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EMERGENCY LIVING: A POST-DISASTER TRANSITIONAL HABITAT FOR TOMÉ (CHILE)

HABITAR DE EMERGENCIA: UN HÁBITAT TRANSITORIO PARA TOMÉ (CHILE) TRAS EL DESASTRE

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Con el objetivo de extraer aprendizajes sobre la posibilidad de un hábitat transitorio surgido desde una planificación anterior al desastre y articulado por espacios compartidos que permitan, después del desastre, satisfacer las necesidades individuales y las comunitarias, se desarrolla un taller académico planteado en un enfoque de abajo hacia arriba centrado en el usuario. En este taller, a través de una etapa de análisis guiado por el estudio cualitativo de entrevistas a una muestra representativa de la población afectada y de una etapa de ideación guiada por ciclos de retroalimentación y corrección, se proponen configuraciones para el caso de estudio de la comuna de Tomé, en la Región del Bío-Bío, Chile, gravemente dañada por los incendios forestales que afectaron al país en el mes de febrero del año 2023. Frente a la imposición cuantitativa de soluciones tecnocráticas y universales, una planificación cualitativa de soluciones participadas y compartidas.

Palabras clave: hábitat, desastre, construcción para emergencia, vivienda, incendio forestal

An academic workshop was held using a user-focused bottom-up approach to learn lessons about the possibility of a transitory habitat using pre-disaster planning and shared spaces that allow, post-disaster, to meet individual and community needs. In this workshop, using analysis guided by the qualitative study of interviews with a representative sample of the affected population and an ideation stage guided by feedback and correction cycles, configurations are proposed for the case study of the commune of Tomé in the Bío-Bío Region, Chile, which was severely damaged by the forest fires that affected the country in February 2023. Qualitative planning of participatory and shared solutions was used, to face the quantitative imposition of technocratic and universal solutions.

Keywords: habitat, disaster, emergency construction, housing, forest fire

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I. INTRODUCTION

After a disaster, infrastructure damage can entail its destruction or inability to function satisfactorily. For housing, this generates a severe problem, namely the absence of a suitable place to live (Ashmore, Ferrer & Serra, 2010), transcending the loss of a building and involving the temporary or permanent displacement of those affected.

The response to this problem is part of disaster management (UNDRO, 1982). This must contemplate a suitable solution during the emergency phase immediately after the disaster — emergency housing— and during the recovery phase until a new satisfactory situation is reached — transitional housing—. In this response, along with the design of an appropriate housing layout, it is necessary to consider other factors, such as the availability of land and construction materials or the intervention of the authorities and the participation of the affected population (Burnell & Sanderson, 2011). In that sense, besides providing security, protection, and shelter**5**, the solutions must ensure a decent living (Barakat, 2003). For all these reasons, managing housing after a disaster is one of the most significant challenges for the international community's humanitarian response (Ashdown, 2011).

Regarding this problem, the population that has had their housing affected by disasters has increased considerably in recent decades, among other causes, due to the proliferation of settlements in vulnerable areas and the use of poor designs and precarious construction materials (McDonald, 2003). This increase has evidenced the authorities' inability to provide sufficient accommodations to cover the number of destroyed homes, which means that many housing solutions are solved without formal support (Wagemann, 2017a). As a result, post-disaster solutions to the housing problem are diverse (Sampo, 2013), from the provision of services for self-construction (Wagemann, 2017b), to the delivery of prefabricated housing (Bris & Bendito, 2019) depending on the physical, economic, social and cultural context, the magnitude and type of the disaster (Sphere Project, 2011) and the time interval considered (Al Asali, Wagemann & Ramage, 2019).

This article aims to show the lessons learned that contribute to the international debate on having a temporary dwelling through previous planning coordinated by relationship models between the public space and private space, which are capable of configuring shared spaces that, after the disaster, satisfy individual and community needs. Providing relationship models that are adaptable in their application to the affected location and that, when facing the quantitative imposition of universal technocratic solutions, involve bottom-up, user-centered, qualitative, and participatory planning. To this end, a workshop was held about a case study with students from the Master's Program in Management and Resilient Architecture for Disaster Risk Reduction (MAGAR, in Spanish) and national and international experts, with the resulting ***Emergency Dwelling: a Temporary Habitat for Tomé***.

II. THEORETICAL FRAMEWORK

Dwelling and individual and community needs

In ***Building, Dwelling, Thinking***, Martin Heidegger (1975) addresses the notion of dwelling as the way we mortals are in the world. A dwelling that is deployed in a ***building that cares*** and is associated with an essentiality that distinguishes it from a mere ***shelter that hosts***. In this essentiality, dwelling is existentially linked to the space in which one resides, and with this, the construction of spaces where living takes place is revealed as the motor of existence. Thus, for Heidegger, although buildings intended to serve as housing can provide accommodation - something reassuring and comforting - they must be able to guarantee ***the dwelling***, in an implicit criticism of the massive construction of accommodations that do not solve this condition (Guerra, 2012).

For his part, in ***A Theory About Human Motivation***, Abraham Maslow (1943) organizes human needs according to a psychological theory that ranks them pyramidally in different levels, with a base of physiological needs on which the needs of security, affiliation, recognition, and finally those of self-realization are located, in an ascending way. For Maslow, the gradual satisfaction of these needs is fundamental for the individual's development, thus becoming demands.

In addition to these individual needs, there are family and community needs associated with social interactions, responsibilities, and routines (Quaratntelli, 1995), as recognized by the World Health Organization, WHO, (1946) in the preamble of its constitution, which has a definition of health that includes the need for a state of complete physical, mental and social well-being.

5 Quantified by national and international standards established by different agencies and organizations.

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Thus, it is possible to consider dwelling as a way of being in the world based on the care and satisfaction of individual physical and psychological needs and community relations.

The housing problem after the disaster. From emergency to transitional dwelling

In an emergency caused by a disaster, the possibility of the ***dwelling*** happening, satisfying the individual and the community's needs, is subject, to a greater or lesser extent, to the intensity of the disaster and the damage suffered by the infrastructure. Minimizing this is part of the goals of disaster management, specifically the post-disaster housing issue (UNDRO, 1982). Thus, having an appropriate housing solution is the first step to achieving a certain degree of normalcy in the affected people's lives (Kronenburg, 2011).

Since the 1970s, the approach to this problem and its associated terminology have been evolving, with different terms that are sometimes used interchangeably, generating coincidences and inconsistencies (Wagemann, 2017a). These include ***Emergency Shelter***, defined as a phase immediately after the disaster where the affected people find shelter for days while their usual daily routines are interrupted and which, due to its expected brevity, does not consider the need for regular food preparation or prolonged medical care (Quarantelli, 1995); ***Temporary Shelter***, defined as a place where people affected by a disaster reside for a short stay until more suitable housing is available and which must be accompanied by the provision of food, water, and medical care (Félix, Branco & Feio, 2013); ***Temporary Housing***, defined as accommodation where those affected temporarily reside while resuming their domestic tasks and daily activities (Quarantelli, 1995); and ***Transitional Shelter***, defined as a gradual process that provides shelter to affected families. This starts with the first support provided during the emergency and extends until land and reconstruction rights are obtained, which may take several years (Narymbaeva, 2012). It is also manifested as accommodation that provides a private, dignified, roofed living space and a safe and healthy environment for periods after a conflict or a natural disaster until a durable housing solution is achieved (Corsellis & Vitale, 2005).

This evolution in terminology has been associated with the temporary nature of the solution considered (Wagemann, 2017a). Thus, in the 1970s, ***Emergency Shelters and Small Dwellings*** were discussed, with accommodation mainly focused on disasters in rural areas. Later, in the early 1980s, there was talk of ***Shelter After Disaster***, in a period marked by the repercussions of design guides capable of influencing international policies. During the 1980s and 1990s, two milestones shifted the focus towards urban-scale disasters. The first is the publication by the UN (1982), the Emergencies Handbook, which defines standards that will be adopted internationally; the second is the differentiation made by Quarantelli (1995) of different phases in emergency housing: ***Emergency Shelter, Temporary Shelter, Temporary Housing and Permanent Housing***. Later, in the first decade of the 21st century, the nature of the different disasters marked the evolution of these concepts, displacing the concept of ***temporary shelter*** to ***transitional shelter*** and understanding that housing solutions are part of a process that does not imply a single stable state (Wagemann, 2017a).

As a result, nowadays, there are different ways to approach the transition from post-disaster ***emergency shelter*** to ***permanent housing***, considering the construction phases and strategies. These range from expandable cores to semi-permanent housing and from providing basic infrastructure services to plots to be occupied (Wagemann, 2017a). However, in all these cases, the objective is that temporary solutions should be part of the recovery process (Kronenburg, 2011). The transitional shelter should also be designed so that it can be improved and integrated as part of a permanent shelter, be reused for other purposes, be relocated from a temporary to a permanent location, be sold to generate income, or be reused for reconstruction processes (Narymbaeva, 2012). Regarding this recovery, and although the priority objective after a disaster is to provide shelter to those who have lost it, temporary housing should not only address issues such as reducing their vulnerability to diseases or health problems. However, it should provide a space that guarantees suitable protection, habitability, dignity, and privacy to achieve a certain degree of normalcy in the affected communities (OXFAM, 2004).

An alternative view to the post-disaster housing problem: participatory, processual, and local

Usually, the problem of shelter post-disaster is addressed after the disaster occurs and from a top-down technocratic approach, with decision-making from a few experts, politicians, or administrations based on the ***product***, with the definition of some serializable prototypes and universal, with the definition of global models (Bris & Bendito, 2019). However, faced with this approach, it is possible to adopt an alternative vision, changing the timing of disaster response planning. Instead of planning ***after***

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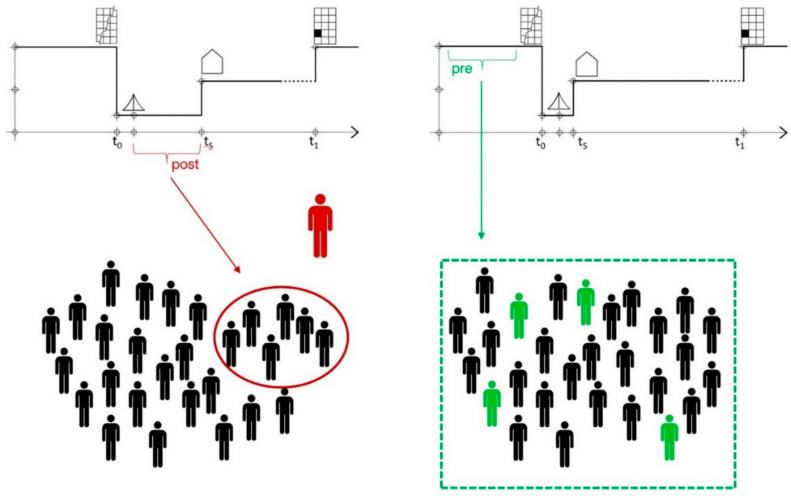

Figure 1. Post-disaster and pre-disaster approach. Source: Bris & Bendito, 2019.

the disaster, planning ***before the disaster***. This, although ***necessary,*** is ***insufficient***, as it cannot secure a better response by itself**6** and requires a bottom-up user-centered approach with a participatory design and a process with the definition of evolutionary models, local adaptation, and typologies adapted to the conditions.

Thus, when planning occurs ***post-disaster***, the needs of the target population are estimated quantitatively -affected people, surface area, manufacturing time, assembly and installation or construction- trusting that, by supplying minimal materials, those affected will resume their normal lives. A vision that generally considers the mere sum total of dwellings, with a matrix and undifferentiated distribution that does not prioritize spaces of social relationship (Shiozaki, Nishikawa & Deguchi, 2005). This makes those affected invisible, and they assume a passive position where they can only accept or reject the solution provided (Puliafito, 2010). On the contrary, when planning occurs ***before the disaster***, the possibility of having the opinion of potential users and other agents, experts, or specialists appears in the design of the shelter units' distribution, which contemplates spaces that enhance socialization and public life and combine a correct balance between the settlements and other population centers (Davidson et al., 2007; Fois & Forino, 2014). ***From the product to the process and from the technocratic to the participatory*** (Figure 1).

In addition, when planning occurs after a disaster, universally defined minimum standards are often applied that trust that the same thing can work in different places. This has been proven questionable (Bris, Bendito & Saint-Supéry, 2016) and can lead to the response's failure or rejection. However, when planning occurs before the disaster, it is possible to adapt the models and standards to the affected area and population's cultural, social, economic, demographic, geographical, and climatic conditions. ***From the global to the local.***

III. CASE STUDY

In the summer of 2023, the commune of Tomé, in the Biobío Region, Chile (36°37'02"S 72°57'27"W/-36.6171, -72.9575) was severely affected by wildfires, with more than 200 homes affected, affecting more than 300 people and razing more than 13,000 hectares**7**. Among the material losses, about 100 houses were completely destroyed, and the rest suffered severe partial damage in areas characterized by high rurality and high exposure to fire risk due to their location and materiality.

6 An example of this insufficiency is the case of Tohoku, Japan, where pre-disaster planning of temporary housing meant a significant reduction in response time and costs, but not a better habitat (Bris & Bendito, 2019).
7 https://www.biobiochile.cl/noticias/nacional/region-del-bio-bio/2023/02/04/incendios-forestales-en-tome-dejan-mas-de-200-hogares-damnificados-y-13-000-hectareas-arrasadas.shtml. Retrieved December 1, 2023.

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For Chile's Ministry of Housing and Urbanism (MINVU), it was necessary to complete the reconstruction quickly. It was also essential to do it correctly, providing a housing solution that was dignified and appropriate to the conditions of the territory and the target community**8**. The response to this emergency was to grant subsidies and provide housing solutions in the form of prefabricated industrialized housing without any adaptation to the affected areas and people. In addition, in the opinion of the beneficiaries interviewed in this research, the dwellings were undersized, had poor functionality, poor lighting and ventilation, and lack of privacy**9**. Thus, the result was the same despite the initial concern to provide solutions appropriate to local casuistry instead of the imposition of universal solutions.

IV. METHODOLOGY

Motivated by the University of Concepción's commitment to society, the Master's Degree in Management and Resilient Architecture for Disaster Risk Reduction (MAGAR) of the Faculty of Architecture, Urbanism, and Geography organized, in October 2023, in the Emergency Dwelling course, a workshop called ***A Transitional Habitat for Tomé*****10**, where the problem of emergency habitation was outlined from a bottom-up approach, focused on the user and the process.

The workshop considered two stages, analysis and ideation, and three scales, housing, neighborhood, and city, to enable relationship spaces that would allow community relations to be established after the disaster. For this, the participants were organized into two working groups**11** and assisted by a panel of expert advisors**12**.

In the first analysis stage, a study was made using a survey, an interview with 12 of those affected, and a documentary record of the housing solutions received after the disaster. The survey addressed the following basic data: name, age, occupation, marital status, family make-up, pets, date of entry into housing, home ownership, type of housing, materiality, modifications made to housing, and access to utilities. The interview considered three scales of analysis: ***City***, with the questions, which services do you use most frequently? And how close are these to your neighborhood? ***Neighborhood***, with the questions, what activities or places are most relevant to you in the neighborhood? How do you participate in your community? And do you have any support network? Finally, ***housing***, with the questions, what are the home dynamics like? What is your daily routine? Do you have a sense of belonging with your current home? Have community ties improved after the wildfires last summer? What values do you consider motivate your actions in the private and/or community sphere? In addition, the interview addressed their experience during the recovery process, from the moment before the disaster to the current situation, through the fire and emergency shelter.

The documentary record considered the location of the housing solution received, accompanied by its planimetric survey and a small photographic record. The work sample consisted of 12 people, chosen as a representative group of the affected community, and a qualitative test was applied to their responses to look closer at their subjective experience of the disaster and acquire a richer and more detailed knowledge of the phenomenon beyond the quantitative data of the means provided. At this stage, it was essential to establish a relationship of trust and understanding with the participants to transfer the results of their demands for private and public space to the ideation process through possible organizational charts.

In the second stage — ideation — the working groups considered the results of the analysis stage to systematize the relationship between private and public spaces in the three work scales: housing, grouping of housing, and grouping of housing groupings. This phase was carried out using a holistic design process articulated by successive proposal and feedback cycles, which included the advisory panel's critical assessment of the solutions formulated. Finally, the results were presented for joint and reasoned evaluation by the faculty and the expert panel as a validation mechanism for the proposals, considering the future needs of other users similar to those of the participants chosen as a representative sample of the affected population.

V. RESULTS

In the analysis stage, the sample interviewed by the first working group — group A— included six people: a

8 https://www.diarioconcepcion.cl/ciudad/2023/06/15/comienza-entrega-de-viviendas-definitivas-en-tome-a-damnificados-por-incendios-forestales.html. Retrieved December 1, 2023.
9 Answers extracted as stated by the people affected during the interviews conducted by the work teams.
10 The teaching team consisted of *..
11 Group A included * and Group B, *.
12 The expert advisors were *.

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Figure 2. Housing unit typologies received by the population affected by the disaster. Source: Preparation by the authors based on the information prepared in the workshop.
Figure 3. Proposal by Group A to extend the housing unit received. Source: Prepared by the authors based on the information prepared in the workshop.

pensioner (78 years old), a housewife (of uninformed age), a nanny (36 years old), a master builder (36 years old), an informal saleswoman (45 years old) and a hauler (55 years old), while the sample interviewed by the second working group —group B— included six other people: a student (7 years old), a housewife (48 years old), a housewife (73 years old), a carpenter (63 years old), a student (17 years old) and a housewife (40 years old). In these interviews, it was recorded that, after the disaster, those affected were housed in tents in emergency camps for 1 to 4 months until they received a housing solution, which in some cases was unsatisfactory and had to be replaced. Among the pre- and post-disaster community values taken from the interviews, respect, solidarity, honesty, commitment, and empathy appeared regularly. These were values that the interviewees recognized in social interaction at meetings in private living rooms and dining rooms, in community social clubs and churches, in family games, with friends in private backyards, and community competitions on public pitches and courts. The presence of meeting spaces thus becomes an essential condition for the design of a transient habitat.

Regarding the housing solutions received, two families interviewed by the first group received a 5 x 6 m house with an attached toilet module (Figure 2). The other family received a 5 x 5 m house with an attached toilet module (Figure 2). On the other hand, all three people interviewed by the second working group received the same 5 x 6 m module, with slight variations in orientation and interior distribution.
In the ideation stage, group A proposed a central layout defined by four housing units with the typologies received

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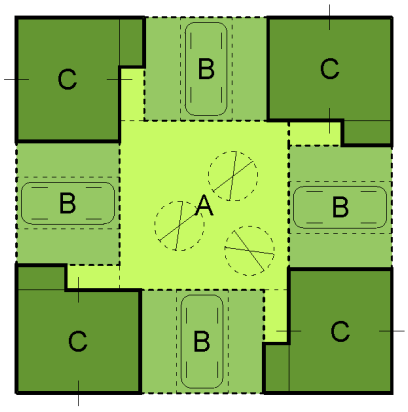

Figure 4. Grouping of housing units (C), extendable (B) into an intimate central area (A), Group A. Source: Prepared by the authors based on the information prepared in the workshop.

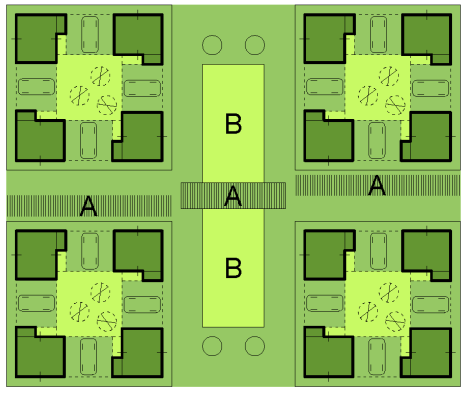

Figure 5. Grouping of groupings. Transitional spaces (A) and community spaces (B), Group A. Source: Prepared by the authors based on the information prepared in the workshop.

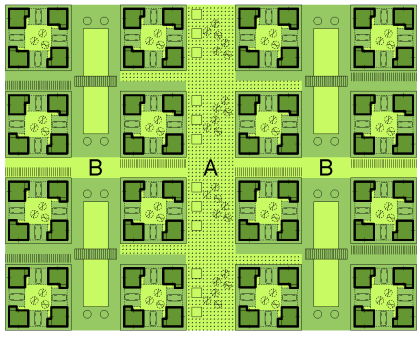

Figure 6. Grouping of groupings. Expansions of the corridor (A) and voids for collection (B), Group A. Source: Prepared by the authors based on the information prepared in the workshop.

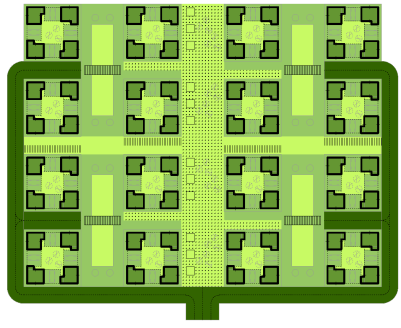

Figure 7. Grouping of groupings. Perimeter street and space up to the first central area. Group A. Source: Prepared by the authors based on the information prepared in the workshop

by those affected - considering a 3 x 5 m extension and incorporating modifications, such as a window facing the entrance to improve lighting and ventilation and a back door (Figure 3), distributed according to a matrix around a central protected space for everyday use, of approximately 50m^2 (Figure 4). This layout aims to promote a first approach among the relocated people, where their safe place is defined: an intimate central area for uses such as clotheslines and small vegetable gardens.

On an intermediate scale, the repetition of this central layout using a rectangular matrix defines a complex organized by transition public spaces, self-built shaded areas, and green corridors to host social activities for meeting, recreation, rest, and small commerce, and, at their intersection, quick collection spaces for the logistics of the housing complex (Figure 5). A macro module where the cohabiting groups coexist in a greater community.

On a larger scale, the groups of groupings are arranged along a central corridor as a public space that hosts different recreational activities and a small commercial area (Figure 6). An identity mediator of socialization between the different micro-communities that the shaded areas guide.

Finally, the settlement has a perimeter street to filter road access and encourage a walkable habitat (Figure 7).

Group B proposed a central layout defined by rows of 3 houses, which adopted the progressive housing solution used by Elemental in Villa Verde (Figure 8). It was also arranged considering a matrix around a centrally protected community space (Figure 9). Among the dwelling's design conditions is

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Figure 8. Housing unit designed by Elemental in Villa Verde and adopted by Group B. Source: Prepared by the authors based on Elemental's design.

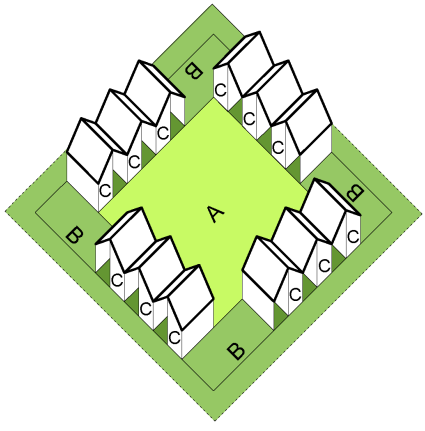

Figure 9. Grouping of extendable housing units (C) with shared spaces (B and A), Group B. Source: Prepared by the authors based on the information prepared in the workshop.

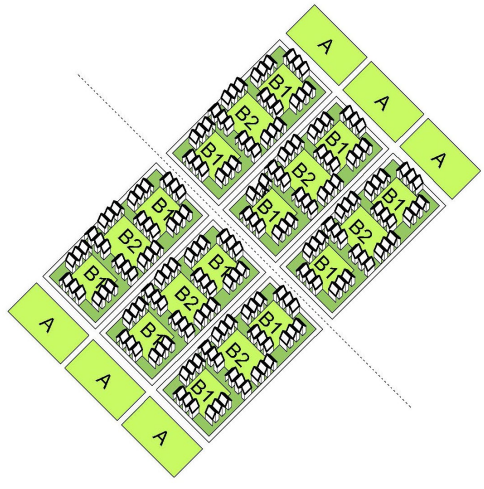

Figure 10. Grouping of groupings on an intersection with identity (A) and neighborhood (B) spaces, Group B. Source: Prepared by the authors based on the information prepared in the workshop.

the possibility of a controlled and self-built growth that considers extensions within a framework that maintains the typology, favoring a feeling of belonging and identity. The corners of these groupings are intended for community use areas.

The repetition of this layout follows a rectangular matrix that forms a complex organized by transversal corridors to some main intersections where public programs are located (Figure 10). In this way, it introduces collective spaces that serve a controlled number of family units to facilitate social agreements, a cooperative construction of the collective space that pursues community attachment on which a neighborhood identity is based, and diversification of collective spaces that enrich the social fabric.

Finally, when these results were presented in front of the panel of professors and expert advisors, it was seen that both proposals coincide in the shared approach that the housing builds a common space where social recognition is possible and allows a feeling of belonging to the community.

VI. DISCUSSION

The joint reading of the two teams' work made it possible to find some coincidences and certain shared aspects in the design of a transitional habitat that can be grouped into a series of common themes from which lessons can be taken for other experiences. Although some of these issues are implicit in the results, others emerge from comparative analysis and contrast with the international literature, such as modularity or the incorporation of domestic work spaces.

Starting from previous experience: Innovating from the known
Among the results obtained, the fact that the two proposals used pre-existing emergency housing solutions stands out: a single-slope roof type of the ***Un Techo para Chile*** program in one case and the progressive housing projected by Elemental in the other. This decision confirms the global nature of these solutions, implicitly validating them as it assumes their adequacy for the local conditions of Tomé. The innovation starts from the known, from the affirmation of previous contrasted experiences, to focus on the less explored and still unsatisfactory aspects of these scenarios: the relationship between their inhabitants. Moreover, it does so from a perspective that continues approaches to dwelling from the construction of those affected (Deprés, 1991; Kellett & Moore, 2003; Blunt & Dowling, 2006).

One field: Unit, grouping, and complex

As a consequence, the focus of the design shifted from the housing unit, the ***what***, to the relationship between the housing units, the ***how***, in a position aligned with contemporary approaches to architecture and urbanism that defend its organization as a field where its organization is the result of the relationships between the parties (Allen, 1997). This results in a dissolution of the traditional hierarchical schemes of ***background-figure***, in which the figure -the built - is defined by its contrast against a background - the unbuilt - in favor of a distribution where the background acquires the same relevance as the figure in the design process. In this way, the results reproduce the usual schemes of many new-build cities in Latin America - marked by the imposition of an abstract grid on the territory**13**-, and replicate an urban landscape rooted in local idiosyncrasies. However, this uniform arrangement has difficulties assuming the topography's conditions and is not at all practical for occupying areas with irregular perimeters.

The type: The general and the specific

The results of the two systems were developed by repeating the same type that is different in the subsequent appropriation by its occupants without considering a first adjustment that observes the different needs of the affected people. In addition, along with this same starting condition, the repetition of the same type in unequal orientations did not contemplate any adjustment for its position, thus hindering the sufficiency of the bioclimatic behavior ***of the type*** according to its place in the layout matrix. Consequently, the need to include design variables capable of solving the adequacy ***of the type*** to the needs of its occupants and the position in the whole is evident, allowing particularizing the general as an essential aspect in the design of the transitional housing (Felix et al., 2015)

Modularity: Building before the disaster

Both approaches incorporated a modular design. The first group used a prefabricated module built by assembling elements in a predefined package. The second used a mixed module with a construction that combines the on-site implementation of elements, placing the prefabricated elements. Both decisions made it possible to shorten the disaster response times, where part of the construction time was shifted to the pre-emergency phase. A choice that, however, is not without criticism, such as those that question aspects such as the decontextualization or neglect of local resources (Oliver, 1978) or those that point out the associated logistical and design problems (Davidson, Lizarralde & Johnson, 2008).

13 Based on the tradition of what is established by the Laws of the Indies.

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Time builds: Growth and transient permanence

In both configurations, the extension of the initially built type is foreseen, which places both solutions in the category of ***core houses***. In one case, there is an increase in surface area from adding another prefabricated module and, in the other, from a self-built use of the interstitial void between the units. In any case, in the two responses, voids are waiting for a future occupation, and solutions are undoubtedly framed within ***temporary housing***. Both proposals present transitional housing capable of becoming permanent, placing these formulas in ***transition-permanence*** marked by a constant evolution, in line with other ways of making housing outside the disaster (García-Huidobro, Torres & Tugas, 2008).

Productive habitat: Domestic workspaces

In both alternatives, spaces for economic activities were considered: spaces next to housing in one case and spaces incorporated into the housing in the other. This decision made it possible to understand the transitional habitat as a habitat that also needs to be productive. It includes generating sustained income that contributes to the affected population's economic recovery through domestic spaces intended for this purpose. This shows a necessary relationship between the productive and reproductive spaces (Lefebvre, 2013).

Social landscape: Spaces of relationship and community services

Both options considered shared spaces of relationship and meeting, setting up places for interaction to strengthen community bonds and the relationship of people in the habitat. The design of these spaces was approached on different scales through small ergonomic elements, such as urban furniture, intermediate conditioning elements, such as ***shaded areas***, and more prominent elements, such as the community services at the ends and intersections of the corridors. This aspect, important in both proposals, seeks to promote the relationship between the space of the private sphere and the public sphere, imbricating them in a fabric understood as a social landscape capable of constructing a shared identity (Case, 1996).

Low density: After as before

Both proposals showed a low density, which implies a reduced capacity to accommodate more people affected by the disaster. This is done either by considering exclusively one-story housing solutions, an aspect that facilitates self-builds and the transportation of prefabricated units, or by considering a disproportion concerning the usual relationship in these actions between housing spaces and public spaces. However, despite a lower use of the land occupied by both organizational charts compared to the usual emergency camps, this low density coincides with the traditional density of the peri-urban nuclei affected by the disaster, which means that if a permanence of the transient habitat is achieved, the new density would be similar to that before the disaster, avoiding the perception of something inhospitable, uncomfortable or even alienating (Blunt & Dowling, 2006).

Connection: With the outside and with the inside

As an end of the internal circulation network from the different kinds of corridors, which seek to enhance communication between residents, in each option, connection routes with nearby population centers were considered to allow access to different services and favor the exchange between these and the settlement. The perimeter nature of these connections sought to define a limit that would differentiate the settlement and enable gradual reduction of the road scale, limiting access to light vehicles and favoring interior areas for pedestrian use, spaces intended for quick collection, or areas for logistics activities. In this way, spaces of relationship, in this case of mobility and exchange, acquire a capital importance in the design of the habitat (Bris & Bendito, 2019).

Dignity: Improving on the past

The two proposals considered standards similar to or higher than before the disaster, as the affected homes often had substandard conditions and basic or precarious construction levels. In addition, the previous homes are exceeded in both models in community spaces due to an informal organization where the open spaces were residual and from areas not yet occupied by irregular layouts. With this, the possibility of understanding the disaster response as an opportunity to improve the previous reality is confirmed, but, above all, recognizing the need to recover the dignity of the people affected after the disaster (Barakat, 2003).

VII. CONCLUSIONS

The study of the proposals presented allowed extracting some reflections that can contribute to the debate on the possibility of a transitional emergency habitat articulated from pre-disaster planning and based on the importance of community spaces of relationship.

First, innovating from experience, starting from previous solutions that allow addressing the less satisfactory aspects of previous interventions and progressing with cumulative learning where efforts are focused on solving the worst resolved needs, such as the importance of community spaces of relationship. In this sense, it is essential to consider, with an equivalent relevance, the built spaces

and the spaces defined for them to achieve a shared identity. This implies considering the habitat a complex beyond a mere total of self-sufficient units.

Secondly, the work from a bottom-up approach allowed identifying the people with the habitat, facilitating their acceptance based on strategies such as using familiar typologies and urban layouts assumed as their own, which contribute to building community identity.

Thirdly, it is important to ensure daily living standards are as close as possible to those before the disaster, but mainly, that is acceptable as a permanent situation in cases of prolonged transition. Among these standards is the correct interrelation in the habitat to enhance the inhabitants' integration and avoid situations of exclusion.

Finally, it is relevant to include as a design variable the possibility of adapting the generic housing unit to the specific needs of those who inhabit it. This would allow a particularization of the general that encourages the construction of personal identity through acts of appropriation. With this possibility, incorporating the temporary and spatial dimensions is vital, as well as using empty spaces available for progressive occupation by self-builds or the arrangement of additional modules and the possibility of reallocating spaces.

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