

REPORT

VOLUME 1 of 4

ON THE

FIRE AUDIT

OF

OLDCOURT AVENUE

AND

OLDCOURT DRIVE

OLDCOURT ESTATE

BRAY

COUNTY WICKLOW

FOR

BRAY TOWN COUNCIL

**SURVEYED BY: MICHAEL WALSH
BRENDAN MOLLOY**

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1.0 Introduction

Michael Walsh, Chartered Fire & Safety Engineer and Brendan Molloy of Molloy & Associates, Consulting Engineers & Architects were instructed by Bray Town Council (BTC) to carry out a Fire Audit on the rented council houses at the Oldcourt Estate, Bray.

The brief included a visual examination of 50 houses selected at random and a later opening up 10 of those houses to try to identify any inherent defects which reduced the fire separation properties of a house and/or presented a hazard to the occupants. The Report would include recommendations for the making good of any such defects.

Oldcourt Avenue includes a Resource Centre at No 107 and 141 houses

Oldcourt Drive includes 87 houses.

The houses were originally constructed with timber frame front and rear walls, timber flat roofs and 215mm insitu concrete party walls. The party walls were later built up in the attics in 215mm solid blockwork to new pitched roofs. New masonry walls were also constructed to the front and rear of each house. The party walls were extended to meet these external walls. Pitched roofs were constructed over the existing flat roofs. These new roofs were carried on the new front and rear walls.

A number of fires had taken place in the estate subsequent to the renovations. The residents requested that the houses be examined and further modified to prevent such fires. The inspection was to be independent of Bray Town Council.

Bray Town Council, with input from the residents, decided to initially pick 40 houses at random for examination. A further 10 houses would be selected by Michael Walsh and Brendan Molloy when the examination of the 40 houses was completed. 10 houses out of the 50 would later be opened up for inspections of the fire separation construction details. An electrician would examine the electrical services in 10 houses. Gary Power of GLM Electrical was instructed to carry out the electrical inspections.

Bray Town Council in conjunction with the Oldcourt Residents Committee supplied a main list of 26 houses with a back up list of 26 houses for Oldcourt Avenue and a main list of 14 houses with a back up list of another 14 houses for Oldcourt Drive.

A notice was dropped into the letter box of each house circa one week prior to the survey of that house. The notice gave the date and time of the proposed survey. Householders were asked to contact Mr Richard Sheridan of Bray Town Council if the appointed date and time did not suit.

Access to some houses was not possible because:

- a. No one was present in the house at the appointed time
- b. The Householder claimed that he/she had not received the notice
- c. The Householder claimed that he/she had informed BTC that the time or date did not suit
- d. Illness of a member of the household
- e. The householder would not permit access to carry out the survey and/or the opening up works

These denials of access greatly hindered the survey process because it was not possible to survey an alternative house on such occasions.

In the initial discussions with Bray Town Council the surveyors had requested that each premises be vacated during each survey. This is a normal requirement for comprehensive surveys of this type. All but two of the houses remained occupied with adults and often children present. Some houses had people in bed during the survey. Access to some rooms was denied. The Enterprise Centre was closed for the day of the survey by arrangement with the staff, however a considerable number of children and adults were present.

2.0 Visual Surveys

The visual surveys have been completed on:

- a. St Fergal's Resource Centre
- b. 32 houses in Oldcourt Avenue
- c. 17 houses in Oldcourt Drive. An individual report has been compiled for each premises. All reports include a list of relevant items noted in each room, entrance hall, stairs, landing, attic, external.

Lack of compliance with the regulations and lack of good practice included the following:

- a. Defects in the party walls in the attic void
- b. Defects in the extensions to the party walls.
- c. Absence of an adequate number of operative fire alarms
- d. Defects in open fireplace surrounds
- e. Chimneys not cleaned
- f. Dry lining to chimney breasts over fireplaces
- g. Flammable materials stored close to open fires
- h. Storage of flammable materials including clothes, paper, etc. close to and/or on top of electrical sockets and plugs
- i. Defective electrical socket outlets
- j. Poor quality electric wiring which had been carried out by householders
- k. Unauthorised works which had been carried out by an householder
- l. Bitumen based roofing felt which carries over party walls but devoid of fire stopping.

Defects were present in the party walls in the attic voids at the locations shown below. For the purpose of this report the following defect measurements apply:

small gap/hole : circa 3 mm – circa 5 mm wide x length of defect

gap/hole : c. 10 mm wide x length of defect

large gap : c. 50 mm wide x length of defect

large hole : c. 225 mm wide x length of defect

Oldcourt Avenue:

usual

Survey No:

- 1 small gaps in wall with adjacent house at high level
- 2 small gaps/holes in joints to both walls
- 3 holes in both walls
- 4 holes in both walls at flat roof level
- 5 small hole at ridge with adjacent house. PVC cable through mortar joint with adjoining property
- 6 large hole of size circa 2500mm x c. 200mm at roof level with adjoining house. Holes in both party walls at flat roof level.
- 8 gaps/holes in both walls, 100mm blocks omitted at chimney, width of party wall appears to be 100mm at these locations
- 9 gap in wall with adjacent house
- 11 large hole in wall with adjacent house. Roof timbers to adjacent house are attached through the hole
- 16 large hole in wall with adjacent house. Blockwork joints require filling. Hole in ridge with adjacent house
- 17 small holes in wall with adjacent property
- 18 gap in a horizontal joint with adjacent property

- 19 small gaps at ridge with adjacent house
- 20 gaps in joints to both walls
- 22 small gap at apex with adjacent house
- 23 gaps in joints to wall with adjacent house some blockwork joints appear to have been re-pointed at a later date.
- 25 small gaps at top of wall with adjacent house
- 26 gaps in joints to both walls. The bitumen based roof felt carries over both walls
- 27 gaps in joints to both walls, hole in wall at chimney
- 30 small gaps in wall with adjoining house

Oldcourt Drive:

- 34 holes in both walls at flat roof level
- 35 small holes at ridge with
- 36 gaps in mortar joints and at roof level with adjoining house. Holes in party wall at flat roof level
- 37 gaps in mortar joints in both walls. Holes in both walls at flat roof level.
- 39 small holes at ridge with adjacent house
- 40 large holes in wall with adjacent house
- 41 holes in both walls at pitched roof level and flat roof level, gaps in mortar joints.
- 42 circa 150 mm deep gap under the roof with adjacent house. Holes in party wall with adjacent house at chimney. Gaps in mortar joints to both walls.

- 43 gap in wall with adjacent house
- 44 small holes at ridge. Large hole at ridge with adjacent house
- 45 small hole at chimney with adjacent house Wall with adjacent house finished at ridge.
- 46 holes in both walls
- 47 wall with adjacent not finished at ridge
- 48 hole in wall to side of chimney. Holes in both walls at flat roof level.
- 50 hole at ridge with adjacent house.

Survey number 29

The attic has been converted into a bedroom. Access to the attic is by a ladder from the landing. The ladder does not carry up over attic floor level. This room is in contravention of the fire regulations as set down in Part B of the Building Regulations subsections 1.5.7.1 to 1.5.7.7. Additional fire requirements throughout the now three storey house have not been complied with.

Survey number 24

The attic has been converted into a room with ladder access. The fire requirements have not been complied with. This room is dangerous for occupants and contravenes good practice.

Survey number 7

This attic has been converted into a bedroom with access by a stairs. The fire requirements have not been complied with. We understand that this house is now in private ownership.

Survey Number 10

This attic has been converted into a bedroom with access by a stairs. The fire requirements have not been complied with. This room is dangerous for occupants and contravenes good practice.

Survey Number 22

- a. The original electrical consumer unit is over-cabled. This unit must be replaced with a commercial unit of adequate size in a lockable steel cabinet.
- b. Doors and frames to rooms are required to be 30FDS fire door sets.
- c. All walls to escape routes are required to have a minimum fire resistance of 30 minutes.
- d. The first floor is required to have a minimum fire resistance of 30 minutes.
- e. The soffit to the stairs is required to have a minimum fire resistance of 30 minutes.
- f. Intumescent fire sleeves or equivalent fire stopping materials must be provided to all services which pass through walls and the first floor.
- g. The escape door to the crèche must be re-hung to avoid opening across the escape route.
- h. The lockable gates on the fire escape route must be provided with automatic opening devices which are activated by the fire alarm system.

Survey Number 23

The fresh air vent in the front wall to the living room was closed off with a hit-and-miss type cover. The room had a PVC window. The air supply to the gas fire was not adequate.

Survey Number 3.

The fresh air vent in the front wall to the living room was sealed on the inside. The air supply to the gas fire was not adequate. The gas supply valve to the fire was open. The Householder stated that the gas fire was not used and that the sealing of the vent was to prevent air drafts. The Householder switched off the supply valve. This vent must be opened or the gas supply to the fire disconnected and the pipe capped off by a competent plumber.

Survey Number 12.

The open fire in the living room has circa 45mm and 80mm gaps between the chimney piece and the side cheeks to the fire back. The chimney breast over the fire place is dry lined. The fireback defects and cavities behind the dry-lining may permit flue gases to enter the bedrooms at first floor level.

Survey Number 32	The fire back in the open fire to the living room is part burnt out.
Survey Number 21	Heavy soot deposits are present in the chimney to the living room fire place.
Survey Number 1	This house has a rear bedroom extension. The door to the bedroom from the kitchen has been removed. The absence of the door inhibits the means of escape for occupants of the rear bedroom.
Survey Number 41	Heavy soot deposits are present in the chimney to the living room fire place.

Earth boxes are not visible to the fronts of some houses. These boxes must be located and opened up for inspection. Earth boxes which are located in flower beds or lawns are liable to be damaged.

Cooker switches are located directly over the electric cookers in some houses. It would not be possible to use the switches in the event of a fire on these cookers.

Clothes and other flammable items are stored around electric plugs and sockets in some houses. Plugs and sockets may over-heat if a loose connection is present. A fire may result.



Most of the houses with open fires have dry lining to the chimney breast over the fire place. This detail may allow flue gasses to enter the bedrooms at first floor level.

Some houses have cookers located in the corner of the kitchen with heavy grease deposits on painted walls. This is a fire hazard.

The absence of worktops on both sides of cookers/hobs is a common fault.

3.0 Opening Up Surveys

The following houses were opened up

- a. Oldcourt Avenue, 6 houses
- b. Oldcourt Drive, No's 4 houses

When the opening up works commenced it was decided to thoroughly investigate one house which was vacant at that time. No. 32 Oldcourt Avenue had been damaged by fire. Substantial areas of walls and floors were opened up. These investigations gave valuable information on the original structure and the later modifications to that structure. This knowledge directed our investigations in the other nine houses.

When parts of the dry linings were removed at the junctions between the party walls and the front and rear walls, holes/gaps of various sizes were found in the extensions to the party walls to the following houses:

Oldcourt Avenue: 6 houses

Oldcourt Drive: 4 houses

The construction of the extensions to the party wall was generally of poor quality. Holes/gaps were found in most houses.

In the event of a fire, smoke and/or gasses can travel from one dwelling to the next behind the dry lining to the external walls. Entry to wall cavities can take place where the dry lining has been perforated by sockets, cables, pipes.

The dry lining to chimney breasts must be removed and the walls plastered with sand and cement mix and hardwall plaster finish.

Bitumen based felt in the external walls and on the previous flat roof should be removed.

4.0 Electrical Surveys

The electric circuits to 10 houses in the Oldcourt Estate were examined by Mr Gary Power of G.L.M. Electrical. The purpose of this survey was to try to identify any fundamental problems within the selected houses which might result in a fire.

The houses surveyed were:

Oldcourt Avenue: 4 houses

Oldcourt Drive: 6 houses

Electrical defects were found in each house. It can be concluded therefore that all houses must be examined by a competent person.

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5.0 Conclusions

The visual and opening up surveys to the selected houses showed that the fire separation between adjoining houses has been compromised by substandard construction to the party wall extensions and attic voids. The normal requirement for party walls of full mortar joints to blockwork and that the blockwork be built up to the undersides of roofs, were not complied with in all cases. Where there were voids between the tops of walls and roof coverings, in most cases these voids were not packed with fire inert materials. If any one of the above houses where defects in the party walls were found to be present had caught fire, the fire could have spread to adjoining houses.

The electric socket locations in most houses are poor. A socket behind a door is unsuitable. Bedrooms with two single sockets which are on the same wall near a door are not adequately provided for. Trailing sockets are inevitable. Many trailing sockets are of very poor quality and are likely to develop faults. Contacts weaken with use and begin to arc. If the unit continues in use, the PVC casing is likely to ignite. In several houses trailing sockets were located under clothes, paper, behind cupboards and on carpets.

The number and locations of electric sockets in kitchens to most houses were inadequate. It was common to find work tops without sockets. Box type multiple outlets and trailing sockets were often used to power washing machines, electric kettles, microwaves, fridges and sometimes dishwashers. While box type multiple outlets and trailing sockets are adequate for low wattage appliances such as lights, televisions, fridges, etc., they should not be used for high wattage items such as washing machines, dishwashers, electric kettles, microwaves, etc. The matter of the poor provision of electric sockets must be put right.

The bitumen based felts in external walls and on the original flat roofs where retained, will contribute to increased fire loading, heat and smoke production, in the event of a fire and may result in fire spread through wall cavities.

Electrical inspections showed that defects were found in each dwelling inspected.

6.0. Recommendations

It can be concluded therefore that all houses must be examined. The party walls in attic voids to all attics must be made good. Small gaps and holes must be fire stopped with intumescent mastic or equivalent material and mortar pointing finish to prevent later damage. Larger holes/gaps must be blocked up with bricks and full mortar joints. Gaps between the party wall and main roof coverings must be fire stopped with compacted rock wool or equivalent material.

The extensions to the party walls at ground and first floors must be opened up for inspection from floor to ceiling. All holes/gaps in the party walls extensions must be fire stopped. The party wall extensions must be provided with a 20mm layer of sand and cement plaster as detailed in the housing refurbishment drawings No's 1101/12, 1101/22, 1101/26.

The party wall extensions at the original flat roof levels must be opened up and all holes/gaps fire stopped. The wall extensions must be provided with a 20mm layer of sand and cement plaster.

The plaster slabs must be removed from all chimney breasts and the blockwork plastered with sand and cement mix and hardwall plaster finish.

All bitumen based felt should be removed from the external walls and the original flat roofs.

All external wall cavities between houses should be checked for cavity barriers.

A mains operated fire detection and alarm system should be provided in each dwelling. Detectors should be suitably located and inter connected throughout each dwelling to include all circulation areas and all rooms/areas where a fire might originate. Detection by any one unit causes all units to sound an alarm.

All tenants must be provided with a good practice advisory booklet which sets out a list of recommendations regarding safety which the tenants are advised that they should put into practice. It is considered that where the provision of fixtures is inadequate, Bray Town Council, as landlords, have a duty of care towards the occupiers of those houses.

It is also our opinion that a representative of Bray Town Council should carry out an inspection of every rented BTC house every 6 to 12 months and advise the tenants of any breaches of the above recommendations. Tenants should not be permitted to carry out alterations to the structures or electrical circuits without prior permission and professional advice. This is the normal practice with private rented accommodation.

All dwellings must be inspected in respect of electrical installations by a competent person and all electrical work made to conform with the requirements of the Electro Technical Council of Ireland.

The above remedial works should in our opinion be put into immediate effect.

7.0. Notes

- A. The above Report was compiled from brief surveys which could take no account of other defects which were present but unexposed at the time of the surveys.

Signed: Date:
Michael Walsh

Signed: Date:
Brendan Molloy