

Andrew Brown

Fire Engineering in the 21st Century and Beyond

Setting the modern scene.

- Housing.
- Financial incentives.
- Targets.
- Pressure on local governments.
- External pressure on federal governments.
- Planned devolution.
- Pressure to deliver.
- Pressure to reduce carbon footprint.
- Pressure to make cost and efficiency savings.
- Unstable planet – unstable world.
- Self-regulation.

Setting the modern scene.



- Less with less.
- Green incentivisation.
- Energy market instability.
- Changing construction funding models.
- High volume production.

Setting the modern scene.

- Wide-ranging changes in legislation made quickly.
- Changes in legislation still outstanding.
- New legislation in place that has yet to be tested.
- Outstanding prosecutions.
- Lack of experiential understanding within the judiciary.
- Increased scrutiny on previously unregulated areas of the industry.

Setting the modern scene.

- Public coverage of incidents.
- Increased social awareness.
- Reliance on public material.
- Increased interdependency of products, materials, services.
- Changes in methods of information sourcing



Social and media drivers



Setting the modern scene.

- The development of green technology.
- The use of green materials inside buildings.
- The development of BESS.
- The move to Hydrogen.
- Experimentation with Ammonia.
- Solar panel systems in all types of buildings.
- The development of alternative methods of insulation for existing buildings and new buildings.
- The proliferation of electric cars.
- Carbon capture.

The global picture.

- Increased focuses on energy efficiency in buildings.
- Extreme weather conditions.
- National and international targets and penalties.
- Fragmented international policy.
- Green building.



Is this all new?





<https://unobtainium13.com/wp-content/uploads/2014/07/628x471.jpg>



<https://www.standard.co.uk/news/london/grenfell-100-days-what-has-happened-since-the-devastating-blaze-a3640571.html>

Is this all new?

- LA2 1999
- Volendam 2001
- Canecão Mineiro 2001
- Station 2003
- República Cromañón 2004
- 911 Nightclub 2007
- Factory Nightclub 2008
- Wuwang Club 2008
- Santika Club 2009
- Khromaya Loshad 2009
- Kiss 2013
- Collectiv 2015
- Yaoundé nightclub 2022
- Kočani nightclub 2025

Complex building life management.

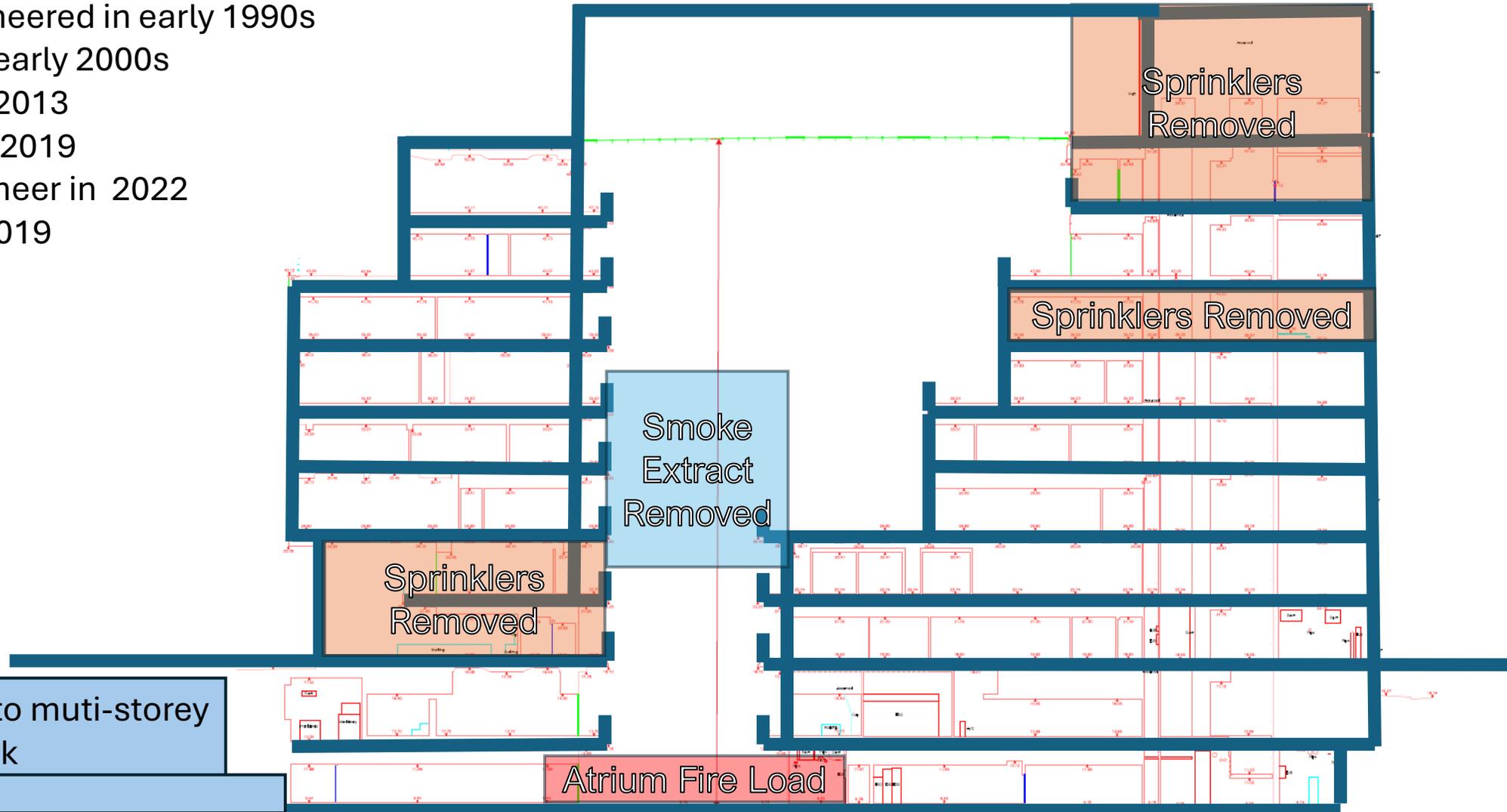


Building diversification.



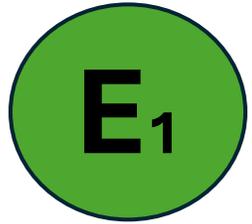
Compound Fire Engineering

- Originally fire engineered in early 1990s
- Fire engineered in early 2000s
- Fire engineered in 2013
- Fire engineered in 2019
- Attempt to re-engineer in 2022
- No evidence pre-2019

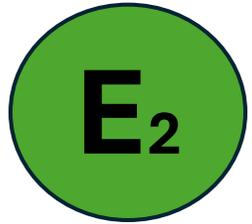


Incentivisation of sustainable technology.

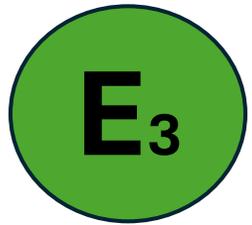




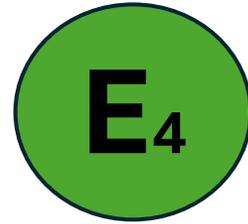
Empathise



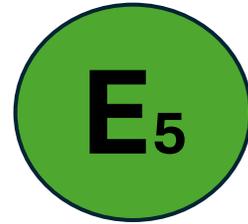
Educate



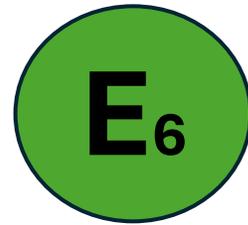
Expand



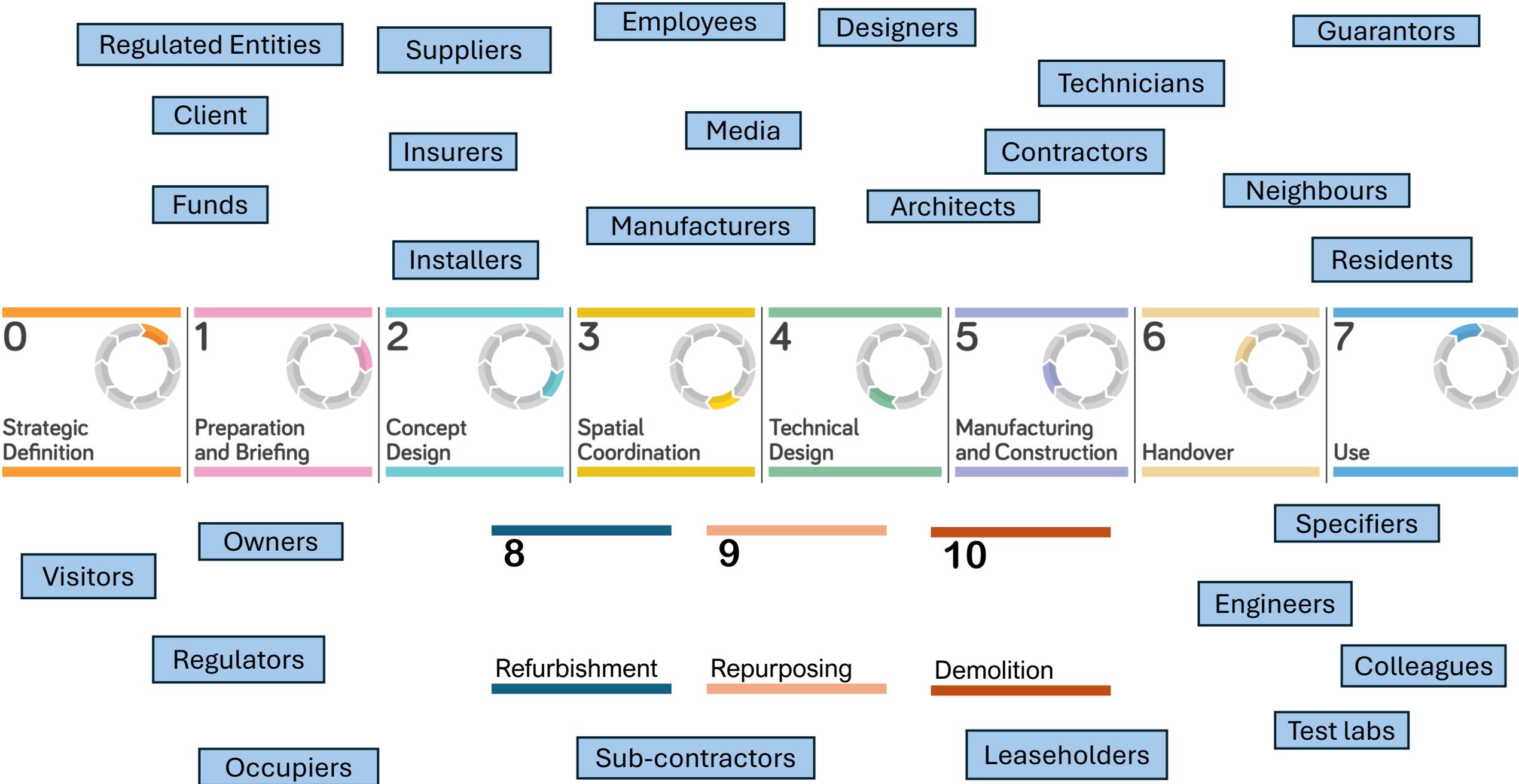
Explain



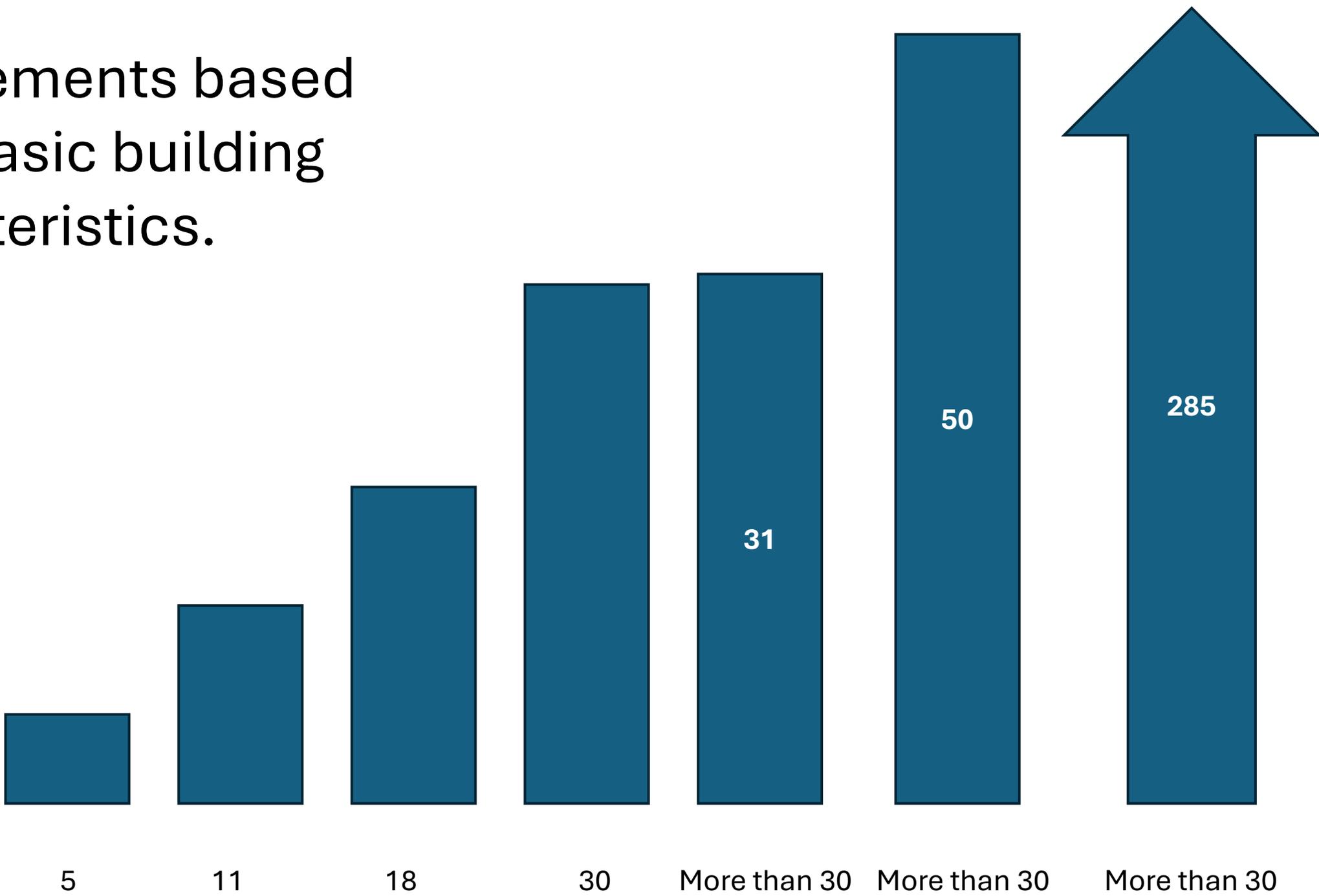
Encourage



Enforce



Requirements based upon basic building characteristics.



Questions

Bishopsgate

<https://www.standard.co.uk/news/london/55-bishopsgate-skyscraper-city-of-london-approved-b1095956.html>

Macedonia

<https://www.youtube.com/watch?v=HO16RGTtLk4>

Dunlop

<https://www.business-live.co.uk/commercial-property/fort-dunlop-facelift-given-green-10911290>

Oldham Mill

https://www.business-live.co.uk/economic-development/death-trap-mill-site-could-31165078?utm_source=taboola&utm_medium=display&utm_campaign=exchange

BESS

<https://www.spie.com/en/discover-our-offers-solutions-and-expertise/our-expertise/energy-production-transmission-distribution-storage/battery-energy-storage-systems-bess>

More with Less

<https://link.springer.com/book/10.1057/9780230300408>

Towering Inferno

https://www.google.co.uk/search?sca_esv=dc34c69bf0bcbd51&q=towering+inferno&udm=2&fbs=ABzOT_CWdhQLP1FcmU5B0fn3xuWpA-dk4wpBWOGsoR7DG5zJBs5KbvfUChveCKqCmofFTOnX5cWomDDhhcVLebGO7DXb9hjrCU2QMuJy1E8Qk9EkfkzqgUYuFlffu1l2alBFlickxXosmHnkmGlAlr75B3WWeghyWsqFWqJk6qiGwi2NUkdkc6NioAWFrpUCfjkF92wgpTxJdN74Co049XQIlzkaf1kjMg&sa=X&ved=2ahUKEwiSqaOo85WMAxUPaEEAHd-oGygQtKgLegQIRAB&biw=1528&bih=712&dpr=1.25#vhid=y7JPRt2ndg4uXM&vssid=mosaic

<https://intotheretroscope.com/towering-inferno-1974/>

Nightclub Fires

https://en.wikipedia.org/wiki/List_of_nightclub_fires

Video

<https://www.youtube.com/watch?v=8YnhKRLzZDI>

Sheep

<https://houseplans.co/articles/is-a-green-roof-right-for-you/>