URBAN TRANS FORMATION

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Elemental: Housing As an Investment Not a Social Expense

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Elemental[1] is a *Do Tank*. Our field of action is the city. *Elemental* seeks an approach to urban life in contexts of scarce resources, whether in the housing field, public space, transportation or infrastructure, using the city as a source of equality, here and now. If there is anything everyone in the world today can agree upon, it is that we need to correct the inequalities of our societies. For that, the only sustainable, but long-term, solutions are education and income redistribution. The city, if well-designed, might provide the necessary shortcut. Do Tank is a term invented to describe our modus operandi: the city is a powerful and efficient vehicle to improve the welfare and the opportunities of people who might have been originally excluded from the benefits of development. In *Elemental*, we are trying to make effective and efficient quality of life improvements for the poorer segments of society, through concrete urban projects, privileging those projects that require innovation and research. As Geetam Tiwari from the IIT (Indian Institute of Technology) in Dehli says, questions raised by complex systems (such as cities) tend to require counter-intuitive answers; in order to resolve these questions, time and dedication are needed – and, in general, the resources are insufficient. Hence, if the question cannot be formulated correctly, it becomes difficult to obtain a proper answer; but far more dangerous is the risk that there might be a good answer to the wrong question.

[1] *Elemental* is a Housing Initiative affiliated to the Pontificia Universidad Católica de Chile and COPEC, its focus is the design and implementation of urban projects of social interest and public impact.

As think tanks (i.e., universities, study centers, foundations), we seek to identify, debate, and concern ourselves with unexplored complex issues of social interest and public scope; specifically, in our case, the realm of the city. And like many other stakeholders in society (i.e., governments, consultants, NGOs), we are interested in making a contribution to the common good by means of concrete projects: in short, by doing things. This two-fold operation of a Do Tank (operational towards the common good) forces one to accept all the restrictions of a given problem (economical, legal, political, social temporary, etc.) without loosing the greater picture of general interest. To put it differently: if the *Do* accepts the restrictions, the *Tank* sets the conditions. The *Do* is in charge of accepting the restrictions and ideas that must be internalized in order to become real; the *Tank* looks after the conditions that this new reality must encompass. Just as it makes no sense in doing something without quality, it makes no sense to imagine something without implementing it. This leads to what one might call a relevant pragmatism, in which from one side, theoretical debates are filtered out, but at the same time, care is taken so that the process of implementation doesn't miss the general purpose of the operations.

Even though the contribution of a Do Tank must come from its capacity of articulating, representing, and validating poorer families' interests, its most distinctive aspect consists in understanding that for implementing an action, one has to be able to read the multiplicity of stakeholders' interests and provide them all with a common language, i.e., that of *works* which are able to synthesize those interests.

What distinguishes a Do Tank from other modes of operating is very specific and reflects upon a profound principle: the funding that enables an autonomy of particular interests, ergo an independent defense of the common good.

In order to contribute professional quality work to urban projects, perhaps even generating public welfare, since 2002, *Elemental* has worked under the wing of the Universidad Católica de Chile, and, since 2006, with the support from the Chilean Oil Company, COPEC.

For Example

In this article we will present an example of our work on a housing project. In order to trigger a qualitative leap-forward, *Elemental* works under the same policy conditions as the rest of the market and within the framework of the current local housing policy, bringing together the best practices in architecture, engineering, and social development. The project makes use of a US$ 7,500 subsidy (given from the government to the families) which pays for the costs of land, construction, and infrastructure – in the best of cases, this allows for around 30 m² of built space. When the given money is the equivalent to just half of a house, the key question becomes *Which half do we do?* We have chosen to provide the half that a family would unlikely build on its own.

Our point is that social housing should become a public investment, not just a public expense. Hence, we have identified a set of design parameters that allow a housing unit to increase its value over time. Thus far, we have designed and built projects with a middle-income standard unit which gains in value over time. In effect, we have

Fig. 2: Quinta Monroy, common spatial condition.

Fig. 3: Quinta Monroy inhabitants preferred to stay in the slum for 30 years instead of moving out of the city (periphery). Location is the most important value for them: location means opportunity.

assertion – as to the value of design – can be found in one of *Elemental*'s early projects: The Quinta Monroy.

In 2003, hired by the governmental Chile-Barrio Program, *Elemental* was asked to develop a project for Quinta Monroy, the last informal settlement in Iquique, a city in the desert, that for the last 30 years has presented a problem. We were given the mission of settling some 100 families that had illegally occupied a 5,000 m² site in the heart of Iquique's downtown. Although the families lived under very bad environmental conditions (60% of the rooms lacked natural light and ventilation, and drug dealing was facilitated by a labyrinthine layout), the government commisioned us with the task of settling the families in the very same place, instead of displacing them to the periphery, which is the answer the market would have naturally provided. It was also a priority to keep the families in the same site because of their proximity to an extremely valuable network (transportation, jobs, public education, and health facilities). Indeed, this proximity was reflected in the going rate of the land itself, valued at some three times more than what social housing can normally afford.

We tested all the typologies available in an attempt to answer the question of providing a housing solution to all of the families in the same site; we tested the isolated house in a lot, the row house, and the high-rise building, but for one reason or another none of them solved the equation. In the best case-scenario, only 60 families were able to be re-settled within the site; this would not only provoke a social conflict for the 40 families left out (and the local democratic authorities), but it also meant that we were put in the position of allocating all of our resources into the purchase of the land itself, with no resources left for an acceptable building.

Fig. 4: None of the existent typologies were appropriate for the Quinta Monroy community.

What to Do?

We were left with the unequal equation:

US$ 7,500 × 100 (Families) ≠ US$ 750,000 ÷ 100 (FAMILIES)

We started by reframing the question, shifting our mindset from the scale of the best possible US$ 7,500 unit to be multiplied 100 times, to the scale of the best possible US$ 750,000 building capable of accommodating 100 families and their expansions. We knew, though, that high buildings by nature are limited in their capacity to expand: ground floor units can expand horizontally and those top floors can expand vertically into the air. What we did then was to conceive a building that had only a ground and a top floor. In other words, we created a *Parallel Building*: a house in a lot and then an apartment on top of it. With two families per lot, we had doubled the efficiency of land use before even beginning the design. This density allowed us to accommodate all of the 100 families, pay for the land, and, thereby, maintaining the social and economical network that would upgrade their living conditions.

Self-Construction As Customization Not Deterioration

Bear in mind that approximately 50% of each unit's volume was to be self-built. That is, the *Parallel Building* was made porous: it provided the supporting, unconstrained framework for future improvised construction. Each family's space for growth was framed by solid structures, so that expansions could be done in an easy (low-tech) and safe way. This *initial* building was placed on the front edge of the lot in order to guarantee the quality of the urban front after expansions occur. Framed self-built expansions can temper, characterize, and customize the historically criticized monotonous and repetitive beast known as the *housing block* (brought about by efforts to achieve economy); this *block* is, by nature, unable to respond to the diversity and particular needs of families. On the other hand, the monotony and repetition perhaps introduced an element of order to a 50% unpredictable future construction.

From the Nuclear Family to The Extensive Family

A key issue in the economical take off of a poor family is the provision of a physical space for the extensive family to develop. Multi-family lot occupancy is not only the result of not having one's

Fig. 5: General view of the facade with addition, June 2006.

own house; it is also an economic device that provides the place for *the extensive family*, an intermediate level of association that allows to gain some economies of scale and a support network to survive under fragile economic conditions. Ironically, it is very expensive to be poor: poor families have to buy sugar by the quarter kilogram, for example, and not the 5kg packs which cost less. Only by becoming a bigger group are they able to form resistance. The extensive family – composed of parents, children, grandparents, cousins, etc. – is one way of creating a network of survival: when relatives take care of the children, both parents are able to work. This requires an ad hoc urban space.

In the current state of the urban fabric, we either find private spaces (for the nuclear family) or public ones (that nobody takes responsibility for). In our project we introduced the collective space, involving 20 families surrounding a common property with restricted access. This proved to be a way to successfully take urban living beyond the private realm and ensure its maintenance and, in the end, its value.

From a Small Housing Unit to a Middle-Income House Half-Built

Instead of thinking in terms of a tiny unit that could add more bedrooms with time, we designed a middle-income house, out of which we were providing just a small part. This meant changing the standards of the design. Kitchens and bathrooms had to be designed for the ultimate scenario of a 72m² house. Bathrooms should contain the possibility of accommodating a tub and not just a shower; kitchens should be able to become a separate room; and some of the bedrooms should allow for the possibility of a queen-size bed. The standard of the house was raised as such to accommodate the future more exigent dweller and, likewise, in the process, it would become a valuable property.

From Beneficiaries to Clients

We also interacted with our clients through a community participation process. Our goals were threefold: first, to communicate restrictions and constraints. We wanted them to understand the hierarchy of what to do first and what, if necessary, is acceptable to be sacrificed. Second, whenever possible, we wanted the families themselves have equal choices. Finally, we wanted to survey local resources and strategies. Actually, the *Parallel Building* was not a completely new idea to them. Originally, there were only 50 families illegally occupying the 0.5-hectare site. As years passed by, those families had built illegal apartments on top of the original illegal houses, with direct access to the passages network, and subletting them illegally to other families. Hence, the parallel property idea was something they had spontaneously

Fig. 7. Diagrammatical plan indicating the quantity of public space within the blocks.

Fig. 6. The location of the project in central Iquique, Chile.

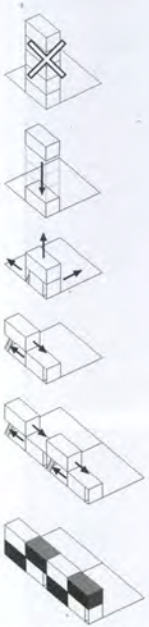

Fig. 8: Parallel building scheme.

developed themselves. We were there only to guarantee good partition walls, solid structures, and well-ventilated and lighted rooms.

From the Structure as Bones to the Structure as Body

The usual structure to finishes ratio in a building is around 30:70. In social housing, the ratio changes to 80:20. This means that all the savings made on the structure itself are fundamental; but it also means that its design radically defines the conditions of the dwelling. The structural skeleton not only has to provide, therefore, a supporting, unconstrained framework for improvised construction, but also one that will perform as the final *skin* of the building.

From a Proposal to an Equation

The design parameters that can add value to social housing projects are 1) high density (so that the funding allows for sites that are well located within the network of opportunities in cities), and 2) some conformity of the architecture itself that, by being strategically positioned in the lot, can play a role in guaranteeing the future quality of urban space. This architectural type should also allow for easy and safe building expansions. A good design (and, therefore, a good public policy) should provide all those important elements that any individual homeowner (no matter how much money, time or energy spent) would otherwise never be able to produce on his/her own.

Elemental has managed to revitalize interest in the problem of housing for the poor. Nevertheless, the greatest challenge in validating the initiative will occur during the next months when the proposed ideas must be constructed within the restrictions imposed by the tight economic and cultural context and within the *Elemental* system. The confidence placed in the initiative by both the Chilean government and the various partner institutions prove that *Elemental* has already made a difference in providing a relevant solution to a problem. By the end of 2007, we have completed 1,000 housing units in five different projects and 2,000 more are in the process of being completed. And we have just been called to start a few of big projects in Mexico, of a couple of thousand units each. Now the time has come to prove that we can work on the scale that the problem requires, without loosing or compromising on the quality that the poor deserve.

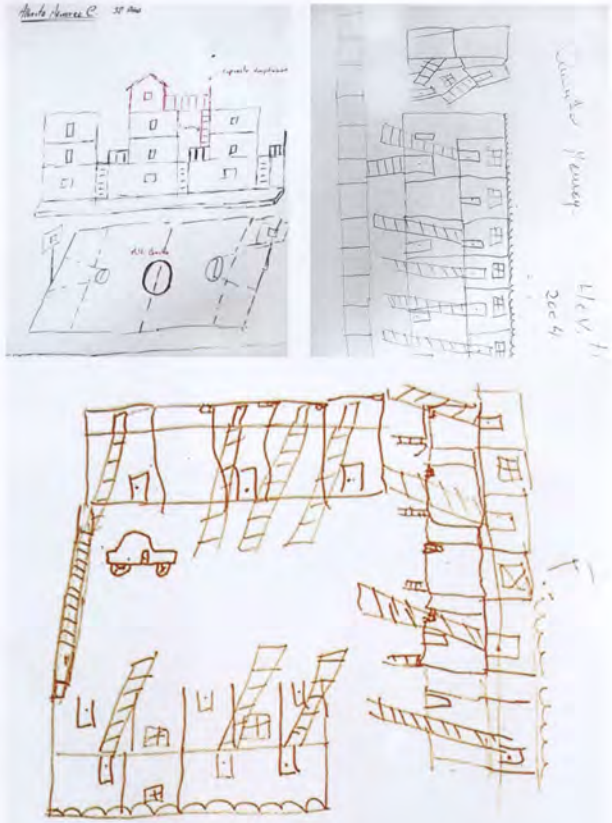

Fig. 9: Participating in the planning process the future homeowners identified with the project from the beginning.

Fig. 10. View of the patio before the opening, December 2004.

Fig. 11. View of the patio with additions, June 2006.

Fig. 12. View inside the house before the opening, December 2004.

Fig. 13. View inside the house with improvements, June 2006.