A long term view – the sustainability of tall buildings
Steve Watts, Partner at alinea consulting and CTBUH Chairman
28 March 2019
The three pillars of sustainability
Tower lifecycle

Construct
Profit

Use
People

Re-Use
Planet

Time
Profit
Have cake, eat it
It’s not all about height
Short term vs long term costs

Exchange Value

Life Cycle Value

100%

60% 40%
Energy improvements over time, Hilson Moran
Unregulated energy use

Regulated Energy Use includes: fixed building services, heating, hot water, cooling, ventilation, lighting

Unregulated Energy Use includes: plugload, server rooms, security, external lighting, lifts etc.

Special Functions include: trading floors, server rooms, cafeteria etc.
Planet
Annual CO$_2$ Emissions
people, places, and things are connecting

- scalable sensors
- deployable networks
- cloud processing - AI
- sharing economy
- workplace mobility
- social engagement
Greening
“powerful computers allow designers to envisage structures that squeeze more out of the compromise between utility, aesthetics and cost”

The Economist
People
People: the hidden cost?

Operational Value

A breakdown of business costs

- Salaries of Occupants 85%
- Building - construction cost 6.5%
- M&E services - running and maintenance 4%
- Furnishings and furniture - capital cost 1.25%
- Building - maintenance 1%
- Cleaning, security etc 1%
- M&E services - depreciation 0.75%
- Furnishings and furniture - maintenance and depreciation 0.5%

5% 95%
A new standard: WELL

Explore WELL features
See how WELL features impact and influence human behaviors related to health and well-being.
LEARN MORE
The future is a ‘networked’ space
Profit
Planet
People
Have cake, eat it

CHEAP

GREEN

HEALTHY
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<thead>
<tr>
<th>Brand:</th>
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<td>Occupant Comfort</td>
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<td>Average Score</td>
<td>Net Area (m²)</td>
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Maximum Deviation: 3% 12% 18% 34% 4%
Longevity
Timeline of the 100 Tallest Demolished Buildings

- **Ocean Tower** (2008–2009) in South Padre Island, Texas, was dynamited after repairs were deemed too expensive.
- **Edificio Windsor**, Madrid (1979–2005) was heavily damaged in a 2005 fire and was deemed unsafe.
- **Harmon Hotel**, Las Vegas (2009–2015), was demolished before it ever opened. Construction flaws had rendered it unsafe to occupy. Only 26 of its planned 49 stories were ever finished.

These are just a few examples from the list of demolished buildings. See the full list of demolished buildings at ctbuh.org/demolished.
More than one life
The tower and the city
Supporting each other