KAVANAGH
MANSFIELD
& PARTNERS
CONSULTING
STRUCTURAL
AND CIVIL
ENGINEERS

CL 2357

NDFA SOCIAL HOUSING BUNDLES 04 AND 05 STRUCTURAL SURVEY REPORT ON BUILDINGS TO BE DEMOLISHED

Marrowbone Lane – Forbes Lane Depot site

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0	24.07.2023	MS	Issued for Comments
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1. INTRODUCTION

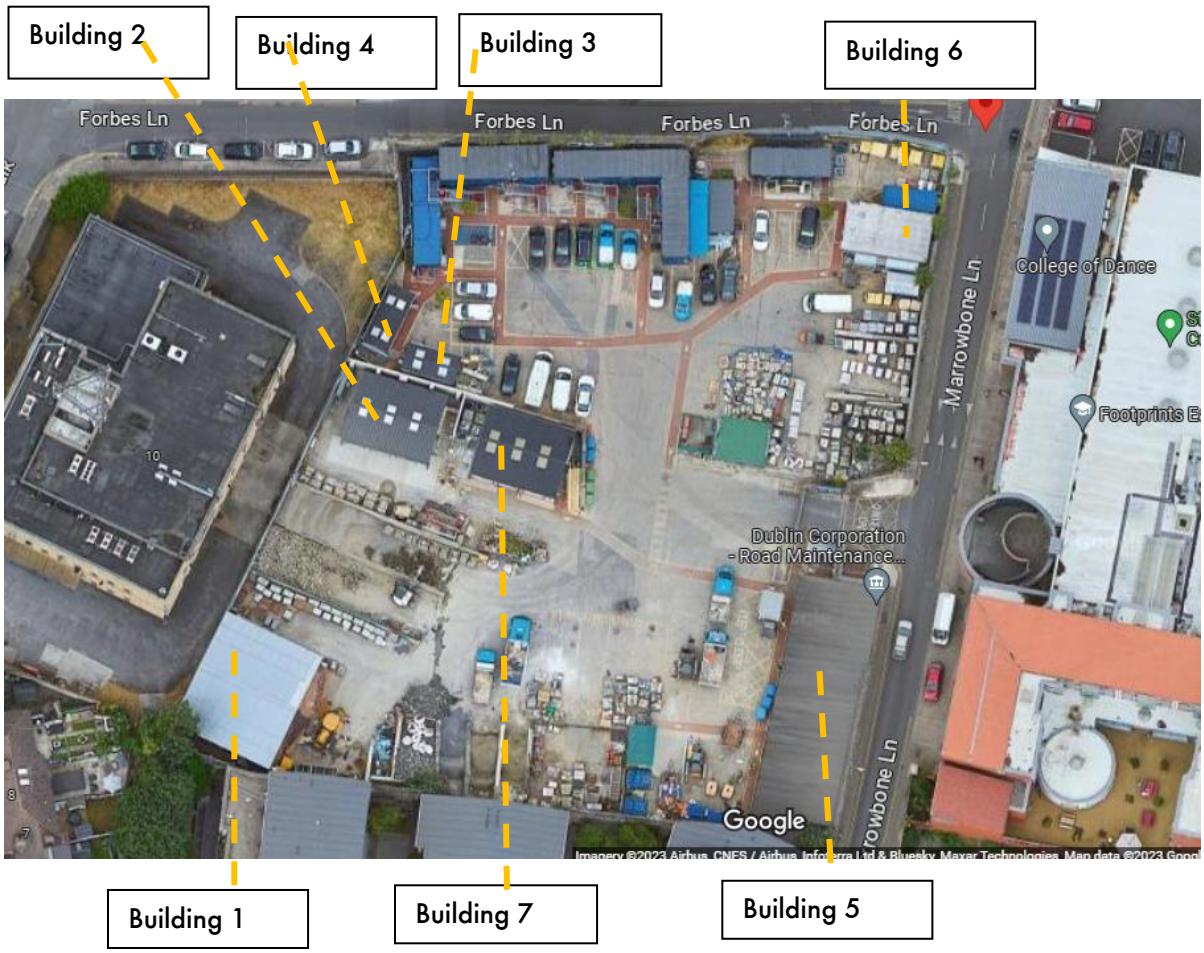
Kavanagh Mansfield and Partners were asked to assess the structural adequacy and provide a pre demolition survey of the existing structure highlighting any areas of concern and outline any recommendations for the demolition sequence of the structure.

2. EXECUTIVE SUMMARY

A pre-demolition survey was conducted on 16/08/2023 to assess the structure of the building on site. The site comprises a total of 7 buildings. Two of these buildings are constructed with masonry walls, featuring timber ceiling. The remaining five buildings are steel-frame industrial structures. All buildings are in relatively good condition, with no elements found to be in a dangerous state. In the external area it was installed: six modular units of temporary porta cabins, (3 with 2 levels and 3 with one level), two steel portal frames made of UB columns and beams and one temporary modular security cabin.
Before commencing demolition, a risk assessment will be carried out by the demolition contractor. It is recommended to salvage recyclable materials, such as steel elements, whenever possible. Additionally, all waste should be disposed of offsite at a licensed waste facility

3. SITE DESCRIPTION

The Forbes Lane Depot site is currently in use by the Dublin City Council – Road Maintenance located at The Liberties, Dublin 8. The site is situated between Forbes Lane to the north, Marrowbone Lane to the east and commercial developments to the south and west.
The location of the proposed site is illustrated in Figure 1 below. Additional photos are contained in the Appendices at the back of this report.



See below a table with a structural description of the buildings:

3.1. Building 1

Building 1 comprises 1 level (Ground floor and roof), the structure is a steel portal frame built into concrete walls on the sides.

ELEMENT	DESCRIPTION	COMMENT
Ground Floor	The floor is a concrete insitu slab in all of the rooms. (photos 01 and 02)	No Opening Up was carried out to expose the foundation, the type of the foundation and depth aren't possible to identify.
Roof	The Roof is a duo pitch made of metal sheet roofing, supported by purlins, which are supported by steel UB rafter. (Photos 02,03 and 04)	
External Wall	The side and rear enclosure comprise a 3.0-meter-high concrete wall with approximately 200mm-250mm thickness, which is surmounted by a 1.5-meter trapezoidal metal sheet covering. (photos 01 and 04)..	
Portal Frame	The portal frame is made of a steel Column and a Steel rafter UB Steel, steel roof bracing is also installed at the rear of the building. (photos 02, and 04).	

Actions on Structures

Vertical Loads

All the vertical loads of the building (Self-weight, cladding walls, cladding roof, etc.) are supported by a steel portal frame structure and the concrete wall which transfers loads to the foundation level.

Stability

The Horizontal loads are transmitted to the foundation through a steel structure (column beams and truss) and the concrete wall which transfers the loads to the foundation, steel roof bracing is also installed at the rear of the building to restrict lateral movement.

Structural Defects

No structural defects were found during the course of our survey

3.2. Building 2

Building 2 comprises 1 level (Ground floor and roof slab), the structure is a steel portal frame fixed on the foundation, closed with cladding walls.

ELEMENT	DESCRIPTION	COMMENT
Ground Floor	The ground floor slab is made of in-situ concrete (photos 5 and 6).	No Opening Up was carried out to expose the foundation, the type of the foundation and depth aren't possible to identify
Roof	The roof is made of Metal Cladding Roof Sheets. (photos 5,6,7 and 8).	
External Wall	The external wall is a cladding made of	

	metal a trapezoidal sheet wall; (Photos 7 and 8)	
Portal Frame	The portal frame is made of a steel Column UC and a Steel rafter UC, (photos 5 and 6)	

Actions on Structures

Vertical Loads

All the vertical loads of the building (Self-weight, cladding walls, cladding roof, etc.) are supported by a steel portal frame structure which transfers loads to the foundation level.

Stability

The Horizontal loads are transmitted to the foundation through a steel structure (column beams and truss) which transfers the loads to the foundation.

Structural Defects

No structural defects were found during the course of our survey

3.3. Building 3

Building 3 comprises 1 level (Ground floor and roof slab), the structure is a steel portal frame fixed on the foundation, closed with cladding walls.

ELEMENT	DESCRIPTION	COMMENT
Ground Floor	The ground floor slab is made of in-situ concrete (photos 9 and 10)	No Opening Up was carried out to expose the foundation, the type of the foundation and depth aren't

		possible to identify
Roof	The roof is made of Metal Cladding Roof Sheets. (photo 9,10,11 and 12)	
External Wall	The wall is made of Metal Cladding sheets (photos 11 and 12)	
Portal Frame	The portal frame is made of a steel Column UC and a Steel rafter UC, (photo 9 and 10)	

Actions on Structures

Vertical Loads

All the vertical loads of the building (Self-weight, cladding walls, cladding roof, etc.) are supported by a steel portal frame structure which transfers loads to the foundation level

Stability

The Horizontal loads are transmitted to the foundation via a steel frame (columns beams and truss which transfer the loads to the Foundation).

Structural Defects

No structural defects were found during the course of our survey

3.4. Building 4

Building 4 comprises 1 level (Ground floor and roof slab), the structure is a steel portal frame fixed on the foundation, closed with cladding walls.

ELEMENT	DESCRIPTION	COMMENT
Ground Floor	The ground floor slab is made of in-situ concrete (photos 13 and 14).	No Opening Up was carried out to expose the foundation, the type of the foundation and depth aren't possible to identify.
Roof	The roof is made of Metal Cladding Roof Sheets. (photo 13,14 and 15)	
External Wall	The wall is made of Metal Cladding sheets (photo 13)	
Portal Frame	The portal frame is made of a steel Column UC and a Steel rafter UC, (photos 13 and 14)	

Vertical Loads

All the vertical loads of the building (Self-weight, cladding walls, cladding roof, etc.) are supported by a steel portal frame structure which transfers loads to the foundation level

Stability

The Horizontal loads are transmitted to the foundation via a steel frame (columns beams and truss which transfer the loads to the Foundation).

Structural Defects

No structural defects were found during the course of our survey

3.5. Building *5*

Building 5 comprises 1 level (Ground floor and timber roof).

ELEMENT	DESCRIPTION	COMMENT
Ground Floor	The floor slab is a insitu concrete in all of the rooms (photos 16 and 17)	
Roof	The roof is a mono-pitch asbestos roof which is supported by Purlins, with timber ceiling beneath (Photo 17,18, 19, and 20).	It is necessary to confirm on-site before the demolition,
External Wall	The external and internal walls are made of concrete blocks with approximately 215mm. (Photos 17,19, and 20).	

Actions on Structures

Vertical Loads

All the vertical loads of the building (roof slab, joist, brickwork walls.) are supported by loadbearing Masonry walls which transfers loads to the foundation level.

Stability

The Horizontal loads of the building are transmitted to the foundation by the Masonry wall which transfers loads to the foundation level.

Structural Defects

No structural defects were found during the course of our survey

3.6. Building 6

Building 6 is a single store comprising 1 level (Ground floor and roof).

ELEMENT	DESCRIPTION	COMMENT
Ground Floor	The ground floor slab is made of in-situ concrete (Photo 21)	No Opening Up was carried out to expose the foundation, the type of the foundation and depth aren't possible to identify
Roof		The roof was covered and the building was locked during the visit because of that it was not possible to identify the type of roof structure
External Wall	The external and internal walls appear to be made of 215mm concrete blocks. (Photos 21,22, and 23).	During the visit, we didn`t have access to the building. Need to be confirmed

Actions on Structures

Vertical Loads

All the vertical loads of the building (roof slab, joist, brickwork walls.) are supported by loadbearing masonry wall which transfers loads to the foundation level.

Stability

The Horizontal loads of the building are transmitted to the foundation by the Masonry wall which transfers loads to the foundation level.

Structural Defects

No structural defects were found during the course of our survey

3.7. Building 7

Building 7 comprises 1 level (Ground floor and roof slab), the structure is a steel portal frame fixed on the foundation, enclosed with metal cladding.

ELEMENT	DESCRIPTION	COMMENT
Ground Floor	The ground floor slab is made of in-situ concrete (photos 24 and 25).	No Opening Up was carried out to expose the foundation, the type of the foundation and depth aren't possible to identify
Roof	The roof is made of Metal Cladding Roof Sheets. (photos 25, 26, 27).	
External Wall	The wall is made of Metal Cladding sheets (photos 25, 26, 28).	
Portal Frame	The portal frame is made of a steel Column UC and a Steel rafter UC, (photos 25 and 26).	

Actions on Structures

Vertical Loads

All the vertical loads of the building (Self-weight, cladding walls, cladding roof, etc.) are supported by a steel portal frame structure which transfers loads to the foundation level.

Stability

The Horizontal loads are transmitted to the foundation through a steel structure (column beams and truss) which transfers the loads to the foundation.

Structural Defects

No structural defects were found during the course of our survey

3.8. External area

Six modular units of temporary porta cabins were installed, three of which have two levels and can be accessed through external steel stairs. The other three units have only one level and were installed above a concrete base. In addition, two steel portal frames made of UB columns and beams and covered with a metal cladding roof were installed to cover construction materials. Furthermore, one temporary modular security cabin was also installed

3 modular units of temporary porta cabins with two levels

Porta cabine 1
With 2 levels

Porta cabine 2
With 2 levels

Porta cabine 3
With 2 levels

3 modular units of temporary porta cabins with one levels

Porta cabine 1
With 1 levels -
Toilets

Porta cabine 2
With 1 levels -
offices

Porta cabine 2
With 1 levels –
Main Offices

Steel portal frames

Modular Security cabin.

J Marco Silva Jr
For
KAVANAGH MANSFIELD & PARTNERS
Consulting Engineers

CONDITIONS:

Inspections by Kavanagh Mansfield and Partners are carried out subject strictly to the following conditions unless otherwise expressly agreed in writing:

1. Initial inspections are non-intrusive, 'walkaround', preliminary assessments of structures. They are concerned with the strength, stability and durability of the basic structure of the building and they are carried out generally on the basis recommended in 'Surveys and Inspections of Buildings and Similar Structures' published by the Institution of Structural Engineers. They are *not* 'structural surveys' as that term is used by, for example, the Society of Chartered Surveyors; some aspects of non-structural elements/matters - such as electrical, drainage and other services, completions and finishes, doors and windows, water- and weather-tightness - may be noted in passing and commented on but are not dealt with comprehensively.

2. Initial inspections of structures are limited to noting and commenting on observed visible defects which in our opinion may prove to be symptomatic of significant inherent structural distress. No substantial opening-up to expose or uncover the structure is carried out; note in this respect that it is not possible to state that structural elements that are covered, unexposed or inaccessible are free from defects. A more detailed structural investigation and appraisal can be carried out on request.

3. Structural inspections do *not* deal with the following *inter alia*: the condition of timber and the presence or extent of fungal or insect infestation such as dry rot (a timber decay specialist's advice should be sought in relation to these); the presence or extent of asbestos (an asbestos specialist's advice should be sought in relation to these); the presence or extent of IAPS (invasive alien plant species) including Japanese knotweed; planning permission and other building control approvals; fire risk assessment; the possible presence of radon gas (the Radiological Protection Institute of Ireland will facilitate a radon survey for a small charge); legal rights of ownership (such as whether dividing/boundary walls are party walls or are owned by one person).

4. Any suggested remedial (or other) works in our inspection reports are indicative & subject to subsequent detailed design and specification.

5. No verification of any information or documentation supplied by others has been carried out by us.

6. Reports are strictly for the private and exclusive use of the commissioning client and, further, solely for the purpose for which originally commissioned. They may not be assigned to third parties. They shall not be used or relied upon by third parties.

7. Kavanagh Mansfield & Partners is the trading name of Piconsult Limited. We provide professional inspection and reporting services in accordance with the current Conditions of Engagement of Consulting Engineers, Agreement RA9101 ("Report and Advisory Work"), published by Engineers Ireland (tel. 01-6684341); a photocopy of Agreement RA9101 will be provided by us on request. Limitations on the liability of Kavanagh Mansfield & Partners as specified in Agreement RA9101 shall apply except as may otherwise be agreed in writing with the commissioning client. No warranty is offered or implied.

Appendix 1A

Building 1

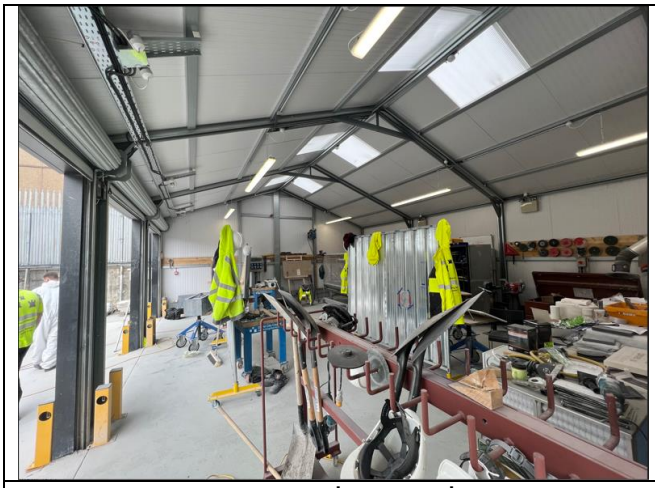
Front view – Photo 1

Top view– rear bracing - Photo 2

External side view– Photo 3

internal side – First Floor – Photo 4

Building 2

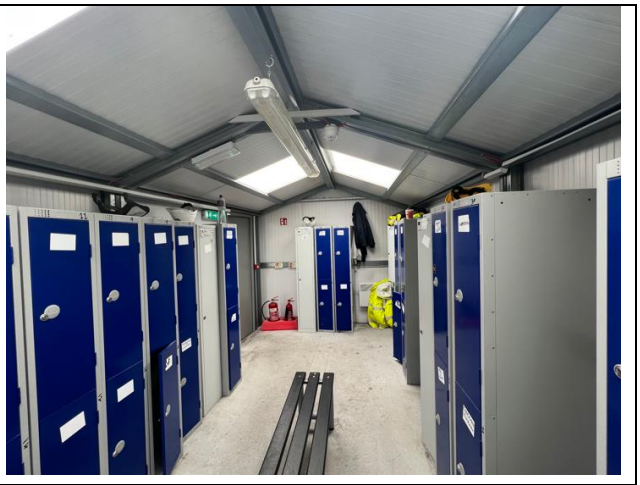


internal view – Photo 5

Top view– Photo 6

	
External side view– Photo 7	External side – Photo 8

Building 3

	
internal view – Photo 9	Top view– Photo 10
	
External side view– Photo 11	External side – Photo 12

Building 4

	
internal view – Photo 13	Top view– Photo 14
	
External side view– Photo 15	

Building 5

	
Concrete floor – Photo 16	Top view– Photo 17

	
internal room view – Photo 18	External side view– Photo 19
	
External side view– Photo 20	

Building 6

	
Concrete floor – Photo 21	Top view– Photo 22
	
external view – Photo 23	

Building 7

	
Concrete floor – Photo 24	Top view– Photo 25
	
Internal view – Photo 26	external view – Photo 27