

Towards a Sustainable Regeneration: The Case Study of the San Mateo Neighborhood, in Jerez de la Frontera (Andalusia)

J.L. Higuera Trujillo, F.J. Montero Fernández

Abstract—Based on different experiences in the historic centers of Spain, we propose an global strategy for the regeneration of the pre-tertiary fabrics and its application to the specific case of San Mateo neighborhood, in Jerez de la Frontera (Andalusia), through a diagnosis that focus particularly on the punishments the last-decade economic situation (building boom and crisis) and shows the tragic transition from economic center to an imminent disappearance with an image similar to the ruins of war, due to the loss of their traditional roles. From it we will learn their historically-tested mechanisms of environment adaptation, which distill the vernacular architecture essence and that we will apply to our strategy of action based on a dotacional-and-free-space rhizome which rediscovers its hidden character. The architectural fact will be crystallized in one of the example-pieces proposed: The Artistic Revitalization Center.

Keywords—Jerez de la Frontera, pre-tertiary fabrics, sustainable architecture, urban regeneration

I. AS A COMMON FRAMEWORK

EVEN shortening the lecture, it would be appropriate to state a common framework to facilitate the understanding and the later discussion.

A. The study inside its framework

The present piece of work is a synthesis of my dissertation, which resulted from an investigation supervised by Professor F.J. Montero and that obtained the highest mark unanimously last September in the Higher Technical School of Architecture of Seville. Reflections born in the “Master of Sustainable Cities and Architectures”, which I am attending in the same school, has been included. Its first aim was to begin from the experiences in Spanish historical centers, to offer an overall strategy of regeneration and apply it to the degraded neighborhood of San Mateo (Saint Matthews), in Jerez de la Frontera (Andalusia). However, the piece of work had to finish with an architectural project, and this part, in the beginning looking incidental, finally took enormous strength using the forgotten environmental strategies from our popular architecture to, under previous simulation, give shape to the proposal. That is why “towards a sustainable regeneration”, because facing the violence in which the paradigm is closed, it remember what the previous generation had forgotten to set the new scenario.

B. A terminological reflection

We will not use “historical center” in this lecture, due to all fragments of the city have a historical load and those are not always in a central position; not even the very clever option from Fernando Gaja i Díaz “pre-industrial zones” [1].

J.L. Higuera Trujillo and F.J. Montero Fernández are with the Higher Technical School of Architecture, University of Seville, Spain. (e-mail: juanluht@gmail.com).

Our actual scene forces us to new considerations: “pre-tertiary zones”, knowing they took their shape before the “transitional period” and without this one introducing important form modifications or “tertiary civilitation” inserted their central functions.

C. Pre-tertiary zones and sustainability

Fight for sustainability, as it cannot be any other way, will be fought in cities; hard battle due to the city has occupied all surface and encouraged the horizontal paths, making it more difficult to reduce the ecological footprint. That is why were are here, because we believe we must learn from what is already built and update it towards sustainability, including all social, environmental, economical and cultural implications. Something that incites us to face the global state from the local perspective, so that we work on the double paradox of a local solution for globality, made from trans-disciplinary means and directly related with Annoni’s “case by case”.

II. AN OVERALL STRATEGY TO REGENERATE PRE-TERTIARY AREAS BASED ON SPANISH EXPERIENCES

This strategy, here only schemed to develop its precise application, is a variation of Gaja i Díaz’s proposal to the interventions in the Valencian Community, altered by the own investigation about Andalusian experiences.

A. Act 0: Status quo

Most problems from these areas start from the lost of their traditional functions as a consequence of their incapability to adapt to the XIX century model, attacking systematically all the components: civitas, urbs y polis [2]. If we chase a true restoration, far from the frightening alignments closer to theme parks than what cities must be, we must meet their three elements, beginning from flesh. A regeneration.

B. Act 1: Urgencies

1. “Believe it and transmit it to the citizenship” [1]. It implies the creation of an office to advise about restoration, working in feedback with neighbourhood associate[ons].
2. Direct support to the population. Many times this is lacking, and they are the ones who kept it alive and standing.

C. Act 2: Stone

1. *Special Plan and Catalogue*. Their previous existance is normal; but, once stated the human condition, it is the time. Speculative complications approach.

D. Act 3: Re-Civitas, re-urbs

1. *Repopulation*. Over the physical conservation the main problem for the survival of many old areas is depopulation,

strategies of various demographic contributions to avoid the appearance of generational or class ghettos. If the situation is an advanced state of degradation, private interventions should be avoided, and social policies promoted; and if the expectation is recovery, then appeal to incentive particulars.

2. *Equipment.* Incorporate daily services of immediate use and collective equipments. In some experiences the city hall acquired properties in exchange for the demolition costs and used them later for this. It is important not to sin of conservationist, because it would condemn to obsolescence and later ruin; but neither of "transformationist" as it would probably trigger the transformation into an urban mall. Morphologically, bulking not using it as a redesignating hypothesis towards public spaces or as a make-up operation after which the metastasis continues, it shows itself as an adequate acting way.

E. Act 4: Function

1. *Promoting specialized trade.* That was one of the pillars where pre-tertiary zone's economy stood and the new sustainable city should bet on the return to regional. Some authors consider its transformation into residential areas of medium-high profile as the only solution (Italy's case), but our global situation states the only balance way in the city is to accept its complexity. The simplification is a model since industrial revolution and will not get us out of here.

2. *Private initiative.* Attracted by favorable circumstances and the typical big amount of empty premises, it is important that planning played well its role: avoiding incompatible vices with housing (full urban occupation, new admissible heights and leisure zones) and, in new urbanism for new sustainable city, to recover the hygienist condition and include concepts which a priori may seem childish but in contemporary city are shown forgotten: health, beauty, nature.

F. Act 5. Mobility

1. *Car.* It would be really desirable to incorporate it from the fifth case, it gets relegated here to caricaturize the obsession. Pedestrianize, with no fear, there is nothing more anachronistic than historical city and motorized free circulation. They are not compatible. Various examples with orographic, architecture, and different city councils situations arrived to acceptable solutions with a common denominator: loop paths only allowing the deepest step, not stopping, to the owners and public services. That is why there is general advice of situating parking lots at a maximum radius of 500 meters from all points in the area; something I only consider admissible next to the fifth step due to the high requirements and paying enormous attention as it could give place for a terrible rise of the circulatory needs. It is preferable, firstly, to correct the flow between center and periphery with buses and some other public transports. Although that is a measure that, if it did not exist, should have been delivered with the fourth step.

III. ITS APPLICATION TO SAN MATEO NEIGHBORHOOD IN JEREZ DE LA FRONTERA (ANDALUSIA)

Understanding a city autonomously was never possible, but the framework of sustainability not only forces to understand its territory, but to look for relationships based on natural and functional. The next resume of the state is just an attempt of this premise:

A. Act 0: status quo.

Jerez de la Frontera is situated inside Cádiz province, in the extreme South of Spain, where on the contrary than the rest of the Andalusian territory, there is not a demographic-eating capital dominating the region, but a series of small-mid towns interrelated. A inhabitation strategy that would possibly make their sustainability easier if not because of the urbanistic perversions suffered: due to the central position it submitted to exaggerated expectations of growing and turned into an annihilating system of the territory, even in development, which tried to survive from the transportation sector and the incipient tourism, bond to tertiary and patrimonial values. Sectors, however, proceeding from the lack of an industrial sector able to absorb the surplus of manpower from agriculture and craftworks; in turn derived from the detriment of the system of the traditional winery industry for which the city is famous.

In one of these former functional craters, the San Mateo neighborhood is found, inside the square area made by the city walls and next to one of the vertexes: the Wall Street Tower.



Fig. 1 The situation of San Mateo in Jerez de la Frontera

And precisely with these sequential changes of function we approach this neighborhood problem, being, as we commented at the beginning, the origin of most problems from the pre-tertiary areas and being able to tell the history of the deterioration from its concatenation. It is not a place for a historical review which has been avoided in all exposition, but the situation forces to present, at least, the next four changes of paradigm:

Trade opening after the Arab border went further as a consequence of Algecira's conquer. Until then the urban form was an Arabic one, except for the inclusion of some churches, after which the division in seven pos-conquer districts was made. The opening implied enormous growing outside the walls (73%) and the security in the routes from the sea

(Sanlúcar and Cádiz), which confirmed the commercial function of the zone with the Market Square, where even one of the main ways crossing Jerez to the route of Sevilla Gate started. San Mateo became economical center of the city, holding the palaces of some of the most important gentleman of the moment, and even another gate is asked to perforate the wall: Arroyo Gate.

Wine explosion from the XIX century. From 239 wineries in 1818 the city passes to 1000 in 1855, altering substantially part of its most exterior morphology and its population sector, which becomes formed mainly from near wineries' workers. Other economical cores appear and it loses meaning.

Twilight of the traditional winery sector and the irresistible periphery of the 90's. Although all commented transformations meant a certain hybridation of uses and adaptation to the weave, it is not any other thing than the own rationality from pre-tertiary zones: history. It was not a matter of a loss of traditional function like this one, before which it was not only transformable, but spurned. In 2006, 75% of homes moved to growing zones (North, South and East).

Building boom and crisis. Brick deployed mainly in growing areas and, happily, did not change the shape; but the crisis left it in coma, denying any evolution. There are still some signs of luxury housing initiatives or empty parcels in which a hotel complex was supposed to be built. Today it remains with 30% of the housing empty

San Mateo germinated thanks to the flow coming from the Rota Gate, it was configured to canalize them and proclaimed itself the economical epicenter. Adapted hardly to the winery paradigm, began losing its old merchant signification, succumbed to the final strike of the explosion of the periphery and the economical crisis denied it any possibility of recovery. Now, after the lack of services, it gets to the marginal, and some parts could be catalogued as "War ruins". 240300m² of pure tissue, marrow in a strange lethargy.

A brief review through the following analysis makes clear the multiplicity of lacks in this kind of tissue.

Bus lines avoid it. Those are traced looking for the main energy compatible points, but also they can dispose inverse strategies. In fact, there are initiatives using public vehicles of dimensions in accordance with good results.

Daily trade. In historical center there are deeper zones than San Mateo, and, however, they show a good physical state (although not a healthy social distribution: or mainly commercial or exaggeratedly gentrification). It is not a matter of turning to a transfiguration of uses and weaves into more profitable ones by a private appropriation of collectively created values, but it is to incorporate again the trade.

Institutions and Administration. Derived from the previous paragraph, those avoid our tissue.

Sanitary Equipment. Overdose of pharmacies in the urban center, and in San Mateo only one and a sanitary center whose moving is being planned as there is not enough population to serve. Again the inverse way.

Educational Equipment. Although short, there is a nursery and a school (6-16 years old), they satisfy the few population.

Master Plan considers the lack of a professional forming center.

Sport spaces. The rambling pre-tertiary and pre-industrial tissues are not compatible with the wide necessary spaces; but it is not the case of San mateo, with its huge empty wineries.

Greenery. The drawing did not lose any ink, they did not exist at all.

Cultural Spaces. Sarcastically we found the Archeologic Museum which, after being expanded two years ago, remains closed. And the future City of Flamenco from Herzog & de Meuron.

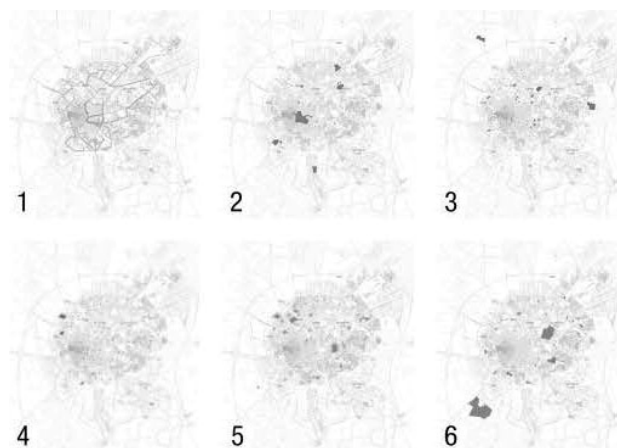


Fig. 2 1, Urban bus lines; 2, Daily trade fabric; 3, Administrative fabric; 4, Healthcare fabric; 5, Educational fabric; 6, Sports fabric

Immediate equalities with Bilbao's Guggenheim are valid, but not as reachable nor it will not have such an enviable outcome: the new urban regeneration must understand past mistakes, which many times did not take it to the same level of intensity of use, of urban life, converting city canvas in touristic neighborhoods lacking a true neighbor environment. That is why it is now or never, because as they do not have the necessary subtract to assume the energy injection that the national center means, it is added the terminal risk of canceling all the operation or falling into a speculative alignment similar to the theme parks.

B. Behind the method's globality: the project.

Given that the regeneration sequence proposed allows free design, we arrived the point in which conceptions differ and ways separate. This almost magical point that provides such different results from so similar hands, and makes that in architecture there are not last words, and therefore, forces every project to come from a formed criteria and not from the appreciable actual surrender to the free shape.

At first, like this, would be to confess what was loved: the rizomatic structure of its serpent and mysterious streets ending in unexpected openings, timidly called squares, the gravepine roofs in the patios, the duality between its transparencies and opacities, between public and private. It would not be strange then moving us between the deepest clean and the biggest of respects; understanding as a common mistake to give the historical value and urban perspective to the architectural interest of a building, because city is not made of monuments

but anonymous architecture and many times humble ones. Maybe not important if considered individually, but globally and under the iconic atmosphere conferred by its archaic belonging to the place, they are understood as the synthesis of deeply rooted cultural values and estimated senses of historical continuity. That was the loved. And the hated: the unique pieces denying the city. Therefore, we propose a multi-free-spaces-equipment, multiply connected to itself and to the rest of the tissue, which does not add a new identity to the San Mateo zone, but rediscovers its hidden character and disposes an open space opened to future alterations.

C. The regeneration according to the phases.

Act 1: urgencies. Social policy to support the inhabitant is materialized in the Restoration Incentives and Information Office, which would work at the same time as control of social assistance and stimulating of plastic beginning. Its strategic position and ruin state shows the old Rikelme Palace as an excellent choice.

Act 2: stone. Catalogue has already been developed.

Acto 3: re-civitas, re-urbs. Its advance degradation state makes it urgent to give a bonus to social policy:

- Including little cores of daily market (nowadays there are only to very basic forcing inhabitants to use the car) and begin workshops for elderly in a provisional status which could be placed in the workshops of the Archeological Museum until construction, later, of the elderly center.
- Acquiring, by city hall, properties to hold the necessary amount of soil in the intervention. Urban redefinition may begin once priorities thought. In Sagunt, Valencia, needed manpower was used with a terribly positive result, which in our case could relate to the formation courses.
- Thinking of a central bus line going across the wide zone of the city center without this transport, connecting social and economical interest points with the ones which will soon define themselves as that: City of Flamenco, Market Square...

Act 4: function.

- Support by valuation courses of the historical center and local activities of different sources are essential for the beginning of the specialized trade. Because of its absorbing character the core could be located in front of the City of Flamenco. Moreover, including the proposed professional teaching workshops in the Master Plan would generate a desirable synergy.
- The zone, already improved, has something to offer to the private initiative and some housing lots could be released in order. To give different social strata we would take strategically the housing rent, because it is as important the repopulation as its choosing to avoid generational or class ghettos.
- Before the opening of the City of Flamenco it would be profitable to raise a tourism office to announce what the center zone offers, the municipal hostel and a housing lot to attract new young inhabitants and satisfy the housing of new workers of the new offer.
- The school will show itself as not enough, and our rhizome will be able to branch merging to the neighborhood by the High School and Formative Courses Institute. The

educational offer makes new social housing lots possible, as well as continuing the greenery by incorporating a sports center also usable by the educational tissue.

- The last branch requires attracting new inhabitants. With this the new building of the elderly center begins, and the greenery around, continuing the bypass-rhizome and focusing, by the market square, the archeological museum annex.
- Finally, the mental center is placed in the annex neighborhood of San Miguel.

This way San Mateo would be sewed to itself and the rest of the city, being part, therefore, of it. The segregation disappears without subtracting any attractive of the differences offered in it. San Mateo lives and the chosen sequence allowed acting without anesthesia nor almost post-surgery. But that is not the reason to forget it again. City must be taken care of.



Fig. 3 Detailed phases of the urban regeneration: the rhizome's deployment from the ruin to the complete development of dotacional and green.

IV. EXPERIENCES LEARNT AGAIN FROM POPULAR ARCHITECTURE. TOWARDS THE NEW PARADIGM ARCHITECTURE

Experiences studied by Gaja i Díaz showed necessary to arrive to the architectural scale to achieve a correct integration. Probably enough and more operative by an urban project as the one Oriol Bohigas proposes "facing up the inadequacies from general planning, this which is not architectural project nor urban plan, rules the shape and content of a city fragment from public space of architecture" [3], however, he took advantage from the situation for the beginning of a parallel research and yet incipient trying to learn from vernacular architecture its historically-essayed mechanisms to adapt to the environment, destillating its own essence and which, after experimenting, we apply to the pieces proposed in the regeneration plan. Because of the dimension of this we will delimit it to the experience of the Artistic Dinamization Center. Projecting in the pre-tertiary city turns out tremendously evocating for architects, who begin feeling tired with the limited messages modern architecture sends. A nostalgic hug to the ornament, supported on a self already built, looking for a forced additive context we have not been able to unify yet. It is true that no architectural work can be understood as completely new, it is in restoration where that continuous and formerly existing environment rises, recycled, reused, manifestating architecture as a sustainable solution of problems. And its configuration, as always, does not only have an answer: it is opened, subjective, without equation. Only trails of objectivity, that here will be presented as a scheme:

A. Irregularity and pre-existing become configurator ectoplasm. As powerful as it can be the solar cycle. As inevitable as the passage of time

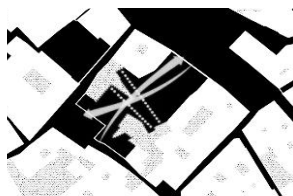


Fig. 4 The site and its flows

B. Imposing a program to the previous is not possible. It is a mutual dialogue forgotten by neutralizing modern pieces. It is making city.



Fig. 4 Various aspects of vernacular architecture

C. Serving ourselves from the environmental tools of vernacular architecture is more than a sustainable strategy, it is using and updating popular imagery

The vine roofs, typical in popular patios, fit out with enormous effectiveness and sensuality. They offer an approximate opacity around 85% that, however, because of the translucent leaves shed a hard shadow, but a colorful shine. It would turn attractive to extrapolate it even to streets which, according to radiation studios, need to be covered.

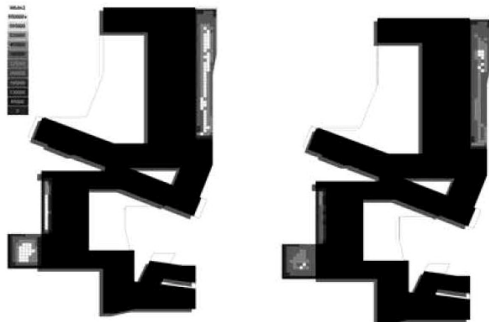


Fig. 5 Comparative study of the incident radiation without vegetation (left) and cover (right): 60% reduction. Prepared by Ecotect Analysis 2010

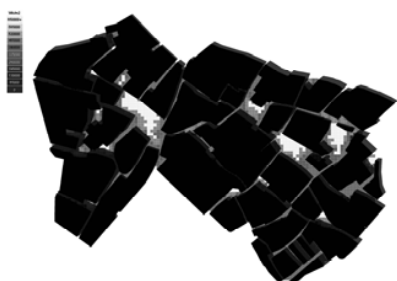


Fig. 6 Overall calculation of the incident radiation in the area of urban regeneration. Prepared by Ecotect Analysis 2010

On its own part, the air conditioning installation takes air from some technical corridors half opened by holes in the masonry. As seen in the winery latticeworks, they keep good ventilation with a slightly better temperature (2-5°C) than the exterior one, making the difference of temperatures the machine has to solve a little smaller.

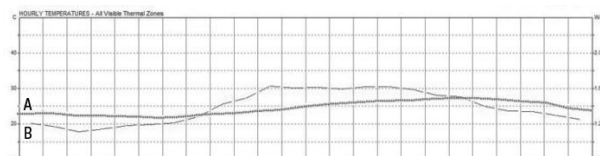


Fig. 7 Comparative calculation of the temperature in the plenum against the outside on a summer day. Prepared by Ecotect Analysis 2010

The result has to accept and incentive the complexity of the tissue. It is the base of adaptability and the profitable social relationships. It is a city for everybody.

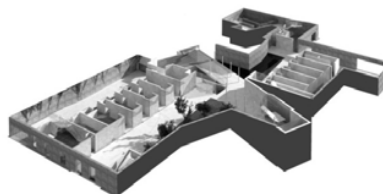


Fig. 8 Virtual section of the proposed building

However, those should never be taken as aesthetic cannons. We could all remember operations of a great dimension under the plan of a single architect which, although correct, condemns to monotony a tissue as plural as it is by origin the urban one. The only exportable thing from this is the desire to contribute to transform the neighborhood with an intensely vernacular architecture but completely brought up to date and committed to real sustainability.

REFERENCES

- [1] F. Gaja i Díaz, *Intervenciones en centros históricos de la Comunidad Valenciana*. Valencia: Conselleria d'Obres Públiques, Urbanisme i Transports & Colegio Oficial de Arquitectos de la Comunidad Valenciana, 2004.
- [2] J. Benavides, *La ciudad: construir en lo construido*. Sevilla: Padilla Libros, 1998.
- [3] O. Bohigas, *Contra la incontinencia urbana: reconsideración moral de la arquitectura y la ciudad*. Barcelona: Electa, 2004.
- [4] Montero, F.J., Giles, J & De Jorge, Z. "Territorios Urbanos: Barrio (Published Conference Proceedings style)," in *Actas de los Seminarios de Apoyo a la Investigación hibridación y transculturalidad en los modos de habitación contemporánea*, pp. 521-528, 2009.