



**CTBUH 40<sup>th</sup> Anniversary  
1969-2009**

*"Towards a sustainable urban future"*

# *Tall Trends in Troubling Times*

Presentation to The Economic  
Development Council of Chicago

**Antony Wood**

CTBUH Executive Director

Chicago, 25<sup>th</sup> November 2009

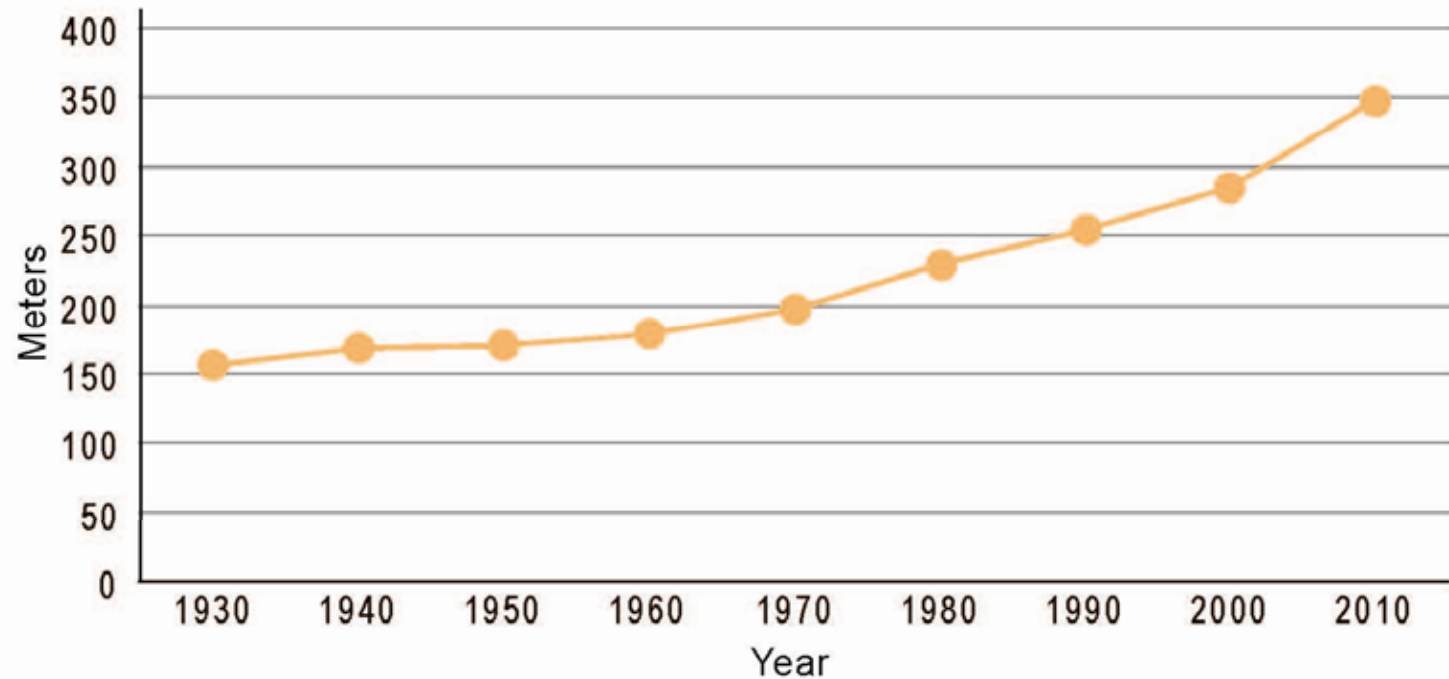


# **7 Recent Tall Building Trends**

# Tall Building Trend 1: An increase in Height

Over time, the average height of the 100 tallest buildings in the world has been steadily increasing. However, by 2010, this average height will have jumped to 349 meters, up from 286 meters in 2000, an increase of 22%. This is almost double the increase from 197 meters to 229 meters that occurred between 1970 and 1980, the second largest increase in average building height across a decade.

Average Height of the 100 Tallest Buildings in the World



# Tall Building Trend 1: An increase in Height

## “The World’s Tallest Building” Title



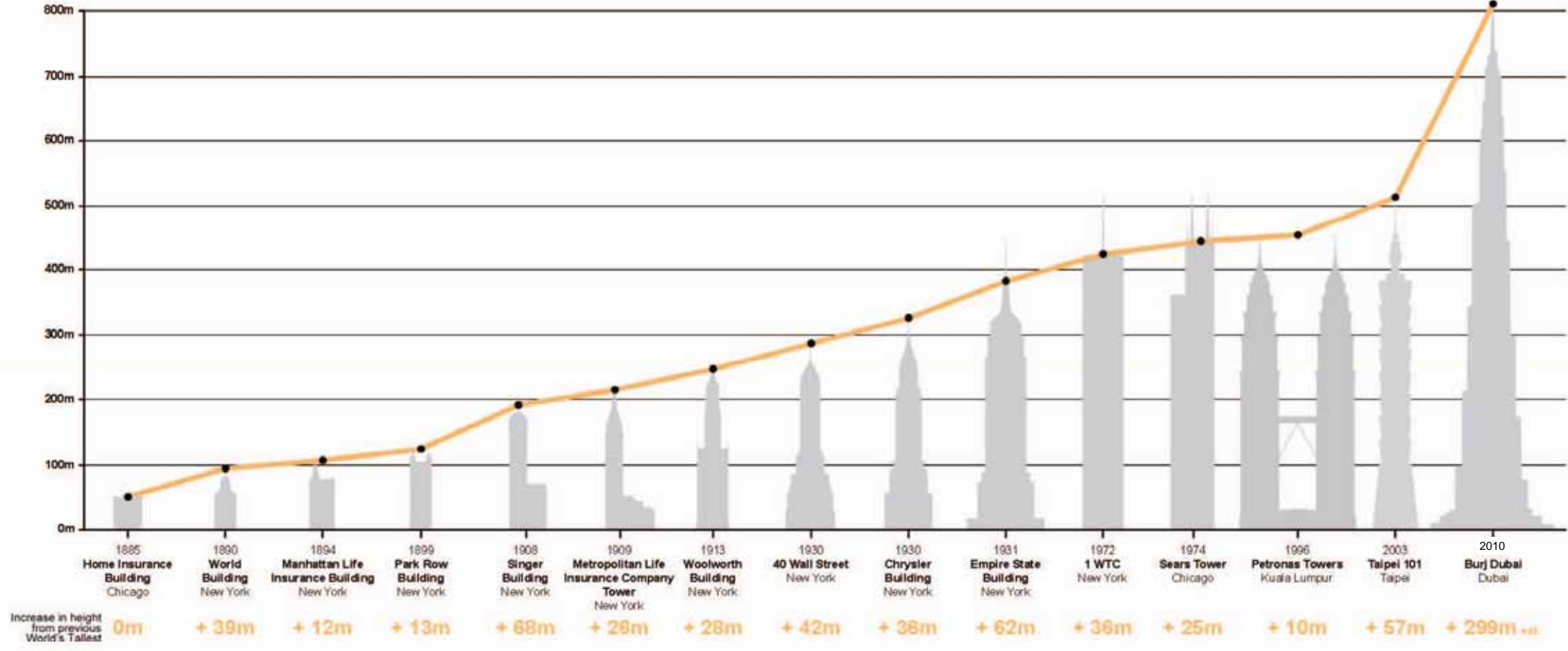
Taipei 101, Taiwan



Burj Dubai, UAE

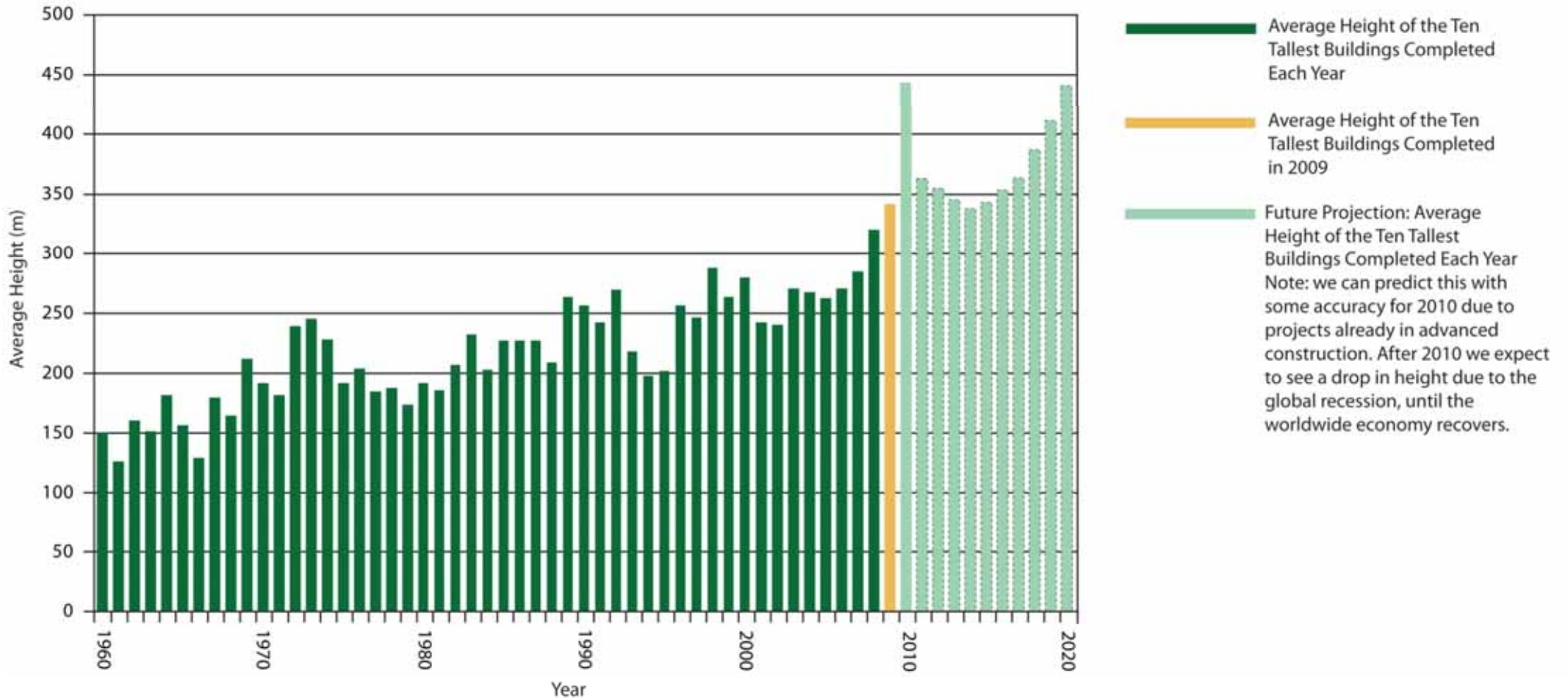
# Tall Building Trend 1: An increase in Height

Height Incremental Changes in the Development of the World's Tallest Buildings Historically



# Tall Building Trend 1: An increase in Height

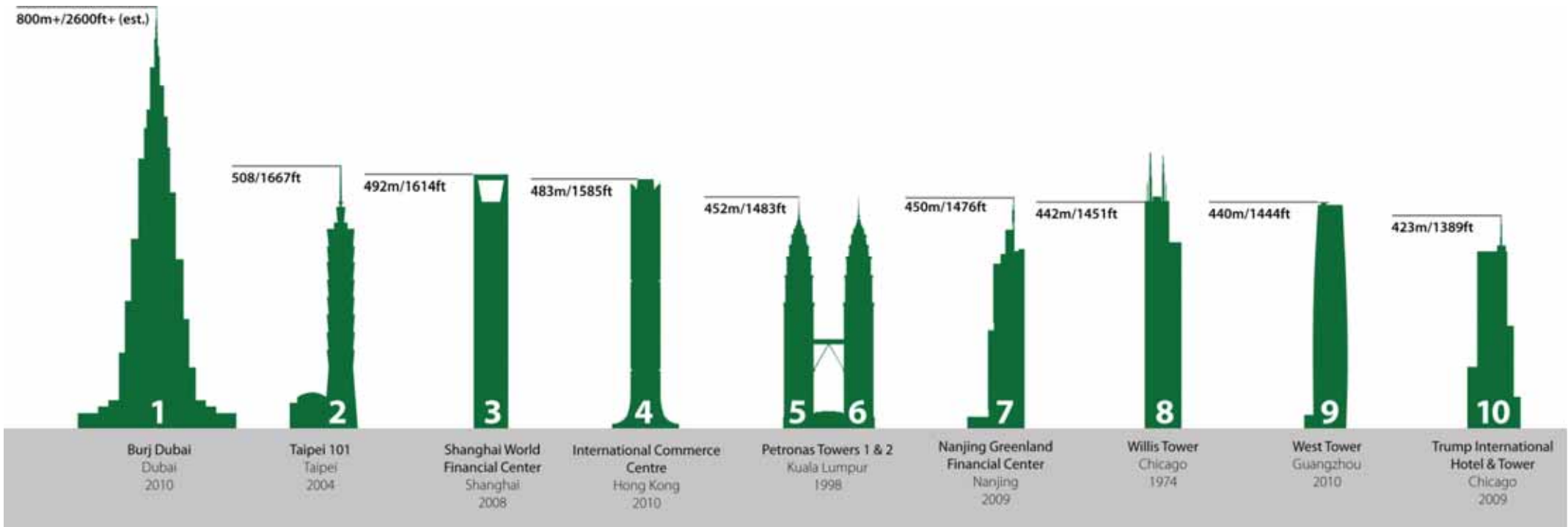
## Average Height of the Ten Tallest Buildings Completed in Years 1960 – 2020



# CTBUH Height Criteria & Definitions

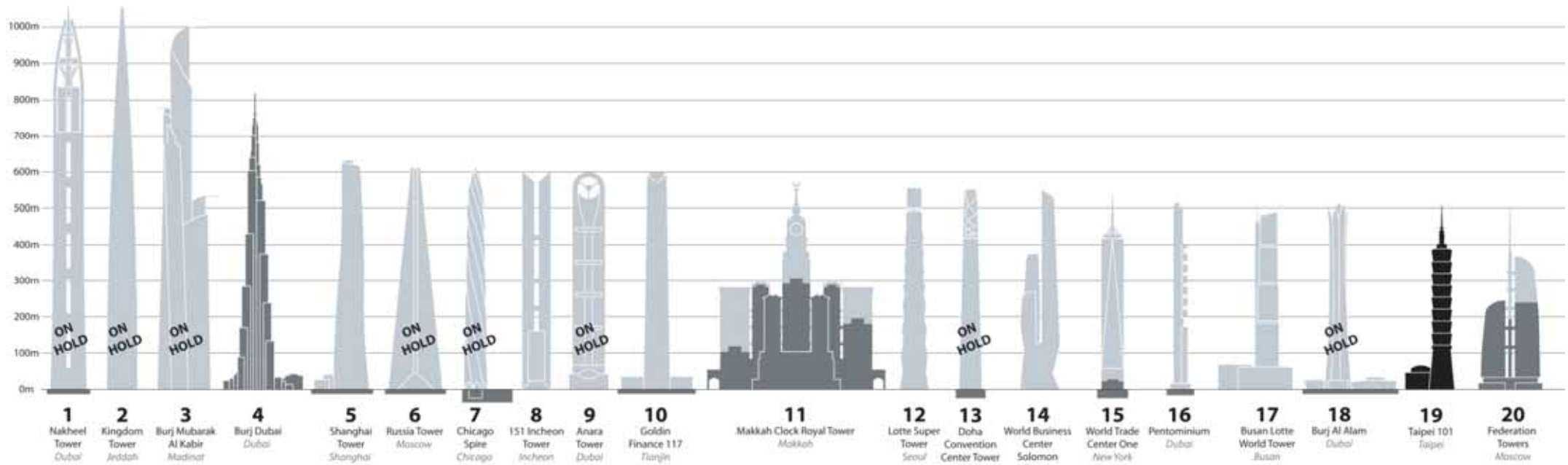
## 1. Height to Architectural Top:

Height is measured from the level<sup>1</sup> of the lowest, significant<sup>2</sup>, open-air<sup>3</sup>, pedestrian<sup>4</sup> entrance to the architectural top of the building, including spires, but not including antennae, signage, flag poles or other functional-technical equipment<sup>5</sup>. This measurement is the most widely utilized and is employed to define the Council on Tall Buildings and Urban Habitat (CTBUH) rankings of the Tallest Buildings in the World.

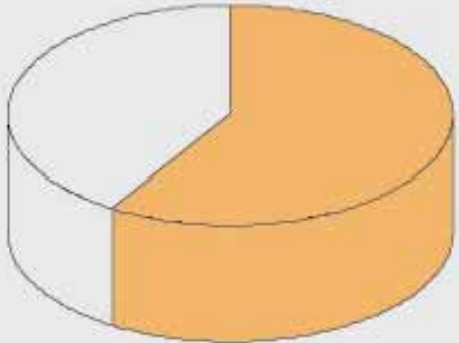


World's ten tallest buildings according to **Height to Architectural Top** as expected, 2010

# The Projected Tallest 20 in 2020



## Tall Building Trend 2: An increase in Number



By 2010, **59** of the tallest 100 buildings in the world as documented in 2006, only **4** years beforehand, will be new

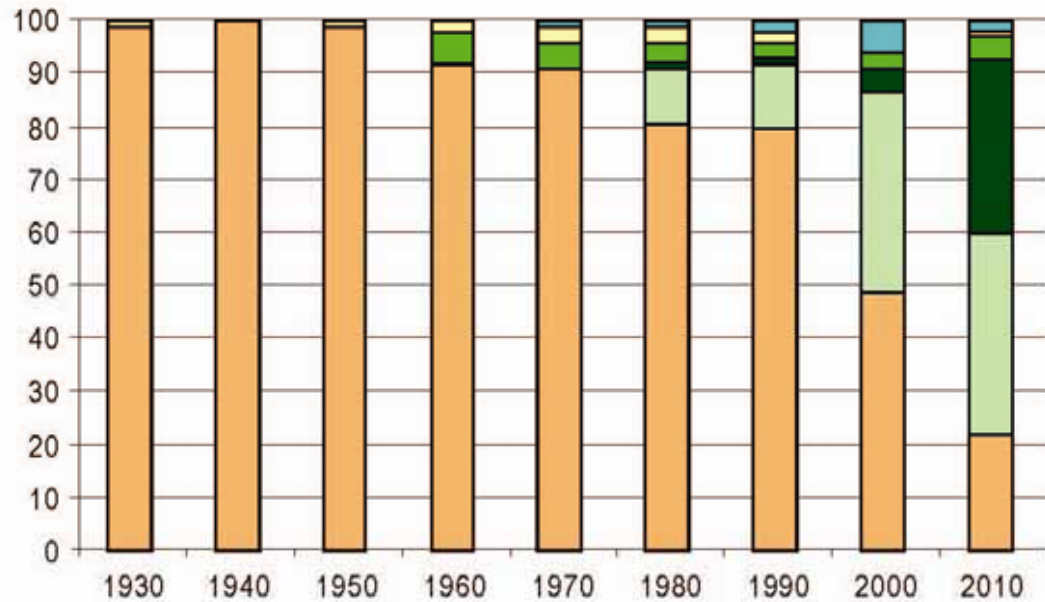


By the end of 2007 there were **34** supertall\* buildings in the world. By the end of 2010, just **3** years later, this will have more than doubled to **82** supertall buildings globally

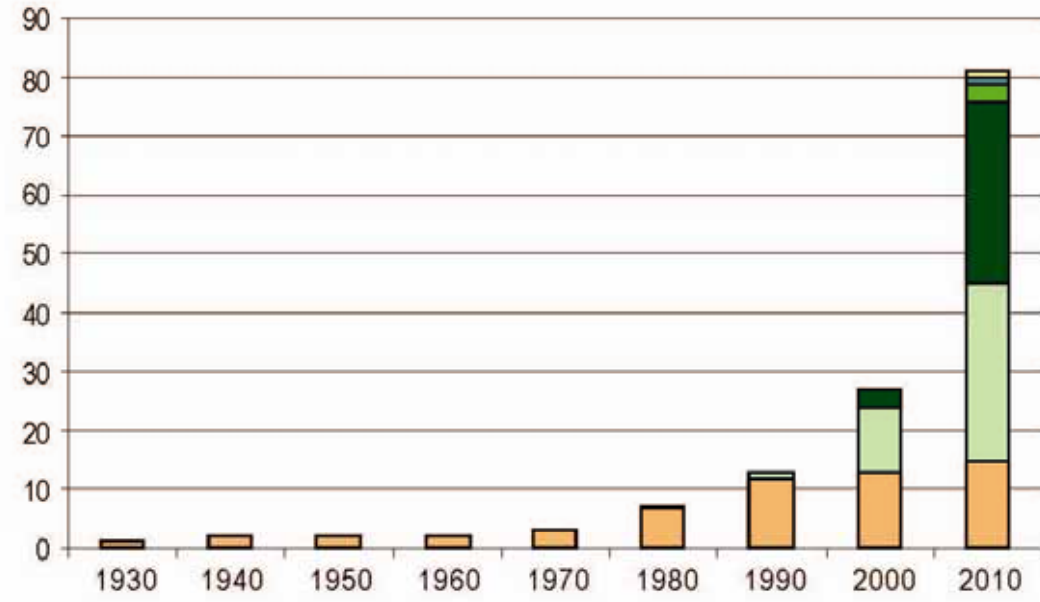
\* Note: CTBUH defines a 'Super Tall' building as being 300 metres or greater in height.

# Tall Building Trend 3: A change in Location

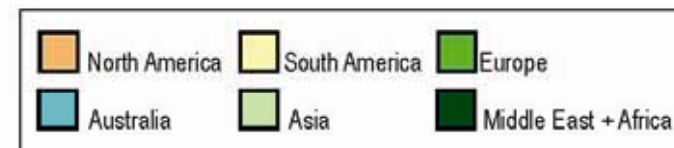
100 Tallest Buildings in the World by Region



Total Number of Supertall\* Buildings by Region



For a significant period of time, North American towers have dominated the 100 tallest buildings in the world, although this is rapidly changing due to the global boom in tall building activity, with a dramatic increase in the number of supertall\* buildings located mostly in Asia and the Middle East.



## Tall Building Trend 3: A change in Location



In 1930, **99%** of the tallest 100 were located in North America with **51%** in New York City alone. By 2010 that will have decreased to only **22%** and **5%** respectively

# Tall Building Trend 3: A change in Location

## Tallest Urban Agglomeration Statistics

Tallest 25 Urban Agglomerations

Rank <sup>(1)</sup>	City	Country	Urban Agglomeration Population <sup>(2)</sup>	City Population <sup>(3)</sup>	# of Buildings over 100m <sup>(4)(5)</sup>	Combined Heights (m) <sup>(5)(6)</sup>	People/Meter <sup>(6)</sup>	People/ Building <sup>(6)</sup>
1	Hong Kong	China	7,200,000	6,857,100	2354	333,836	22	3,059
2	New York	USA	21,900,000	8,143,197	794	109,720	200	27,582
3	Tokyo	Japan	33,800,000	8,489,653	556	73,008	463	60,791
4	Dubai	UAE	1,540,000	1,089,000	403	66,248	23	3,821
5	Shanghai	China	17,900,000	14,348,535	430	59,958	299	41,628
6	Bangkok	Thailand	8,750,000	6,858,000	355	48,737	180	24,648
7	Chicago	USA	9,850,000	2,842,518	341	48,441	203	28,886
8	Guangzhou	China	15,300,000	8,524,826	295	42,865	357	51,864
9	Seoul	South Korea	23,900,000	9,895,217	282	39,308	608	84,752
10	Kuala Lumpur	Malaysia	4,700,000	1,145,342	244	34,035	138	19,262
11	Singapore	Singapore	4,700,000	4,483,900	238	33,735	139	19,748
12	Shenzhen	China	9,400,000	7,008,831	235	33,435	281	40,000
13	Chongqing	China	6,350,000	5,087,197 <sup>a</sup>	226	31,475	202	28,097
14	Toronto	Canada	5,650,000	2,503,218	216	27,867	203	26,157
15	Panama City	Panama	1,330,000	484,261	185	27,478	48	7,189
16	Manila	Philippines	19,200,000	1,581,082	186	26,307	730	103,226
17	Jakarta	Indonesia	15,100,000	8,640,184	170	23,674	638	88,824
18	Sao Paulo	Brazil	21,000,000	11,016,703	194	22,794	921	108,247
19	Osaka	Japan	16,700,000	2,628,811	172	22,754	734	97,093
20	Beijing	China	13,200,000	11,509,595	172	22,192	595	76,744
21	Macau	China	502,113	498,852	131	19,597	26	3,833
22	Moscow	Russia	13,500,000	10,433,869	132	18,504	730	102,273
23	Tianjin	China	8,200,000	7,499,181	131	18,259	449	62,595
24	Nanjing	China	4,700,000	3,624,234	110	16,784	280	42,727
25	Mumbai	India	22,300,000	11,914,398	118	16,331	1,365	188,983

# Tall Building Trend 3: A change in Location

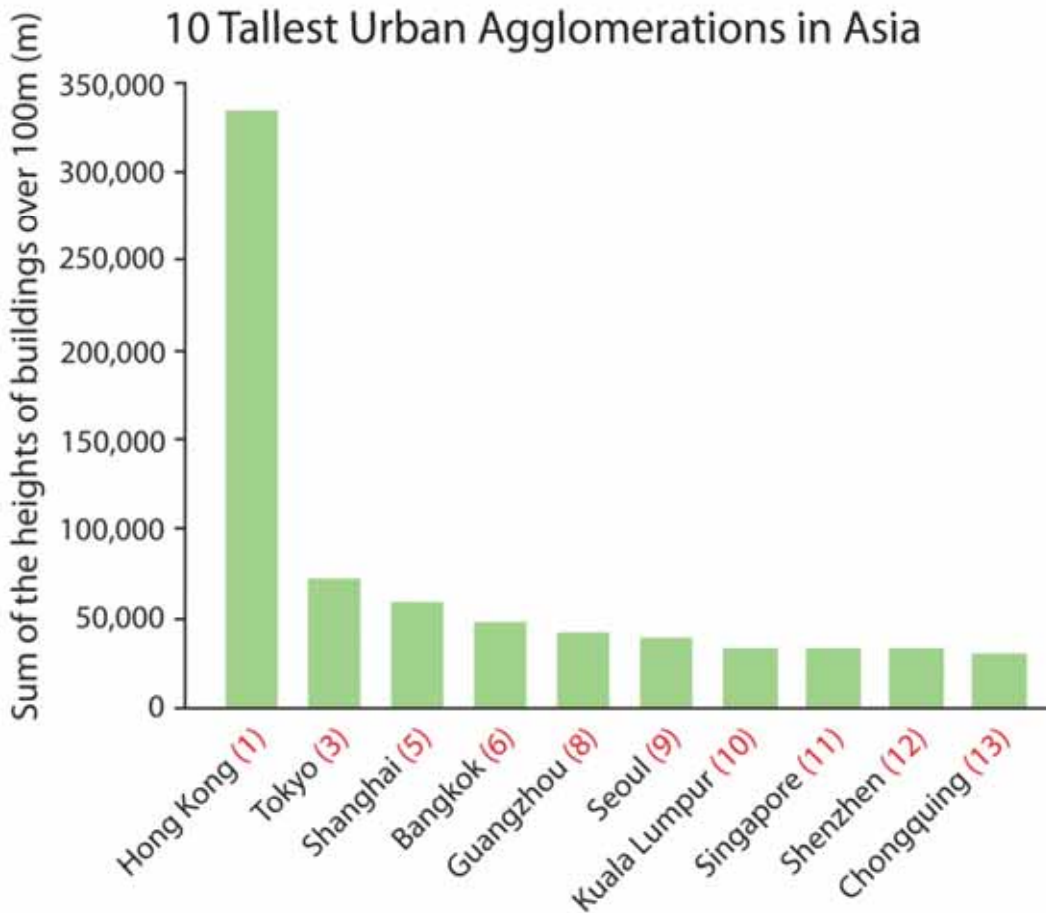
## Tallest Urban Agglomeration Statistics

Location of the 50 Tallest Urban Agglomerations

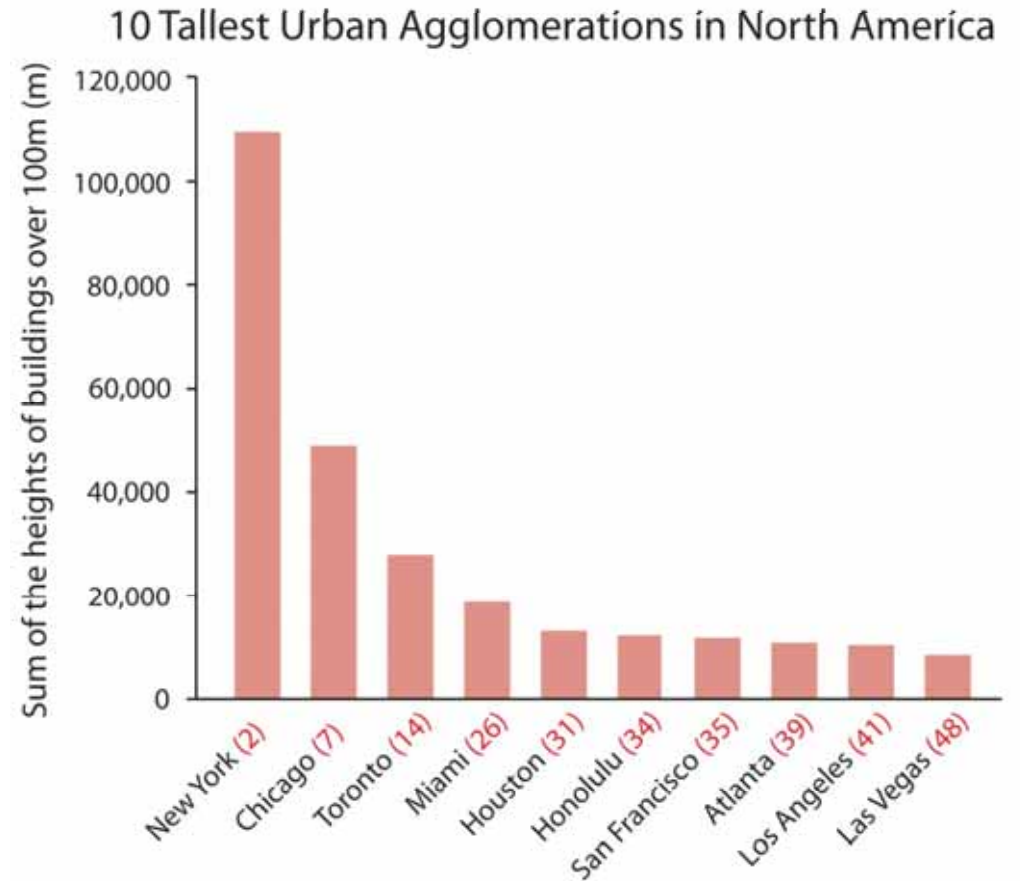
Region	Number of Tallest 50 Urban Agglomerations	% of Tallest 50 Urban Agglomerations
Asia	26	52%
North America	11	22%
Middle East	3	6%
South America	3	6%
Europe	3	6%
Central America	2	4%
Australia	2	4%

# Tall Building Trend 3: A change in Location

## Tallest Urban Agglomeration Statistics



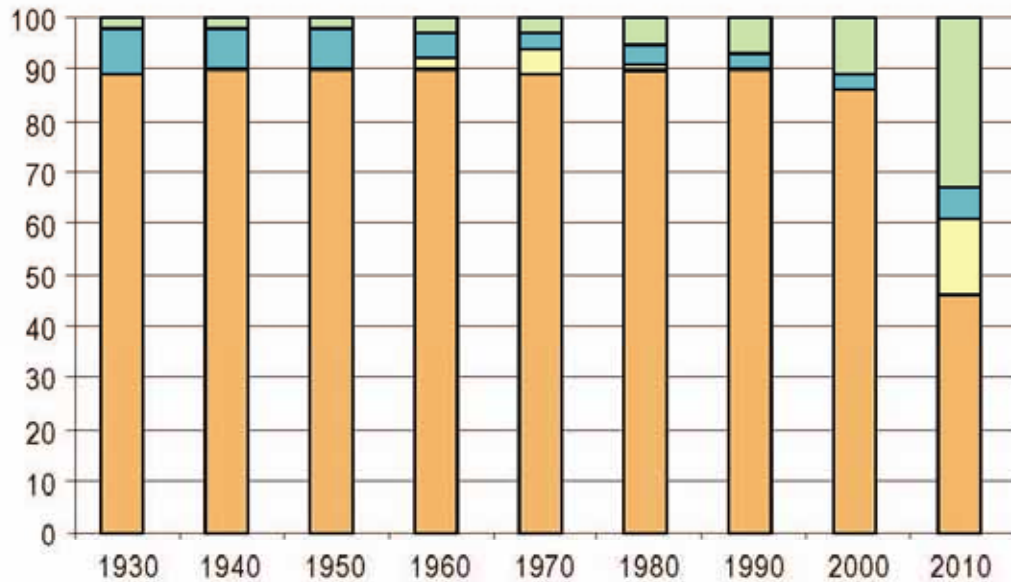
(Global Ranking)



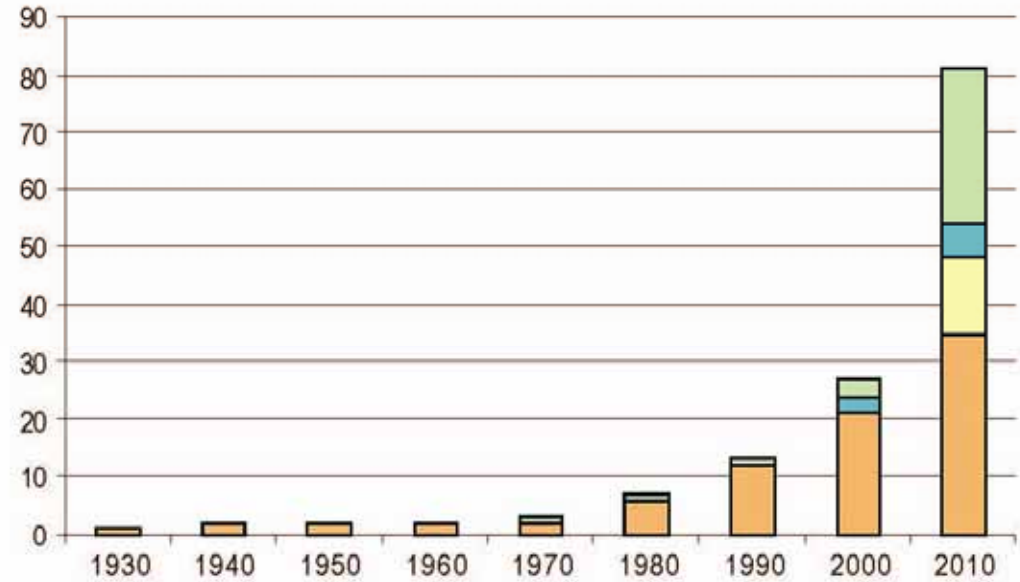
(Global Ranking)

# Tall Building Trend 4: A change in Function

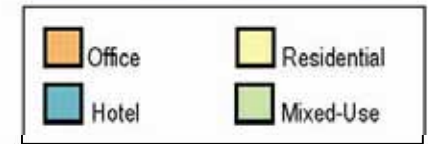
## 100 Tallest Buildings in the World by Function



## Total Number of Supertall\* Buildings by Function

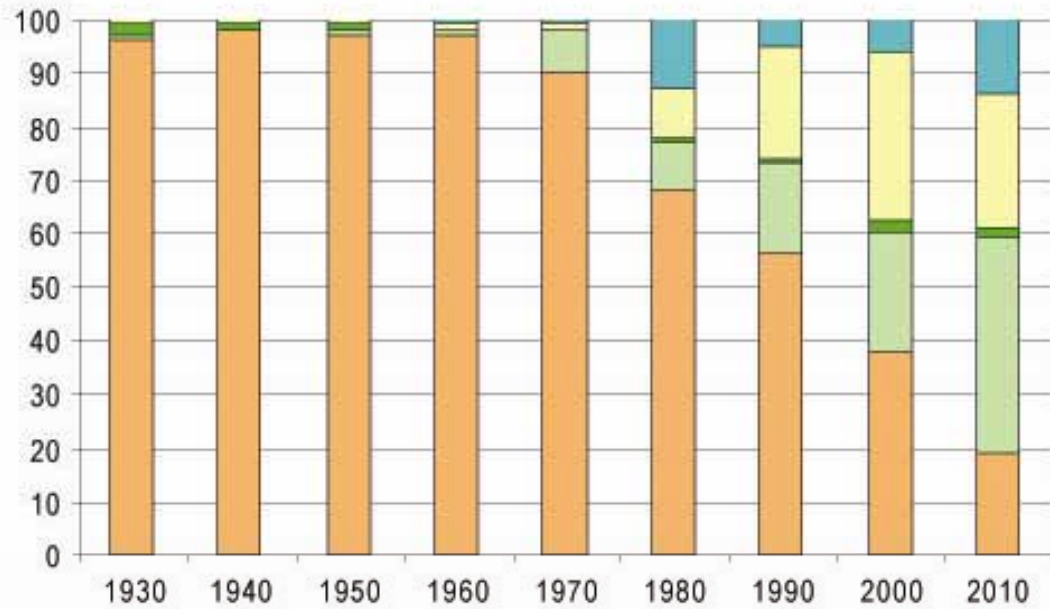


The world's tallest buildings have for decades accommodated predominantly an office function. This however, is quickly changing – by 2010 less than half of the tallest 100 buildings in the world will be office towers, with the majority instead accommodating residential and mixed-use\*\* functions.

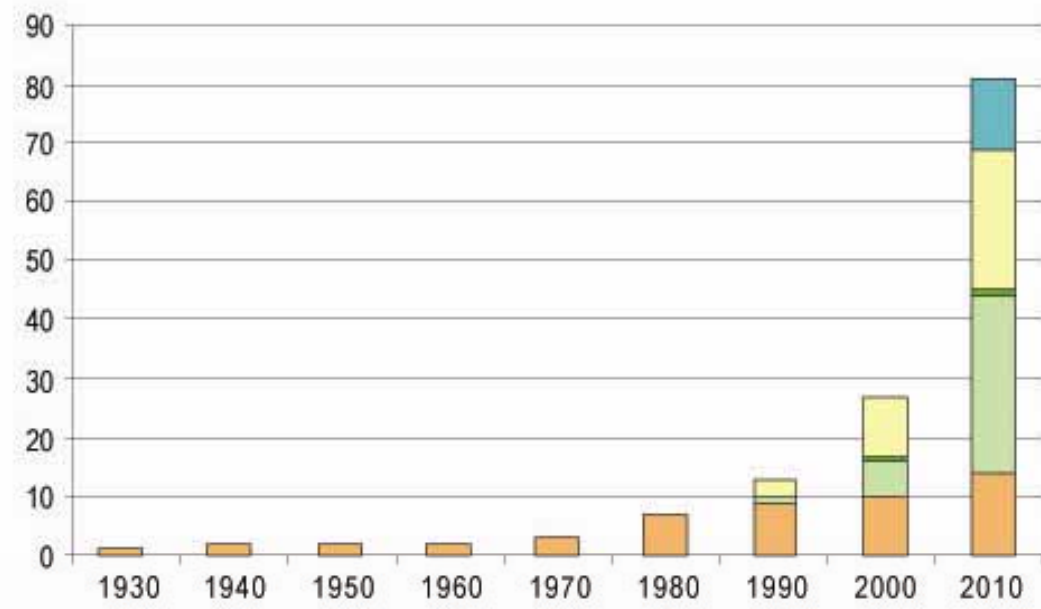


# Tall Building Trend 5: A change in Material

## 100 Tallest Buildings in the World by Material



## Total Number of Supertall\* Buildings by Material



# Tall Building Trend 6: A change in Title / Motivation

## Pre-2000



Chrysler



Sears



Petronas

## Post-2000



Taipei 101



Chicago Spire



Burj Dubai

## Tall Building Trend 7: A change in Aesthetics



1999. Conde Nast Building. New York. Fox & Fowle Architects



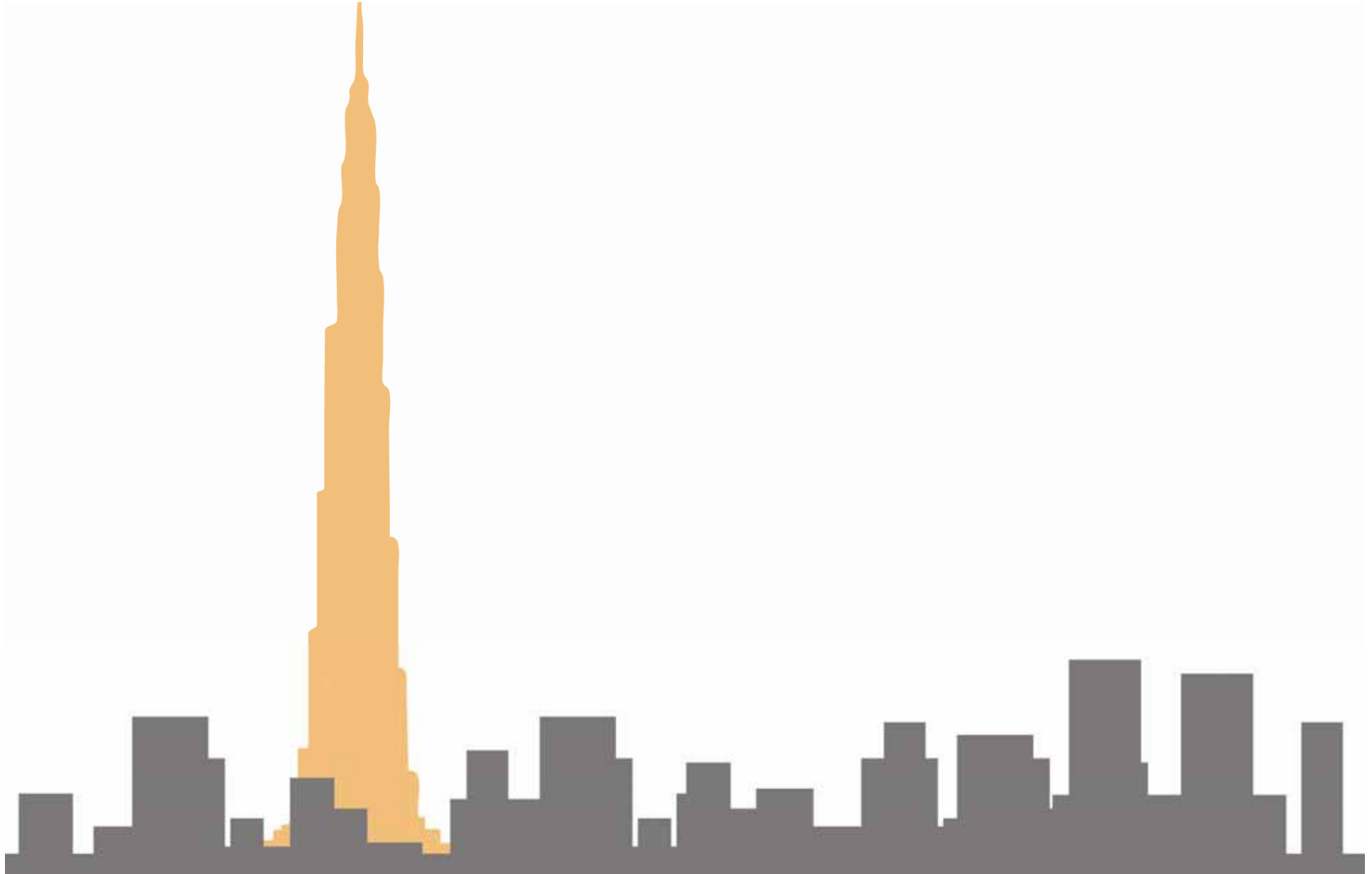
2008. Bahrain World Trade Centre. Atkins

# **4 probable Tall Building Drivers**

# Tall Building Driver 1: Land Prices



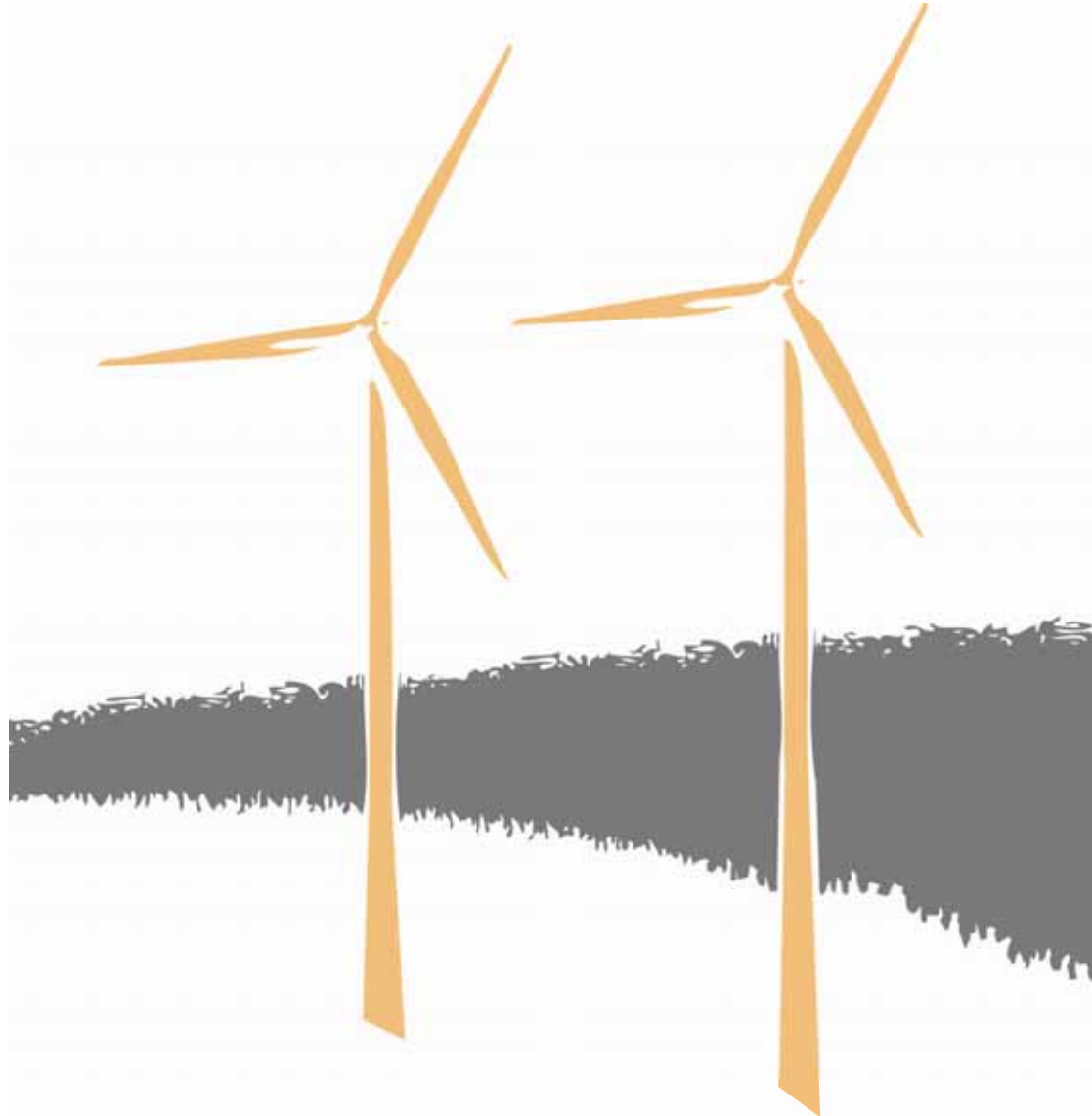
## Tall Building Driver 2: Global Icons



# Tall Building Driver 3: 9/11 & The WTC Towers' collapse

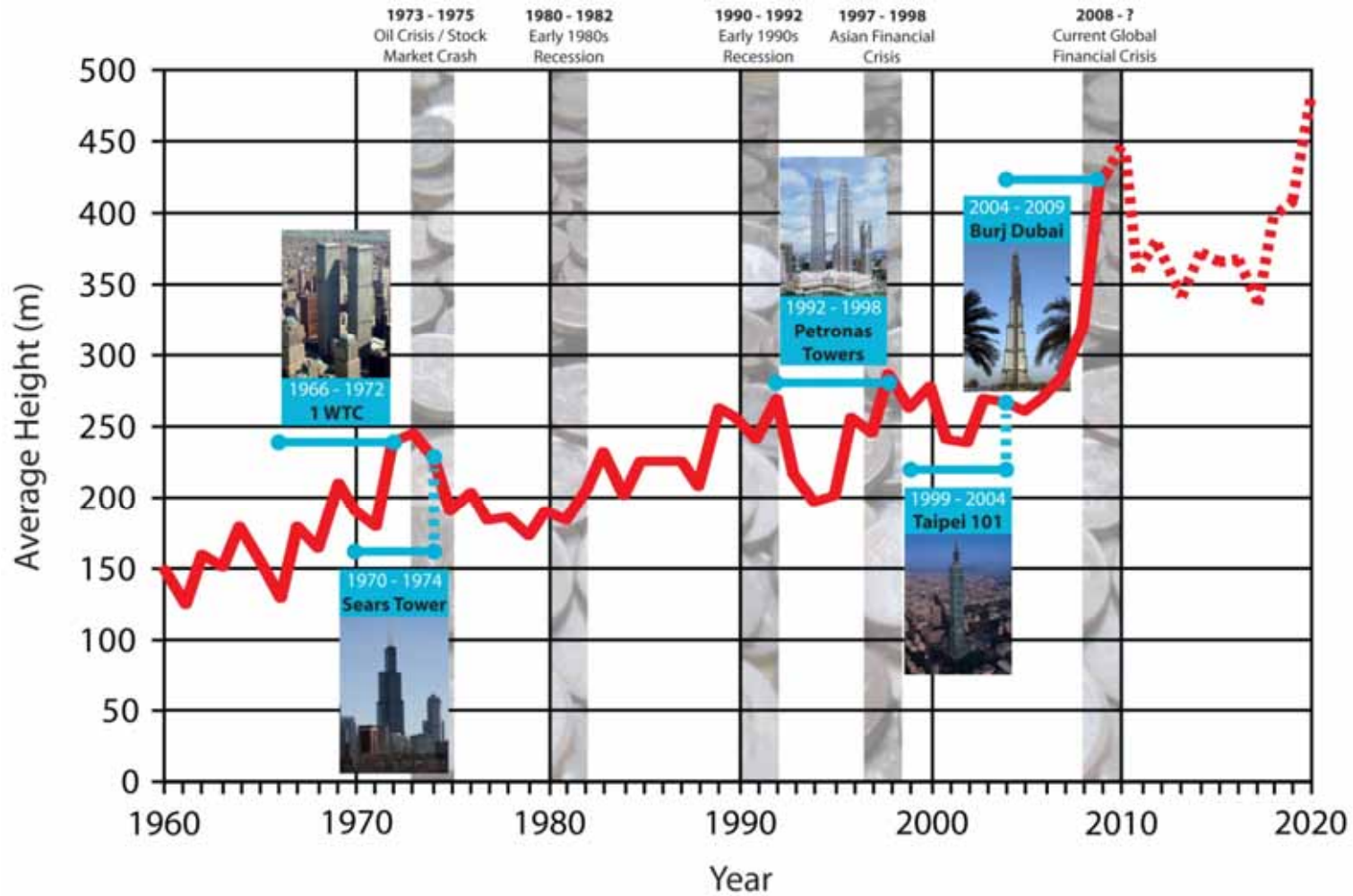


# Tall Building Driver 4: Sustainability & Climate Change



# **Challenges for the Future**

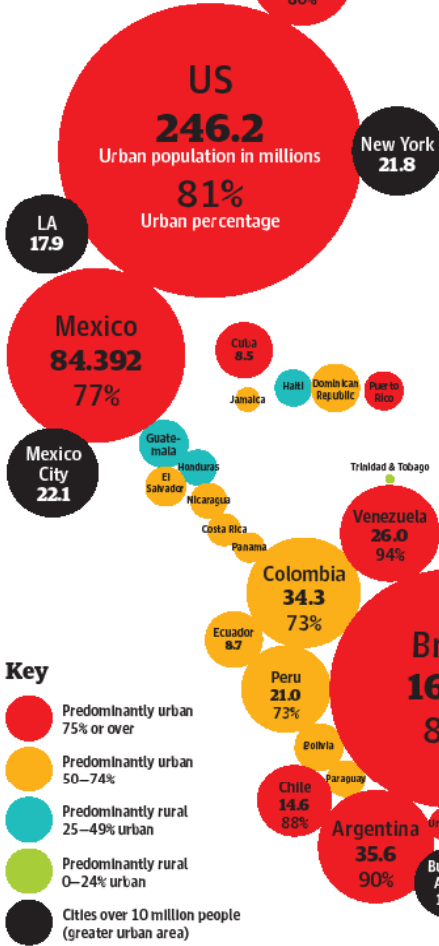
# Impact of Global Recession



-  Average Height of the Ten Tallest Buildings Completed Each Year
-  Future Projection: Average Height of the Ten Tallest Buildings Completed Each Year
-  Construction Period of World's Tallest Buildings
-  Period of Economic Contraction

# The new urban world

The earth reaches a momentous milestone: by next year, for the first time in history, more than half its population will be living in cities. Those 5.3 billion people are expected to grow to 5 billion by 2030 – this unique map of the world shows where those people live now

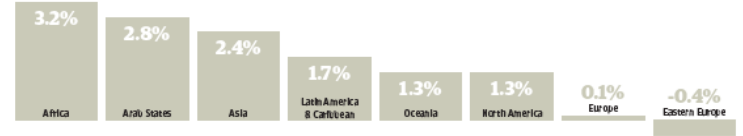


- Key**
- Predominantly urban 75% or over
  - Predominantly urban 50–74%
  - Predominantly rural 25–49% urban
  - Predominantly rural 0–24% urban
  - Cities over 10 million people (greater urban area)

At the beginning of the 20th century, the world's urban population was only 220 million, mainly in the west

By 2030, the towns and cities of the developing world will make up 80% of urban humanity

Urban growth, 2005–2010



3,307,950,000  
The world's urban population – from a total of 6,615.9 million

SOURCE: UNFPA GRAPHIC: PAUL SCRU



## Shortfall 1: The Commercial Design Approach

1958, Seagram Building, New York,  
Mies van der Rohe & Philip Johnson



## **Shortfall 2: The Iconic- Sculptural Design Approach**

2003; Swiss Re Tower, City of London  
Foster Associates

**Tall Buildings have an opportunity to lead the way for the benefit of the entire construction industry, due to the financial and professional expenditure involved and thus the opportunity for incorporation of experimental technologies etc.....**





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