Architecture as a Social Process: Evidences from Design-Build Studios in Southern Mexico

Inspired by the Praktikumsseminar Mexiko of the TU-Berlin, Archintorno has promoted three projects in the last nine years, which involved international groups of students, indigenous communities of the Oaxaca State, Italian and Mexican NGO and cooperatives. In Santa Cruz Tepetotutla and San Pedro Tlatepusco, the communities' request was to build two casas comunitarias (community houses), to support a local development program focusing on ecotourism and the enhancement of local cultural and natural resources; while in Pensamiento Liberal Mexicano, the Sociedad Cooperativa Grupo Mixto de Rio Pluma asked for the realization of a "micro-regional center for technology innovation", to develop different activities aimed at improving the housing and living conditions within the community and at supporting local development.

INTRODUCTION

Vernacular settlement patterns and architecture evolved over millennia, and still represents the majority of the built environment among many cultures. This can be seen when considering the indigenous communities in Southern Mexico. An effective definition of vernacular architecture has been given by Paul Oliver in its "encyclopedia"— "Vernacular architecture comprises the dwellings and all other buildings of the people. Related to their environmental contexts and available resources, they are customarily owner—or community—built, utilizing traditional technologies. All forms of vernacular architecture are built to meet specific needs, accommodating the values, economies and ways of life of the cultures that produce them". [1]

According to this definition, the focus shifts from individual architects and individual buildings to "architecture as a social process", in which many are involved, guided by common values.

This process of social and collective production of the habitat has become more and more complex, since housing typologies and building technologies inspired by Western models are being introduced even within the most remote vernacular settlements. In the indigenous communities of Southern Mexico in fact, frequent migration –often circular migration- towards the USA or major Mexican urban centers is determining strong impacts within the communities. An example of the deep

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social and cultural change is the transformation of the vernacular housing culture and of the rural, traditional lifestyle, as a consequence of the introduction of modern and urban elements. The housing compounds, for example, demonstrate a hybridization of the vernacular tradition with modern, western-styled architectural elements. Moreover, industrial materials (i.e. concrete, steel, prefabricated elements, etc..) and modern building technologies are being introduced, which are economically and environmentally less sustainable then traditional ones and are causing the loss of cultural heritage and traditional abilities of local manpower.

Under the above mentioned ongoing transformations in the housing culture, this paper offers a reflection on how to propose architecture in the indigenous communities of Mexico that are appropriate to the local context and to the ongoing social and material changes. This reflection is proposed through the analysis of three projects, in which university students are directly involved in designing and building architectures that support self-help development programs proposed by indigenous communities of the Oaxaca State, in Southern Mexico.

The suggestion for the architectural design, that comes out from these experiences, is to find inspiration in the vernacular tradition in order to avoid the indiscriminate proposition of Western housing and construction models. The proposed strategy is to reinterpret the vernacular tradition by culturally appropriate means, focusing on the introduction of socially and economically-compatible changes. This strategy can only be possible if it is based on the full involvement of the local communities at each step of the decision-making process. Therefore, the focus is on the complex social process by which distant worlds are put into relation, communicate and cooperate in order to reach a shared objective, creating a virtuous cultural and technological exchange.

As a consequence of the above mentioned considerations, "architecture as a social process" has a twofold meaning. From one side, the architectural design is based on the analysis of the ongoing social and cultural transformations, and on the understanding of how these transformations impact on the local housing culture and, more in general, on the built environment. From the other side, architecture itself becomes the product of a social process, based on the dialectic relation between tradition and innovation, local and global, natural and artificial. In this way, architecture is used as an instrument useful both to measure and to produce social change. Therefore, the focus is on the social responsibility of the architects and on the ethical implications of designing and building.

In the Archintorno's projects, students and indigenous communities are involved in each step of the project, which are articulated according to a complex participatory process. The cooperation starts with a visit in the communities, where all elements useful for the project's development are collected, and a first exchange of expectations, ideas and arrangements takes place. This exchange continues during the architecture design workshop, that concludes with the choice by the community of one project to be realized, among different students' proposals. After that, during the construction step in the Mexican communities, technical exchange among the participants is pursued; the attempt is to valorize local building materials, knowledge and expertise - meanwhile strengthening the community's self-esteem-, and to suggest possible practical improvements in these fields. The aim is to involve architecture students, from all over the world, and the indigenous communities to work together on real projects, faciltate discussion on vernacular building culture and techniques, reinterpreted in a contemporary sustainable key. Moreover, an important goal in this phase is the cultural exchange, which emerges spontaneously thanks

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to the experience of living and working together for some months. This aspect has improved in the last project through a household survey lead by the students with the families of the host village, in order to understand local lifestyles and housing cultures. Through these experiences, students, teachers and other stakeholders gain scientific and social expertise.

Archintorno is a non-profit association based in Naples that promotes its projects in collaboration with "C.A.M.P.O. a.c.", an Oaxacan NGO whose commitment is to support the indigenous communities of the State in realizing their sustainable development projects. One important objective in each project is to stimulate networks of international cooperation and solidarity, by involving different sectors: public, private and the various expressions of the civil society settlements.
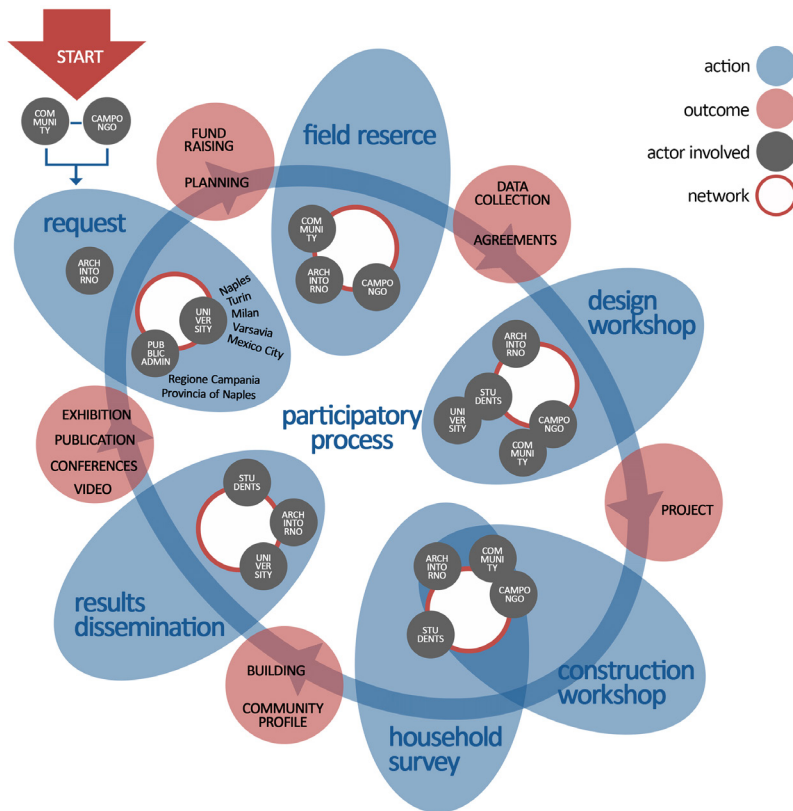
ANSWERING TO COMMUNITIES' REQUEST

The indigenous communities involved in Archintorno's projects are located in the State of Oaxaca, a region characterized by a largely mountainous terrain, far from the main urban centers, and rich in natural resources with one of the highest rates of biodiversity in the world. Due to this isolation they maintain a traditional social and political system [2] but live in a state of poverty and marginalization— the phenomenon of migration to urban centers in Mexico and abroad is constantly growing, because of a lack of employment opportunities that motivate young people to leave their homes.

In this context, the local NGO CAMPO has been working with rural communities of the State for more than twenty years through integrated projects for sustainable rural development on a regional and local scale. These are based on the principles of autonomy, social inclusion and equality. The aim is the creation of new economical activities with respect to local resources and capabilities.

Figure 1: Outline of methodology

It is this process, that aligns with the same principles that inspire Archintorno. Architecture that is sensitive to the needs and resources of the community. It also provides the possibility of cultural exchange, improved self-esteem and an awareness of their own abilities.

The collaboration begins at the request of the community, through the community assembly, who decide to undertake a participatory process with Archintorno, for the construction of a community building to realize their local self-development projects.

The first two projects in the area of Chinantla the Sierra Norte, Santa Cruz Tepetotutla and San Pedro Tlatepusco, have seen the creation of two Community Houses which host eco-tourists and researchers of local biodiversity. The buildings are part of a regional plan that includes the creation of an eco-tourism route that connects communities. This area is already visited by many scientists and nature lovers, so now the communities can host them in that houses; the vast knowledge of the inhabitants about their territory, plants and animals allow them to be a tour guide through the forest. The two houses are in use and represent incoming profit for both communities.

The latest project in Pensamiento Liberal Mexicano, is a Micro-Regional Centre of Technological Innovation hosting the activities of the Grupo Mixto Rio Pluma, a cooperative of the village working within the community development projects of "eco-tecnias". The coop has been working on these sustainable techniques for many years. This center will be a regional point where they can experiment and disseminate information to other communities also.

FIRST MEETING
Once the connection is established with the community, Archintorno organizes a visit to the village. This is the first time knowledge is exchanged between those involved.

The community, the local NGO and the association convene a meeting to discuss the project and to plan future actions. They exchange ideas and opinions on how best to approach the whole process, assign responsibilities, and discuss the contributions that each party is willing to offer according to their availability: the project is in fact a choral work that brings together the resources and ability of each partner. The community offers room and board to students for the entire period of construction, the possibility of using local materials and provides the tequio: a form of community work that is a valuable resource in these isolated communities and involve each household donating hours of work towards collective projects. The local NGO is responsible for providing equipment and provides its own technical staff. It also manages movements and communications with the city in case of unexpected events during construction.

Archintorno deals with the search for financial resources to implement the project and offer their professional skills to lead the working group, composed of students who will follow the entire process. In addition, each project involves professionals from the village that will be paid to contribute knowledge of local building techniques: a carpenter, a mason, and the chefs are selected by the Community Assembly .

This visit is also an opportunity to study the village and allows for data collection useful for the design of the building: the shape of the settlement, the residential areas, construction techniques and materials used. Also the climate, vegetation and local resources are all aspects which are analyzed and included in a report that is

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produced and handed to students at the commencement of the workshop and will provide valuable information to create a project responsive to local needs

SENSITIVE DESIGN

The workshop comprises a teaching approach based on empirical and theoretical insights, design activities in the classroom and collective reviews known as the Design-Build Studio approach. The workshop begins with an introductory lesson in which the project is presented and the results of the preliminary field investigation. This helps to focus the most important topics to develop during the design activity. From the next lesson, the students are divided into groups that from the outset begin to develop the first design idea.

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During the design process the lectures are useful to add new important concepts into the first drawings that students begin to develop. For example theoretical study on vernacular architecture and tropical bioclimatic architecture, offer the first hints for the architectural composition, the functional distribution of the spaces and the adoption of passive systems to regulate the microclimate of the building. The focus on manufacturing techniques of the chosen materials will introduce students to technological and constructive aspects. The common thread is the attempt to adopt a holistic design methodology, inspired by the vernacular culture, that also allows the introduction of 'culturally appropriate' formal and technological innovations, based on the use of natural, human and cultural local resources.

At the end of the design phase projects are selected and sent to the community. In addition to choosing their favorite project, the community also propose some design recommendations based on their everyday experience. In the last realized project in Pensamiento Liberal, this moment had a further development; the chosen project was discussed directly with the community, and it was decided to modify it, integrating some interesting ideas proposed by the other projects. They also pointed out some issues to be further developed and problems to be solved. The design was no longer the product of a single team, all students and members of the community felt to have made a contribution.

Around the chosen project is created a team of students who will develop the final design. In this phase the future "self-builders" have to consider economical and practical issue. Particular attention is given to the analysis of materials technology

Figure 2: Common work in Santa Cruz Tepetotutla

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easily reproducible with the available equipment and the know-how of the local workforce. The final result is a project that, through an ongoing dialogue with the community, understands the available resources and can create a sustainable and appropriate project.

BUILDING AS A COOPERATION EXPERIENCE

The next phase of the project is the construction workshop, the central moment of the entire project. It represent the meeting point between the students of the universities and the indigenous community; It's the place where all the relationships built from a distance become explicit in an everyday sharing experience. Students meet the locals in their homes, share with them the food, the parties and of course the work; therefore the site is not only the place of construction of a physical space but also a moment to build relationships, share experience, working together to build a place that has been imagined together.

In this type of construction process the primary objective is the improvement in knowledge of those involved through common work. For this purpose each must feel able to understand the construction process, their own learning capabilities and the use of the tools and the construction materials chosen. To speed up this process, different working groups of students are formed. Tasks are rotated amongst groups, this allows each student to experience different construction tools and techniques, sharing the knowledge learned in the previous operations. In this phase local labor, with its wealth of experience in local construction techniques and its know-how, is a reference for students, and assist the construction manager in his didactic role on field, guiding students step by step in every new working operation. In this way the students become more independent in managing daily tasks, simplifying the role of the site manager. Another aspect that contributes to the evolution of individual participants is the distribution of responsibilities among them. There are those who will take care of the transport of construction materials, relationships with the community, some others will manage the schedules and so on. In the end, students are so involved in the process that they are able to make decisions about things to be done, to make and follow a construction plan, even without the endorsement of the site director.

Exchange of knowledge, sharing of everyday life and familiarization with materials and tools, are very useful to deal with unexpected changes that were often encountered, particulary in isolated areas such as these villages. This then, enriched the

Figure 3: Micro- Regional Center in Pensamiento Liberal Mexicano (ph. Carlo Mossetti)

Figure 4: Community House in San Pedro Tlatepusco

design of new technological solutions and compositions in tune with the needs and suggestions of the place. This means that the building design was constantly evolving until the end of the construction process. This form of flexibility together with mutual listening among those involved allowed us to discover archaic technologies, generating at the same time the enrichment of local architecture, new skills in the community and the awareness of potential resources available in loco.

LISTENING TO THE PEOPLE

In our third project in Pensamiento Liberal Mexicano, Archintorno tried to enrich the cultural and technical exchange with the local community. They did this through a household survey aimed at understanding factors that influence the choice of (or the aspiration towards) housing typologies and building technologies in the indigenous communities of the Oaxaca State, as well as the factors that determine the physical organization and management of the territory. Moreover, the survey represented an opportunity for the international students involved in the construction to deepen their understanding of emerging lifestyles and housing cultures in the host community. Thirty households, almost one in five families in Pensamiento, were interviewed by Mexican and Italian students around seven main themes:

• family history and family composition;
• subsistence strategies;
• national and international migration, relation with other urban and rural centres;
• access to socio-cultural resources
• use of natural resources
• perception of life conditions
• housing typologies and building technologies.

In particular, housing compounds were deeply analyzed through graphic and photographic surveys and through direct questions to the owners/self-builders. Data was elaborated according to a holistic approach and households were classified into four typologies, each representing a different social group, with a different lifestyle. The survey results indicate that the housing typology is a reliable indicator of the social group the family belongs to. Housing typologies are the product of a complex decision-making process, that is influenced by a wide range of factors, such as monetary income and main economic/subsistence activities of the family, experiences of migrations towards Mexico's major urban centres and USA, security and thermal comfort of building technologies, morphology of the housing plot and

– not least – personal aspirations and tastes. The research results and process have been documented and will be used in our next design workshops as an introduction to the housing cultures of the indigenous villages of the Oaxaca State.[3]

DISSEMINATION OF THE EXPERIENCE

In the final step, Archintorno together with the students, produce a complete set of documentation tools (videos, publishing, exhibitions) to promote the whole experience. [4] This moment is very important for several reasons. First of all the research of forms and concepts to communicate the experience implies a critical rethinking of everything that until then had be en lived with the spontaneity and enthusiasm that inevitably occur from such an intense experience. The act of relating this experience, looking for the most appropriate forms of communication, means to revisit it multiple times under different aspects, both social and cultural, creating a critical view on it. Also in this case, the students are divided into different working groups, each of which will describe the experience through various forms of expression, building something together one more time: previously the final product was a building, now it is a book, a video and an exhibition.

The dissemination tools developed will serve to lay the foundations of a debate within our territory, focusing on issues around the role of architecture in the processes of social development, and the new dynamics of teaching architecture in the University.

It's also an opportunity to start a discussion within our organization to assess the strengths and weaknesses of the project to tackle the next one with greater awareness reflecting upon possible improvements.

Therefore, this last step completes the task of weaving a network of intercultural relations, looking for the repercussions on civil society and the academic world. Students in fact, through their stories, become messengers of knowledge acquired and the value of common work. The aim is to communicate that these kind of experiences are important also in our city where residents can be protagonists of inclusive communities to feel part of a common structure; we think that the role of the architect today should be to rethink the places starting from the processes that determine them.

CONCLUSIONS

The methodology presented here, is an approach that Archintorno has been pursuing since 2005, and in the last few years as a member of the European Design-Build Knowledge Network (EDBKN) [5]: an international network of universities, associations and organizations with the aim to promote the Design-Build Studio within the academic curriculum. It provides students the learn by doing experience and at the same time supports the self-development process of the local communities involved. It can reach multiple objectives ranging from the training of future professionals who will be more aware and sensitive to the social dynamics related to architecture to building self-confidence in the communities. This self confidence comes from local knowledge being enhanced through a contemporary reinterpretation of traditional construction.

Through a multidisciplinary approach which studies the social processes that exist where you want to intervene and by working together with stakeholders to achieve a shared objective, helps to create architecture sensitive to the needs and resources of the places and people who live there. It is also applicable in rural settings as well as in urban areas.

The methodology proposed by DBS Archintorno is in fact a structure that follows fixed steps, but can be adapted to the context in which you operate, allowing you to integrate the specificities of each case. This provides an adequate response to the needs of each of the parties involved in the process. It is a cyclical process that feeds the results obtained from previous projects and is constantly evolving.

The DBS should be taught in university education as an innovative teaching model which will expand the existing network, strengthen interdisciplinary knowledge in this field and to promote collaboration between all parties involved.

The continuous exchange of knowledge, skills and experience in the construction process that characterizes our projects could be an interesting input to strengthen the bond between the academic culture and the social processes of the civil society.

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ENDNOTES

1. Encyclopedia of Vernacular Architecture of the World: Cultures and habitats, P. Oliver

2. Comunalidad y Autonomía, una compilación de tres ensayos y dos declaracíones de unas indígenas de la Sierra Norte de Oaxaca, Martinez Luna, J.

3. Pensamiento entre aquì y allà. Encuesta sobre el agregado familiar para comprender estilos de vida y culturas del habitar en la comunidad de Pensamiento Liberal Mexicano, Oaxaca, Mexico, R. Nicchia and C. Casas Cruz, A. Buenrostro Valadez, A. Herrera Betancourt.

4. *Costruire con la Gente, una Casa Comunitaria nel villaggio indigeno di Santa Cruz Tepetotutla, Oaxaca, Messico, Associazione Archintorno.*

5. *http://edbkn.eu/*

Figure 5: Building wooden walls in Pensamiento

Liberal Mexicano