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Architecture

Can Smart Urban Planning Improve the Fire Safety of High Rise Buildings?

by David Cox September 12th, 2017

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Lessons learnt in regards fire evacuation are applied to a case study to examine potential improvements in the fire safety of high rise city buildings.

In the aftermath of any fire, there are many lessons to be learnt. One of these issues is the relationship between the building under fire and the neighbouring buildings.

In the case of one [burning building](#), all feasible means of escape were exhausted and there was little time available to find a solution. Both fire escapes were filled with dense lethal smoke and the sealed corridor was filling with smoke. Consequently for the persons trapped on that floor, the fire safety of the building had entirely failed.

By some obscure circumstances, the group trapped in the corridor found clean air. This discovery was not found by good judgement or smart thinking but simply the result of extraordinary luck. However, the fire below obviously continued and the group was still in danger.

Although not known at the time, a fire ladder extending from a fire tender located on the street was used to provide access to persons within the building. This access was, however, denied to the other sides of the building because there was inadequate access for the fire trucks to manoeuvre around these areas of the building. In addition to this problem, the firefighters needed to be able to escape if the fire became dangerous to them.

Consequently, the group did not have access to the front of the building facing the street and consequently access by fire ladder was impossible. Had the fire fighters not been able to contain the fire from within the building, there was no other means of escape. The group therefore had no other option but to wait and hope the fire below them could be extinguished and the firefighters could reach them from within the building. After what appeared to be a lengthy period, that is what occurred and all of the group were saved.

This example demonstrates the importance of providing emergency vehicle access to at least both sides of a building as well as consideration for providing for an alternative means of exit for the firefighting team.

Case study

The case study attached is used to demonstrate these principles. Proposal B shows an artist's impression of a recent approved development proposal in Brisbane which included at least seven high rise buildings.

Proposal A shows an alternative proposal for the same site which was designed for the local community and which incorporated the right of public use of part of the site.

Proposal B provides emergency access from the street to the new buildings but effectively no access for emergency vehicles within the site to any of these seven high rise buildings. Furthermore, even if access was partially gained to a very small part of the site, there was no alternative means of escape for the fire fighters if the fire became uncontrolled.

Proposal A differs from the above scheme. As well as providing a valuable inner courtyard area within the development and providing for the designated public access to this area, the proposal provides extensive access to both outside and inside of the 'ring' of proposed new buildings around the courtyard. Further to this, there is also an alternative exit for emergency vehicles via the laneway at the bottom left of the proposed courtyard

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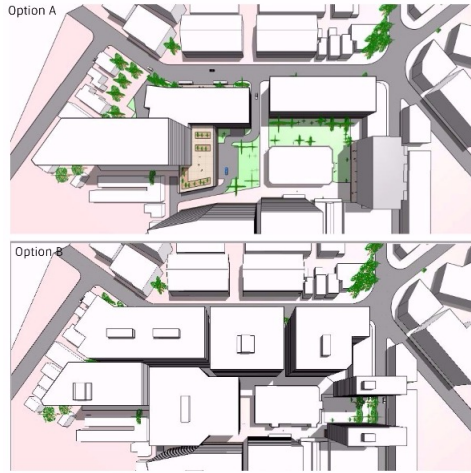
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emergency vehicles via the driveway at the bottom left of the proposed courtyard.

With regard to this fire safety provisions discussed above, Proposal A is inherently far safer than Proposal B.



When it comes to whether smart urban planning can help with fire safety, the answer is clearly in the affirmative.

Urban planners often ignore these safety aspects for adequate access to be provided for fire and emergency vehicles. This is demonstrated by the fact that Proposal B gained development approval even though it failed to provide such access.



by David Cox

David is a widely experienced architect who has worked on major projects in the private and pub....

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Mervyn Hayman-Danker

24/09/2017

A suggested MUST Read for ALL, that includes a Case Study that proves that "smart urban planning practice" WOULD improve the FIRE SAFETY of High Rise buildings!
I hope that our statutory planners, decision makers and developers are taking note!



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