

Can Patios Make Cities? Urban Traces of TPA in Brazil and Venezuela

¿Pueden los patios hacer ciudad? Las huellas de TPA en Brasil y Venezuela

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Abstract / Resumen

In August 1953 city planners José Luis Sert and Paul Lester Wiener –founders of TPA (Town Planning Associates) with their practice in New York City– published an urban manifesto in the journal *Architectural Forum* entitled: *Can Patios Make Cities?* In this article Wiener & Sert sustain that patios, the very ancient architectural device of Latin American cities, can become a typological key element in the conception and design of modern cities. [Fig. 1] Mainly illustrated with drawings for the city-plans designed by TPA in Brazil, Venezuela and Cuba, according to the authors, their experience in Latin America should be taken by the community of U.S. planners “not as a working model to be copied, but as a kind of laboratory model against which to check our own ideas”¹ in direct response to the discussions set up by CIAM (Congrès International d'Architecture Moderne) immediately after World War II. This study provides an account of the exploratory model of compact-planning undertaken by Sert & Wiener, not in the master plans developed for existing cities in Latin America, but in the common ground of the inter-tropical essays designed for three entirely new towns: *Cidade dos Motores* (Brazil, 1944-47), *Ciudad Piar* and *Puerto Ordaz* (Venezuela, 1951-53). Based on different documentary sources to support our work we will examine the urban design principles practiced by TPA in these cities within the multilayered dynamics of war and the expansion of air transportation in Latin America.

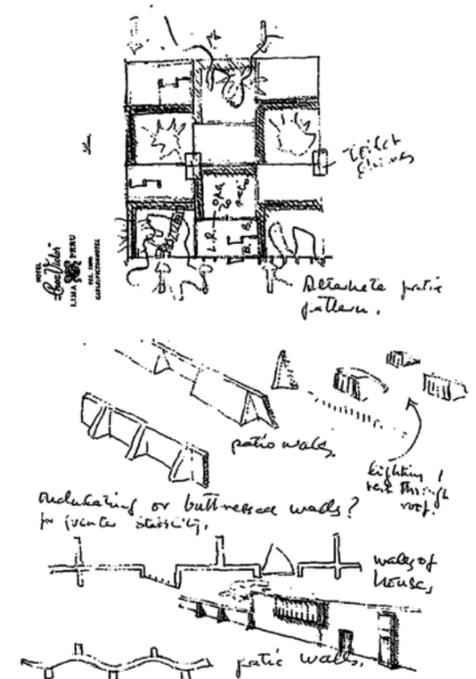
En Agosto de 1953 los urbanistas José Luis Sert y Paul Lester Wiener –fundadores de TPA (Town Planning Associates) con sede en Nueva York– publicaron en la revista *Architectural Forum* un manifiesto titulado: *Can Patios Make Cities?* En dicho artículo, Wiener & Sert afirman que el patio, el instrumento de proyecto más antiguo de las ciudades latinoamericanas, puede convertirse en un elemento tipológico clave en el diseño de la ciudad moderna. Las planificaciones urbanas realizadas por TPA para Brasil, Venezuela y Cuba ilustran la experiencia desarrollada por ambos proyectistas en Latinoamérica como respuesta directa a las discusiones desarrolladas en los CIAM tras la Segunda Guerra Mundial. Según sus autores, dichos proyectos no deben ser asumidos por la comunidad norteamericana de urbanistas “como un modelo para ser repetido, sino como un ejemplo de laboratorio urbano en el cual se pueden contrastar las propias ideas.”¹ Este texto aporta una muestra del modelo de investigación sobre el urbanismo compacto propuesto por Sert & Wiener, no en los planes directores desarrollados para las ciudades existentes latinoamericanas, sino en el territorio de sus experimentos en el trópico, en las tres ciudades de nueva planta que proyectaron: *Cidade dos Motores* (Brasil, 1944-47), *Ciudad Piar* y *Puerto Ordaz* (Venezuela, 1951-53). A partir de diferentes fuentes documentales, examinaremos los principios urbanos propuestos por TPA en estas ciudades en el contexto de las distintas dinámicas de la guerra y de la expansión del transporte aéreo en Latinoamérica.

Keywords / Palabras clave

Post World War II Planning, TPA, patio, Compact-Planning, Brazil, Venezuela.

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[Fig. 1] Outdoor patios diagram proposed by Wiener & Sert.

Fuente: P. L. Wiener; J. L. Sert “Can Patios Make Cities?”, *Architectural Forum* 99, n. 2, (Aug. 1953), p. 125.

[Fig. 2] Study of the walls and patios for the housing patterns of Chimbote, Peru (1947).

Fuente: José Luis Sert Collection, Courtesy of the Frances Loeb Library, Harvard University Graduate School of Design.

The patio as human measure: from the colonial to the CIAM grid

“Human approach is the only universal one.”²

In the quotation extracted from the bulletin of MoMA’s exhibition *Two Cities: Planning in North and South America* (1947) Ada Louise Huxtable summarizes Sert’s intention to achieve a measurable unit, as a reproducible human cell, to reverse the degraded tissue of the built environment. As a universal typology linked to the town squares of the Hispanic-American colonies, the patio will be the planner’s unifying module for restoring the urban fabric as well as a social instrument for reshaping democratic communities.

A few months before the opening of MoMA’s exhibition, a meeting at Princeton University under the title *Planning Man’s Physical Environment*³ will bring together more than 70 architects, urban planners, philosophers and sociologists. The principal figures of the modern architectural intelligentsia will be there: Robert Moses, Frank Lloyd Wright, Walter Gropius, Alvar Aalto, Richard Neutra, José Luis Sert, Sigfried Giedion, Philip Johnson, Kidder Smith, Charles Eames and Marcelo Roberto, among many others. In the two-day session for discussing “The Visual and Social Basis of Design” and “The Physical Limitations of Design”, the core of the debate will pivot between the need to find a modular artifact dealing with the human body as a unit of measurement, and the way to achieve appropriate standardization methods. Contrary to the general tendency Sert will center his proposal not in the industrial lightness of mass-production techniques, but in the permanent nature of the fortified walls and patios of his Mediterranean references as the perfect synthesis of modern architecture and vernacular tradition. [Fig. 2]

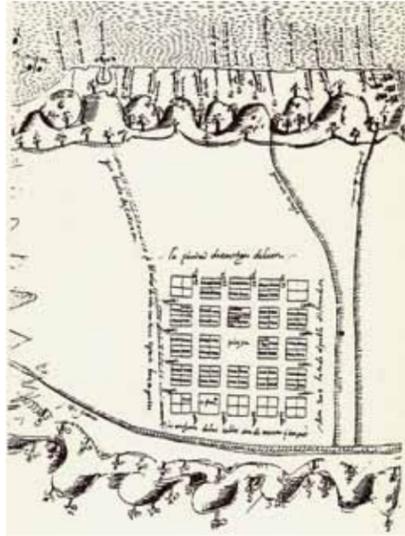
This seminal idea will guide not only TPA’s project for *Cidade dos Motores*, displayed on the occasion at the New York’s museum, but will also define the subsequent work developed by the urban planners in Latin America. Embodied in the CIAM’s postwar debates since 1947, the multiple possibilities of the patio as an architectural feature will equally structure the lectures, books and articles carried out by Sert and Wiener (alone or as co-authors) in the following years.⁴

1 Paul Lester Wiener; José Luis Sert, “Can Patios Make Cities?”, *Architectural Forum* 99, n. 2, (Aug. 1953), pp. 124-131.

2 Ada Louise Huxtable, “Two Cities: Planning in North and South America”, *Bulletin of the Museum of Modern Art*, vol. XIV, n. 3 (New York, June 1947), 1. In: The Museum of Modern Art Archive [CE II.1.115.4.2]

3 “Princeton Conference Digests of Informal Discussions on Planning Man’s Physical Environment”, *Architectural Forum* (April 1947), pp. 12-13, 97-100.

4 See: José Luis Sert, *The Neighborhood Unit. A Human Measure to City Planning*. Undated manuscript report prepared for the Housing and Town and Country Planning Section, Department of Social Affairs, United Nations in José Luis Sert Collection at Harvard School of Design [folder D100]; Jose Luis Sert, “The Rebirth of the Patio” in José Luis Sert. *Architecture, City Planning, Urban Design*, Knud Bastlund (Zurich, Les Editions D’Architecture, 1967): p. 135; J. Tyrwitt; J.L. Sert; E.N. Rogers, eds., *The Heart of the City. Towards the Humanization of Urban Life* (New York, Pellegrini and Cudahy, 1952).



[Fig. 3] Reproduction of a section of the foundation plan of Santiago de Leon de Caracas from 16th Century.

Fuente: Archivo General de Indias in Seville, Spain.

5 Eric Mumford develops these themes broadly in two publications: *The CIAM Discourse on Urbanism 1928-1960* (Cambridge, MIT Press, 2000) and "CIAM and Latin America" in Xavier Costa; Guido Hartray, eds., *Sert, arquitecto en Nueva York* (Barcelona, Actar, 1997), pp. 48-75.

6 As described in the *Athens Charter* (1933) which divides the city in four function-based-zones: living, working, recreation and circulation. The social and the cultural importance of the civic center to overcome the limitations of CIAM's Athens Charter are first developed by Sert in his book *Can our Cities Survive?* while working on the project for *Cidade dos Motores* in Brazil (1944).

7 In their shared practice they will always sign as Paul Lester Wiener & José Luis Sert.

8 Founded in 1942, *Town Planning Associated* had a third member who is rarely mentioned, Paul Schultz's administrative contribution remains quite uncertain. It doesn't seem to be a coincidence that the ending of TPA as associated practice will coincide with the dissolution of CIAM in 1959. All the material consulted is found at the Jose Luis Sert Collection in Frances Loeb Library, Harvard Design School, Cambridge.

9 See: Jose Luis Sert, "The Rebirth of the Patio" in *José Luis Sert. Architecture, City Planning, Urban Design*, by Knud Bastlund (Zurich, Les Editions D'Architecture, 1967), p. 135.

10 During the 1930s José Luis Sert co-founded the group GATCPAC (*Grup d'Artistes i Tècnics Catalans per al Progrés de l'Arquitectura Contemporània* / Group of Catalan Artists and Technicians for the Progress of Contemporary Architecture) which later became, with the addition of the western and north groups the GATEPAC, the Spanish branch of the *Congrès Internacional d'Architecture Moderne* (CIAM). The un-built "Plan Macià" will be the most ambitious urban plan developed for Barcelona (1931-1938) by GATCPAC together with Le Corbusier and P. Jeanneret to order urban growth and reform in the Catalan capital during the Republican years.

The urban essays developed in Latin America will also be decisive to the CIAM discussions⁵ in the search of universal patterns within functionalist orthodoxy. An example will be the GRID system designed by the French ASCORAL group, led by Le Corbusier in CIAM VII (1949), as an analytical method for displaying work presentations. The rigid diagram proposed was immediately criticized by the younger generation of architects for its excesses of rationalism. The patio will be in this agenda the spiritual missing piece, the "fifth function"⁶ proposed by Sert to counteract the deep fissure between the emotion and the rational mind introduced by modern architecture.

So far we have intentionally highlighted the figure of Sert instead of Wiener. Even if delimiting intellectual boundaries in teamwork is a difficult task, there is every reason to believe that Sert played the leading part in setting up the conceptual framework for TPA's practice, although credits in the signing of documents and publications don't clarify authorships.⁷ After reviewing documents, correspondences, clippings, publications and extensive material produced by TPA during their association up until 1959⁸ this conclusion seems quite obvious. As a founding member of the CIAM (1928), and later as its president (1947-1956), following his arrival to New York in 1939 Sert will maintain an intense academic agenda in the U.S., being appointed in 1953 as Dean and Chairman at Harvard Graduate School of Design, where he will be in charge of the first Urban Design program.

Such information is only relevant to this study in order to support the idea that "the rebirth of the patio"⁹ will be mainly Sert's contribution, considering his Spanish and Mediterranean background and his Catholic and Republican ideals. Likewise, his experiences in a highly pedestrian and compact city like Barcelona, characterized by the integration between the medieval city and the 19th Century homogenous pattern of Cerdà's extension plan – synthesized in the block with interior courtyards – should not be underestimated in his "compact" and "pedestrian city" *leitmotifs*. Also, his deep political and professional involvement as a practicing architect in the planning development of Barcelona at the time should be taken into account.¹⁰

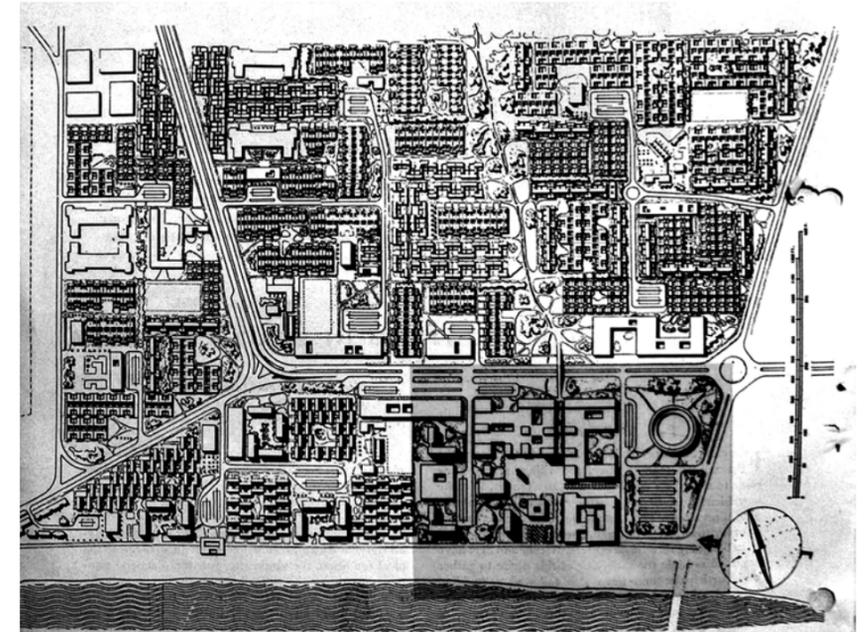
Thus, his approach to the patio as urban core appears to relay not only to historical literature or in the intellectual affinities with Le Corbusier, Patrick Geddes or Lewis Mumford as suggested by some authors.¹¹ His experience with the *patio* seems rather consubstantial to Sert's spiritual constitution: it's in the roots of his ancient and collective memory summarized in the Spanish colonial project in Latin America promoted by the expansion of Christianity during the time of the Renaissance.

If we trace back the strategy implemented in the founding and re-founding of Hispanic American cities, the approach undertaken by TPA in Latin America present significant parallels. In both cases the unitary architectural section – the geometrical squares of the colonies and TPA's modular *patios* – become the artifact for the reproduction of an urban grid conceived independently of *locus* in its universality. [Fig. 3] Rooted in the tradition of the regular Mediterranean paths, with concepts reflecting influences from the Medieval and Renaissance treaties *Lo Crestià* of Catalan monk Eiximenis (1386), *De Architectura* by Roman architect Vitruvius (1486) and *Utopia* by English theologian Thomas More (1516), America (North and South) will repeatedly be the perfect place for testing the "ideal city".¹²

As a specifically Hispanic creation in its characteristics, the colonial civic square represents the perfect synthesis of the structure and the ideology of colonization¹³. In the same way, the orthogonal plans designed by Sert & Wiener in mid-twentieth Century in Latin America respond to a collage of historical and modern references in the application of their urban model: the Medieval and the Renaissance spirit of the colonial cities plus the planning charters of CIAM epitomized by the Athens Chart, the Neighborhood Unit, the New Monumentality and the Heart of the City.

[Fig. 4] In the master plan for the city of Chimbote in Peru (1947) TPA will develop broadly the different scales of *patios* as minimum cellular unit in the composition of the membrane tissues, going from the *patio*-house of the neighborhood units to the Civic Center as heart of the city.

Fuente: Wiener, Paul Lester.; Sert, José Luis. "Five Civic Centers in South America", *Architectural Record* 114, August 1953: p. 122.



11 See for example: Mardges Bacon, "Josep Lluís Sert's Evolving Concept of Urban Core. Between Corbusian Form and Mumfordian Social Practice" in *José Luis Sert. The Architect of Urban Design, 1958-1969*, Eric Mumford; H. Sarkis; N. Turam, eds. (Cambridge, Yale University Press, 2008), pp. 76-115; Jose Luis Sert, *Can Our Cities Survive? An ABC of Urban Problems, their Analysis, their Solutions* (Cambridge, Harvard University Press, 1942).

12 Two detailed studies on the subject of the foundation of Hispanic American cities have been consulted: Javier Aguilera Rojas, *Fundación de ciudades hispanoamericanas* (Madrid: Mapfre, 1994); Miguel Rojas-Mix, *La plaza mayor. Urbanismo como instrumento de dominio colonial* (Barcelona, Muchnik, 1978).

13 As an instrument of physical dominion, the *plaza mayor* as civic core will be laid out following the guidelines of the royal ordinances by Felipe II of Spain (1593) known as *Leyes de Indias*. See: Miguel Rojas-Mix, *La plaza mayor. Urbanismo como instrumento de dominio colonial* (Barcelona, Muchnik, 1978).

14 The references to Ortega y Gasset's ideas, contained in his book *Revolt of the Masses*, and his allusions to the Greek *polis*, are constantly supporting Sert's thesis on the *patio* as the predominant architectural feature for urban design.

15 From: FULLER, Buckminster. *Utopia and Oblivion*. Copy of original manuscript of the lecture given at Somerset, England, (June 7, 1965). In José Luis Collection, Frances Loeb Library, Harvard School of Design [File D121].

16 The manifesto was first published in: Sigfried Giedion, *Architektur und Gemeinschaft*. (Hamburg, Rowohlt, 1956), pp. 40-42.

17 José Luis Sert contribution to the common manifest will be first published by Paul Zucker as Jose Luis Sert, "The Human Scale on City Planning" in *New Architecture and City Planning*, Paul Zucker, ed. (New York, Philosophical Library, 1944), pp. 392-412.

18 *Pax-Americana* is primarily used to refer to the peace established after the end of World War II in 1945. In its modern sense it has come to indicate the military and economic leadership position of the United States in relation to other nations.

19 J.L.Sert; F. Léger; S. Giedion. "Nine Points on Monumentality" in *Sert, arquitecto en Nueva York*, Xavier Costa; Guido Hartray, eds. (Barcelona, Actar, 1997), p. 16.

All these theories and manifestos will integrate the fundamental principles defended by Sert with doctrinarian spirit. From the smallest unit, the *patio*-house, to the metropolitan cores of the civic-centers as "hollow spaces" – as described by Spanish philosopher Ortega y Gasset in his *Revolt of the Masses* –¹⁴ the *patio* will be the ideological pattern for framing TPA's new towns. [Fig. 4] An architectural devise that will be at the service of the U.S. military, economical and commercial interests in Latin America in the physical and aerial control of territories and resources during World War II and the Post-war era.

Aerial mapping: trans-urban design in the age of steel

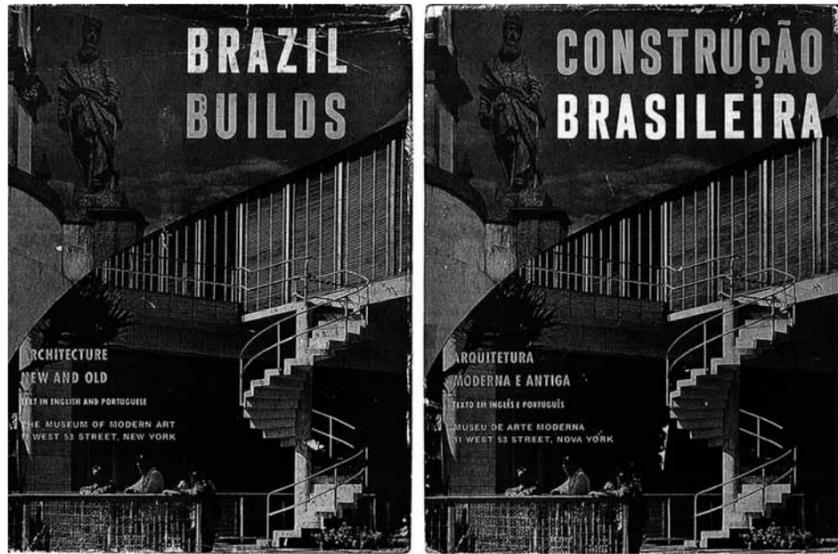
"Before the air transport era, this vast wealth realizing integration of the world's resources was only accomplished via the seas. Whoever ruled the oceans ruled the world. With the invention of the air-plane (...) came the assumption that whoever ruled the sky ocean, which dominated the water ocean, must succeed in the ruling of the world."¹⁵

In 1943, with the world at war, Sert will join abstract painter Fernand Léger and art historian Sigfried Giedion in New York for writing the *Nine Points on New Monumentality* manifesto¹⁶. The document will serve to collect their thesis on the need to integrate new forms of monumentality into the modernist project, by a close collaboration between art and architecture.¹⁷ Under the atmosphere of the *Pax-Americana*,¹⁸ the desire for monumental public space would respond to the democratic conviction that predicted an end to the war and the consequential need to restore physical and social fabric in Post-war. This relation is explicit in the last and ninth point of the manifesto, which celebrates the potentialities offered by the airplane for city planning:

"Man-made landscapes would be correlated with nature's landscapes and all elements combined in terms of the new and vast façade, sometimes extending for many miles, which has been revealed to us by the air view. This could be contemplated not only during a rapid flight but also from a helicopter stopping in mid-air."¹⁹

The radical changes introduced by the aircrafts to the architectural and urban practice were already anticipated by Le Corbusier during his first flights to South America in 1929. The airplane would be then, not just a major military and technical instrument for the ruling of the world – as stated by architect Buckminster Fuller – but a tactical apparatus for the cross-pollination of modern ideology. The experience

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[Fig. 5] Covers of the English and Portuguese editions of the MoMA's catalogue: Goodwin, Philip L. 1943. *Brazil Builds. Architecture new and old 1652-1942*.

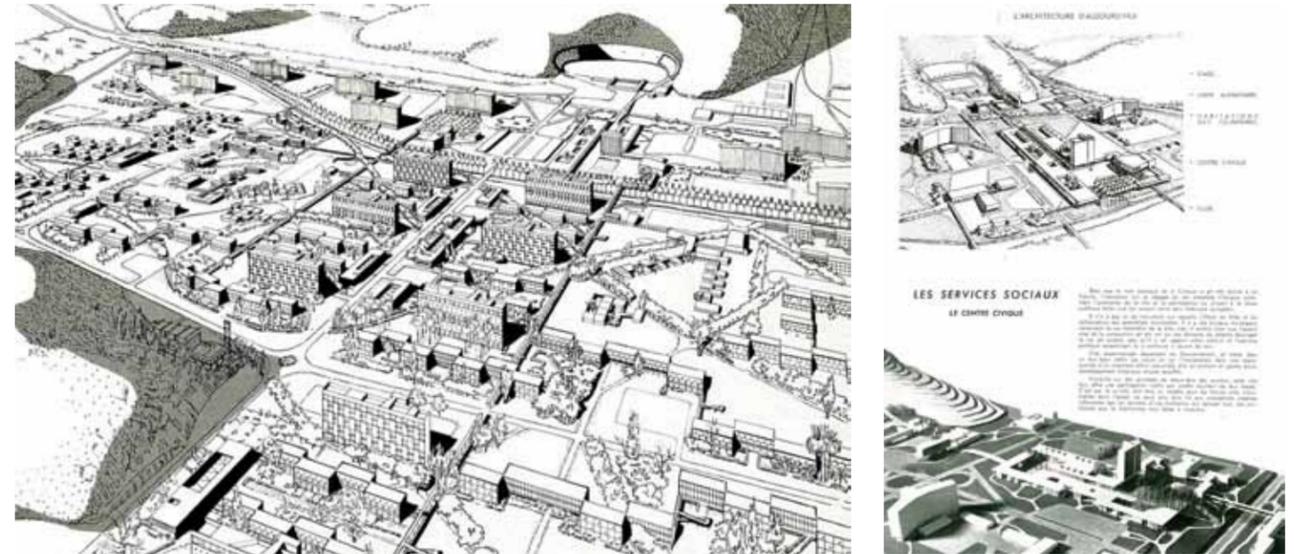
Fuente: Museum of Modern Art, New York.

of TPA in Latin America represents a revealing case-study embodying military and trans-urban design²⁰ practices synthesized in the steel and the airplane industry.

By 1941 the U.S. State Department and the War Department will sign an important contract with Pan American Airlines-PAA for the construction of airfields in Latin America under the *Airport Development Program*.²¹ The plan would envision two main routes: one to Brazil via Puerto Rico, Martinique and Guyana. A second route would connect Texas, Panama, Colombia, and Venezuela under a veiled military strategy within a commercial façade. The Rio Conference of Foreign Ministers of 1942 will define the military aid, in order to protect key points along the South American coasts, with the signing of important war agreements with Brazil, Peru and Venezuela under the *Lend & Lease Act* and the support of the Import-Export Bank.²² By 1944 there would be 16 landplanes and 5 seaports in Brazil as well as 8 landplanes in Venezuela, apart from the others built in the southern continent; a communication mapping to be reinforced by the Pan-American Highway in the integration of North and South America.

When MoMA organized the exhibition *Brazil Builds: Architecture New and Old* in 1943 to reinforce alliances, the Santos Dumont seaplane in Rio de Janeiro will be one of the two images in the photomontage for the cover of the exhibition's catalog. [Fig. 5] In the same way, the introduction of Architect P.L. Wiener to Secretary of State Cordell Hull at the beginnings of the *Airport Development Program* in 1940 will be a strategic movement.²³ Within the objectives of war, the appointment set by Wiener's brother-in-law Henry Morgenthau – then Secretary of Treasury during the Roosevelt administration – suggesting Wiener's services as advisor on architectural plans in Latin America,²⁴ will result in his association with Sert and the network of transnational projects in Brazil, Peru, Colombia, Venezuela and Cuba developed by TPA in twelve years since 1944.

At the bottom of the question will be the mapping of transport connections reinforced by permanent workers settlements to guarantee a steady supply of oil, iron and steel during the war. In such a panorama, the new towns developed by TPA in Latin America will be epicenters for the exploitation of mineral wealth and the development of airplane factories and steel mills to meet the demands of a growing consumer market for modern life. *Cidade dos Motores*, *Chimboté*, *Ciudad Piar* and *Puerto Ordaz* will not be isolated cases, but parts of a global network operation in Latin America involving international architects, planners and avant-garde artists in a time of wild capitalist expansion. Not by chance the cities designed by TPA



[Fig. 6] Final proposal, known as Plan B, for the new town of *Cidade dos Motores* as presented by TPA to the authorities in October 1945.

Fuente: "Plan for Cidade dos Motores", *L'Architecture d'Aujourd'hui*, 1 (Sept, 1947): pp. 98-120.

[Fig. 7] Drawings and models of the Civic Center and the community services for the Motor City.

Fuente: "Plan for Cidade dos Motores", *L'Architecture d'Aujourd'hui* 1 (Sept, 1947): pp. 98-120.

will be aligned to the original tracings of the Pan-American Highway, except for the Orinoco towns in Venezuela which were communicated then only by waterway in the transportation of mineral resources.

Despite their close teamwork, while acting as a member of the *U.S. Office of Production and Research Development* during World War II, Wiener will be devoted to public and diplomatic efforts in the concretion of commissions for TPA.²⁵ Sert, in turn, will be occupied in searching for the adequate measure of scale to restore collective assembly. By seeking this in the permanent and compact forms of architecture, the Catalan planner will try to convince the contemporary North-American architects and developers of the need to counteract the imbalances created by industrialization in the over-extended cities of the U.S.²⁶ However, his Mediterranean vision will find resistance in a Puritan based society historically engaged in nomadic forms of land occupation since the time of colonizers. The town plans of Latin America will be, in this context, the perfect place to test TPA's pedestrian compact-planning model against the Garden City auto-based ideology, as extracted from Wiener & Sert's *patio* manifesto.

Artificial Cities: from compact planning to housing à redent

Among the commissions for new towns, *Cidade dos Motores* will be the first in Latin America. [Fig. 6] Under the development guidelines of the *Estado Novo* by Getúlio Vargas (1937-1945), Brazil will carry out important industrial enterprises after nationalizing the iron and the steel industries.²⁷ General Guédez Muñoz, responsible for the National Motor Factory, will negotiate with TPA the conditions for the design of a worker's city of 24.000 inhabitants, close to the airplane factories and to the industrial area of *Volta Redonda* in the State of Rio de Janeiro, site of the first steel mill in Latin America.²⁸

The design implemented by Wiener & Sert will have a starting point in the early report prepared by the Brazilian architect Attilio Correa Lima.²⁹ Retaining little, except for the location of the stadium, in the final version of the master plan presented by TPA in 1945 the compact-planning philosophy will guide the reduction of land occupation and building infrastructure by carefully measuring and scaling. Greatly influenced by Le Corbusier's urban typologies, the proposed scheme will be modulated by different *patios* and the monumental Civic Center as a body divided in three parts: a sport area, a shopping and a cultural center. [Fig. 7] With pedestrian and motorized routes clearly segregated, the constitution of the cellular tissue of housing à redent

20 The concept of *trans-urban design* is used in this work to emphasize the trans-continental exchanges embodied in TPA's practice in Latin America as testing ground in the translation of modern ideology.

21 Although negotiations began in the early 1940's, it was only in 1941 that the contract with PAA was signed. See in: J.S. Woodbridge, *War Department. Pan American Airport Development Program Consolidated Contract*. In PAA Records, WWII Contract 1941, Collection 341, Series I, Box 15, Folder 17; Stetson, Conn; Byron, Fairchild, *The Framework of Hemispheric Defense* (Washington, Center of Military History United States Army, 1989), pp. 249-259.

22 Ibid: pp. 172-206.

23 According to General Marshall "the immediate conclusion of PAA contract is now more essential to our national defense than any other single matter" in Stetson Conn; Byron Fairchild, *The Framework of Hemispheric Defense* (Washington, Center of Military History United States Army, 1989), pp. 249-259. General George Marshall will be the U.S. Army Chief of Staff during the war and chief military adviser to President Franklin D. Roosevelt. As Secretary of State in postwar his name was given to the Marshall Plan.

24 Based on primary resources from the Paul Lester Wiener Collection, on the specific circumstances of Paul Lester Wiener's presentation to the Secretary of State, this information is found in: Josep Maria Rovira, *José Luis Sert. 1901-1983*. (Milano, Electa, 2000), p. 113.

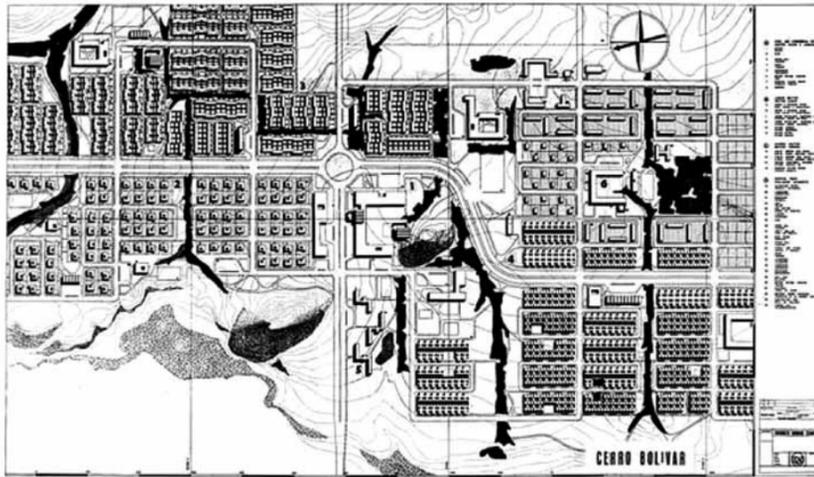
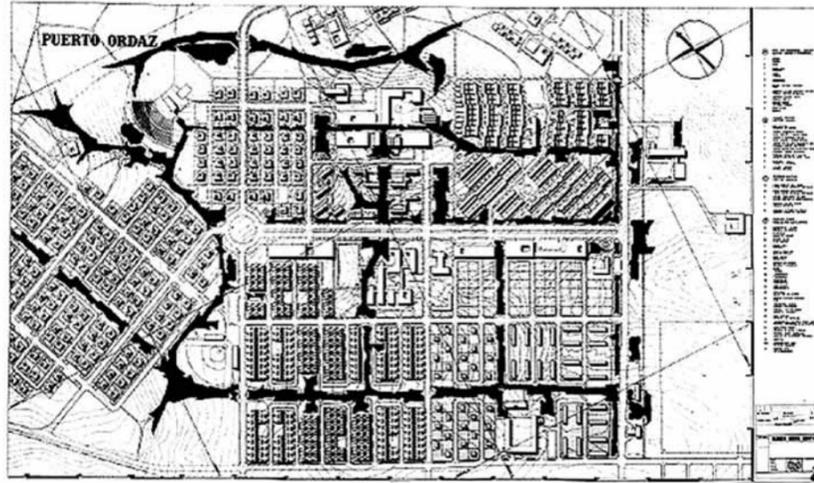
25 As extracted from the correspondence exchanged with Sert, in José Luis Sert Collection, Frances Loeb Library, Harvard School of Design [S 318].

26 See in: José Luis Sert, *The Neighborhood Unit. A Human Measure to City Planning*. Undated manuscript, report prepared for the Housing and Town and Country Planning Section, Department of Social Affairs, United Nations in: Jose Luis Sert Collection, Frances Loeb Library at Harvard GSD [D100].

27 See in: Brazilian Government Trade Bureau, "Motor City Rising Near Rio. Plans Call for Farm and Housing Development of Entire Region" in *Brazilian Bulletin* 3, 70 (New York, Nov 15 1946), pp. 1-3.

28 Francis Violich, *Cities of Latin America. Housing and planning to the South*. (New York, Reinhold Publishing Corporation, 1944), p. 189.

29 The architect Attilio C. Lima, the same to design the Santos Dumont seaplane in Rio (1937-38) at the cover of the MoMA's *Brazil Builds* catalog, will die in an airplane crash a few days after presenting his urban proposal for *Cidade dos Motores* in August 1943. For further information see: Carlos A. Ferreira Martins, "Sert en Brasil. La ciudad de los motores", in *Actas Preliminares: Miradas cruzadas, intercambios entre Latinoamérica y España en la Arquitectura española del siglo XX*. (Pamplona, Escuela Técnica Superior de Arquitectura de la Universidad de Navarra, 2008), pp. 59-68.



[Figs. 8-9] City-plan for Puerto Ordaz by Orinoco Mining Company.

City plan for Cerro Bolívar (also named Ciudad Piar) by Orinoco Mining Company.

Fuente: TPA's Latin American portfolio at José Luis Sert Collection, Courtesy of the Frances Loeb Library, Harvard University Graduate School of Design.

30 The *Guayana* territory occupies almost half of Venezuela's geographic area, and still holds the mystery of the legendary *El Dorado* that inspired XIX Century scientific and imaginary utopias in European writers such as Alexander von Humbolt, Jules Verne and Conan Doyle. Since WWII the region has demonstrated that its true wealth lies in its high grade of industrial mineral deposits.

31 Details on the original settlement of the Orinoco towns by TPA and their relation to the planning of the future city of *Ciudad Guayana* (1961-)—designed to be the greatest industrial pole in the development of southern Venezuela— have been completed upon interviews to architects and planners Anthony H. Penfold and Marta Vallmitjana, both members of the professional team from *Corporación Venezolana de Guayana*— CVG who was to work with the Joint Center for Urban Studies from the Massachusetts Institute of Technology-MIT in the design of the new city. Due to the limited scope of this work, the subject will not be developed here. But additional information in English on *Ciudad Guayana*'s initial studies can be found in: Anthony H. Penfold, "Ciudad Guayana. Planning a New City in Venezuela", *The Town Planning Review*, vol. 36, Nº4 (January 1966): pp. 224-248; Lloyd Rodwin and Associates, *Planning Urban Growth and Regional Development: The Experience of the Guayana Program of Venezuela* (Cambridge, Mass. London, MIT Press and Harvard University, 1969) among others.

will be a timid essay in comparison to the subsequent housing patterns developed in Chimbote, Peru, in 1947. But *Cidade dos Motores* won't be built. The end of the war and the death of President Vargas in 1954 will bring important changes within U.S. politics in Latin America and the developmental agenda of Brazil that will lead to the suspension of the Motor City plans.

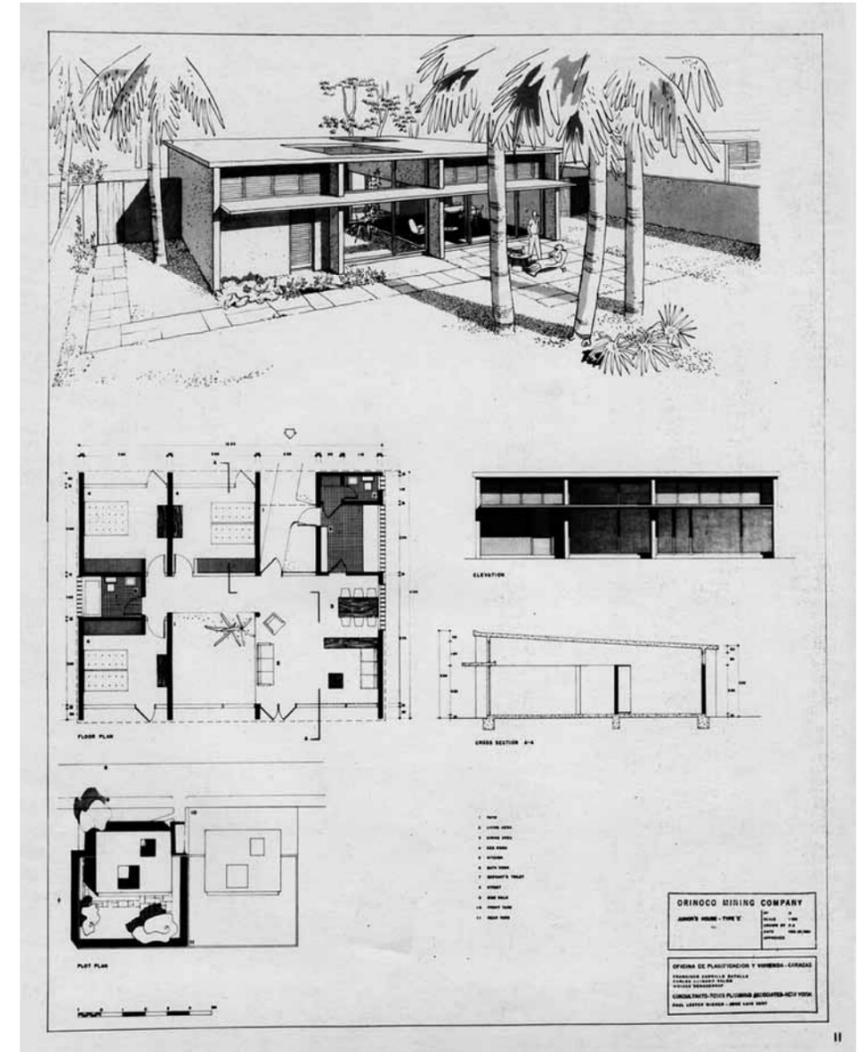
The project for the Orinoco new towns *Ciudad Piar* and *Puerto Ordaz* will be another uncompleted exercise by the urban planners in Latin America.³⁰ TPA will be hired as consultants by the Orinoco Mining Company-OMC, a subsidiary of U.S. Steel, and the Venezuelan Office of Planning and Housing (*Oficina de Planificación y Vivienda*) directed by Francisco Carrillo Batalla, practicing engineer associated to Venezuelan architects Carlos Guinand and Moisés Benacerraf. The project was intended for the planning of two new towns close to the southern shore of the Orinoco River, in the confluence of the Caroni River, following the modern concepts in the creation of urban cores.³¹

The discovery of the world's largest iron ore deposit in *Cerro Bolívar* will be the origin of the two communities planned jointly between transnational U.S. capital and the Venezuelan Military Junta led by Colonel Carlos Delgado Chalbaud.³² Linked by railroad, *Puerto Ordaz* will be designed for 50.000 inhabitants, [Fig. 8] as the principal port for the embarkation of iron ore, while *Ciudad Piar*— also named *Cerro Bolívar*— [Fig. 9] planned for 35.000 inhabitants will be the location of extraction at the foot of *Cerro Bolívar*.

The discovery of the mineral sources in 1947 by OMC geologist Mack Lane will make not only possible the planning of the Venezuelan towns, but also the

[Fig. 10] Standardized housing models built by Orinoco Mining Company in Puerto Ordaz.

Fuente: TPA's Latin American Portfolio at José Luis Sert Collection, Courtesy of the Frances Loeb Library, Harvard University Graduate School of Design.



[Fig. 11] Drawing of the Junior House Model for the Orinoco Mining Company workers.

Fuente: TPA's Latin American Portfolio at José Luis Sert Collection, Courtesy of the Frances Loeb Library, Harvard University Graduate School of Design.

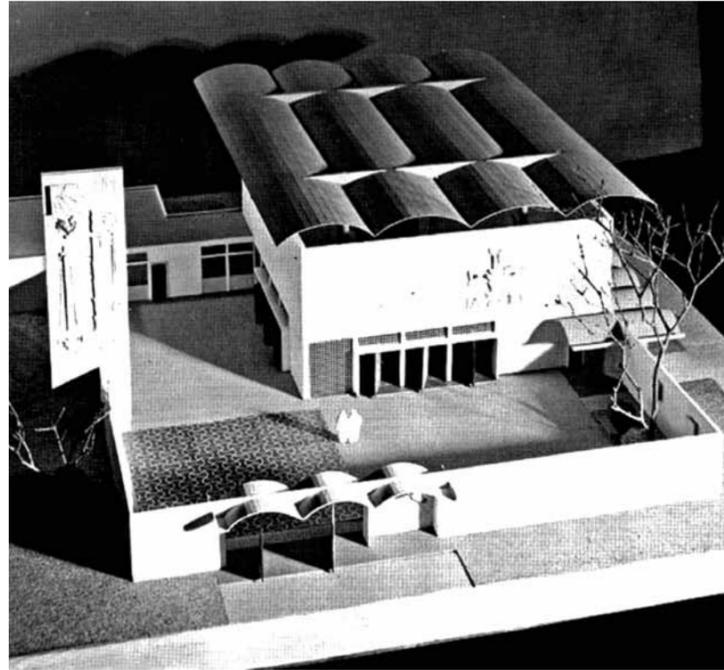
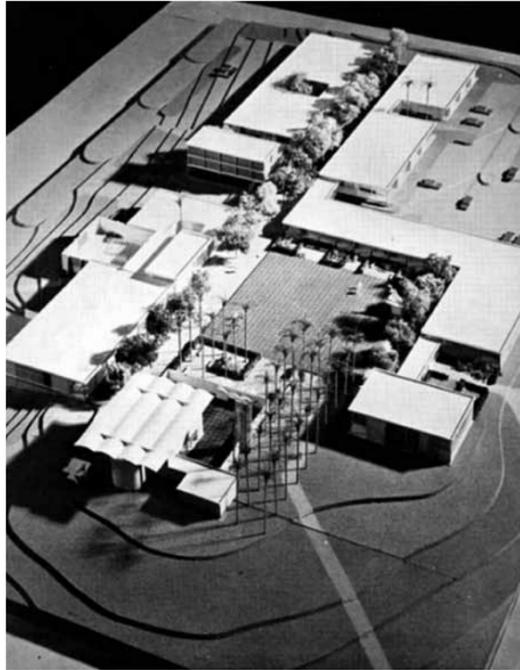
32 In: José Luis Sert; Paul Lester Wiener, *The Work of TPA Associates in Latin America. Introductory notes*, Copy of manuscript prepared by TPA for Architecture Design, (March 16, 1957), Jose Luis Sert Collection, Graduate School of Design, Harvard University, [S318]: pp. 15-18.

33 See in: Benjamin Fairless, "The Most Dramatic Years in the Story of Steel. Part II", *Life Magazine* (22 Oct 1956): pp. 163-176.

34 Ibid.

construction of the greatest modern steel mill in the East Coast of the U.S.: the *Fairless Work*.³³ For the transportation of the iron ore to the plant at Pennsylvania in Delaware Bay, the Orinoco River had to be dredged for the shipping of the raw material.³⁴ Paradoxically, while Sert & Wiener were testing their experiment of compact-planning at the Orinoco, the same mineral wealth of the Cerro Bolívar will be the one to stimulate suburban development of the second Levittown in the U.S. east coast of Philadelphia in order to provide housing to workers of *Fairless Work* and WWII veterans.

The planning conditions and the architectural strategies for the Orinoco towns will be different from that of *Cidade dos Motores*. Developed in close partnership with



[Figs. 12-13] Model for the Civic Center of Puerto Ordaz designed by José Luis Sert.

Fuente: José Luis Sert, "A Church for Puerto Ordaz", *Liturgical Arts* 21, 4 (Aug. 1953): pp. 112-18.

Venezuelan and U.S. technicians, in both cases the master plans will be divided in several phases and sectors to control expansion. The individual houses will constitute the principal cellular tissue of housing *à redent*, in closer affinity with the Garden City model, following the tradition of U.S. mining camps in its spatial and social segregation. The idealized models designed for the senior and the junior worker houses show a huge contrast with the few construction results and the local conditions in its utopian projections. [Figs. 10-11]

Articulated to a Civic Center as an urban hinge, the most interesting example of design will be the one developed for the un-built church of Puerto Ordaz. Going from the *patio*-unit as human measure, to the civic core in its communality and monumentality, all of Sert's personal and intellectual concerns will be summarized in this architectural essay. [Figs. 12-13]

Among the reasons to suspend the plans for the Orinoco Towns will be the political changes in the Public Work Ministry (*Ministerio de Obras Públicas*) with the consequent closure of the Office of Planning and Housing (*Oficina de Planificación y Vivienda*) under the dictatorship of Colonel Marcos Pérez Jiménez in 1953. Also the professional conflicts between the foreign consultants and the Venezuelan partners – caused by TPA disregarding the terms of the contract in the proper diffusion and designation of authorships – will explain its interruption. Despite their intention to organize the city as a living body, or their aim to attach to the local conditions and traditions, their vision for the new towns in Brazil and Venezuela will remain that of the abstraction of the *Artificial Cities*.³⁵ Those defined by Christopher Alexander as formally structured cities with previously planned growth and the management of temporal and spatial developments marked by a unitary character exemplified by Chandigarh and the Levittown.

Final traces

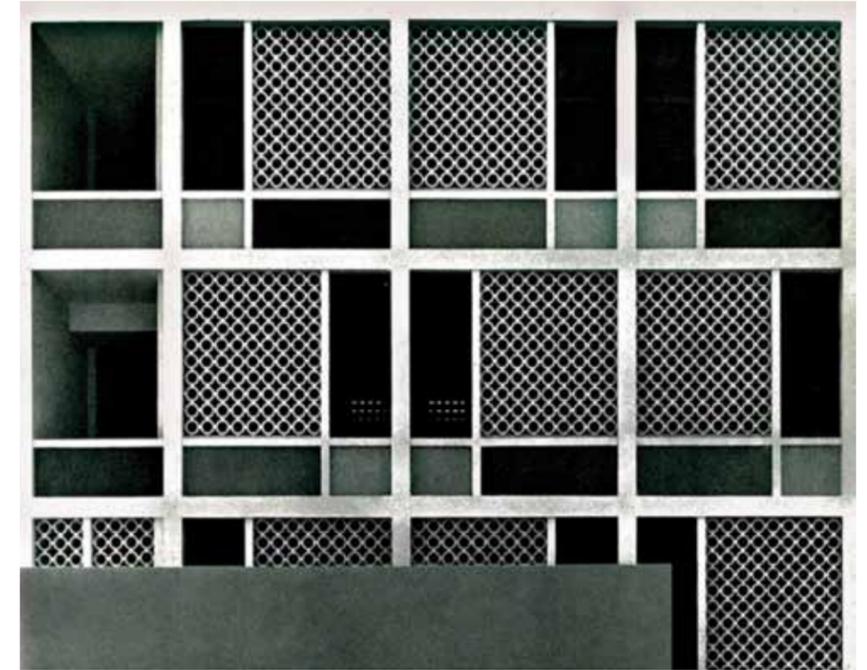
What remain today of TPA's exercise in Brazil and Venezuela? Perhaps the best evidence is to be found in the composition with modular devices for the control of tropical conditions designed for the housing of the *Pomona* neighborhood unit in Maracaibo (1951-53). Hired by Venezuelan housing office *Banco Obrero*, *Pomona* will be one of the few built examples by the consultants in Latin America.³⁶ [Fig. 14]

35 Originally published as: Christopher Alexander, "A City is not a Tree", *Architectural Forum*, Vol. 122, No 1, (April 1965): pp. 58-62 (Part I); Vol. 122, No 2 (May 1965): pp. 58-62 (Part II). As a critical response to the concept of the city being a tree proposed by Aldo van Eyck, Christopher Alexander will say: "The tree of my title is not a green tree with leaves. It is the name of an abstract structure. I shall contrast it with another, more complex abstract structure called a semi-lattice. The city is a semi-lattice, but it is not a tree".

36 After a subsequent visit, Wiener writes on a travel diary that *Pomona* will be one of the most satisfying performances of all TPA's urban projects. In: *Wiener's Travel Diary* at Paul Lester Wiener Collection, Special Collections, University of Oregon.

[Fig. 14] Example of the façade patterns developed for the housing of Pomona in Maracaibo, Venezuela.

Fuente: TPA's Latin American Portfolio at José Luis Sert Collection, Courtesy of the Frances Loeb Library, Harvard University Graduate School of Design [B80b].



In the membrane tissues designed with precast concrete screens, the architects will summarize the local *Cobogó*³⁷ characteristic of Brazilian modern architecture in the translation of the tiling patterns of the Islamic architectural tradition.³⁸ As a reproducible building component, more than the *patio*-house, the typological block seem to be the "minimum cellular unit," the modular "hollow space" to pollinate TPA's practice since *Cidade dos Motores*. Through the reinterpretation made of the modular devices in *Pomona* we track an important trajectory of aesthetic and technical exchanges conveyed by the work of TPA that will have a great influence in the subsequent development of Venezuelan architecture.

But the new towns of Brazil and Venezuela will end up being no more than what Wiener & Sert announced to their American fellows in the battle for the new architecture within the technologies of war: perfect laboratories to rehearse their social and urban utopias. However, deeply rooted to local and regional conditions, the block of solids and voids stands as the best expression of the universal legacy of Latin American ethos to cross-fertilize modern architecture in the traces of place.

BIBLIOGRAPHY

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AGUILERA ROJAS, Javier. 1994. *Fundación de ciudades hispanoamericanas*. Madrid: Mapfre

ALEXANDER, Christopher. 1956. "A City is not a Tree", *Architectural Forum*, Vol. 122, N° 1 (April): pp. 58-62 (Part I); Vol. 122, No 2, (May): pp. 58-62 (Part II).

BACON, Mardges. 2008. Josep Lluís Sert's Evolving Concept of Urban Core. Between Corbusian Form and Mumfordian Social Practice. In *José Luis Sert. The Architect of Urban Design, 1958-1969*, eds. Eric Mumford; H. Sarkis; N. Turam, 76-115. Cambridge: Yale University Press.

37 *Cobogó* is the name given to the industrial precast concrete screens invented in the late 1920's by three Brazilian engineers from the city of Recife. The term derives from the initials of their last names: Coimbra-Boeckmann-Góis.

38 The suggestion of the influence of the Brazilian *Cobogó* in the work of Sert in Latin America is proposed by Carlos A. Ferreira Martins in his article "Sert en Brasil. La ciudad de los motores", in *Actas Preliminares: Miradas cruzadas, intercambios entre Latinoamérica y España en la Arquitectura española del siglo XX*. (Pamplona, Escuela Técnica Superior de Arquitectura de la Universidad de Navarra, 2008): p. 66.

CAROLA BARRIOS

Can Patios Make Cities?

Urban Traces of TPA in Brazil and Venezuela

BASTLUND, Knud. 1967. *José Luis Sert. Architecture, City Planning, Urban Design*. Zurich, Les Editions D'Architecture

Brazilian Government Trade Bureau. "Motor City Rising Near Rio. Plans Call for Farm and Housing Development of Entire Region", *Brazilian Bulletin* 3, 70 (New York, Nov. 1946), pp. 1-3

FAIRLESS, Benjamin. 1956. "The Most Dramatic Years in the Story of Steel. Part II", *Life Magazine* (22 October), pp. 163-176

FERREIRA MARTINS, Carlos A. 2008. Sert en Brasil. La ciudad de los motores. In *Actas Preliminares: Miradas cruzadas, intercambios entre Latinoamérica y España en la Arquitectura española del siglo XX*, pp. 59-68. Pamplona: Escuela Técnica Superior de Arquitectura de la Universidad de Navarra

FULLER, Buckminster. 1965. *Utopia and Oblivion*. Copy of original manuscript of the lecture given at Somerset, England, (June 7). In José Luis Collection, Frances Loeb Library, Harvard School of Design [File D121]

GOODWIN, Philip L. 1943. *Brazil Builds. Architecture new and old 1652-1942*. New York, Museum of Modern Art

HUXTABLE, Ada Louise. 1947. "Two Cities: Planning in North and South America", *Bulletin of the Museum of Modern Art*, vol. XIV, n. 3 (New York, June)

MUMFORD, Eric. 1997. CIAM and Latin America. In *Sert, arquitecto en Nueva York*, eds. Xavier Costa; Guido Hartray, pp. 48-75. Barcelona, Actar

_____. 2000. *The CIAM Discourse on Urbanism 1928-1960*. Cambridge, MIT Press

MUMFORD, Eric; SARKIS, Hashim; TURAM, Neyran. 2008. *Josep Lluís Sert. The Architect of Urban Design, 1958-1969*. Cambridge, Yale University Press

PENFOLD, Anthony H. 1966. "Ciudad Guayana. Planning a New City in Venezuela", *The Town Planning Review*, vol. 36, N°4 (January), pp. 224-248

"Princeton Conference Digests of Informal Discussions on Planning Man's Physical Environment", *Architectural Forum* (April 1947), pp. 12-13, 97-100, 132

RODWIN, Lloyd and Associates. 1969. *Planning Urban Growth and Regional Development: The Experience of the Guayana Program of Venezuela*. Cambridge, Mass. London, MIT Press and Harvard University

ROJAS-MIX, Miguel. 1978. *La plaza mayor. Urbanismo como instrumento de dominio colonial*. Barcelona, Muchnik

ROVIRA, Josep Maria. 2000. *José Luis Sert. 1901-1983*. Milano, Electa

SERT, José Luis. *The Neighborhood Unit. A Human Measure to City Planning*. Undated manuscript, report prepared for the Housing and Town and Country Planning Section, Department of Social Affairs, United Nations. In Jose Luis Sert Collection, Frances Loeb Library, Graduate School of Design, Harvard University, [D100]

_____. 1942. *Can Our Cities Survive? An ABC of Urban Problems, their Analysis, their Solutions*. Cambridge, Harvard University Press

_____. 1944. The Human Scale on City Planning. In *New Architecture and City Planning*, ed. Paul Zucker, pp. 392-412. New York, Philosophical Library

_____. 1953. "A Church for Puerto Ordaz", *Liturgical Arts* 21, 4 (Aug.), pp. 112-118

_____. 1967. The Rebirth of the Patio. In *José Luis Sert. Architecture, City Planning, Urban Design*, by Knud Bastlund, pp. 134-139. Zurich, Les Editions D'Architecture

SERT, José Luis; WIENER, Paul Lester. 1957. *The Work of TPA Associates in Latin America*. Introductory notes. Copy of manuscript prepared by TPA for Architecture Design, (March 16). In José Luis Sert Collection, Graduate School of Design, Harvard University, [S318]

STETSON, Conn; BYRON, Fairchild. 1989. *The Framework of Hemispheric Defense*, pp. 249-59. Washington, Center of Military History United States Army

VIOLICH, Francis. 1944. *Cities of Latin America. Housing and planning to the South*. New York, Reinhold Publishing Corporation

WIENER, Paul Lester; SERT, José Luis. 1946. "Brazil Builds a New City: Cidade dos Motores", *Progressive Architecture*, vol. 27, n. 9 (Sept.), pp. 52-75

_____. 1947. "Plan for Cidade dos Motores", *L'Architecture d'Aujourd'hui* 1 (Sept.), pp. 98-120

_____. 1953. "Can Patios Make Cities?", *Architectural Forum* 99, n. 2, (August), pp. 124-131

_____. 1953. "Five Civic Centers in South America", *Architectural Record* 114 (Aug.), pp. 121-36

_____. 1957. "The Work of TPA in Latin America 1945-1956", *Architectural Design*, 27, 6 (June), pp. 190-213

WOODBIDGE, J.S. *War Department. Pan American Airport Development Program Consolidated Contract*. In PAA Records, WWII Contract 1941, Collection 341, Series I, Box 15, Folder 17