In the past few years we have experienced financial, energy, and global warming crisis. While the issues are more complex there is general agreement that cities, now more so than ever are increasingly important places as financial engines that per capita conserve less energy and generate less GHGs. Cities are also where we built our towers. So we must be careful about how we design and place our towers so our cities are better places to be than before the tower was built.
Urban Form

Emerges from the character & setting of a place

- Location
- Climate
- History & Customs
- People

Can produce high-quality places that are:

- Cohesive
- Inclusive
- Identity

Traditionally the urban form of a city emerges from the character and setting of the place. The location, climate, history of settlements, and the individual preferences and customs of people.
Benefits

Act as landmark
Clusters define important parts of City
Unique skyline -- image of the city
Efficient use of land

Concerns

Architectural kitsch
Social segregation
Damages street life
Needs lots of energy & capital

A tall building reaching for the sky is the most potent and visible symbol of success. A well designed tall building can be an iconic asset; a poorly designed one has no place to hide.

Tall buildings in urban setting can be efficient use of land if build properly -- they pack more people on less land and preserve open spaces and farms that supply local food to the cities. However, tall buildings can also perpetuate social segregation and isolation, much like a vertical gated community.

A common damaging aspect of the tall building is how it meets the streets -- blank walls and security gates destroy the street life.

Studies have shown that tall buildings consume one-third more material and energy and require more service area and offer less usable floor space than a low or mid-rise building. With all fossil fuels having peaked it will be interesting to see how are we going to keep the "lights on" in tall buildings on our way down from the peak.
Cities like London in late nineteenth century and New York in early twentieth century have historically had regulations shaping the form of towers. The purpose of the setback regulations was to let light and air in the streets and to prevent canyonization.
We are familiar Le Corbusier’s vision to replace the street-grid with mega-blocks and the tower redefined as a free-standing replicable iconic objects rather than part of a continuous urban fabric. This vision has been realized with fervor in Asian cities with eerie similarity in cities like Dubai.

Well designed tall buildings contribute at two scales:

at a very personal level, the designer working with the owner conceives and offers the city a personal statement and asserts the building as an iconic figure and a functional space for the people that work and live within these towers.

the second level is public level: where the tower interacts with the ground or the city. It is at this second level, which involves the design of the public realm that I think Corbu's vision fails to conceptualize the public realm.

The focus of form-based regulations are primarily to address this second level and ensure a rich public realm.
In the 1950s and 60s a number of cities replaced setback and height with Floor Area Ratio in an attempt to control how much building got built on a lot. A FSI of 1 can produce a one story perimeter block building or a 12 story tall building. FSI is a poor predictor of urban form and is a serious impediment to contextual development.
Contextual Factors

A. Tall building strategy
B. Response to climate
C. Individual preferences
D. Community spaces & nature
E. Street level impact

FAR and the resulting mediocre tall buildings fail to connect with the context, and disillusion the public appetite for tall -- less is better when it fails to make a positive contribution to the quality of life of the area.

To be contextual tall must be part of an overall tall building strategy, it should be designed for the local climate and individual preferences, provide variety of public and private communal spaces, and make a positive contribution to the street life.
The city’s skyline should be viewed as its topography. Should tall buildings stand as monumental objects or form a deliberate skyline composition? A single tall building has high image value and is easier to insert at various locations in the city, the intensification from a single tall building is relatively low. Clusters of tall buildings achieve more intensification but may be appropriate only in few areas. Each city needs a unique tall building strategy based on local context.

Recent tall buildings were threatening to replace the historic buildings in Old Town Foshan, China. Old town had the 900 yr old temple and excellent examples of ling nan architecture. The character defining features of this style are curved gables, stone walls, courtyards, and dense alleys.
Limit height to preserve the Temple’s famous roof profile.

The height of buildings around the temple are limited -- so when you are on the temple grounds you will not see the taller buildings. Compare that to the recent Las Vegas style towers around the Kaaba.
The taller buildings are located along the transit line in clusters to minimize impact.

The master plan creates urban hill and valley forms. The temple and old town are the valley and the higher density development represents the hills that increase in height with increased distance from the historic area. This layout provides sunlight and views for the new developments, while preserving the light and views for the historic areas.
The Dyak Longhouses in Borneo have horizontal openings below projecting ledges which allows the cool breeze to come in while keeping the monsoon rain out. WOHA Architects adopted this vernacular response to climate into the high-rise form.
C. Individual Preferences

People buy apartments as off the shelf products -- with very limited opportunity to customize the space to individual preferences.

Historically, the openings in the facade offered a variety of permutations for personal comfort. The bottom panel allows cool breeze and views when the person is sitting on the floor. The central panel has louvers for shade and privacy. The top panel (transome) allows light into the deeper areas of the rooms.

In Moulmein Rise, the overhangs, planters, bay windows, and sunscreen can be rearranged in myriad ways to suit individual preferences.
Sky parks and landscaping adds visual cues of scale for residents in a tall building. Sky parks also act as social spaces addressing alienation. In Newton Suites, WOHA created cantilevered gardens and vertical 30 story green wall bring nature in a tall building format.
E. Street level impact

**Streetwall Block**

Traditional mid-rise buildings line up to create a continuous street wall that supports an active street life.

**Bundle of Towers**

In contrast, tall buildings sit as freestanding objects in a plaza or parking lot. The plazas are dark and desolated spaces that compromise street life. In many cases, the street level walls, gates and guards provides a grim reminder of the exclusive nature.
A preferred configuration is where tall buildings are placed on a contextual base that preserves the street wall with publicly accessible activity at the street level. Above the base, the tower can be individual creative expressions of design.
Form-Based Codes foster predictable built results & a high quality **public realm** by using **physical form** (rather than separation of uses) as the organizing principle for the code.”

Form-Based Code Institute

The focus of the Form-based codes (FBC) is the public realm. This type of development regulations produces predictable built results and a superior public realm by using physical form as the organizing principle. FBCs are graphic-based codes that allow the public to visualize in advance the form and location of the streets, buildings, and open spaces leading to a higher comfort level with taller buildings. FBCs require far less discretionary review and process, which saves everyone time, money and effort.
At the heart of a form based code is a regulating plan that indicates the different zones and describes the intensity and character of development, and the different street and public open space types are called out.
Communities are generally made up of a range of building types. The range of types expresses the basic repeating types that comprise most communities. Distinct from architecture, a type represents a general configuration and intensity that can be predictably deployed throughout a neighborhood or community to achieve a particular vision. Within each zone you can select from a range of building types.
For the tower building type the standards typically address

1) Block and lot size. For block and lot size, a maximum is typically prescribed -- the lot width controls how wide a building can you have on a lot - the intent is to prevent long super-block buildings and have frequent intersections that promotes walkability.

2) Size and Massing -- the variety of tower and base configurations. The base adds context. Studies have shown that beyond a four to five story height the occupants of the building lose their connection and interaction with the street.

3) Activating the street with public activities and supporting building frontages

4) Parking and service location and access are from rear or side streets.

5) Open space -- public (generally tied with incentives) and private internal courts, terraces, balconies.
Frontages are how the buildings interacts with the sidewalk. A range of frontages for building types are called out to avoid dead walls and security gates.
For the base of a tower, the range of frontage types include arcade, gallery, forecourt, storefront. The code spells out the standards for these frontages.
Network of street and context are important considerations that promotes walkability. In this California city, the code identifies narrowing the wide streets, turning all one-way into two-way streets, and reconnecting the network where feasible.
The different streets sections are designed for different context and promotes mobility and walkability.
This is an existing condition where the street network was clipped.
Reconnecting the Grid

The code calls for reconnecting the grid.
A range of public open spaces are identified.
In US, Miami was the first city to replace its zoning codes with form-based codes. Denver and Nashville have followed suit. Buffalo, Indianapolis and a number of other cities are presently developing form-based codes.

In Miami, the city engaged three nationally reputable firms to design buildings per the new code. The results were interesting -- the code did not limit creativity, allowed more intensity and more activity, while promoting a rich public realm. At the bottom right is a KPF building designed under the new FBC.
In Saudi Arabia Al Malik Road is a 13 km long frequently used by the royal family to travel between the airport and the royal palaces -- in its present state it does not live up to its importance as a processional route. The road is extremely wide and has a variety of residences and commercial businesses at various distances from the road’s edge -- high speed traffic both on central lanes and side lanes -- not an inviting place for public.
The vision and code calls for the frontage road to be narrowed, medians are widened, two lanes of parking, and street trees. These improvements begin to shape the public realm for development of new buildings.
Higher FAR will produce in taller buildings. Large towers are placed behind more humanly scaled building facades. To shape an enjoyable walking environment these buildings will have active frequent doors and display windows.

Parking structures are screened by habitable space such as office and apartments.
These are images from the Code illustrating some of the street, building, and open space regulations.
Taller buildings are going to be necessary. Where and how we grow are important considerations.

Tall needs to be a deliberate and planned strategy that delivers more efficiency in land use and innovative contextual design. Tall buildings need to play a role in enhancing the neighborhood by focusing on enhanced public realm, be environmentally responsive and provide for a broad segment of the population.

Form-based Codes offers a regulatory framework that operates at variety of scales, integrates all disciplines of city planning to work in consort to ensure that individual towers create places of lasting value.