

### 33. Urban Cracks as Adaptive Playgrounds for Future Living

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#### Abstract

This paper reframes neglected interstitial sites, or “urban cracks,” as resources for adaptive and participatory urbanism. It draws on established concepts, including lost space and terrain vague, to assert that the ambiguity and temporality of these sites provide opportunities for experimentation. The analysis is inspired by the philosophy of junk playgrounds, treating play as a guiding principle that suspends prescriptive norms and encourages collective improvisation. The study introduces Minimally Intrusive Interventions (MII), defined as lightweight, mobile, reversible, and abstract elements that activate urban cracks while maintaining their openness. The MII method unfolds iteratively by placing cues, observing site rhythms, inviting engagement, and refining interventions in response. Integrating urban cracks with MII produces adaptive playgrounds, environments in which meaning, relationships, and uses develop over time. This approach complements formal planning by promoting small-scale, provisional configurations and prioritizing observation and contextual resonance over fixed outcomes.

**Keywords:** Urban cracks; Minimally Intrusive Interventions (MII) ; Adaptive urbanism; Playful urbanism

## Introduction

Cities are never seamless wholes. Alongside streets, buildings, and formal public spaces, there persist fragments, margins, and interstices, sites that do not conform to the prevailing order of planning or development. These spaces are often fenced, underused, or hidden in plain sight, appearing where infrastructures collide with residential fabrics, where industrial land falls into disuse, or where redevelopment leaves voids in its wake. Far from being exceptional, they are part of the city's everyday morphology.

The vocabulary for these spaces is diverse. Trancik (1986) identified them as “lost space,” describing the anti-spaces left by modernist planning and infrastructural overreach. De Solà-Morales (1995) captured their ambiguous poetics as “terrain vague,” highlighting their suspension between vacancy and possibility. Berger (2006) spoke of “drosscapes,” landscapes of waste generated by post-industrial economies. Loukaitou-Sideris (1996) referred to “urban cracks,” describing them as residual and degenerating sites that fracture social as well as physical fabrics. Other terms such as “dead zones” (Doron, 2000), “voids” (Armstrong, 2006), and “urban wildscapes” (Jorgensen & Keenan, 2012; cited in Lokman, 2017) underline the same idea: spaces that resist conventional categorization and exist in tension with the planned city.

Despite their often negative framing, many authors underline the overlooked potential of such spaces. Hudson and Shaw (2011) note that interstitial sites punctuate the official city yet remain mentally exterior to its circuits, embodying both critique and alternative. El Messeidy (2019) goes further, arguing that residual areas, though usually treated as waste or landfill, can host creative solutions. Naghibi et al. (2020) frame leftover spaces as opportunities in contexts of limited resources.

Building on this recognition of potential, this paper adopts the term “urban cracks” as a working concept to examine how such spaces might be reactivated through design. The metaphor evokes both fracture and repair: the gaps in the urban fabric where dominant logics fail, and where alternative forms of use might emerge. Rather than treating cracks as deficiencies, these sites are framed as areas of latent possibility, an “urban kintsugi,” where incompleteness becomes a resource rather than a liability. Their openness makes them particularly resonant with adaptive forms of engagement, where meaning is not imposed but evolves with collective interaction.

A particularly generative way to engage cracks is through play. Play here is not understood as leisure alone but as a mode of experimentation and discovery, a suspension of fixed rules that enables new patterns to emerge. Carl Theodor Sørensen's “junk playgrounds,” first proposed in the 1930s and later realized in post-war Europe, embodied this principle (Papastergiou, 2021): abstract, messy, and deliberately incomplete, they provided materials rather than instructions and invited children to build, dismantle, and rebuild. This precedent suggests that play can act as a design logic, privileging openness, adaptability, and collective improvisation.

Re-situated in the context of cracks, play offers a way to activate spaces without clos-

ing them down. Minimal, light, and reversible interventions, referred to here as Minimally Intrusive Interventions (MII), can transform neglected voids into platforms for exploration. Rather than offering solutions, these interventions invite people to test, adapt, and co-create meaning over time. Their value lies in keeping spaces adaptable and receptive. In this sense, cracks are not voids to be filled, but openings where play, incompleteness, and collective imagination foster new forms of shared authorship.

## Defining Urban Cracks

The idea of neglected and in-between spaces has a long genealogy in urban discourse. Trancik (1986) described “lost space” as the unstructured and undesirable landscapes left behind by modernist planning, from surface parking lots and freeway edges to abandoned industrial complexes and urban renewal sites that were never redeveloped. He associated their proliferation with five main drivers: dependence on the automobile, the Modernist approach to open space, rigid zoning and land-use policies, a lack of institutional responsibility for public space, and the abandonment of inner-city industrial and military facilities. For Trancik, such spaces made no positive contribution to their surroundings, yet he also noted their potential to provide opportunities for creative redevelopment and hidden resources in the city.

Building on this framing, other scholars have identified similar conditions with different emphases. De Solà-Morales (1995, p. 120) referred to “terrain vague,” spaces at once marginal and ambiguous, “foreign to the urban system, mentally exterior in the physical interior of the city.” Berger (2006) introduced “drosscapes” to describe the large post-industrial landscapes of waste and obsolescence. Loukaitou-Sideris (1996) used the term “urban cracks” to denote deteriorating and residual spaces that disrupt both physical and social worlds. Van Eeghem (2013, p. 588) later described such spaces as existing “in-between time,” once active, now neglected, and awaiting a future that is planned or imagined but not yet realized.

Several typologies have been proposed to classify these places. Winterbottom (2000, p. 41) differentiated between “non-spaces,” “leftover spaces,” and “dual-use space.” Hudson and Shaw (2011) argued that leftover spaces are intrinsic to planning itself, by-products of zoning, industrial decline, and infrastructural ordering, often labelled “voids” or “dead zones.” Pagano and Bowman (2000) noted that the designation of “vacant land” is broad and inconsistent, ranging from derelict buildings to small irregular parcels or land in temporary use, which makes accurate measurement difficult.

Beyond their definition and categorization, a number of studies emphasize the experiential and aesthetic dimensions of these spaces. De Solà-Morales (1995) stressed that the evocative power of “terrain vague” lies in its dual sense of vacancy and vagueness, where absence of use intersects with freedom and expectation. In this way, terrain vague embodies both critique of the city’s productive circuits and potential for other urban futures.

This tension between rationalized urban order and the openness of cracks has also been explored in relation to modern planning. Edensor (2005) argues that modernist approaches, guided by a machinic belief in rational grids, sought to stabilize urban life into discrete zones—work here, homes there, traffic there—producing single-purpose environments that mute contingency and diversity. Against such fixity, studies of “loose space” demonstrate how unregulated pockets within the city continue to foster unscripted social life. Franck and Stevens (2007) show that such spaces enable informal exchange, improvisation, and encounter, even under pressures of privatization and sanitization.

In parallel, scholarship has examined the ecological and experiential unfamiliarity of these landscapes. Luo and de Wit (2022) portray leftover spaces as ecologies where human and non-human dwellers coexist, generating forms of use and meaning often absent in the regulated city. Their accounts underline the interpretive ambiguity of cracks: they are indeterminate, yet precisely because of that, open to unanticipated practices.

A temporal perspective reinforces this understanding. Wall (2022, p. 181), drawing on Bender (1993), Haraway (1988), and Massey (2005), argues that landscapes are always “in process,” never fixed but continuously remade through partial perspectives and ongoing relations. This aligns with debates on temporary occupation, such as “Zwischennutzung” (temporary or in-between use) and “interim spaces,” which highlight dynamic possibilities of sites awaiting a defined future (Costa et al., 2021, p. 2).

Practically, urban “in-between spaces” often appear at edges and seams—under bridges, along rights-of-way, between buildings, or across obsolete parcels—by-products of uncoordinated development (Azhar & Gjerde, 2016; see also Figure 01). Because they fall outside dominant scripts, they risk neglect, yet precisely for that reason they can host spontaneous practices and low-threshold experiments (Smet, 2008, as cited in Azhar & Gjerde, 2016; Hudson & Shaw, 2011). Ecological studies further argue that recognizing their social and environmental value can reorient strategies for reuse (Kremer et al., 2013; Kim, 2016; Folke, 2006; Wals & Wals, 2015, as cited in Naghibi et al., 2020).



(Fig.01 - Former steelworks buffer, Rheinische Str., Dortmund. A fenced void caught between its industrial past and uncertain future - Source: Author 2025)

When absence is understood as potential, new ways of thinking about urban change emerge. Research on shrinking cities and deindustrialization suggests that waves of ruination are not endpoints, but stages in broader material and social transformation. Such conditions create opportunities for new practices, ecologies, and forms of enterprise to surface (C. DeSilvey & Edensor, 2013; Brito-Henriques & Cruz, 2019; Abramson, 2017; Anderson et al., 2017; DeSilvey, 2017, all as cited in Costa et al., 2021). Németh and Langhorst (2014) highlight that vacant parcels are increasingly being used for community gardens, small-scale agriculture, adaptive reuse, and creative businesses, generating new civic infrastructure and social spaces. In this way, what once appeared as surplus urban space becomes a catalyst for renewal.

Taken together, these strands—genealogical, experiential, temporal, ecological, and tactical—recast cracks not as defects but as resources: part of the city’s ongoing composition where contingency persists and meaning is co-produced in situ. Rather than empty plots awaiting redemption, they can be understood as entry points into the city’s fabric—small breaches through which design can engage with the larger system. Their significance lies in offering an accessible scale for experimentation, where new forms of use and relation can take hold before formal planning catches up. In this sense, cracks provide the first points of contact for rethinking urban design from within rather than from above. What emerges through such contact is a distinct potential: these overlooked openings can host social, cultural, and spatial experiments that extend far beyond their physical boundaries.

## The Potential of Urban Cracks

Urban cracks serve as arenas where social life and cultural imagination can unfold beyond the constraints of planned environments. Their openness empowers communities and individuals to assert agency in shaping their surroundings. As Winterbottom (2000) observed, resident-led initiatives and implementation often deliver tangible results more directly than formal political processes, cultivating civic life and local leadership in the process. Residual and non-appropriated spaces thus act as “unnoticed playgrounds for unconstrained initiatives,” counterbalancing top-down development (Verschelden et al., 2012, p. 283).

This potential also challenges the prevailing designer-expert model. Loukaitou-Sideris (1996) argued that when urban design becomes a communicative process, problems and solutions are shaped collaboratively, allowing users to embed cultural and ideological contexts into outcomes. Such participation can mediate conflicts and lead toward empowerment by turning urban design into a process of “making sense together” (Forester, 1985). This concern with agency is especially relevant in the context of urban cracks, since many vacant and neglected sites are located in marginalized neighborhoods where open space is scarce and environmental burdens are high. In these settings, vacant lands likewise operate as instruments of justice, linking appropriation to broader claims for the “right to the city” (Németh & Langhorst, 2014; Harvey, 1996; Mitchell, 2003; Smith, 1984).

Beyond institutional frameworks, the everyday appropriation of interstitial areas underscores their social role. Residual sites embody what Lefebvre (1991, p. 39) described as “lived space”: settings constructed by daily practices that resist the dominant images and codes of the planned city. As Luo and de Wit (2018) note, their temporal emptiness and marginal position invite informal occupations, often by those living at the city’s edges. Such hiddenness enables encounters and uses often suppressed in regulated public spaces.

Cracks counter the homogenizing tendencies of contemporary urbanism by providing spaces for looseness, improvisation, and cultural expression. Edensor (2005) described ruins and derelict sites as loose, messy spaces that defy the smoothness and control of commodified cityscapes. Their looseness permits experimentation and forms of expression not easily contained in official public space. Scholars of community art similarly highlight the capacity of cracks to host practices that suspend default understandings, stimulate curiosity, and foster collective learning (Verschelden et al., 2012; Edensor & Mundell, 2021). Van Eeghem (2013, p. 589) builds on this by describing cracks as hybrid “other” spaces: sites that grow organically yet remain part of the city’s fabric. Loukaitou-Sideris (1996, p. 92) extends the discussion by identifying residual sites as “forms awaiting realization” and arguing that they can be reconnected to urban life through targeted programs that inject activity.

The openness of cracks allows provisional arrangements and iterative engagement. Costa et al. (2021) describe this as “interim reuse,” a practice that transforms waiting time into opportunity by testing temporary occupations without heavy investments,

restoring visibility to neglected areas and reintegrating them into the rhythms of urban life. Németh and Langhorst (2014) argue that these approaches embody a more pragmatic and incremental form of transformation, better suited to conditions of flux than rigid masterplans. As they observe, “the city is never an end state but is perpetually evolving” (Bishop & Williams, 2012, p. 19).

Tactical perspectives further illuminate this potential. Small-scale, low-cost, and reversible actions can test ideas with manageable risk while informing longer-term strategies (Pfeifer, 2013; Azhar & Gjerde, 2016; El Messeidy, 2019). Such tactical interventions resonate with the openness of cracks, offering provisional tools for reactivating marginal spaces without foreclosing their future possibilities.

Metaphors crystallize this range of potential. Residual sites can be read as laboratories, where new practices are tested and adjusted; as adaptive platforms, where minimal interventions set the stage for possible futures without dictating them; and as playgrounds, where improvisation and imagination flourish. As Sicart (2017, p. 1) reminds us, “to play is to be in the world. Playing is a form of understanding what surrounds us and who we are, and a way of engaging with others.” Taken together, these perspectives recast urban cracks as catalysts for rethinking urban life: democratic free zones, cultural counterpoints, temporal laboratories, ecological niches, and imaginative playgrounds.

## **Resonances with Playgrounds & Everyday Practices**

Play offers a distinct lens for understanding space, empirical, uncertain, and improvisational. Among historical precedents, the adventure or “junk” playground stands out as a user-shaped environment defined by openness and continual reinvention. Kozlovsky (2006) describes Sørensen’s idea as to “enclose a space, supply it with building materials, discarded objects and tools, and allow the children to build the playground according to their own ideas” (p. 1), reframing play as constructive authorship rather than consumption. First tested in 1943 at Emdrup, this model treated play as preventive and communal, cultivating solidarity through self-organization amid wartime uncertainty. Crucially, these grounds were intentionally incomplete: children built, dismantled, and rebuilt, exercising agency through cycles of making and undoing (see Fig. 02). As Kozlovsky (2006) also notes, Sørensen judged the junk playground “the ugliest, but also the best” (p. 2), precisely because it prioritized experience over finished form. This tradition cast play as a way of knowing the world, an experiment in participation and shared authorship rather than consumption.



(Fig.02 - Detail from the Notting Hill Adventure Playground, Faraday Road - Source: Daily Mail/Rex/ Shutterstock, cited in The Guardian, 2017)

From this perspective, the lens of play clarifies why urban cracks—unfinished, permissive, and open to reinterpretation—are fertile grounds for collective invention. Advocates of “destructive” play reframed it not as moral failure but as creative experiment and egalitarian critique, where objects held value in use rather than display (Kozlovsky, 2006). Ward (1961) famously called the adventure playground a “free society in miniature,” emphasizing how negotiated rules and shared making generate situated citizenship. From this vantage, the playground becomes a social laboratory: participants co-create “models for living” through micro-political negotiation and collective sense-making (Henricks, 2015, p. 7; Poulsen, 2022). Read in this light, cracks in the urban fabric inherit this same potential: when environments relinquish aesthetic closure and expert monopoly, users can become authors, critics, and caretakers of place.

Read against the city, this “incompleteness-as-capacity” resonates with everyday ur-

ban play. The ludic city is not a special district but a condition: public space becomes a stage for informal, unscripted encounters that meet social needs and spark novel possibilities (Stevens, 2007; Franck & Stevens, 2007). In this register, playful place is not merely a backdrop; it is an actor that “changes the composition of an encounter by changing the affective connections made” (Thrift, 2003, p. 104). Designing for play thus expands from equipment provision to curating affordances—ambiguity, looseness, and routes of self-directed movement.

Contemporary “urban ludic interventions” translate these insights into modest, situated tactics. Defined as additions that offer alternatives to adult pedestrian convention, they invite curiosity, deviation, and exploratory routes (Donoff, 2014; Donoff & Bridgman, 2017, p. 294). Scholars trace a diverse repertoire—from interactive installations and urban games to performative public art—each enabling unscripted interaction and self-expression (Edensor & Mundell, 2021; Tawfique et al., 2025). At the core of this literature, is the body: ludic experience hinges on movement, balance, vertigo, mimicry, and competition, aligning with classic play typologies (Huizinga, 1950; Stevens, 2004, Donoff & Bridgman, 2017; Tawfique et al., 2025). By foregrounding corporeal engagement, these interventions re-sensitize everyday practice to place.

Crucially, playful practice in cities extends well beyond childhood. Evidence associates adult play with social capital, cohesion, and mental health (Mahdjoubi & Spencer, 2015; Brown & Vaughan, 2009; Donoff & Bridgman, 2017). Public installations with no obvious function prompt “simulative play” to test bodily skills or indulge fantasy “for its own sake” (Stevens, 2004, p. 145). Networks of interstitial or polycentric play—scattered micro-affordances that stitch across streets, edges, and thresholds—activate in-between areas as beacons for discovery and low-threshold encounter. At the micro scale, such insertions operate as urban acupuncture (Lerner, 2014), light-touch stimuli that can recalibrate local rhythms without heavy capital or permanence (Donoff & Bridgman, 2017).

Informal practices further demonstrate how vacancy and residual fabric become stages for playful reappropriation. After formal uses end, sites rarely remain empty: they are re-scripted through gardening, leisure, and artistic experiment, turning ruination into platform rather than endpoint (Edensor, 2005; Lokman, 2017; Costa et al., 2021). As Edensor (2005) notes, when things escape assignments of fixed meaning or value, people relate to them imaginatively and sensually, weaving speculative narratives unconstrained by prior orders. The point is not that every residual site should host spectacle, but that looseness—materially, socially, and semantically—enables situated improvisation that tightly programmed spaces tend to foreclose.

From these traditions, transferable criteria emerge for designing with cracks. First, openness: like junk playgrounds, interventions should avoid prescribing singular uses. Incompleteness and abstraction (e.g., modular elements with multiple readings) invite users to determine meaning in action (Poulsen, 2022). Second, reversibility: materials and configurations should be lightweight, movable, and erasable, amenable

to cycles of build–test–revise–dismantle that match the provisional tenure of cracks (Kozlovsky, 2006; Bishop & Williams, 2012). Third, low-threshold engagement: features must be legible and tempting without instruction (Donoff & Bridgman, 2017; Hartt, 2023). Fourth, distributed networks: rather than a single destination, a constellation of micro-affordances along paths, edges, underpasses, and buffers creates a web of invitations (Lefaivre & Döll, 2007). Fifth, embodied variety: draw from ludic modes such as competition, mimicry, chance, vertigo (Huizinga, 1950; Donoff & Bridgman, 2017). Sixth, context attunement: read local routines, materials, and narratives so that playful cues converse with existing practices (Mews, 2022).

These criteria align with broader urban outcomes. Research suggests that playful public space can cultivate relationships, connect intergenerational users, and foster inclusive atmospheres (Spencer & Mahjoubi, 2015; Jones, 2013; Walz, 2010; ARUP, 2017; Townsend, 2013, as cited in Hartt, 2023; Tawfique et al., 2025). The ludic reframes design from furnishing activities to enabling capacities: making space for people to step beyond instrumentality, compulsion, and convention to pursue uncertain prospects (Stevens, 2007; Edensor & Mundell, 2021). In this sense, the playground is less a typology than a method, tuning affordances, materials, and temporalities so that users can improvise, negotiate, and co-author space.

## **Toward Minimally Intrusive Interventions (MII)**

This chapter proposes Minimally Intrusive Interventions (MII)<sup>1</sup> as an embodied design stance attuned to the qualities of urban cracks and to the ludic, user-shaping logics discussed earlier. Rather than a finished object or a prescriptive program, MII is conceived as a kit of parts: lightweight, abstract, and mobile elements placed in overlooked sites to invite people to linger, configure, and reconfigure. The intent is to extend the existing openness of cracks without foreclosing it: to provide just enough structure to catalyze participation, play, and situated authorship, while keeping meaning and outcome deliberately underdetermined. This aligns with a broader contemporary view that “there is an assumption in the twenty-first century that claims cities’ minimal interventions are the most relevant design strategies of urban development” (Enia & Martella, 2019, as cited in Naghibi et al., 2020, p. 115), and with calls for public-space design to respect “continuously emerging complex relations in cities” (Muñoz Aparici & Harteveld, 2025, p. 50).

Methodologically, MII resists top-down delivery and finalization. It operates through iteration: read the site; place a reversible cue; observe interaction and rhythms; invite low-threshold engagement; adapt, relocate, or remove; repeat. It privileges humility

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<sup>1</sup> Minimally Intrusive Interventions (MII) are developed as part of my ongoing PhD research on time-based participatory urbanism. Portions of the conceptual framework and early applications appear in my own manuscripts currently under review and forthcoming. The present chapter reframes and extends that work specifically for the purposes of this paper.

and non-invasiveness, seeking to leave no scar on social or ecological fabric, and favors collective co-production over heroic authorship. Its temporality treats the in-between as a resource, working with transition rather than closure. These commitments differentiate MII from both permanent projects and tactical moves that often harden into fixed forms: reversibility and erasability are not conveniences but principles.

Reversibility is a core condition of MII. Interventions must be capable of disappearing without scars, leaving no permanent mark on the urban fabric. This principle is closely tied to mobility: by remaining lightweight and movable, elements can be repositioned, recombined, or withdrawn altogether. As Robert Kronenburg (as cited in Arieff, 2011) has argued in relation to mobile architecture, flexibility challenges the assumption that built forms must aspire to permanence, instead promoting adaptability and reuse.

Complementing this reversibility is a non-teleological stance. Unlike conventional planning that prescribes end states, MII initiate processes whose direction remains open. This stance resonates with what Luo and de Wit (2022, p. 43) term a “tendency,” a trajectory that guides without predetermining, sustained through cycles of feedback and adjustment. Participation, in turn, depends on accessibility, understood as low-threshold engagement that allows anyone to take part without expertise, institutional approval, or formal invitation. In this sense, they echo Donoff and Bridgman’s (2017) emphasis on playful urban interventions as tools that lower barriers to interaction. Their lightweight and flexible design supports improvisation and reduces risk, resonating with tactical approaches that test possibilities quickly and reversibly (Lydon et al., 2015).

MIIs also require an ethic of attunement and care. Designers act less as master planners and more as gardeners, tending to rhythms of use, decay, and appropriation. The process involves attentive observation and iteration, but also ethical sensitivity. As Muñoz Aparici and Harteveld (2025) stress, inclusive public design requires empathy, humility, and respect for tacit forms of knowledge that emerge in everyday practice. For MII, this means that even observation is provisional: methods must balance authenticity with transparency, capturing how people engage without reducing participation to data extraction.

Taken together, these tendencies translate into specific spatial scales and practices. MII is 1:1 and body-scaled (handleable by hand; perchable; lean-against-able), yet engages the streetscape more broadly, where repeated small gestures can subtly influence how neglected spaces are perceived and used. Following Gehl’s observations, people tend to dwell at edges—interfaces that provide support, vantage, and an easy exit—rather than at the undifferentiated center, a tendency known as the “edge effect.” Complementing this, the “piano effect” describes how small features such as stairs, bollards, planters, and railings invite people to pause, socialize, and “lean into” place (Gehl, 2010; Gehl & Svarre, 2013). MII leverages these dynamics by lightly tuning edges and anchors, adding movable perches, abstract frames, and gentle delineations that nudge appropriation without dictating it.

In this sense, spatial flexibility becomes inseparable from temporal flexibility: the capacity to adjust form through ongoing observation and feedback. Temporary use is defined “not [by] the nature of the use...or scale, longevity or endurance...but rather the intention...that the use should be temporary” (Bishop & Williams, 2012, p. 5). MII operationalizes this idea as a living process: responsive to context, contingent on interaction, and open to change. This iterative ethos echoes Németh and Langhorst’s (2014) argument that experimentation and reversibility enable more incremental and flexible forms of urban adaptation, fast to test, fast to reverse, and better suited to fluid conditions. Outcomes are assessed through behavioral traces (rearrangements, wear), field notes, and brief conversations; iterate when users modify or repeatedly engage; relocate when signals are ambiguous; withdraw when unwanted or obstructive.

Building on this adaptive ethos, MII situates itself among a family of temporary and tactical practices while reinterprets their logic through formal indeterminacy. It shares with *Zwischennutzung* the use-between-uses logic and with urban acupuncture the preference for small, catalytic moves (Costa et al., 2021; Naghibi et al., 2020; Lerner, 2014). It aligns with pop-up landscapes that activate underused sites through flexible, low-cost, and socially integrative design (Schaller & Guinand, 2017). It overlaps with ludic interventions in stimulating curiosity and embodied exploration (Donoff & Bridgman, 2017). It resonates with portable or mobile architectures that “adapt to unpredictable demands, provide more for less, and encourage innovation,” recasting the ambition of permanence (Arieff, 2011). And it aligns with portable street concepts, low-cost, configurable hardware that can deliver a street life over a weekend and then be removed, used to re-animate debilitated areas (El Messeidy, 2016). Across these cousins, the MII distinction lies in its use of abstraction as an enabling condition: its elements are deliberately indeterminate, avoiding fixed function yet inviting interaction, improvisation, and reinterpretation. Rather than prototyping toward a finished state, MII prolongs openness, keeping sites in play and meaning continually negotiable.

Extending this openness from form to knowledge, MII engages with the tacit dimensions of design practice. Urban cracks, in this sense, surface tacit social and spatial knowledge that MII seeks to materialize without freezing their living quality. This requires designer capacities of situated awareness, sensitivity to socio-spatial relations, narrative inquiry, and designing with the tacit: “listen to what, in words, in images, in actions they say about their lives” (Geertz, 1986, p. 373). As Sanders (2002) observes, much of what people know about their experiences cannot be verbalized; this tacit and latent knowledge lies beneath the surface of expression. Participatory design, therefore, moves beyond asking users what they need or think, toward creating conditions in which they can show what they know, feel, and imagine. Generative tools and making activities become a shared language between designers and participants, allowing the unspoken and the emotional to enter the design process as creative material. Here, empathy functions as a methodological stance: taking others’ perspectives to co-create inclusive arrangements, while accepting that any arrange-

ment remains temporal because diversity and space are themselves dynamic. Design “is ongoing and open-ended,” presenting itself in both stable and unstable forms as agency circulates through human and non-human actors (Muñoz Aparici & Harteveld, 2025, p. 55).

The adventure playground offers a historical proof-of-concept for incompleteness as capacity: users construct, deconstruct, and negotiate “models for living,” with pleasure rather than prescription as the driver (Kozlovsky, 2006; Henricks, 2015, p. 7; Poulsen, 2022). MII translates these lessons to urban cracks by staging situated experimentation: abstract pieces that can be stacked, joined, leaned, or arrayed into edges, niches, and micro-stages—sometimes a rest zone, sometimes a stall line for a pop-up market, sometimes a small performance perch. The goal is not to solve a space but to keep it fertile: to cultivate circumstances in which people can test layouts, negotiate use, and generate meanings that outlast any single configuration.

By remaining reversible, mobile, abstract, and non-teleological, MII prolongs interpretability. By remaining low-threshold, it broadens authorship. By cycling through observation and adaptation, it learns in public. And by tuning edges and anchors, it converts latent affordances into everyday practices without erasing the site’s contingencies. In doing so, MII complements more comprehensive planning with a fine-grained, participatory temporality, consistent with the claim that “the city is never an end state but is perpetually evolving” (Bishop & Williams, 2012, p. 19).

## **Urban Cracks + MII = Adaptive Playgrounds**

Urban cracks, as argued throughout this paper, represent conditions of openness—spaces that are neither fully inside nor fully outside the logics of planning. Minimally Intrusive Interventions (MII) extend these conditions by offering a method that does not overwrite ambiguity but works with it. The two together suggest a conceptual synthesis: sites that resist closure combined with a design stance that sustains this resistance. If cracks are the “what,” MII provides a “how”: a way of engaging without resolving, of holding space for plurality and experimentation. Together, they form adaptive playgrounds: environments that enable play, encounter, and negotiation without determining their outcomes.

The qualities of cracks—marginality, looseness, and openness—are often seen as barriers to development, but can be re-read as resources. Urban environments influence human behavior by promoting or inhibiting specific actions and social interactions (Tromp et al., 2011). Interventions in cracks, if designed with care, can tilt affordances toward sociability and improvisation. MII adds minimal cues that accentuate latent possibilities without foreclosing others. As Naghibi et al. (2020, p. 124) note, even small-scale elements can “improve the quality of space” and influence patterns of interaction. Adaptive playgrounds thus combine two dimensions: the site-based openness of cracks and the method-based incompleteness of MII. Together they transform neglect into opportunity.

Adaptive playgrounds complement structured participation by offering lower-threshold, provisional engagement that diversifies co-creation (Muñoz Aparici & Harteveld, 2025). In contrast to the determinacy of master plans, temporary and tactical approaches foreground experimentation. As Arieff (2011) observes, “no single master plan can anticipate the evolving and varied needs of an increasingly diverse population.” MII resonates with this sensibility, but rather than positioning itself against planning, it complements it by filling gaps where formal processes struggle to capture immediacy, ambiguity, or everyday improvisation. This does not imply naïveté about structural limits. As Németh and Langhorst (2014) remind us, temporary use cannot be considered a panacea for achieving resilience or justice. Accordingly, adaptive playgrounds recognize this limitation by emphasizing partiality: they are not full solutions but modest tools to expand the field of possibility. Their value, therefore, lies precisely in enabling residents to appear as co-authors, even in small ways, of spaces otherwise overlooked.

The very qualities that make cracks and MII fertile also expose them to risks. Groth and Corijn (2005, p. 515) describe how temporary projects can generate “complex social and cultural networks” but remain contingent on fragile economic conditions. Once investment returns, indeterminate spaces are often erased. This reveals a first theoretical risk: adaptive playgrounds may be tolerated only as long as they remain marginal, their openness endangered once they gain recognition. A second risk lies in the paradox of design itself. As Luo and de Wit (2022, p. 34) argue, design by definition “plans and makes” for a specific purpose, yet cracks thrive on indeterminacy. Any intervention risks stabilizing what was meant to remain fluid. Third, there is the problem of engagement fatigue. Bottom-up participation, especially when concentrated in fragile communities, cannot be infinitely demanded. Adaptive playgrounds must therefore remain light-touch, enabling rather than obligating involvement, and recognizing that neglect, disuse, or even failure are legitimate outcomes that also produce knowledge. Finally, ethical considerations persist. Observing how people interact with interventions raises questions of transparency, consent, and agency. The challenge is to respect the tacit dimensions of everyday life without reducing them to data points, and to ensure that openness does not become another form of extraction.

Evaluating adaptive playgrounds requires methods as flexible as the interventions themselves. Rather than predefined metrics of success, assessment can rely on traces of use. Behavioral mapping, as suggested in observational methods for public life (Gehl & Svarre, 2013), can help document where and how people cluster, linger, or avoid. The aim is not to measure efficiency but to understand resonance: whether the interventions opened possibilities, even briefly, for alternative forms of encounter. Learning in this context is iterative. Each intervention becomes part of a feedback loop, not only adjusting future placements but also building a repertoire of how openness operates across different cracks. This process aligns with what Luo and de Wit (2022, p. 43) call “tendency and feedback”: a design mindset oriented toward direction without closure, constantly open to correction.

## Conclusion

Urban cracks remind us that cities are never seamless or complete. They embody the unevenness and contingency of urban development, surfacing as interruptions in the built fabric yet also as invitations to imagine otherwise. This paper has traced how such residual and overlooked sites can be reinterpreted through the lens of play and through the proposal of Minimally Intrusive Interventions (MII). Together, these strands suggest adaptive playgrounds: not literal playgrounds, but contexts where improvisation, negotiation, and collective authorship can unfold.

The contribution lies less in a new label than in reframing existing urban qualities. Cracks are already incomplete and ambiguous; MII build on those conditions by extending them rather than erasing them. Value in the city can reside not only in closure or permanence but also in openness, reversibility, and provisional arrangements. Instead of treating leftover land as a problem to be solved, it becomes a context where people can experiment with temporary meanings and uses, generating small but real forms of belonging and exchange.

For design and planning practice: interventions in cracks need not be large or definitive to matter; lightweight and reversible elements can be enough to activate engagement, creating situations where people test possibilities at their own pace. Not every site requires a long-term solution from the outset; some spaces are most productive when they remain in flux. And participation need not always be formally orchestrated; informal encounters and playful appropriations can be just as important as structured consultation in cultivating attachment to place.

This perspective complements comprehensive design and long-term planning. Where master plans aim for stability and predictability, adaptive playgrounds accept volatility and experiment in the margins. They thrive in small scales and transitional periods, offering a counterbalance to the rigidity. By acknowledging that cracks can host moments of creativity, conviviality, and care, design can open itself to other temporalities and ways of knowing.

The call is to learn to work with what is already there, cultivating openness rather than rushing toward closure. See cracks not as failures to be fixed, but as spaces of potential where people and time can do their quiet work. To design minimally intrusive interventions is to accept that incompleteness and uncertainty are not obstacles but conditions of urban life. Leaving room—for people, for time, for the unexpected—is not a withdrawal of responsibility but an affirmation that the city's richness often emerges in what cannot be predetermined.

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