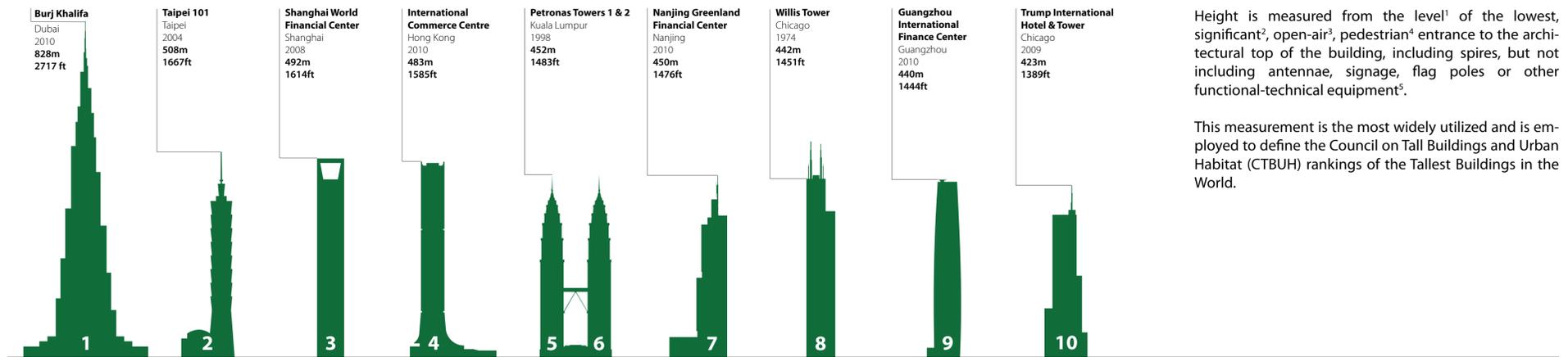


How is the height of a tall building measured?

The CTBUH recognizes tall building height in three categories:

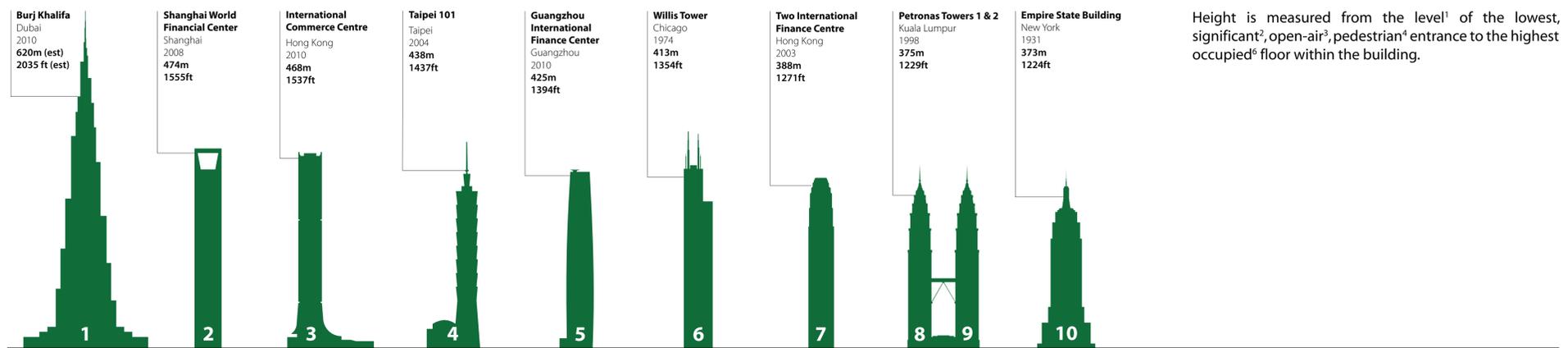
1. Height to Architectural Top



Height is measured from the level¹ of the lowest, significant², open-air³, pedestrian⁴ entrance to the architectural top of the building, including spires, but not including antennae, signage, flag poles or other functional-technical equipment⁵.

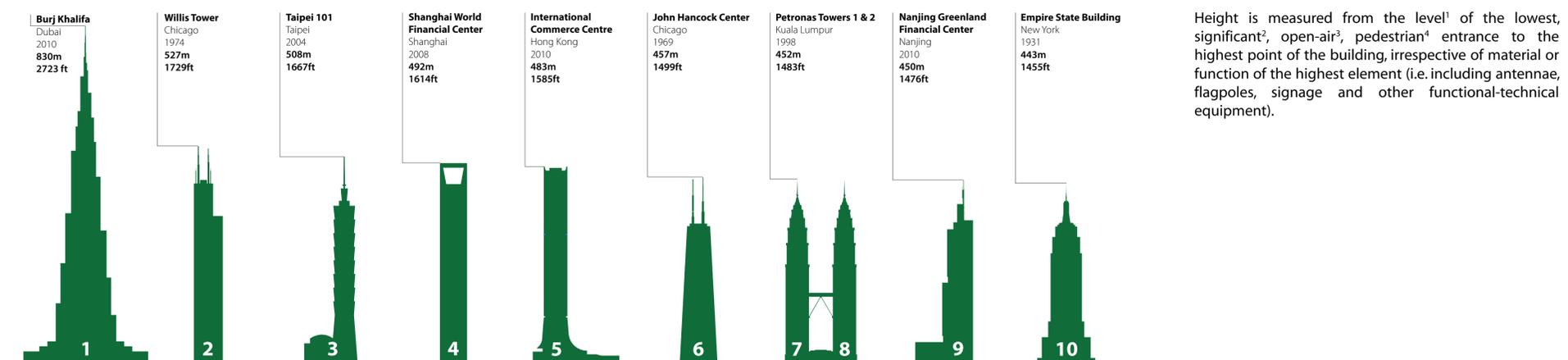
This measurement is the most widely utilized and is employed to define the Council on Tall Buildings and Urban Habitat (CTBUH) rankings of the Tallest Buildings in the World.

2. Highest Occupied Floor



Height is measured from the level¹ of the lowest, significant², open-air³, pedestrian⁴ entrance to the highest occupied⁶ floor within the building.

3. Height to Tip



Height is measured from the level¹ of the lowest, significant², open-air³, pedestrian⁴ entrance to the highest point of the building, irrespective of material or function of the highest element (i.e. including antennae, flagpoles, signage and other functional-technical equipment).

Note: The diagrams above represent the Ten Tallest Buildings in the World as projected for the close of 2010.

What is a Tall Building?

There is no absolute definition of what constitutes a "tall building". It is a building that exhibits some element of "tallness" in one or more of the following categories:

a) Height relative to context

It is not just about height, but about the context in which it exists. Thus whereas a 14-story building may not be considered a tall building in a high-rise city such as Chicago or Hong Kong, in a provincial European city or a suburb this may be distinctly taller than the urban norm.

b) Proportion

Again, a tall building is not just about height but also about proportion. There are numerous buildings which are not particularly high, but are slender enough to give the appearance of a tall building, especially against low urban backgrounds. Conversely, there are numerous big/large footprint buildings which are quite tall but their size/floor area rules them out as being classed as a tall building.

c) Tall Building Technologies

If a building contains technologies which may be attributed as being a product of "tall" (e.g. specific vertical transport technologies, structural wind bracing as a product of height, etc), then this building can be classed as a tall building.

Although number of floors is a poor indicator of defining a tall building due to the changing floor to floor height between differing buildings and functions (e.g. office versus residential usage), a building of perhaps 14 or more stories (or over 50 meters/165 feet in height) could perhaps be used as a threshold for considering it a "tall building".

When is a tall building considered to be "topped out" architecturally?

A tall building is "topped out" architecturally when it has reached its ultimate architectural height (e.g. it includes spires, parapets, etc).

When is a tall building considered to be "under construction"?

A tall building is considered to be "under construction" when site clearing has been completed and foundation/piling work has begun.

When is a tall building labeled as "construction stopped"?

A tall building is labeled as "construction stopped" when it is widely reported within the public domain that construction has halted.

When is a tall building considered to be a "real" proposal?

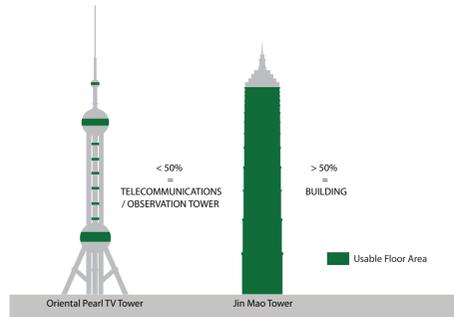
A "real" proposed tall building can be considered such if it fulfils ALL of the following criteria:

1. Has a specific site,
2. Has a developer/financier who owns the site,
3. Has a full professional design team who are in the process of progressing the design beyond the conceptual stage,
4. Has a dialogue with the local planning authorities with a view to obtaining full legal permission for construction,
5. Has a full intention to progress the building to construction and completion.

Only buildings that have been announced publicly by the client and fulfil all the above criteria will be included in the CTBUH "proposed" building listings. Also, note that due to the changing nature of early stage designs and client information restrictions, some height data for "proposed" tall buildings that appears on the CTBUH "Tallest Lists" is unconfirmed.

What is the difference between a tall building and a telecommunications / observation tower?

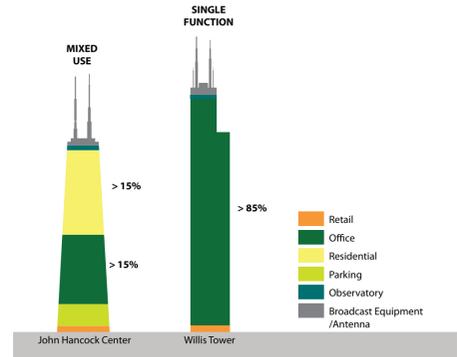
A tall "building" can be classed as such (as opposed to a telecommunications / observation tower) and is eligible for the "Tallest" lists if at least 50% of its height is occupied by usable floor area.



Single-Function and Mixed Use Buildings

A **single-function** tall building is defined as one where 85% or more of its total floor area is dedicated to a single usage.

A **mixed-use** tall building contains two or more functions (or uses), where each of the functions occupy a significant proportion of the tower's total space". Support areas such as car parks and mechanical plant space do not constitute mixed-use functions. Functions are denoted on CTBUH "Tallest" lists in descending order, e.g. "hotel/ office" indicates hotel function above office function.



Structural Material

A **steel** tall building is defined as one where the main vertical and lateral structural elements and floor systems are constructed from steel.

A **concrete** tall building is defined as one where the main vertical and lateral structural elements and floor systems are constructed from concrete.

A **composite** tall building utilizes a combination of both steel and concrete acting compositely in the main structural elements.

A **mixed structure** tall building is any building that utilizes distinct steel or concrete systems above or below each other. There are two main types of mixed structural system: A **steel/concrete** tall building indicates a steel structural system located above a concrete structural system, with the opposite true of a **concrete/steel** building.

Additional Notes:

1. If a tall building is of steel construction with a floor system of concrete planks on steel beams, it is considered a **steel** tall building.
2. If a tall building is of steel construction with a floor system of a concrete slab on steel beams, it is considered a **steel** tall building.
3. If a tall building has steel columns plus a floor system of concrete beams, it is considered a **composite** tall building.

Floor Number

The number of floors should include the ground floor level and be the number of main floors above ground, including any significant mezzanine floors and major mechanical plant floors. Mechanical mezzanines should not be included if they have a significantly smaller floor area than the major floors below nor should mechanical penthouses or plant rooms protruding above the general roof area. Note: CTBUH floor counts may differ from published accounts, as it is common in some regions of the world for certain floor levels not to be included (e.g. the level 4, 14, 24, etc in Hong Kong).

Height Calculator

The CTBUH have developed a tall building height calculator to estimate the height of tall buildings when only the number of floors is known. To find out more about this calculator and how it was developed, see heightcalculator.ctbuh.org

Determination of Compliance to Criteria:

Due to the complex and diverse nature of tall building designs worldwide, some exceptions to this set of criteria may be appropriate depending on the particular building. The CTBUH Height Committee therefore reserves the right to examine and define such exceptions on a case by case basis.

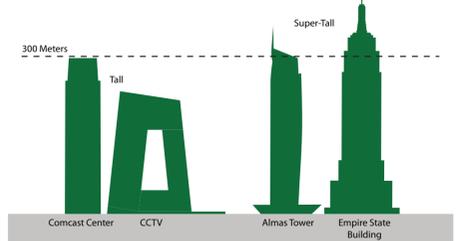
To submit an individual building for evaluation or clarification, please complete the form at buildingsubmission.ctbuh.org and send to info@ctbuh.org

Footnotes

- ¹ Level: finished floor level at threshold of the lowest entrance door
- ² Significant: the entrance should be predominantly above existing or pre-existing grade and permit access to one or more primary uses in the building via elevators, as opposed to ground floor retail or other uses which solely relate/connect to the immediately adjacent external environment. Thus entrances via below-grade sunken plazas or similar are not generally recognized. Also note that access to car park and/or ancillary/support areas are not considered significant entrances.
- ³ Open-air: the entrance must be located directly off of an external space at that level that is open to air.
- ⁴ Pedestrian: refers to common building users or occupants and is intended to exclude service, ancillary, or similar areas.
- ⁵ Functional-technical equipment: this is intended to recognize that functional-technical equipment is subject to removal/addition/change as per prevalent technologies, as is often seen in tall buildings (e.g. antennae, signage, wind turbines, etc. are periodically added, shortened, lengthened, removed and/or replaced).
- ⁶ Highest occupied floor: this is intended to recognize conditioned space which is designed to be safely and legally occupied by residents, workers or other building users on a consistent basis. It does not include service or mechanical areas which experience occasional maintenance access, etc.
- ⁷ This "significant proportion" can be judged as 15% or greater of either: (i) the total floor area, or (ii) the total building height, in terms of number of floors occupied for the function. However, care should be taken in the case of super-tall towers. For example a 20-story hotel function as part of a 150-story tower does not comply with the 15% rule, though this would clearly constitute mixed use.

What is a Super-Tall Building?

Again, opinions on this differ internationally. Although great heights are now being achieved with built tall buildings (in excess of 800 meters/2600 feet), as of early 2010 there were 43 buildings in excess of 300 meters completed and occupied globally. The CTBUH thus defines "super-tall" as being any building over 300 meters/984 feet in height.



Building Status

When is a tall building considered to be "completed"?

A completed building can be considered such—and added to the "tallest" lists—if it fulfils all of the following three criteria:

- 1) topped out structurally and architecturally,
- 2) fully-clad,
- 3) open for business, or at least partially occupied