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Article

DIY architecture in Türkiye: Ecological, sociopolitical and vernacular dimensions through three case studies

Mutlu ORAL*

Department of Architecture, Eskişehir Osmangazi University, Eskişehir, Türkiye

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ABSTRACT

This study examines DIY (Do-It-Yourself) architecture as a community-driven mode of spatial production that challenges expert-led, centralized systems of building and planning through ecological and social engagement. While the term 'DIY' gained prominence in the mid-twentieth century, its practices are deeply traceable to vernacular traditions, collective building cultures, and the fundamental human imperative to create shelter. In contemporary contexts marked by ecological crises, affordability pressures, and the erosion of local building cultures, DIY architecture has re-emerged as a significant alternative grounded in autonomy, adaptation, and user agency. Methodologically, the research employs qualitative fieldwork—including spatial documentation, 16 semi-structured interviews, archival review, and a four-dimensional analytical framework (socio-spatial motivations, material strategies, ecological adaptation, and knowledge production). Three Turkish cases—Kanlıkavak Pigeonary, Alakır Sack House, and İzmit Fishermen's Shelters—were selected for their distinct DIY typologies and traceable user-led construction histories. Findings reveal that DIY architecture cultivates ecological literacy, strengthens social bonds, and generates resilient spatial solutions through circular material use, adaptive design, and collective knowledge. Each case represents a unique mode of production: Cultural-communal making (Kanlıkavak), ecological autonomy and resistance (Alakır), and livelihood-based urban adaptation (İzmit). Together, they demonstrate forms of spatial intelligence that often lie beyond the reach of institutional delivery systems. The study reframes DIY architecture as a legitimate, future-oriented paradigm. It argues that user-driven building processes are essential for broadening participation, rethinking conservation, and advancing socially grounded and ecologically responsive architectural futures.

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***Corresponding author**
*E-mail adress: mutluoral@gmail.com

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INTRODUCTION

The ecological crises, deepening social inequalities, and rising urban costs of the twenty-first century have exposed the limits of conventional architectural practice. A central structural problem underlying these challenges is the professionalization of architecture: Throughout the twentieth century, design and construction increasingly moved into the hands of experts, transforming what had once been a universal human capacity—the act of building one's own shelter—into a specialized and regulated domain reserved for professional authority (Parvin, 2013). In today's rapidly changing world, where economic precarity, climate vulnerability, and resource scarcity intensify, this separation between users and the spaces they inhabit has become even more pronounced, making alternative, user-driven modes of production more relevant than ever.

Although the term "DIY" (Do-It-Yourself) gained prominence in the mid-twentieth century, its practices are deeply traceable to vernacular traditions, collective building cultures, and the fundamental human imperative to create shelter. Early forms of self-building can be traced to prehistoric shelters, Neolithic dwellings, and the informal, communal construction systems that shaped settlements across diverse geographies (Rudofsky, 1968; Smith, 2012). In its modern sense, DIY culture emerged after World War II against a backdrop of economic uncertainty and cultural transformation. Manuals such as the Whole Earth Catalog (1968–1998) empowered individuals to create, repair, and build without relying on institutional structures. The 1960s counterculture expanded DIY into the realms of self-sufficiency, communal living, and ecological awareness, accelerating its transition from a survival method into a socio-political stance.

The participation movements of the 1960s and 1970s attempted to address the growing disconnect between experts and users, but participatory design often remained limited to consultation rather than shared decision-making (Sanoff, 2000; Gardesse, 2015; Calderón, 2019). As a result, users—already marginalized by professionalization—became subject to a second exclusion through methods that lacked real influence. This double constraint encouraged a more radical approach to spatial agency.

Consequently, by the 1970s, DIY concepts began to significantly shape architectural discourse by advocating for direct user action. Fichter & Turner's (1970) Freedom to Build (1972) articulated self-building as both a personal right and a political act, arguing that housing is most effective when produced by its users. This theoretical foundation was concurrently being put into practice through pioneering architectural experiments. This wave of thinking was exemplified by a growing body of architectural work that operationalized DIY principles. Representative projects include Christopher Alexander's A Pattern Language (Alexander, et al. 1977), which provided a universal vocabulary of design patterns to empower non-professionals; Walter Segal's self-build system (1970s), which demonstrated an accessible timber-frame method for citizen builders; and Auburn University's Rural Studio (1990s–present), which redefined hands-on, socially engaged pedagogy.

This trajectory continued into the 21st century, solidifying DIY as a sustained architectural strategy. Ross (2010) documented how self-built housing in the United States became a means of asserting autonomy beyond mere economic necessity. This ethos was further advanced by models like Alejandro Aravena's incremental "half-a-house" (2000s), which embedded user-completion into formal housing policy, and open-source platforms such as WikiHouse (2010s–present), which enable digital, globally accessible self-building. These examples, among others, signal that DIY is not merely a countercultural gesture, but a global architectural strategy responding to affordability crises, ecological urgency, and demands for spatial agencies.

In the twenty-first century, DIY architecture has gained renewed momentum through ecological awareness, social justice movements, and expanding access to digital fabrication. Open-source platforms, CNC milling, community workshops, and 3D printing now enable citizens to directly participate in both design and construction, challenging professional monopolies and transforming DIY from a local craft tradition into a globally networked mode of spatial production (Dalsgaard, 2012; Garde, 2014; Fuad-Luke, 2009). Simultaneously, tactical urbanism has shown how small-scale, citizen-led spatial interventions can rapidly reshape public spaces when institutional planning proves slow or ineffective (Lydon & Garcia, 2015).

Within this broader intellectual, historical, and socio-political context, this study examines three DIY architectural cases from Turkey—Kanlıkavak Pigeonary, the Alakır Sack House, and the İzmit Fishermen's Shelters—to demonstrate how user-driven building practices emerge as responses to exclusion, ecological crises, and the need for spatial autonomy. These cases illustrate DIY architecture not as a nostalgic or peripheral phenomenon, but as a contemporary, democratic, ecological, and socially grounded production capable of addressing urgent spatial and environmental challenges.

RESEARCH METHODOLOGY

This study employs a qualitative, field-based research design framed within contemporary discourses on DIY architecture, tactical urbanism, and participatory design (Fuad-Luke, 2009; Lydon & Garcia, 2015; Sanoff, 2000). A qualitative approach is necessary to reveal aspects of tacit knowledge, embodied building practices, and non-professional construction processes that cannot be fully captured through quantitative methods.

The investigation focuses on three cases from Türkiye (Figure 1) —Kanlıkavak Pigeonary (Eskişehir), the Alaçık & Sack House (Antalya), and the İzmit Fishermen's Shelters— selected through purposive sampling from a broader pool of approximately twenty documented DIY structures.

Analytical Framework and Case Selection

To ensure consistent analytical language across cases, the study develops a conceptual framework organized around four interconnected dimensions:

1. **Socio-spatial Motivations**: Autonomy, resistance, community formation.



Kanlı Kavak Pigeonary

Author: Anonymous
Location: Eskişehir / Center
Info: This structure was built 20 years ago on a plot in Kanlı Kavak Park in Eskişehir by about 30 local residents interested in pigeon breeding, through a community effort. Here, they raise special breeds of tumbling pigeons (such as Tippler, Carneau, Helmet, etc.) and socialize with one another.



The Alaçık & The Sack House

Author: Erkutlu & Günal Family
Location: Antalya / Alakır
Info: These DIY houses mark the beginning of the Alakır River Fellowship, a nature activist/art collective founded under the motto "Sharing firsthand experiences from within the hidden destruction of a consumption-based system, stories of struggle, and harmonious living with nature." Since 2004, Birhan Erkutlu and Tuğba Günal have been living alongside the Alakır River in Antalya, in homes they built themselves without any external assistance.



İzmit Fisher Shelters

Author: Anonymous
Location: İzmit / Center
Info: These shelters were built by fishermen in 1995 along the İzmit coastline using salvaged materials, and in 2011, they were demolished by the fishermen themselves. The use of salvaged materials gives this living space (used both for daytime and full-season stays) a makeshift, abandoned, and somewhat eerie appearance. However, upon closer inspection, an organic structure emerges that has developed a strong connection with its context.



Figure 1. Locations and Descriptive Profiles of the Three DIY Architecture Cases in Turkey (Photos by Author).

2. **Material and Technological Strategies**: Resource procurement, fabrication methods, circularity.
3. **Ecological Adaptation**: Environmental response, sustainability practices, climate resilience.
4. **Knowledge Production**: Tacit knowledge, skill transmission, design evolution.

The three cases were selected because they represent distinct DIY typologies: Communal production (Kanlıkavak Pigeonary), ecological self-building and resistance (Alaçık & Sack House), and autonomous habitat formation (İzmit Fishermen's Shelters). Each case offers complete and traceable construction histories, accessible field conditions, and sufficient user involvement to support robust qualitative analysis.

Data Collection and Fieldwork

Fieldwork was conducted across multiple periods using consistent methods for all cases:

- Systematic spatial observations and material inspections.
- Photographic and technical drawing documentation.
- Collection of measurements for plan-based analysis.
- Gathering of supplementary materials (construction diaries, personal archives).

Temporal distribution of fieldwork included: Kanlıkavak Pigeonary (2023-2025, field based), Sack House (2024, archival), and İzmit Fishermen's Shelters (2010, archival and field-based).

Interview Protocol and Analysis

Semi-structured interviews (16 total across all sites) explored themes of autonomy, construction processes, material reuse, ecological attitudes, and community dynamics. Participants included builders, residents, community members, and environmental activists.

A hybrid thematic analysis was undertaken using NVivo. First-cycle inductive codes were generated from field notes, interviews, and visual materials, capturing actions (building, repairing), material decisions (reuse, salvage), ecological motivations, and user-authority interactions. These descriptive codes were refined into higher-level categories through deductive engagement with literature on DIY architecture and tactical urbanism. Themes were triangulated across the four analytical dimensions and then compared across the three cases to examine how autonomy, material circularity, ecological adaptation, and knowledge transmission manifested in different contexts.

Triangulation methods included cross-referencing spatial evidence with user narratives and archival materials.

KANLIKAVAK PIGEONARY: COMMUNAL PRODUCTION AND KNOWLEDGE SHARING

The Kanlıkavak Pigeonary, built in the early 2000s by approximately 30 residents of Eskişehir's Kırmızıtoprak Neighborhood, exemplifies how DIY architecture can emerge from longstanding cultural traditions to fulfill contemporary communal needs. This case moves beyond the paradigm of individual necessity, illustrating a form of collaborative tactics (Lydon & Garcia, 2015) where spatial production becomes a medium for sustaining social bonds and intergenerational knowledge.

Socio-spatial Motivations: From Individual Need to Collective Space

The pigeonary originated when local *kuşbaz* (pigeon breeder)[1] enthusiasts found their private terraces insufficient for both husbandry and the social rituals integral to their practice. In a move that echoes the core principle of user autonomy central to DIY and participatory design (Sanoff, 2000; Fichter & Turner, 1970), the community collectively established a shared space on a donated plot of land. This transition from fragmented private domains to a unified collective venue transformed the pigeonary from a mere shelter into a dynamic social node, directly challenging the exclusion of users from spatial production in conventional planning.

Material and Technological Strategies: Organic Evolution Through User Modifications

The structure's evolution over 25 years embodies a process of incremental co-construction, where material changes are intrinsically linked to social functions. As documented in Table 1, each phase of development—from basic shelter to a space incorporating storage, socialization areas, and environmental arrangements—was driven by user modifications. This organic progression stands in stark contrast to top-down architectural delivery, showcasing a model where the built environment is continuously adapted through collective engagement.

Ecological Adaptation: Harmonious Integration with Local Conditions

The pigeonary's development demonstrates a nuanced, low-impact adaptation to its immediate environment. Figure 2 documents the initial physical transformation from a rudimentary structure to a collectively defined space, illustrating the project's responsive growth. Figure 3, the current site plan, reveals later enhancements—such as floral arrangements and textile additions—that blend micro-ecological considerations with cultural expression. This approach aligns with a key principle of sustainable vernacular architecture: The harmonization of built form with local conditions and user rhythms, rather than the imposition of standardized solutions.

Table 1. Socio-spatial evolution of the Kanlıkavak Pigeonary.

Period	Physical Features	Social Functions	Implied Knowledge Dimension
2000-2005	Basic shelter	Pigeon care	Foundational husbandry skills
2005-2010	Storage areas	Knowledge sharing	Material organization & exchange
2010-2020	Socialization spaces	Community events	Spatial negotiation for gathering
2020-Present	Environmental arrangements	Community legacy	Ecological & symbolic stewardship

Knowledge Production: Tacit Knowledge and Intergenerational Learning

Beyond its physicality, the pigeonary operates as a living repository of tacit knowledge. The evolution chronicled in Table 1 is not merely a log of physical changes but a map of accumulated, shared know-how regarding materials, construction techniques, and social organization. Knowledge is transmitted not through formal plans but through embodied practice and oral tradition, creating a resilient system of intergenerational learning. This mode of knowledge production, rooted in doing and sharing, is a cornerstone of DIY culture (Gauntlett, 2011) and highlights a form of expertise that exists outside professional domains.

The Kanlıkavak Pigeonary thus stands as a testament to how DIY architecture can foster cultural continuity and create deeply connected social spaces through collective, incremental making.

ALAKIR SACK HOUSE: ECOLOGICAL RESISTANCE AND SUSTAINABLE AUTONOMY

The Alakır Sack House, situated in Antalya's Alakır Valley, epitomizes DIY architecture as a form of materialized ecological resistance. This case moves beyond technical sustainability to demonstrate how spatial production can be a direct, activist response to environmental degradation and centralized industrial systems. It embodies what Fuad-Luke (2009) terms "design activism," where making becomes a means for socio-ecological critique and the pursuit of autonomy.

Socio-spatial Motivations: Activism as Spatial Practice

The project's genesis is inextricably linked to local activism against hydroelectric power plants, framing its construction within a broader political struggle. As Bookchin (1996) argues, superficial environmentalism often neglects the structural roots of ecological crises. The Sack House confronts this directly, serving as a built manifesto against extractive economies. The decision to self-build represents a conscious disengagement from mainstream systems, pursuing what can be defined as ecological autonomy[2]—a mode of living that prioritizes minimal consumption, direct engagement with nature, and spatial self-determination. This aligns with the ethos of tactical urbanism, where direct action creates alternatives in the face of unresponsive institutional frameworks (Lydon & Garcia, 2015).



Figure 2. User-led spatial development of the pigeonary (2023–2025) (Photos by Author).



Figure 3. Site plan with integrated built forms and landscaping (Photos by Author).

Material and Technological Strategies: Earthbag Technique and Local Sourcing

The project's materiality is central to its identity. Employing Nader Khalili's earthbag technique, the project synthesizes vernacular earth-building traditions with contemporary seismic safety principles, resulting in a low-cost, highly insulated, and environmentally responsive construction system (Kamal & Rahman, 2018). Though labor-intensive, it remains a sustainable and accessible DIY solution (Layline, 2011). The entire construction unfolded as an iterative

prototyping process in which early phases—tent life, the Alaçık, and the Yuva prototype—functioned as live laboratories for refining techniques, soil mixtures, and climatic adaptations.

Figure 4 visually chronicles this phased development of the Yuva prototype, offering concrete evidence of the embodied learning and incremental skill acquisition that underpin DIY practices (Gauntlett, 2011). Figure 5, in turn, illustrates the transition from experimentation to a consolidated architectural form of Sack House, presenting user-drawn plans alongside the completed structure. Together, these visual documents demonstrate how technical knowledge emerged through hands-on trial rather than formalized expertise.

Additionally, the rigorous local sourcing of materials within a 50 km radius—and the exceptionally high reuse rate of 70%—underscores a firm commitment to circularity and a reduced ecological footprint.



Figure 4. Sequential construction phases of the earthbag 'Yuva' prototype (Erkutlu, 2012).



Figure 5. User-generated plans and completed views of the sack house (Erkutlu, 2018).

Ecological Adaptation: A Systemic, Off-Grid Ethos

The Sack House implements a fully integrated, off-grid ecological strategy, moving beyond the building envelope to holistically manage water, energy, and food systems (Table 2).

The project's quantitative performance metrics (Table 3) crystallize a systemic DIY ethos, where ecological autonomy is achieved through a deliberate, low-intensity rhythm that fundamentally redefines the tempo and resource logic of conventional construction.

Knowledge Production: Open-Source Learning and Skill Transmission

Knowledge production here was fundamentally experiential and open-source. The phased construction process (Figure 4) itself was the primary educational tool, facilitating the transmission of tacit knowledge through direct material engagement. This hands-on learning was coupled with a conscious ethos of "anti-capitalist architecture," where techniques and experiences were shared publicly, creating a model of open-source learning that empowers others.

This reinforces Gauntlett's (2011) idea of 'making is connecting,' framing the Alakır as a learning hub within a broader network of ecological resistance.

The Sack House ultimately embodies a form of DIY architecture where ecological principles, material practice, and political resistance converge to create a prototype for sustainable autonomy.

IZMIT FISHERMEN'S SHELTERS: INFORMAL URBANISM AND COMMUNITY RESILIENCE

The İzmit Fishermen's Shelters (1995–2011) represent a seminal case of informal urbanism and community-driven spatial production along Turkey's urban coastline. This self-built settlement of nearly one hundred units exemplifies how DIY architecture emerges as a tactical response to

Table 2. Integrated ecological strategy of the sack house.

Category	Application	Contribution to Autonomy & Sustainability
Preceding Experience	Tent life; Alaçık/Yuva prototypes	Served as live laboratories for iterative learning and skill refinement.
Water Management	Natural spring; rainwater harvesting	Achieved full water independence from municipal infrastructure.
Energy Systems	Solar panels; candles/gas lamps	90% reduction in lighting energy; off-grid power generation.
Food Production	Vegetable garden; livestock	Applied permaculture principles for partial food self-sufficiency.
Material Sourcing	Local stone, clay, sand; 70% reused materials	Radically reduced embodied energy and supported circular economy.
Construction Techniques	Manual labor; earthbag; green roof	Eliminated need for machinery; enhanced insulation and biodiversity.
Bioclimatic Design	23° south orientation; natural ventilation	Achieved thermal comfort without mechanical heating/cooling systems.

Table 3. Quantitative performance indicators of the sack house.

Parameter	Value	Implication
Construction Time	526 days	Embodied a slow, non-exploitative building rhythm.
Daily Workload	5 hours	Aligned construction with human and ecological cycles.
Enclosed Area	65 m^2	Embraced a minimalist spatial footprint.
Energy Consumption	0.8 kWh/day	Consumed ~5% of the energy of a conventional house.
Rainwater Harvesting	12 m^3/year	Demonstrated efficient use of on-site water resources.

the inadequacies of formal planning in providing for livelihood-based communities (Lydon & Garcia, 2015).

As shown in Figure 6, the settlement's spatial configuration becomes legible through the combination of satellite imagery and ground-level perspectives. The satellite view reveals the overall coastal layout—its crescent-shaped shoreline, branching walkways, and the linear distribution of over-water units—indicating a morphology that emerged through incremental, user-led extensions. The West and East views further illustrate how these structures were adapted to fluctuating water levels, material scarcity, and everyday fishing practices. Taken together, these multi-scalar observations exemplify what Fuad-Luke (2009) describes as "everyday design activism," where numerous small, improvised interventions accumulate over time into a resilient and collectively produced spatial system.

Its eventual demolition in 2011 starkly illustrates the tensions between such bottom-up, socially embedded habitats and top-down urban governance, raising critical questions about whose spatial practices are valued in the city.

Socio-Spatial Motivations: Autonomy, Informality, and Communal Practice

The shelters embodied "livelihood urbanism" - where spatial production directly serves economic survival and communal work patterns. Unlike the cultural focus of Kanlıkavak or ideological stance of Alakır, this case represents urban informality driven by economic necessity. This was not informal housing, but informal workplace urbanism, where spatial organization was dictated by the rhythms of fishing life rather than abstract planning regulations.

The settlement's configuration by over fifty fishermen through shared labor embodied a potent form of user autonomy, resonating with Fichter & Turner (1970) argument that users are the most effective producers of their own functional spaces.

The 2011 demolition thus represented not just the removal of structures, but the erasure of a community-defined spatial logic, also underscores the fundamental conflict between such community-built environments and formal urban governance systems.

Material and Technological Strategies: Improvisation and Adaptive Reuse

The material and structural diversity of the İzmit Fishermen's Shelters emerged from practical constraints, resource availability, and incremental user-led modification.

As illustrated in Figure 7, the façades display extensive elevational variation shaped by each builder's skills, material access, and aesthetic decisions. These user-produced elevations—ranging from patchwork claddings to improvised

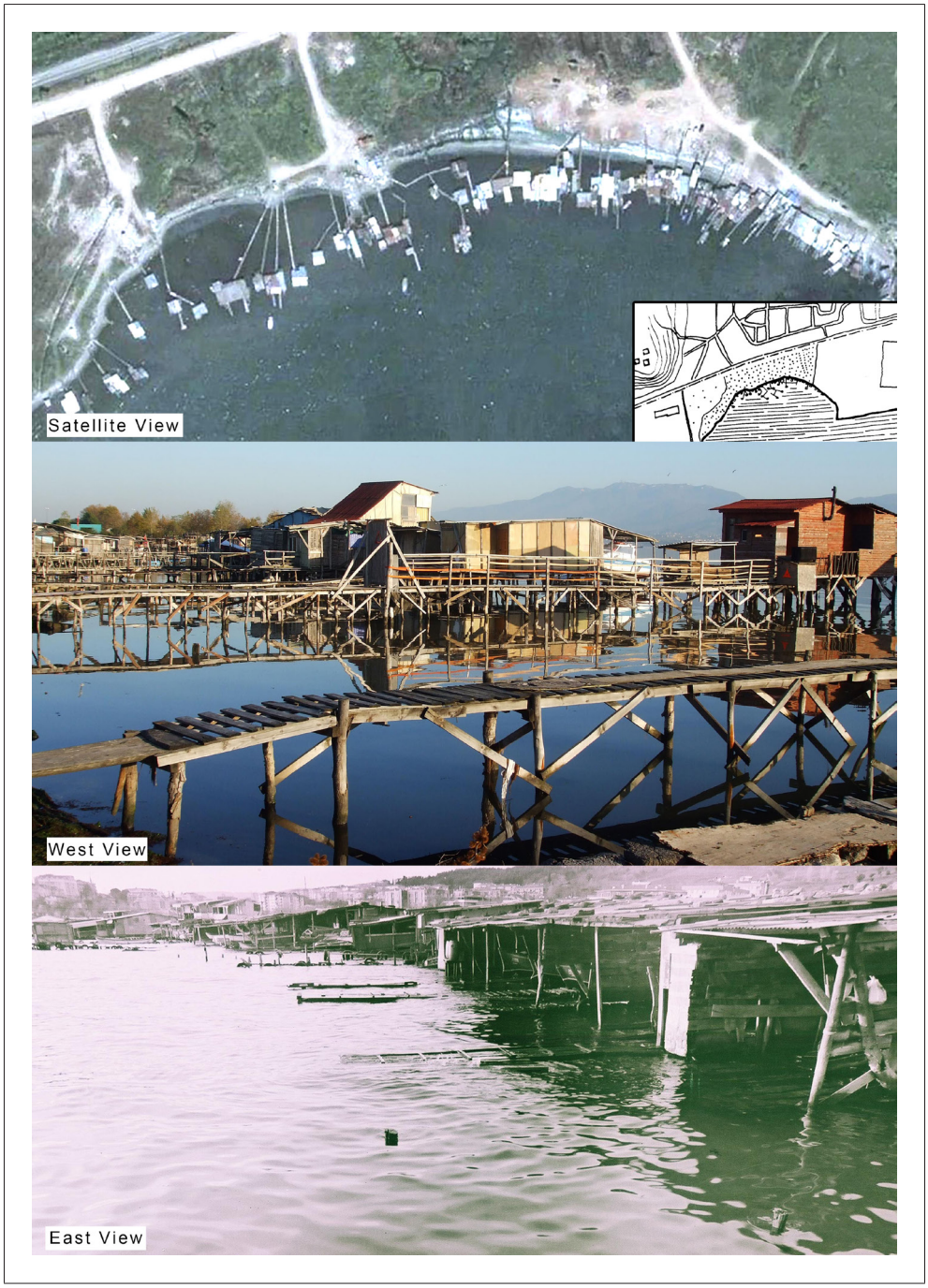


Figure 6. Coastal spatial pattern of the İzmit shelters: Satellite and ground-level views (Photos by Author; Doğukanlı, 2006a).

structural frames—make visible the intuitive, iterative nature of construction in the settlement. This heterogeneity aligns with Birsel's (2004) concept of "frog architecture"[3].

Crucially, this lightweight, flexible, and non-rigid construction logic proved exceptionally resilient to seismic forces. While the formal urban fabric of İzmit suffered catastrophic damage in the 1999 earthquake, the fishermen's shelters survived with minimal harm.

Extensions such as terraces, verandas, bridges, and multi-room layouts were incorporated over time as needs evolved, creating a dynamic and flexible spatial language. Crucially, the material logic of the shelters was shaped by extensive practices of reuse and salvage. In Figure 8, the façades were constructed using tarpaulins, billboards, scrap chipboard panels, reclaimed doors, and various other salvaged materials, while the piers and walkways were



Figure 7. Elevational variations of the İzmit fishermen's shelters (Doğukanlı, 2006a).

assembled from driftwood, discarded tires, and sea-borne debris.

The coastal environment thus functioned simultaneously as a site of deterioration—due to humidity, decay, and erosion—and as a continuous material reservoir. This continuous cycle of adaptation perfectly illustrates Turner's concept of "housing as a verb"—a spatial process rather than a finished product.

ECOLOGICAL ADAPTATION: WATER-BASED LIVING AND FLUID SPATIALITY

The shelters developed amphibious urbanism through dynamic adaptation to aquatic conditions. Figure 9—combining the settlement's plan, interior views, and the integration of boats—highlights how water was not merely a surrounding element but a defining architectural medium, while Table 4 summarizes the multi-aspect environmental negotiation. This represents a form of socio-ecological resilience where spatial intelligence emerges from lived experience rather than professional expertise, creating what might be termed "ecological democracy" in spatial practice.

Knowledge Production: Craft Learning, Repair Culture, and Collective Memory

Knowledge production here operated through craft learning and oral transmission, creating what Gauntlett (2011)

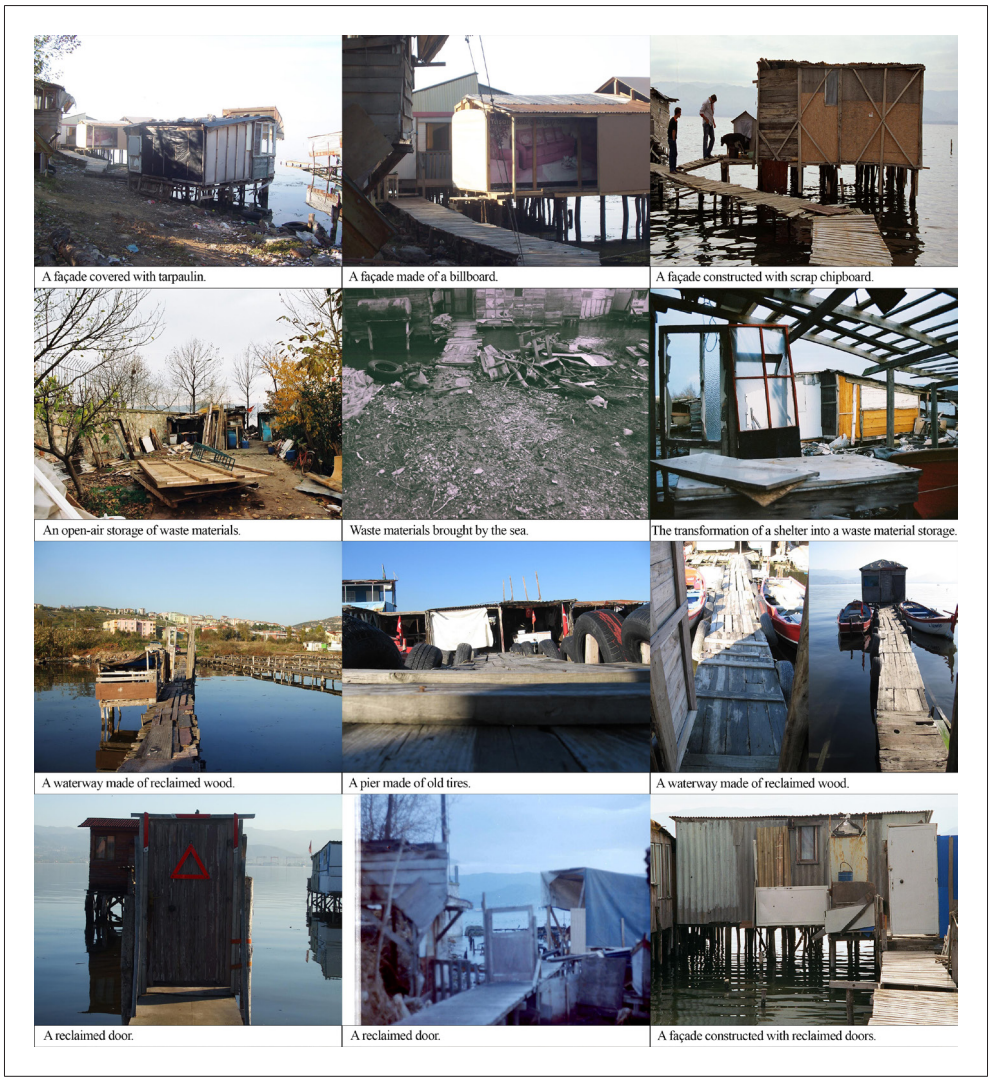


Figure 8. Recycled material practices in the İzmit shelters (Doğukanlı, 2006a; Photos by Author).

might call "making as connecting" in an urban context. The settlement functioned as a live construction laboratory where skills circulated through collective practice rather than formal training. As Doğukanlı (2006b) notes, spatial boundaries, ownership patterns, and building decisions were negotiated socially rather than bureaucratically, producing an environment governed through shared memory and mutual agreement.

This tacit knowledge system, while creating resilient communities, remained politically vulnerable due to its informality - a crucial lesson for understanding the limitations of DIY urbanism within contemporary governance frameworks.

The İzmit Fishermen's Shelters demonstrate the capacity of informal, user-driven urbanism to generate resilient, adaptable, and socially cohesive habitats in direct response to economic and environmental conditions.

Table 4. Socio-ecological dynamics of water-based living.

Aspect	Impact Area	Manifestation in DIY Architecture
Physical	Structural Configuration	Lightweight, elevated, or floating foundations minimizing ecological impact
Social	Interaction Forms	Shared platforms and decks fostering cooperative community networks
Cultural	Everyday Practices & Traditions	Spatial layout directly facilitating fishing routines and boat-based social life
Temporal	Seasonal Adaptation	Dynamic spatial use: Open decks in summer, enclosed interiors in winter



Figure 9. Spatial and boat-integrated living in İzmit shelters (Doğukanlı, 2006a).

DISCUSSION

The three case studies examined in this research, analyzed through a consistent four-dimensional framework, collectively demonstrate how DIY architecture operates as a robust, user-driven alternative to professionalized building cultures. Rather than representing isolated or marginal practices, these cases reveal a coherent and evolving set of motivations, material strategies, and knowledge systems grounded in direct spatial agency. The comparative analysis presented in Table 5 serves as a conceptual map, illustrating the spectrum of DIY practices in Turkey—from cultural-communal production (Kanlıkavak) to ecological-activist resistance (Alakır), and socio-economic informality (İzmit).

A Spectrum of DIY Typologies: Unifying Principles and Distinct Rationales

A cross-case analysis using the four-dimensional framework, as summarized in Table 5, reveals that beneath their apparent differences lie core unifying principles. Chief among these is a process-oriented design logic where space evolves through continuous adaptation and collective decision-making, rather than being delivered as a finished product. This iterative process cultivates unique forms of resilience—social, spatial, and ecological—unattainable through top-down, standardized construction. Furthermore, across the spectrum from cultural preservation to activist resistance and economic informality, the material strategies consistently demonstrate a vernacular intelligence that prioritizes reuse, local sourcing, and low-impact techniques.

While united by these foundational approaches, each case contributes a distinct design rationale to the DIY spectrum, clarifying their unique positions within it.

The Kanlıkavak Pigeonary showcases how DIY is instrumental in sustaining cultural memory and strengthening intergenerational bonds through tacit knowledge. In stark contrast, the Alakır Sack House exemplifies a paradigm of ecological autonomy, where the very act of building becomes a form of activism and a means of physical disengagement from unsustainable systems. Finally, the İzmit Fishermen's Shelters reveal the power of improvisation and bricolage in generating adaptive urban infrastructure that responds directly to livelihood needs and economic precarity.

Theoretical Dialogue: Extending DIY and Participatory Frameworks

The findings both confirm and complicate existing theoretical frameworks by revealing that DIY architecture is driven by a complex interplay of profound motivations that yield multi-dimensional impacts. Thematic analysis demonstrates that user actions are spurred by deep-seated psychological, ecological, and socio-cultural drivers that far exceed mere functional necessity.

Table 5. Four-dimensional comparative analysis of DIY Cases in Türkiye.

Analytical Dimension	Kanlıkavak Pigeonary	Alakır Sack House	İzmit Fishermen's Shelters
Socio-Spatial Motivations	Cultural Communion: Strengthening social bonds around the tradition of pigeon breeding. Space transforms a hobby into a collective social node.	Ecological Resistance: Activism against hydroelectric power plants. Space is a tangible manifesto for the pursuit of sustainable autonomy.	Livelihood Urbanism: The practical needs of the fishing profession. Space is a habitat for economic survival and cooperative living.
Material & Technological Strategies	Incremental Co-construction: Organic evolution over 25 years through user modifications. Social functions directly inform physical form.	Iterative Prototyping & Local Sourcing: Earthbag (Superadobe) technique. A circular material economy with 70% reuse rate within a 50 km radius.	Radical Bricolage & Urban Mining: Wood, tarps, billboards, scrap doors gathered from the coast. An improvisational and contextual material language.
Ecological Adaptation	Low-Impact Harmonization: Micro-ecological arrangements (flowers, textiles). Harmonization of the built environment with user rhythms and local conditions.	Systemic Off-Grid Autonomy: Integrated water, energy, and food systems (Table 2). Radical reduction of ecological footprint.	Amphibious Resilience: Dynamic adaptation to water. Lightweight, elevated/ floating foundations. Superior performance in the 1999 earthquake compared to conventional structures.
Knowledge Production	Intergenerational Tacit Knowledge: Knowledge transmitted through embodied practice and oral tradition. The space functions as a living repository of know-how.	Open-Source Experimental Learning: The construction process (Figure 4) is the primary educational tool. Techniques are shared publicly ("anti-capitalist architecture").	Craft-Based Collective Memory: Skills circulate through collective practice and a culture of repair. Spatial decisions are made through social negotiation.

As summarized in Table 6, these motivations resonate with established theories of human behavior and design, yet they manifest in the specific, grounded context of spatial production. Kanlıkavak exemplifies motivations rooted in socialization and development; Alakır embodies the pursuit of independence and environmental harmony; and İzmit reflects imperatives of necessity and collaborative practice.

Crucially, across all cases, these motivations culminate in a form of 'substantive participation' that moves beyond the consultative models critiqued by Sanoff (2000), realizing Turner's (Fichter & Turner, 1970) ideal where users are the primary authors of their spatial reality. This substantive participation, in turn, generates distinct impacts that extend theoretical discourse, particularly in terms of a 'Temporal Perception Shift' and 'Material Embodiment Experience'. The 526-day slow-building rhythm of the Sack House exemplifies a deliberate temporal decolonization (Adam, 1998), while the İzmit settlement's survival of the 1999 earthquake provides empirical evidence for "vernacular structural intelligence"—a form of resilience emerging from adaptive, lightweight construction rather than top-down engineering.

A Value System, Not Just a Technique

The conceptual worldview of DIY builders, distilled from the discourse and encapsulated in Table 7, underscores that DIY is a coherent value system, not merely a set of techniques. This framework moves beyond singular motivation or impacts to articulate the fundamental aspects that constitute the DIY ethos, highlighting its potential as a holistic alternative to conventional practice.

Implications for Architectural Conservation: Challenging Static Paradigms

The cases present a profound challenge to traditional architectural conservation, which often prioritizes material authenticity and fixed states. Instead, they advocate for a 'processual conservation' paradigm that values continuous adaptation, community knowledge transmission, and evolving spatial practices. The demolition of the İzmit shelters represents a critical failure of heritage recognition systems that cannot accommodate informal, community-built environments. This suggests the need for expanded heritage criteria that can recognize the value of social practices, repair cultures, and collective memory—the very elements that constitute the living value system outlined in Table 7.

Policy, Educational, and Future Research Directions

Policy Recommendations:

- Develop "adaptive building codes" that accommodate low-impact, user-built structures.
- Establish "community land trusts" to secure tenure for informal settlements with proven socio-ecological value.
- Create municipal "material banks" for salvaged construction materials to support circular economies.

Educational Implications:

- Integrate "hands-on building literacy" into core architectural curricula through mandatory workshops.
- Develop courses on "community facilitation" to supplement traditional expert-design training.

Table 6. Motivations and impacts of DIY architecture: A thematic synthesis.

Theme	Core Concept (Motivation)	Representative Discourse	Key Impact / Dimension	Theoretical Connection
Autonomy & Self-Determination	Process-oriented personal right and freedom	"Longing to own one's time..." (P9, 2024)	Identity Construction; Temporal Shift	Self-Determination Theory (Deci & Ryan, 2000); Autonomy Theory (Ryan, 1991)
Ecological Awareness & Harmony	Conscious human-nature relationship	"Building with natural materials helped me reconnect..." (P7, 2024)	Resource Efficiency; Energy Balance; Biodiversity	Biophilia Hypothesis (Kellert & Wilson, 1993); Ecological Design (Van der Ryn & Cowan, 1996)
Socialization & Community	Collaborative community building	"This process creates community..." (P5, 2023)	Social Capital Formation	Social Capital Theory (Putnam, 2000)
Personal Fulfillment & Actualization	Existential fulfillment through creation	"We started this journey to live authentically..." (P15, 2024)	Existential Fulfillment; Hands-on Materiality	Positive Psychology (Seligman, 2002); Logotherapy (Frankl, 1959); Craft Theory (Sennett, 2008)
Necessity & Pragmatism	Basic need fulfillment and problem-solving	"Creating space was a fundamental need" (P12, 2024)	Practical Skills & Knowledge; Minimalist Design	Experiential Learning (Kolb, 1984)

Table 7. The DIY architecture value framework.

Fundamental Aspect	Core Keywords
Spatial Agency & Autonomy	Independence, Freedom, Self-sufficiency, Construction freedom, Sense of Ownership
Ecological Integration	Sustainability, Harmony with nature, Recycling, Eco-friendliness, Natural materials
Socially Embedded Production	Social connections, Sharing, Teamwork, Social Solidarity, Community-building
Personal Empowerment & Growth	Personal satisfaction, Value of one's labor, Joy of self-production, Mental well-being, Personal development
Resourceful & Practical Intelligence	Handicraft, Artisanship, Practical intelligence, Quick problem-solving, applied knowledge, Low cost, Efficiency

- Establish "live project studios" where students collaborate directly with community builders.

Limitations and Future Research: This study is limited by its qualitative methodology and focus on the Turkish context. Future research should:

- Quantitatively assess the environmental performance of DIY structures through life-cycle analysis.
- Conduct longitudinal studies tracking social capital formation in community-built projects.
- Explore the potential of digital fabrication to scale DIY principles while maintaining localization.
- Investigate policy frameworks in other contexts that successfully integrate informal building practices.

This study positions DIY architecture not as a marginal phenomenon but as a viable, future-oriented strategy. It demonstrates the capacity of user-driven processes to generate culturally resonant, ecologically intelligent, and socially resilient habitats, offering a critical model for rethinking both architectural practice and conservation in the 21st century.

CONCLUSION

This study demonstrates that DIY architecture is not a marginal improvisational activity but a significant socio-ecological practice that reshapes how individuals and communities produce, inhabit, and sustain their environments. Through three cases from Turkey—Kanlıkavak Pigeonary, the Alakır Sack House, and the İzmit Fishermen's Shelters—the research reveals that DIY architecture constitutes a holistic mode of spatial production grounded in user agency, ecological adaptation, and collective knowledge rather than professional authority. Each case shows how bottom-up building practices can generate spatial outcomes that are socially cohesive, materially resourceful, and environmentally responsive in ways that conventional architectural systems struggle to provide.

Across the three cases, several unifying principles emerge. First, all demonstrate that spatial agency expands dramatically when users reclaim the right to build. Whether through communal making (Kanlıkavak), ecological self-sufficiency (Alakır), or livelihood-driven informality (İzmit), DIY practices cultivate autonomy, ecological sensitivity, and social solidarity. Second, all cases illustrate a process-oriented design logic in which space evolves through continuous adaptation, repair, and collective decision-making. This iterative process produces forms of resilience—social, spatial, and ecological—that cannot be replicated through top-down, standardized construction. Third, the material strategies observed across cases highlight vernacular intelligence that embraces reuse, local sourcing, and low-impact techniques, reinforcing the centrality of embodied knowledge and ecological awareness in sustainable architecture.

The thematic analysis further confirms that the motivations behind DIY architecture—ranging from self-determination and ecological awareness to craft learning and self-actualization—are not secondary but fundamental elements of the building experience. These findings align with established theoretical frameworks such as autonomy theory, biophilia, experiential learning, and social capital theory. Together, they show that DIY practices cultivate ecological literacy, strengthen communal bonds, and enhance individual well-being, offering a multidimensional alternative to consumer-driven, resource-intensive architectural models.

The implications for contemporary architectural conservation and planning are profound. Rather than treating DIY structures as temporary, informal, or expendable, conservation frameworks should recognize them as living systems of cultural memory and ecological intelligence. The demolition of the İzmit Fishermen's Shelters illustrates the vulnerability of community-built environments under current regulatory regimes and highlights the urgent need for heritage criteria that include social practices, craft cultures, and adaptive spatial traditions—not only physical monuments. Expanding conservation paradigms in this direction would align architectural heritage with contemporary debates on sustainability, participatory design, and environmental justice.

Table 8. Implementation Framework for DIY Architecture Integration.

Policy Area	Key Proposals	Implementation Steps	Responsible Actors
Legal Framework	Develop adaptive building codes	Create regulations for low-impact, user-built structures	Local governments, Parliament
	Recognize collective ownership models	Establish legal frameworks for housing cooperatives	Ministry of Justice, Municipalities
Education & Training	Integrate DIY studios into curricula	Develop hands-on building courses	Universities, Accreditation boards
	Organize community workshops	Create skill-sharing programs for vernacular techniques	NGOs, Professional chambers
Spatial Resources	Establish community workshops	Provide public spaces for collaborative building	Municipalities, Community organizations
	Create material recycling hubs	Develop networks for reclaimed building materials	Ministry of Environment, Municipalities
Community Participation	Enhance neighborhood decision-making	Implement participatory planning processes	Local governments, Civil society
	Organizing design workshops	Facilitate community visioning events	Municipalities, Universities
Cultural Heritage	Document DIY structures	Create inventories of community-built environments	Ministry of Culture, Universities
	Support living heritage practices	Conduct oral history and community memory projects	Museums, Cultural organizations

Based on these insights, the study proposes a comprehensive framework for integrating DIY architecture into architectural practice and planning policy (Table 8). This includes adaptive building codes, community-led material infrastructures, participatory planning tools, hands-on education within architectural curricula, and cultural protection mechanisms for living building traditions. Taken together, these strategies aim to transform DIY architecture from a set of isolated practices into a coherent, institutionally supported approach with relevance for contemporary and future architectural challenges.

Ultimately, this research demonstrates that DIY architecture matters today because it challenges the foundational questions of modern architectural practice: *"Who has the right to produce space? Whose knowledge counts? How can building be reconnected with ecological responsibility and social meaning?"* By foregrounding user agency, vernacular resilience, ecological alignment, and collective creativity, DIY architecture provides a powerful model for rethinking architectural production in the twenty-first century. Its capacity to sustain local memory, strengthen community identity, and reinforce ecological stewardship suggests that user-driven construction is not merely a historical remnant, but an essential component of a more just, sustainable, and meaningful built environment.

NOTES

[1]Pigeons have maintained cultural significance since the Oghuz tribes, transitioning from palace life to popular practice (Kaplan, 2007). The tradition has evolved into a social practice where knowledge exchange about care, training, and breeds occurs among enthusiasts (Korkmaz, 2022).

[2]As people increasingly feel the effects of ecological degradation, awareness of concepts like the "ecological footprint" has spurred environmental research and sustainable initiatives since the 1970s (Ciravoğlu, 2008)

[3]"*Frog architecture*" is a concept developed by Sedef Birsel based on her observations of the İzmit fishermen's shelters. Birsel (2004) describes these structures as dwellings that could be built with "a pair of long boots, a saw, a few nails, and some arm strength," shaped entirely by users' imagination and practical ingenuity, where even the walls, rooms, or terraces could be configured however one wished. The term is used metaphorically to emphasize how this spontaneous and low-cost mode of production departs from formal planning norms; Birsel characterizes these structures as a spatial formation that "grows, jumps, and multiplies like a frog," expanding incrementally through user-led additions.

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