

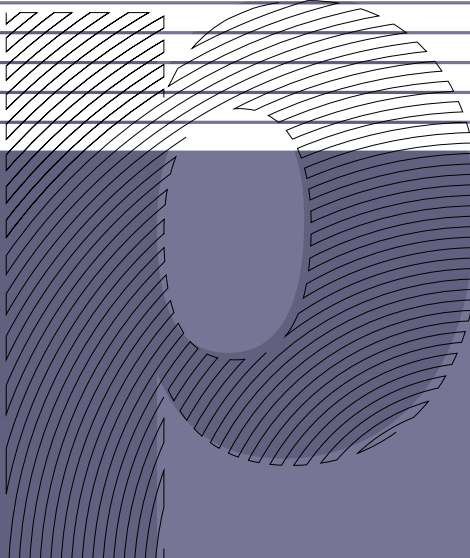
Andean Cosmotechnics: Notes for Two Defen- sive Architectures in the San José Neighborhood in Manizales, Colombia

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Julio Suárez Hormazábal

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This article examines the experience of the 'Taller Social Latinoamericano' (Latin American Social Workshop) held in Manizales, Colombia, in 2022, focusing on the construction of the *Apu Kumanday Classroom*. This circular space, along with the cultivation of protected plant species, stands as an act of resistance against a large-scale urban renewal project. The article analyzes two defensive design strategies: the barricade and the shell, both conceived to confront devastation. From a situated practice, it examines both the interplay between progress and violence, as well as the dual role of architecture, as both practice and technique. These reflections are shaped through community-based planting pedagogies, resulting in the creation of a 'green barricade' designed to protect and strengthen spaces. Design is framed as a political, aesthetic, and social act, aimed at repairing the socio-spatial fabric fractured by processes of dispossession and eradication.

Keywords

Apu Kumanday Classroom

barricade

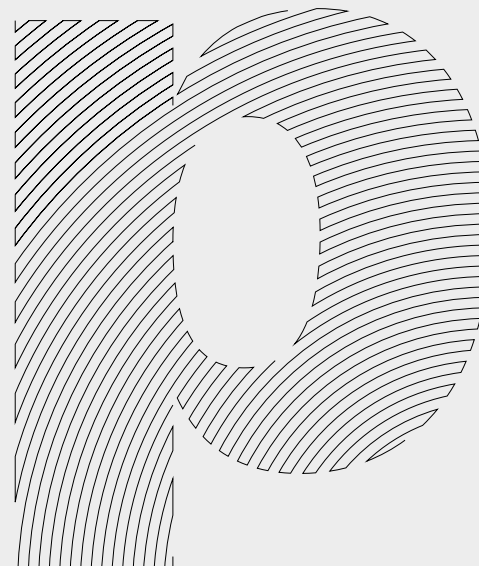
shell

Comunativa

community

Julio Suárez Hormazábal

Lecturer and director of the Master in Socio-spatial Practices at Universidad de Las Américas. He is pursuing doctoral studies at Universidad de Alicante. After graduating in Architecture from Universidad del Biobío, he obtained a Master's degree in Architecture from Pontificia Universidad Católica de Chile. Revolving around critical spatial practices, his research focuses on temporary architecture, technique studies, and practice-based research. He is the co-author of *Situaciones* (along with República Portátil; Dostercios, 2020), and author of 'El andamio como elemento arquitectónico' (*Rita*, Issue 13) and 'La abrazadera giratoria y el espacio en red del andamio' (*Rita*, Issue 17). He is a co-founder of República Portátil, a platform for the development of projects and research that address the relationship between architecture, temporality, and socio-spatial practice.



Andean Cosmotechnics: Notes for Two Defensive Architectures in the San José Neighborhood in Manizales, Colombia

Julio Suárez Hormazábal

Universidad de Las Américas
Facultad de Arquitectura, Animación, Diseño y Construcción
Santiago, Chile

✉ jsuarez@udla.cl

🌐 <https://orcid.org/0000-0001-5984-8426>

RESISTANCES AND VIOLENCES IN THE COLOMBIAN ANDES' URBAN SPACE

In the fall of 2022, I spent two weeks building a circular classroom out of guadua (Colombian bamboo) alongside a group of Latin American students and architects from various countries. The project took place on a site adjacent to a family's backyard in Manizales, in the heart of Colombia's coffee-growing region. Now known as the *Apu Kumanday Classroom*, this open-air structure functions as both a classroom and a symbol of resistance against the threat posed by the San José Urban Megaproject—a government initiative proposing a radical transformation of the city center under the guise of urban renewal.

The article is framed between two performative actions of architecture: one of violence and the other of protection. These actions are discussed through the works of authors who address this condition of spatial violence, as well as the aesthetic-political nature of certain interventions. Bernard Tschumi's famous phrase, "There is no architecture without violence" (1996, p. 122), highlights an inherent characteristic of the discipline when construction and destruction are understood as two inseparable sides of the same coin. It is crucial to incorporate a disciplinary critique that questions this inherently violent aspect of architecture, especially when it originates from the State. In summary, it is essential to understand that the theory of violence in the discourse of modernity is, simultaneously, a political theory, as Nadir Lahiji (2011) suggests. In this regard, Jacques Rancière's text 'The Paradoxes of Political Art' (2010) offers an operational response that can be applied to a specific case: the construction of defensive models for the occupation of contested land.

¹ Organized by the Coordinadora Latinoamericana de Estudiantes de Arquitectura (CLEA Latin America), together with the Colectivo de Estudiantes de la Sociedad Colombiana de Arquitectos (CESCA). This was the first edition after the COVID-19 global pandemic.

² Architect Lucía Garzón, Coonvite Arquitectura Cooperativa, República Portátil, La Cabina de la Curiosidad, and Bististema worked in the three TSL workshops.

³ República Portátil was founded in 2003 as a creative community that works transdisciplinarily in the theoretical-practical development of projects related to the collective habitation of urban space. Its works include art installations, performances, modular equipment, and temporary shelters, of both small and large-scale, in cities across Chile, Mexico, and Colombia.

⁴ For this article we worked with representatives of the Comunitativa such as Gilsan Quintero, Daniela Hernández, Juan David Delgado, and Marta Lucía Loaiza.



Figure 4: Honorary display where señora Marta Lucía Loaiza gathers and exhibits the awards she has received for her social work within the community. Photograph by the author, 2022.

This article is a reflection following the experience gained at the ‘Taller Social Latinoamericano’ (Latin American Social Workshop), and aims to critically analyze the tension observed between a devastating urban renewal project and the spatial resistance of Fundación Comunitativa Huertas Urbanas (a foundation that creates urban gardens, whose name refers to a native-communal culture). These opposing forces have inspired a reflection on two design strategies associated with defensive typologies: the barricade and the shell. Throughout this essay, I will examine the operations behind the construction and design of both typologies, carried out through methodologies that I consider worth sharing.

THE ACTORS OF RESISTANCE

The 18th version of the ‘Taller Social Latinoamericano de Estudiantes de Arquitectura’ was held in 2022, this time under the theme ‘Weaving Landscapes: TSL Manizales (Colombia) 2022’.¹ In this edition, a group of students and architects from various Latin American countries gathered to analyze, design, and build public facilities in workshops held across three communities in Manizales.² República Portátil, a collective I have been part of since 2003, was one of the studios invited by the students to lead one of these workshops.³

As a collective, we were responsible for working in the San José neighborhood, where the Fundación Comunitativa Huertas Urbanas is located.⁴ Since 2012, this independent organization has committed to “the transformation of human habitat through processes of reflection and social action aimed at rethinking environmentally destructive practices” (Comunitativa, n.d.), fostering creative resistance scenarios capable of countering the effects of action following dispossession.

During the work carried out on the Comunitativa grounds, the collective of architects and students was warmly welcomed by señora Marta Lucía Loaiza, the leader of the Fundación (Figure 4). At her home, we shared meals and discussed the construction details. It was also there that we built relationships with Gilsan Quintero, Daniela Hernández, and Juan David Delgado from Fundación Comunitativa. They introduced us to their methods and strategies for resisting the destruction of their environment, as well as the references that inspire their plantation work and their connections with other foundations. They also explained how, through an action-based pedagogical practice, they have steadily reclaimed ground against the so-called ‘Macroproyecto Urbano de Remodelación’ (Urban Redevelopment Macroproject), an initiative that impacts the center of the San José neighborhood.

URBAN MACROPROJECT IN MANIZALES

Manizales, the capital of the Caldas department, is an iconic city within Colombia's Coffee Axis. With a population of approximately 400,000, the city is situated in a mountainous region at an average altitude of 2,150 meters above sea level. Its location provides a temperate climate and a geography favorable for coffee growth, underscoring its cultural and economic significance as part of the Coffee Cultural Landscape, which was declared a UNESCO World Heritage Site in 2011.

In 2009, the Colombian government approved the macro project 'Centro Occidente de Colombia San José' (West Central Colombia San José), an ambitious initiative aimed at transforming and revitalizing a significant area of Manizales. This transformation promised urban and housing renewal, along with substantial social and economic development, to improve the physical conditions of the surrounding area. However, this project also led to the material destruction of a culture for the sake of hygiene and renewal. Through the 'Taller Social Latinoamericano' (TSL), we were able to witness the scale of urban devastation that Comunitativa described as the 'Macrodisaster'.

SUBTRACTION AS A FORM OF TIME DESTRUCTION

The urban renewal project in downtown Manizales—part of the 'Construir Ciudades Amables' (Building Friendly Cities) strategy from the National Development Plan during Álvaro Uribe's government—rests on a development ideal that, under the guise of improvement, promotes a 'renewal' that transforms the city into a more urbanized model. Approved in 2009 and inspired by the success of previous projects, it has been developed with the support of the now inexistent Ministry of Environment, Housing, and Territorial Development. However, over a decade, this process led to one of the most destructive interventions in Manizales' history: the ERUM Company megaproject, which eliminated 233 blocks and demolished 2,569 buildings, displacing homes, businesses, and industries (Delgado Loaiza, 2020, p. 223) (Figures 2, 3, and 4).

↓ **Figure 2:** View of the San José landscape twelve years after the eradication. Photograph: Juliana Burgos, 2022.

↓ **Figure 3:** View of a street in San José during the eradication. Photograph: Gilsan Quintero, 2012.

→ **Figure 4:** Aerial view showing the relationship between Parque Urbicante, the *Apu Kumanday Classroom*, and the city of Manizales. On one side, the highway section of the urban renewal project. Photograph: Herald Jeffry Paredes, 2022.



In their analysis of this intervention, Serrano Moya and Vallejo Aristizábal (2013) distinguish between ‘renewal-regeneration’ and ‘renewal-demolition’, emphasizing how these renovations not only respond to urban development intentions, but are also driven by political and economic interests aimed at halting the physical and environmental deterioration of urban centers. However, the concept of ‘remodeling-destruction’ offers a deeper reflection: terms such as undoing, tearing down, and ruining represent the ‘disappearance of time’ and embody a form of power exercised through the demolition of habitat, serving as a policy designed to increase the surplus value of land (Serrano Moya & Vallejo Aristizábal, 2013). This logic of obsolescence and replacement reveals an intention of ‘subtraction as form’ (Easterling, 2014), where urban intervention involves not only a spatial reconfiguration, but also a drastic transformation in both the way of life and the spatial memory of the place. Although the agenda is presented as ‘friendly’, the result of the remodeling has been, paradoxically, construction through destruction, highlighting the complex nature of such transformations, which affect not only the physical space but also the identity and social fabric of an entire community.

Two Types of Defense Against Destruction

Through the material reading of space, it is possible to interpret the context in which territorial occupation strategies for land appropriation emerge. As a transformation of the world, architecture allows us to observe the political implications of these transformations. However, as Tschumi (1996) suggests, if architecture entails, in its own act, both construction and destruction, can we conceive of a defensive architecture that offers a way out of the polarization between construction and destruction?

Through dispossession and demolition, a new *tabula scripta* (Alkemade, 2014) made its way into the city center. In this hostile landscape, Comunitativa was able to develop temporary strategies to build and design the spaces marked by the subtractions left by the bulldozers. Through the logic of care, they integrated plant growth as a constituent technique for both creation and protection against real estate expansion. The design operation described here is linked, as Miguel Mesa del Castillo mentions in *Víctimas de un mapa* (2012), to Tschumi’s ‘exemplary actions’ (1996)—urban actions and occupations that can be related to two defensive typologies made of plant material: the barricade and the shell. Without proposing an overtly confrontational approach to the tensions of destruction, this arrangement offers a way to weave new connections with the environment.

Figure 5: Señora Marta Lucía Loaiza's kitchen window, overlooking the Parque Urbitante grounds. Photograph by the author, 2022.



⁵ 'Popular schools' are generally associated with the concept of non-formal education, where private entities (such as NGOs and foundations) can offer training programs to complement formal education. Law 115, along with Law 715 of 2001, grants municipalities the autonomy to regulate self-financed educational services, allowing these institutions to participate in pedagogical projects that promote community development and facilitate access to education for marginalized sectors.

PEDAGOGIES AS KNOTS, THE RECOMPOSITION OF THE FABRIC

In the fall of 2022, upon arriving at the home of Marta Lucía and Juan David, we gained access to the intimate world of *Comunativa*. During lunch conversations, while sharing delicious plates of *sancocho* and *mondongo* prepared by Marta, we learned about their emotional bonds and the collective's territorial recovery agenda. After the demolition of the neighboring houses, in one of the many blocks destroyed, resistance found a place to nest.

Juan David explained to me that, initially, this care was exercised through domestic pedagogies of music and cooking—a combination developed by both hosts to support the immediate community after the demolitions. Daniela notes that, over time, this initiative expanded to include the development of documentary filmmaking pedagogies and the cultivation of urban orchards, which are currently visible from the kitchen window (Figure 5), and occupy a large area today, after the eradication of around 15 houses.

These informal conversations raise questions about territorial occupation methods and the projected scope of actions by actors such as Gilsan, who emphasizes that the pedagogies operated as a collective work method, later applied in the recovery of vacant land, both within the immediate context of *Comunativa* and in other grassroots organizations in Manizales. In this legal space protected by collective action, the *Fundación* develops its pedagogical planting processes through a regular schedule of workshops, with 20 to 30 people participating in each session. For Gilsan, this methodology enables the continued recovery of lands known as Parque Urbitante and Parque Metamorphosis. Currently, the *Fundación* seeks to support its actions through Colombia's Education Law, which grants protection to corporations, foundations, and NGOs under the designation of 'popular schools'.⁵

Comunativa not only builds a physical space but also addresses the paradox of the political in architecture, as Rancière (2010) puts it: a conflict between aesthetic autonomy and its potential to generate dissent. Urban orchards are interpreted in this article as a 'green barricade' that transcends its practical function and becomes an aesthetic and political act, reconfiguring the sense of the common in urban space. This research, based on participant observation and informal interviews, allowed us to capture how daily coexistence and resistance practices generate an articulated regime of perception and use of territory. The spatial operations carried out in this context embody a form of dissidence that goes beyond construction, imbuing the recovered spaces with symbolic and social value.

THE GREEN BARRICADE: A PRACTICE OF SPATIAL RECOVERY THROUGH THE ACCUMULATION OF TIME

Barricades have historically been used as defensive architectures in public spaces. Gottfried Semper, one of the most renowned architects of the 19th century, designed barricades in Dresden during the 1848-1849 revolution (Siemann, 1998, p. 205). Leopold Lambert (2012) offers a pertinent reflection, describing these constructions as abject matter built through accumulation. In an article precisely titled 'Abject Matter', Lambert (2012) examines examples from the Arab Spring and various representative democracy movements, including the Indignados in Spain, Occupy Wall Street in the United States, and the 2019 social uprising in Chile. However, in the present case, this vegetal barricade not only accumulates matter but also time, allowing space to be gained for establishing occupation (Figures 6 and 7).

↓ **Figure 6:** View of the vacant lot before its occupation by Comunativa. Source: Google Maps (Image captured by the author on 20 July 2024, from the side of Calle 28 in San José, Manizales, Colombia).



→ **Figure 7:** View of the banana plantations set up by Comunativa. In the center, the TSI team is gathered at the site of the *Apu Kumanday Classroom*. Photograph: Aline Costa Vilela and Christian Zambrano, 2022.

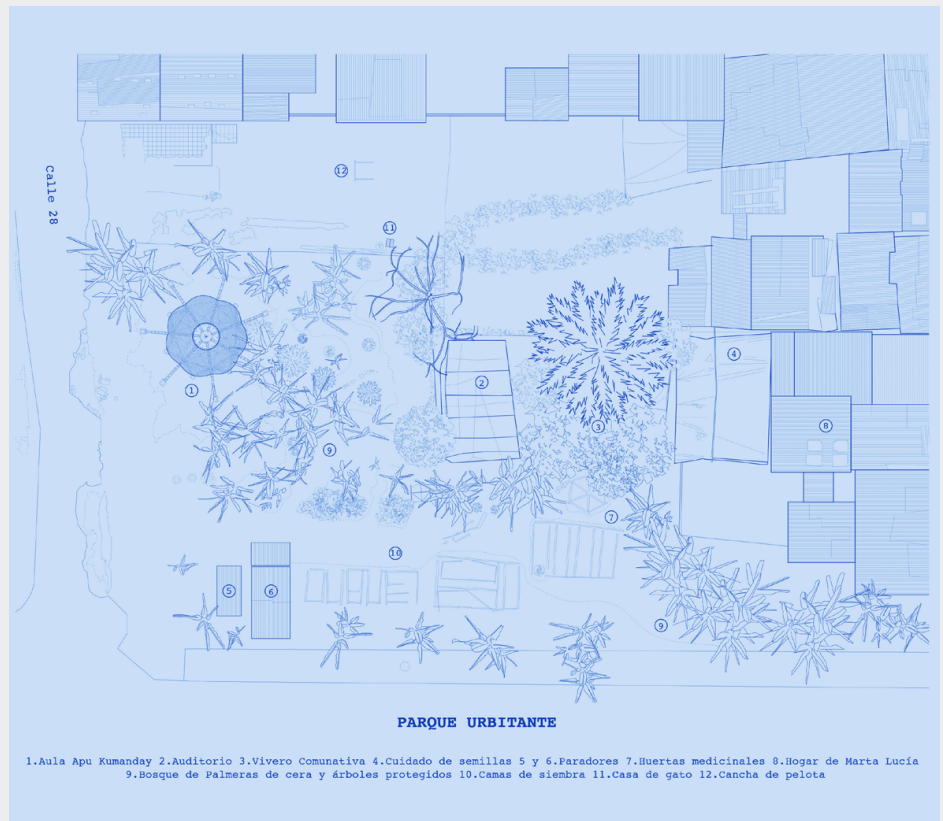
Comunativa implements a pedagogical project that consolidates vacant spaces through medicinal orchards, banana palm trees and protected species, thereby displacing spaces available for urban development. Given the conditions of the equatorial mountain climate, which favors tropical rainforest vegetation, trees like banana palms—with a growth cycle of approximately six months and an average height of two to three meters—enable the occupation of land. This methodology is far from being a mere cosmetic or ornamental solution; instead, it is understood as a form of silent spatial struggle and community resistance. In this text, it is conceptualized as a 'green barricade': a guerrilla technique designed to neutralize land use and counteract real estate speculation.

When referring to a barricade, we speak of a border that acts suddenly and temporarily upon a space, prompting questions about how this barricade acts in relation to time. The sowing process is inspired by the cultivation method of Japanese farmer, biologist, and philosopher Masanobu Fukuoka

(2011), who advocates for a seeding practice without plowing, manure, or fertilizers, avoiding weed removal and pesticides, and employing a technique based on clay balls. Time becomes a critical variable in this approach, conceptualized as a ‘slow’ barricade, advancing at the pace of plant growth and inherently linked to the cycles and seasons of the year.

But how is this Eastern method adapted to a situated practice, carried out in Manizales? One strategy involves the selection of species and the community-driven processes underlying their cultivation. These efforts began with the planting of banana palms to define the park’s perimeter. Subsequently, planting beds were created and distributed across the area overlooking the adjacent road. Finally, as Gilsan explains, 47 tree species protected under Colombian law were planted—trees that, after three years, cannot be legally cut down. In this way, Comunitativa operates by using the vegetative body as a spatiotemporal horizon, creating a form of protection against territorial disputes (Figure 8).

Figure 8: Plan drawing of Parque Urbitante and its main elements. Drawing by the author, 2024.



The design of Parque Urbitante employs a 'vegetal time' to gradually shape the contours and edges of the sites left after the eradication. The strategic placement of planting points defines a spatial horizon, where the plants act as technical elements that consolidate the progress of occupying the vacant lots. According to Milton Santos, space acquires meaning through its actors, since "objects do not have a philosophical reality," but instead are connected to systems of actions, and vice versa (2000, p. 54). Inspired by Fukuoka's approach, Comunitativa's planting practice in the park expands its boundaries slowly and seemingly lacks design. Furthermore, this cultivation requires ongoing care, including pest and weed management, becoming both a pedagogical and communal process. Protected by law, the planted species ensure a spatial right, consolidating the territory through knowledge encounters that strengthen the community's commitment through popular education.

THE SHELL: A DEFENSE AND SYMPOIETIC SHELTER TECHNIQUE

Various artifacts related to defense are preserved in historical architectural records. One of these is the 'tortoise ram' described by Vitruvius in *Book X*, related to machines (1995, p. 274). This dome-like structure consists of a movable palisade reinforced with rawhide and timbers, designed to protect assailants from attacks from above as they advance toward the walls of a fortress (Figure 9).



Figure 9: Illustration belonging to the edition of Vitruvius' *De Architectura* annotated and translated to Italian by Cesare Cesariano, where various objects are illustrated, including the tortoise ram. Source: Vitruvius Pollione, M. (1524). *De Architectura Libri Decem* (Cesare Cesariano, Trans. and Comp.), p.374. Made in the house of M. Gotardo da Ponte. Image retrieved from: <https://archive.org>

Centuries later, Buckminster Fuller reimagined the concept of the dome, linking it not only to protection but also to connection. His vision of the home as a ‘broadcasting shelter’ (Wigley, 2015, p. 60) allows us to understand the dome as a space that delocalizes the relationships between body and place. In his 1960 proposal to cover New York City with a large transparent shell, Fuller envisioned a prophylactic architecture capable of protecting an entire city from pollution and climatic agents.

Speculatively, these structures can also be associated with Peter Sloterdijk’s ‘atmospheric islands’, discussed in his book *Foams* (2018), which include Joseph Paxton’s Crystal Palace (1851), Alphonse Balat’s Royal Greenhouses of Laeken (1875), or Nicholas Grimshaw’s Eden Project (2000). These domes function as technical membranes that delimit space, controlling the relationship between the interior and exterior. In many cases, their primary function is the care of plant species, as seen in greenhouses, where time seems to slow down or synchronize to provide specific environmental conditions. However, while the Manizales shell functions as a shelter for pedagogies, its purpose is not to create an autonomous or replicable environment, nor to generate a conservation ecosystem that controls environmental conditions, as a greenhouse or a Fuller’s dome would.

The shell of the *Apu Kumanday Classroom*—constructed during the TSL—is part of a palisade architectural operation that employs the compression ring technique to connect seven *Guadua angustifolia* ‘bases’, which support the bamboo-dome modules, providing a roof for the tentacular structure of the classroom (Figures 10 and 11). This technical operation enables the construction of a high visibility element in a short ten-day period. Through an organization specific to the architecture discipline, the work concatenates design, prototyping, and modular production procedures until the projected geometry is achieved. This coordination is understood as a technique that allows for the efficient planning of the production of its components.

↓ **Figure 10:** Assembly of a roof module built with the bamboo-dome technique, designed by Colombian architect Lucía Garzón. Photograph: Aline Costa Vilela and Christian Zambrano, 2022.

↓ **Figure 11:** Compression ring. Photograph by the author, 2022.



⁶ *Trans. N.:* A source different from the source quoted in the Spanish original version is used: *Staying With the Trouble: Making Kin in the Chthulucene*, Duke University Press, 2016, p. 33.

These domes reveal a *continuum* of architectural strategies (from defense to shelter) that respond to both external threats and the demands of the environment and its community, configuring autonomous and protective spaces at various scales and in different contexts. The shell forms the classroom, functioning as a shelter for the pedagogies that enable the care of the plantings in the park. It is not, as mentioned, an autonomous, replicable, or controlled environment. Instead, it is a sympoietic structure, as defined by M. Beth Dempster, who characterizes these constructions as “collectively-producing systems that do not have self-defined spatial or temporal boundaries” (as cited in Haraway, 2019, p. 63).⁶ This distinction is crucial to avoid confusing interpretations between sympoietic and autopoietic systems, differentiating those that emerge from collaboration without rigid boundaries from those that are self-sufficient and closed (Haraway, 2019).

While the architecture of the classroom operates as a collective system in its relationships, as a defensive model, it is linked to the palisades described by Vitruvius from *Book X* onward, where he mentions both war and defensive machines, such as ‘mobile towers’, revolving cranes, and winches. All of these are subsidiary structures that function as means to an end rather than as ends in themselves. From this perspective, it becomes appropriate to distance oneself from techniques of invasion and abrupt occupation of a place, making way for a narrative of attunement or adjustment. Thus, the operation associated with the technical and design decisions of the *Apu Kumanday Classroom* is part of the practices, beliefs, and culture of this community in Manizales, and therefore corresponds to what Yuk Hui has termed ‘cosmotecnics’, defined as “the unification of the cosmic order and the moral order through technical activities” (Hui, 2024, p. 34).

TOWARDS AN ARCHITECTURE OF OPERATIONS

Based on my participation in the *TS1* and as part of the República Portátil collective, this essay has allowed me to reflect on other mechanisms of construction and destruction in Latin America. Considering the issues guiding *Comunativa*’s agenda, I would highlight the need, present in many of these workshops, to produce structures that are both efficient and aesthetic, while also responding adequately to the circumstances. When I first arrived in the field, I initially viewed the orchards as part of an effort aimed at food self-sufficiency or, alternatively, as a pretext to integrate the community under the logic of collective ‘do-gooders’. Over time, I came to understand the spatial relevance of these ‘exemplary actions’ (Tschumi, 1996), understood through their operation or *allagmatics* (Simondon, 2015, p. 303)—which implies care and dedication.

Simondon (2015) points out that *allagmatics* is based on an inseparable relationship between structure and operation, requiring an effort of materialization. This effort involves the use of potential energy, coordinated with

↓ **Figure 12:** View of the *Apu Kumanday Classroom* and the banana forest. Photograph by the author, 2022.



↗ **Figure 13:** View of the *Apu Kumanday Classroom* with the TSI students who collaborated in its construction. Photograph by the author, 2022.

its operational components, to modulate a concrete structure. In this process, the action of each actor influences the others, generating resonance (Simondon, 2015). Such a definition can also be applied to the processes of aesthetic and political dissent carried out in *Comunativa's* pedagogies, where the collective action of emancipation constitutes precisely an act from which the creation of a vegetal topology emerges, producing a material border in space (Figure 12).

The barricade and the shell originate from pedagogies that legitimize their actions, functioning as territorial instruments of sympoietic spatial control. However, what distinguishes them is the operation behind their construction. Since the barricade does not control its final form, its design is not imposed on the shape, as is the case of the strict geometry of the shell. But what signals inform their particular geometries? The barricade presents a mode of spontaneous growth: although the locations of the tree species are defined, the final result is determined by plant growth. In contrast, the shell, with its concentric and localized architecture, tends to produce an element with defined lines and contours, from which certain functions are deduced in its design procedure.

Operational decisions influence the structure of both elements. The accumulation of plant matter is connected to the park through 'living objects' that intertwine in their becoming. The shell is governed by an underlying mandate or plan that guides it, suggesting a hidden hierarchy behind its operation. In contrast, the operation of the barricade not only responds to factors of time and distance, but also becomes an accumulator of experiences that are embedded in the territory over time, producing a resistance understood as a 'creative ethic' (Mesa del Castillo Clavel, 2012), or what Peran calls—in his 'deseo de (no) ser arquitecto' (Desire to (Not) Be an Architect)—an "injection of time into the spatial body of architecture" (2011). This action seems to counteract the definitive nature of demolition and destruction, which implies the disappearance of time, thereby liberating resistance from

the dialectical cycle of power against power. Defense, in this case, does not operate within the logic of responding to violence with more violence, but is instead realized through concerted actions of care, participation, and pedagogy (Figure 13).

At times, it seems that the development of these workshops for architects and students entails a kind of vertigo, driven by the production of tangible objects, setting operation as a function of structure in the pursuit of generating a direct impact on space and, why not say it, the contemporary architecture media. The lessons drawn from concrete experiences of dispossession and collective spatial reconfiguration open a political discussion within the República Portátil collective, inviting reflection on modes of operation that integrate social and environmental factors simmered over time: shaping without molding, delimiting without separating, and enabling the discovery of alternative design paths. These paths embrace their relative geometries and operation hierarchies, opening their recursiveness to other cosmotechnics, while preserving the emancipatory nature that defensive constructions can sometimes embody. **D**

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