

Item No. 17.	Classification: Open	Date: 12 December 2017	Meeting Name: Cabinet
Report title:		Ledbury Estate – Arup Structural Survey Report	
Ward(s) or groups affected:		Livesey	
Author:		Councillor Stephanie Cryan, Deputy Leader and Cabinet Member for Housing	

FOREWORD - COUNCILLOR STEPHANIE CRYAN, DEPUTY LEADER AND CABINET MEMBER FOR HOUSING

In June, following a public meeting about fire safety, the council became aware of cracks appearing in homes in the Ledbury Estate tower blocks which have been caused by the thermal movement of the large concrete panels that make up the construction of the blocks. This widespread cracking has led to the breakdown of compartmentation of fire safety. The council asked Arup, a structural engineering company, to check both the structural integrity of the four tower blocks and the capacity of the blocks to withstand disproportionate collapse. The four tower blocks were constructed by Taylor Woodrow Anglian (TWA) and are of a similar design to Ronan Point where a gas explosion in 1968 resulted in disproportionate collapse of the building and the death of four residents.

In August we took the decision to terminate the gas supply to the four tower blocks following concerns that the blocks would not be able to withstand a gas explosion and would be at risk of disproportionate collapse. An interim report was brought to Cabinet on 19 September 2017.

Arup were asked to do further checks and inspections to look at whether the requisite strengthening works highlighted after the Ronan Point tragedy in 1968 had been carried out and we received the full report from Arup on 20 November which concluded that these the blocks had been built without the correct strengthening measures in place.

This report asks cabinet to note that the council received the report from Arup on 20 November 2017. The report was published on the Ledbury page of the Council's website the same day; and a summary was delivered to each home the following day. A public meeting was also held on 23 November with residents where a presentation from Arup was received.

The report concludes that the structure of the building is in good condition and that it meets wind loading requirements. However, in order to comply with the BRE and DCLG recommendations on the prevention of disproportionate collapse, strengthening works are required.

A Resident Project Team, with an independent Chair, has been established for the blocks and they will be working with the council on the scope of works required and the options on which residents will be consulted on in respect of the future of their homes. We very much believe that the residents of the Ledbury tower blocks should have a say in the future of the blocks.

I would like to thank all of the residents in the tower blocks for their continued patience and support whilst we are working to resolve the problems with the structure of the buildings.

RECOMMENDATION

1. That cabinet notes the content of this report; the draft key stages that officers are working through with the Ledbury Resident Project Team; and receives a further report setting out the outcome of the resident consultation on the options appraisal process.

BACKGROUND INFORMATION

2. Arup was appointed by Southwark Council to carry out a structural engineering assessment of the four 14-storey high tower blocks on the Ledbury Estate in Peckham.
3. This report provides a summary of the Arup report called "Ledbury Estate: Structural Assessment of Bromyard, Peterchurch, Sarnsfield and Skenfrith House" dated 20 November 2017.

Description of the buildings

4. There are four tower blocks on the Ledbury Estate: Bromyard House, Peterchurch House, Sarnsfield House and Skenfrith House.
5. All of the blocks are 14 storeys high and 'H-shaped'. In every block there are four flats per floor; two flats on both sides of the stairwell and lifts in the middle.
6. In Skenfrith House and Peterchurch House, half of the flats have one bedroom and half have three bedrooms. In Sarnsfield House and Bromyard House, the bottom five storeys have one bedroom and three bedroom flats, and above this, all flats have two bedrooms.
7. The four 14-storey tower blocks on Ledbury Estate were built between 1968 and 1970. They were built and owned by the Greater London Council and then passed on to Southwark Council in the 1980s.
8. The floors and walls were made out of concrete panels which were made in a factory, and delivered to Ledbury "flat packed" on lorries. These panels were then lifted into place and connected together to make the overall building structure.
9. Each floor panel is supported by two walls, one at each end of the floor panel.
10. In the flats, there are three main types of wall panels. The "flank" walls and internal "cross" walls support the floor slab panels. The other external walls don't need to support the floor slab panels because these are already being supported by the cross walls and the flank walls.
11. The areas containing the lift and stairs in the middle of the buildings are also built from concrete panels.
12. The blocks are of a similar construction to a 22 storey building called Ronan Point, in Canning Town, in the London Borough of Newham.

13. In May 1968, there was a gas explosion in one of the flats on the 18th floor of Ronan Point. The explosion blew out a flank wall panel and as a result, the whole of one corner of the building collapsed. The gas explosion caused much more damage than expected, and so this was called a “disproportionate collapse”.
14. Later that year, the Government issued two documents, which required all LPS blocks over six storeys high that had already been built to be assessed by a Structural Engineer. These assessments were to check whether, if there was another gas explosion like at Ronan Point, would the buildings experience a disproportionate collapse? If any building did not pass this check, either it had to be strengthened, or the gas supply to the building had to be removed. If the gas supply was removed, the buildings still had to be checked but now for resistance to a smaller explosion to reflect the fact that the main gas supply had now been removed. These documents also required buildings to be checked for their resistance to wind. Finally, any LPS building over six storeys high that had not yet been built needed to be built to the new standards set out in these documents.
15. In 2012 the Building Research Establishment and the Department for Communities and Local Government (DCLG) published a guidance document to update the guidance written in 1968. This guidance has been followed in the Arup assessment of the four tower blocks at Ledbury Estate.

Structural assessment

Phase 1

16. In July 2017 Arup was asked by Southwark Council to investigate reports of cracking from residents of the Ledbury Estate.
17. Some of these cracks were up to 30mm wide, some were smaller, and some were understood to change in size depending on how hot or cold it was outside.
18. Arup concluded that the cracks were actually gaps between the separate concrete panels that make up the buildings. None of gaps affected the strength of the buildings. This was explained at the meeting to residents on 11 July 2017.

Phase 2

19. After Phase 1, Arup was asked by Southwark Council to check the structure of the four tower blocks to ensure they could withstand the kind of gas explosion that had happened at Ronan Point in 1968. The reason that this kind of explosion was checked was because the four tower blocks at Ledbury had a piped gas supply.
20. The records of Southwark Council, the Building Research Establishment (BRE) and the original builder were searched, but no information was found from the time when the buildings were built.
21. The London Metropolitan Archives had some basic information. There were receipts for £53,700 of “remedial works” done in 1968-1969, but no further information on what these remedial works were. There was also a note which said the design of the blocks had been changed to meet the requirements of the

Government documents in 1968, but it didn't say how or what exactly had been changed. At that time the blocks were owned by the Greater London Council and not by Southwark Council.

22. A 1985, the British Research Establishment report-'Large panel Systems-the structure of Ronan Point and other Taylor Woodrow-Anglian buildings' named the four Ledbury towers as 'type b' blocks which had been built subsequently to Ronan Point with a different H2 flank wall designed to resist joint forces equivalent to standard static pressure of 5 lbf/in. This gave the council confidence that the necessary strengthening works and been carried out. However, there was not enough information on paper to be certain of how the buildings were built or precisely what "remedial works" had been carried out.
23. The only way to find out more about the structure was to carry out a number of "intrusive investigations". This involved breaking out bits of the concrete structure in the two flats that were vacant at the time. This allowed the team to find out what steel connections and reinforcing bars were hidden inside the concrete, and whether any of the "remedial works" could be seen.
24. From these investigations and from structural calculations, it was found that the buildings were at risk of a disproportionate collapse if there was a gas explosion from the piped gas supply. As soon as this was known in August 2017, Southwark Council decided to remove the piped gas supply to the buildings. This reduced the risk of a gas explosion happening and to that end the gas was disconnected at the four towers on 11 August 2017.

Phase 3

25. Removing the gas supply reduced the risk of disproportionate collapse but did not make the risk go away. BRE guidance states that buildings should be able to experience other types of accidental damage without incurring disproportionate collapse (e.g. vehicle impact, where relevant) and should be able to withstand explosions caused by bottled gas.
26. Arup had to carry out a further assessment of the buildings, again following the guidance set out by the BRE and the Department for Communities and Local Government in 2012.
27. In Phase 2, Arup had investigated the structure in two flats. It was important to determine if the findings from these two flats were the same in other areas. As a result, Arup carried out more intrusive investigations in 19 void flats across all four of the buildings on the Ledbury Estate during October 2017.
28. As well as the risk of disproportionate collapse, Arup also looked at the resistance to exceptionally strong winds, and whether the concrete panels (which are now nearly 50 years old) had deteriorated in any way.

Disproportionate collapse

29. The Arup assessment shows that the buildings are not strong enough to satisfy the BRE guidance for accidental damage to buildings that do not have piped gas and therefore need to be strengthened.
30. Many of the strengthening measures to the concrete walls and floors will require local removal and reinstatement of plaster finishes, floor finishes and floor

screeds, heating pipes, radiators, sanitary ware including baths, and kitchens.

31. The following parts of the four buildings need to be strengthened:
 - Floor units next to flank walls and external wall panels (all levels, all buildings)
 - Cross-walls (including party walls) at upper levels (Level 8 upwards, all buildings)
 - Cross-walls: party walls between one- and three- bedroom flats in Bromyard House and Sarnsfield House
 - Connections between the external wall panels and the floors/internal walls.
32. In the Arup report there are some sketches to give a basic idea of what the strengthening could be and where it would be needed.
33. The report recommended that until such strengthening measures are in place, the use of bottled gas and oxygen cylinders should be banned.
34. This ban has been implemented by the Ledbury officer team and all residents have been advised. In addition the Fire Wardens for each block have also been advised to ensure that no bottled gas or oxygen cylinders are brought into the blocks.

Wind resistance

35. The Arup assessment showed that there is adequate resistance to wind load.
36. The external wall panels are helping to resist the wind pressures on the building.
37. In order that the external walls continue to help resist the wind pressures, the quality of the joints in the wall panels needs to be maintained and therefore Arup have recommended that these all be inspected and repaired if necessary, for long term resistance to wind loading.

Condition

38. Tests done on the concrete during the investigations in the flats showed that the concrete and the embedded steel reinforcement are in good condition.

Conclusions of the Arup report

39. The structural assessment has shown that the buildings need to be strengthened to meet the guidelines for disproportionate collapse for these types of buildings, set by the Building Research Establishment and the Department for Communities and Local Government in 2012.
40. The piped gas supply has been turned off which has removed the main risk that might lead to a disproportionate collapse. The use of bottled gas and oxygen cylinders should also be banned until the strengthening is in place.

The next steps

41. Following the receipt of the Arup report it was immediately published on the Ledbury page of the Council's website, residents and former residents were

written to and were signposted to the webpage; a summary report from Arup was delivered to all residents and former residents.

42. A public meeting for residents and former residents was held on Thursday 23 November 2017 at the Ledbury TRA Hall where Arup presented their findings. 70 residents attended the meeting.
43. The meeting also received a report setting out the draft key stages of the next steps. In the run up to the meeting, the weekly Ledbury Newsletter had contained articles on the next steps and therefore the draft key stages of the next steps expanded on the information that residents had already been advised of. The draft key stages were also set out in a hand out given to those who attended the meeting on the 23 November, which has also been published on the Ledbury webpage.
44. The Ledbury Towers Resident Project Team was set up in October 2017 and meets monthly. The next meeting will be held on 5 December 2017 and the meeting will consider the draft key stages, brainstorm on both the draft scope of works and how to maximise resident engagement in the two consultation exercises that need to be undertaken. The meeting will also start to look at how residents would like to be involved in the appointment of the Independent Consultant required to carry out the options appraisal process; and to decide on whether to use the current consultants that Southwark Council has available to cost the works, or engage a separate cost consultant.
45. The next key stages that the Resident Project Team will consider at their meeting are set out in Appendix 2 to this report.

SUPPLEMENTARY ADVICE FROM OTHER OFFICERS

Director of Law and Democracy

46. The report asks cabinet to note the proposed way forward following receipt of the Arup structural survey report on the buildings comprising the Ledbury Estate tower blocks.
47. Section 105 of the Housing Act 1985 requires the Council to consult with those of its secure tenants likely to be substantially affected as a whole or as a group by a matter of housing management which, in the council's opinion as landlord represent a new programme of maintenance, improvement or demolition, or a change in the policy or practice of the council.
48. To meet legal requirements consultation must be undertaken when proposals are still at a formative stage. The consultation must include sufficient reasons for the proposals to allow interested parties the opportunity to consider the proposals and formulate a response; it must allow adequate time for interested parties to consider proposals and formulate their response and the outcome of consultation must be conscientiously taken into account when the ultimate decision is taken on the proposals. The consultation strategy should be reviewed at key stages of development of the proposals.
49. The public sector Equality Duty, in section 149 of the Equality Act 2010, requires the council to consider all individuals when carrying out their functions; this includes delivering services and in relation to their own employees. It requires public bodies to have due regard to the need to eliminate discrimination,

advance equality of opportunity, and foster good relations between different people when carrying out their activities. Officers will need to bear the duty in mind during the consultation process and when formulating recommendations to cabinet for final decision making; members must have due regard to the duty when the matter is referred back to cabinet following consultation.

50. Officers from legal services will provide legal advice, when required, and in relation to any appointments to be made.

Strategic Director of Finance and Governance (H&M17/079)

51. The strategic director of finance and governance notes the contents of the report and the draft key stages of the next steps. Critical to moving this forward is the appointment of independent consultants to undertake the options appraisal which will inform subsequent decision making. All costs associated with the Ledbury Estate are currently being met from contingency sums within the Housing Revenue Account (HRA) and the Housing Investment Programme (HIP).

BACKGROUND DOCUMENTS

Background Papers	Held At	Contact
None.		

APPENDICES

No.	Title
Appendix 1	Arup report called "Ledbury Estate: Structural Assessment of Bromyard, Peterchurch, Sarnsfield and Skenfrith House" dated 20 November 2017 (circulated separately)
Appendix 2	Ledbury Key Stages - Discussed at the Resident Project Team Meeting on 5 December 2017 (circulated separately)

AUDIT TRAIL

Cabinet Member	Councillor Stephanie Cryan, Deputy Leader and Cabinet Member for Housing	
Lead Officer	Gerri Scott, Strategic Director Housing and Modernisation	
Report Author	Mike Tyrrell, Director of Ledbury Estate	
Version	Final	
Dated	30 November 2017	
Key Decision?	No	
CONSULTATION WITH OTHER OFFICERS / DIRECTORATES / CABINET MEMBER		
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Strategic Director of Finance and Governance	Yes	Yes
Cabinet Member	Yes	Yes
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