

JLS Winter 2015 Travel Scholarship: Understanding Elemental's Incremental Housing Projects

While in Chile I focused my research on the social housing projects of the Chilean architecture firm Elemental. Originally, I thought that the main influence on the form and most interesting part of the projects was the ability to reduce cost of construction by building only half the house and infrastructure so that the residents could easily complete the second half. Elemental has named this construction practice incremental housing. This design allows the buildings to be built for the very limited government subsidy, (7,000-12,000 USD depending on funding and date of construction; this price includes purchasing the land) while still providing residents enough living space for their whole family. Unlike social housing in the US, after two years of living in a unit and a small down payment, the occupants own their homes.

Upon arriving in Chile, I realized that this was really only half of the reason for the apparent success of the projects; the other important factor was the participatory design process that occurs between the residents and the architecture firm. A lot of Elemental's projects replace informal settlements which complicates the process socially and politically (Image 1 and 2). To gain the trust of residents and to assure an acceptable final solution, the firm meets with all the residents and works with them to finalize location, program, and typology. In my conversations with residents, they spoke enthusiastically about their role in the planning and organization of the community. I got the sense that the residents felt a commitment to their community because they were instrumental in shaping both the neighborhood plan as well as their own homes through construction. One of the partners in the architecture firm explained the process of participatory design and the amount of time and effort required. The firm knows that without this level of inclusion housing projects in Chile face severe criticism from resident/owners.

When you walk or drive through neighborhoods in Chile, the lack of space within dwellings is apparent. Streets are filled with houses and apartments that have additions built onto them (image 3). This includes expanded balconies, cantilevered rooms, and even additional stories. I met with a professor of structural engineering at Pontifical Catholic University of Chile who has done research on the impacts of these informal additions. He found that unpermitted informally constructed additions were the first to fail in earthquakes, endangering occupants and the original structure due to added and unexpected loads.

Because of the tremendous need for social housing in both Chile and around the world, Elemental designed their projects so that they could be repeated without serious redesign. In order to prove the feasibility of the projects using only the limited budgets, they had to complete them without private donations or free labor. Although construction companies wanting to show their philanthropy offered reduced construction costs, Elemental could not take these donations. While this worked in smaller towns, in Santiago land costs and problems with hiring contractors meant that Elemental was more willing to accept donations of all kinds. For instance at one site that was originally a trash dump, the national army donated time and trucks to clear the three meters of accumulated trash.

Although meeting with residents was difficult due to language barriers and a suspicion about outsiders, I was able to meet with residents at two of the three projects I studied. The first, Maria Ortega, not only showed me her whole house but also explained the construction work she had done, most of which had been contracted out to builders who lived in the community. She moved her kitchen outside, turned her downstairs into a market, and finished all the surfaces from floors to cabinetry (Image 4 and 5). The second woman, Catí, also built market but in her front courtyard. The interior of her house was spectacular --carefully decorated and furnished. She had also moved the bathroom location to create a larger kitchen to prepare food that they sold at the market (Image 6 and 7).

In summary Elemental's projects were much more than housing. They were communities where social networks were retained and strengthened. They were economic generators for family incomes. Through self-building families develop an important *sense* of ownership but also a means to expand their family wealth through *actual* land ownership, possibly leading to upward mobility.

Images



Image 1: Looking at Lo Barnechea II from across the river, informal house visible on riverbank.



Image 2: Informal settlement located less than one mile from the Lo Barnechea project, similar to what was present on the site before construction of the project.



Image 3: Informal expansion as seen from highway, construction is difficult for the residents and not seismically safe, the housing was not constructed to allow the residents to expand.

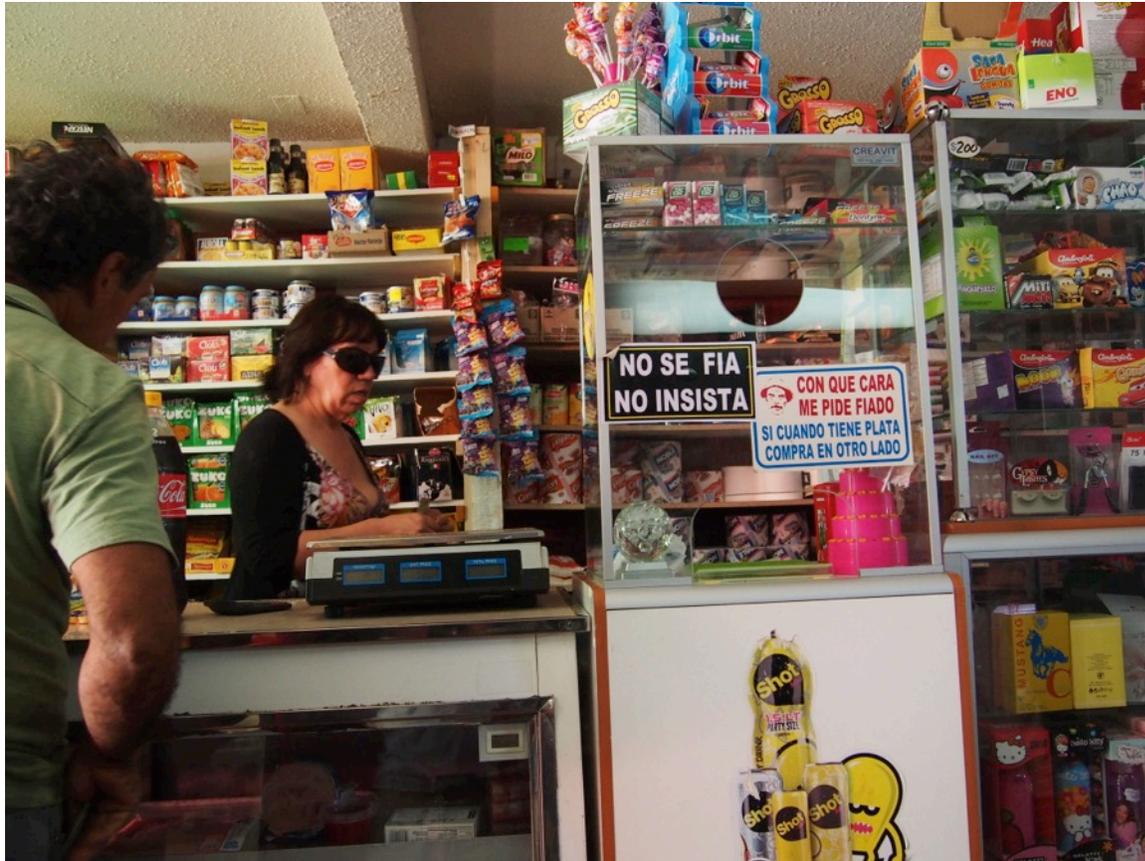


Image 4: Lo Barnechea. Maria working at her market.



Image 5: Lo Barnechea. Maria describing current construction on the third floor, they are finishing the walls and plan on replacing the windows to make a nicer master bedroom.



Image 6: Lo Espejo Project. Catí and her friend standing in front of their store.



Image 7: Lo Espejo Project. Catí's mother making food in the kitchen to sell in the store, the family has remodeled the house to make the space work better for their needs.

Additional images



Image 8: Lo Barnechea project. Housing in foreground, community center at center, and another social housing project (not by Elemental) in the background.



Image 9: Renca Housing. Informal construction of patios and additional rooms in front-courtyard of some units.



Image 10: Backside of Reanca Housing. Additional informal construction occurring on the rear of some units.



Image 11: Informal and auto-construction in many parts of the city, including at the Central Market in Santiago.