A block estate (pág. 11).

Far from the Guadalquivir River, and in the suburbs of Seville, a building estate forming courtyard-blocks has been developed. The streets in it are straight and the building height is maintained constant throughout. The open air spaces and facilities which have not as yet been furnished will also be fitted into this gridiron of blocks. it is in fact a fraction of the city in which a precise and constant geometry, following an orthogonal design, organises the different uses.

Pino Montano will cover a surface area of 126 hectares located at about two miles (three kilometres) North of the centre of Seville, an area equalling about a third of that covered by the central city. The extension, set in a large empty space, will be surrounded and enclosed by different types of infrastructures: the Arroyo canal, the old railway track and Pino Montano Avenue, the latter having been projected as an articulatory axis for the different residential groups that have covered this section of the city.

The decision to carry out a unitary intervention in this outlying zone led to a revision of the old plan and its adaptation to new massing criteria for the housing estate. The new partial plan, drawn up in 1981 by the architects Antonio Cruz and Antonio Ortiz, proposes a building massing to modify the original coverage and open types. The basic premises for the new plan are to emphacise the presence of the street and to ensure the homogeneity of the residencial network. This is attempted in the project through housing massing in low-rise blocks, thus increasing site coverage in comparison with massing on conventional estates. The development of a compact network supposedly garantees urban continuity and comfort in the public spaces, while at the same time improving certain conditions in the organisation of housing. The morphological massing is thus approached like a network of orthogonal streets of different widths and legths, forming a continuous grid of superblocks covering fifteen hectares. The project thus involves large sized units where each superblock will group about 1,300 dwellings, plus facilities directly attached to residence –school and medical clinic–.

The already completed construction of part of this estate allows for an evaluation of the advantages and inconveniences deriving from the application of this compact urban design –generally used in central areas or in areas adjacent to old areas– compared with the building models contemporary urban design suggests for residential expansion.

Residential estates built in the sixties and seventies subjected the suburbs of many Spanish towns and cities to visual disorder and banality. Their commonplace image presented them as isolated blocks superimposed on the neighbouring agricultural activities coexisting with powerful infrastructures, all of which was added to an unaccountable negligence in the building of streets and minimum services. A very different disorder, it must not be forgotten, from that which theoreticians of the modern city saw in the cities of the beginning of the century, because the massive residential expansion which has spotted the edges of our cities over the last decades has at least managed to offer hygienic housing conditions and neighbourhoods with open air spaces. In spite of the particular ugliness of those estates and, so often, of their terrible building standards, the housing conditions are nearly always better than in the degraded neighbourhoods in the city centres. They do offer open spaces, even if these are unurbanised and amorphous. With time, the facilities have come to function. But, as has been proven, that is not enough: those partial cities have more than sufficient systemisation and ventilation, open space, regulated traffic and facility stocks, but they lack almost everything else: massing design, visual diversity and the mixture of activities qualifying the different parts of a city.

The current rejection of this kind of residential expansion in the suburbs is not only the result of differing aesthetic criteria, or of alternative ideas concerning the problem of massive housing, it is above all a criticism of the difficulties these areas show in acquiring urban character which other residential massing forms –perhaps more precarious and certainly less theorised– have managed to offer. Corridor-streets and conflictive uses were avoided on those block estates, stacking was fought against, but their design has never, up to now, favoured the development of interesting public spaces or the emergence of a new use for the city.

It could be thought that the discussion about convenient massing types in the suburbs would automatically centre on the choice between individual blocks of flats or block estates. This is an undoubtedly important option which the example set by Pino Montano clarifies. It must not be forgotten that there are excellent examples of neighbourhoods with high-rise isolated towers managing to create an urban atmosphere and complexity, just as there are also examples of block neighbourhoods developed in one go, showing great architectural monotony and banality.

In Pino, the design has chosen orthogonality as a model, the street as a structure, and the block as a grouping form. The execution of the project, however, has changed and adapted the premise of the design, by turning the block into the main feature, the courtyard into the main space in the grouping, and the street into thoroughfare, obligatory access or passage way.

One of the major difficulties encountered in the Pino project lies in adapting the large open space and facility surface areas the newly created neighbourhoods require, and which are solved in autonomous ways in the traditional estates, to an organisation of residential massing in blocks. For greenery is not often included in the massing of the different known block gridirons: it is either superimposed, or else clearly independent from it. Something similar occurs to the massing of facilities: they are either located in a more or less flexible manner when small-sized –as in the case of commercial facilities– occupying a partial or whole block, or else, when great surface areas are required and, therefore greater accessibility, they are located as outstanding pieces, set apart from the residential network. In the Pino estate, a mixed solution has been sought for the distribution of these community spaces which require large surface areas, making them neither independent from the massing of the residential blocks nor integrated into them. In the former case because more hierarchy would be needed in the design, and in the latter because too large a sized blocks would necessarily be required for their subdivision into subsidised housing units.

The services most linked to the housing estate – landscaping, clinics or schools– are arranged in 114 m long ribbons which are crossed by the lenghtwise running streets and break up to continuous character of the housing estate; services of a more general type – sportsgrounds, parks, etc. are emplaced on the edges of the estate absorbing its particular shape. In this way, each superblock of 358 m from street to street is interrupted by the main facilities covering almost half of its width, repeating themselves systematically in each of the superblocks, between the building blocks.

The absence of general structuring elements is perhaps one of the most doubtful aspects of the new Pino Montano plan: the Avenue runs outside the continuous line of blocks, greenery is individually assigned to each superblock, commercial facilities are located on the perimeter. The idea of establishing overall elements is subordinated here to the wish to create a continuous network where all the elements can be organised in blocks. The joint school-greenery-clinic element, however, categorically does away with the possible continuity of residential blocks. And although it is true that the regulation set very high standards for public and facility space in partial plans, it is also true to say that by assigning them to each of the blocks into which the estate has been divided, (practically) means setting up a mechanism of subneighbourhoods, which is probably unnecessary. The way in which the new neighbourhood routes have been designed, with orthogonal streets of different widths and categories, but using a regular scheme as a starting point, intended as a pattern for repetitive extension, means that the street structure and hierarchy does not allow for the creation of a centre, axis or axes to polarise it.

The elements giving scale and tension to the group in Pino are located in its very suburbs, in the estate precinct, like a thick garland bordering the site's peculiar shape.

For the development of the project, the estate has been broken down, taking the block as a starting point. Some of Seville's most prestigious architects were commissioned the projects by the Patronato de la Vivienda (Housing Board). The two square blocks facing the Avenue were designed by José Ramón and Ricardo Sierra; the two following blocks by Antonio Hernández and José Antonio Sánchez; the following rectangular blocks were designed by Rafael Lucas, José Morales, and María José Muñoz; one of the two also rectangular-shaped end blocks was designed by Antonio Barrionuevo, and the other by Mª Victoria Durán and Francisco Torres. Eight of the twenty blocks making up the repeatable morphological unit on the estate have thus been developed. The fact of choosing the block as a project unit, and not some other element, favoured experimentation with the uses for the courtyards while relegating the street to its mere access condition. The street, seen in plan as a garantee for the unitary and regular image of the whole group, thus loses certain interest in the execution of the projects.

The blocks, separated and delineated by throughfares differing in hierarchy and size, have been built in pieces, like a chess-board, and, for this reason, their perimeter –that of the superblock unit– cannot be identified. There is neither a typological change marking differences between inner and perimetral buildings, nor a homogeneous treatment of the façades. Every block, independently built but following the plan guidelines, is massed like a great unitary compact distributed around its inner courtyard. The buildings are the same on the four sides, a wall fronting a 12 m wide street being the same as a façade overlooking a 114 m wide green space or a large commercial avenue.

In all these particular schemes, the blocks are organised like a single building surrounding a courtyard which acts as a hall and will be the living, playground, meeting and festivity area of the community. This has turned into the great subject of the projects, their leitmotiv, in this way breaking away from the traditional street-house-courtyard grading system as a transition from more to less public. The courtyard is not at the back; on the contrary: the block has swung round. Nevertheless, in low cost projects of this kind, the problem of massing the blocks as a single building, i.e. with all its façades exposed, makes it difficult to keep up standards in all of them. Perhaps if one were to imagine this city fragment as a cluster of houses with streets, all set upon a tapestry of courtyards, it would make its difficulties easier to grasp. For only in this way will it seem logical that the street should be the one to undergo geometrical irregularities and changes in alignment.

In any case, one of the greatest achievements of the schemes is to have concentrated all interest and effort into solving the courtyard which becomes the most interesting, the most ambiguous and, at the same time, the most used of all the spaces.

In the square blocks, measuring 42 x 42 m, the inner space is regular and of a good size. The reduced number of families grouped around it –about 48– helps control its uses, and the duality of the façades is still maintained –overlooking both street and inner space– favoured by the location of shops on the group floors. The community staircases are in the corners and give access to three flats per storey.

In the rectangular blocks, the façade of the buildings definitely confronts the inner space, independently of good or bad orientation, and a solution of moving back the alignment by 5 m is adopted, thus creating private gardens at grade level facing the street, and in this way reducing the width of the courtyard which is designed as a wide passage way. This solution somehow does away with the difficulty of mixing public and private spaces in the courtyard, while at the same time doing away with the possibility of more complex interior designs.

The dwellings always hace cross-ventilation and their surface areas fluctuate between 65 m^2 for the three-bedroom units and 75 m^2 for the four-bedroom units, organised into single level or split level units. The ground levels are either used for commercial purposes or private garden flats with the garden separating them from the street. The displaced alignment making the rectangular block "H" shaped is subdivided into four slabs linked up by the accesses.

The B-2 square block scheme confronting the Avenue focuses all the residential units on the round courtyard –without corners or nooks– which is defined by a skin superimposed on the building walls. This elegant and sober inner space with eight jacarandas and a circular pond has been designed as an entrance hall, like a large antechamber without obstacles. The order is established by two diagonal axes organising four large entrance lobbies leading onto the street. The definition of this categorical inner circle enconters difficulties, however, in its adaptation to the orthogonal geometry of the buildings. The design solves these difficulties with galleries and balconies, giving on occasions the rooms overlooking the courtyard overcomplex shapes for their surface areas. The façade onto the street is like a large blank wall perforated by shop windows and doors. The quality of these brick walls, added to the light roof with wide projection covering the top of the block, gives the whole group coherence and unity while emphacising its appearance of a big rambling house.

The scheme of the other two B-1 blocks offers a less unitary solution for the inner space. As a result of trying to turn the courtyard into a more domestic space, more adaptable to its uses as a playground area, with flower beds and pergolae, its scale is lost. It is undoubtedly a more private space, in which case, however, it shows the disadvantage of being over exposed to the street, too accessible. The housing units, the accesses to which are also emplaced on the corners, are more conventional than those in the B-2 block, although probably more adaptable to the dwellers' needs.

The rectangular-shaped block schemes differ a great deal from one another, although maintaining alignment, heights and number of storeys constant in all. In the A-2.2 block, the courtyard is the element that definitely justifies the massing and is the space denoting most character of all the estate. Development is organised along four slabs which are interrupted every two housing units, with the main accesses to the inner space located at the ends. The accesses are flanked and emphacised by two small towers whose blue and white tiled roofs on two slopes add colour and brightness to the white walls, while at the same time serving the purpose of announcing the important function occurring within. The courtyard is furnished with flowers, trees and a kiosk, all surrounded by pleasant white dry land, turning it into a very confortable space. The street side façade is more regular than, and acts as contrast to, the inner façade. The A-1 block offers a more developed solution for the courtyard and is perhaps for this reason less interesting. Stairs, handrails and paving define an elongated space where we hope greenery will, one day, play the leading role.

The A-2 block scheme adopts a different solution which breaks down the development into slabs. The central courtyard is interrupted by an advancing body which subdivides it into three consecutive spaces. Perhaps the most controversial aspect of this scheme lies in the express will to divide into compartments the central open space which, while remaing public for the community and being an alternative to the street, closes at the same time the building away from the street. The housing units are split levelled with joint accesses located every five units. A garden on the ground level separates them from the street and turns into a private sidewalk. This express will to split the inner space of the block into more manageable environments through a less strictly perimeter building massing, is found here in an excessively small-sized block. Instead of domesticating the courtyard, it discusses it. However, this scheme leads on the other hand to a more private form of life, less exposed to a continuous community use, and defends a more anonymous solution allowing for a more private take-over of the space.

An aerial view of the cluster proves that, in spite of difficulties, in spite of only half of a superblock having been developed, of the schemes offering ununified and individual solutions for the building massing in the blocks, the group as a whole shows unusual clarity and force. The same happens here as in the case of the neighbouring blocks: where development ends, open land or high posts begin. But the decision to opt for a compact and continuous solution with courtyard blocks turns this contrast into a datum for city-planning, gives clear meaning to the city dweller's own private space, making up the backbone, with possibilities of even becoming of positive interest, for what in so many cases is the formal breakdown of urban suburbs.

Block partitioning. How Santiago de Chile was modernised (pág. 29).

As well as detecting in the processes of city formation and tansformation found in some centres of Spanish American capital cities a gradual and incrementing evolution of morphological development begun at the time of Discovery, Conquest and Colonisation carried out by the Spanish in the 16th century, one can also note that an essential part of this development has taken place over the last hundred years and is still based on the urbanistic legacy of orderly and compact massing established at the time of founding.

In the city-planning on our continent, however, certain discordances are detected between the reality of certain morphological facts and the way in which these have traditionally been translated...

Wishing to demythicise some of these points and, in a way, defending the cultural specificity of our processes of Physical formation and transformation, and the parallelism that could be found between the architectural production of Spanish America and the different international movements, I consider it suitable to clarify that:

With regard to the first maladjustment –that is to say, rigidness before change and obsoletism in the network in the face of a flexible urban reality undergoing constant adaptations –we must remember that the gridiron order out of which the urban network of the city is formalised is, from the outset, an open and dynamic process which is also internally divided into zones conveying diverse roles, functions and meanings. Apart from producing a wide variety of cities following a same established pattern, it enabled the block, as the main piece of the gridiron, to be architecturally solved in different ways, a process that was accentuated in time and became more complex.

Regarding the second of these maladjustments – that is, the frequent confusion between "unity" and "uniformity" in urban processes –it is absolutely essential to distinguish the regional variants the process of city-planning acquires, so as to give adequate credit to some entities as distinct from others, and also because, from a methodological point of view, it would help to clarify the differences found in certain nuclei in spite of their apparent unity.

One must inevitably accept that during the 16th, 17th and 18th centuries, Spain was able to reduce a whole continent to one unity, without altering the regional peculiarities that existed in every locality.

As a result, in the attempt to clarify differences and value identities, one can distinguish within the large Spanish American city centres, those in a strict sense "historical-foundational", setting the basis for the symbolic embodiment of Spanish power, from those merely "foundational", with few Pre-Columbian and colonial references, places of constant transformation, taking place over the last centuries to be exact.

Apart from delving into the differences which characterise us, we shall approach, from an urbanistic point of view, the establisment of diversified behaviours and, consequently, an understanding of the cities which are better adjusted to the nature of the phenomenon.

In relation to the third maladjustment –let us not forget the contrast between "modern centre" and "colonial centre" –and contrarily to what is surmised, the urban network in most of the foundational centres developed during this century take up once more the guidelines set by the original urban structure. The gridiron making up the general order and the block as a predial unit, as well as being the defining elements of the regular city and its evolutionary process, are also the axes for urban transformation during the 20th century...

Finally, and as far as the last recognised contradiction is concerned –namely, urbanistic-architectural specificity of our praxis and total "dependence" on models generated abroad– one must remember that in spite of the strong links between European and North American, and Spanish American architectural production, at no stage in its evolution is the latter either a transfer or a literal copy of such experiences.

On the one hand, the uniqueness derived from an urban process conditioned by three cultural syntheses or redefinitions in which we have taken part, i. e., Discovery, Conquest and Colonisation; Independence and Enlightment, and the Industrialisation and Modernisation of the States in the area, added to, on the other hand, the acting strength of the network in a central situation within a more or less permanent economic system, will all impose certain inevitable rules on architectural events and create the necessary adaptations and integration of the built form into the nature of the grid.

Moreover, in talking of "fringe situations" to explain the total dependence between the praxis of our countries and that of the culture producing countries, aside from falling into a now anachronistic oversimplification, we are denying the fact that historically, from the 19th century on, relations between the so-called "centres" and the so-called "fringes" are extremely complex and mutually interpellant, to such an extent that on many an occasion certain productions or events occurring on the fringe affect situations in the centres.

On the basis of which the following can be asserted:

1. The regular city, meaning the city organised as a grid based on block, cross-street and crossing elements, is from the outset a modern entity... Also, the oversized sites on which the blocks are developed and the width of the streets in the established roadway system will allow its use for centuries and will satisfy the increasing demands for different uses.

2. Spanish American cities, in the light of such aspects, are defined through urbanistic and spatial variables which maintain a certain level of independence from economic, social or political elements. Without wishing to deny such influences, the relative autonomy of urban elements, their rules and laws of spatial organisation, allows one to skip over the fatal determinisms set between space and society, making such relationships more complex by turning them into something more than just the simple and miserable relationship between socioeconomic development and physical transformation.

3. Following this line of approach, it is thought that the grid as a general order of reference and the block as a predial unit in a central location make up the necessary conditions to fix the rules for intended architectural operations. The modernisation of the "foundational" city centres, taken up once more with great impetus in the last hundred years, will stem from the modernity of the original grid and from the continuity of the typological process emanating from it.

The block will thus become the first step in the urban organisation of the city centre, as well as the container for various architectural types developing through a dialectic, constant and accumulative process.

4. Bearing in mind the widespread opinion that our cities lack form, the city centre emerges in this context as a form of urban growth, including morphological and typological characteristics which differ from those found in other areas of the city.

One could even consider the colonial city centre as the cornerstone for the present modern centre and for the metropolitan forming of the city..

Articles in English.

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5. A certain maturity and complexity emerging from the use of the block as a predial unit and as a site massing organising element can be perceived in this sequence. In this process, "cross parcelling" and "courtyard houses", used so extensively as spatial organising factors in the colonial city, become the initiators of the morphological and typological development in the city centres...

Following the above stated, it is, in muy view, a categorical imperative to acquire a modern understanding of the idea and use of the grid and block in the "foundational" city centres of Spanish America. Their capacity for evolving, self-transformation and structuring new development space shall be sufficiently proved by the typological and morphological characteristics emanating from the urban development and network in the Centre of Santiago.

It is even possible the block gridiron in the Centre of Santiago may prove useful as a model, putting forward, beyond its specific and local character, certain new ideas on: the regular city on our continent; the modern treatment the central nucleus undergoes, and the varied building massing alternatives that are possible for a square block.

In this sense, an effort has been made to reveal unifiable facts, by reconstructing antecedents and with the help of available information from the cartography of the Centre of Santiago between 1885 and 1984, and expliciting by means of different scales and readings the process of typological substitution and transformation registered in predial references and architectural events that have taken place over these almost a hundred years.

Backed up by the evidence that, like in other urban centres of some of the countries in the area, the modern consolidation of this location has occurred from the middle of the 19yh century onwards, in view of the fact that during this period parcelling and typological conditions are favoured and accelerated, after having for centuries encountered great difficulties, an Atlas of the Centre of Santiago has been drawn out and divided into three historical periods, confronting one another at different levels: at the City Centre level, as the city's sub-system, at the block group level, and at the specific architecture of certain blocks level...

Seen in the light of three synthetic moments in the city centre's urban history, the contents of the blocks are encompassed in more than one hundred study units, forty of which show on a scale of 1:500 detailed planimetric and axonometric diagrams of spatial massing.

Thus, one of the main questions confirmed in the case of Santiago's city centre, which are also extensible to other equivalent urban realities on the continent, is that the formation of this location and the development of the city in time is the result of successive residential additions attached to those already in existence, where the central grid turns out to be the intensification and densification of the network in the territory.

Even if running the risk of them being a mere outline, one can roughly recognise within the evolution four processes undergone by the central block gridiron as a subsystem.

1. A first process of evolution, taking place during the 16th century, is characterised by the move from plotted city to developed city emerging from the existing idea of massing, set by the relatively regular roadway distribution system, the block, as a predial unit and the quartered sites within the latter. At this stage, housing is but construction of a minimal elementary character making up the element from which the city is to materialise...

2. A second evolutionary process, taking place during the 17th, 18th and first half of the 19th centuries, is the structuring of the so-called perimeter block as a model of formalisation for the central urban gridiron, made up in its turn by courtyard houses in their "corner" type and "attached" type versions. The minimal elementary housing type characterising the first process and made up of a simple volume which represented the essential habitable space during the initial period of settlement, gave way to more complex solutions.

These were the result of extending and densifying housing towards the inner part of the estates and/or the subdivision of the originally quartered or cross-shaped block which, in view of its central location, was exceedingly large for the type of housing developed in it, and whose value, on the other hand, was continually being raised.

There were a few exceptions to this process of densification and subdivision recorded in practically all the blocks in the city centre during the colonial period: *those blocks with religious or military buildings maintaining single property-ownership over the entire site.* In this context, one must accept that housing as an addition or infilling element, and the structuring of site ownership have exerted great gravitation force in the growing development of the central urban fabric.

3. A third evolutionary process, taking place during the second half of the 19th century, is the step from this simple system of infilling basically determined by the parcelling and subdivision possibilities of the estates, to one in which the architectural configuration determines a more developed type of space. With the emergence of the Monument, either as an individual element in itself or integrated into other building typologies, the perimeter block as a model of formalisation stops being the only alternative for building massing in the city. In spite of monuments still being governed by the laws of the block, the relationships established at a perceptional, morphological and functional level are completely different.

On the one hand, the built form of the monument establishes new models for parcelling, and although in some cases it shows certain similarities with the predial organisation of religious construction, there is little similarity to be found between them in morphological terms. The architecture of monuments is public and the buildings are often integrated into the city by means of galleries, public halls or small squares to make them stand out.

On the other hand, housing shows new building typologies and, at the same time, new ways of covering the block. The palace or detached house, the "cité" or small convent, not only represent an evolution within residencial typology, but also show a ripening and growing complexity in the management and solving of the estates.

We could say that *"penetration", whether under its lobby, gallery, hall or passage way versions, emerges as a new element within the old parcel division...*

4. Finally, a fourth process in the evolution develops during the current century with the emergence of new elements like inner passage ways or open through-streets within the blocks introducing, together with new building massing types, other networks or reference systems within the orthogonal grid.

As has already been mentioned, there is a simultaneous emergence of more autonomous volumes from the block context and laws on the one hand, and more complex articulations with orthogonal street and/or crossing elements on the other. Modern architecture establishes new formal operations within the block.

The block with "penetrations" is developed as another building massing type with different types of routes for pedestrians and vehicles inside, thus encompassing the subject of mobility. Building typologies are multiplied. The "block building", the "city building", the high-rise "tower building" appear, joined to or isolated from others, definitely modifying the urban landscape and, in fact, the spatial organisation of the city centre's gridiron blocks.

Within the field of architectural operations, however, the gridiron continues to be governed by routes and possibilities set by the most elementary geometry. Thus, emanating from similar operations, namely subdivision, densification, fusion, geometrical reconversion, rationalisation and regularisation, a typological process is developed and made evident by the evolution from perimeter block to block with "penetrations", and from the courtyard house to the "city-building".

For over more than three hundred years, that is, from its emergence in the 16th century right up to the last quarter of the 19th century, *the urban gridiron in the foundational city centres was maintained as a pattern for building massing, meaning that architecture would be largely defined by the figure of the block and by the nature of the assigned site...*

One can safely state that in the 20th century the course of building massing undergoes a substancial change in the blocks, more specifically in the city centre blocks, due to:

a) The entry of most of the countries in the area into a new international economic system, headed by the United States, thus increasing the possibilities of maximising gain in value and profitability from urban operations.

b) The roles played by technology in high-rise construction, the rationalisation of architectural forms and maximum economy in the use of sites, and

c) The ideological and often legal weight of City Planning and building norms, inspired by the modern approaches of functionalist urbanism.

Within this context, and as can be appreciated in some examples of cadastral architecture from 1930 to 1960 and in some outstanding blocks, the irruption of high-rise construction built with reinforced concrete and governed by norms introducing progress in terms of hygiene and comfort, will not only alter the course of architecture in the blocks, but will also pave the way for completely new composition patterns by: *freeing the horizontal plane of load-divider elements and tending towards a pillar and slab scheme; allowing first storeys and the inside of the estates to be used as extensions of street and public space, and making the utmost use or taking maximum advantage of the sites by multiplying ground levels.*

Even further, and in contrast to what has traditionally occurred, *architecture, during the 20th century, turns into the mechanism giving order to the building massing of the block and, hence, of the regular network in the city centre.* It could be said that, all along the period studied, there is a typological, continuous and dialectic process between block and architecture, moving from a situation where the grid governs building massing, to one where it is architecture which carries out new formal operations on the block.

In the architecture of the 20th century, as is confirmed by all the blocks on a scale of 1:500, the grid only represents a general order of reference since it will be abandoned for a somewhat more autonomous projecting process as well as being used from other points of view. The building typologies generated in this period show an intentional order in their ground plans, heights and sections, modifying the contents of the blocks.

In this process, which has not always been as linear as described here, we can note:

a) An ever-increasing tendency towards regularising the blocks, and the independence and autonomy between built form, street and infilling unit.

b) An evolution from simplicity to complexity, from homogeneity to heterogeneity, and the creation of a precise and detailed grammar.

c) An increasng maturity, complexity and density in the conception and management of the block as the basis for building massing, where the evolution shown denotes an evident and progressive development of the ground plans for the building types it contains.

These conclusions, put forward by our research, can be verified through the following facts:

1. The Spanish American city is formed from the "courtyard house" which establishes certain relationships between the parcelling morphology and the building typology that are fundamental to the typological process. The cadastral structure of the 1885-1915 period shows the coexistence of small and medium sized estates covered by this building type, thus confirming the low density and the nucleo-approach of the urban form.

Although the persistence of regularity, frontality, alignment, cubiformity and maximum adjusting or advantageous use of sites in the successive building typologies intensifies the use of the estates, it also reveals however certain constants in the composition deriving from this initial type and from the city-planning system applied. A great number of blocks, at a scale of 1:1,000, between 1885 and 1984, in the centre of Santiago, have been studied to this purpose.

The city is formed by taking the perimeter block as a starting point which generically consists of courtyard

houses as a residential addition, and acting as an urbanising element located in the centre. The blocks with "penetrations", basically consist of blocks of flats –where housing has been "relegated" to the top storeys of the suburbs– is the result of the evolution taking place through the typological process described in the central part.

2. The massing arrangements governing the courtyard houses, both in their "corner" locations and when they are attached, are not generic massing forms responding to a specific spatial programme or conception. They are, in my view, the logical coverage solutions allowed for by a rectangular-shaped estate with reduced front onto the street and using precarious building systems.

On the contrary, in the projects developed between 1930 and 1960, besides being governed by the Brünner Plan guidelines, the building massing form responds to a complex programme of functions, and tries to offer a balanced urban and architectural solution. The building typologies to emerge seem to make evident, both at the individual level and at the group or fragment level, the idea of the city on a general level and a reconciliation between traditional and modern views. They introduce, in short, a structural, morphological and functional optimisation which manages to modify the block.

This is made manifest by:

a) The generalised tendency of the perimeter block towards more complex configurations in plan and volume, such as those structured with penetrations.

b) The removal of the fencing wall as a defining element of private space, the conversion of this into a perimetral container of public activities, and the irruption of streets or passage ways in the inner part of the estate or block as an alternative and complementary system to the street gridiron.

c) The process of constant regularisation and geometric rationality shown by the block and its architectural forms, and the growing tendency towards geometric reconversion at a predial level shown by the more centric units. We move from a process of subdivision and horizontal densification onto a process of fusion of estates and vertical densification.

d) The creation of a multiple-reference inner space, like the system of interconneted inner passage ways or galleries, and/or the emergence of a subsystem of streets or outer passage ways, thus generating another grid within the existing regular grid.

e) The creation of the inverted yard as a public space complementing the street, and the possibility of introducing elements deforming the grid or the strict orthogonality (with, say, diagonals, curves, rotundae or ellipses).

3. The typological process taking place in the central block is strongly determined by certain elements that define and canalize it. Namely:

a) *At a morphological level,* a strong geometrical component in the general grid of reference and in the infilling unit. Although this is not overruling, it establishes a precise architectural massing organisation while at the same time allowing for certain composition schemes within the proposed system.

The Cartesian gridiron and the orthogonal references never disappear altogether, although they are used in different manners during each period.

b) *At a technical or structural level,* the most significant constant noted in the various building typologies is the simplicity and logic of development. This is the result of the quest for maximum adequation to the sites, the use made of traditional technologies, and the rationalisation of building processes. It could be stated that, in spite of modifying architectural units during the 20th century, technicological transformations and those of developing systems have been aimed at an optimal solution for the available space.

c) *At a cultural level,* there is a recognisable process evolving from elementary and primary solutions to other more complex ones, more often governed by the parcelling of sites and the distribution of property ownership than by rules or laws. The logic behind this has somehow garanteed a certain continuity in the process, since an accepted characteristic is the discontinuity of norms or regulations, self-evident in the succession of city fragments that the city, as a reality, possesses.

In short, and as can be appreciated in the attached plates, having examined the urbanistic-architectural material in the Centre of Santiago, the following can be said:

1. A discontinuity in the norms ruling the building process obviously affects the continuity of the typological process more or less consolidated during the first half of the 20th century. The irruption of new demands provokes not only a typological transformation, but also a typological mutation.

2. Parcelling and building typologies are the basic elements when interpreting the formation process of the centre of the city, more specifically in the more central areas. Due to the less central location of the edges of the Centre, parcelling and development in these areas will be, if not atypical of the process, at least less outstanding in their morphologies and developments.

3. The differing nature of the border block, added to the relatively lower value of land in this section of the city, will determine a tendency: public action in the design and the privilege of a system of open routes as a complement to the existing gridiron streets.

One can recognise, on the contrary, a tendency towards an individual or private nature of action in the more central blocks, and the privilege of a system of "gallery" type or "covered passage way" type inner "penetrations" for pedestrian routes.

4. Parcelling, Development and "Penetrations" tend in general to produce maximum coverage of the site at grade level to the point of this becoming one of the most constant relationships within the evolution of the centre. They all tend to maximise the usage of a given surface area by: rationalising site coverage, discriminating the location of activities, multiplying the commercial and public façades or levels, and allocating passage ways or galleries as a system of inner routes.

In this context, seeing the modern centre of Santiago at its three quoted levels is a means of considering an existing urban centre from other points of view.

The examples put forward by the blocks in this location, as well as proving what has already been pointed out, make up a repertoire of experimental solutions that can modify the conventional treatment the square block has always undergone. I also hope that, apart from their specific character, the examples the central gridiron blocks of Santiago put forward as models will offer new ideas on the regular Spanish American city thus turning it into an unquestionable contribution to the stock of modern urban accepted riches, something which as yet has not occurred.

Design arguments for an urban highway (pág. 39).

We have grown considerably over the past half century in our knowledge and understanding of urban highways. A drawing from the 1922 brochure announcing Robert Moses' proposal for the East River Drive helps illustrate the changes (1).

The meaning of the picture is quite clear: The sun shines only on an uncrowded roadway; Lincoln Phaetons and Packard touring cars glide by effortlessly on their way to and from the country; the city looms in the background, a symbol of prosperity and modernity; and on the overpass in the foreground lounge figures –seemingly taken from the pages of Town and Country– who have nothing better to do than watch the traffic pass below.

By 1946 the car was no longer a novelty, and our perceptions were changing. In a brochure of that year in support of the proposed Mid-Manhattan Expressway, a drawing of the elevated highway (2) showed people walking away from the road. The structure itself, though gleaming and white, shared equal billing with the Marble Collegiate Church and the Empire State Building. Mercifully for Manhattan, the highway was never built.

We now know that urban highways have consequences that their earliest proponents never anticipated or considered. A portion of the Brooklyn-Queens Expressway along the Brooklyn waterfront (3), for example, slashes through a fragile 19th-century neighborhood, leaving remaindered parcels of land and blank walls in its wake, while separating the upland residential areas on one side from the jobs and waterfront activities on the other.

So, too, over much of its length, the East Drive cuts Manhattan off from the river. Even East River Park, stretching from 14th Street to the Williamsburg Bridge and built at the same time as the highway, is underused because the Drive (4) creates a barrier between the city and the river.

In other American cities the consequences have often been even less fortunate. Much of downtown Kansas City has been reamed out by a highway system whose design was predicated almost entirely on traffic and engineering criteria (5); and Chicago's Dan Ryan Expressway (6) divides that city on the gigantic scale usually associated with natural phenomena like the Mississippi River or the Rio Grande.

in the great debate over urban highways, however, we have often forgotten that under proper circumstances a highway can be a powerful catalyst for more constructive change. New York City itself offers some of the best examples.

The Brooklyn Heights Esplanade cements the rejuvenated Brooklyn Heights community and gives it focus. The three-block-long park, with its spectacular view of the Lower Manhattan skyline, is actually a roof over a portion of the Brooklyn-Queens Expressway; it was created at the insistence of local residents who had opposed the original plans for an unadorned roadway (7, 8). The underpass beneath Battery Park, and the United Nations Plaza over the FDR Drive (9), are similar to the Esplanade in that both knit together the city and the waterfront by covering the roadways that separate them.

Perhaps New York's best example is Carl Schurz Park, on the Upper East Side of Manhattan. The park, one of the busiest in the city, is the site of Gracie Mansion, the Mayor's residence, and along its outer edge, the park extends out over the East River Drive (10). The drive was built as an exposed roadway along the river edge of the existing park. It was Mayor Fiorello LaGuardia who insisted the drive be covered, noting that he found it improper to carry on the public's business while listening to the roar of traffic outside his window.

All of this brings us to the West Side of Manhattan, where the confluence of a number of separate events has created an opportunity for New York that is rare for any city.

First, over the past decade this part of the city has been undergoing nearly cataclysmic change. Most of the traditional cargo-handling, warehousing, and freight-forwarding activities have abandoned the West Side for sites with cheaper land, greater backup space, lower wages, and better access. The vacuum is being filled with new uses, including large projects like Battery Park City and the New York City Convention Center as well as a multitude of smaller renovations and rehabilitations both residential and commercial.

Second, the centerpiece of the West Side and its most salient presence –the antiquated and under-maintained elevated West Side Highway has collapsed (11) and been demolished. For the time being, traffic has been detoured onto a makeshift roadway at grade level, cutting people off from the waterfront.

The demise of this highway, and the provisions of federal law, allowed the state and city governments to propose rebuilding the road as an interstate highway – a tunnel in the river just outside the existing shoreline, with a 2.7 mile-long waterfront park on its roof. In addition, there will be new land created behind the park for development, and a new federally financed solid-waste treatment facility and bus-maintenance garage to replace facilities now in the project area.

The environmental benefits of a covered and ventilated highway are obvious, and have been described in great detail elsewhere. The public-policy consequences that Westway Park illustrates have received less attention.

Westway's tunnel, lying at the edge of the island with a park on its roof, recaptures that waterfront for the public and makes it accessible to the city's people once again. We can see the importance of delineating public and private domains if we look at contrary examples across Manhattan, along the East River. At Sutton place private real-estate interests have hopped out over the highway, usurping access to the river and limiting it to luxury-apartment dwellers (12). Farther south, between Waterside Plaza and the United Nations School, two well-intentioned projecs succeeded in denying the public any access along their common riverfront because no overriding public policy shaped the design.

Westway Park not only recaptures the waterfront but preserves it in the public domain. The tunnel and park, together with a small street along the inland edge, creates a strong, clear delineation between what can be built upon and what cannot. In so doing, Westway Park is in the tradition of Daniel Burnham's plan for the Chicago lakefront (13) or the Copacabana in Rio de Janeiro (14). Closer to home, it is like Riverside Drive, or Fifth Avenue along Central Park, where the separation of public from private and the tension between them enhance both. In one sense, Westway's closest antecedent lies just north of Grand Central Station. In the yeas after 1900 the open tracks were covered with a landscaped Park Avenue and a network of cross-streets, thus stitching together two sections of Manhattan the railroald had severed a half-century before (15).

In putting together the diverse components of the Westway Project, however, its proponents have had to address the fundamental problem that thwarts most attempts to rebuild or rehabilitate large portions of existing cities –particularly when transportation facilities are involved.

Unlike the Renaissance city, in which the fastest-moving object was an occasional runaway horse, a modern city must cope with and facilitate speeds ranging from pedestrians at its center to SSTs at its perimeter, with a plethora of modes and velocities in between. Out of this conflict (16) and the schemes proposed to resolve it, modern city planning was born.

At the beginning of the 20th century the French planner Eugene Henard was among those who saw that the segregation of different kinds of conveyances was an essential ingredient in reducing conflict. He proposed totally new building-types and transportation systems (17), each with its own roadway and off-street storage area.

Grand Central Station (18) and its later evocation in modern clothing, by the Italian Futurist Antonio St. Elia (19), were a second important revelation: They demonstrated that these various segregated systems could be interconnected with elegance and drama.

Several generations of planners and urban designers have since grown up believing that if they could design and manage the city's infrastructure they could shape all built form. In Megastructures, the architectural historian Reyner Banham documents with insight the fantastic forms and plans that have been concocted combining roads, subways, housing, and other uses (20, 21).

Although there are historical examples of multiple-use construction (22), most of these megastructural fantasies have remained unrealized. Their fate represents not so much a failure of vision –the modern city is indeed an enormously complex organism– as a failure to understand the political dynamics of a modern pluralist democracy.

In the United States, government is layered into federal, state, county, and municipal levels. Each layer is further sectioned into functional, sometimes artificial compartments, with transportation separated from housing, and from, say, health care. Each of these agencies moves to its own intenal rhythm and administrative agenda, responding to different constituencies. Because American cities are built with large amounts of private capital, the problems of incomplete governmental jurisdiction are exacerbated by the further need to mesh public and private interests.

Thus, when public officials and other decision-makers looked at Harvey Wiley Corbett's scheme of 1925, prepared for the Regional Plan Association (23), in which he proposed an upper-level pedestrian sidewalk over two levels of streets, they saw unanswerable questions: Should the sidewalk be built first, with pedestrians crawling through second-story windows and over secretaries' desks to get down to the lobby; or should all downtown buildings be rebuilt with two-story lobbies, on the promise of a future aerial sidewalk?

Hugh Ferriss's tongue-in-cheek 19XX rendering shows an even more incredible dilemma: Should one begin by seeking approvals for a 30-story-high roadway or start instead by punching holes through the middles of large buildings, with the highway to follow?

In such schemes lay great potential for tragedy. After Le Corbusier proposed his first plan for Algiers in 1929, it became almost an icon for modern city planners. An enormous continuous apartment building, with a superhighway on its roof, was to snake along the shore of the Mediterranean (24). When the housing component dropped out of the equation, a second plan showed only the rooftop roadway (25). Had the scheme moved forward, Algiers would have been permanently disfigured by an elevated highway like the Bruckner Expressway, its columns jackbooting across the fragile web of casbah-like neighborhoods beneath.

These historical examples can teach us a twofold lesson. To increase its chances of success, a complex public-works or development project must either be carried out under a single administrative eagis or have a single source of funding –as was the case with Grand Central Station, Rockefeller Center, and the NASA space program– or else it must be broken into discrete components, each self-contained and not depending for its implementation upon complicated interlocking bureaucratic arrangements.

With Westway we have tried to apply these lessons in solving the difficult problem of giving people access to the river while rebuilding a necessary transportation link. Changes in land use along the West Side and the decay and collapse of the old highway have made the task easier; but the underwater tunnel with a park above it, the new service center for city buses, and the waste-recovery plant have all been made possible by the resources of the federal Highway Trust Fund, and enabled through a series of federal laws and administrative decisions. The park is integrally linked to the highway legally, administratively, and in design. The need for the park emanates from the environmental laws governing the project and thus the dollars to build it are part of the project's cost. But when Westway is finished the federal aspect of a project will be complete. Then the residential neighborhoods behind can begin to move out to the waterfront at their own pace, reuniting New York City with its river.

THE PARK

Several factors shape the design and character of the Westway Park and place it in context with other great New York City Parks.

The Hudson River flowing beside the park is one of the most important of these determinants. By its width and grandeur it suggests that the park's most vital large-scale function is to delineate Manhattan's edge and the boundary between the city and the broad sweep of the river. The park is a border for Manhattan Island, a green strip in the tradition of Riverside Park, East River Park, and Battery Park City, which clearly marks long stretches of the island's perimeter, just as Central Park marks its center.

The contrast between city and river is emphasized by a continuous waterfront esplanade, consistent in character along its length but opening at many points onto diverse large areas behind. The esplanade is also a protection for the highway tunnel, allowing both park and highway to withstand the actions of waves, winds, tides, and floods. in this sense the park is confronting a river very different from the calm and tideless Seine flowing through Paris or the canals of Venice, where the plazas and campos are flooded from the tidal marshes below.

The geometry of the highway tunnel beneath exerts its own logic upon the park. In one sense the highway is a decorated box a level box lying next to a flat table of land extending away from the water for several blocks. Dramatic changes in elevation and large indentations in plan were thus neither desirable, because of the gran scale of the river, nor possible, because of the shape and load-carrying capacity of the highway box and the proximity of the U.S. Pierhead Line.

Long, flat open spaces can be serene and ennobling, as in the lawns of English country estates such as Robert Smythson's Wolloton Hall (26) or the gardens of André Le Nôtre at Versailles (27). In a flat landscape, however, very small changes in elevation have a much greater impact.

The designers have used these differences to mark the boundaries of Westway Park. At the city edge, away from the water, the park is 15 inches above the sidewalk, offering a seat to those who may want to linger at the park's edge. This sitting-wall is punctuated by gentle ramps at each of the park's many entrances.

On the outer edge a slightly greater change in elevation –two and a half feet– marks the transition from the park's interior down to the esplanade. This change is also delineated by a sitting-wall at a scale more appropriate to the river, with frequent steps and ramps out onto the exposed esplanade. Decoration helps park users locate themselves, and to give interest to these changes in elevation. Instead of the traditional balls and pyramids adorning ths stairs, however, the design incorporates symbols more appropriate to New York –over-scaled apples and skyscrapers.

One of the park's primary functions is to provide the richness of diverse functional and esthetic experiences. It does this in part with a variety of paths for different purposes. Parallel to the open esplanade and behind it runs a promenade. In contrast to the spartan and tough character of the open esplanade, the promenade is tree-lined and elegantly paved in diverse patterns. Strollers need not compete with joggers or cyclists.

A bicycle path gently loops along the inner edge of the park lawn with yet another geometry. All these long routes are traversed by shorter paths leading through the park from the city to the water.

The trees serve a variety of architectural purposes. Their regular spacing along the promenade creates one rhythm that is a counterpoint to the long curves of irregularly spaced trees on the inner edge. This mixture of formality and informality has its precedents in both Frederick Law Olmsted's Central Park and St. James's Park in London, where Le Nôtre's original rigid line of trees is enriched by John Nash's later, more sinuous planting behind (28). In the park, as we move along the flat, open lawn between tree-lines, the effect of perspective is somewhat analogous to a boat ride through the Florida Everglades, where we pass through vistas that open and close slowly, like moving theater-flats during a scenery change.

We perceive Westway Park at both the large scale and the small, while eschewing the middle scale so often dominant in the "piazza mode" of modern urban design. The park also functions at two time-scales, and in that sense is a dynamic political diagram as well as a fixed design. The outer edge confronts the river in a grand and enduring manner. But the inner edge beneath the trees is like a series of squirrel's pouches – offering variously sized areas for play or other activities not yet conceived by people not yet residing near a park not yet built.

To be sure, comfort stations and children's playgrounds –many of which are the result of meetings with community groups and other constituencies– are planned for various locations. But we know from studying Central Park that the process of agreeing or, designing, and building facilities in a park can continue long after it was conceived. Westway Park can accommodate this evolving dialogue. Like the river, the park embodies both permanence and change.