to be determined by the contractor and to be confirmed in the Flood Emergency Response Plan for Construction Phase (FERP-CP), taking into account the above mitigation measures, as well as the findings of the FRA (ARUP, 2025).

y. The Contractor(s) will provide a copy of the FERP-CP (which will take into account any relevant planning conditions, and any relevant future additional requirements via. changes in legislation or best practice guidance) to LCCC for review and comment in advance of commencement of any demolition or construction works onsite.

23.3.7 The Landscape

a. Site hoarding shall be erected to screen views of construction activities;
b. Vegetation protection measures, particularly around the quarry walls, will be installed ensure vegetation to be retained is fully protected during the construction process;
c. The CEMP which accompanies the application for approval shall continue to be developed by the contractor to include the control of construction activity, traffic, materials storage and lighting with due consideration for neighbouring residences and surrounding area.

23.3.8 Noise & Vibration

a. Best practice noise and vibration control measures will be employed by the contractor during the construction phase in order to avoid significant impacts at the nearest sensitive buildings. The best practice measures set out in BS 5228-1 and BS 5228-2 (BSI 2019) will be complied with specifically relating to construction site mitigation measures. Noise control measures that will be implemented include the selection of quiet plant, use of enclosures and screens around noise sources and site boundaries, limiting the hours of work and noise and vibration monitoring.

23.3.8.1 Selection of Quiet Plant

b. The potential for any item of plant to result in exceedance of construction noise thresholds will be assessed prior to the item being brought onto the site. The least noisy item of plant will be selected wherever practicable (e.g. plant items with sound attenuation incorporated). Should a particular item of plant already on the site be found to exceed the construction noise thresholds, the first action will be to identify whether the item can be replaced with a quieter alternative.

c. The appointed contractor will evaluate the choice of excavation, breaking, piling or other working method taking into account various ground conditions and site constraints. Where alternative lower noise generating equipment are available that will provide equivalent structural / excavation / breaking results, these will be selected to control noise within the relevant thresholds, where it is practicable to do so.

23.3.8.2 Noise Control at Source

d. The following measures will be implemented, if required, by the appointed contractor to control noise at source. These measures relate to specific site considerations:
   - For mobile plant items such as dump trucks, cranes, excavators and loaders, the installation of an acoustic exhaust, utilising an acoustic canopy to replace the normal engine cover and / or maintaining enclosure panels closed during operation can reduce noise levels by up to 10 dB;
   - For percussive tools such as pneumatic breakers and tools a number of noise control measures include fitting a muffler or sound reducing equipment to the breaker ‘tool’ and ensuring any leaks in the air lines are sealed;
   - Use of rotary drills and ‘bursters’ activated by hydraulic or electrical power to facilitate quieter methods for excavation of hard material.
   - Removal of larger sections of demolished buildings by lifting out and breaking at areas away from noise sensitive boundaries;
   - For piling plant, noise reduction can be achieved by enclosing the driving system in an acoustic shroud. For steady continuous noise, such as that generated by diesel engines, it is possible to

reduce the noise emitted by fitting a more effective exhaust silencer system or utilising an acoustic canopy to replace the normal engine cover;

- Mobile and stationary plant will be switched off or throttled back to a minimum when not in use (engines, motors and generators). Lorries, trucks and concrete vehicles will not be permitted to queue outside site compounds with engines left idling;
- Where compressors, generators and pumps are located in proximity to NSLs and have the potential to exceed the construction noise thresholds, these will be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation;
- Resonance effects in panel work or cover plates can be reduced through stiffening or the application of damping compounds, while other noise nuisance can be controlled by fixing resilient materials in between the surfaces in contact;
- For all materials handling, ensure that materials are not dropped from excessive heights, lining drops chutes and dump trucks with resilient materials;
- All items of plant will be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures;
- Where practicable, equipment powered by mains electricity or battery shall be used in preference to equipment powered by internal combustion engines or locally generated electricity; and
- Plan the site layout to ensure that reversing is kept to a minimum.

23.3.8.3 Screening

e. Screening shall be utilised on site as an additional measure to other forms of noise control. BS 5228–1 states that on level sites the screen should be placed as close as possible to either the source or the receiver. The construction of the barrier will be such that there are no gaps or openings at joints in the screen material.

f. The site will incorporate a solid site hoarding line of minimum 2.4m in height around its perimeter which will be maintained in situ for the duration of the construction phase. Where necessary, this hoarding height will be increased in height to assist in reducing noise levels at adjacent noise sensitive buildings.

g. Erection of localised demountable enclosures or screens will be used around breakers or drill bits when in operation in proximity to noise sensitive locations (NSLs) with the potential to exceed the construction noise thresholds. Annex B of BS 5228–1 (Figures B1, B2 and B3) provide typical details for temporary and mobile acoustic screens, sheds and enclosures that can be constructed on-site from standard materials.

h. Careful planning of the construction site layout will also be considered. The placement of site buildings such as offices and stores between the site and sensitive locations can provide a good level of noise screening.

23.3.8.4 Hours of Work

i. Standard construction working hours are between 07:00 to 18:00 hrs Monday to Friday inclusive and between 08:00 and 14:00 hrs on Saturdays. However, it is possible that the contractor may wish to carry out certain operations outside these hours i.e. Sunday or evening hours during long summer days etc. Such occurrences will be kept to a minimum and take place over a short timeframe and as such are unlikely to cause excessive disturbance. Deviation from these times

will only take places when written approval is granted by Limerick City & County Council in exceptional circumstances.

23.3.8.5 Liaison with the Public

j. The contractor will establish clear forms of communication between the contractor and adjacent NSLs to the works, so that residents or building occupants are aware of the likely duration of activities likely to generate noise or vibration that are potentially significant.
k. A community Liaison Plan will be developed by the developer in liaison with the local residents and the adjacent Salesians Primary school and a single point of contact nominated to engage with LCC.

23.3.8.6 Vibration Control

l. A review of any foundations relating to protected structures is undertaken prior to any significant excavations commence to ensure all direct connections between these structures and the proposed construction areas are severed to avoid any bridging and vibration transmission.
m. Vibration from construction activities will be limited to the values set out in **Error! Reference source not found.**. to avoid any form of potential cosmetic damage to buildings and structures.
n. In order to minimise any potential impacts to adjacent building occupants, the following measures shall be implemented during the Construction Phase.
   - A clear communication programme will be established by contractor to inform adjacent building occupants in advance of any potential intrusive works which may give rise to vibration levels likely to result in significant effects as per **Error! Reference source not found.**. The nature and duration of the works will be clearly set out in all communication circulars as necessary; and
   - Appropriate vibration isolation will be applied to plant (such as resilient mounts to pumps and generators), where required and where feasible

23.3.9 Air Quality

23.3.9.1 Communication

a. An Environmental Manager (EM) will be in assigned by the appointed contractor. The EM will be responsible for co-ordinating the day-to-day management of environmental impacts during the Construction Phase. The EM will be responsible for performing inspections as deemed necessary and manage responses to environmental incidents. The name and contact details of the EM will be responsible for construction dust management and air quality issues will be displayed at the construction compound/site boundary hoarding, as well as head/regional office contact details.
b. A complaints register will be kept by the appointed contractor detailing all telephone calls and letters of complaint received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out.
c. Previously established community engagement with neighbouring residents will continue for the remainder of the construction works.

23.3.9.2 Construction Works Area Management

d. Construction compounds will be laid out so that machinery and dust causing activities such as stockpiles are located away from receptors, as far as is practicable.

e. The appointed contractor will provide a site hoarding of 2.4m height along noise sensitive boundaries, at a minimum, at the Construction Compounds, which will assist in minimising the potential for dust impacts off-site. Construction works area fencing, barriers and scaffolding will be kept clean using wet methods.
f. Stockpiles will be covered to prevent wind whipping.
g. Any chutes and conveyors will be enclosed, and skips will be covered.
h. Drop heights from any conveyors, loading shovels, hoppers and other loading or handling equipment will be minimised. Fine water sprays will be used on such equipment where visible dust plumes are generated.
i. Cutting, grinding or sawing equipment will be fitted with or used in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
j. Equipment will be readily available in the construction works areas site to clean any dry spillages. Spillages will be cleaned up as soon as reasonably practicable after the event using wet cleaning methods.
k. An adequate water supply for effective dust or particulate matter suppression and mitigation will be ensured, and non-potable water will be used where possible and appropriate.
l. Construction works area runoff of water or mud will be managed as per the Surface Water Management Plan detailed in the CEMP.

23.3.9.3 Operating Vehicles / Machinery

m. Engines of all vehicles will be switched off engines when stationary - idling vehicles are not permitted.
n. The use of diesel- or petrol-powered generators will be avoided and mains electricity or battery powered equipment will be used where practicable.
o. A Construction Traffic Management Plan (CTMP) has been developed as part of the CEMP to minimise use of the Local Road Network. The CTMP will be adhered to be the appointed contractor.
p. The appointed contractor will prepare a Construction Stage Mobility Management Plan (CSMMP) to actively discourage personnel from using private vehicles to travel to the Proposed Scheme. The CSMMP will promote the use of public transport, cycling and walking by personnel. Private parking at the Construction Compounds will be limited. Vehicle-sharing will be encouraged, subject to public health guidelines, where travel by private vehicle is a necessity (e.g. for transporting heavy equipment).

23.3.9.4 Demolition Activities

q. During the demolition process, any cutting, grinding or sawing equipment will be fitted or used in conjunction with a suitable dust suppression technique such as water sprays or local extraction.
r. Prior to demolition blocks will be soft stripped inside buildings (retaining walls and windows in the rest of the building where possible, to provide a screen against dust), as necessary.
s. Drop heights from conveyors, loading shovels, hoppers and other loading equipment will be minimised, if necessary fine water sprays will be employed.
t. Explosive blasting will be avoided, and appropriate manual or mechanical alternatives will be used.
u. The control of dust emissions from crushing processes will be by the use of suppression and appropriate siting of equipment. Crushers will be fitted with water suppression system over the

crusher aperture. Correct operation of high pressure, low volume water sprays over the feed area will provide adequate dust control of the crushing process.

v. Deposits of dust on external parts of any crushing plant will be be cleaned off at the end of each working day in order to minimise the potential for wind entrainment.

23.3.9.5 Earthwork Activities

w. Materials with the potential to produce dust, such as excavated material, will be removed from the construction works area as soon as possible, unless being re-used within the construction works area. Management of extracted material is detailed in the Construction and Demolition Resource and Waste Management Plan

x. Areas exposed by earthworks will be re-vegetated to stabilise surfaces as soon as practicable. Hessian, mulches or trackifiers will be used where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. Cover will only be removed in small areas during work and not all at once.

y. During dry and windy periods and when there is a likelihood of dust nuisance (defined under “Monitoring” measures below), water-based dust suppression (e.g. bowser) will operate to ensure soil moisture content is high enough to increase the stability of the soil and thus suppress dust.

23.3.9.6 Construction Activities

z. Sand and other aggregates will be stored in bunded areas and will not be allowed to dry out, unless this is required for a particular process.

aa. Smaller supplies of fine power materials bags will be sealed after use and stored appropriately to prevent dust escaping.

bb. A speed restriction of 15 kph will be applied as an effective control measure for dust for on-site vehicles.

cc. Vehicles transporting loose materials (e.g. spoil or sand) entering and leaving the Proposed Scheme works areas and construction compounds will be covered with tarpaulin to prevent escape of materials during transport. Before entrance onto public roads, trucks will be checked to ensure the tarpaulins are properly in place.

dd. Where construction work area or construction compound conditions result in large amounts of mud building up on truck wheels, wheel washing will be carried out for trucks before they use the public road network.

ee. Water-assisted dust sweeper(s) will be used at the access points to a construction compound and the immediate adjoining local road, to remove, as necessary, any material tracked out of the compound.

ff. Any on-site haul routes will be inspected for integrity and necessary repairs to the surface will be carried out as soon as reasonably practicable.

23.3.10 Climate

a. Embodied carbon of materials and construction activities will be the primary source of climate impacts during the construction phase. Measures detailed in the Circular Economy Statement, and the Construction and Demolition Resource and Waste Management Plan (CDRWMP) shall be implemented including:

- Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.
- Ensure all plant and machinery are well maintained and inspected regularly.

- Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site.
- Recycling of materials will be promoted to and reduce the environmental footprint of the site.
- Sourcing materials locally will be prioritised.
- Material choices and quantities will be reviewed during detailed design, to identify and implement any lower embodied carbon options, where feasible.
- The Salesians Individual town house units will be built of timber frame.

b. During construction the Contractor will be required to mitigate against the effects of extreme rainfall/flooding, wind/storms, fog, lighning, hail and temperature extremes through site risk assessments and method statements.

c. All materials used during construction will be accompanied by certified datasheets which will set out the limiting operating temperatures. Temperatures can affect the performance of some materials, and this will require consideration during construction.

23.3.11 Microclimate – Pedestrian Wind Comfort & Distress

No mitigation proposed

23.3.12 Microclimate – Sunlight Daylight & Shadow Analysis

No mitigation proposed

23.3.13 Material Assets – Traffic & Transport

a. The Outline Construction Traffic Management shall be further developed by the contractor to form the Construction Traffic Management Plan. The contractor's detailed Construction Traffic Management Plan will address the following key issues:

- A dedicated person will be appointed for the management of the deliveries during the construction stage. It will also be this person's duty to make sure the construction routes are adhered to without fail.
- The Applicant will conduct a pre- and post-construction condition survey on the public road, with the developer liable to repair any damage to the public road attributed to the construction of the proposed development.
- Deliveries will be scheduled to avoid morning and evening peak hours. This will avoid HGV traffic arriving during the morning peak hours and creating conflict with local residents' commute or school run. Construction personnel will be encouraged to car-pool, or to travel to site in minibuses.
- During the construction phase, clear construction warning signs will be placed on the approach to the site access point, in accordance with Chapter 8 of the Traffic Signs Manual. The site entrance points will also be appropriately signed. Access to the construction site will be controlled by onsite personnel and all visitors will be asked to sign in and out of the site by security/site personnel. Site visitors will receive a suitable Health and Safety site induction and Personal Protective Equipment ("PPE") will be worn.
- To control, prevent and minimise dirt on the access route and emissions of dust and other airborne contaminants during the construction works, the following mitigation measures will also be implemented.
  - Wheel washing facilities should consist of a water bowser with pressure washer. The bowser will contain water only and no other additives. Run-off from this activity will be directed to the

drainage situated on the lower boundary of the construction compound. All drivers will be required to check that their vehicle is free of dirt, stones and dust prior to departing from the site.
  - Drivers will adopt driving practices that minimise dust generation including a 30km/h internal access road speed limit; and
  - Any dust generating activities will be avoided or minimised, wherever practical, during windy conditions.
- Once construction of the Proposed Development is completed, all machinery and equipment will be removed and hard standing within the Solar Farm site excavated. The area will be regraded with the stockpiled topsoil to a natural profile. Road surfaces, road markings, etc. will be fully reinstated as is and in such a manner that there is no change to the operation of the local road network.

b. The contractor will develop a detailed Logistics Plan to identify the delivery schedule requirements for every delivery. It is proposed that the contractor will operate a "Just in Time" delivery philosophy to minimise materials stored on site and reduce congestion in and around the works compound.

23.3.14 Material Assets – Waste Management

a. All waste management procedures implemented onsite during the construction phase will be in accordance with the CDRWMP (AtkinsRéalis, 2025) submitted as part of this planning approval. In advance of commencement onsite, the Contractor will prepare a project specific Detailed CRWMP which will further develop this plan, and will provide specific details in terms of proposed permitted haulage contractors, and permitted / licenced waste disposal / recovery facilities;
b. Scheduling and planning the delivery of materials will be carried out on an '*as needed'* basis to limit any surplus materials;
c. Materials will be ordered in sufficient dimensions so as to optimise the use of these materials onsite, and will be carefully handled and stored so as to limit the potential for any damage;
d. Where feasible, sub-contractors will be responsible for the provision of any materials they require onsite in order to help reduce any surplus waste;
e. Waste materials generated will be segregated at the site compound, where it is practical to do so. Where the on-site segregation of certain waste types is not practical, offsite segregation will be carried out.
f. There will be skips and receptacles provided to facilitate segregation at source and
g. All loaded trucks entering and exiting the Site will be appropriately secured and covered
h. Excessive temporary works will be avoided. Existing facilities will be reused as appropriate.
i. Paints, sealants and hazardous chemicals will be stored in secure, bunded locations and
j. The contractor will ensure that only licensed waste contractors are engaged for the transport of waste, and that all waste is directed to appropriately licensed waste facilities or treatment, recovery, or disposal, as required.
k. As part of the asbestos management strategy, specific mitigation measures have been proposed by Phoenix Environmental Safety Ltd in the 2024 Asbestos Survey Report and consist of the following:
    a. Asbestos containing materials should be removed prior to the commencement of any works
    b. A licensed asbestos removal contractor should be contracted for removal and disposal of asbestos waste; and
    c. All asbestos removal works will be undertaken in full compliance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006–2010 (S.I. No. 386 of 2006).
l. The appointed contractor will adhere to all regulatory requirements and follow the recommendations outlined in the survey report, including the implementation of robust control measures to prevent exposure to asbestos material.

m. A Resource Recovery Plan mapping out the materials streams proposed to be re-used and recycled along with the proposed outlets / end uses shall be developed for material arisings in specific buildings or structures which have been identified as having medium / high reuse or recycling potential
n. Demolition material that is not suitable for reuse on site or which is surplus to requirements, will be stockpiled, tested and classified. Where feasible classification for reuse on other construction site(s) will be considered. Where the material is not suitable for reuse, it will be categorised in accordance with the EPA waste classification guidelines.
o. Demolition material that is deemed hazardous will be treated at an authorised facility either in Ireland or abroad. Export of hazardous waste from the proposed development outside of the State is subject to the Waste Shipment Regulation, as described above. Export of hazardous waste from site outside the state will comply with the procedures set out in this legislation
p. All waste arising from the proposed development will be managed in line with the principles and objectives set out in the CDRWMP (ARUP 2025) ensuring compliance with best practice in prevention, segregation, recovery and disposal and align with regional waste infrastructure principles and policy.
q. Licensed local waste management facilities will be contracted to manage waste arising from demolition works

23.3.15 Material Assets – Utilities

a. Asbestos containing materials will be removed by an asbestos removal contractor from all 31no. locations identified, and disposed of as asbestos waste before any demolition works commence
b. Carrying out removal works with asbestos recovered on insulation board and millboard panels will require 14 days notification to the HSA. This applies to 7no. locations.
c. All asbestos removal work will be carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010, and all asbestos waste willbe disposed of in accordance with all relevant statutory requirements.
d. All works will be carried out in strict accordance with the guidelines of the relevant stakeholders (specifically ESB, eir and Uisce Éireann), Health and Safety and any additional site specific requirements.
e. A copy of all available existing, and as built utility plans will be maintained onsite during the demolition phase.
f. The underground power lines and foul water mains within the existing Uisce Éireann services, located onsite will be clearly marked and all Site personnel will be made aware of the known location of any onsite underground or over ground services during the construction phase.
g. A project-specific Detailed Construction Environmental Management Plan (CEMP) will be prepared by the appointed Contractor prior to the commencement of construction works. This document will incorporate all of the environmental considerations (including water (specifically stormwater run-off), dust and noise nuisance control; soil/stockpile management; temporary groundwater management; appropriate site management of compound area; fuel, oil and chemical storage and use; and waste management) set out in the Outline CEMP submitted as part of this planning application;
h. All newly installed utilities/services will be assessed, tested and certified as required prior to being fully commissioned;
i. The construction compounds will include adequate temporary welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the compound will be removed off site to an appropriately licensed facility for disposal until a connection to the public foul drainage

network has been established;

j. Connections to the existing and proposed foul networks will be coordinated with the relevant utility provider. All works associated with the existing and proposed utilities for the proposed development will be carried out in strict accordance with the guidelines of the relevant stakeholders (specifically ESB, eir and Uisce Éireann), Health and Safety and any additional site specific requirements;

k. A copy of all available existing, and as built utility plans will be maintained onsite during the construction of the proposed development. The underground power lines and foul water mains within the existing Uisce Éireann services, located onsite will be clearly marked and all Site personnel will be made aware of the known location of any onsite underground or over ground services during the construction phase and,

l. Street Lighting will be implemented in accordance with the lighting report prepared by Arup (2025b).

m. Telecommunications infrastructure will be installed in accordance with the ISM (2025) report, submitted as part of this planning application.

23.3.16 Risk Management for Major Accidents /Disasters

a. A structural condition assessment of the historical chimney shall be undertaken prior to commencement of development, in line with best practice.

23.4 OPERATIONAL PHASE MITIGATION

23.4.1 Population & Human Health

No mitigation proposed.

23.4.2 Biodiversity

No mitigation proposed.

23.4.3 Cultural Heritage - Archaeology

a. In the event of discovering subsurface survival of the industrial and maritime heritage in the form of physical or structural remains, consideration shall be given to the exposure of these structures to public viewing to allow for full visual access and interpretation of the relevant heritage. Options such e explored including full or partial pedestrian access; enclosed but visually accessible methods; restored ground surface with distinguishing or tactile surfaces to highlight the nature and extent of subsurface structures.

b. Any resulting artefactual heritage shall be conserved where applicable and presented in an on-site location dedicated to its overall industrial and maritime heritage, together with full interpretation of the site.

23.4.4 Cultural Heritage – Architecture

a. Where industrial or maritime heritage fabric is discovered this will be incorporated into the designs and placed on public view to allow for full visual access and interpretation.

b. Heritage features discovered during earlier phases shall be conserved, with full or partial pedestrian access provided to heritage features and provision of interpretation displays

c. Ensure that the presentation of heritage forms a significant part of any publicly accessible spaces, specifically any interpretive facility.

23.4.5 Land & Soils

No mitigation proposed.

23.4.6 Water & Hydrogeology

a. In the (highly unlikely) event of an emergency / fire, discharge of the fire water runoff will be prevented from entering the Lower River Shannon SAC through the surface water drainage network by operation of a shut-off valve on the discharge pipe at the exit from the reservoir, as previously identified. An Emergency Water Management Plan will be prepared and implemented during the operational phase, with a named Facilities Manager who will be contactable 24/7 and a deputy contact. Both personnel will be fully briefed on emergency procedures to manually shut off the discharge valve to the River Shannon immediately in the event of an emergency / fire.

23.4.7 The Landscape

a. Incorporation of measures to ensure the successful retention of mature planting either within or without the site, along the site boundaries.
b. Incorporation of measures to ensure the successful establishment of new proposed planting, including: appropriate establishment maintenance of planting, the agreement and monitoring of planting growth parameters/targets and the engagement of appropriate professional advisors throughout the construction period and beyond.
c. Inclusion of facilities management arrangements, targets and performance indicators in respect of the maintenance and management of the finished scheme, in terms of access and security, and the upkeep of building services and fabric, the public realm and the soft landscape.
d. Periodic vegetation surveys shall be undertaken to ensure the continued sustainability of vegetation on site.
e. The implementation and monitoring of a landscape management plan shall be undertaken for the full duration of the defects liability period to ensure successful establishment of the proposed planting scheme and trees.

23.4.8 Noise & Vibration

23.4.8.1 Building Services Plant

a. The selection and design of operational plant items with potential to emit noise to atmosphere will be designed to comply with the noise control guidance from BS 4142 (BSI 2014) and BS 8223 (bsi 2019);
b. Where ventilation is required for plant rooms, consideration will be given to acoustic louvers or attenuated acoustic vents, where required, to reduce noise breakout;
c. The use of perimeter plant screens will be used for roof-top plant areas for AHSPs. The screen heights are as per the architectural drawings and all plant screens to these areas will be solid acoustic panels with absorptive facing to the inner face of the screen;
d. The selection of the ASHPs will be those with the lowest operational noise output that is available to serve the heating needs of the buildings. Based on the assessment in this chapter, the sound power of any one unit shall not exceed 91 dB(A).

e. The plant items will be selected to have no tonal or impulsive characteristics when in operation at NSLs;
f. All mechanical plant items, e.g. fans, pumps etc., shall be regularly maintained to ensure that excessive noise generated by worn or rattling components is minimised;
g. Any new or replacement mechanical plant items, including plant located inside new or existing buildings, shall be designed so that all noise emissions from site do not exceed the noise limits outlined in this document; and

23.4.8.2 Public Realm, Commercial Floor Space, Meanwhile Use Areas

h. In the event that amplified music is used for specific events during evening or night-time period, the control limits set out in Section 13.2.4.2 are recommended in order to control noise levels at the nearest noise sensitive dwellings. The use of best practice control measures for music noise will be used including the choice and location of speakers, volume control and screening, where necessary, around the site perimeter.
i. A “Respect your Neighbours” campaign should be initiated within all outdoor seating areas including signage indicating that it is a residential area and noise levels should be kept to a minimum;
j. Brief and train all staff on the requirement to keep noise levels to a minimum and to actively discourage raised voices, rowdy behaviour, singing etc.;
k. Prior to the use of any new external entertainment system being operated, a comprehensive review of audio systems and calibration survey will be required to ensure the music noise levels set out above (relating to day to day use of spaces) will not be exceeded. This will establish background noise levels at the closest NSLs and set the operational noise level at the entertainment system, and;
l. An overarching management policy shall be developed that takes cognisance of the potential for a noise nuisance to occur and implements suitable management policies communicated to all uses.

23.4.9 Air Quality

No mitigation proposed.

23.4.10 Climate

No mitigation proposed.

23.4.11 Microclimate – Pedestrian Wind Comfort & Distress

No mitigation proposed

23.4.12 Microclimate – Sunlight Daylight & Shadow Analysis

No mitigation proposed

23.4.13 Material Assets – Traffic & Transport

a. The Mobility Management Plan (MMP) submitted with the application will be implemented and continuously reviewed / updated to mitigate the anticipated increase in traffic volumes.
b. Efforts will be made to utilise local public transport network, road network and active travel facilities in the most efficient ways possible that will be encouraged through appropriate cycle parking and storage facilities on the proposed development.

c. Staff will be made aware about the public transport facilities nearby.
d. The measure will also include making people aware about “Cycle to Work Scheme” and “Taxsaver Commuter Ticket Scheme”.

23.4.14 Material Assets – Waste Management

a. Key operational waste management strategies to be adopted, are detailed in the Operational Waste Management Plan prepared by AtkinsRéalis (2025).
b. Waste generated will be segregated on site into the various waste streams (residual waste, dry recyclables and organic waste) via dedicated bins and storage areas.
c. Bins will be colour coded to prevent cross contamination.
d. Waste shall be collected fortnightly for townhouses /triples units and on a weekly basis for apartments and commercial units by licensed waste contractors.

23.4.15 Material Assets – Utilities

No mitigation proposed.

23.4.16 Risk Management for Major Accidents /Disasters

No mitigation proposed

23.5 MONITORING

23.5.1 Biodiversity

- An Ecological Clerk of Works (ECoW) will be appointed by the Contractor to ensure that the ecological plan is effectively implemented. The representative will be a suitably qualified ecologist or environmental scientist. The ECoW will be responsible for:
  - Monitoring the construction works and identifying any additional or refined mitigation measures (i.e. ‘adaptive management measures required), in relation to any ecology;
  - Reporting the findings of monitoring, including any adaptive management measures recommended and the effectiveness of same;
  - Delivering site induction and training on ecological aspects to all construction personnel prior to commencement of construction activities;
  - The implementation of ecological mitigation measures
  - Updating, renewing and returning the derogation licence in place throughout construction

- The employer (Limerick Twenty Thirty), will also provide an employer’s environmental representative. This officer will be a suitably qualified ecologist or environmental scientist and will work closely with the contractor’s representative to ensure that all environmental/ecological requirements are adhered to and fully monitored. The employer’s representative will visit the site on a weekly basis (at a minimum) during the construction phase. An audit of the works will be undertaken during these weekly visits, and it will be ensured that the prescribed methods are employed. Any potential impacts additional to those predicted will be highlighted and if necessary, additional measures put in place to prevent them. Any deviance from the agreed methodology will be highlighted and if necessary rectified.

- Operational monitoring for biodiversity will include annual surveys for bats to monitor the success of the constructed bat roosts and to ensure that the proposed landscaping and lighting measures are in place and are established and maintained as planned. Monitoring of the bat populations on the site will continue for 5 years following construction and will include activity surveys as well as inspections of the erected bat houses and boxes and other alternative roosting places. The results of the monitoring will be communicated to NPWS in standard reporting format as part of the conditions of the derogation licencing required.

- Swift boxes do not usually require maintenance. However, as boxes will be installed onto the buildings and not integrated within the structure, there will be a need to regularly check these to ensure they are firmly in place. This can be done in line with the building's regular maintenance programme.

- Ongoing monitoring will be required for all First Schedule Invasive Species and non-native Invasive Species of potential concern recorded, with suitable follow-up management in order to control new growth or re-establishment within the infested areas. Following the initial treatment and removal, at operation of the development the treated areas will be re-surveyed annually to ensure no invasive species re-stablish. If necessary, the areas will be re-treated until no growth is recorded for two consecutive years.

23.5.2 Cultural Heritage - Archaeology

- Archaeological monitoring of all groundworks shall be incorporated into the construction phase, subject to the findings of the predevelopment archaeological test excavation.

23.5.3 Cultural Heritage - Architecture

- Continue to monitor the condition of the buildings and ensure their ongoing protection and to address any emerging risks or deterioration.

23.5.4 Land Soils & Geology

- A comprehensive monitoring and supervisory regime including monitoring of all excavations and stability assessments as required will be put in place to ensure that the proposed construction works do not constitute a risk to the stability of the site.

23.5.5 Water & Hydrogeology

- A comprehensive surface water and groundwater monitoring programme will be implemented before, during and after the proposed demolition and construction works. Regular sampling[1] at key groundwater monitoring wells onsite, as well as at the onsite reservoir, and at key locations on the River Shannon upstream and downstream of the site shall be undertaken. Water monitoring will be scoped, carried out and assessed by an appropriately qualified Environmental Manger or Ecological Clerk of Works. Results will be held onsite and available as required.

- Excavations, especially piling for foundations will need to be carefully monitored for groundwater ingress.

[1] Minimum monthly frequency

- Annual water quality analysis shall be undertaken to confirm that the water quality of the reservoir and surface drainage network is maintained and that the SuDS measures and petrol interceptors are effective. It is recommended that additional water quality monitoring is performed in the event of a flooding event on site or in the case of fire or any other accidental spillage.

23.5.6 The Landscape

- The CEMP will be updated by the Construction Manager, Environmental Manager, Resource Manager and/or Ecological Clerk of Works, as required if site conditions change, and for any planning conditions that may be imposed. The CEMP will be implemented and adhered to by the construction Contractor(s) and this is a working document which requires continuous review and amendment throughout the construction phase by both parties, to ensure effective mitigation.

- The constructed development requires adequate facilities maintenance and management to ensure the continued upkeep, functioning and appearance of the development. This will include all necessary management of the buildings, plant and equipment together with the maintenance and management of the hard and soft landscape elements including public realm, open spaces and planting works integral to the development.

23.5.7 Noise & Vibration

- The contractor will carry out noise and vibration monitoring at representative sensitive locations to evaluate and inform the requirement and / or implementation of noise and vibration management measures.

- Noise and vibration monitoring systems will be installed at the site prior to any works taking place and will be maintained in continuous operation throughout the construction period. The system will be configured to trigger alerts in the event that the set limit values relating to the control of significant noise effects are approaching, as per Chapter 13.0 Table 0.2 and for the avoidance of any cosmetic damage to buildings as per Chapter 13.0 **Error! Reference source not found.**.

- As a minimum, a vibration monitor will be installed be installed adjacent to the Flaxmill complex and brick chimney, adjacent to these protected structures.

- Noise monitoring equipment will be installed along the site boundaries in closest proximity to the surrounding NLS. Noise monitoring will be conducted in accordance with the International Standard ISO 1996: Acoustics – Description, measurement and assessment of environmental noise Part 1 (2016) and Part 2 (2017). The result of the monitoring programme will be used to determined compliance with the construction noise thresholds and to inform the requirement and / or implementation of noise and or vibration management measures.

- Noise control audits will be conducted at regular intervals throughout the construction programme in conjunction with noise monitoring. The purpose of the audits will be to ensure that all appropriate steps are being taken to control construction noise emissions and to identify opportunities for improvement, where required.

- Vibration monitoring will be installed at the base of the two on-site protected structures during excavation works. It is also recommended to install vibration monitoring equipment along the western site boundary in proximity to the Salesians Primary School.

- During the commissioning phase of the project, noise monitoring will be undertaken to determine compliance with the operational noise levels from the on-site buildings services plant.

23.5.8 Air Quality

- To determine if any short-term dust impacts will occur, a minimum of daily visual inspections for dust soiling of receptors (including roads, and surfaces such as street furniture, cars and windowsills) adjoining the construction works areas will be undertaken. Inspection results will be recorded in the site inspection log. Cleaning will be provided, if necessary, such as in the event of a dust complaint resulting from the Proposed Scheme construction works.

- The potential for dust generation increases when rainfall is less than 0.2 mm/day and at wind speeds of greater than 10 m/s. To determine if these conditions are likely to affect the site, the weather forecast will be consulted daily, specifically the hourly forecasts for wind speeds as well as 12-hour rainfall radar showing anticipated amounts of precipitation in mm.

- The frequency of site inspections by the Environmental Manager responsible for dust management will be increased to a minimum of twice daily during the above conditions. The effectiveness of dust control methods will be monitored via visual inspections and work that would generate dust (e.g. moving materials from stockpiles or transferring loose dry materials from trucks) will be limited in so far as is practicable during these weather conditions.

- Monitoring of construction dust deposition along the site boundary to nearby sensitive receptors (as identified in Section **Error! Reference source not found.**) during the construction phase of the proposed development is recommended to ensure mitigation measures are working satisfactorily. This can be carried out using the Bergerhoff method in accordance with the requirements of the German Standard VDI 2119. The Bergerhoff Gauge consists of a collecting vessel and a stand with a protecting gauge. The collecting vessel is secured to the stand with the opening of the collecting vessel located approximately 2m above ground level. The TA Luft limit value is 350 mg/m^2/day during the monitoring period of 30 days (+/- 2 days). Monitoring shall ensure that the dust mitigation measures are working satisfactorily as construction works progress.

23.5.9 Climate

- Monitoring and reporting of the embodied carbon in the construction phase will be conducted. The aim of monitoring will be to seek further ways to minimise climate impacts. Monitoring will include contractual obligations, in line with the most recent Climate Action Plan and sectoral targets, for the successful tenderer to ensure that the proposed development stays in line with updated aims.

- Commitments to monitor GHG emissions during the construction phase will also be secured through the Construction Environmental Management Plan (CEMP). Monitoring will include embodied carbon of construction materials, water usage, power and fuel usage, and waste

generation (including reuse and recycling rates). Where monitoring shows that the proposed development is not meeting its targets, further mitigation will be put in place.

- Monitoring should also include reviewing potential for extreme weather events which may cause damage during construction. Contractors' Environmental Management System (EMS) will include measures to address risks during such events i.e. flooding.

23.5.10 Material Assets – Traffic & Transport

- The Applicant will conduct a pre- and post-construction condition survey on the public road, with the developer liable to repair any damage to the public road attributed to the construction of the proposed development.

- The Applicant will set up a Project website in order to keep local residents and businesses updated with construction road impacts.

23.5.11 Material Assets – Waste Management

- During the construction phase, waste management activities will be monitored by the Contractor's appointed Resource Manager to ensure full compliance with the mitigation measures outlined in this report, as well as all relevant waste management legislation and local authority requirements.

- The Contractor will be responsible for maintaining comprehensive waste records throughout the duration of the construction phase. All waste volumes transported off-site will be tracked and monitored, with documentation retained on-site and made available for review as required.

23.5.12 Material Assets – Utilities

- The Contractor will be responsible for maintaining records and documentation for the full duration of the demolition and construction phase, including all relevant paperwork during commissioning of new services, consisting of required approvals and consents, and documentation for each system being commissioned (i.e. completion reports, checklists, test results, utility provider confirmation, and operations and maintenance manuals).

23.5.13 Risk Management for Major Accidents & Disasters

- Appropriate monitoring and assessment of the chimney and quarry during construction and developmental phases are proposed to reduce the risk of major accident and / or disaster.