



**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 AND RETAINED.

BASIN VIEW FLATS

Rev. No.	Date	Author	Description
0	28.11.2023	MS	Issued for Comments



1. INTRODUCTION

Kavanagh Mansfield and Partners were asked to assess the structural adequacy and provide a condition survey of the existing structure highlighting any areas of concern and outlining any recommendations for the demolition sequence of the structure or for the structure that will be maintained and refurbished.

2. EXECUTIVE SUMMARY

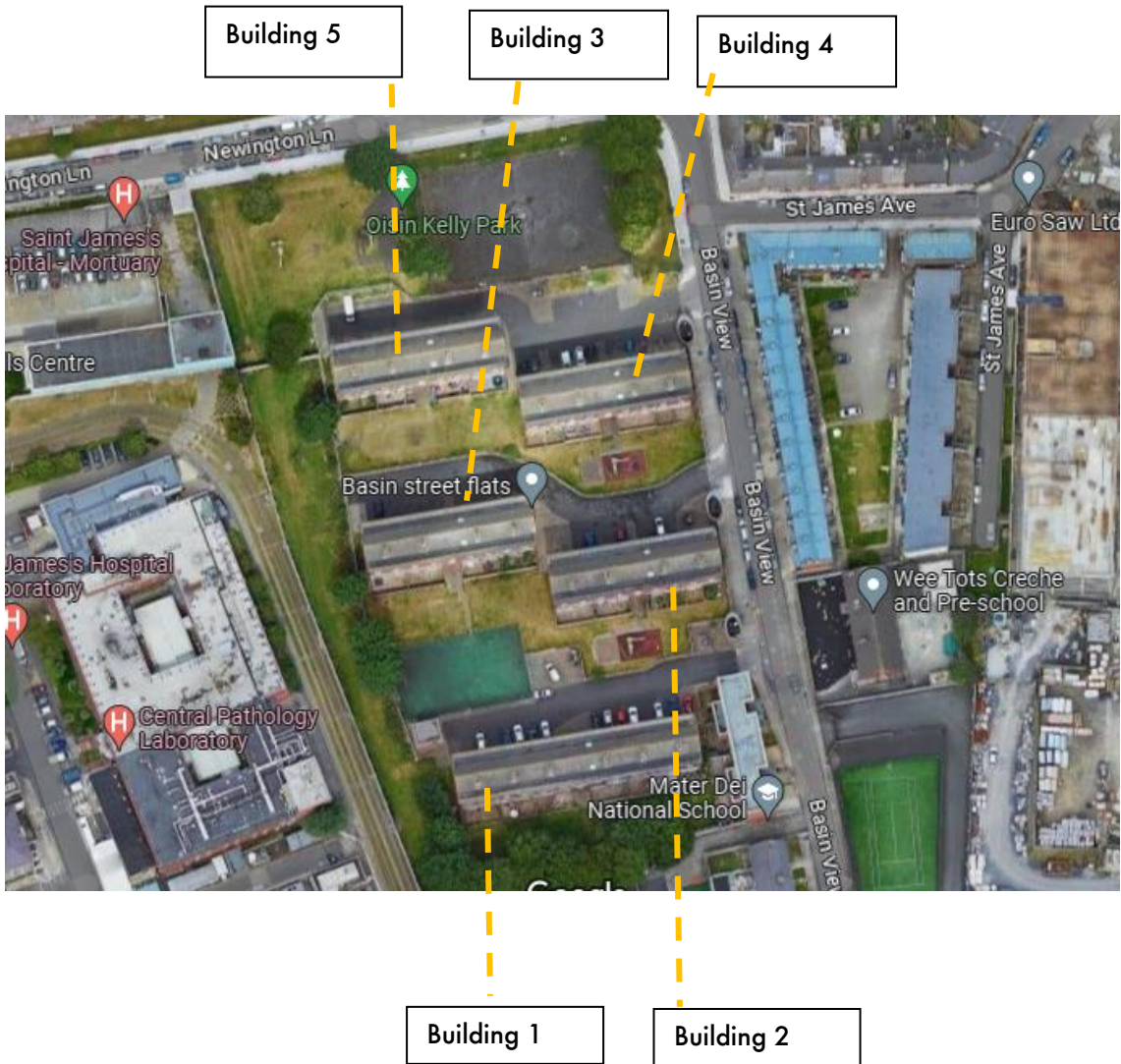
A pre-demolition inspection was conducted on 11/09/2023 to evaluate the structural integrity of the building on-site and on 21/11/2023 to see the structure condition of the roof that it will be retained. The property consists of a total of 5 buildings. Four of these buildings (Buildings 02, 03, 04, and 05) have fewer apartments compared to the first building, in general all of the blocks of apartments are in good structural condition considering their age. Minor defects were identified in these buildings, but nothing that compromised the structure's integrity. As per the demolition and redevelopment plan to transform the site into a residential community, only the first building will be retained.(Building 1) The other 4 Blocks 02,03,04 & 05 are to be demolished. Building 01 is in good structural condition based on our observations in the corridors, apartments, roof, and accessible areas during the visit. For the apartments earmarked for demolition, no unusual construction details were noted that would warrant a deviation from standard demolition procedures. However we recommend conducting a risk assessment before commencing demolition. Additionally, all waste should be disposed of off-site at a licensed waste facility

3. SITE DESCRIPTION

Basin View Flats

The site is located near James Street and is surrounded by mixed use development. The immediate area includes schools, a hospital, and more housing.

The location of the proposed site is illustrated in Figure 1 below.



A Structural Survey was carried out of the premises and all existing buildings on the site, see below a table with a structural description of the buildings:



BUILDING 1 TO 5



Image 1 - Building 1



Image 2- Building 2 and 3



Image 3- Building 4 and 5

The Buildings comprises 3 levels of apartments, (Ground floor, 1st floor, 2nd floor, and Attic slab).

Attic
2 nd floor – level 2
2 nd floor – level 1
1 st floor – level 2
1 st floor – level 1
Ground floor

The Ground floor level has just one floor, and the first and second levels have two floors (as can be seeing on the table above), the first building is longer than the others, with more apartments per level.

ELEMENT	DESCRIPTION	COMMENT
Ground Floor	The floor slab is in-situ concrete 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
Ground, 1 st and 2 nd Floor (Levels 1 and 2)	The floor slabs are reinforced concrete slabs that are approximately 200mm thick with a concrete beam on the edges with 235mm thick approximately (Photos 03,04,05, and 06)	No Opening Up was carried out to expose the slabs.
Roof	The roof is a type of butterfly roof consisting of a central duo pitch roof supporting concrete tiles, flanked by roof surfaces sloping from the outer walls to form a valley at the base of the duopitched roof approximately 1200mm wide. The parapet wall is capped with concrete coping stones which are	



	made of concrete and are weathered with a waterproof membrane. The duo-pitch roof is made of 100X44 timber rafters spanning from eaves to ridge without intermediate purlin supports. (photos 07,08,09,10, 11 and 12)	
External Wall	The external walls are made of two blocks leaves and a cavity between them, the thickness of the wall is approximately 300mm. (Photos 13, 14, 15 and 16).	No Opening Up was carried out to expose the wall.
Internal Wall –	The Internal party walls are approximately 200 mm concrete walls between the apartments, and 100mm masonry wall inside of the apartments (Photos 17).	No Opening Up was carried out to expose the wall.
Corridor/stairs	The corridor and stairs slab is made of concrete in situ slab.	

Actions on Structures

Vertical Loads

All the vertical loads of the building (roof, 1st-floor slab, joist, brickwork walls, light wall partition, etc.) are supported by loadbearing concrete walls which transfer loads to the foundation level.

Stability

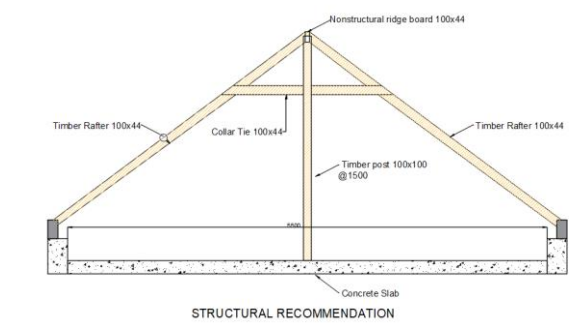
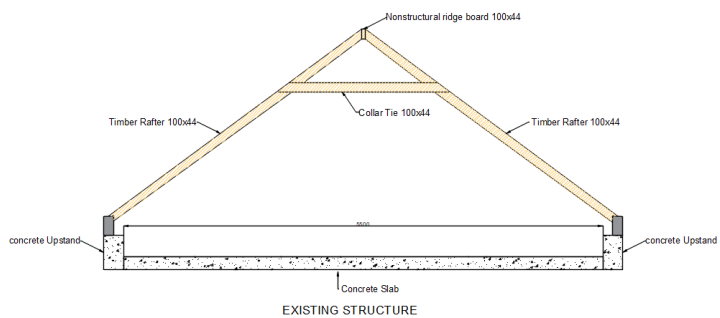
The Horizontal loads are transmitted to the foundation via floor plates acting as a diaphragm which transfers the loads to the shear Walls and then to the Foundation



Roof Verification – Recommendation

A structural survey was conducted in the attic space to assess the integrity of the roof and the feasibility of maintaining the existing structure or making structural adjustments to ensure the roof's integrity for the next 50/100 years. After the survey and some structural checks on the existing structure, it was determined that the structure has been well-maintained internally without any apparent moisture marks in the wood or internal environment, despite being built over 50 years ago. However, a structural verification of the existing structure according to current Eurocode standards revealed that the current structure does not meet all the requirements recommended by Eurocode. Therefore, we recommend installing Timber props 100x100 fixed on the concrete slab every 1500mm to ensure the durability of the structure for the next 50 years. See below image with the existing situation and our recommendation.

We also recommend creating a Roof Maintenance Plan that prioritizes planned preventative maintenance, including inspections, general roof repairs, debris removal, gutter cleaning, and mould removal, to ensure the durability of the structure.



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



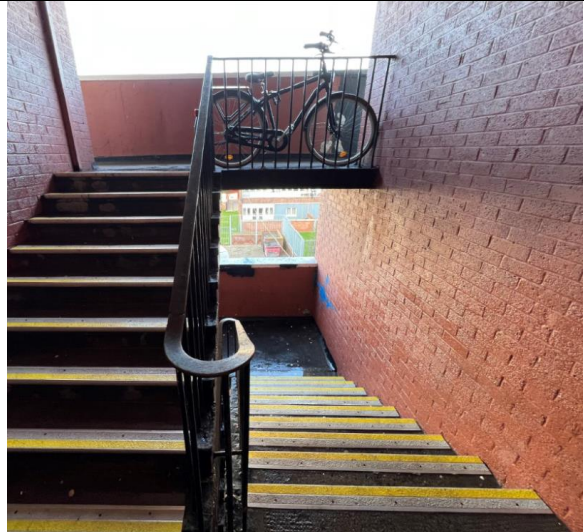
Ground Floor apartment - Photo 1



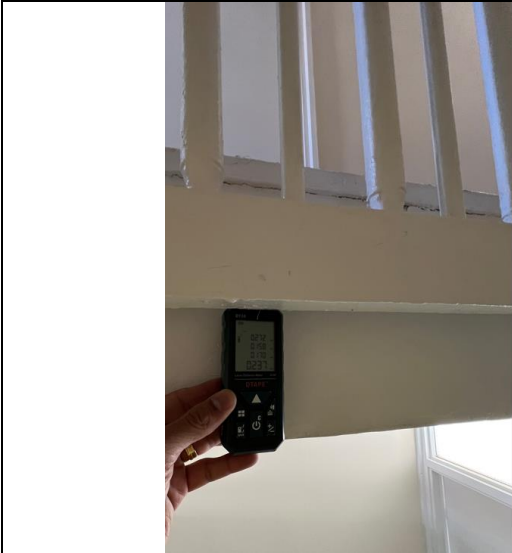
Ground Floor - external side - Photo 2



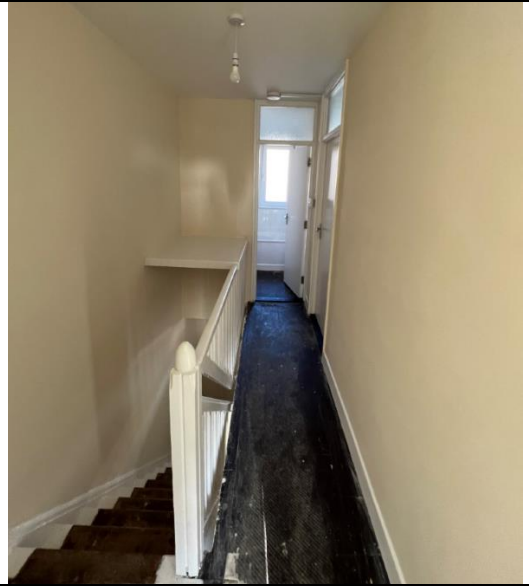
**Standard apartment - internal view- 1st Level
Photo 3**



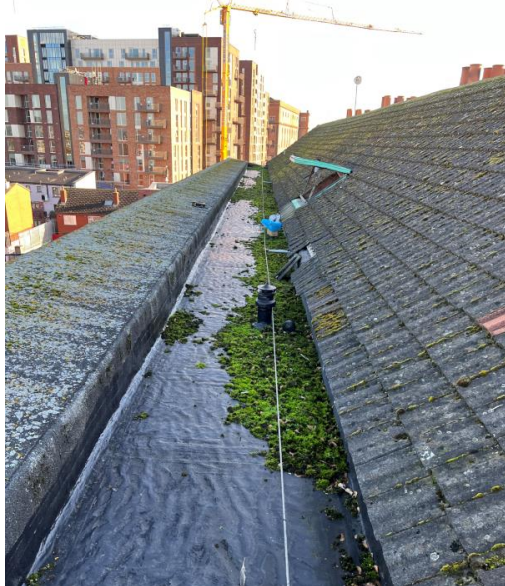
External stairs - internal view- 1st Level Photo 4



Slab 2nd level apartment - internal view- Photo 5



Slab 2nd level apartment - internal view- Photo 6



Roof - external view- Photo 7



Roof - external view- Photo 8



Attic - Internal view- Photo 9



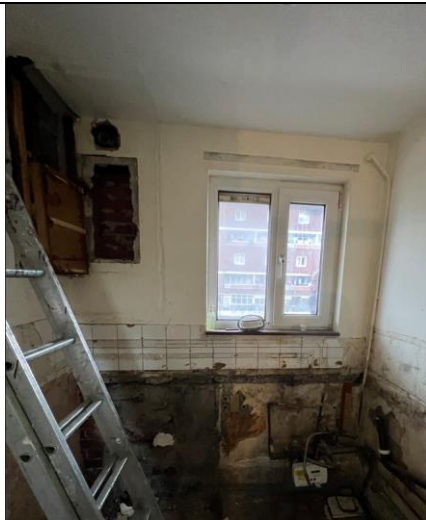
Attic structure- Internal view- Photo 10



Attic structure- Internal view- Photo 11



Attic structure- Internal view- Photo 12



External wall- Internal view- Photo 13



External wall- Internal view- Photo 14



External wall- external view- Photo 15



External wall- Internal view- Photo 16



Internal wall- Photo 17



Internal wall- Photo 18