

# Post-Vernacular “Geography” Network: A Tool to Build and Rebuild Sustainable Cities in Latin America

*In the last three decades of the twentieth century, Latin America has experienced a rapid increase in urban population; the formation of informal settlements becoming common. The nature of human settlements needs to be rethinking.*

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## **BEFORE STARTING**

According to the Oxford English Dictionary, the word “geography” derives from the Latin *geographia* that means geographical treatise, and it has a Greek etymology that means <<science of describing the earth’s surface>>.<sup>1</sup> Our actions and thoughts, along with the built geography, natural geography and the relations between all of them, shaped the spatiality of human life, and the humanity is shaped by space, geographies ranging from rooms to the whole earth.

Talking about geography it is talking about city space, architecture and urbanism; architecture is a geographical element in the urban context; architecture could be conceived by professional or by vernacular actors; the informal urbanization is the vernacular geography, the changeable geography of the everyday life.

The term vernacular architecture is the oldest name that has been used to identify the “other” architecture. The word “vernacular” derives from the Latin *vernāculus* that means domestic, native, and indigenous; it is defined as the language or dialect spoken by the ordinary people of a country or region.<sup>2</sup> Since the etymological perspective, for something to be considered vernacular must be native to a specific place, produced with its own components and processes, and it is usually built by inhabitants; the limitations of this approach are obviously seen.

During the Modern Movement, the studies of vernacular architecture became relevant and a new perspective emerged that allowed the



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recognition of the existence of traditional environments. The formal analyses of vernacular began with “Native Genius in Anonymous Architecture” written by Sibyl Moholy-Nagy in 1957. After this study other researches appeared, and from there, only in the work of Amos Rapoport and Paul Oliver, it was considered, as a hypothesis the existence of urban vernacular geography. Rapoport subdivided vernacular architecture in pre-industrial vernacular and modern or post-industrial vernacular,<sup>3</sup> while Oliver was remarking the existence of a “contemporary” vernacular architecture.<sup>4</sup>

Nezar AlSayyad draws attention to the fact that in the twenty-first century, culture and tradition (concepts connected with vernacular geography) becoming more in information-based and less place-rooted, so the characteristics that define vernacular built environment should be rethinking. AlSayyad explains that tradition should be more useful if it is considered a platform where the subjectivities involved in the production and / or occupation of space can be explored.<sup>5</sup>

On the other hand, Dell Upton remarks that the researches on traditional architecture must be focused <<...in the active, evanescent, and the impure, seeking settings that are ambiguous, multiple often contested and examining points of contact and transformation in the market, at the edge, in the new and decaying>>.<sup>6</sup> The tradition is still operating, the tangible products of the tradition are the processes by which identities are defined and redefined constantly.

In the cities of Latin America, vernacular geography is produced and reproduced daily, but is overlooked by the majority of scholars still locked in the myth of vernacular purity, and in the discussion planned versus unplanned (Figure 1). The epistemological knowledge of vernacular built environment should be changed. We need to open the dialogue radically and permanently, in order to find new proposals for analysis and urban-architectural

**Figure 2:** Vernacular geography, the new proto-cities of the XXI Century. Photo by Eduardo Alarcón.

(Endnotes)

1 Augé, M., *Futuro*, Adriana Hidalgo Editora, Buenos Aires, 2012.

**Figure 1:** Examples of urban vernacular geography (Barrios Populares and Villas Miseria in Mexico and Argentina).

interventions, proposals as tools that allow us to improve the quality of life in cities, and to consider the idea of sustainable world as part of our future.

Thinking about the future, and following Marc Augé's<sup>7</sup> ideas, this paper is divided in three sub-themes, they constitute ongoing hypothesis, thus their content is an advance, a rough scheme that announces their process of validity; this process represents an open-ended space where we can learn to change the world before we imagine it. The first sub-theme, *Vernacular Geography: The Contemporary Proto-cities*, it is based in two main ideas: the validation of the urban vernacular built environment, and the consideration of the informal settlements as the new proto-cities of the current century. In the question *Spatial justice and sustainability in Latin American proto-cities, couldn't they be?* It is looked for the encounter of these elements to establish a broader scope that allows us to work in the construction of the future cities. Finally, in the third sub-theme, *Post-vernacular Network*, it is proposed new tools for the comprehension of the urban informality, as spatial networks, protocols of communication, and flexible remap models.

### **VERNACULAR GEOGRAPHY: THE CONTEMPORARY PROTO-CITIES**

For thousands of years, cities have been considered the places where civilizations are being developed. Edward Soja, via Jane Jacobs, places the proto-cities in the first step of the social organization. Jacobs's hypothesis is based that it was the fact of interdependence and creativity economies of the first cities, which made possible new job opportunities, including agriculture. The separation that was made between urban commerce and industry from rural agriculture is being imaginary; they both come from the same source: the manufacture of clothing or food crops (rural work) is nothing but urban work transplanted.<sup>8</sup> Building on these ideas, we can say that rural vernacular geography is an urban cultural practice transplanted.

First of all, human beings are social beings; human societies live in groups. From the beginning, these groups showed a sharp gender division of roles and tasks, the social organization was manifested into city-space. The men-hunters used to work to maintain and defend the territory, the women use to gather food and take care of the needs of everyday life in the temporary home camps; the shelters (tents or huts) were placed following a circle shape, as a settlement.

Approximately 40,000 years ago, hunters and collectors around the world began the process to become sedentary. Temporary characteristics of home camps and shelters were changed to another kind of materials and building techniques to allow them to last longer. Recent research has shown that the camps of hunters and gatherers were developing a complex structure: moreover to the base camp, there were also other smaller mobile camps, hunting stations, caves used as a temporary shelters, and workshops to make tools.<sup>9</sup>

The sedentary processes were vital to the consolidation of the agrarian society, the villages grew to significantly size; the settlements were organized using a rectangle as a new shape; the rectangle was defined by a mud wall, the houses were built with mortar; the social order was based on groups that shared family or ethnic ties. At this point we can talk of proto-urbanization; the urban division of labor, large-scale irrigation, and writing, all of these characteristics of "civilization" are still in its first stage.

Other events will be related to the origin of cities, as the emergence of new economic opportunities derived from long-distance commerce; the development of monarchical institutions and the growth of bureaucracy; control technology; the easy way to get food production (food surplus); the expansion of religious beliefs and ceremonial activities; the large-scale creation of communities with a same faith; the need for defense against foreign invasion and nature inclemency; lastly, the pressure of demographic explosion and the environmental degradation as its consequence.

To the list of influences mentioned above, some researchers add the stimulus of the urban agglomeration (*synekism*), which occurs in all human settlements; most conservative scholars believe that the result of this agglomeration was the virtual creation of the city and the state, while the critical sector of researches defines *synekism* as a fundamental force that was present throughout the sequence of human societal development, outlined in the proto-cities and continuing in the present time.<sup>10</sup>

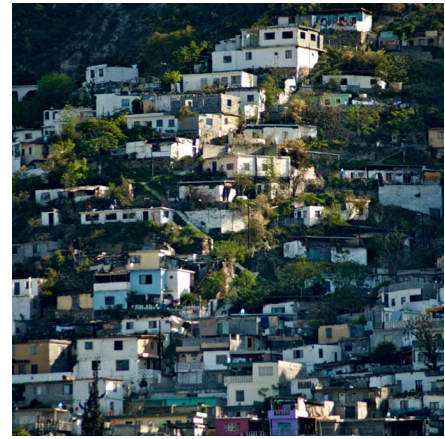
Considering the force generated from the stimulation of the urban agglomeration as a key piece for the comprehension of the urban phenomenon, we can change the conventional sequence of the social organization and place the city before the Agricultural Revolution, causing not only the development agriculture itself, but also the emergence of farming villages, rural life, shepherds and farmers, the writing, class formation, and the state.

Based on this hypothesis, we can continue the human societal development process: urban-urban/rural-urban again-, then the peripheral fabric of Latin American cities made up of *favelas*, *barrios populares* and *villas miseria*, all of them with their own *synekism*, could be considered the new proto-cities of the twenty- first century (Figure 2); the comprehension of the physical materiality and the intangibility of this proto-urbanization, will be the starting point for the construction of the future cities.

In the past, the concept of city was directly related to modernity, the city represented the basic element of early modern society, and it meant openness, freedom and change. The transformation of the concept began with the Industrial Revolution, the mixture of social classes was replaced by a process of segregation and exclusion. In 1960 a new urban crisis, in almost every city in the world, has occurred, pointing the end of the economic "boom" of the industrial countries. The urban crisis has exposed weaknesses and deficiencies of the architectural theories and urban practices used till this time.

Since the latest twentieth century, spatiality studies point out some global transformations that force us to rethink both the nature of human settlements and the proposals from urban planning professionals. The first transformation is the conversion of territory in urban area; the second transformation is the rapid growth of informal urban development (economy, employment, housing, lifestyle); and the third one is the emergence of cities with more than 10 million dwellers, also called megacities.<sup>11</sup>

Manuel Castells considers the megacity as the new urban form it is characterized by traits of hypermodernity, but also by a sharp inequality (formal planned areas vs. vernacular geography); the megacity is connected to the outside through global networks and locally disconnected; the power



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Figure 2. Vernacular geography, the new proto-cities of the XXI Century



acquires new geographies; the coordinate reference system has completely changed.<sup>12</sup>

### **SPATIAL JUSTICE AND SUSTAINABILITY IN LATIN AMERICAN PROTO-CITIES, COULDN'T THEY BE?**

During the last thirty years of the twentieth century, Latin America experienced a rapid increase in urban population; the needs of new inhabitants exceeded the capacity of governments, and the formation of informal settlements becoming common. Since the beginning of this situation, governments and professional architects of Latin American countries, tried to solve it by replacing *barrios populares*, *favelas* and *villas miseria*, with largely self-contained apartment blocks and industrial serial production housing (dwelling machine), these ideas were derived from models tested in industrialized countries; the proposal of the professionals followed the principles established by Modern Architecture related with prioritizing functional aspects as a strategy that allows the incorporation of informal inhabitants into the “formal planned” city. Like examples we can mention: the architecture of *Nonoalco-Tlatelolco* (superblocks), and the proposals from INFONAVIT (social housing) in Mexico; the program of eradication of *villas miseria* in Argentina, they remove the population to multi-family buildings. In both cases, through the time, the professional solutions became “vernacularized”.<sup>13</sup>

With the demand increasing for housing and the continuing build of informal settlements, two more options were tasted, on one hand, we have the construction (stage-built process) of detached houses based on “spontaneous” models (self-construction); and on the second hand, we have the same building processes but guided by administrative authorities, the two proposals were intertwined and spread through the work of John F.C Turner, who proposed an open and decentralized system in which inhabitants could choose between various options; for Turner, the high participation of dwellers in the decision-making and/or in the built process of their own housing, was the key piece to reach social and individual welfare.<sup>14</sup>

Other methods of participative design that have been used in the production of Latin American housing are: *Supports: Housing and City* by John Habraken;<sup>15</sup> *Pattern Language* by Christopher Alexander<sup>16</sup> and *El Método* by Rodolfo Livingston.<sup>17</sup> In brief, these methods were based in the participation of the inhabitants, and besides they propose: the industrial production in the components of the dwellings; free adjustments to organize the areas in the architectural scheme; the use of dynamic and common language; individual solutions instead of the massive projects, among others.

The social production of habitat and housing is a term promote by Habitat International Coalition. *América Latina* (HIC-AL), with the objective to create processes which are characterized to rescue the positive aspects of informal settlements; and use them in the production of city space. This proposal means in collective organization, not individual one.<sup>18</sup> The main point of collaborative design proposals is taking the roll in different levels: planning, programming and budget, and in the urban-architectural design, as well as in the operative activities.

The proposals of intervention for the squatter settlements have been based in a binary opposition strategy, on one hand, the professionals trying to

obtain total control of the urban-architectural processes, and the control of everyday life. In contrast to social housing production (participatory process) that proposes the improvement of the settlements by the dwellers; in these cases, the roll of the professionals is only technical assessors.

The efforts have been many, but much more are needed. By 2001, 32 percent of the population lived in squatter settlements. The global urbanization forecasts estimate that by 2030 Latin America will be 80 percent urban.<sup>19</sup> According to the 2012 Report, developed by United Nations Human Settlements Program (ONU-Habitat) and Economic Commission for Latin American and the Caribbean (ECALC) among others, Latin American cities are the most inequitable cities in the world; this inequality is expressed in the vernacular geography. Nowadays, 111 million people live in squatter settlements.<sup>20</sup> (Figure 3) Through the circumstances, the most viable models for the vernacular geography intervention and design are the ones that consider the participation of the inhabitants; however, it is necessary that, that participation it is based in the mutual learning between professionals and empirical architects, as well as a critical review of these processes.

According to Edward Soja, the complete justice is unachievable; the author explains that justice and injustice are infused into the urban geographies of all scales: from the intimacies of the house to the global world. The built geography has spatially environmental injustices, which are affected by the climate change and global warming. The recognition of the oppressive geographies could create spaces of resistance; Soja argues that from its remapping, it will be possible a critical spatial consciousness and from there to work for hope alternatives to change unfair geographies.<sup>21</sup>

The concept of sustainability is directly related with the idea of spatial justice. The sustainable development refers to satisfy the basic necessities and the opportunity to satisfy and to reach a better quality of life for all human beings. According with the World Commission on Environment and Development (WCED) Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.<sup>22</sup> The sustainability is related with ecological aspects as well as social aspects.

On ecological aspects, economic growth and development (exploitation of resources, direction of investments, orientation of technological development; and institutional change) are involved in the changes of the ecosystem; any ecosystem cannot be preserved intact; although, from a sustainable perspective, the effects must be considered. The idea of common interest is a fundamental part of social sustainability; the common interest as a value works in the society through education, institutional development, law enforcement, and effective participation in decision-making processes by local communities.

### **POST- VERNACULAR NETWORK**

According to Castells, the postmodern society is a network society, characterized by the existence of the space of places and the space of flows, the timeless time and the hope of the glacial time, the electronic home, and the culture of the virtual reality.

The idea of architecture is not static but changeable, and it has an intrinsic relationship with its surrounding environment, therefore, a better way of



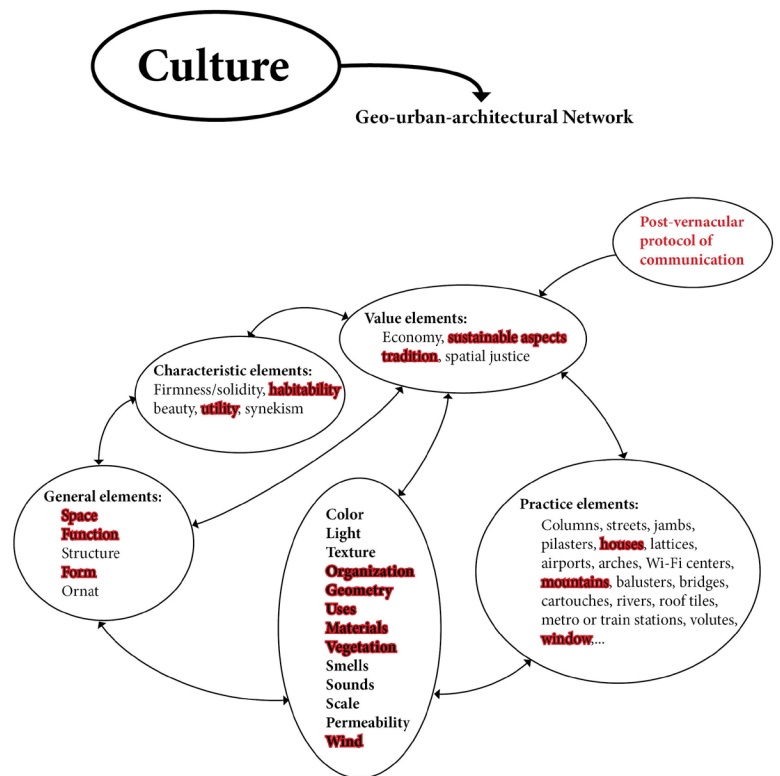
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Espacio/Momento A y más... (lo percibido o real)	Espacio/Momento A (lo percibido o real)	Espacio/Momento B (lo concebido o imaginario)
<p>Sierra Ventana es la ciudad en el cerro, organizada, escalada (calles) conectan con "puente", el mar en Monterrey, los edificios son duros y altos, casi arrancados, construidos en la piedra. El material es concreto más de lo que aparece, el puente de concreto, estas cosas se documentan en la planta de momentos y de tal, en la conexión con dos unidades principales de la ciudad "Sur" y el "Norte" donde se conectan los cerros y las bocaneras con medianas elevadas. La casa de Lily Baele a espaldas, a lomos recibe cerros y a cada instantes, siempre contra el lugar de la casa, escuchando y riendo con todos, dando vueltas en la cocina, los ventanales expresan como hijas, ahora son de "material" antes quedaban las construcciones, hoy las casas siempre lo urbano existió desde que los pines eran de tierra y los techos de limón, antes de la televisión por cable y el internet, antes de la perforación y los servicios públicos, los urbanismos sencillos, hicieron pública, se organizan y gestionan. Ya no es la misma ciudad de antes, ahora cada quien hace sus cosas y paga sus recibos, pero los quedados, las cosas colectivas, siempre habrán de ser una "unidad". La ciudad está en el cerro en las casas, en los parques, en los cerros, y en sus habitantes, Sierra Ventana es adentro y afuera.</p>	<p>Más de (Punto de la colonia) largo (dimensiones verticales) Estructuras horizontales de acero 1.50 m x 1.50 m x 2.00 m (tipicas) o triangulares como forma general) colores blancos y azules, amarillos, rojos, naranja, verde, etc.</p> <p>Punto de Lateral (elemento de referencia) 4.20 m x 5.30 m en con especial para 15 personas sentadas, todo de lava solar, estructura metálica.</p> <p>Banda Divisoria (separación entre Sierra Ventana y la colonia Miralobos) 2.00 m de alto, fachas claudicantes, gráficas.</p> <p>Punto Espacio Público 2000 m<sup>2</sup> con árboles pequeños, plantas, juegos infantiles, andadores, bancas de concreto.</p> <p>Accesibilidad limitada: banda perimetral de malla ciclónica para control de entrada.</p>	<p>Uso: Actividades (siguen) unidades hijas públicas, se organizan y gestionan</p> <p>Estrategia Conectar</p> <p>Función Estrategia Organización</p> <p>Color: abundan los colores azules en todos del momento u otro más, parece todo</p> <p>Sonido: cuando (...) el ruido del viento realimenta oficial, la conciencia hacia otros, incluida hacia casa y ciudades</p> <p>Forma: cuando, donde (...) para el mundo.</p> <p>Los objetos se mueven lo mismo se percibe el color a caballo en acción, que el del tiempo, de la historia, de limón recién cortado...</p> <p>Interacción en el "teje" de tierra ventana</p> <p>Permeabilidad (... soy una raja en el mar...)</p>

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understand this, it is considered as a process, a node in a geo-urban-architectural network. Thus, the network is programmed by another open-ended network: the culture. Built geography could be conceived by professional or by vernacular actors, and it should be conceived by both of them; it is needed to find new tools for analysis and urban-architectural interventions.

Networks constitute the fundamental pattern of all kinds of life, and they have a critical role in social organization; they are constructed by sets of interconnected nodes, they have multi-centers; the importance of a node



space + function + utility + habitability + geometry + form + organization + tradition + uses + materials + houses + wind + sustainability + windows + vegetations + mountains...

Figure 3: Barrio Popular "Sierra Ventana" located in Monterrey, Mexico; photo by Sergio Salazar (post-graduate student).

Figure 4: Examples of the steps V and VI of the new remap model; academic exercise by post-graduate students.

Figure 5: Examples of connections applying the post-vernacular protocol.

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depends of the relevant information that each node contains and the relations between all of them. The channels of connection between nodes are called flows. Networks are defined by programs which assign their goals, codes and rules of performance. All nodes of a network are necessary for the network's performance they are available to transform themselves in order to survive. The network is the unit, not the node; it is a complex structure of communication. Networks of communication can cooperate with each other; it depends on the inter-operability between them and the existence of codes of translation (Protocols of communication).<sup>23</sup>

The built environment is a cultural phenomenon. The geo-urban architectural network is a communication network and it is constituted by five nodes, these nodes have an initial, but not final, list of elements, and here are some examples: general elements: space, function, form, ornament, structure...; particular elements: color, light, texture, organization, uses, materials, harmony, sounds, hierarchy, smells, dimensions, scale, permeability...; practice elements: columns, streets, jambs, pilasters, houses, lattices, airports, arches, Wi-Fi centers, mountains, balusters, bridges, cartouches, rivers, roof tiles, metro or train stations, volutes, windows...; characteristic elements: firmness/solidity, habitability, beauty (as a polysemous concept), utility, synekism...; value elements: economy, sustainable aspects (ecological/social), tradition, spatial justice...<sup>24</sup> The architectural style is a different network, it is the consequence of the arrangement between elements in the architectural artifact as well as in the city-space.

In the metropolis of developing world vernacular geography is produced and reproduced daily. Nowadays, Latin American cities (no matter their climate conditions) are facing serious problems related with the growing demands of their population, such as food, housing, transportation, drinking water, waste treatment; in addition to the alarming environmental degradation and its consequences. The nature of human settlements and the proposals from professionals need to be rethinking.

The addition of the prefix "post" to the vernacular term represents a deconstruction and reconstitution of its original referent, a different kind of vernacular engagement, which allows us combining rural and urban traditions as lessons, experimenting a different approach to the urban vernacular geography. At this point, the post-vernacular geography network is a project in process a set of ongoing hypothesis. To build the network different tools are used: the application of a new remap model, and a post-vernacular protocol; the first one helps to improve the measuring systems to the quantitative and qualitative deficit of settlements, as well as adding or not, new elements to the network; the post-vernacular protocol is constructed by set of codes which will establish the connections between elements and therefore the first approximations to the post-vernacular geography network.<sup>25</sup>

The approaching works to the post-vernacular network have been made both in subtropical cities (Buenos Aires,<sup>26</sup> Argentina) and semi-arid cities (Monterrey,<sup>27</sup> Mexico). The new remap model considers the urban architectural materiality/immateriality, the simultaneous experiences, and virtual reality. From the hypothesis that each neighborhood is a city and all cities are constituted by a superposition of simultaneity, the remapping proposal consists of the following steps: I. Graphic maps or "windows" to the

## ENDNOTES

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territory [1. Places 2. Practice Elements 3. General/ Particular Elements] II. Introduction to the own city or imagined city III. Road Map<sup>28</sup> (1) IV. Scenes<sup>29</sup> [Ten scenes developed from starting point statements] V. Road Map (2) or Deconstruction Process [from the scenes, which represent the lived space<sup>30</sup> or third space, it is deconstructed general, particular and practice elements, organizing them, according to it belongs, the real or imagined world] VI. Critical Path (Figure 4) VII. Urban-architectural Strategy of intervention.

In 2010, as part of a postdoctoral research project, it is established an initial list of design premises for urban vernacular housing,<sup>31</sup> these premises became the codes that constitute the post-vernacular protocol, in the following are some examples of premises-codes and the relationships between elements that result from them:

Look for the most suitable location to build the house, considering the physical characteristics of the place. Avoid total property construction and promote permeable materials for floor and roof porch, garage and sidewalk, use "green terraces." Ensure the suitable dimensions for each of the areas where major activities are carried out by inhabitants. Include "useful plants": fruit trees and bushes with thorns as protective elements. Increase the inner space. Potentiate multi-purpose areas; avoid petrified walls as division, using mobile divisions. Design multi-purpose pedestrian walking as community public space. (function +space +utility +habitability +light +wind +house +windows +columns +arches +color +ornament +sustainability +uses +materials +structure +vegetation +lattices +form +walls) (Figure 5).

As it is said before, the efforts have been many, but much more are needed; the proposed tools are not only aimed to build a post-vernacular network but to validate the research as a necessary path for the design of contemporary cities. The resources mentioned encourage critical review of concepts such as participatory processes, sustainability, and user-professional relationship, all of them so frequently used in the topic of vernacular geography. Finally the geo-urban architectural network, remapping model for informal urbanization, and the post-vernacular protocol are tools in process, which are put on the table with the purpose of deconstructing and rebuilding them in the discussion with "others".