

Urban form and the social use of space

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Abstract. *The essential purpose of any Urban Project is to shape Public Space. Buildings role, no matter their architectural qualities, is to shape that void and give it character. The failure of CIAM's urbanism was its disregard for public space, merely a left over emptiness between isolated building blocks and highways. A good instrument to understand this fact is the Figure/ Ground plans that show in black and white the basic shape of buildings and voids. In the traditional city, the public spaces have a clear definition, a presence of its own. In a CIAM design, the public realm is shapeless, with no hint about either use or limits. These concepts are broadly accepted today, but two adverse conditions affect entire populations: 1. In poor Countries, there is an urgent need to make slums part of the city structure and services, with little budget left for public space. 2. In Asian Cities, mainly in China, immense areas are demolished overnight; its historic fabric replaced by endless rows of anonymous high rise blocks amid elevated traffic structures, with no place left for pedestrians.*

Keywords: Urban project, Public space, Urban form, Figure ground diagrams, Squares.

Introduction

Cities, no matter their age or location, are collective creations of human toil and spirit. Today, an important and growing percentage of world population live there.

It is the most sustainable way to dwell in planet Earth, provided the use of public transportation and clean energy increases, pollution is controlled, and consumption and waste –especially in rich countries– decreases. It is clear, although difficult to believe for many, that Manhattan is more sustainable than suburban sprawl.

The best choice is compact cities –either small towns or world metropolis– with democratic governments, good transportation, varied housing and adequate educational, health, security, recreational and cultural services.

Then, let's consider what makes a good place to live. One of the best answers is the quality of its public space.

The form and use of public space is as much a cultural as a physical construct, which varies in different cultures or periods. Similar forms do not imply a place will house the same activities. Successful projects in some places are not so in others, owing to its disregard for local conditions, but it may also happen that places can be used in quite a different way than the one designed for.

This text concerns mainly with Western public space, its development, and some design criteria, which may be useful to project or evaluate an urban scheme.

In traditional cities, public spaces have a clear definition, a presence of their own, while in many areas built after 1950, the public realm has no discernible shape to indicate its use or limits. Good architecture does not always help, as demonstrated by the no man's land between the Concert Hall, the National Library and the Art Gallery in Berlin.

It may then be assumed that one essential aspect of any urban project is to shape public



Figure 1.
Royal Crescent, Bath

space. It is a conscious decision. Buildings define that void, give it character. Architecture, good or bad, is architect's concern. When questioned about cities they have visited people mention places and activities and only some monuments, like Eiffel Tower or Sidney Opera, symbols of their respective cities, are worth recalling.

Some history

In the beginning was the street

It may sound biblical, but surely the street is the first structure that combines directional movement and enclosed public space. No village can exist, no matter how small, without at least one path that allows access to sheltered private space and gives a common place to meet. The pattern may vary from the irregular lines adapted to the place's topography or defense, to the geometrical clarity of Hippodamus de Miletus grid or the Roman *cardo* and *decumanus*, but it always marks the birth of a city.

Many European cities have uncertain

beginnings, and their older sections show a haphazard street pattern, unless they originated in Roman settlements. The opposite happens in the New World. In South America, they were founded under the precise dispositions of Council for the Indies (*Consejo de Indias*). In North America, the colonists' strong common sense made them usually chose a basic grid to organize their new villages.

Nomadic tribes of hunters camped in a loose circle around a fire, or safer still, inside a cave, those being the best ways to defend from enemies and wild animals alike. The street and the first settlements were born as soon as keeping herds, and later growing crops, began.

In fact, our first social experiences are associated with crossing the home's safe threshold and discovering in the street the rich and sometimes dangerous reality of the outside world.

Then came the square

The public square is probably one of the most wonderful inventions of Western culture. It may be taken for granted, but it is still quite

alien in the Eastern world. In Beijing, both Tiananmen (1949) and the Access Square to the Forbidden City (Ming Dynasty, 1420 AD) are ceremonial spaces, as the last one was immortalized in Bertolucci's film, *The Last Emperor*. In the East,

gardens are the essential open space, and were in the past restricted to king and court

In contrast, Greek Agora and Roman Forum were the realm of citizens, where they met, did business, discussed public affairs and gossiped.

Forms of government and the relative strength of political, economical or religious powers changed, as did the unstable balance between God and Man's prevalence, but streets and squares are still the basic urban structures in our cities.

O tempora, o mores - Tullius Cicero

The methods and tools to open these spaces change both in time and place, as do their use and character.

The Medieval Townscape

Medieval Streets were narrow and followed an irregular pattern, even if they continued an older Roman settlement, as in Rome, Florence and Siena.

Squares, when opened in front of churches or city halls were often small and irregularly shaped, well suited to a population often decimated by war and plague. That made it difficult to have a complete grasp of cathedrals, whose towers were visible only at a distance, a situation similar to that of high rise structures today, like Lloyd's building in London.

When squares occupied existing voids, as did the Piazza Navona, built over the old Domitian Circus or the amazing Piazza del Campo in Siena, on the former site of the Roman Forum, their design was more regular, their geometry more precise. In both cases, however, access was intricate and through narrow twisting streets.

Here Comes the Renaissance

Some of the most brilliant minds of human

history lived and worked in Italy during this brief period. They changed the world, but the cities they lived in did not change much. The ideal city they conceived, a perfectly geometric space defined by equally perfect classical buildings, was present only in paintings and drawings. Perhaps the most expressive images were two imaginary perspective views of "Baltimora" and "Urbino", by a painter of the Piero della Francesca school.

The Rise of Absolute Monarchies

The demise of feudalism and the consolidation of nation states, mainly France, Spain, England and the Vatican State, started a process of change in the design of new more formalized public spaces, built in shorter time spans and intended to demonstrate the power of both king and country.

Between 1550 and 1650, the popes were Rome's true urbanists, with Sixtus V (1585-1590) as the most inspired. They opened new streets and widened existing ones, restored the water supply system and built most beautiful and popular public spaces.

It is enough to mention just three: Piazza del Campidoglio, designed by Michelangelo in 1536, Piazza del Popolo, part of Sixtus V's Plan of Rome, and Piazza di San Pietro, completed in 1667 with the magnificent Bernini colonnade.

Although the land needed for these works came partially from demolition of older buildings, the new spaces were integrated into the street network.

Giambattista Nolli's *Pianta Grande di Roma* of 1748, presented in great detail the city map, where public space: street, squares and the interior of churches and palaces' courts was white, and private buildings black. This criterion to represent the city's solids and voids would become one of the most useful design tools, until –of course- the recent coming of Google Earth.

In Paris, geometric perfection was still more important, a Bourbon's trademark. Not only did the plan had to be regular, but also the square's façades had to be exactly alike.

The required space was carved out of the compact built mass, while keeping the random access from existing streets. Once inside the

square, the change was abrupt, provoking a strong feeling of strangeness. This ideal was clear in Place des Vosges (1612), Place Vendôme (1702) where the continuous façade was built before the actual buildings behind, and Place de la Concorde (1772).

The same design scheme was used in the construction of the Plaza Mayor in Madrid, finished in 1619 and the Plaza Real of Barcelona, even if built in the middle of the 19th century.

It is also interesting to note that Italian piazzas had no trees or planting while the French ones usually accepted some well pruned trees. To find greener squares one has to cross the Channel.

London and Edinburgh

Cities in Britain had a different growth pattern, owing in part to the scarce presence of defense walls, – water being a better deterrent for invaders, excepting Vikings– and the presence of manor houses with ample parks next to central areas. In London, after the Great Fire of 1666, a design competition was held and won by Christopher Wren, but it was abandoned due to the legal and economic difficulties inherent to the process of opening new streets and modifying old property lines.

Between the 17th and 19th centuries, development of the Great Estates transformed the properties of the Crown, a few important families, and corporate bodies, into new and elegant neighborhoods, with a clear street pattern, compact townhouses and –mainly– green private fenced squares. They bore the prestigious names of the original families: Bedford, Cavendish, Portman, Montagu and were open only to the neighborhood residents. This peculiar system turned out to be quite successful. It defined a clear sequence of well-proportioned public spaces with good urban architecture. It also prevented random demolition and, above all, produced some beautiful sequences of urban form, crescents and squares, which reached its apex in the small town of Bath.

In Edinburgh, a similar more orderly process took place. The old city, tightly built around the castle mound was overcrowded and unhealthy.

With uncommon rationality, the city bought the land needed for its expansion and in 1767 held a competition. won by James Craig. The design was organized through a sequence of broad tree lined avenues and squares. Works proceeded accordingly, under strict norms that regulated building heights and materials.

The 19th Century

Industrial revolution turned inventions into manufactured goods and commercial development, creating economic growth and relative peace. It was also a time of wealth concentration, inequality and urban poverty. Cities population increased at an accelerated pace, while public services were almost non existent and sanitary conditions and overcrowding turned slum dwellings into cells lacking ventilation and light.

Big cities faced the need to expand by incorporating land outside the old walls, long made obsolete by the fire power of modern weapons.

This era saw the rise of the engineer in industry and service infrastructure. but also, like John Paxton and Gustave Eiffel, in the design and construction of entirely new building programs for Railways, Grand Central Stations, Bridges, and Exhibition Halls.

The relevant aspects of urban expansion were:

- Rigorous plans with detailed dimensions for street and sidewalks, building materials, service ducts etc.
- Importance of Urban Projects in decision making procedures.
- New public transport: trains, trams and later the underground.
- Public Buildings for Government, Education, Commerce and Leisure (opera houses became a prestige symbol).
- New public parks located in the old royal gardens, hunting grounds or public land (New York's Central Park).

Napoleon III and the Paris of Baron Haussmann

There can be little doubt that the ambitious plan that Napoleon III and Baron Haussmann

conceived and executed from 1852 to 1870 was one of the most successful and influential ever deployed. A new vision of the city was literally cut out from the old built fabric, opening avenues and streets complete with water, sewage, gas and drainage and even façades, as well as the Boulogne and Vincennes parks and the Garnier opera house, opened in 1875. New building types were also introduced, like “A la Belle Jardinière” department store, 1867, which enhanced the city’s image as fashion capital.

In short, Paris became the mirror all capital cities wanted to look at and had an influential role in their future.

Other Cities, other Plans

In 1860 Barcelona initiated works on vacant army land following the brilliant Ildefonso Cerda plan. It was based on a grid of large regular blocks with broadened corners, which increased light and transformed the sidewalks in pocket squares.

In 1909 Chicago wished to become the “Paris of the Prairie” under the guidelines of the Daniel Burnham and Edward Bennett plan.

Buenos Aires, which since 1900 considered itself the “Paris of the South”, opened new avenues and created the extensive Palermo urban park. The new ideas were synthesized in the “Plan de Estética Edilicia” (1925) of Carlos Noel.

New York followed its own path. In 1609, the Dutch settlers had instructions from the West India Company to produce in the Southern end of Manhattan a very ordered street scheme. It never was. Two centuries later, the Commissioner’s Plan of 1811 established the rectangular pattern of streets and avenues which exists today. Its flexibility allowed in 1853 the inclusion of the 2.8 km² Central Park, designed by Frederick Law Olmsted and Calvert Vaux.

The book “An Atlas of Rare City Maps, Comparative Urban Design, 1830-1842” by Melville C. Branch includes 40 beautifully detailed drawings of –mostly– European, North American, and Asian cities. Drawn in the same period, they allow to compare the development and design of the cities rendered.

Among others, two aspects show strong cultural differences:

- Constantinople (Istanbul) and Calcutta. The first one, with no Western presence, is a compact mass of twisted narrow streets and no open public spaces. The second one has a similar street pattern, but the urban fabric is cut by broader, straight streets and avenues, built by the British Administration/ occupation.

- The three American cities, Philadelphia, New York and Boston are organized by a regular orthogonal street pattern, although in Boston the grid is adapted to the river costal front.

The 20th Century

As in the 15th century, the last decades of 1800 and the first years of 1900 concentrated an unusual number geniuses who seemed to share a common vision. Darwin, Einstein, Freud, Marx, Picasso, Joyce, Stravinsky and Le Corbusier –to name but a few– set the foundations for the following hundred years.

Abstraction was the rule. Music rejected melody, literature disregarded storytelling, painting and sculpture no longer concerned with realistic forms and architecture abandoned not only ornament but also the traditional city model.

Between two World Wars

New city planning adhered to a dogma based on hygiene and speed, which resulted in use segregation, highways, and endless –but not always useful– green open spaces. This ideal was shared by all modern architects, from Le Corbusier to Mies van der Rohe and Walter Gropius at the Bauhaus.

The first Congrès International d’Architecture Moderne (CIAM), strongly influenced by Le Corbusier, met in 1928 at La Sarraz. The Athen’s Charter, signed in 1933 at the second CIAM Congrès, established city planning principles and was unanimously supported until the 1950’s Team 10 rebellion. The better known urban projects of that period were the 1923 Le Corbusier’s Plan for a Contemporary City of three million people and the 1925 Plan Voisin for Paris.

The failure of CIAM urbanism was not its lack of design excellence, even vision, as Le Corbusier's proposals and buildings clearly demonstrate, but its disregard for public space, merely a leftover emptiness between isolated building and highways.

Clearly one of the best achievements of Modern Architecture was fluid open space, seamlessly interconnecting a building's interior and exterior. Nowhere is this concept better expressed than in Mies van der Rohe's masterpiece, the 1929 Barcelona Pavilion.

Nevertheless, this idea proved a failure when applied to the design of large scale social housing or office building projects, based on endless rows of blocks that had no clear relationship either with the circulation pattern or the open spaces enclosed. In most cases they were alien to the city and had no identity, a situation aggravated by the strict zoning policy put into practice, which segregated housing from work, education, leisure and even mobility.

By the end of the fifties, it was generally assumed that large scale planning had failed to give an acceptable answer either to the reconstruction of European cities devastated by World War II, or to the upgrading of the central areas of American cities, deserted by middle class flight to suburbia.

The 1960's Change of Paradigm

Team 10, started in the 9th CIAM Congrès in 1953 to evaluate the failure of the 1933 Athens's Charter principles used in the reconstruction of European cities after WW II. The most prominent members were Candilis, de Carlo, Bakema, van Eyck and the Smithsons. Their aim was to combine CIAM's ideals with the characteristics of traditional city. It was doomed to fail, as did the Smithsons' invention of streets in the air, an integral part of almost all social housing in Britain at the time.

Four influential books condensed and advertised the ideas that were to change city planning and social policies. The first two dealt with urban form, the last two with the social use of public space.

Aldo Rossi: L'Architettura della Città - 1966

The text assumes the city to be one with its architecture but also with its own history, so that the remaining traces of old structures are part of the present and may give clues to its future, thus ignoring the timeless ideal of the modern town.

Rob Krier: Urban Space - 1975

It proposes to organize the city along a sequence of public spaces, integrating well-proportioned infill buildings with monuments in a coherent whole. It also presents a sort of morphological catalogue of urban form and some competition projects.

Both publications strongly influenced urban thinking at the time, notwithstanding Rossi's obsession with institutional '800 Italian Architecture and Krier's exclusive preference for German Baroque public space.

The next two books were both written in 1961 and are concerned, from different professional viewpoints, with the way cities were lived and enjoyed.

Jane Jacobs: The Death and Life of Great American Cities

She was a journalist and architectural critic at the New York Times and participated in a crusade against a road through Greenwich Village -where she lived- proposed by the all-powerful planning head, Robert Moses. They won, and from that moment she was a leader of protests against Moses' highway projects, which deteriorated public space and communities.

Gordon Cullen: Townscape

His beautiful drawings, showing everyday life in traditional public spaces, showed how to integrate modern constructions and activities into existing towns. He was the leader of the Townscape movement which grew around the Architectural Review Magazine, to oppose intrusive urban renewal actions and highways.

Cullen's publications and thinking had a strong influence in changing urban policies in

the following decades and reflected society's reaction against them.

On the other hand, the rejection of modernism also produced postmodernism, a sadly poor, if probably inevitable, return of architecture to an improbable past.

The Regeneration of Inner City.

By the end of 1960, France's President Georges Pompidou realized the importance of locating great public buildings in deteriorated areas, emptied by the removal of service or transportation structures. His first step was to open an architectural competition for the design of a new Contemporary Art Museum in Les Halles neighbourhood. Won by Piano and Rogers brilliant design, the Centre Pompidou was a success since it opened in 1977. President Françoise Mitterrand followed this policy with enthusiasm, and imposing structures were built for the new Bastille Opera, the Finance Ministry, the National Library and La Villette Park, none, however as widely acclaimed as the Pompidou.

The French called Terrain Vague the large plots of land emptied in central city areas by the displacement of services, railway yards and even port docks. The policy of locating big urban developments in those spaces was soon followed in the Western world. Although these areas had irregular shapes, especially railway yards, it was possible to integrate them successfully into the near street's grid.

What now?

The situation is not the same everywhere. The consequences of climate change are felt globally, but their impact on each region and country are different. So are their actions and commitment. The Paris Consensus recently signed may be a first step in the right direction, especially with China's agreement, a fact sadly unbalanced by Donald Trump's disaffection and the potential consequences of the Brexit.

Everybody is aware that present consumption, pollution and waste levels are not sustainable even in the short run: cities will have to change.

Unfortunately, Asia, and especially China, have opted for an oversized CIAM model to solve the pressing need to house millions of new city dwellers. Isolated buildings twenty or more stories high are linked by highways, leaving no accessible public space, or even sidewalks.

Nevertheless, some positive trends can be detected almost everywhere:

- Promotion of mixed use areas in all neighbourhoods.
- Inclusion of social or subsidized housing in new developments.
- Improved design of huge service infrastructures as waste disposal or energy plants.
- Limitation of private car access and increase of pedestrian areas in the central city.
- Banishment of new city highways.
- Creation of new urban parks.
- Support and extension of mass transit and the high design quality of new facilities.
- Landscaping of river borders for public use.

In the USA, the disenchantment with suburban living has reversed the sprawl trend to more sustainable compact towns and developments, Main Street nostalgia included. Even if some projects built by the Walt Disney Corporation fall in the kitsch category, this trend can only be celebrated.

The Smart Growth Manual written by Andres Duany and Jeff Speck is a clear and well-illustrated handbook that condenses the knowledge and experiences of the New Urbanism movement. Although it can't be applied literally to different cultures, it will help elaborate proposals in a different milieu.

The New Millennium Challenges

While problems are being solved in central city areas, the biggest and most pressing issues have moved to the edges, in the conflict ridden periphery settlements.

The Developed World

Average middle classes can no longer afford to live in the city -be it Paris, London, New York or

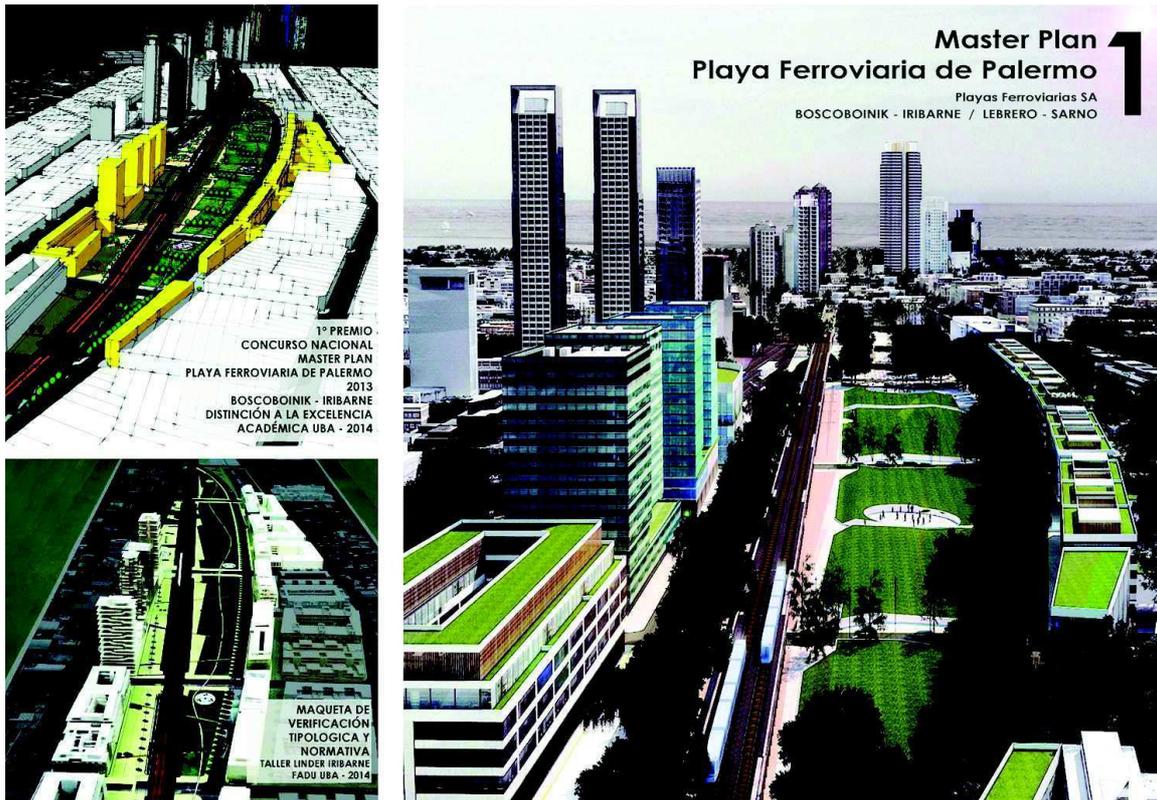


Figure 2.

Master Plan for Development at a Former Railway Yard in Palermo, Buenos Aires. General view

Vienna- since even their less attractive districts have been gentrified. That means teachers, policemen, firemen or nurses travel long hours from home to job. The situation is worse for marginal, often immigrant population, as they live even further away and housing, education and transport are worse.

They share, though, the syndrome of single use communities:

- Lack of public space and cultural facilities.
- Anonymous planning and architecture, based on repetitive medium rise blocks, and track housing in the USA.
- Low densities which prevent community life.
- Lack of attractive landscaped leisure and sports areas nearby.

The first and obvious answer would be to provide them the same or better services enjoyed in the city. The second and less obvious one could be to increase density and create interesting public space with a new street and squares pattern.

It is possible to find fresh ideas in Rodrigo

Perez de Arce Urban Transformations and the Architecture of Additions.

Conclusion: Too much unused open space

The developing world

Poverty –even misery– and social exclusion exist not only in the far away suburbs but also at the inner city. Whether called slums, villas miseria or favelas their shortcomings are the same:

- Lack of basic utilities: water, sewage, drainage and paving.
- Lack of accessibility and public transportation.
- Overcrowding.
- Lack of adequate health, education and leisure facilities.

The first answer is to provide all the missing essential utilities and services. Equally important is to make the settlement part of the city. It is not an easy process, since it involves opening some new straight streets through the existing passage maze. That allows ambulances,

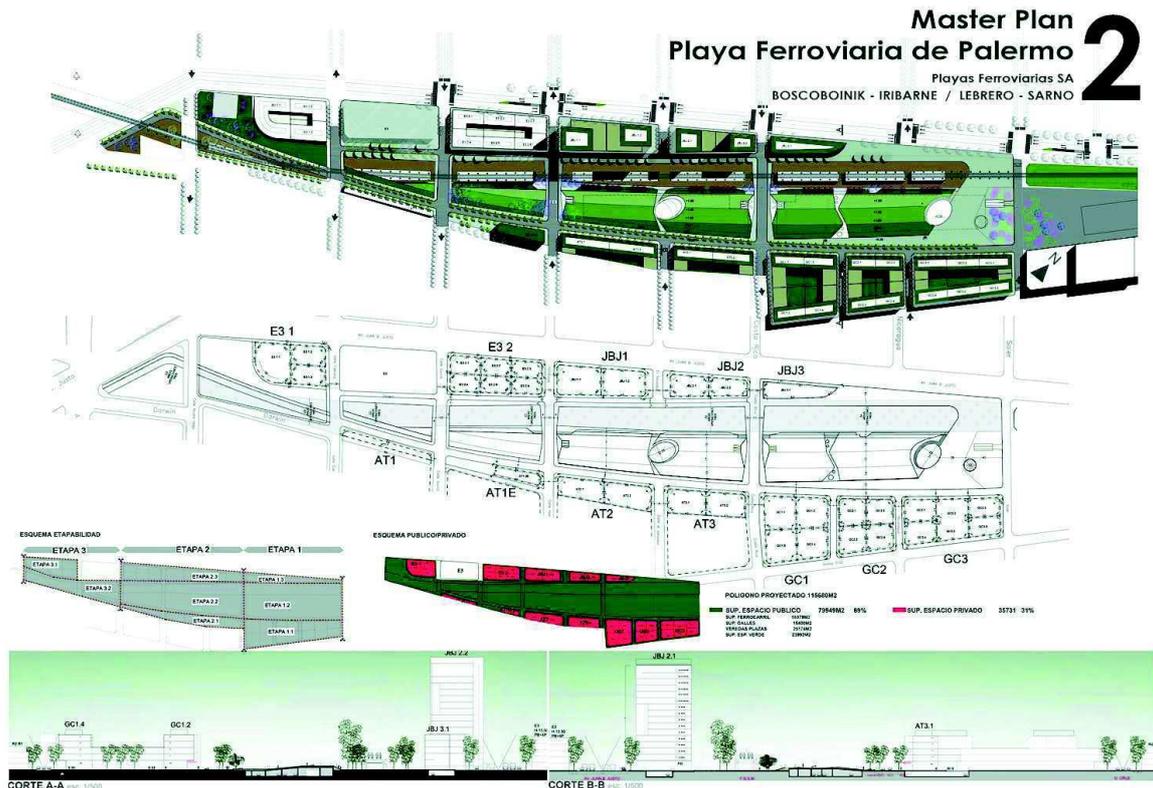


Figure 3.
Master Plan for Development at a Former Railway Yard in Palermo, Buenos Aires.
Plans and section.

fire engines and police cars access, and makes space for utility ducts. It is also important to make provisions for public leisure and sports space, but also –as in Medellín– for some outstanding cultural or educational facility.

If the settlement is far from the city, public transport is required to drive its social and economic integration.

Conclusion: Too little open space

Most cities do not clearly fall in any of this two categories, specially those with over ten million population, where both realities coexist.

El País, Babelia” section (May 27th/ 2017) publishes the article “The Megalopolis have a future” (“Las megalópolis tienen porvenir”) which includes Norman Foster and Alejandro Aravena contributions. Notwithstanding different world situations, some clear ideas are generally accepted:

“Cities with good living conditions are rather compact and have easy pedestrian

accessibility, good public transport and ample parks and public civic spaces. . . They are comparatively dense and its historical evolution is rooted in European traditional concepts. . . They use less energy than extended low density cities as Los Angeles, totally depending on private car use . . . According to a study by Climate New Economy (La Nueva Economía del Clima) urban sprawl costs America one trillion dollars a year”.

Different authors also agree on the need to adapt general ideas to local conditions. Two recent projects by Foster + Partners Office, Masdar new city in Abu Dabi (UAE) and the Master Plan for Dharavi in Bombay (India) show this ideas in two widely different Asian countries.

Buenos Aires has a clear urban structure, good public space, transport and resources that coexist with poor areas, both in central locations as in marginal suburbs. Today public works deal mainly with transport, waste disposal,

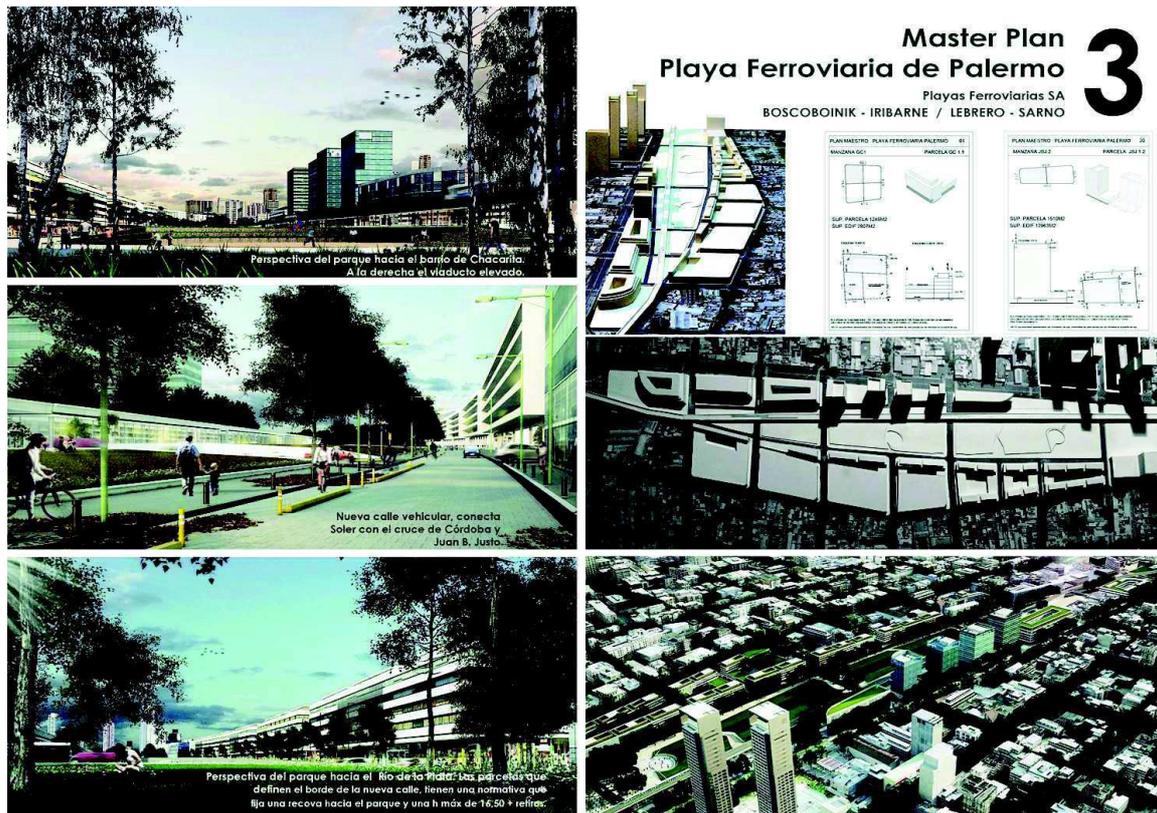


Figure 4.

Master Plan for Development at a Former Railway Yard in Palermo, Buenos Aires. Partial views

public space and shanty towns improvement, but also public – private development projects in areas left empty by obsolete service and utilities removal.

The work enclosed is a medium density, mixed use development for an upper/ middle class fast growing area of Buenos Aires. Its design is based on the ideas presented in the text.

Master Plan for Development at a Former Railway Yard in Palermo, Buenos Aires

This project was the winning entry at a 2013 National Ideas Competition for the development of the unused railway yard Palermo, at a growing neighbourhood in the north of Buenos Aires. The area is ten blocks (1 km) long, between one and three blocks wide and its net area is 11,5 ha (115,000 m²). It is divided in two sectors by the railway tracks, which will be elevated in the near future.

- Architects: Mario Boscoboinik and Jorge Iribarne

- Design decisions:

- *Open a unified green public park 1 km long at the wider Southern sector, its shape inspired by Bath crescents, enclosed by 16m high buildings, with arcaded ground floor.

- *In the Northern, narrower sector place a sequence of five 50 m high towers which grow from a 16 m base.

- *Under the elevated tracks there will be shops and restaurants connecting the avenue's sidewalk with the park.

- Key data:

- Land area allotted to streets, sidewalks and public park...80,000 m² (70%)

- Land area allotted to building footprints...34,500 m² (30%)

- Building floor space...99,000 m²

The project received the following awards:

- 2014: Academic Excellence Award, Universidad de Buenos Aires.

•2016: First Prize in Urbanism Award, Sociedad Central de Arquitectos (SCA) and Consejo Profesional de Arquitectura y Urbanismo, Buenos Aires.

References

- Ballon, H. (ed.) (2012). *The Greatest Grid. The Master Plan of Manhattan 1811-2011* (Museum of the City of New York and Columbia University Press).
- Barnes, E. L.R. and Siegel, E. (ed.) (1982). *The Cornell Journal of Architecture* 2.
- Hénard, E. (2012). *Etudes sur l'architecture et les transformations de Paris & autres écrits sur l'architecture et l'urbanisme* (Éditions de La Villette).
- Intendencia Municipal, Comisión de Estética Edilicia (1927) *Proyecto orgánico para la Urbanización del Municipio. El Plan Regulador y de Reforma de la Capital Federal* (Talleres Peuser, Buenos Aires)
- Kato, A. (ed.) (1980). "Plazas of Southern Europe" *Process: Architecture* 16.
- Perez de Arce, R. (1978). "Urban Transformations and the Architecture of Additions". *Architectural Digest* 4, 237-266.
- Rowe, C. and Koetter, F. (1978). *Collage City* (The MIT Press, Cambridge).
- Vercelloni, V. (1994). *Atlante storico dell'idea europea della città ideale* (Jaca Book).