

# MMOS

MURPHY · MATSON · O'SULLIVAN

CONSULTING CIVIL & STRUCTURAL ENGINEERS

## Outline Construction & Demolition Management Plan

### Student Accommodation, Rialto Cinema Site, Rialto

Rev. 02

Prepared by: DO'S

Murphy Matson O'Sullivan

Consulting Civil & Structural Engineers

## Table of Contents

- 1.0 Introduction
- 2.0 Site Location and Description
- 3.0 Existing Land Use
- 4.0 Outline of Proposed Works
- 5.0 Construction Management Plan
- 6.0 Demolition Waste Management Plan
- 7.0 Environmental Issues
- 8.0 Traffic Management
- 9.0 Neighbouring Structures

**Appendix A – Asbestos Survey Report by Phoenix Environmental Safety Ltd.**

Project Reference 18\_079

Revision control table

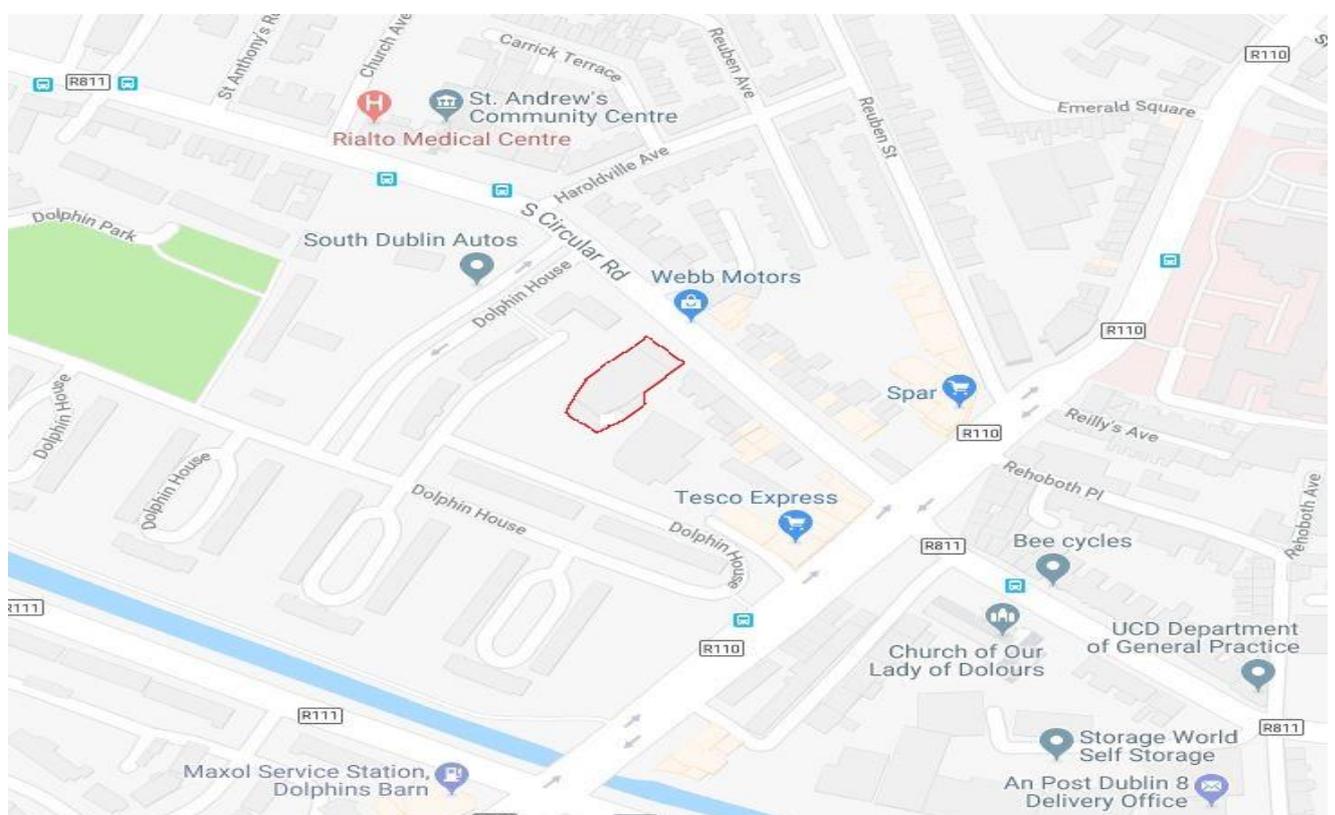
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0	18.01.19	Issue for planning review	DOS	MM
1	14.02.19	Planning Review comments added	DOS	MM
2	04.07.19	Asbestos Survey Report added to appendix A & related reference added	DOS	MM

## **1.0 Introduction**

MMOS Consulting Engineers have been requested by Molaga Capital Ltd. to prepare an Outline Construction & Demolition Management plan for a site in Rialto Dublin 8. The site is located on the South Circular Road and the proposal is for a 5-7 storey above ground Student Accommodation facility with single storey lower ground floor amenity and servicing level below ground.

## **2.0 Site Location and Description**

The site for the proposed scheme is Old Rialto Cinema site (more recently used as a Car Showroom) in Rialto, Dublin 8. The site fronts on to the South Circular Road on its northern side. It has the end of a housing terrace and associated rear garden and a single storey small industrial unit on its eastern side. There are open public footpath and hardstanding areas to the south and west sides of the site. The site is currently bordered by a circa 3m height block wall with security fencing over. The overall site area is 0.299Ha. See figures 1 & 2 for site location and image. The cinema was constructed in circa 1930's and operated as a cinema until the early 1970's. It was then converted to a Car Showroom. The site has been unoccupied for a number of years.



**Figure 1 – Site Location**



**Figure 2 – Site Plan view**

### **3.0 Existing Land Use**

There is an existing 2 & 3 storey concrete and masonry building with flat roof fronting onto the South Circular Road, behind which is a large 2/3 storey structure with pitched roof. The most recent use of the building was as a car showroom/repair facility. Prior to that the building was used as a Cinema. The building is surrounded by concrete and macadam hardstanding at ground floor level with a circa 3.5m ht. masonry wall to the perimeter on the 2 sides east and west and to the rear (south). The existing site levels vary from +19.50m AOD at the front of the site rising to +20.40m AOD at the rear.

## **4.0 Outline of Proposed Works**

The proposed development consists of a 5 to 7 storey above ground new Student Accommodation facility, with single storey lower ground floor amenity and servicing level below ground, and with accommodation for circa 317 no. students (313 bedrooms) with associated facilities. The proposed development is to incorporate part of the existing 3 storey old Cinema structure to the front of the site. The remainder rear of the existing building on site will be demolished. Refer to architect's drawings for details.

The proposed scheme involves the lowest level of building being constructed circa 3.5m below ground (Level -1 – Lower Ground Floor area containing Leisure facilities), with external open courtyard space at Lower Ground (Courtyard 4 in the SW corner) & Upper Ground floor level (Level 0 – Courtyards 2 & 3 on the north-east & south-east sides respectively). There is no requirement for car parking within the site but there is allowance for access to Courtyard 2 for a fire tender.

The existing site levels vary from +19.50m AOD at the front of the site rising to +20.40m AOD at the rear. The proposed development incorporates a Lower Ground floor level -1 at +16.515m AOD with SW external courtyard areas at +16.515m AOD. The proposed Upper Ground floor level is at +19.95m with external courtyards 2 & 3 at a similar level.

The proposed construction is most likely to be a reinforced concrete structure. The basement (Lower Ground) structure is envisaged to consist of a monolithic RC basement slab with surrounding RC walls to ground floor level. The building will most likely be supported on RC continuous flight auger piles. The construction of the basement will require temporary support of the excavation using permanent secant piled wall to its perimeter. The upper floor levels are envisaged to be RC flat slab floor construction on RC columns.

## **5.0 Construction Management Plan**

### **5.1 Programme and phasing**

The proposed construction works will commence in the 3<sup>rd</sup> quarter of 2019, subject to grant of planning permission.

The outline construction and development sequence is as follows;

- Construct site perimeter hoarding inclusive of construction traffic and construction personnel entrance gates on the north side of the site (onto South Circular Road).
- Undertake general site set-up with site offices and welfare facilities within site hoarding.
- Identify all existing services on site above and below ground. In liaison with statutory bodies all live services to be isolated or disconnected as required.
- Undertake demolition and site clearance and remove all demolition materials and initial hardstanding excavation materials to a licenced tip.
- Undertake secant piling to the perimeter of the proposed basement. Excavate to formation levels and remove all excavated materials off site to a licenced tip.
- Construct foundations and basement wall and slabs in RC concrete.
- Construct building frame and envelope.
- Complete works with lands scaping and general building envelope finishes to sides and roof.

### **5.2 Site Access**

Access to the site is currently from the South Circular Road with 2no. access gates east and west of the front building (which is to remain). The main construction vehicular access and egress to and from the site for deliveries and for vehicle egress, will be from the entrance on the west of the front building (at the NW corner of the site). The main vehicle route to and from the site will be via the South Circular Road with movements through surrounding residential areas restricted. The main entrance gate will be manned by security personnel. A wheel wash will be located directly inside the main entrance/exit gate to prevent any dirt being carried out from the site to the public roads. A road sweeper will be employed if necessary, to keep surrounding public access roads clean.

### **5.3 Protection of surrounding Public Areas from Construction Activity**

As noted the site will have a perimeter hoarding to the full extent of its perimeter with controlled access and egress for construction personnel and vehicles. Adequate safety and directional signage will be provided to warn pedestrians and road users of vehicles entering and exiting the site. The controlled access points will be kept locked at all times when not manned for directing vehicles entering and exiting.

Appropriate fall arrest and protective measure will be undertaken where works are required to the building to be maintained which is close to the site perimeter fronting onto the South Circular Road and on the east, west and southern perimeters. As demolition and construction proceeds perimeter protection, including guard rails, netting and crash decking where necessary will be employed to protect both site personnel and members of the public on footpaths and open areas surrounding the site.

It is envisaged that 1no. fixed Tower Crane will be erected on site. All construction materials being lifted by crane will be monitored by banksmen with guide ropes affixed where necessary. Weight restriction systems and alarms will be employed to prevent the lifting of materials over surrounding buildings and over external areas occupied by members of the public such as footpaths and surrounding yards. Should a mobile crane be required for specific deliveries a comprehensive method statement shall be prepared to indicate the required co-ordination of site activities and assessment and minimisation of risk.

### **5.4 Site Security**

As noted a perimeter hoarding is to be erected to the perimeter of the site circa 3.0m in height. If necessary the pedestrian route to the front of the site along the south circular road can be covered to further protect pedestrians. Safety and directional signage will be affixed to the hoarding together with branding to identify the contractor and notify the public of key aspects of the development. Pedestrian construction personnel access to the site will be controlled by means of swipe cards or pass code systems to the gate or turnstiles. During hours of construction activity the main gate will be manned.

All site personnel will have a Safe Pass and receive specific safety induction relevant to the site prior to starting work on site.

## **5.5 Material handling on site**

As noted it is envisaged that 1no. fixed Tower Crane will be erected on site. All construction materials being lifted by crane will be monitored by banksmen with guide ropes affixed where necessary. Weight restriction systems and alarms will be employed to prevent the lifting of materials over surrounding buildings and over external areas occupied by members of the public such as footpaths and surrounding yards. Should a mobile crane be required for specific deliveries a comprehensive method statement shall be prepared to indicate the required co-ordination of site activities and assessment and mitigation of risk.

It is envisaged that Teleporters and Hoists will be used around the site during construction. Method statements will be prepared outlining restrictions on their use and outlining co-ordination with other site activities.

## **5.6 Site Deliveries**

An unloading area will be provided within the site hoarding for unloading of deliveries. The area will be accessible for offloading of materials by forklift and tower crane.

Deliveries will be scheduled where possible outside of peak morning and evening traffic rush hours.

## **5.7 Site accommodation**

Site accommodation will consist of the following;

- Site staff offices and welfare facilities
- Material drop-off zone and storage area

A temporary electricity supply will be provided via the adjacent grid (subject to agreement with Electric Ireland). Water supply will be provided by means of a temporary connection subject to agreement with Irish Water and DCC. Similarly, an outfall connection to the local foul water drainage network will be made subject to agreement with Irish Water and DCC. It is envisaged that existing connections on site will be utilised for these connections to minimise disruption to the pavement and road network.

## **5.8 Site Parking**

As the site is relatively small and space around the proposed building is restricted. Therefore, there will be no site parking available for construction personnel within or in the vicinity of the site. All construction staff will be encouraged to use public transport.

## **5.9 Working Hours**

Construction operations on site will be between the hours of 07.00am and 19.00pm Monday to Friday and 0.800am to 14.00pm on Saturdays or as otherwise directed by DCC in the planning permission (if successful).

Should particular deliveries, construction activities or service connections be required to be undertaken outside these working hours this will only be with the prior written agreement of the local authority or service providers.

## **6.0 DEMOLITION & WASTE MANAGEMENT PLAN**

### **6.1 General**

The contractor will be required to prepare a specific Demolition Waste plan & Construction Waste management plan for the site and submit prior to commencement of the works. The following requirements are noted.

#### **Details of the Wastes to Be Produced (Incl. Estimated C&D Surpluses/Deficits)**

During construction of the proposed development, there will be demolition and construction waste generated, such as waste concrete, brick & block, subsoil excavation material, off-cuts of timber, oversupply of materials and damaged or broken concrete blocks and tiles, along with packaging materials such as cardboard, plastic and polystyrene.

Note that an Asbestos Survey report has been undertaken by Phoenix Environmental Safety Ltd. Asbestos bearing materials were found in the existing building on site, details of which are in the Refurbishment/Demolition Asbestos Survey report in Appendix A.

#### **Main C&D Waste Categories**

The main non-hazardous waste streams that will be generated by the construction and demolition activities at the site are:

- Stones/bedrock, topsoil and subsoil
- Concrete, brick, tiles and ceramics
- Asphalt, tar and tar products
- Plasterboard
- Scrap Metal
- Cardboard (packaging)
- Plastic (wrapping, packaging)
- Waste wood
- Paper

The hazardous waste streams may include the following;

- Contaminated soils from excavation
- Asbestos bearing materials from demolition
- Batteries
- Wood Preservatives
- Oils/Fuels from machinery & equipment

The European Waste Code (EWC) Classification for each waste stream is presented in Table 6.1.

**Table 6.1: Waste types and EWC Classification**

<b>Waste Material</b>	<b>EWC Code</b>
<i>Non-Hazardous</i>	
Concrete bricks, tiles and ceramics	17 01 00
Wood	17 02 01
Glass	17 02 02
Plastic	17 02 03
Bituminous mixtures, coal tar and tarred products	17 03 00
Metals (including their alloys)	17 04 00
Soil, stones and dredging spoil	17 05 00
Insulation materials and asbestos-containing materials	17 06 00
Gypsum-based construction material	17 08 00
Other construction and demolition waste	17 09 00
Cardboard	15 01 01
<i>Hazardous</i>	
Asbestos	17 06 05
Batteries	16 06
Wood Preservatives	03 02
Liquid Fuels	13 07

## Estimated Waste Arising & Proposals for Reduce, Reuse & Recycle

The EPA has produced figures for the C&D waste recorded in the National Waste Database . This included a percentage breakdown of each waste type in the C&D stream.

**Table 6.2: Breakdown of Waste Materials generated at a typical site**

Waste Types	%
Bedrock, Soil & Stones	51
Concrete, Bricks, Tiles, Ceramics, Plasterboard	39
Asphalt, Tar and Tar products	2
Metals	2
Other	6
<b>Total Waste</b>	<b>100</b>

As Table 6.2 shows, a large percentage of the waste at the site will be soil and stones. The excavated material from the site will be reused on site where possible (e.g. crushed concrete and stone as piling mat. For excess demolition and excavation material, off site options include land remediation/infill on other sites in the area or carting off site to licenced landfills.

## 6.2 Proposed Uses of Wastes and Surpluses/Deficits from the Site

A temporary segregation bay will be constructed at the site for the duration of the construction and demolition phase of the development. The bay will include segregated areas for recyclable waste streams, such as gypsum (plasterboard), cardboard, timber, concrete/blocks/tiles etc.

As extensive development is being carried out in the vicinity of the site, the possibility of reuse of materials on neighbouring sites will be investigated.

### Asbestos bearing materials from Demolition Waste

Phoenix Environmental have undertaken an Asbestos Survey & Report on the existing buildings to be demolished on site. Asbestos containing materials were detected and confirmed by laboratory testing. Asbestos containing ceiling coating, cement board, bitumen adhesive under floor tiles and cement slates were identified in the report undertaken in July 2018. This survey will be provided to the Demolition Contractor so that a specialist Asbestos Removal Contractor is appointed, and a detailed Asbestos Removal Plan is undertaken. Refer to appendix A for report details.

Asbestos waste is hazardous and must be disposed of properly. Before any demolition work, identify which waste facility is licensed by the Environmental Protection Agency (EPA) for disposal of asbestos waste.

Hazardous waste transfer stations can accept asbestos waste and then arrange to have it disposed of at an appropriate facility here or abroad.

The Asbestos containing materials will be removed and disposed of as asbestos waste before demolition commences. All asbestos removal works must be carried out in accordance with S.I. No. 386 of 2006 Safety, Health & Welfare at Work (Exposure to Asbestos) Regulations 2006-2010. Refer to Phoenix Environmental Safety Ltd. Asbestos Survey Report for details.

### **Cardboard**

Cardboard will be segregated on site. The cardboard will be flattened and placed in a covered skip or tied and covered, to prevent the card getting wet. A recycling contractor will collect it as required.

### **Plasterboard**

There will be a separate skip for plasterboard at the site. There are a number of specialist contractors that recycle plasterboard and they will be contracted to address this matter.

Reprocessed gypsum powder, which makes up to 94% of the plasterboard, can be reprocessed into new plasterboard or converted for use in soil conditioners for the agricultural industry. The paper, which makes up to 6% of the plasterboard, can be reused in various industries.

### **Soil/Subsoil**

Excess excavated soil will be disposed of off-site. Soil will be removed and disposed of by contractors licensed under the Waste Management Act of 1996, the Waste Management (Permit) Regulations of 1998 and the Waste Management (Collection Permit) Regulations of 2001. This material may be used for fill material on other sites, or capping purposes on site, e.g. at a landfill.

A site investigation has been undertaken by Ground Investigations Ireland. The general site profile below ground is as follows;

- Concrete (0.2m)
- Made Ground (1m – 2m)
- Cohesive Deposits (gravelly clays)
- Granular Deposits (Gravels)

Laboratory Environmental testing was undertaken on soil samples to establish Waste Acceptance Criteria (WAC). The results of these tests are presented with individual parameter limits for “Inert”, “Non-Hazardous” and “Hazardous” as outlined in the EC Directive 1999 131/EC Article 16 Annex II, “Criteria and procedures for the acceptance of waste at landfills”. The results indicate some soil samples tested have Total Organic Content (TOC) above the hazardous limit and Molybdenum, Antimony and Sulphate above inert limits. Consultation will be required with local landfill operators regarding the disposal of this material to ensure compliance with regulatory requirements. Refer to Ground Investigations Ireland Ground Investigation Report for details.

## **Plastic**

As plastic is now considered a highly recyclable material, much of the plastic generated during construction will be diverted from landfill and recycled. Clean plastic will be segregated at source and kept as clean as possible and stored in a dedicated covered skip.

## **Timber**

There will be timber waste generated from the construction work as off-cuts or damaged pieces of timber. Timber that is uncontaminated, i.e. free from paints, preservatives, glues etc, will all be recycled. It will be stored on site in a designated skip and collected by a recycling contractor. Such companies shred the timber and use it for manufacture of wood products or for landscaping (wood chips etc).

## **Scrap Metal**

Steel is a highly recyclable material and there are numerous companies that will accept waste steel and other scrap metals. A segregated skip will be available for steel storage on site pending recycling.

## **6.3 Tracking and Documentation Procedures for Off-Site Waste**

All waste will be documented prior to leaving the site.

Any contractor who takes waste materials from the site will be compliant with the Waste Management Act of 1996 & 2001 and also the Waste Management (Collection Permit) Regulations of 2001, i.e. any contractor removing waste from the site will have a waste collection permit issued by Cork City Council. The foreman on the site will have a copy of the waste collection permits.

All information will be entered in a waste management system kept on the site; this will be maintained by the appointed building contractor. This will maintain accurate records on the quantities of waste/surpluses arising and the real cost (including purchase) associated with waste generation and management, locations for disposal and recycling of waste and the permitted contractors used in the process. This will also be in accordance with Section 5 of this Appendix.

### **Disposal of C&D Waste**

There will be a general skip or receptacle for C&D waste not suitable for reuse or recovery. This skip will include polystyrene, contaminated cardboard, plastic etc. Workers on the site will be encouraged to recycle as much municipal waste as possible, i.e. cardboard, plastic, metals and glass. General wet waste will be presented separately for recovery. Food waste will be segregated with separate receptacles for collection and disposal.

Prior to removal, the municipal waste receptacle will be examined by either the foreman or a member of his team to determine that recyclable materials have not been placed in there. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly.

Particular measures for the initial removal of Asbestos bearing materials such as area sealing/screening, use of particular PPE for working with asbestos and double bagging of materials will need to be taken. This will be subject to detailed method statements and risk assessment to be undertaken by the specialist licenced asbestos removal contractor.

## **6.4 Construction & Demolition Waste Management Procedures**

### **Sorting/Segregation Arrangements for Individual Materials**

C&D waste materials will be stored separately on site, i.e. there will be a Central Waste Storage Area (CWSA) with specific receptacles or bays for each material taken from the demolition and construction phase.

Bins or skips used on site will be transportable to the CWSA. A forklift will be used to transport skips and containers around the site. By having segregated wastes at source, it can be arranged that a waste contractor/recycler will collect the materials as necessary.

### **Details of Transportation and Reception Arrangements for Movement of Materials to Other Sites**

The waste materials will be stored in the specifically designated compound. All waste collected from the site will be by a permitted waste contractor, under the Waste Management (Collection Permit) Regulations 2001.

The contractor will provide the waste manager on site with documentation of the waste to be removed and a copy of the waste collection permit. Prior to the waste leaving the site, the waste manager will have documentation to show where the waste is being taken to, and that the facility is licensed to accept the particular waste. A receipt will be issued for each load that leaves the site.

Some wastes may be transported to another site for reuse on the site. The manager will be in contact with other sites to ensure that as much waste is reused as possible, such as concrete for fill purposes etc.

All wastes leaving the site will be placed in appropriate containers. Any concrete, soil, gravel, or broken stone transported off site will be covered to prevent dust or particle emissions from the load.

### **Training Provisions for Waste Manager and Site Crew**

One of the construction team or the foreman will be appointed as a waste manager to ensure commitment, operational efficiency and accountability.

The waste manager will be given responsibility and authority to select a waste team if required, i.e. members of the site crew that will aid him/her in the organisation, operation and recording of the waste management system on the site.

The waste manager will have overall responsibility to oversee, record and provide feedback to the client on everyday waste management at the site. Authority will be given to the waste manager to delegate responsibility to sub-contractors where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and salvage on site.

The waste manager will be trained in how to set up and maintain a record keeping system, how to perform an audit and how to establish targets for the waste management on site.

He/she will be also trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and know how to implement the construction and demolition waste management plan.

The training of the site crew is the responsibility of the waste manager. A waste training program will be organised. A basic awareness course will be held for all site crew to outline the C&D waste management plan and to detail the segregation of waste materials at source. This may be incorporated into the induction course, or safety-training course.

This basic course will describe the materials to be segregated, the storage methods and the location of the waste storage areas. A subsection on hazardous wastes will be incorporated and the particular dangers of each hazardous waste will be explained.

## **6.5 Record Keeping**

Records will be kept for each waste material, which leaves the site, either for reuse on another site, recycling or disposal. A system will be put in place to record the construction waste arising on site.

The waste manager or a member of his team will record the following;

- Waste taken for Reuse off-site (i.e. for capping of landfill cells or at another site)
- Waste taken for Recycling
- Waste taken for Disposal (incl. separated Asbestos bearing materials)
- Reclaimed waste materials brought on-site for reuse

For each movement of waste on- or off-site, the waste manager will obtain a signed docket from the contractor, detailing the weight and type of the material and the source and destination of the material.

This will be carried out for each material type. This system will also be linked with the delivery records. In this way, the percentage of construction waste generated for each material can be determined.

The system will allow the comparison of these figures with the targets established for the recovery, reuse and recycling of construction waste and to highlight the successes or failures against these targets.

## **6.6 Outline Waste Audit Procedure**

The appointed waste manager on site will be responsible for conducting a waste audit at the site.

A review of all the records for the waste generated and transported on- or off-site will be undertaken. If waste movements are not accounted for, the reasons for this should be established in order to see if and why the record keeping system has not been maintained.

A summary report will be prepared and compared with the established recovery/reuse/recycling targets for the site.

Each material type will be examined, in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved.

Waste management costs will also be reviewed. Ongoing consultation with waste contractors and the Dublin City Council will be pursued in order to ensure that the best practicable option is being followed for waste management on site.

Upon completion of the project, an audit will be prepared, summarising the ongoing progress and the total recycling/reuse/recovery figures for the development. This audit may be reviewed by the Waste Management section of Dublin City Council.

At least two audits will be carried out during construction to ascertain if measures in place are addressing demands and to allow for corrective measures in waste handling and management to be addressed with appropriate corrective measures.

## **7.0 ENVIRONMENTAL ISSUES**

### **7.1 Noise**

Noise monitoring will be set-up and recorded on site throughout the construction period. Noise monitoring will commence approx. 2 weeks before construction activities commence to get a base level which is to be shared with DCC to act as a baseline.

Construction activities to be carried out in compliance with the recommendations of BS 5228, Code of Practice for noise and vibration control on construction and open sites, and BS 6187 Code of Practice for Demolition. Measures to be employed to ensure compliance will include:

- Noise monitoring locations on site and in vicinity of site to record background and construction noise activity.
- Best construction practice to be used to minimise noise produced by construction activity on site.
- All site plant and equipment to include noise reducing systems where possible and at a minimum to be fitted with effective exhaust noise reducers. Regular maintenance of plant will be undertaken to ensure noise emission compliance.
- Acoustic lining covers to be added to all site compressors.
- All plant to be operational outside working hours, such as pumps and generators, will be located in acoustic enclosures.
- Site working hours, as set out by the local authority, will be strictly adhered to.

### **7.2 Air Quality Monitoring**

Air Quality and Dust monitoring will be carried out on a regular basis in accordance with DCC requirements or as stipulated in the planning conditions. Records will be kept of all monitoring undertaken for review by the Planning Authority.

### **7.3 Dust & Dirt Pollution**

The contractor will ensure that all construction vehicles that exit the site onto the public roads will not transport wheel dirt or construction dust. This will be achieved as follows;

- Ensuring construction vehicles have clean internal road surfaces where possible.
- Ensure that all vehicles are processed through an on-site wheel washing facility.
- Ensure all vehicles carting away demolition materials are covered to avoid dust spread.
- Ensuring all vehicles are inspected for compliance with cleanliness requirements prior to exiting the site.

Water based dust suppression will be used to reduce air born dust spread caused particularly during the demolition and excavation phases and when the weather is dry for an extended period.

### **7.4 Harmful Materials**

Where harmful materials will be stored on site, for use in connection with the construction work, these materials are to be stored in a controlled manner. Where onsite facilities are used the filling area will be bunded and fuel storage systems will be double bunded at a minimum.

## **8.0 Traffic Management**

### **8.1 Access to the site**

The contractor is to prepare a detailed Traffic Management plan for the agreement of Dublin City Council & An Garda Siochana. Construction traffic will enter and exit the site via the South Circular Road.

### **8.2 Construction Parking**

Owing to the restricted nature and size of the site, there will be no site parking or construction parking anywhere in the vicinity of the site. Where necessary nearby offsite parking will be identified to avoid congestion in the surrounding areas and minimise congestion for local residents and retailers.

Construction staff will be encouraged to use public transport and information on local transport will be highlighted on site.

### **8.3 Vehicle Movement During Construction**

Most vehicle movement will be generated during the initial demolition and excavation phases where demolition and excavation materials are carted off site to registered Waste Handling facilities. Traffic volumes generated in this period are estimated to be in the region of 10no. 2-way trips per hour. This volume of traffic on the South Circular Road is not deemed significant in terms of the overall existing traffic flow. These flows are not expected to significantly impact on the capacity of the surrounding road network.

### **8.4 Minimise Construction Vehicle Movements**

Construction vehicle movements will be minimised as follows;

- Consolidation of delivery loads to/from the site and manage large deliveries on site to occur outside of peak periods.
- Use of precast/prefabricated materials where possible.
- Demolition or excavation materials will be re-used on site where possible.
- Adequate space for storage of materials will be provided on site.
- Construction material quantities to be minimised as much as possible.
- Construction personnel vehicles to be minimised by promotion of use of public transport.

Listed below are measures to be encouraged to minimise traffic movements;

## **Car Sharing**

Car sharing among the construction staff will be encouraged. Staff home locations will be surveyed to identify clusters to assist in organising car sharing.

## **Public Transport**

Information leaflets will be provided to all construction staff on induction to highlight the locations and routes of public transport services in the vicinity of the site.

## **Cycling**

Bike parking spaces will be provided on site for construction personnel, in addition to locker space to allow cyclists to store their cycle clothing.

## **8.5 Public Roads**

A visual condition survey will be undertaken of all surrounding roads prior to any site works commencing. The contractor to liaise with DCC Roads & Traffic Department to agree any changes to construction access routes and load restrictions if required.

The site entrance and main site access road will be continuously maintained for emergency vehicle access.

The following measures will be undertaken to ensure the site, public roads and surrounding footpaths are kept clean and tidy;

- Wheel wash facilities will be provided at site exit for construction vehicles exiting the site.
- A regular programme of site tidying will be established to ensure a safe and orderly site.
- Scaffolding will have preventative netting to prevent materials falling and detritus being scattered by wind.
- Any dirt or mud spillages on surrounding roads and footpaths will be regularly cleaned.

## **8.6 Project Specific Traffic Management Plan**

A detailed project specific traffic management plan will be developed by the main contractor on appointment and agreed with the design team, DCC and An Garda Siochana prior to works commencing on site. This co-ordinated plan will be updated as required as the project proceeds. Issues to be addressed in Traffic Management Plan will include:

- Public Safety of members of public using surrounding roads and footpaths.
- Construction Traffic Routes.
- Deliveries Schedule.
- Special Deliveries (out of normal wide or long roads).
- Traffic Flows.
- Signage and lighting.
- Road opening requirements.
- Road closures.
- Lighting.

A specific member of staff of the main contractor will be appointed as liaison office for point of contact with local residents, DCC & Gardai.

## **9.0 Protection of Neighbouring Structures**

### **Monitoring**

A monitoring regime will be employed by the contractor to record the existing condition of buildings surrounding the site, to record vibration and any settlement of structures.

Through Condition Surveys of all surrounding properties to be undertaken by specialist on behalf of contractor. These surveys are to be largely a photographic record of these buildings and copies to be made available to all parties as record for recourse if required.

The contractor to employ a Vibration Monitoring Specialist to develop a vibration strategy for the site. Vibration monitors to be fixed to surrounding buildings 2 weeks prior to commencement of works on site and will remain insitu until after demolition, piling and substructure work are completed. All vibration records to be recorded. Monitors to send out alarm signal to construction management staff for trigger vibration levels approaching critical limits. Vibration strategy and critical limits to be informed by BS 7385.

Targets and tell tales to be fixed to adjacent structures to record any movement of structures or of existing cracks in structures over time. Survey and readings to be taken regularly on site (minimum bi-monthly).

## **APPENDIX A**

### **Refurbishment/Demolition Asbestos Survey Report**

**By Phoenix Environmental Safety Ltd.**

**Phoenix Environmental Safety Ltd.**

# **ASBESTOS SURVEY REPORT**

**(Refurbishment / Demolition Survey)**

**Client: Molaga Capital Limited,  
7 Amberley Lawn, Grange, Douglas, Cork**

**Location: The Old Rialto Cinema Site,  
South Circular Road, Dublin 8**

**Date: 3<sup>rd</sup> July 2018**

**Report No. PE 18-475**



**Graigueswood, Freshford, Co. Kilkenny**

**Tel: 056 8832414  
Fax: 056 8832950**

**admin@phoenixenv.ie  
www.phoenixenv.ie**

Client Name: Molaga Capital Limited, 7 Amberley Lawn, Grange, Douglas, Cork

Property: The Old Rialto Cinema Site, South Circular Road, Dublin 8

Asbestos Survey Type: Refurbishment/Demolition Asbestos Survey

Survey Company: Phoenix Environmental Safety Ltd.

Surveyors: Eoghan Hickey & Andrew Hickey

Testing Laboratory: G&L Consultancy Ltd.

Date of Survey: 27<sup>th</sup> June 2018

Date of Survey Report: 3<sup>rd</sup> July 2018

Report issue: Draft

Signed: *Eoghan Hickey*

Date: 3<sup>rd</sup> July 2018

This report cannot be used for contractual or engineering purposes unless this sheet is signed where indicated by Surveyor. The report must also be designated 'final' on the signatory sheet.

Please note that Phoenix Environmental Safety Ltd. cannot be held responsible for the way in which the Client interprets or acts upon the results. The report must be read in its entirety including any appendices. Phoenix Environmental Safety Ltd. accepts no responsibility for sub-division of this report. All measurements in this report are approximate and therefore should not be used by the asbestos removal contractor for pricing purposes. The asbestos removal contractors should ascertain for themselves, by site measurements and inspection, the exact nature and extent of the work to be done.

The survey information should be used to help in the tendering process for removal of ACMs from the building before work starts. The survey report should be supplied by the client to designers and contractors who may be bidding for the work, so that the asbestos risks can be addressed. In this type of survey, where the asbestos is identified so that it can be removed (rather than to manage it), the survey does not normally assess the condition of the asbestos, other than to indicate areas of damage or where additional asbestos debris may be present. However, where the asbestos removal may not take place for some time, the ACMs' condition will need to be assessed and the materials managed.

<b>TABLE OF CONTENTS</b>	<b>PAGE</b>
Cover sheet .....	1
Signatory Sheet .....	2
Table of Contents .....	3
Summary .....	4
Introduction.....	5-6
Appendix A (Asbestos materials in buildings) .....	7-8
Appendix B (Results of Laboratory Analysis) .....	9-10
Appendix C (Asbestos Data Sheets & Asbestos Register).....	11-15
Appendix D (Non asbestos containing materials) .....	16-18
Appendix E (Non-accessible locations) .....	19
Appendix F (Floor plans & location of asbestos containing materials).....	20-23

## SUMMARY

Following a request made by Murphy Matson O' Sullivan Consulting Engineers Ltd., we have produced this Refurbishment/Demolition Asbestos Survey report of the Old Rialto Cinema Site, South Circular Road, Dublin 8 with the aim of finding asbestos containing materials (ACMs) within the scope of the asbestos survey.

The scope of the asbestos survey was confined to all accessible areas of the Former Rialto Cinema Building on the South Circular Road which is due for major refurbishment and part demolition works in the near future.

**During the asbestos survey of the Old Rialto Cinema Site, the following asbestos containing materials were detected in the following locations:**

- Asbestos containing textured coating was identified on the ceiling of the 2<sup>nd</sup> floor and also on the ceiling of the 2<sup>nd</sup> floor mezzanine store room (1,000 m<sup>2</sup> total approx.)
- Asbestos cement board was identified under the rear slated roof of the 1<sup>st</sup> floor (80 m<sup>2</sup> approx.)
- Asbestos containing bitumen adhesive was identified under vinyl floor tiles in the ground floor electrical room (10 m<sup>2</sup> approx.)
- Asbestos cement slate debris was identified at the rear of the site
- Asbestos cement replacement slates may be present on the rear lean-to roof and should be inspected once scaffolding has been erected or another similar means of safe access has been arranged

*See Appendix C, E & F for more details*

## INTRODUCTION

### Background

Asbestos has been used extensively in the building industry for over one hundred years and has proved to be an excellent product for a variety of uses, having many qualities such as insulation, fire and chemical resistance to name a few. Its suitability across a wide range of uses and its relatively cheap cost made it very popular, with over 3,000 different asbestos products having been recorded.

The use of asbestos containing materials (ACM's) was most prevalent between the 1950's and 1970's when it provided an economic, easy to use and versatile material. Unfortunately, given the constitution and make up of asbestos it can give rise to microscopic airborne fibres being released into the working environment. The fibres have carcinogenic properties caused by inhalation of the fibres which can get lodged in the lining of the lungs causing disease and death.

### Scope & Purpose

Molaga Capital Limited has commissioned Phoenix Environmental Safety Ltd. to undertake an asbestos survey of the Old Rialto Cinema Site, South Circular Road, Dublin 8. The aim of the survey was to locate and identify the presence of asbestos containing materials (ACM's) or suspected ACM's. This report provides a record and assessment of the extent and characteristics of ACM's and is based on information made available on 27<sup>th</sup> June 2018.

This particular survey comprised of a Refurbishment / Demolition Survey, carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006, the Health and Safety Executive's (UK) guidance document HSG 264 (Asbestos: The Survey Guide) and HSG 227 (A Comprehensive Guide to managing Asbestos in Premises).

#### **This means that:**

- As far as reasonably practicable, locate and describe all ACM's in all reasonably accessible areas within the scope of the survey
- A sampling programme is undertaken to identify possible ACM's and estimates of the volumes and the surface areas of ACM made
- A record of the condition of the ACM's or where additional asbestos debris may be expected to be present is produced

### **Refurbishment / Demolition Surveys (formerly type 3 surveys)**

This type of survey is necessary prior to any refurbishment (including "minor") or demolition work being carried out. These "refurbishment / demolition" surveys will be much more intrusive and destructive compared with management surveys as their intention is to locate all the ACMs so that they can be removed before the refurbishment or demolition takes place. Refurbishment/demolition surveys are required as necessary when the needs or use of the building changes and the fabric of the building will be disturbed or complex fixed plant and equipment are to be dismantled.

### **The purpose of the report is to:**

- Enable the client to take appropriate precautions so that people who work at the Old Rialto Cinema Site during the forthcoming demolition works are not exposed to asbestos-related health risks
- Provide information to assist the client in developing and implementing an action plan before any refurbishment works or demolition is carried out

### **Presentation of Findings**

#### **Data Sheets**

A series of data sheets have been prepared to provide assessments and recommendations for each of the locations where samples were taken. These data sheets are presented in Appendix C.

#### **Figures**

The schematic diagrams presented in Appendix F at the rear of this document shows the locations of all of the asbestos containing materials detected during the asbestos survey.

#### **Caveats**

All reasonable steps have been taken to ensure that the contents and findings of this report are true and accurate. Though as stated below, further undetected ACM's may still be present within the premises. The client should therefore be aware of his responsibilities for identifying, locating, removing and/or managing all ACM's within the premises, and for notifying the appropriate authorities where necessary.

#### **Refurbishment / Demolition Surveys**

This type of survey employs the use of destructive sampling techniques of an unfamiliar site. Although every effort is made to locate all asbestos containing materials, it is impossible to rule out the possibility that undiscovered asbestos materials may be present. If the building is to undergo major refurbishment or demolition, it is recommended that the persons carrying out the work are made aware of this and take sufficient precautions, as may be appropriate, to ensure the health and safety of their own employees and any other parties who may be affected by the works.

# APPENDIX A

## ASBESTOS MATERIALS IN BUILDINGS

**Sprayed coatings** applied in Ireland were typically a mixture of hydrated asbestos cement containing up to 85% asbestos, mainly amosite but crocidolite and mixtures have been used. Primarily used for anti-condensation and acoustic control and fire protection to structural steelwork. It is a friable material but if in a good condition and unlikely to be disturbed presents no immediate danger; however it is likely to release fibres, if disturbed especially during repair and maintenance work. As it ages the binding medium of sprayed asbestos may degrade with the consequent release of more fibres.

**Thermal insulation** to boilers, vessels, pipe work, valves, pumps etc also known as hand applied lagging. Lagging may have a protective covering of cloth, tape, paper, metal or a surface coating of cement. All types of asbestos may be found in lagging and the content can vary between 15 and 85% asbestos with the protective papers being up to 100% chrysotile. The likelihood of fibre release depends upon its composition, friability and state of repair, but it is particularly susceptible to damage and disturbance through maintenance work or the action of water leaks.

**Asbestos insulating boards** usually contain between 16 to 40% amosite, although boards may be found to contain other types of asbestos and in other quantities. Insulating boards were developed in the 1950s to provide an economical, lightweight, fire resisting insulating material. As insulation board is semi-compressed it is more likely to release fibres as a result of damage or abrasion. Work on asbestos insulation board can give rise to high levels of asbestos fibre.

**Asbestos cement products** as in roofing slates, wall cladding, permanent shuttering, flue, rain water and vent pipes generally contain 10 to 15% of asbestos fibre bounded in Portland cement, some flexible boards contain a small proportion of cellulose. All three types of asbestos have been used in the manufacture of asbestos cement. The asbestos fibres in asbestos cement are usually firmly bound in the cement matrix and will be released only if the material is mechanically damaged or as it deteriorates with age.

**Ropes and yarns** are usually high in asbestos content, approaching 100% and all three types of asbestos have been used in their manufacture. They were used as in the pipe lagging process and in pipe jointing and also for packing materials as in heat/fire resistant boiler, oven and flue sealing or anywhere thermal or fire protection was required. The risk of fibre release depends upon the structure of the material; bonded gasket material is unlikely to release asbestos but an unbonded woven material may give rise to high fibre release especially if when damaged or frayed.

**Cloth thermal insulation and lagging**, including fire resistant blankets, mattresses and protective curtains, gloves, aprons, overalls etc. All types of asbestos have been used in the manufacture but since the mid 60's the majority has been chrysotile, the content of which can be up to 100 %.

**Millboard, paper and CAF gaskets** usually have an asbestos content approaching 100% with all three types of asbestos being used in their manufacture. They were used for insulation of electrical equipment and for thermal insulation. Asbestos paper has been used as a laminate for fireproofing to various fibre panels. These materials are on some occasions not well bonded and will release asbestos fibres if subject to abrasion and wear.

**Bitumen felts and coatings** may contain asbestos either bound in the bitumen matrix or as an asbestos paper liner. These materials are not likely to present a hazard during normal installation or use, but should be removed and disposed of in compliance with any regulation applicable.

**Thermoplastic floor tiles** can contain up to 25% asbestos usually chrysotile, PVC vinyl floor tiles and unbacked PVC flooring normally 7-10% chrysotile and asbestos paper backed PVC flooring the paper backing may contain up to 100% chrysotile. Fibre release is not normally an issue but may occur when the material is cut or subjected to abrasion.

**Textured coatings.** Decorative coatings on walls and ceilings usually contain 3-5% chrysotile. Fibre release may occur when subjected to abrasion.

**Mastics, sealants, putties and floor tile adhesives** may contain small amounts of asbestos. The only possible risk is from sanding of hardened material when appropriate precautions should be taken.

**Reinforced plastic and resin composites**, used for toilet cisterns, seats, banisters, stair nosings, window seals, lab bench tops, brake shoes and clutches in machines. The plastics usually contain 1-10% chrysotile and were used in for example car batteries to improve the acid resistance. Resins may contain between 20 and 50% amosite, but because of its composition fibre release is likely to be low.

ASBESTOS FIBRE TYPE COMMON NAMES	
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	N/A
Fibrous Anthophyllite	N/A
Fibrous Tremolite	N/A

		
Chrysotile	Amosite	Crocidolite
		
Tremolite	Actinolite	Anthophyllite

# APPENDIX B

## RESULTS OF LABORATORY ANALYSIS



# APPENDIX C

## ASBESTOS DATA SHEETS



Old Rialto Cinema Site, South Circular Road, Dublin 8



## PHOENIX ENVIRONMENTAL SAFETY LTD. ASBESTOS DATA SHEET



Created By	Eoghan Hickey
Date	3 <sup>rd</sup> July 2018
Site Details	Old Rialto Cinema Site, South Circular Road, Dublin 8
Client Name	Molaga Capital Ltd.
Survey Type	R/D Asbestos Survey
Site Ref	PE 18-475
Building Ref.	Old Rialto Cinema Site
Location	2 <sup>nd</sup> Floor & Mezzanine Level
Extent/ Amount	1,000 m <sup>2</sup> approx.

Survey Date	27.6.2018	Sample No.	BS 161591
Survey Company	Phoenix Environmental Safety Ltd.		
Testing Laboratory.	G&L Consultancy Ltd.		

	MATERIAL ASSESSMENT		PRIORITY ASSESSMENT
Product type	Textured coating	Normal occupant activity	N/A
Extent of damage	Medium damage	Likelihood of disturbance	N/A
Surface treatment	Unsealed	Human exposure potential	N/A
Asbestos type	Chrysotile	Maintenance activity	N/A
	Material assessment score: N/A	TOTAL SCORE: N/A	Priority assessment score: N/A

### CONCLUSIONS AND RECOMMENDATIONS

The textured coating identified the ceiling of the 2<sup>nd</sup> floor and also on the ceiling of the 2<sup>nd</sup> floor mezzanine store room contains Chrysotile (white) asbestos fibres. Asbestos containing textured coatings typically contain between 2-5% asbestos fibres

The asbestos containing textured coating should be removed by an asbestos removal contractor and disposed of as asbestos waste before the demolition works commence

See Appendix F for more details

All asbestos removal work must be carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010

## PHOENIX ENVIRONMENTAL SAFETY LTD. ASBESTOS DATA SHEET



Created By	Eoghan Hickey
Date	3 <sup>rd</sup> July 2018
Site Details	Old Rialto Cinema Site, South Circular Road, Dublin 8
Client Name	Molaga Capital Ltd.
Survey Type	R/D Asbestos Survey
Site Ref	PE 18-475
Building Ref.	Old Rialto Cinema Site
Location	Under rear pitched roof
Extent/ Amount	80 m <sup>2</sup> approx.

Survey Date	27.6.2018	Sample No.	BS 161596
Survey Company	Phoenix Environmental Safety Ltd.		
Testing Laboratory.	G&L Consultancy Ltd.		

	MATERIAL ASSESSMENT		PRIORITY ASSESSMENT
Product type	Cement board	Normal occupant activity	N/A
Extent of damage	Medium damage	Likelihood of disturbance	N/A
Surface treatment	Unsealed	Human exposure potential	N/A
Asbestos type	Chrysotile	Maintenance activity	N/A
Material assessment score: N/A		TOTAL SCORE: N/A	
Priority assessment score: N/A			

### CONCLUSIONS AND RECOMMENDATIONS

The cement board identified internally on the underside of the 1<sup>st</sup> floor rear slated roof contains Chrysotile (white) asbestos fibres. Asbestos cement products generally contain between 10 to 15 % asbestos fibres, bound in Portland cement

The asbestos cement board should be removed by an asbestos removal contractor and disposed of as asbestos waste before the demolition works commence

See Appendix F for more details

All asbestos removal work must be carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010

## PHOENIX ENVIRONMENTAL SAFETY LTD. ASBESTOS DATA SHEET



Created By	Eoghan Hickey
Date	3 <sup>rd</sup> July 2018
Site Details	Old Rialto Cinema Site, South Circular Road, Dublin 8
Client Name	Molaga Capital Ltd.
Survey Type	R/D Asbestos Survey
Site Ref	PE 18-475
Building Ref.	Old Rialto Cinema Site
Location	Ground floor electrical room
Extent/ Amount	10 m <sup>2</sup> total approx

Survey Date	27.6.2018	Sample No.	BS 161600
Survey Company	Phoenix Environmental Safety Ltd.		
Testing Laboratory.	G&L Consultancy Ltd.		

	MATERIAL ASSESSMENT		PRIORITY ASSESSMENT
Product type	Floor tile & bitumen adhesive	Normal occupant activity	N/A
Extent of damage	Medium damage	Likelihood of disturbance	N/A
Surface treatment	Composite material	Human exposure potential	N/A
Asbestos type	Chrysotile	Maintenance activity	N/A
	Material assessment score: N/A	TOTAL SCORE: N/A	Priority assessment score: N/A

### CONCLUSIONS AND RECOMMENDATIONS

The floor tile & bitumen adhesive identified in the ground floor electrical room contains Chrysotile (white) asbestos fibres. Bitumen adhesives contain small amounts of asbestos fibres

The floor tiles and bitumen adhesive should be removed by an asbestos removal contractor and disposed of as asbestos waste before the demolition works commence

See Appendix F for more details

All asbestos removal work must be carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010

## PHOENIX ENVIRONMENTAL SAFETY LTD. ASBESTOS DATA SHEET



Created By	Eoghan Hickey
Date	3 <sup>rd</sup> July 2018
Site Details	Old Rialto Cinema Site, South Circular Road, Dublin 8
Client Name	Molaga Capital Ltd.
Survey Type	R/D Asbestos Survey
Site Ref	PE 18-475
Building Ref.	Old Rialto Cinema Site
Location	Rear of site
Extent/ Amount	Not quantified

Survey Date	27.6.2018	Sample No.	BS 161601
Survey Company	Phoenix Environmental Safety Ltd.		
Testing Laboratory	G&L Consultancy Ltd.		

	MATERIAL ASSESSMENT		PRIORITY ASSESSMENT
Product type	Cement debris	Normal occupant activity	N/A
Extent of damage	High damage	Likelihood of disturbance	N/A
Surface treatment	Unsealed	Human exposure potential	N/A
Asbestos type	Chrysotile	Maintenance activity	N/A
	Material assessment score: N/A	TOTAL SCORE: N/A	Priority assessment score: N/A

### CONCLUSIONS AND RECOMMENDATIONS

The cement slate debris identified at the rear of the site contains Chrysotile (white) asbestos fibres. Asbestos cement products generally contain between 10 to 15 % asbestos fibres, bound in Portland cement

The asbestos cement slate debris should be removed by an asbestos removal contractor and disposed of as asbestos waste before the demolition works commence

See Appendix F for more details

All asbestos removal work must be carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010

# APPENDIX D

## NON ASBESTOS CONTAINING MATERIALS



Metal roof cladding. No Asbestos Containing Materials (ACM's) detected

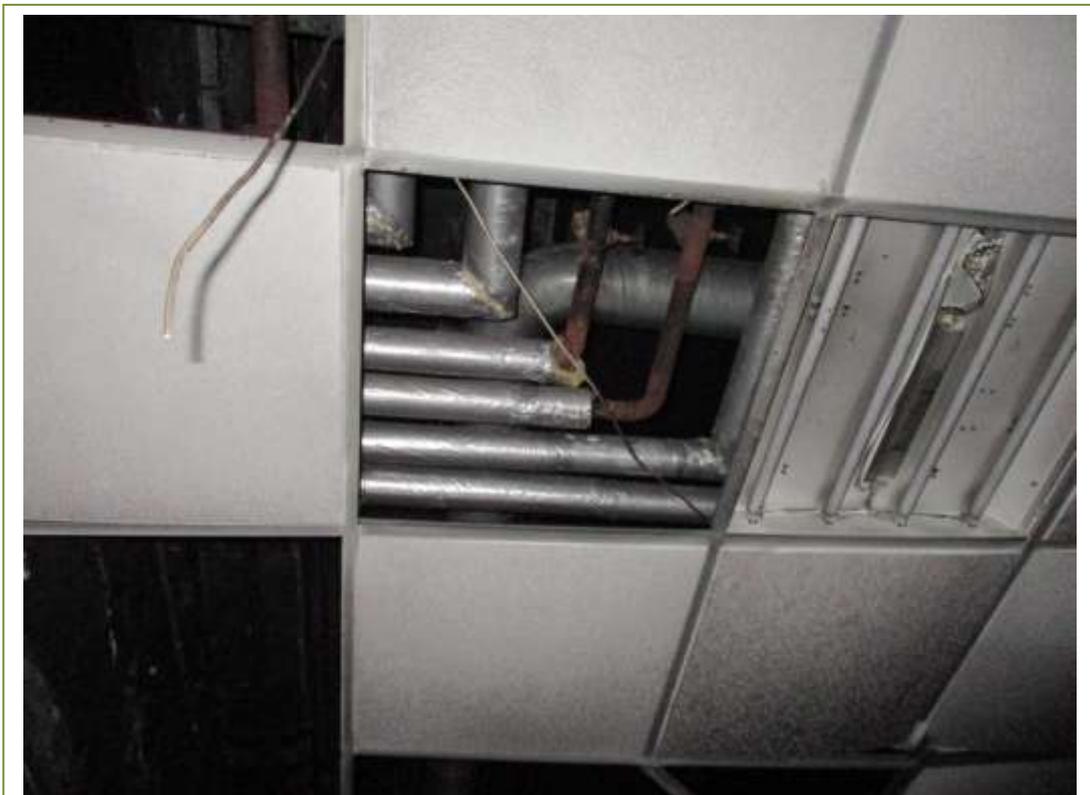


Asphalt on flat roof. No ACM's detected

## NON ASBESTOS CONTAINING MATERIALS



Stair nosing. No ACM's detected



Fiberglass pipework insulation. No ACM's detected

## NON ASBESTOS CONTAINING MATERIALS



Floor coverings and asphalt in front areas. No ACM's detected



Textured floor coverings on the 1<sup>st</sup> floor side stairwell ceiling. No ACM's detected

# APPENDIX E

## NON ACCESSIBLE LOCATIONS

- The rear lean-to roof could not be accessed safely to sample the slates. While the slates were found to be natural slates when visually inspected internally, it is possible that some asbestos containing replacement cement slates may be present in this area and should be inspected once scaffolding or another means of safe access to the roof area can be arranged
- Some areas were not accessible on the day of the survey as the doors were blocked up or unsafe to enter, these will need to be accessed prior to the demolition works commencing. These areas are outlined in appendix F
- No inspection of live electrical or mechanical plant or similar was carried out
- No inspection of any areas requiring specialist access equipment other than telescopic ladder was carried out
- All contractors working on site should always remain vigilant to the possibility that other asbestos containing materials may be concealed within the fabric of the building or equipment. If any suspect asbestos containing materials are uncovered during the course of the work, works must stop in that area and the suspect material should be sampled and analysed immediately for the presence of asbestos

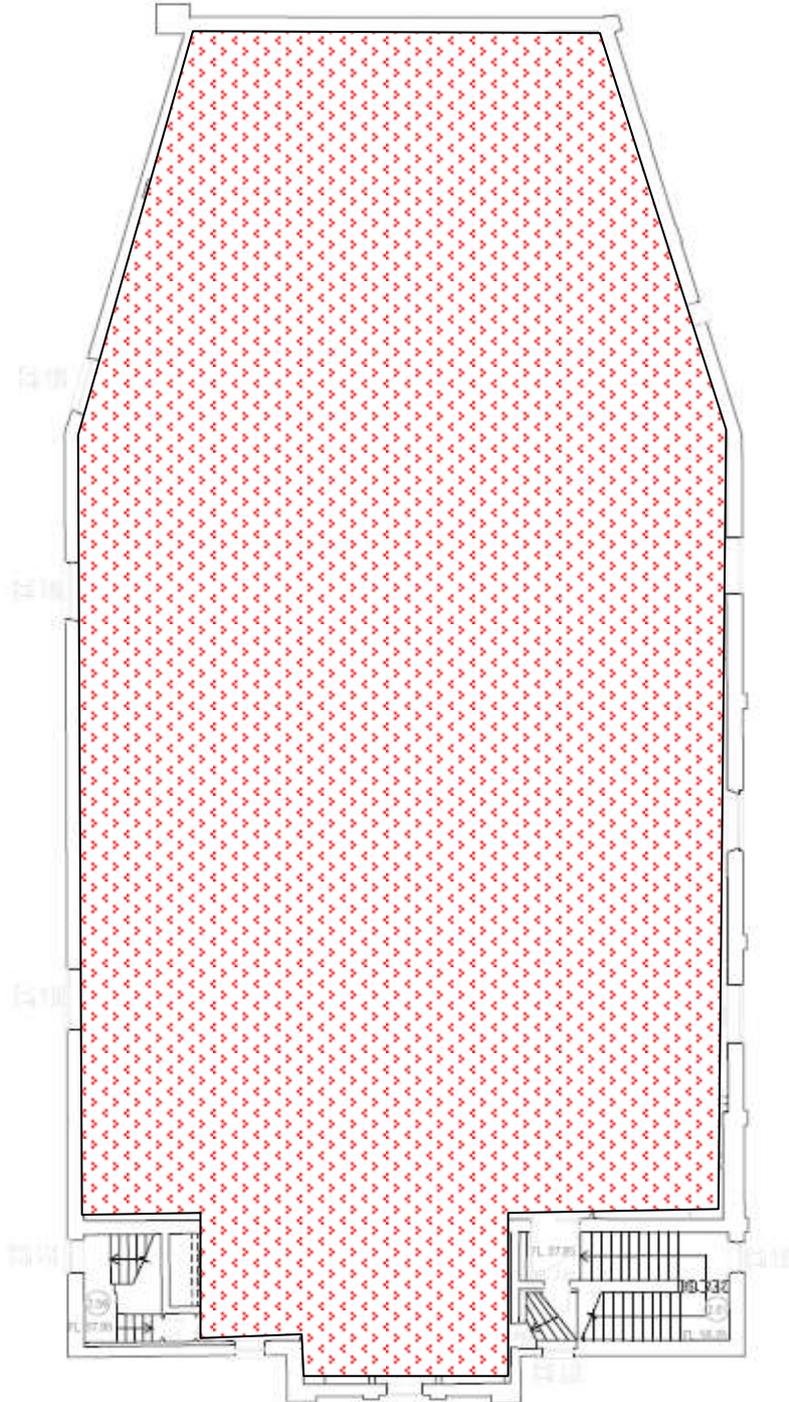
# APPENDIX F

## FLOOR PLANS & LOCATION OF ASBESTOS CONTAINING MATERIALS

Schematic diagram only  
Not to scale  
3<sup>rd</sup> July 2018

Old Rialto Cinema Site,  
South Circular Road,  
Dublin 8

### 2<sup>nd</sup> FLOOR PLAN



	Areas where asbestos containing textured coating was identified



