



Passive Fire Protection Review

Site: Cestrian Court (11358)
Address: Newcastle Road,
Chester Le Street,
Durham,
DH3 3TD
Client: FirstPort
Visit Date: 9th July 2020
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Review Date: N/A

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Section 1 – Executive Summary

This report is a review of the passive fire protection in communal areas of Cestrian Court and an assessment of appropriate remedial measures.

Cestrian Court is a retirement property arranged over 4 floors (ground and 3 over) and consists of 48 flats (including a manager's flat and guest suite) with the following ancillary accommodation: manager's office. residents' lounge.

Plant rooms (electrical rooms, risers, lift motor room).

Internal bin store.

laundry. Car park.

gardens.

Scooter store.

The property is designed with multiple means of escape via two protected staircases linked by protected corridors. Staircases provide access to all floors.

Externally there are paved walkways immediately outside the main entrance and car parking to the rear/front.

The following passive fire protection issues were identified during the inspection:

- Breaches in compartment walls separating roof voids between flats; these were primarily at the junction of the wall and roof where fire stopping materials had become dislodged and at lower levels where holes in concrete slabs over corridors had not been fire stopped, however there was one area where the compartment wall has a large opening in it of approximately 1.5m².
- There were a number of service penetrations from above ceiling areas in communal corridors to flats which were inadequately fire stopped.
- Cavity barriers above cross corridor doors were inadequately fire stopped.
- Cross corridor doors frames were attached to corridor plasterboard walls which were mounted by dab and daub method which creates a void behind plasterboard walls which by-passes cross corridor doors.
- Communal vents are installed which pass through roof voids, it could not be confirmed that appropriate fire damper have been installed in bathrooms of flats.

All the above issues require to be rectified to achieve an appropriate standard of fire resistance.

Section 2 – Description of Premises

Cestrian Court is a retirement property arranged over 4 floors (ground and 3 over) and consists of 48 flats (including a manager's flat and guest suite) with ancillary accommodation. The premises appear to be of traditional build with concrete floors and external double skin masonry walls, blockwork walls separating apartments/communal areas up to ceiling level of top floor, and double skin plasterboard on timber studwork separating roof voids.



Cross section of plasterboard on timber studwork compartment wall separating roof voids.

Firestopping at junction of plasterboard compartment wall in roof voids was achieved by compressed mineral wool slabs. Due to the movement of the building over years, this fire stopping has become dislodged in many places. In some areas attempts have been made to replace it with expanding foam.



View of plasterboard compartment wall with missing mineral wool fire stopping and expanding foam in place.



Example of mineral wool fire stopping in place.



Example of partially dislodged mineral wool fire stopping.

The roof comprises multiple pitches and is tile on timber joists.



Cestrian Court

The top floor corridors are covered with concrete slabs which have full length holes connecting roof voids either side of the corridor. Some of the slabs had these holes fire stopped with mineral wool but the majority of these holes were not fire stopped, and some had been covered over with PUR/PIR foam slabs.



Example of concrete slab with holes over top floor corridors view from roof void.



Example of holes in slabs fire stopped with mineral wool.



Example of PUR/PIR foam slabs in front of holes in slabs.

Cross corridor doors frames were attached to corridor plasterboard walls which were mounted on dab and daub method which creates a void behind plasterboard walls which by-passes cross corridor doors.

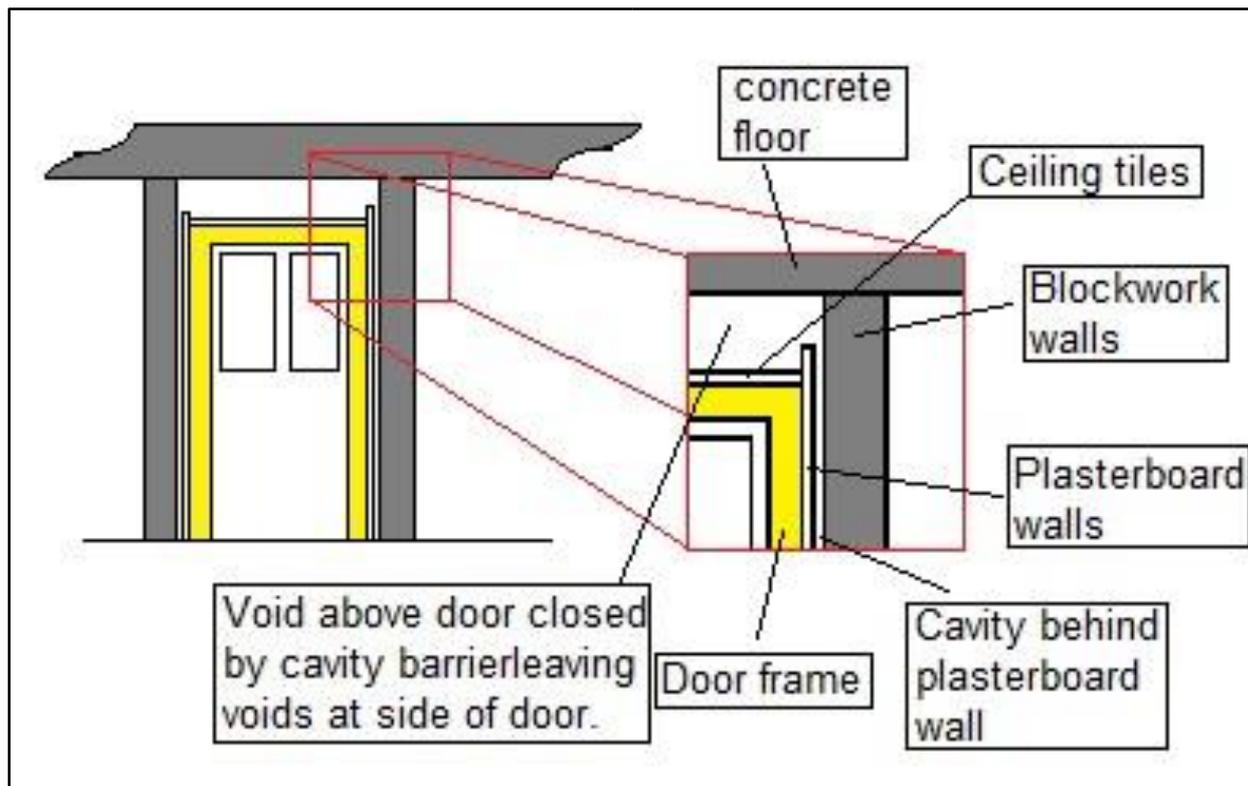


Diagram of construction of CCDs showing void created by dab and daub method of affixing plasterboard walls.

Communal vents discharged from a communal riser through the top floor roof space, it was unknown if all openings to flats had been fitted with appropriate fire dampers.



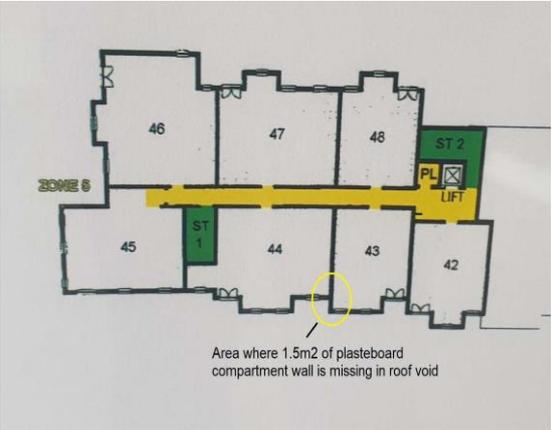
Example of communal vents discharging from communal riser through roof void.

Section 3 – Fire Action Plan

Due to the costs associated with the required remedial works, a three year action plan and each defect listed below is allocated to years 1, 2 or 3.

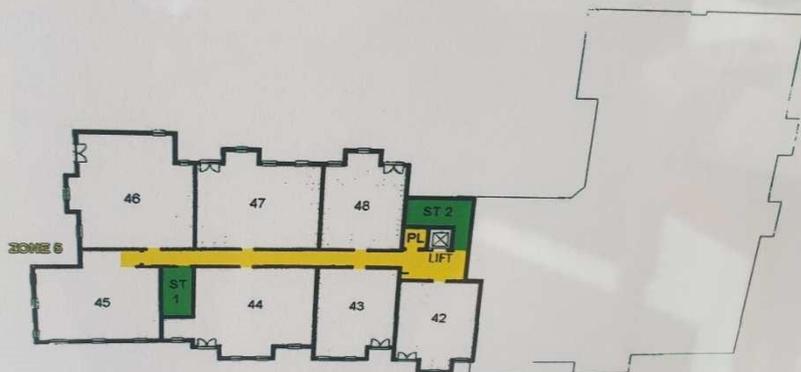
Defect	Remedial Action	Action Plan Year
<p>Firestopping between plasterboard compartment walls and roof in roof voids had become dislodged in many areas, with some fire stopping being replaced by expanding foam.</p> <p>This defect appears to be caused by slippage of mineral wool due to expansion and contraction of roof, this is considered not to have met guidance at time of construction as Approved Document 'B' requires cavity barriers to be mechanically fixed where possible (in the case of fire stopping it states that the fire stopping should be resilient).</p>  <p>Example of missing mineral wool fire stopping.</p>	<p>Arrange for gaps where mineral wool fire stopping is missing/loose or has been replaced by expanding foam at wall/roof junction to be replaced by densely packed stone wool held in place by intumescent mastic or plasterboard cover providing a minimum fire resistance of 60 minutes.</p>	<p>1</p>
<p>Plasterboard sheets forming the compartment walls in roof voids were not taped and sealed.</p>  <p>Example of plasterboard joint not taped and sealed.</p> <p>This defect is considered not to have met the guidance at the time of construction.</p>	<p>Arrange for plasterboard joints to be taped and sealed.</p>	<p>1</p>

<p>Firestopping of plasterboard compartment wall did not extend to barge boarding areas.</p> <p>This defect is considered not to have met the guidance at the time of construction.</p>	<p>Arrange for fire stopping to be extended to barge board areas at base of wall consisting of fire batts sealed in place providing a minimum fire resistance of 60 minutes.</p>	<p>1</p>
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<p>Approximately 1.5m² of the compartment wall separating flats 42 and 43 was missing at the architectural detail at the elevation facing onto the main road.</p> <p>This defect is considered not to have met the guidance at the time of construction.</p>  <p>View from flat 43 into roof void of flat 44.</p>  <p>Location of missing compartment wall</p>	<p>Arrange for compartment wall to be installed between flats 44 and 43 to a minimum fire resistance of 60minutes.</p>	<p>1</p>
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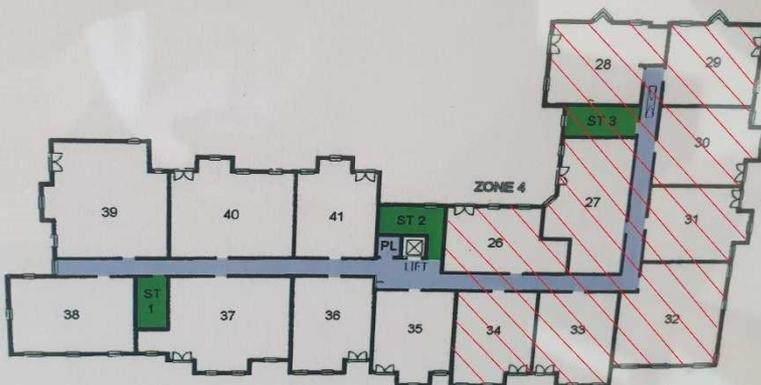
Due to the cost effectiveness of remediating all the defects in roof voids at once, i.e. Year 1 & 2 action plan (see defects above and below relating to loft spaces); all defects in loft spaces may be addressed at the same time:- loft spaces above flats 42 to 48 in year 1 and those above 26-34 in year 2, i.e. 2nd floor lofts in year 1 and 1st floor lofts in year 2. Year 3 actions will remain the same.

SECOND FLOOR



Alternative Year 1 loft areas flats 42 – 48 and staircase.

FIRST FLOOR



Alternative Year 2 loft areas shown hatched in red.

There were a number of penetrations in the brick dwarf wall beneath the plasterboard compartment wall in roof voids that have been fire stopped with expanding pink foam. Pink expanding fire resisting foam is not suitable for this application.

It was unknown when the cables penetrating the brick dwarf walls were installed, if at the time of construction then this defect is considered not to have met the guidance at the time of construction.

Arrange for all penetrations in dwarf brick walls under plasterboard compartment walls in roof voids to be fire stopped to a minimum fire resistance of 60 minutes. Gaps around cable, plastic pipes up to 40mm in diameter and metal pipes should be fire stopped with intumescent mastic or cement to an appropriate depth to give a fire resistance of 60 minutes. Plastic pipes greater than 40mm in

2

	<p>diameter should be fire stopped as above and fitted with an appropriate</p>	
 <p>Example of plastic pipe penetrating brick dwarf wall inadequately fire stopped.</p>	<p>intumescent collar in accordance with the collar manufacturer's instructions.</p>	
<p>Slabs forming the roof of the communal corridors had holes linking roof voids which were not fire stopped.</p> <p>This defect is considered not to have met the guidance at the time of construction.</p>  <p>Example of holes in concrete slab linking roof voids which are not fire stopped.</p>	<p>Arrange for all holes in concrete slabs and gaps between slabs to be fire stopped to a minimum fire resistance of 60 minutes. This may be by fire batts sealed with intumescent mastic or by densely packed stone wool to an appropriate depth.</p>	<p>2</p>

<p>Cavity barriers located above cross corridor doors were inadequately fire stopped – inappropriate use of expanding foam, mineral wool not densely packed, gaps at edges of plasterboard/cable trays and plastic pipes greater than 40mm in diameter not fitted with intumescent collars.</p> <p>It was unknown when the cables/pipes penetrating the cavity barriers above cross corridor doors were installed, if at the time of construction then this defect is considered not to have met the guidance at the time of construction.</p> 	<p>Arrange for cavity barriers above cross corridor fire doors to be fire stopped to minimum fire resistance of 30 minutes.</p>	<p>2</p>
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<p>Example of inadequately fire stopped cavity barrier above CCD.</p>  <p>Example (2) of inadequately fire stopped cavity barrier above CCD.</p>		
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<p>Due to the use of the dab and daub method of affixing plasterboard sheets to blockwork walls in communal areas and cross corridor fire door frames were mounted to the plasterboard walls rather than the blockwork wall beneath there were voids by-passing the cross corridor doors (These voids were also open to the ceiling void).</p> <p>This defect is considered not to have met the guidance at the time of construction.</p>	<p>plaster for the voids behind board either: walls to be sealed by</p> <ul style="list-style-type: none"> a) Firestopping of plasterboard walls to blockwork wall in ceiling void of corridors to a 30 minute fire resisting standard using intumescent mastic. b) Cutting of plasterboard at cross corridor doors and the insertion of a timber batten at least 38mm thick affixed to the blockwork wall. <p>Note: re to the ceiling tiles requiring d mounted to seal all tions from ceiling void to flats w), option A above will (y be the best option.</p>	<p>3</p>
<p>There were a number of service penetrations from communal corridor ceiling voids into flats that were not appropriately fire stopped.</p>  <p>Example of service penetration not adequately fire stopped.</p> <p>The pipes and cables appear to be original and these defects are considered not to have met the guidance at the time of construction.</p>	<p>Arrange for all service penetrations from communal corridors to be adequately fire stopped to a 60 minute fire resisting standard.</p>	<p>3</p>

<p>It could not be confirmed that communal vents that discharge from communal risers through the roof voids have been fitted with appropriate fire dampers at openings to flats.</p> <p>These defects are considered not to have met the guidance at the time of construction.</p>  <p>Example of communal vents in roof void</p>	<p>Confirm that all communal vents have been fitted with appropriate fire dampers.</p>	<p>3</p>
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