

Architecture for transition: Analysis of two projects in the peace-building process in Colombia

*Original*

Architecture for transition: Analysis of two projects in the peace-building process in Colombia / DIAZ DIAZ, FREDDY ROLANDO; Unigarro, Daniel. - ELETTRONICO. - 2709:(2022), pp. 100005-1-100005-9. (Intervento presentato al convegno World Multidisciplinary Civil engineering, Architecture and urban planning symposium tenutosi a Praga) [10.1063/5.0105180].

*Availability:*

This version is available at: 11583/2973290 since: 2022-11-22T14:46:26Z

*Publisher:*

AIP Publishing

*Published*

DOI:10.1063/5.0105180

*Terms of use:*

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

*Publisher copyright*

AIP postprint/Author's Accepted Manuscript e postprint versione editoriale/Version of Record

(Article begins on next page)

# Architecture for transition: Analysis of two projects in the peace-building process in Colombia

Cite as: AIP Conference Proceedings 2574, 100005 (2022); <https://doi.org/10.1063/5.0105180>  
Published Online: 15 November 2022

Freddy Díaz and Daniel Unigarro



View Online



Export Citation

Trailblazers. <sup>New</sup>

Meet the Lock-in Amplifiers that measure microwaves.

Zurich Instruments [Find out more](#)

# Architecture for Transition: Analysis of Two Projects in the Peace-Building Process in Colombia

Freddy Díaz <sup>a)</sup>, Daniel Unigarro

*School of Habitat Sciences, Universidad de La Salle, Bogotá, Colombia*

<sup>a)</sup> Corresponding author: [frdiaz@unisalle.edu.co](mailto:frdiaz@unisalle.edu.co)

**Abstract.** Architecture for transition is a proposal of theoretical and methodological approach that takes up approaches from the South epistemologies and critical design studies. Therefore, a conceptual debate on this perspective has the purpose of contextualizing and localizing the analysis of two communitarian small infrastructure projects generated within the framework of the peace-building process in Colombia. The evaluation of these projects implemented in the rural area of San José del Guaviare from the perspective of architecture for transition evidences a technical logic that is decontextualized, delocalized and dysfunctional in the conception and execution of the architectural design. This leads to the conclusion that the approach proposed should be considered to achieve architectural projects that adapt to the territorial conditions, respond to the inhabitants needs, strengthen community ties, and contribute to the construction of peace.

## INTRODUCTION

Modern and contemporary paradigms of architectural thought assume architecture as a spatial, functional, and technical problem. However, in a global transition scenario characterized by social and ecological crises, architecture must assume a position in relation to social transformation through projects whose design responds to habitat conditions and the needs of local populations. In this sense, architectural design for transition emerges as a possibility to think, propose, and execute territorial transformations from a wide and holistic understanding of concrete spatial realities. This implies valuing both the materiality and the constructive knowledge present in the territory, so that they serve as a starting point for an effective architectural design in relation to the habitability of the place and the "buen vivir" -good living- of its inhabitants.

This new epistemological and methodological approach to conceiving architecture is the result of multiple transdisciplinary debates that have emerged in the Global South. An example of this are the critical design studies that seek to validate the autonomous and creative capacities of subjects and communities. In this way, inhabited space is transformed to meet their needs without the intervention of technical experts. However, architectural design can be conceived as a collaborative, transdisciplinary and transformative practice that combines the daily actions and knowledge of local communities. They contribute to the resolution of design challenges through their direct experience of the environment and what it offers, as well as the conditions and needs that architecture for transition must consider.

For the Colombian case, such a perspective is relevant given several conditions that frame a process of territorial transition in two senses. First, a transition to peace, given that the internal armed conflict that the country has experienced since the middle of the last century marked the future of the Colombian rural territory, not only due to countless violent actions but also as a place of lack, marginality, and state oblivion. Faced with this, the signing in 2016 of the Final Agreement between the national government and an illegal armed group that was active for more than 60 years: The Revolutionary Armed Forces of Colombia -FARC-, establishes the basis for a peace-building process aimed at reconciliation and overcoming violence. Second, a transition towards autonomous and sustainable ways of life in rural territories. This must have the support and participation of all institutional, social, and corporate actors for the generation of possible and viable alternatives. Strategic management and intervention actions are

aimed at improving the conditions of existence and guaranteeing the "buen vivir" of the communities. In practical terms, this includes the development of rural infrastructure projects, community facilities and housing, in which architectural design must transcend its technical character to become an element of innovation and social transformation: a device for territorial transition.

With the purpose of consolidating the peace building process, the Colombian government has implemented different territorial policies: Instruments such as the Development Programs with a Territorial Approach -PDET-, the Action Plans for Regional Transformation -PATR-, the Municipal Pacts for Regional Transformation -PMTR- and the Community Pacts for Regional Transformation -PCTR-. Each of these is structured in different phases for their construction and execution in the short term (2 years), medium term (5 years) and long term (10 years). In addition, they address different scales of intervention: subregional, municipal, and local. The implementation of these policies implied defining 16 sub-regions covering 170 municipalities of the 1123 municipalities in the country, which were prioritized considering the conditions of lack and marginality associated with the armed conflict.

This article analyzes two architectural projects of small community infrastructure in the villages of Charrasquera and Sabanas de La Fuga, two of the 87 villages in which the rural area of San José del Guaviare is divided. This municipality is the departmental capital and is one of the twelve municipalities that make up the Macarena-Guaviare sub-region. Both projects were developed as part of the initiative within the PMTR, which proposed the construction and provision of community huts and the improvement of the conditions of some existing ones. This initiative is part of Pillar 8 of the PATR called Reconciliation, Coexistence and Peace Building, which aims to promote actions that contribute to the guarantee and promotion of human rights and a culture of peace with equity, coexistence, and reconciliation in the subregion.

Following, the theoretical-conceptual approach that allows understanding the architecture for transition as an opportunity both for practical analysis and for the generation of design proposals in accordance with the specific territorial realities is presented. Then, the methodology implemented for the analysis of the two communal centers of the Charrasquera and Sabanas de La Fuga villages selected as case studies is presented. Subsequently, it is shown that these works as architectural projects respond in their conception, design, management, and construction to a standardized and prototypical solution that ignores the reality of the specific territorial context. Additionally, the lack of knowledge of the habitability conditions of the region and the ways of living of the local population have caused the lack of appropriation by the local communities. Finally, it is concluded that architecture in the post-agreement context should have as a basic and fundamental purpose to generate spaces for life, work, and socialization of the inhabitants in those rural territories in transition to peace. The project should be understood and thought of as a device for local action and transformation through transitional architectural design, to strengthen communality and promote autonomy in community processes, appropriation of the territory and its re-existence.

## **ARCHITECTURE FOR TRANSITION: A NEW THEORETICAL-PRACTICAL APPROACH**

The context of global ecological and social crisis has generated proposals of a different order even in the North. One example is degrowth as a stance against the developmentalist trend focused on economic growth, which is based on the construction of alternative economies and a transition towards convivial societies that live simply, in common and with less [1]. This process requires the unleashing of enormous amounts of creative labor and inventive practices that allow us to survive and flourish on a warming planet [2]. A contrasting position with degrowth is proposed from the Global South with the idea of post-development. Both positions share a concern for ecology, social justice, local autonomy and the questioning of capitalism and liberalism [3]. However, the difference lies in the strategies to meet the proposed objectives: degrowth proposes an alternative development that allows reducing or better managing waste or innovating in renewable energy sources, while post-development proposes alternatives that go beyond developmentalist discourses to achieve the good living of local communities.

The Peace Agreement in Colombia takes up some of these ideas to overcome the historical debt with the country's rural territories through what it calls Integral Rural Reform. It recognizes the inequitable distribution of land as a problem to be solved with the "democratization of access to land for the benefit of the rural communities most affected by poverty, state neglect and conflict" [4]. For this, the parties set the common goal of "contributing to the structural transformation of the countryside, closing the gaps between the countryside and the city, creating conditions of well-being and good living for the rural population" [5]. In this way, "buen vivir" becomes the purpose of peace building in rural communities, highlighting its potential as an alternative to development resulting from a recovery of knowledge and sensitivities of some indigenous peoples and a reaction against conventional

developmentalism that departs from Western ideas of progress and points towards another conception of good living, including special attention to nature [6].

This allusion to "buen vivir" as an essential part of the transition to peace implies overcoming armed conflict and generating scenarios of autonomy for communities. A transition that overcomes war and conflict as part of the transition towards sustainability [7]. In this sense, peace building in rural territories should respect and value the ways of living based on sustainable practices with the physical, social, and cultural environment. This is a call for all professionals and technical experts who wish to contribute and get involved in transition processes, especially for those architects, urban planners and planners who must review objectives, methodologies and tools of space and habitat design to drastically reformulate them through the activation of localized participatory and collaborative practices [8]. The idea of a localized design includes the recognition of the existence of different possible worlds made up of interconnected systems: the pluriverse.

Understanding the pluriverse allows a holistic approach to problems at different spatiotemporal scales as a fundamental premise of "ontological design" as a condition that is always situated-the condition of Worldhood. It is therefore a starting point for understanding modes of human being such as dwelling and purposeful activity-for example, working, or designing-. A complementary perspective proposes ontological design as a means of thinking about, and contributing to, the transition from the hegemony of modern one-world ontology to a pluriverse of socio-natural configurations. In this context, designs for the pluriverse become a tool for reimagining and reconstructing local worlds [9]. This is because design solutions for transition are rooted in long-term thinking, are lifestyle-oriented and place-based, and always recognize the natural world as the broad context for all design solutions [10].

Design then becomes a daily tool for social, cultural, and economic configuration and transformation at the local scale due to its action orientation. It is thus possible as a foundation for social innovation by addressing areas often excluded by the business and consumer market. "Design for social innovation" starts from the questioning of the role of the project in its various forms to strive for social, economic, and ecological innovation. Hence the much broader question about the future of the design culture of the human habitat to be defined as truly sustainable. Thus, architectural design poses an operational system in which expert and non-expert figures coexist and participate, since design for social innovation is assumed to be "all that expert design can do to activate, sustain and guide processes of social change towards sustainability" [11]. In practical terms, expert design in architecture must interact with non-expert or diffuse design, in a horizontal relationship in which the architect sheds his or her interests and positions him or herself as a facilitator of processes guided by the interests of local inhabitants.

Architectural design appears in this transitional scenario as an instrument for the creation of spaces for living, working, and meeting that promote autonomy, good living, and community life. Therefore, architects as expert designers can contribute to address the problems of everyday life in a strategic and flexible way, transforming communities into permanent laboratories for experimenting with forms of social innovation. For this, new methods promote the exchange of inter- or transdisciplinary knowledge and practices in the initial phases of the design process in pursuit of a common goal. This implies overcoming the conception of the architectural project only from the spatial, functional, and technical aspects, to think based on the recognition of the environment and the form of continuous interaction with space given the countless daily practices in relation to the habitability and well-being of human beings.

As all human activities and needs require a space with certain conditions for their realization and satisfaction, architecture can generate a dialogue of knowledges with autonomous design focused on the resolution of day-to-day problems, which must be complemented to achieve spaces in accordance with specific territorial contexts. Thus, a comprehensive understanding of the environment in which an architectural project is located makes it possible to imagine how it will function over time and to design the interaction of the user or inhabitant with the space. In this way, it is possible to move from ontological design as the denomination of something to "ontological design as practice" [12]. Being a design practice and not just a theory, "ontological design" can act through different tools and devices in the transition to peace in Colombia, permeating the processes through which the implementation of projects whose premise of action is community participation and self-management is carried out.

This has antecedents in the Global South from approaches such as the "social production of habitat" with community participation scenarios that promote autonomy, self-management, and collective ownership [13]. Also, some practices of joint construction of knowledge that seek architectural and technical solutions consistent with the context in which they are located. Local and regional realities require other types of interventions that are not only effective but also adequate and relevant to their own dynamics. This is the proposal of "collective knowledge of the habitat" that is methodologically based on the active and constant interaction between inhabitants, technicians, and professionals during all stages of the process -recognition, design, construction, and legitimization- to achieve an understanding of the physical, spatial, and environmental conditions of the place and the practices of inhabiting [14].

Consequently, architectural design for transition is eminently participatory and transdisciplinary to generate alternatives from the understanding of ruptures in problematic contexts. It is also presented as a tool with great potential to contribute to the profound ecological and cultural transformations and transitions emerging in the territories of difference, made up of places in which the logics of the communal are the very root of design [15]. Thus, the creative capacities to design and solve different situations typical of the everyday life of the inhabitants are understood and an architecture for peace that values all the efforts of local populations [16]. These efforts are more transcendental in practice than public policies that seek to transform reality. As will be seen below, the proposal of standardized and prototypical solutions that are implemented following political criteria and parameters end up being unknown and not appropriated by local communities.

## **ARCHITECTURAL EVALUATION FROM THE TRANSITIONAL APPROACH**

The management and implementation of the different architectural projects aimed at peacebuilding has been the task of different sectors. The PDETs are a planning and management instrument to implement the different plans and projects derived from the Final Agreement, prioritizing the component of social and community projects. San José del Guaviare was prioritized as one of the 170 PDET municipalities mainly due to the impact of the armed conflict and the presence of illicit crops and other illegal economies. According to the Territorial Renewal Agency - ART-, so far in this municipality 22 of the 1041 PDET projects implemented at the national level have been executed, of which 21 correspond to architectural projects with a social and community approach. These projects are mainly school improvement, design and construction of sanitary batteries, parks, and community centers. In this framework, the following analysis aims to review the conditions that determined the design and construction of two community centers built in this municipality: one localized in Charrasquera and other in Sabanas de La Fuga.

Between October 2018 and October 2019, three versions of the Workshop "Pensando el Territorio Veredal" - Thinking the Village's Territory- were held in the study areas. This event was organized by the Universidad de La Salle from Bogotá (CO) with the participation of Università degli Studi "G. d'Annunzio" from Chieti-Pescara (IT). The activities developed in this workshop allowed field work and the collection of information on site, which are part of the methodology for the analysis of the case studies presented below. The on-site work allowed the collection of different perspectives of the local inhabitants through interviews and conversations, as well as architectural and photographic surveys of the community centers that were relevant for the realization of this study.

### **Case studies**

The Charrasquera community center is in the main hamlet of the village of the same name. This hamlet was the scene of several violent events that caused its destruction in 2002. Since then, the hamlet has been slowly rebuilt, mainly after the signing of the Peace Agreement in 2016. Due to the disproportionate impact of the conflict, this place was included as a subject of collective reparation by the Victims Unit Office. Consequently, and in line with the PDETs, the construction of a community center in this place was prioritized (Figure 1 and 2).

Its location is determined by the identification of a communally owned lot, located at the intersection of the two main roads. In the past, some community facilities such as the slaughterhouse were located there. Near the community center, there are the ruins of a house destroyed in the 2002 victimization event and some houses that have been rebuilt and inhabited again. In the image 1 you can identify the community center because it is the only building with a red roof.

The construction of the community center was executed by the United Nations Development Program (UNDP). The design process should have included the participation of the community in the different design and construction processes. However, according to community members in different interviews conducted in March 2019, this participation did not take place. Thus, the construction techniques and architectural typology do not correspond to the ways in which the territory has been traditionally built and inhabited and the way in which the hamlet has been rebuilt.

The village of Sabanas de la Fuga is located approximately 30 kilometers from there, which means a two-hour trip in a 4x4 truck. The community center was built in this hamlet because of the implementation of PDET projects in the region. According to ART this work was commissioned to the private company Construcivil. Its location was determined based on an old hut that was functioning despite its obvious structural problems and deteriorating



conditions in the enclosures and finishes. The community decided to keep it and build the new one in the adjacent lot, with the vision of integrating them and improving the existing infrastructure.



**FIGURE 1.** Hamlet of Charrasquera. Photo by the authors, 2019



**FIGURE 2.** Hamlet of Sabanas de La Fuga. Photo from Apple maps, 2021

### **Technical Aspects**

Both community centers were built with the same structural system, using reinforced concrete frames with 25 cm thick columns and beams. The enclosure walls were built with painted and plastered clay blocks. The carpentry and

roof structure are metallic, and the roof tiles are made of galvanized sheet metal color red. This construction system is widely used in Colombia, mainly in population centers where industrialized materials are readily available and where qualified labor for masonry and concrete is easily obtained. However, the environment in which these community centers are located is a jungle environment, more than 3 hours away travelling by deficient roads. Consequently, an architectural typology has been developed in the Amazon region, based mainly on the materials available locally and on the traditional knowledge of the peasant settlers and indigenous people who have populated these territories. Thus, wood has become the most common material used in structures and enclosing walls and zinc roof tiles the most common solution for roofs. (Figure 3, 4 and 5)



**FIGURE 3.** Old hut on Sabanas de La Fuga. Photo by the authors, 2020



**FIGURE 4.** Community center of Charrasquera. Photo by authors, 2019





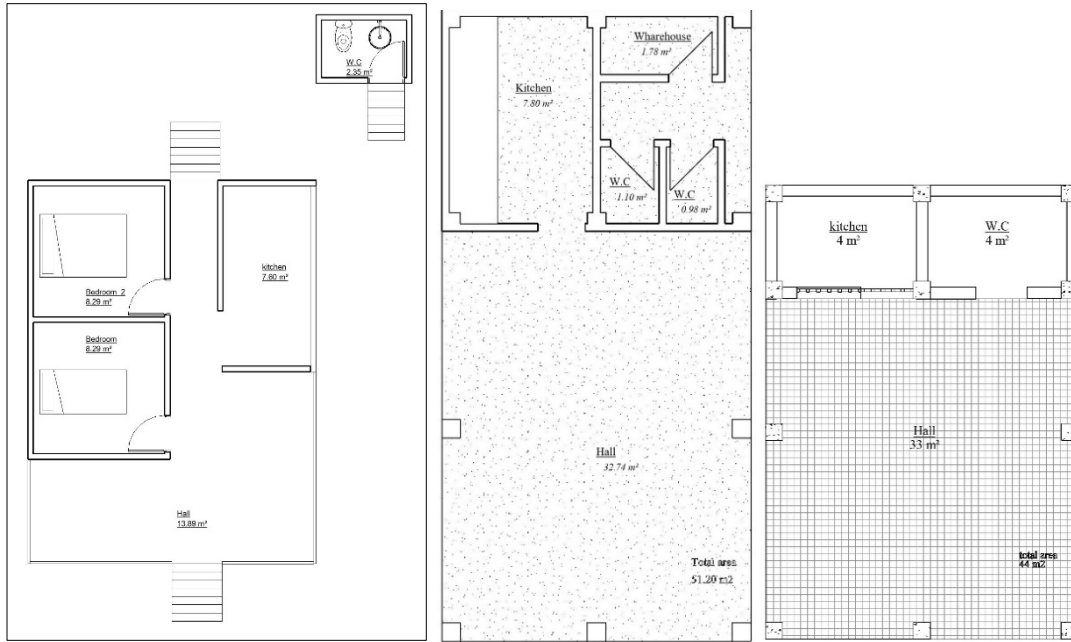
**FIGURE 5.** Community center of Sabanas de La Fuga. Photo by authors, 2020

The sloped roof responds mainly to the ease of construction and low cost of the system. In the case of San José del Guaviare, which is a highly rainy municipality with a deficit of potable water in the rural area, sloped roofs offer the possibility of implementing rainwater collection systems, which were not considered. Likewise, the rural area of San José del Guaviare does not have electricity coverage, but the radiation levels offer the possibility of implementing solar energy systems, which were not included either. Despite of this, the community centers were built and delivered with the networks ready to be connected to the public systems, ignoring the deficit conditions, and implementing technical solutions for an interconnected place such as a town center.

The budget is a relevant aspect in this type of project and, in these particular cases, generates some concerns on the part of the local community. While the Charrasquera community center had a total investment of around US\$ 36,000, the Sabanas de la Fuga community center costed around US\$ 47,000, according to ART. This increase of about 30% seems to have no justification, considering that the constructed area is similar, the structural system is the same and the distance from the town center is also similar. Additionally, according to the compliance audit report to the ART issued by the Comptroller General's Office, the value of the construction contract for the Sabanas de la Fuga community center was around US\$ 26,000, which shows a gap between what was contracted and what was executed.

### **The typology**

The typology of housing in the region is characterized by a transitional space between public and private, between inside and outside, which fulfills the important function of socialization and in many cases commercial activity. The design of the community centers, in contrast, responds to a rectangular plan typology with an open area at the front, designed to serve as a meeting and gathering place, and a small block of bathrooms and kitchens integrated into the volume and located at the rear. This lack of knowledge of how the inhabitants of the place occupy the space, generates a natural rejection to the daily or sporadic activities that may occur in the building.



**FIGURE 6.** Typical house of Guaviare (left); Charrasquera Community Center (middle) and Sabanas de La Fuga Community center (right). Drawing by the authors, 2021

The kitchen in Colombian rural architecture is a place where a large part of the daily time is spent, mainly for women. In this sense, the kitchen is spacious, ventilated, with space to place other furniture and develop activities in addition to the preparation of food that allow socialization and even the productivity of the inhabitants. In addition, the wood stove is the only alternative for cooking food in the absence of electricity and gas networks. The bathroom, in the traditional typology, is usually a block detached from the main block of the dwelling. This makes it possible to isolate its function mainly because of tradition and ease of access to the rainwater reserve, which is collected and used without any treatment.

In the design of the community centers, these typological characteristics were ignored and consequently the kitchens are closed spaces, with minimal dimensions and elongated proportions, equipped with a tiled table, a stainless-steel sink, and appliances for a non-existent electrical energy; and the bathroom, incorporated into the main block of the building, is perceived as alien in an environment where the modes of living are mainly conditioned by the domestic architecture. (Figure 6)

## Results

It can be identified that the design of the community centers as part of the PDET projects was carried out following prototypical and standardized guidelines aimed at optimizing the construction process and design and construction costs. One of the objectives of the projects framed in these programs is to promote community participation in the planning, execution, and subsequent use. However, in the analysis and on-site work, it became evident that in these cases this participation was minimal. The challenge of an architectural project in the transition to peace must go beyond institutional intentionality and its central object must be the habitability and wellbeing of local communities. It is imperative to propose social and technical management tools to generate alternatives for the implementation, design and construction of habitat, housing, equipment, and collective spaces projects [17].

The distance taken between the designer and the end user in these projects results in projects with low impact on community dynamics. In these cases, the needs of architecture and construction thought from the reality of urban centers must be transferred and localized to produce an understanding of the local needs of the transition to peace, and to change the paradigms of architecture that qualify it by its technical, spatial, and formal conditions. A comprehensive understanding of the environment in which an architectural project is located allows us to imagine how it will function over time and to design the interaction of the user or inhabitant with the space. Design with knowledge of how things work will be qualitatively different from any kind of design that does not [18].

## CONCLUSIONS

Architecture for transition is an innovative methodological tool for conceiving the design of spatial forms and structures. However, it also has the potential to evaluate buildings from their technical aspects to their functionality. Thus, it has been possible to question the use and sense of appropriation of the inhabitants where the two small community infrastructure projects analyzed were implemented. This is valid for the Colombian case, since the technical and typological characteristics of this type of construction are usually replicated, despite the markedly different physical-environmental and sociocultural conditions that exist in the different regions of the country.

The post-agreement scenario and public policy instruments with a territorial approach must adopt perspectives focused on local realities. These take place in the spaces of daily use where people live, work, and interact as communities, so that the adaptation, modification or planning of these spaces must respond to the conditions, interests, and needs. Architecture for transition as a localized methodological bet and given its performative and transformative scope, can retake and value the empirical constructive knowledges to enrich them with part of the expert knowledge. This contributes in some way to the construction of peace by allowing the reconciliation not only of unknown and distant people but also of knowledge in the search for the practical meaning of everything that implies good living.

## ACKNOWLEDGMENTS

This article is a product of the research project "Reconfigurations and Transitions for Territorialization: Strategy for Peace-Building in San José del Guaviare" (code 2438936) funded by Universidad de La Salle, Bogota, Colombia.

## REFERENCES

1. F. Demaria, F. Schneider, F. Sekulova, and J. Martinez-Alier, "What is Degrowth? From an Activist Slogan to a Social Movement," *Environmental Values*, vol. 22, n° 2, pp. 191-215, 2013.
2. D. White, "Just Transitions/Design for Transitions: Preliminary Notes on a Design Politics for a Green New Deal," *Capitalism Nature Socialism*, vol. 31, n° 2, pp. 20-39, 2020.
3. A. Escobar, *Autonomía y diseño: la realización de lo comunal*. Popayán: Universidad del Cauca; 2019.
4. *Forjando Paz, Ruta para la Construcción de una Paz Estable y Duradera*. Bogotá: Torreblanca; 2017.
5. Gobierno Nacional de Colombia y FARC-EP, *Acuerdo Final para la Terminación del Conflicto y la Construcción de una Paz Estable y Duradera*. Bogotá; 2016.
6. E. Gudynas y A. Acosta, "La renovación de la crítica al desarrollo y el buen vivir como alternativa," *Utopía y Praxis Latinoamericana*, vol. 16, n° 53, pp. 71-83, 2011.
7. P. Raskin, *Great Transition: The Promise and Lure of the Times Ahead*. Stockholm: Environment Institute; 2002.
8. T. Fry, "Design: On the Question of 'The Imperative'," *Design and Culture*, vol. 7, n° 3, pp. 417-422, 2015.
9. A. Escobar, *Autonomía y diseño: la realización de lo comunal*. Popayán: Universidad del Cauca; 2019.
10. T. Irwin, "Transition Design: A Proposal for a New Area of Design Practice, Study, and Research," *Design and Culture*, vol. 7, n° 2, pp. 229-246, 2015.
11. E. Manzini, *Design, When Everybody Designs: An Introduction to Design for Social Innovation*. Cambridge: Massachusetts Institute of Technology; 2015.
12. A-M, Willis, "Ontological Designing," *Design Philosophy Papers*, vol. 4, n° 2, pp. 69-92, 2006.
13. G. Romero y R. Mesías, *La participación en el diseño urbano y arquitectónico en la producción social del hábitat*. México: Programa Iberoamericano de Ciencia y Tecnología para el Desarrollo; 2004.
14. M.I. García-Reyes y S. Anzellini, "Saberes compartidos del hábitat: una arquitectura para el paisaje rural," *Dearq*, n° 24, pp. 34-47, 2019.
15. A. Escobar, *Autonomía y diseño: la realización de lo comunal*. Popayán: Universidad del Cauca; 2019.
16. D. Unigarro, L. Sanabria y L. Bonilla, "Indagación de la memoria, reconciliación y arquitectura para la paz en Monterrey (Casanare)." En J. Rojas y A. Vargas, eds. *Territorio, equidad y desarrollo*. Bogotá: Universidad de La Salle; 2021.
17. M.I. García-Reyes y S. Anzellini, "Saberes compartidos del hábitat: una arquitectura para el paisaje rural," *Dearq*, n° 24, pp. 34-47, 2019.
18. A-M, Willis, "Ontological Designing," *Design Philosophy Papers*, vol. 4, n° 2, pp. 69-92, 2006.