

To: Housing Panel
Date: 16th January 2018
Report of: Executive Director of Organisational Development and Corporate Services
Title of Report: Review of Oxford City Council's tower block refurbishment project relating to fire safety

Summary and recommendations	
Purpose of report:	To inform the panel of the outcome of the review
Key decision:	No
Executive Board Member:	Councillor Mike Rowley, Housing
Corporate Priority:	Meeting Housing Needs
Policy Framework:	Corporate Plan / Housing Strategy
Recommendation(s): That Housing Panel resolves to:	
Note the outcome of the review, including the lessons learned and the actions taken.	

Appendices
None

Introduction and background

1. Following the Grenfell Tower fire in London, the Corporate Management Team commissioned a review into fire safety aspects of the Council's tower block refurbishment project, specifically the use of aluminium composite material (ACM) rain screen cladding on parts of two tower blocks in Blackbird Leys.
2. The reasons for the spread of the fire at Grenfell Tower are the subject of a Public Inquiry but there has been considerable focus and speculation about the role of ACM rain screen cladding.
3. Following the Grenfell Tower disaster, the government conducted large scale tests to allow experts to better understand how different types of cladding panels behave with different types of insulation in a fire situation. The cladding system used on parts of two tower blocks in Blackbird Leys failed this test.

4. The review addresses the following five key issues:
 1. *How the specification of the cladding to the tower blocks was derived*
 2. *After the contract was awarded, the level of scrutiny given to the design specification*
 3. *Whether the cladding was installed as specified*
 4. *How the statutory approval process was carried out (to include how Building Regulations and other fire safety requirements known at the time were met)*
 5. *The engagement that took place with residents about the fire protection arrangements.*

Summary of Findings

5. There is no evidence that there were any failings in the Council's tower block refurbishment project.
6. ACM rain screen cladding is a material that has been widely used across the UK on housing projects and at high elevations. Until the Government's testing regime was implemented there was no evidence to suggest that there was anything untoward in the choice of this material for use on parts of two of the five tower blocks in Oxford. The Council's interpretation of the Building Regulations was in line with that of the industry, although there have been suggestions that the regulations were open to different interpretations. No doubt, the Public Inquiry and the separate independent review of the regulations will provide clarity. It should also be stressed that the ACM was used over stone wool insulation ("Rockwool"), which is non-combustible (as opposed to the thermoset plastic insulation used on Grenfell Tower, which is classed as combustible).
7. The decision to install sprinklers and an enhanced fire detection system within the original specification took direct account of the Coroner's Report following the Lakanal House fire in Camberwell, and the recommendations of Oxfordshire Fire and Rescue Service (OFRS).

Fire Safety Measures

8. Before Grenfell, in the event of a fire in a block flats, the accepted national practice, based on advice from Fire and Rescue services, was for residents to remain in their flat, unless the fire was in the flat (the 'stay put' policy).
9. Advice was taken from OFRS both pre and post Grenfell. Since Grenfell, OFRS has conducted fire safety audits for each block. Adequate fire safety was demonstrated for each. Throughout, OFRS's view has been that there should be a holistic approach to fire safety and the safety of residents. OFRS have confirmed that the safety measures the Council has in place and available for inspection – including sprinklers, fire doors, heat and smoke detectors, venting and fire breaks in the cladding system – meet these requirements. At the Council's request, OFRS has communicated this reassurance to residents and to the media.

How the specification of the cladding to the tower blocks was derived

10. The scope of the works was drafted by the Project Sponsor – the Council’s Head of Housing. The Project Initiation Document listed the following within the project scope:
 - *Waterproof rain screening/insulating façade programme*
 - *Energy efficiency improvement programme*
 - *Upgraded fire standards*
11. A Project Board was formed in summer 2013 and agreed the scope of works. Its membership included stakeholders from across the Council, as well as an external Project Manager. A multidisciplinary Project Team sat underneath the Board and made recommendations to it. This governance structure was proposed by the Project Manager and was adopted by the Council as the appropriate methodology for this type of project. Appropriate external professional project management and design services were procured, namely Arcadis, project management, BM3 Architecture Ltd, architects, and The Rolton Group, structural engineers.
12. The Design Team (BM3 and The Rolton Group) produced concept designs for the five blocks, which were approved by the Project Board in February 2014. The Project Board also agreed to include a number of additional measures within the specification, which included the retrofitting of sprinklers and other fire safety measures (see 6 above). In March 2014, the Project Manager reported to the Project Team that OFRS were very pleased with the proposed designs, which took into account the additional fire safety measures.
13. The approach taken to the refurbishment of the five tower blocks was to deal with them in a 2:2:1 sequence, both in terms of design and the timing of works. Evenlode and Windrush towers in Blackbird Leys were taken together because of their close proximity and similarities; Plowman and Foresters towers were also treated together as they are very similar buildings, while Hockmore Tower, which is a very different tower block, was handled separately.
14. The concept designs produced by the Design Team indicated the selection of materials and colours to be used on the exteriors of the buildings and members of the Project Team had experience of installing rain screen cladding from other projects. The initial choice for the rain screen for the two Blackbird Leys towers was a two-tone chameleon style board, and the Project Team consulted on this material.
15. Following input from the Council’s Regeneration Team about the visual appearance of the proposed designs in the context of the wider regeneration of Blackbird Leys, the Design Team were asked to select an alternative rain screen cladding material. Their choice was Vitrabond aluminium composite rain screen cladding panels, which are broadly equivalent to chameleon board in terms of behaviour in relation to fire (depending on the type of chameleon board used and its method of installation). Further consultation was held on the new designs prior to approval by the Project Board and a full planning application being made.
16. The Project Manager developed the specification, known as the ‘employer’s requirements’. Members of the Project Board, Design Team and OFRS had opportunities to comment on this at the pre-contract stage. No concerns were raised about the fire safety strategies or the choice of cladding materials.

17. The architect's drawings for Windrush and Evenlode towers, which formed part of the tender documentation, refer to 'aluminium cladding 300mm module Vitrabond or equal approved'. For Plowman and Foresters towers the drawings refer to 'aluminium cladding panels'. For Hockmore, they refer to 'Trespa cladding panels', and 'aluminium rain screen cladding'.
18. Key stakeholders had ample opportunity to influence the specification and it is important to note that any design risk lay with the contractor and did not sit with the Council.

After the contract was awarded, the level of scrutiny given to the design specification

19. The designs for all five blocks were approved by the East Area Planning Committee on 5 November 2014 with a condition that materials would be as specified. OFRS as a statutory consultee did not raise any concerns about the proposals.
20. In addition, the works were the subject of five 'full plans' Building Control applications, rather than Building Notices. OFRS were consulted as part of this process.
21. The Project Board did not meet from October 2014 to May 2017 and the general view is that there was little need for it to do so once the contractor had been appointed. As the Council had entered into a fixed-price 'design and build' contract it was in the Council's interests to minimise variations, which would add cost.
22. Variations to the planning approvals were dealt with by Planning Officers as non-material amendments to the conditions set out in the decision notices for the works. A non-material change to the location of windows and cladding at Hockmore Tower was agreed. Planning Officers advised that a change requested by the contractor to the approved type of cladding at Hockmore Tower was a material amendment and a variation of condition application would be required. They further commented that the proposed materials were not acceptable on the basis that their quality was significantly poorer and the finish too high gloss. As a result, a variation of condition application was not submitted and the Trespa cladding was retained.

Whether the cladding was installed as specified

23. The contractor, Fortem, proposed the cladding systems that they would install on the blocks; Vitrabond at Evenlode and Windrush, Trespa at Hockmore, as per the architects drawings. Opus, a non-combustible aluminium cladding was proposed for Foresters and Plowman. The structural engineers and others provided a view on methods of installation, weight etc. As it was a design and build contract, it was both the contractor's responsibility and in its interests to make sure the works proceeded as specified as they carried the liability, not the Council.
24. However, in addition to the contractor's quality assurance systems, the Council also employed a Clerk of Works reporting to the Client Manager also employed by the Council. They were responsible for an additional layer of quality control and raising concerns with the contractor. The Clerk of Works produced monthly progress reports as the works were underway, providing details of any incidents or delays, and future actions, as well as a commentary on the materials and workmanship. No comments relating specifically to the cladding materials on Evenlode or

Windrush were raised and minuted but on 9 April 2017, the Clerk of Works raised an issue with the workmanship at Evenlode:

“Elevations 5 and 6 are to be offered up for inspection WC 03/04/2017, I have issues regarding the rain screen cladding on the remaining elevations 5 and 6 the two external corners do not appear to be running in a true horizontal line, I have mentioned this to both SM Evenlode and Alex Fortem Project Manager, the SM informed me that Richard Crook (Fortem Construction Manager, would have a look at the issue)”

25. There was an issue with staff turnover in the Clerk of Works role, which at least four people have undertaken during the project. However, the Client Manager undertook the role when no Clerk of Works was in post and, therefore, any major deviations from the specification would have been identified. There are no significant gaps in the Clerk of Works' records

How the statutory approval process was carried out (to include how Building Regulations and other fire safety requirements known at the time were met)

26. Building Control provided input at the pre-application stage including about the means of escape and fire alarms. Cladding did not feature as part of those discussions because at that time there was no reason to believe that there was a potential issue.
27. Building Control is responsible for ensuring that the cladding is installed in accordance with the Building Regulations. However, it is a duty of the contactor (and the applicant) to notify Building Control when statutory inspections under the Building Regulations are due to be carried out. Building Control will also carry out informal inspections and provide advice.
28. During the contract phase, there was a duty on the contractor to provide certifications for the cladding materials and to call Building Control in at 'statutory inspection stages'.
29. Initially the contractor mistakenly thought that the works could be dealt with by way of Building Notices, rather than by way of the 'full plans' building applications process. This was in part due to capacity issues within Building Control and the lack of continuity in officers dealing with case, who were agency and temporary staff. However, the matter was clarified by the Council's senior Building Control officer and there was no significant impact on giving approval to the cladding.
30. The British Board of Agreement (BBA) certificate for Vitrabond aluminium composite rain screen cladding panels was provided by the contractor. It states that the material has a reaction to fire classification of 'B' and may be regarded as being 'Class O' in the national system (for surface spread of flame). The BBA does not recommend any height restrictions on the use of this material.
31. Building Control also received BBAs for Rockwool insulation (used on all blocks) and the Trespa cladding for Hockmore. The Opus aluminium rain screen cladding for Plowman and Foresters towers also has the required European standard certification. Building Control have confirmed that these products comply with the Building Regulations.
32. Given the nature of a design and build contract, Building Control's approach is to comment but not formally approve works for final completion until such a time as

all the works on a block have been completed and a full inspection has taken place involving Building Control, Housing Services and OFRS.

33. Building Control followed the Building Regulations, the key points of which are:

- *According to Diagram 40, surface materials used over 18m high must be rated at least B in the Euroclass system or class 0 in the national system – Vitrabond meets this standard as per the BBA certificate.*
- *According to Paragraph 12.7, any insulation or filler material used over 18m high should be of limited combustibility (defined as at least 'A2' in the Euroclass system or '20' in the national system) – Rockwool exceeds this standard.*

34. In June 2015, the Building Control Alliance (BCA) issued guidance which offers four routes to compliance:

- i. The use of materials of limited combustibility (i.e. A2 or better) for all elements of the cladding system (which would include the rain screen).*
- ii. Evidence that the complete external cladding system has been assessed in a fire test as meeting the acceptable criteria.*
- iii. A desktop study by a qualified fire specialist supported by test data.*
- iv. A holistic fire engineered approach supported by qualitative analysis.*

35. The first option would exclude the use of Vitrabond but it is likely that at least one of the other options could have led to its use. Indeed, it has been reported that desktop studies have resulted in the use of ACM cladding over combustible insulation in other parts of the UK¹. Building Control based their assessment on the Building Regulations rather than the BCA guidance.

The engagement that took place with tenants and leaseholders (residents) about the new fire protection arrangements after they were installed

36. Since the fire safety measures for the blocks were agreed, the Council has worked with residents to ensure they understand the arrangements in place and advice provided. In addition, vulnerable residents have been identified so that OFRS know which flats they might need to evacuate in the event of a fire. Orders have been placed for the information cabinets that will contain details of the fire safety system and vulnerable residents in each block for use by OFRS.

37. Following Grenfell and the initial meeting with tower block residents in May 2017 when various concerns were understandably raised, the Council set up and has taken soundings from a new residents' reference group about the fire safety arrangements in tower blocks and communication about them, and what more the Council could do to reassure residents.

38. Since the meeting in May the Council has:

- Hand delivered letters notifying residents about evacuation procedures (14 June) and the alarm system and fire strategy (19 June).

¹ [How flammable cladding gets approved, BBC News, 1 July 2017](#)

- Produced and distributed new evacuation leaflets for all five towers.
- Held a fire test on 2 August, which involved some residents.
- Produced and distributed special Fire Editions of the Tenants in Touch newsletter for Evenlode and Windrush, Plowman, and Foresters to all residents in those blocks in August. Information on home insurance and fire safety books for children were distributed at the same time.
- Included a large section on fire safety information and an update on the tower block refurbishment programme in the latest (autumn) edition of Tenants in Touch.

Conclusions

39. As a result of the review a number of learning points have been identified.

40. The following are deemed to be good practice and have been or will be adopted:

- Lessons learnt from failings elsewhere (e.g. Grenfell) should be built into project specifications from an early stage.
- Non-combustible materials should be used for all refurbishment projects in respect of the Council's flat blocks.
- The governance structure comprising an external Project Manager and design team, an internal Client Manager, and a Project Board and Project Team, etc., comprising both external and internal representatives should be considered for future major projects.
- Contractors' obligations to provide information to Building Control under a 'Full Plans' application should be made clear to them from the outset. This would be via Building Control Conditional Approval.
- Final approval of the completed works should involve a comprehensive inspection by a range of Council stakeholders such as Building Control and Housing Services, as well as the Fire and Rescue Service.
- Whilst there was significant engagement with residents in the tower blocks with regard to the fire safety arrangements, post Grenfell, because of resident turnover, this should be a continuing process to make sure that all residents are aware of those arrangements and it should be extended to all Council-owned blocks of flats.
- A streamlined process for fire risk assessments has been implemented across all blocks

41. The following should be the subject of further reflection:

- Design and build contracts should be considered for future major projects as an effective means of delivering the Council's intended outcomes while minimising risk.
- Only non-combustible materials should be specified on the exteriors of Council-owned properties in the future.
- Consideration should be given to any new proposals for strengthening the fire risk assessment process and implementing them, as appropriate.

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Background Papers:
None