

## 1 Background

The TMO client team at the design inception were requesting the design meet the requirement of preventing falls as well as deterring residents from throwing things out of windows.

First design: comprised a large central pivot window and a small casement with louvre externally.

This meant that the smaller window could be fully opened but nothing would fall out of the window. There is an issue with this in that the other tilt-and-turn could always be opened and therefore would not prevent falls/throwing items.

Second design: comprised tilt-and-turn and small casement with louvre externally

Third design: comprised 2 tilt and turns with louvre panel. **2Building regulations**

**The original proposals for windows** was that they were designed larger than the structural opening **as the original Client team wanted to improve on the current ventilation and daylight levels so the new windows were over and above the refurbishment building reg obligations.** Now the contractor is about to carry out internal works within flats it is clear that **cutting larger structural openings to every residents window may cause difficulties.**

Additional disruption and time within flats who are having new heating as well as the window installation

- Curtaining would not fit at every window where larger openings are formed
- Possibly impact on furniture arrangements (wardrobes may run in front of new larger windows and also wall mounted tvs would not be central to the wall)

**Proposed windows** will fit within the structural openings, which will remove the above **additional** issues. Rydon are to confirm that the new proposed windows will meet the existing building regulations for refurbishment standards. **The concern is that (as per the Max Fordham report) at peak times during hot weather periods the residents will need to open the small window in the turn position to prevent overheating.** This is particularly so in the case of the one bed flats on east and west elevation. The smaller casement will be fully open in turn mode and **the larger window will only need to be tilt mode. When in tilt mode the window is restricted to a 100mm opening as per Building.**

Rydon were working on the basis of tilt-and-turn windows as per the tender documents, but the TMO asked them to look at Centre Pivot as a result of concerns on the overheating issue. Fully reversible windows were not looked at because there are issues over leaning out too far to clean and causing falls/items dropping.

### **A Centre Pivots**

#### Pros

- 1 Meet ventilation requirements
- 2 Less likely to have overheating

### Cons

- 1 Rydon have just told us they have ordered the window profiles for tilt-and-turn which cannot be used if centre pivot windows are preferred – ie abortive costs
- 2 Centre pivots cost on average 10 – 20% more than tilt-and-turn windows
- 3 There is no key operation, they are opened by pushing down a button integral in the frame – which means that there is no way of removing the opening mechanism to prevent usage

**B Tilt-and-turn** These will be viable if the smaller window is fully open in the 'turn' position and the larger window in fixed tilt (bottom hung).

### Pros

Residents have already seen the display board showing this type of window

Profiles are already in manufacture

In tilt mode they are bottom hung, so no-one can fall out and it is very difficult to throw anything from the window

The windows have keyed locking handles, so they can be left at fixed 100mm restriction in tilt mode

Residents can open their windows fully in turn mode. But there is no restriction on the turn mode opening width.

Keys can be removed from window handles if residents don't want small children to be able to adjust opening mechanism.

### Cons

The smaller window will need to be fully open in order to reduce any over heating.

### **Conclusion**

Subject to Rydon confirming the tilt-and-turn windows will meet Building Regulations, the recommendation is that tilt-and-turn windows are used at Grenfell. This also gives residents' responsibility over how they use the windows, and is not Big Brother ish.

However, in any instance what the TMO could do is advise residents how to manage the windows/heating by:

- Suggesting they remove the keys to vulnerable windows
- Put restrictors on windows (as ones currently installed retrospectively – this would have to be instructed to Rydon asap)
- Using the heating controls appropriately
- Preventing solar gain by closing curtains

End