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NEW SPATIAL GRAMMAR

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Guest Editor: Ana Nikezić

NEW SPATIAL GRAMMAR

Spatial grammar is usually understood as a reference by means of which designing in architecture can be analyzed, understood and specified in semantic, pragmatic, epistemic, programmatic or other logical ways. Also, it can be associated with a given set of rules within some formal language of architecture. Though one is true; designing architecture is always an act of creative discovery, permanently tending to formalize itself to be widely accepted. New Spatial Grammar opens a fresh way to understanding different perspectives of engaging the place of architecture including all ambiguity and fluidity of the design process. It offers a unique set of architectural strategies and presents a prospect of possible changes in the perception of space.

Questioning the Anthropocene, the first article begins by looking at whether and how a stronger sense of place is possible. Then the second negotiating with recent periods in global history that have put some heavy strains on the human condition and changes in being at one's own place, explores the broad concept of interiority, its meanings and multifaceted aspects. It re-examines its potent spatial poetics rooted against traditional views generically used in and around the architectural profession. The third one, in the context of the "New normal" discusses new mechanisms through which the city can overcome endorsing socio-spatial discrimination. The last paper, tackeling the same post-epidemic context through Small Interventions models reconsiders the potential to gradually improve public space through a series of small, carefully designed and strategically selected interventions. All authors, through their personal experiences and from various disciplinarian positions, break down or build up a new spatial grammar of architecture exposing its underlying patterns to reveal the organizational strategies that lie beneath them. Exploring various ways of involving research and practising architecture they offer a different perspective of architecture providing a greater understanding of architecture as a creative discipline.

Hopefully the ideas, topics and experiences discussed in this issue will raise new questions, but also provide a meaningful contribution to the dialogue on how best to address the issue of spatial grammar in the context of the contested built environment, both historically and in the context of the future, as well as theoretically and practically. Hopefully, they will provide a powerful impetus for readers to develop their capacity for learning from architecture.

A STRONGER SENSE OF PLACE IS POSSIBLE?
ANTHROPOCENE, NON-RELATIONALITY AND CHIASMS

A B S T R A C T

Anthropocene debates have ultimately generated an epochal sensibility regarding the extent and scope of the human ecological footprint on the planet, but also have actualised the importance of place within intricate ecological textures. By expanding a concept of chiasm, this paper addresses the uncertain localisations in the Anthropocene era, and advocates for a stronger sense of place. First, paper criticises approaches that severely undermine place by overemphasising its function in broader spatial processes and by concentrating solely on human symbolic constructions. Secondly, it asserts that, in spite of refocusing on materiality and providing an enormous role to the non-humans as mediators in composing places, accentuating the ontology of flows found in assemblage approaches still keeps places subjugated to space. By assuming that non-relationality has to be taken seriously in the Anthropocene era, it finally discusses how places, as chiasms present partial ontological condensations with various elements being unexposed and only 'locally' related. Besides non-relationality, it is argued that, in order to gain a stronger sense of place, the boundaries have to be thought of as something that allows the presence instead of separation and also events that conjoin and disjoin various temporalities. Beyond this ontological attuning, the paper concludes by discussing how the architecture could convene the endurance of places within shifting chiasmic context of the Anthropocene.

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INTRODUCTION

Anthropocene debates have ultimately generated an epochal sensibility regarding the extent and scope of the human ecological footprint on the planet.[1] Moreover, they have also pointed to fragile embeddedness of human life-forms within abiotic, biotic and technological flows. Albeit an ongoing officialising of the new geological era runs slowly and evokes hotly disputes on periodisation,[2] an enigmatic scope of the Anthropocene concurrently urges devising of proper means to articulate the ecological future, engage with uncertainty and maintain habitability in general. Namely, permanent exploitation of the living and non-living world ultimately provoked gigantic biochemical and thermodynamic reaction of the planet. This unenviable situation has generated an intrusion of non-humans, radically altering the landscape – once thought to be only a backdrop for human activities. An encounter with these kind of a fractured, diffused and concatenated events which vast formations of non-humans mobilise outside the human sight – pandemic included, also rescaled the proximities and distance, imposing a radical shift in our understanding of space. Emerging efforts to describe the Earth hint at this novel spatial sensibility. Notions of Gaia and Planet,[3] aim to encapsulate a fragile biophysical and geochemical coevolution series of contingent organic bonds and loops crucial to sustaining life in general. Outside the portrayal of a harmonious system, Gaia and Planet present the Earth as nonetheless scattered entity – depending on entangled, changing microscopic organic transactions which, quite unexpectedly, bring localities to the fore.

An emerging spatial grammar of the Anthropocene, albeit primarily encompassing a gigantic interconnectedness, has also enforced the re-emergence of talks on place. According to the philosopher Timothy Morton, in the ecological era, place "has emerged in its truly monstrous uncanny dimension"[4]. What he bears in mind is an "uncanny feeling" coming after places have multiplied, intersected and therefore lost the constant presence they previously had because of the vast amount of massively distributed entities which he calls hyperobjects. Coral reefs, human travel or global warming illustrate well these concatenated formations, where entities are immersed into each other. What Morton himself[5] and his fellow object-oriented-ontologists here find as intimidating are "withdrawn" aspects of beings: while these substantially affect what is present and immediate, their interactions largely go out of sight.[6] This situation engenders a radical uncertainty due to which space itself evaporates and place overtakes the primacy. Against quite unfavourable cosmopolitan routine and convenient fiction of the Westerners who exploited a modern myth of space as a pathway to transcend "one's material conditions,"[7] places are now becoming bound to various scales and temporalities that are more similar to a heterarchical mesh than to firm

hierarchical order. Tables, houses, streets, neighbourhoods, cities, the Earth, and ecosystem are hardly nested into each other; exactly because these overlap and imbue, they are somewhat juxtaposed and inextricably bound to other, non-present places. A unique phenomenological situation is therefore engendered: it requires new scientific, architectural and artistic interventions for encountering work of numerous entities whose effects might also be non-relational, distant and undisclosed.

A growing awareness that we live on an odd place called Earth still does not easily dismiss entrenched spatial orienteers: places we inhabit and to which we relate, such as forests or oceans, become strategically important for our ecological future but also, encountered with rather parochial conceptual pantheon.[8] Unlike some other traditions, the Western thought has not endowed the place with much dignity or grandeur, otherwise bequeathed to space. A peculiarity of this relation presents a widely addressed epitome of Western modernity which succeeded to, quite subtly, impose its categorical apparatus and privilege "mathematico-logical" space as a ubiquitous referential plane.[9] Market, class or culture, but also world history, civilisation, humankind or capitalism, as abstract spaces, have also carved homogenous territories around the planet, engulfing each variation and deriving it from this allegedly more complex reality.[10] A space/place relation has thus been regarded by many authors as an antithetical operation which, by alluring ability to "universalise" and exceed the "particularities", keeps the reportedly regressive and parochial realms such as places bound to the space. Moreover, Massey notes, "Not only under modernity was space conceived as divided into bounded places but that the system of differentiation was also organised in a particular way. In brief, spatial difference was convened into temporal sequence. Different 'places' were interpreted as different stages in a single temporal development. All the stories of unilinear progress, modernisation, development, the sequence of modes of production […] perform this operation."[11]

This fashion of keeping place firmly bound to space has astonishingly continued throughout late modernity, in spite of numerous attempts to unbound it. Even after a burgeoning interest since the 1970s and attempts to go against overly homogenising tendencies that were smuggled with space in favour of more twisted, refracted and altered fashion, as we will argue, place is again unduly seen as derived from allegedly more complex and intricate spatial processes. As Low has recently remarked, there is still a persistent tendency to conceive places either as separated or contained within space, despite the evidence from various anthropological settings which would rather favour conterminous or overlapping depictions.[12] Some progress has certainly been made with assemblage thinking, but in the era of Anthropocene, a complexity held in sites and contexts of simultaneous presence require going even one step further in order to engage

with more substantial questions of habitability, bare life and lively infrastructures. A stronger sense of place is therefore more than welcomed. As Chakrabarty masterfully denotes, a sudden encounter with the vast temporality of the planet and various other beings that are basically indifferent to human existence is only likely to push us to act solely if this is initiated through our habitat and dwelling. Namely, later seems to be the only scale where our response would be timely, efficient, feasible – and, emotionally appalling for us.[13]

Readdressing places as *chiasms* therefore, might potentially initiate a more thorough development of new spatial grammars stemming from the Anthropocene discussions and accentuate equally intricate and fragile character of places. Chiasm seems to adequately cover these aims, in spite the focus set by French phenomenologist Maurice Merleau-Ponty when redeveloping this notion as a descriptor for profound intertwinement of human sensory apparatus with an immediate environment. Namely, chiasm generally denotes a blurry intertwinement and subsumes the shaky process of *fabrication*, in which the "internal" and "external" are woven, crisscrossed and overlapped.[14] Therefore, it is situated within a broad relational understanding of space, which addresses places as temporary compositions with porous boundaries and immersed into flows and mobilities. However, in this paper, we also express the need to expand this position and gain a stronger sense of place. As we will explore in the following section, in spite of numerous attempts to revive it, place has been severely undermined by overemphasising its function in broader spatial processes and by concentrating solely on human symbolic constructions. Assemblage thinking has managed to escape from prioritising space over place, but only to a certain extent. In a subsequent section, we assert that, in spite of rectifying a number of errors in previous approaches, primarily by refocusing on materiality and providing an enormous role to the non-humans as mediators in composing places, accentuating the ontology of flows still keeps places subjugated to space. By assuming that non-relationality has to be taken seriously in the Anthropocene era, we finally discuss how places as chiasms, present partial ontological condensations with various elements being unexposed and only "locally" related. Besides non-relationality, we argue that, in order to gain a stronger sense of place, we must think of boundaries as something that allows the presence instead of separation and also events that conjoin and disjoin various temporalities. Our discussion finalises with the consideration on how the architecture might induce an adaptive design of places in order to convoke dynamic and uncertain context of the Anthropocene.

1. A SPACE/PLACE IN A STRAINED RELATION

Long before Casey's masterful overview of conceptual overthrow of place in the West since the 17th century,[15] considerations of place were largely lurking behind and developing within a narrow lineage. Phenomenological teachings of Heidegger proved to be essential for this thread of thought, not only because his fundamental ontology related the being-in-the-world as a firm relationship with things and regarded it as a continuous, reciprocal existential base for humans. In his later essays, Heidegger made an important twist by seeing the place production, such as the bridging the river as an act that produces the space and not vice versa.[16] Similar fashion was met in Yi-Fu Tuan's work who further extended this phenomenological emphasis given to distinct modes of sensations, perception and symbolisation.[17] Tuan also prioritised place over space: his comparative anthropological journeys and psychological considerations emphasised the enormous importance that place has for human upbringing, because it presents a principal experiential frame for encountering the world. What is even more interesting in Tuan is a balanced and reciprocal duality between place and space,[18] which will also be revived a couple of years later in de Certeau's work, where space presents a continuous setting of directions and velocities, whereas place holds the elements in coexistence and mutual attachment.[19]

Further developments have particularly enforced a strained relation of place with space, as the unbounding which differentiates place was regarded primarily as a political act which provides a more humanised frame than space. A "rebellious" impetus to denote the ruptures in symbolic landscape which helped different collectives to reclaim their identity and alterity has set this predominantly phenomenological current on new tracks. Even though it was narrowly related to social space, Lefebvre's work also profoundly echoed in thinking about place. Lefebvre recognised the dialectic sequencing that would cancel the most buried ideological conceptions that accord the space to preponderant societal forces and thus, initiate flourishing of more sensual, carnal and liveable relations.[20] This break that would lead to "lived space" involved what de Certeau couple years later on the same footing claimed to be "something that cannot be administered":[21] soft disruptions and idiosyncratic meanings evolving through the practical use. Besides the enormous inspiration for the theoreticians of everyday life who became more interested in linking, flows and condensation of specific attributes within everyday sites, this current also epitomised a burgeoning interest in late modernity. Namely, an emerging focus on "sense of/for placement" corresponded to numerous calls for rootedness and expressive identitarianism that were particularly driven by emerging global networks.[22]

For authors who witnessed a fast-paced globalisation in the 1980s and recognised the threats brought with time-space compression, it was evident that places succumb to a different extent to these, usually uneven, interconnections in which they are situated.[23] On the one hand, raising awareness that spatio-temporal geography of everyday activities which places condense went on to show how these sites enable broader social integration, otherwise related to usually vague, non-spatial indications such as norms, values, beliefs, etc. From this point of view, pioneered by Giddens, places channel principal institutional parameters for social reproduction.[24] The evident immersion of cities into world and global economy, along with numerous descriptions that testified on how the division of labour profoundly shapes these sites, additionally proved a dual nature of place in broader spatial structures. For example, Harvey emphasised that places present a "fixed capital" as opposed to increased, post-Fordist mode of production, with its hypermobile and flexible capital, accelerated with technology[25]. On the other hand, it also became apparent that places, as "fixed" sites, have enormous importance equally in retaining productive chains, but also as sites which social groups and individuals claim as part of their identity.

Bounding of places to porous networks of social relations, flows and mobilities, however, gave ambiguous results. While being aware that identarian issues often recall reactionary localism, rather than restoring an outré focus on detached processes in which the "symbolic" beings engage in their little parishes, these authors have generally combined both idiosyncratic acts which various groups and individuals undertake when delimiting the place, along with their relative embeddedness into complex structural frameworks. As some respectable research showed, in articulating various demands, social movements enact specific epistemologies when it comes to a politics of place, by inserting specific meanings and generally mobilising against translocal forces.[26] From this point of view, places succumb to more intense processes of composition which are seen as de-naturalised, constructed and opened for contested conceptualisations, segmentations and compartmentalisations.[27] By accentuating the fluctuating creation of boundaries, places largely become absolved of their pre-defined and bounded character. Still, this does not make them secluded. It is assumed that *boundary work* is driven by a continuous process of retaining political and economic control over places. Being non-static, with uncertain boundaries and enclosures, as well as not having a uniform and single identity, places in this perspective at best come as *intersected articulation* of numerous relations, experiences and understandings which entail far larger scales than the place itself.[28]

In a certain way, adopting this "neither introvert nor fully extroverted" strategy and its relational ontology which sought to subversively undermine various dualities, such as global/local or universal/particular, also proved to only declaratively underline the importance of places, while keeping them only in technical terms as *positions, locales or locations*. At least, Agnew notes, this tradition has managed to depart from the search for law-like regularities of social space. However, focus set on non-spatial processes such as class struggle, commodification or capital accumulation as such have led to seeing places as incidental and making them as mere epiphenomena of broader forces.[29] More profoundly, a key strategy to escape from the notorious "rooted or routed" dilemma was epitomised in undermining a bleak essentialism associated with idiosyncratic acts of place-making, while simultaneously leaving places within indefinite circulation firmly bound to spatial flows.[30] Dovey was right to conclude that, while "the essentialist conception of place often translates into practices of border control", the hegemony of scale with its top-down thinking simply gulps everything below: "global trumps the local, and the abstract encompasses the everyday; geography encompasses planning, which encompasses urban design, which then encompasses architecture and everyday life."[31]

In this sense, even some enviable theoretical developments from recent times, albeit not deriving places simply from political and economic processes, have extended this fashion of seeing places as condensed and enduring manifestations of spatial orders. Shields, for example, in his theory of spatialisation regards place as a "memory-bank for societies inscribed and read in ways which are sometimes ritualised but always much more embodied than merely visual."[32] As mnemonic settings, each of them becomes a "place-myth" – a virtual derivation in which relationally set social differences are spatialised.[33] Similarly, in her ambitious project, Martina Löw considers placement as an embodiment of localisation which itself enables spaces.[34] Namely, what is crucial is that places are "indissolubly intermeshed with spaces inasmuch as they are generated by spaces (sense of place develops with placement) and inasmuch as in terms of location they are a presupposition for the constitution of space."[35] Places, however, only surface through predominantly symbolic acts of placements in what is otherwise indeterminate and invisible space: they become nothing more than marked, named and bounded positions as they allow an endured linking of the entities which are foreign to each other.

No matter how much place has become present in these late modern accounts, an overt ontological prioritising of space still seems to block any substantial turn which would exceed sometimes quite vague insistence on relations and provide a stronger sense of place. The discontent of some authors in this regard thus

seems appropriate. The fabric of place, as Sack claimed against quite popular constructivist approaches, entails an abundance of relational entanglements which exceed usually quite impoverished insistence on humans who insert the meaning. Materiality and plethora of other elements, such as parks, trees or roads do present an artificial intervention, a "construct", but these hardly subsume solely to the logic of profit; they are deposits which inversely shape those who are taken as principal "constructors"[36]. This inverted sense of place, as principal locus where the experience is generated, is further extended by Malpas[37]. His uncompromising Heideggerian endeavour situates the place as a principal existential region, along with expanding their internal heterogeneity. Malpas in no sense denies the interconnecting flows which relate the place to others. What he still questions is a simplified swamping of place under the banner of relationality which solely enforces an extrovert view, while neglecting the complex institutional relations coming from "within" places[38]. This is exactly what the Anthropocene times entail: a stronger sense of place which not only subsumes spatial entanglements, but locates place as principal region that, by hosting and allowing various bonds and mediations, create spaces.

2. EMPOWERING PLACE: NON-HUMANS, ASSEMBLAGES AND RELATIONS

Attempts to prioritise place over space have been running against traditions considered above for a long time. An infamous actor-network theory, with its beginnings in science and technology studies, has empowered a certain *micrological* perspective where places, such as laboratories, substantially affect and sustain more complex, concatenated formations in which humans and non-humans intertwine.[39] The proliferation of widely taken assemblage approaches in urban theory was equally concerned with a dynamic ensemble of humans, environment and technology where locations are primarily *hybrid bundles* related to other places in these flattened spatial arrangements thanks to a number of mediators and infrastructural clamps.[40] However, bringing places closer to their material composition is only one among many adjustments which ontological setting such as the Anthropocene requires. With the Anthropocene, we certainly arrive at places of uncanny mixtures, the chiasms which are uncertain, not only because they are radically disclosed, but because various events which essentially leave them enclosed in *non-relational*, fragile states and condensate intricate ontological textures on their own.[41] It is for these reasons why we need a stronger sense of place which exceeds simply being laden to other places. A widespread relational formula which sees places as an outcome of ontology of flow, multiple geographic expressions and connectivities therefore needs to be reconsidered.

Various accounts that have profoundly relied upon entanglements that at once make places knotted sites and involve radical openness in terms of movements, supplies and loops, have for good reasons become an alternative ontological model to rigid categories of scale or territory. Recent times have particularly seen reorientation towards these *horizontal models of transactions*, as possibly enhanced models for describing the human-environment relations and more profoundly, for explaining how placed coexistence emerges from an extensive wayfaring, especially in organic terms. The concept of *lines* here plays an important role. Pioneered by Ingold, lines depict various lateral movements of entities that slide and join together in places. "Places, then, are like knots, and the threads from which they are tied are lines of wayfaring," Ingold denotes.[42] Knotting together again reinstates the importance of trails which go well beyond places, but more profoundly, a momentous accent on placemaking in heterotopic terms. Similar fashion can be found in Latour's enviable Gaia project, where Earth is presented not as a unified territory, but as multiplication of localities.[43] What he calls a *critical zone*, points at networks of micro-actors that exchange materials, electrons and information. These networks also present heterarchical mechanisms that set in motion a multitude of entities and make each locality highly dependent on others. Like Ingold, Latour considers a representation of space as an occupied and completed framework filled with existing things as inadequate: networks which entities form through a long geohistorical associating are both complex lines of sustenance and emergence. "If climate and life have evolved together", Latour warns, "space is not a frame, not even a context: *space is the offspring of time*"[44].

Links set between various entities in these relational considerations are nonetheless crucial for understanding the Anthropocene, no matter how minuscule they seem, exactly because they materialise the placemaking and move beyond purely anthropomorphic learning, essentially estranged from any kind of hybrid intertwinement with non-human entities. As we have seen, in deriving the placemaking from "higher" causes, such as politics, economy or culture, late modern considerations of place have also proved to be terribly anthropocentric by confining the placemaking to symbolic operations and the cultural imprint that various groups and individuals leave on places. Such a negligence of materiality and intricate effects that various objects have in placemaking - whether or not they are human-made, fail to account for a "spectral gathering", that is, how the "things are folded into the human world in all manner of active and inseparable ways, and most especially in the innumerable interactions between things and bodies which are placed at particular locations."[45] Places as knots are thus hybrid set-ups consisting of transactions between the humans and non-human entities, where later also possess enormous agential capacities to enact, relate and therefore, enable and materialise a broad spectrum of human practices.[46]

Hybrid alliances that primarily attach humans to various non-human objects are a complex of mobilities and nexus of conduits, provisionally gathered in places. A radical openness of place facilitates a broader narrative of *reach* which these associations engender outside exclusive accent set on human experience, symbols and discursivity. Network theorists were first to acknowledge that porous extraterritorial flows and connections are more likely to be described as *robust topological links* where objects make spaces and enable a reach of physically distant events.[47] Scholars of everyday life have also emphasised how practices, arrayed in places, routinely succumb to various "distant" events because they are anchored in various paths and material objects.[48] Because of this, a vast number of locational activities substantially depend on innumerable "clamps" and performative aspects of supplying infrastructures, as many assemblage thinkers have shown. Complex, mediated and artificial set-ups, such as cities are more likely to be described as temporary products of technological mediators and artificial intelligence than as fixed settings emerging from human experience. The enactment of human subjectivity, particularly in carnal sense, therefore, is profoundly associated with various other adjunct non-humans embodied in mundane objects and machines which regulate and direct various parameters of urban life.[49]

Although this model of relationality is nowadays widely adopted, its key limitations are not allegedly excessive focus on non-human entities and their interactive modalities which, by condensing together, create these quite fragile sites which are crucial for our way of living. A key problem seems to be in seeing these relational networks - understood "as perforated entities with connections that stretch far back in time and space, and, resulting from all of this, as spatial formations of continuously changing composition, character, and reach"[50] *without disruptions and discontinuities*. While a broad rebuttal of anthropomorphism, which has a giant share in Anthropocene discussions and moving beyond symbolic demarcation are more than welcomed in our understanding of places, what is thought by relations has to be reconsidered. Quite recent discussions on *solid fluidity* support this thesis.[51] A relatively common-sensical partition between the rigid blocks which modulate the continuous series of variations into stable regions of reality, against sometimes vertiginous changes, reaches a tipping point in the ecological era. As Ingold and Simonetti convincingly show, properties of various material formations such as ice, glass or concrete cannot simply be reduced to either solidity or fluidity, as they are concurrently plastic, viscous and elastic. This kind of a *phase transition* "nevertheless suggests that fluidity could be a constitutive property of matter even in its most solid state – that what we take to be particles, divided from one another yet undivided on the inside, are really the vortices of a flow, with each vortex a locus of spin

rather than an externally bounded entity."[52] Indication of the profound depth kept in each entity, along with their ability to disintegrate, unbound and suddenly implode, more specifically, disrupts the idea on relative continuity and brings the non-relationality to the fore.

3. A STRONGER SENSE OF PLACE IS POSSIBLE: NON-RELATIONALITY, CHIASMS AND THE ANTHROPOCENE

While escaping from the networked models of transactions - where the mediators are deprived of their depth and embeddedness into quite narrow relational formations seems necessary, the Anthropocene consequentially requires theoretical unbounding of places in order to historicize relations and enable a differing fabrication of chiasms through *non-relationality*. From what is being said, it is clear that places are not only "fixes" of the flowing spatial events; they are the emergence of broken, detached chiasms with the fabric of things that are only partially related to other places. A radical openness of place in this regard seems naive. Crossing from one arrangement to another does not hold the objects or places in which they are hosted in some continuous form. Without any need for retrieving of essentialism, by asserting that there is an urge to recognise the quite common disruptions allows us to think of places more thoroughly as partially secluded sites to find the means for their proper design and generally skip quite sloppy habit of inferring that "everything is interrelation", without questioning how places both bound and unbound, fold certain relations and unfold towards other locations. It is for these reasons a stronger sense of place has to be regained: a non-relationality induces a *radical uncertainty* upon places, bringing shape-shifting forms, redefining boundaries and altering their design through events.

Ladenness to conduits and flows generally fails to consider how these non-human entities – entrenched and stabilised in specific sites – also lodge a great amount of uncertainty not only because places act as intermediaries in between other places, but exactly because they contain elements and practices which do not succumb to broader interactions. For example, a neighbourhood is a complex material entanglement encompassing residential units, amenities and shops, but also an assemblage of architectural and planning forms, normative framings and materialised practices. Altogether, they set the place into flows of events of different scope and scale.[53] The removal of any part within this kind of an assemblage does not exterminate places, but it alters their shape: closing of a shop might cut the immediate access to various supplies for the inhabitants, as much as novel pedestrian pathways might recreate the practices and daily

mobilities within place. It is for these reasons that places simultaneously gather innumerable elements which are related only to other elements in specific places, thus not having an extensive geography. The furniture in my apartment, essential for various daily practices, has a rather narrowed relational format, embedded into place in which it has *performativity*: while I might research and trace the history of its making, it is fundamentally drifted away from localities and relations which initially assembled it. Endurance of what temporarily composes constellations found in one place, thus quite often depends not only upon performance of conduits, but also on backup that these elements provide. As Dovey in Deleuzian lingo recalls, "The assemblage is also dynamic – trees and people grow and die, buildings are constructed and demolished."[54]

When narrowed down, places display a constant phasing and *interplay of disclosures and enclosures*, where only certain elements and mediators remain bound to innumerable conduits, whereas others profoundly operate in narrowed, and sometimes, non-relational fashion. Discussions on non-relationality went along the debates on the Anthropocene and have sprung specifically with new speculative realist movement, by targeting a vast number of properties contained in beings which remain undisclosed. According to Harman, "Relational theories of objects often go wrong: they over-emphasise the links and alliances made by objects while neglecting to consider the ways that symbiosis protects an object from links, and thus further solidifies its autonomy."[55] Non-relationality therefore encapsulates a strikingly important moment for the Anthropocene because an enormous landscape of interactions remains secluded and deterritorialised at least for a while. Predominantly performed by non-human entities among each other, these *contingent gatherings* are temporarily left with no intermediaries that could link them with other places, or at least expand the effects of these interactions. Bryant rightfully reminds us that even the most minute topology of our everyday remains undisclosed: organs in our bodies interact with each other; bricks, armature and concrete that hold our buildings do too; icecaps melt thousands of kilometres from us.[56] Yet, whereas these interactions quite often do not have intermediaries and remain non-integrated with other locations in a same spatial plane, sudden eruptions, malfunctioning or simply a transmission of events once kept secluded is what makes the Anthropocene places so fragile and uncertain.

Boundaries are therefore particularly at stake because a *shifting* of relationality brings the scope of place into various contractions. A general conclusion to which many authors have come after abandoning essentialist learning, seems to be on point: places succumb to various intersecting socialites, therefore having only relative boundaries.[57] This general mood has been summarised

well by Shields, who rightfully noted that distinct elements and procedures used when demarcating places present "always a bounding and assembling that, like addition, is *an operation rather than a fact*."[58] Whereas connectedness of place and overlapping territorialities have brought more fluidity and porosity in bounding of places,[59] understanding of boundary-making process as contested, prone to negotiations and predominantly an outward move which aims to set a distinction to what lies beyond the place,[60] largely dismisses the very performativity of place. Namely, later fashion severs place from ontology to a large extent: we rob it from the potency to be performative upon relations and elements that are *temporarily enclosed*, to recreate relations anew and unfold unforeseen realties, as long as we derive boundaries solely from operations of separating instead of condensation.[61] In other words, even though a vast number of discussions rightfully point to political, administrative and cultural grounds of enclosure – that usually exceed the material settings as such, what is usually forgotten is that bounds cannot attain only to separation.

Boundaries therefore do not separate places neither outwards nor inwards firmly: however counterintuitive it might seem, boundaries instead *condensate* relations. Namely, setting chiasms as relatively affirmative towards boundaries traces back to astounding analysis of Heidegger who insisted that the boundary is what *activates the presence*.[62] To think in terms of *presencing*, gives place the ability to activate and situate the practices that are otherwise thought to be radically distinct only by being "local" – both in outward and inward manner. Cooking is usually placed in the kitchen not as outward activity against, for example, a living room, but as inward activity of food procession which, due to a shape of places and various objects it condenses, impose an inward boundary and ultimately a phase transition to the objects involved. Fires in Amazon rainforest also initiate the presence: it is the creation of these inward boundaries, gradually expanding with fire destroying acre after acre, which bring to the fore the ways how the Brazilian government operates, along with profit-driven farmers, indigenous population facing destruction of their habitat and animals and plant species brought to a brink of extinction. Studios also appear as situated environments in which the creative work and practices are organised, maintained and supported through equipment; as such, the output of this kind of a condensation does not make place only a locale in broader cultural space, but by generating cultural artefacts and inventions, a site that has profound environmental impact.[63] Outside a simple effect of wrapping up the place with a firm or defined boundary, attaining presence of materials and practices, which certainly runs back and forth on an inward-outward continuum, appears as temporary condensation. This is why Jeff Malpas was right to assert that places contain "enclosedness within bounds."[64] As he claims,

Places can turn outwards to reveal other places, but they can likewise turn inwards to reveal their own character or the character of the subject who identifies with that place. In this latter respect, the possibility of taking a place to be variously oriented, to be folded either inwards or outwards (or, as it might also be put, to 'unfold' in a way that reveals something of its own structure or features of the world).[65]

Each of these points underlined by Malpas – turning outwards, orienting inwards or unfolding into multiple directions – ultimately brings eventfulness of chiasm to the fore and initiates the issue of *temporality*. What is specifically puzzling here is that because of being semi-disclosed, chiasms juxtapose multiple temporalities. Certainly, Massey was right to assert that "the vast differences in the temporalities of these heterogeneous trajectories which come together in place are crucial in the dynamics and the appreciation of places."[66] As such, each of this temporality exceeds the place: some elements which play part in current composition of place as deposits that enable certain endurance, such as rocks and other solid materials, were present long before the place got its shape and might simply outlive it; some practices are purely rhythmically distributed, as in cases of each small retail and the circulation of goods and customers. But this juxtaposition is not an integration of time-space, as Massey claimed. While she was right to point at event of place as coming together of previously unrelated processes, attributing this kind of spatial narratives to a configuration of famed 'throwntogetherness'[67] of place, dismisses the *power to disintegrate*. Namely, what is conjoined through a certain event of place – an assemblage of practices and materials – also succumbs to *phasing* which disrupts the bonds the place temporarily keeps, potentially unfolding or establishing new relations.

Temporal composition of chiasm is imbricated with what is present and thus, disrupted by events that impose rhythms. Describing the 9/11, Wagner-Pacifici has marvellously indicated how such an event, occurring both in proximity of witnesses and being mediated through a live broadcast, impinges the everyday sites with relations that previously were not on the site.[68] Inversely, events induce disruptions, particularly through *rhythmic temporalities*. In his final, posthumously published book, Lefebvre has situated rhythms as prime markers responsible for the alterations of space. Namely, rhythms appear at the conjunction of place, time and an expenditure of energy. Among the rhythms that he lists, there are repetitions of movements, gestures, actions, situations, along with interferences of various linear processes as well as cyclical ones, but also those that involve a steady-paced emergence and disruption: birth, growth, peak, then decline and end.[69] All of these rhythms might be considered both as organic

continuity, but nonetheless, technological permanence and mediation. Giving a rhythmicity to presence, however, substantially leaves each chiasm bound to *solid fluidity* rather than being a mere fix. Albeit some temporalities, especially those concerning the firmness of materials, appear to be more consistent and allowing chiasms to maintain its principal forms and folds, the multiplicity of rhythms occurring elsewhere in non-associated manner, generally contain the potential to unfold and imbue the place. Indeed, Chakrabarty was right when stressing that "one way to think about the current crisis of anthropogenic climate change is to think of it as a problem of mismatched temporalities."[70]

4. CHIASM AS A MATTER OF DESIGN

Even if an apparent paradox might be that the Anthropocene primarily targets the phenomenology of temporality, it unexpectedly develops an intricate spatial framework. Besides the imagery of fractured and flattened Earth epitomised in concepts of Gaia and Planet, the Anthropocene events are highly localisable and, to a certain extent, profoundly bound to what place gathers. Ecological disasters provoked by the land grab and massive destruction of the Amazon rainforest are good illustrations:[71] while these events show how such places are equally under a topological reach of physically distant political and economic powers, we learn that these places have enormous, strategic importance as ecological "production sites". Apparently, reconsidering places as chiasms brings us directly to these condensations which are not simply interrelated, but fractured, stubbornly separated and thus filled with uncertainties. This aligns exactly to what Harman calls a "surplus reality":[72] something that lurks beneath the current manifestations and might implode anytime. Such a forethoughtful claim nonetheless brings the question of design to the fore.

If places are more or less composites with intricate ontological fabric, what they condense also has to be thought of quite vigilantly both in terms to what they relate as well as what potential events might bring harm and crush their composition. A paradox with the Anthropocene is that it simultaneously expulses humans as prime proprietors of the planet and cancels a conceitful habit of negating non-humans from many of their agential capacities, while it also sets none other than humans as principal designers of their own ecological future. Because this chiasmic coordination has to be thoughtful and assembled in such a way to enable a proper dose of "penetrability" and constructively engage into setting adequate relational frames, feedback loops and supplies for our living, it substantially needs to account for what is distant and undisclosed as well. A number of solutions to this conundrum of engaging with non-presence have

been devised from Haraway's principle of staying with trouble which seeks to insert the uncertainty as indissoluble part of our lives,[73] all the way to Latour's call to revive the old topic of apocalypse in order to encounter rationally our ecological future.[74] Yet, beyond this ontological attuning, the question is how the architecture convene the endurance of places within such a shifting context?

Enhancing our sensibility towards uncertain scenarios of the Anthropocene nonetheless comes as a matter of design, where architectural interventions might articulate and even invent new modes of coexistence, as Elizabeth Grosz rightfully pointed out.[75] Albeit bequeathing the architecture with a task of devising the means to articulate the ecological future through engineering and design appears somewhat burdensome, the fabrication of habitability anew, particularly in terms of constructing places and their uncertain and relatively unbounded character, seems as an exigency. Architecture in this respect comes exactly as coping with a phenomenology of temporality. Quite intense changes in a landscape that was once thought to be firmly encapsulated by knowledge and engineering articulation now engenders substantial harm for inhabitation: geology and weather, but also the extinction of species radically alter the setting for the architecture as well. To facilitate these new modes of coexistence, architecture has to correspond to flows of movements, bodies, practices. Simultaneously, this means corresponding to air, heat, cold, electricity, along with flow of materials that are used in construction. The possibility for engagement lies exactly in the capacity to bound these rhythms and temporalities and make them ordered repetitions through spacing, materials and movements created by architecture.[76] Furthermore, this loose alliance enabled with the design induces a matrix where accommodating velocities and the flows of energy have to articulate a life-sustenance in *form of cycles*,[77] that is, to provide phase transitions that both display firmness and adaptability to an altering ecological circumstances.

Besides an indeed *resilient* character that architectural design has to incorporate in order to articulate a series of flows, the latter point also pushes towards *aestheticising* these contingencies condensed into contexts of simultaneous presence, thus displaying a fundamental ability to even unveil and present fragile working of materials and non-human entities in sustaining the human life. Namely, a design and proper "attuning" of chiasms also necessitate to be accompanied with an aesthetic moment – as something that discloses a vast landscape of non-relationality. An emphasis set on these non-present contingencies can already be found in some architectural discussions. As some authors emphasise, newly emerging inhabitations should encapsulate the *performative aspects* of the components circulating within place, exactly in order "to focus on the sensorial, productive and emotional operations of materials and elements in relation to,

and as extensions of, human occupants".[78] Discussions on "open forms" by Sennett and Sendra involve advocating the idea of unfinished and resilient urban structures, but in particular, the construction of various infrastructure links that are usually little visible and accessible.[79] Bio-digital aesthetics similarly targets what is usually shaded in design and exhibits, for example, workings of various non-humans in creating an organically achievable environment with a help of artificial intelligence.[80] There is, however, further implication of introducing the aesthetical glimpse in spheres once thought to be disturbing and inappropriate for the modern gaze. Exactly the unenviable situation fuelled with the Anthropocene, where beings are largely "withdrawn" and work from a distance, paradoxically engenders a new function for the aesthetics, as Morton warns.[81] Non-relational simply seems haunting. It is for these reasons why the fabric of places, under such uncertain circumstances, equally requires to be treated as a fundamental existential importance and nonetheless acquiring specific treatment as a pathway to our environment more habitable.

NOTES

1   For useful overviews and discussions, see for example, Anders Blok and Casper Bruun Jensen, 'The Anthropocene event in social theory: On ways of problematizing nonhuman materiality differently', *The Sociological Review*, 67 (6) (2019). 1-17; Pierre Charbonnier, 'A Genealogy of the Anthropocene. The End of Risk and Limits', *Annales HSS* (English Edition) 72 (2) (2017), 199-224.

2   Will Steffen et al. 'The trajectory of the Anthropocene: The Great Acceleration'. The Anthropocene Review (2015), 1-18; Jan Zalasiewicz et al. 2011. 'The Anthropocene: a new epoch of geological time?' Phil. Trans. R. Soc. A 369 (2011), 835-841.

3   Bruno Latour, *Facing Gaia. Eight Lectures on the New Climatic Regime* (Polity Press. Cambridge, 2017); Dipesh Chakrabarty, *The Climate of History in a Planetary Age* (Chicago: University of Chicago Press, 2021).

4   Tim Morton, *Dark Ecology. For a Logic of Future Coexistence* (New York: Columbia University Press, 2016), 10.

5   Ibid.

6   Levi Bryant, *Onto-Cartography: An Ontology of Machines and Media* (Edinburgh: Edinburgh University Press, 2014); Graham Harman, *Immaterialism: Objects and Social Theory* (Oxford: Wiley-Blackwell, 2016); Graham Harman. *Speculative Realism: An Introduction* (Cambridge: Polity Press, 2018).

7   Morton, *Dark Ecology. For a Logic of Future Coexistence*, 10.

8   Outside the portrayal of various ecological harms made by humans, many authors regard the Anthropocene as a "golden spike" for initiating a far greater metamorphosis of an ontological framework. These attempts embody not only surpassing the notorious 'Great Divide' and its unduly partition of humans' cultural frameworks against the solidity of nature and matter, but also involve a profound dismissal of anthropocentrism and engagement with post-human political course, where non-humans appear as co-constitutive. It is why many among them enlist indigenous knowledge as far more adequate for attaining ecological bonds, along with quite active revival of political theology and the thematic of apocalypse as an indicator of ontological uncertainty (e.g., Chakrabarty, *The Climate of History in a Planetary Age*; Charbonnier, 'A Genealogy of the Anthropocene. The End of Risk and Limits'; Deborah Danowski and Eduardo Viveiros de Castro, *The Ends of the World* (Wiley: London, 2017); Latour, *Facing Gaia. Eight Lectures on the New Climatic Regime*.

9   Cf. Henri Lefebvre, *The Production of Space* (Basil Blackwell, Oxford, 1991), 1-9; Rob Shields, *Spatial Questions: Cultural Topologies and Social Spatialisations* (London: Sage Publications, 2013).

10   John Agnew, 'Space and Place.' In *The SAGE Handbook of Geographical Knowledge*, edited by John Agnew and David Livingstone, 316-330. (London: Sage Publications, 2011); Doreen Massey, *For Space* (London, Thousand Oaks, New Delhi: Sage Publications, 2005).

11   Doreen Massey, *For Space,* 68.

12   Setha Low, *Spatializing Culture: The Ethnography of Space and Place* (London New York: Routledge, 2017).

13   Dipesh Chakrabarty, *The Climate of History in a Planetary Age*.

14   Maurice Merleau-Ponty, *The Visible and Invisible*. (Evanston: Northwestern University Press, 1968).

15   Edward Cassey, *The Fate of Place: A Philosophical History* (Los Angeles: University of California Press, 1997).

16   Martin Heidegger. *Poetry, Language, Thought* (New York: HarperCollins Publishers, 2001).

17   Yi-Fu Tuan, *Space and Place: The Perspective of Experience* (Minneapolis: University of Minnesota Press, 1977).

18   Ibid., 6.

19   Michel de Certeau, *The Practice of Everyday Life* (University of California Press, Berkeley, Los Angeles, 2002), 117.

20   Lefebvre, *Production of Space*, 36-46.

21   de Certeau, *The Practice of Everyday Life*, 95.

22   Arjit Sen, and Lisa Silverman, 'Embodied Placemaking: An Important Category of Critical Analysis.' In *Making Place: Space and Embodiment in the City*, edited by Arjit Sen and Lisa Silverman, 1-18 (Bloomington and Indianapolis: Indiana University Press).

23   David Harvey, *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change* (Blackwell, Oxford, 1989) 260-283; Doreen Massey, 'A global sense of place' *Marxism Today* (38) (1991), 24-29; See also: Manuel Castles, *The Rise of the Network Society, The Information Age: Economy, Society and Culture* Vol. I (Cambridge, MA; Oxford, UK: Blackwell. 1996).

24   Anthony Giddens, *The Constitution of Society. Outline of the Theory of Structuration.* (Cambridge: Polity, 1984), 110-145.

25   David Harvey, Justice, Nature and the Geography of Difference (Cambridge MA: Blackwell Publishers, 1996), 238-247, 261-267, 291-326.

26   Arturo Escobar, *Territories of Difference: place, movements, life, rede*s. (Durham and London: Duke University Press, 2008).

27   Charles Withers, 'Place and the 'Spatial Turn' in Geography and in History.' *Journal of the History of Ideas*, 70, 4 (2009), 637-658.

28   Doreen Massey, *Space, Place and Gender.* (Minneapolis: University of Minnesota Press, 1994)

29   John Agnew. 'Space and Place'.

30   Tim Cresswell, *Place: An Introduction.* (Malden, MA and Oxford: Wiley-Blackwell, 2015)

31   Kim Dovey, 'Place as Multiplicity.' In: *Place and Placelessness Revisited*, edited by Robert Freestone. & Edgar Lui (London: Routledge, 2016), 246.

32   Rob Shields, *Spatial Questions: Cultural Topologies and Social Spatialisations,* 32.

33   Ibid.

34   Martina Löw, *The Sociology of Space: Materiality, Social Structures and Action* (Basingstoke: Palgrave-Macmillan, 2016).

35   Ibid., xvii.

36   Robert David Sack, *Homo Geographicus* (Baltimore, Johns Hopkins University Press, 1997).

37   Jeff Malpas, *Place and Experience: A Philosophical Topography* (London and New York: Routledge, 2018).

38   Ibid., 1-22.

39   Cf. Bruno Latour and Steve Woolgar, Laboratory Life. *The Construction*

of Scientific Facts. (Princeton: Princeton University Press, 1986.); Bruno Latour, 'On actor-network theory: A few clarifications plus more than a few complications.' *Soziale Welt* 47 (1996), 1-14; Bruno Latour, *Reassembling the Social. An Introduction to Actor-Network Theory* (Oxford: Oxford University Press, 2005); John Law, 'After Ant: Complexity, Naming and Topology'. *The Sociological Review*. 47(1999), 1-14; John Law, 'Objects and Spaces'. *Theory Culture Society*, 19 (5-6) (2002), 91-105; Annemarie Mol and John Law, 'Regions, Networks and Fluids: Anaemia and Social Topology'. *Social Studies of Science.* 24 (4) (1994), 641-671.

40   Kim Dovey, Becoming Places. *Urbanism/Architecture/Identity/Power*, (London: Routledge, 2010); Kim Dovey. 'Place as Multiplicity'; Hesam Kamalipour and Nastaram Peimani. 'Assemblage Thinking and the City: Implications for Urban Studies' *Current Urban Studies*, 3(4) (2015), 402-408; Collin McFarlane, 'The City as Assemblage: Dwelling and Urban Space'. *Environment and Planning D: Society and Space*. 29 (4) (2011), 649-671. Collin McFarlane, Ben Anderson, 'Thinking with assemblage'. *Area Volume*, 43 (2) (2011), 162-164.

41   This position is principally derived from the immaterialist principles suggested by Harman, Immaterialism: Objects and Social Theory. Besides criticising overly epistemological position of numerous relational theories, which still think in "correlationist" terms – that is, deriving ontological existence of things from observations of humans, Harman underlines that "(1) entities are partially withdrawn objects rather than merely public actors, (2) relations between objects may be non-reciprocal, (3) relations between objects may be asymmetrical, (4) there is a difference between the important and unimportant relations of an object, and (5) one of the tasks of philosophy is to find a new way to classify different types or families of objects." (Ibid., 106-107).

42   Tim Ingold, Being Alive. *Essays on movement, knowledge and description* (London and New York: Routledge, 2011), 149.

43   Latour, Facing Gaia.

44   Ibid.: 106, original emphasis. Latour and his associates are also interested in finding novel means to represent this thin biofilm called the critical zone as a flattened and heterarchical spatial arrangement. More specifically, these presentations induce tracing of waves of actions performed by various entities (see particularly: Alexandra Arènes, Bruno Latour, and Jérôme Gaillardet, 'Giving depth to the surface: An exercise in the Gaia-graphy of critical zones', *The Anthropocene Review*, 67 (6) (2018), 1-18.

45   Nigel Thrift. 'Steps to an Ecology of Place.' In *Human Geography Today*, edited by Doreen, Massey, John Allen and Phillip Sarre, (Cambridge: Polity Press, 1999), 312.

46   Particularly, this applies to everyday equipment. See: Sarah Pink, *Situating Everyday Life: Practices and Places* (London: Sage Publications, 2012); Theodore Schatzki, *The timespace of human activity: on performance, society, and history as indeterminate teleological events*. (Lanham: Lexington Books, 2010).

47   John Law, 'After Ant: Complexity, Naming and Topology'; John Law, 'Objects

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and Spaces'. *The Sociological Review*; Annemarie Mol and John Law, 'Regions, Networks and Fluids: Anaemia and Social Topology'. See also: John Allen, *Topologies of Power: Beyond Territory and Networks* (London: Routledge, 2016).

48   Schatzki, *The timespace of human activity: on performance, society, and history as indeterminate teleological events*.

49   Ash Amin, 'Lively Infrastructures'. *Theory Culture Society,* 31 (2014), 137-161; Ash Amin and Nigel Thrift, *Cities: Reimagining the Urban.* (Cambridge: Polity Press, 2002); Ash Amin and Nigel Thrift, *Seeing Like a City* (Cambridge: Polity Press, 2017).

50   Ash Amin, 'Regions Unbound Towards a New Politics of Place'. *Geografiska Annaler Series* B, Human Geography, 86 (2004), 33.

51   See: Nigel Clark, et al, 'A Solid Fluids Lexicon', Theory, Culture & Society, 39 (2) (2021): 1-14; Nigel Clark, 'Planetary Cities: Fluid Rock Foundations of Civilization'. *Theory, Culture & Society* 39 (2) (2021), 1–20; Christian Simonetti and Tim Ingold, 'Ice and Concrete: Solid Fluids of Environmental Change', *Journal of Contemporary Archaeology*, 5 (1) (2018), 19-31.

52   Tim Ingold and Christian Simonetti, 'Introducing Solid Fluids', Theory, Culture & Society, 39 (2) (2021), 5. Clark also masterfully shows how these transitive events between fluidity and solidity transition serve as a backbone of civilisation by unbounding various formations from the geological sites from which materials for building were taken. The product of an "emergence of large-scale sedentary or urban life is a self-organising process involving a phase transition between relative fluidity and denser, more tightly-bonded structures". (Clark, 'Planetary Cities: Fluid Rock Foundations of Civilization', 10).

53   Cf. Cresswell, Place: An Introduction; Dovey, 'Place as Multiplicity'; Kamalipour and Peimani. 'Assemblage Thinking and the City: Implications for Urban Studies'.

54   Dovey, *Becoming Places. Urbanism/Architecture/Identity/Power*, 10.

55   Harman, *Immaterialism: Objects and Social Theory*, 93.

56   Bryant, *Onto-Cartography: An Ontology of Machines and Media*.

57   Arjit Sen, and Lisa Silverman, 'Embodied Placemaking: An Important Category of Critical Analysis.'

58   Shields, S*patial Questions: Cultural Topologies and Social Spatialisations*, 137, original emphasis

59   Amin, 'Regions Unbound Towards a New Politics of Place'.

60   Massey, *Space, Place and Gender*, 5-6.

61   Talks on solid fluidity once more affirm this assumption. While the condensation at the first sight might solely be related to solidity, in this case, it also operates as phased reconnection of flows, a contingent gathering which imposes a specific mutation to the entities involved in this narrowed relational format (cf. Clark, et al, 'A Solid Fluids Lexicon').

62   Heidegger. *Poetry, Language, Thought*, 152.

63   Ignacio Farias and Alex Wilkie, 'Studio studies: Notes for a research programme.'

64   Malpas, *Place and Experience: A Philosophical Topography*, 172.

65   Ibid., 174.

66   Massey, *For Space*, 137.

67   Ibid., 141.

68   Robin Wagner-Pacifici, *What is an Event?* (Chicago: University of Chicago Press, 2017).

69   Henri Henri Lefebvre, *Rhythmanalysis: Space, Time and Everyday Life* (London & New York: Continuum, 2004), 16.

70   Chakrabarty, *The Climate of History in a Planetary Age*, 49.

71   Pierre Charbonnier, ''Where Is Your Freedom Now?' How the Moderns Became Ubiquitous.' In *Critical Zones: The Science and Politics of Landing on Earth*, edited by Bruno Latour and Peter Weibel, 76–79. (Cambridge, MA: MIT Press, 2020).

72   Harman. *Speculative Realism: An Introduction*, 188.

73   See: Haraway, 'Staying with the Trouble: Anthropocene, Capitalocene, Chthulucene.'

74   Latour, *Facing Gaia*, 184-219.

75   Elizabeth Grosz, 'Time Matters: On Temporality in the Anthropocene – Elizabeth Grosz in Conversation with Heather Davis and Etienne Turpin.' In *Architecture in the Anthropocene: Encounters Among Design, Deep Time, Science and Philosophy*, edited by: Etienne Turpin, (London: Open Humanities Press, 2013), 131.

76   Ibid., 133.

77   See: Piotr Gradzinski, 'The impact of the Architecture on the Climate Change in Anthropocene 'IOP Conf. Ser.: Mater. Sci. Eng. (2019), 603.

78   Colin Ripley, Geoffrey Thün, Kathy Velikov, 'Matters of Concern', Journal of Architectural Education, 62 (4) (2009), 10.

79   Richard Sennett and Pablo Sendra, *Designing Disorder: Experiments and Disruptions in the City.* (Verso: London, 2020).

80   Claudia Pasquero and Marco Poletto, 'Beauty as Ecological Intelligence: Bio-Digital Aesthetics as a Value System of Post-Anthropocene Architecture', *Architectural Design*, 89 (5) (2019), 58-65.

81   Morton, *Dark Ecology. For a Logic of Future Coexistence*, 17.

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BIBLIOGRAPHY

Agnew, John. 'Space and Place.' In The SAGE Handbook of Geographical Knowledge, edited by John Agnew and David Livingstone, 316-330. London: Sage Publications, 2011.

Allen, John. Topologies of Power: Beyond Territory and Networks. London: Routledge, 2016.

Amin, Ash. 'Regions Unbound Towards a New Politics of Place'. Geografiska Annaler Series B, Human Geography, 86 (2004), 33-44.

Amin, Ash. 'Lively Infrastructures'. Theory Culture Society, 31 (2014), 137-161.

Amin, Ash. and Thrift, Nigel. Cities: Reimagining the Urban: Reimagining the Urban. Cambridge: Polity Press, 2002.

Arènes, Alexandra, Latour, Bruno and Gaillardet, Jérôme. 'Giving depth to the surface: An exercise in the Gaia-graphy of critical zones'. The Anthropocene Review, 5, 2 (2018), 1-18.

Blok, Anders and Jensen, Casper Bruun. 'The Anthropocene event in social theory: On ways of problematizing nonhuman materiality differently'. The Sociological Review, 67 (6) (2019), 1-17;

Amin, Ash. and Thrift, Nigel. Seeing Like a City. Cambridge: Polity Press, 2017.

Bryant, Levi. Onto-Cartography: An Ontology of Machines and Media. Edinburgh: Edinburgh University Press, 2014.

Cassey, Edward. The Fate of Place: A Philosophical History. Los Angeles: University of California Press, 1997.

Castles, Manuel. The Rise of the Network Society, The Information Age: Economy, Society and Culture Vol. I. Cambridge, MA; Oxford, UK: Blackwell, 1996.

Chakrabarty, Dipesh. The Climate of History in a Planetary Age. Chicago: University of Chicago Press, 2021.

Charbonnier, Pierre. 'A Genealogy of the Anthropocene. The End of Risk and Limits'. Annales HSS (English Edition) 72, no. 2 (2017), 199-224.

Charbonnier, Pierre. "Where Is Your Freedom Now?' How the Moderns Became Ubiquitous.' In Critical Zones: The Science and Politics of Landing on Earth, edited by Bruno Latour and Peter Weibel, 76-79. Cambridge, MA: MIT Press, 2020.

Clark, Nigel et al. 'A Solid Fluids Lexicon'. Theory, Culture & Society, 39 (2) (2021), 1-14.

Clark, Nigel. 'Planetary Cities: Fluid Rock Foundations of Civilisation'. Theory, Culture & Society 39 (2) (2021), 1-20.

Cresswell, Tim. Place: An Introduction. Malden, MA and Oxford: Wiley-Blackwell, 2015.

Danowski, Deborah and Viveiros de Castro, Eduardo. The Ends of the World/ London: Wiley, 2017.

de Certeau, Michel. The Practice of Everyday Life, University of California Press, Berkeley, Los Angeles, 2002.

Dovey, Kim. Becoming Places. Urbanism/Architecture/Identity/Power. London: Routledge, 2010.

Dovey, Kim. 'Place as Multiplicity.' In: Place and Placelessness Revisited, edited by Robert Freestone. & Edgar Lui, 257-268. London: Routledge, 2016.

Escobar, Arturo. Territories of Difference: place, movements, life, redes. Durham and London: Duke University Press, 2008.

Farias, Ignacio & Wilkie, Alex. 'Studio studies: Notes for a research programme.' In Studio Studies Operations, topologies and displacements, edited by Ignacio Farías and Alex Wilkie, 1-22. London and New York: Routledge, 2016.

Gradzinski, Piotr. 'The impact of the Architecture on the Climate Change in Anthropocene 'IOP Conf. Ser.: Mater. Sci. Eng. (2019), 603.

Giddens, Anthony. The Constitution of Society. Outline of the Theory of Structuration. Cambridge: Polity, 1984.

Grosz, Elizabeth. 'Time Matters: On Temporality in the Anthropocene – Elizabeth Grosz in Conversation with Heather Davis and Etienne Turpin.' In Architecture in the Anthropocene: Encounters Among Design, Deep Time, Science and Philosophy, edited by: Etienne Turpin, 129-138. London: Open Humanities Press, 2013.

Haraway, Donna. 'Staying with the Trouble: Anthropocene, Capitalocene, Chthulucene.' In Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism, edited by Jason Moore. Oakland: PM Press Kairos, 2016.

Harman, Graham. Immaterialism: Objects and Social Theory. Oxford: Wiley-Blackwell, 2016.

Harman, Graham. Speculative Realism: An Introduction. Cambridge: Polity Press, 2018.

Harvey, David. The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change, Blackwell, Oxford, 1989.

Harvey, David. Justice, Nature and the Geography of Difference. Cambridge MA: Blackwell Publishers, 1996.

Heidegger, Martin. Poetry, Language, Thought. New York: HarperCollins Publishers, 2001.

Ingold, Tim. Being Alive. Essays on movement, knowledge and description. London and New York: Routledge, 2011.

Ingold, Tim and Simonetti, Christian. 'Introducing Solid Fluids', Theory, Culture & Society, 39 (2) (2021), 1-27.

Kamalipour, Hesam and Peimani, Nastaram. 'Assemblage Thinking and the City: Implications for Urban Studies'. Current Urban Studies, 3(4) (2015), 402-408.

Latour, Bruno and Woolgar, Steve. Laboratory Life. The Construction of Scientific Facts. Princeton: Princeton University Press, 1986.

Latour, Bruno. 'On actor-network theory: A few clarifications plus more than a few complications.' Soziale Welt 47 (1996), 1-14.

Latour, Bruno. Reassembling the Social. An Introduction to Actor-Network Theory. Oxford: Oxford University Press, 2005.

Latour, Bruno. Facing Gaia. Eight Lectures on the New Climatic Regime. Polity Press. Cambridge, 2017.

Law, John. 'After Ant: Complexity, Naming and Topology'. The Sociological Review. 47(1999),1-14.

Law, John. 'Objects and Spaces'. The Sociological Review. Theory Culture Society, 19 (5-6) (2002), 91-105.

Lefebvre, Henri. The Production of Space. Basil Blackwell, Oxford, 1991.

Lefebvre, Henri. Rhythmanalysis: Space, Time and Everyday Life. London & New York: Continuum, 2004.

Low, Setha. Spatialising Culture: The Ethnography of Space and Place. London & New York: Routledge, 2017.

Löw, Martina. The Sociology of Space: Materiality, Social Structures and Action. Basingstoke: Palgrave-Macmillan, 2016.

Malpas, Jeff. Place and Experience: A Philosophical Topography. London and New York: Routledge, 2018.

Massey, Doreen. 'A global sense of place' Marxism Today (38) (1991), 24-29.

Massey, Doreen. Space, Place and Gender. Minneapolis: University of Minnesota Press, 1994.

Massey, Doreen. For Space. London, Thousand Oaks, New Delhi: Sage Publications, 2005.

McFarlane, Collin. 'The City as assemblage: Dwelling and Urban space'. Environment and Planning D: Society and Space. 29 (2011), 649-671.

McFarlane, Collin, Anderson, Ben. 'Thinking with assemblage'. Area Volume, 43, 2 (2011), 162-164.

Merleau-Ponty, Maurice. The Visible and Invisible. Evanston: Northwestern University Press, 1968.

Mol, Annemarie and Law, John. 'Regions, Networks and Fluids: Anaemia and Social Topology'. Social Studies of Science. 24 (4) (1994), 641-671.

Morton, Tim. Dark Ecology. For a Logic of Future Coexistence. New York: Columbia University Press, 2016.

Pasquero, Claudia and Poletto, Marco. 'Beauty as Ecological Intelligence: Bio-Digital Aesthetics as a Value System of Post-Anthropocene Architecture'. Architectural Design, 89 (5) (2019), 58-65.

Pink, Sarah. Situating Everyday Life: Practices and Places. London: Sage Publications, 2012.

Ripley, Colin; Thün, Geoffrey and Velikov, Kathy. 'Matters of Concern', Journal of Architectural Education, 62 (4) (2009), 6-14.

Sack, Robert David. Homo Geographicus. Baltimore, Johns Hopkins University Press, 1997.

Schatzki, Theodore. The timespace of human activity: on performance, society, and history as indeterminate teleological events. Lanham: Lexington Books, 2010.

Sen, Arjit and Silverman, Lisa 'Embodied Placemaking: An Important Category of Critical Analysis.' In Making Place: Space and Embodiment in the City, edited by Arjit Sen and Lisa Silverman, 1-18. Bloomington and Indianapolis: Indiana University Press.

Sennett, Richard and Sendra, Pablo. Designing Disorder: Experiments and Disruptions in the City. London: Verso, 2020.

Shields, Rob. Spatial Questions: Cultural Topologies and Social Spatialisations. London: Sage Publications, 2013.

Simonetti, Christian and Ingold, Tim. 'Ice and Concrete: Solid Fluids of Environmental Change'. Journal of Contemporary Archaeology, 5 (1) (2018), 19-31.

Steffen, Will et al. 'The trajectory of the Anthropocene: The Great Acceleration'. The Anthropocene Review (2015), 1-18.

Thrift, Nigel. 'Steps to an Ecology of Place.' In Human Geography Today, edited by Doreen, Massey, John Allen and Phillip Sarre, 295-322. Cambridge: Polity Press, 1999.

Tuan, Yi-Fu. Space and Place: The Perspective of Experience. Minneapolis: University of Minnesota Press, 1977.

Wagner-Pacifici, Robin. What is an Event? Chicago: University of Chicago Press, 2017.

Withers, Charles. 'Place and the 'Spatial Turn' in Geography and in History.' Journal of the History of Ideas, 70, 4 (2009), 637-658.

NOT LIVING IN CAVES:
PHENOMENA AND IMAGES OF THE LAND AND SHELTER

A B S T R A C T

Now, it's like that movie in 'The Croods' - people wanted to stay in the cave. Some wanted to stay in the cave, and that young girl, she wanted to go out and live again and deal with the challenges of living in a different world.[1]

The work is showcasing a personal excavation of the broad concept of interiority, its meanings and multifaceted aspects. More specifically, its potent spatial poetics rooted against traditional views generically used in and around the architectural profession. It is dwelled upon various readings using the local socio-political context of a peculiar place of Western Australia as a colourful backdrop for interpretative purpose.

It is about subjective realities and their relation. While being set off by the day-to-day here and now, it reflects a much larger image of the human condition of our time and the ever-present concept of a cave, the ultimate human cradle embedded in our core. The story is also about the origin and everything that starts within the grotto.

'But that fails to appreciate how safe and warm it must feel in that WA cave [...]'[2]

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INTRODUCTION

Revolving around the ideas of safety, commonality, and personal freedoms, this is a phenomenological exploration intended to initiate the stream of conceptions rather than to offer closures or pose and answer any substantial questions. It is dealing with subjective interpretations of worldly appearances, looking to investigate general realities, recognising the meaning and nature of the idea of impartial facts. In the broadest sense, this is about personal excavations of the concept of interiority, its meanings, and multifaceted aspects. More specifically, its potent spatial poetics rooted against traditional views generically used in and around the architectural profession. It is dwelled upon various readings using the local socio-political context of a peculiar place of Western Australia as a colourful backdrop for interpretative purpose.

Considering the topic has been set vaguely and intentionally without much focus, reflecting the initial urge to address the phenomena broadly, the structure itself replicates this approach in terms of narration and composition by following the train of events. It wanders, detecting the clues, which arises one by one feeding from one another.

The main cache and the main driver of this effort was the particular personal pool of conscious experience, more specifically, the relation of sensation versus sense in the realm of personal consciousness. In addition, it has become the sub-topic of major interest along the way and if not much of clear attention has been given to it in writing, it did set the overall communication tone.

THE STORY

Let us put aside facts for a moment and explore the pure intimate inheritance that we keep, stories earned by birth, nourished through upbringing, education, social environment, and all the interactions we had with the world. Only a few stories stick with us consistently throughout one's lifetime and beyond. We take them for granted and we love them for being our anchors and support. They become our intuitive reflex, embedded so deeply that there is no need to question or judge, no urge to analyse, no doubts whatsoever. They are the cornerstones of our reality readings in day-to-day existence without us being aware. Even when confronted with rational propositions and analytical insights with opportunities given to re-evaluate the story through the lens of facts, the story carries on keeping the relevance. The importance of nurturing past traditions lies in the

human nature itself. We seek safety and shelter from the outside world and the universe that hold mystic forces we see as threat. We need comfort and to be comforted by fellow humans or by a place. All we do and all there is, is driven by this urge and it is not so much about preserving existence as it is about the safety as a state of mind — the sanity.

Most concepts of human existence own their shape and revolve around the cultural surrounding specific to those who made them. Throughout time, generations have shaped them, and being influenced by others, the outsiders, continuously shifted the narrative, appropriated values, meanings, and interpretations. Generation after generation has seamlessly woven the thread of storytelling, more long and complex with each passage, cherished and nurtured with love and care. A huge protective blanket that offered some sense when there seemed to be none. Some of the blankets grew so large that almost each corner of our little universe owned a piece of it. Each piece, no matter how specific to its surrounding, became a part of the same whole. Each thread woven into another, each with own local character, telling the same story as others do, although in different voices, in another faraway places. That silky idea that outgrew everything.

The passage of time is what makes the storytelling transcend lifetimes only to spread further and further until becoming that embedded truth, an anchor of humanity. Although the storytellers might not be aware of the existence of other places and other distant tellers, there is that same thread sharing the same human intimacy, that silky idea making this whole and complex system so beautiful and relevant to what we are, what we do and think of ourselves. It is not hard then to understand why it is so powerful. Those interwoven ideas have built the world we know and the same distant, unknown tellers made it possible.

Putting the facts back in. From time to time, when information of a different kind, a product of a different effort comes onto the stage and interferes with the story, conflicts may emerge; be it internal, interpersonal, societal, scholastic, political or any other relevant to the circumstances. From the scientific point of view, it could seem evident what has to be done — to dissect it differing facts from the story, to superimpose them against each other comparing the overlay, isolating the fiction, analysing the fiction, put the meaning into it and recompose the whole thing. Moreover, whenever in doubt, most of us tend to do that, often putting the facts in charge of the story, keeping the safe distance, taking the higher ground even. And it makes sense doing so. It is what we are trained for after all and we are good at it. There is nothing wrong with it, at least with

the process itself. The conclusions, readings and interpretations of the overlay make the whole difference. Not getting side blinded by the facts, or the concept of fact, as we know it.[3] We have learnt and tend to think of it as something solid, the fact as a constant, found and measured, analysed, and processed, proved, a building block of critical thinking. Which is again, completely fine and in line with the world we are living in, almost true. Again, there lies the crucial aspect of this misunderstanding. Nothing is solid; no matter how thoroughly examined and looked at. Nothing can surpass the enormous wave of time and stay unchanged as to become an eternal unit to measure against. It sounds obvious, and the concept of fact has also changed throughout history, but whenever there is a chance to utilise it again and against the story, it just happens each time.

THE ORIGIN

One of the most seductive stories would be the one of origin. In its multitude of differences and contextual particularities lies the same overarching question of where it all comes from and how do we, humans, fit into it. Without much ambition or will to deliver an in-depth analysis or propose an interpretative position on the topic of origin, the sole interest here is focused on the single aspect of the story — the concept of cave. In turn, by reading different sources into it, reach out can be vast, giving us an almost infinite field of imagination building it upon the initial concept. The intent is to demonstrate how this imaginative construct could evolve being a tool for decoding other basic concepts, beyond the human habitat, be it organic or built, inherited, or created.

The idea of a cave being an archetypical human shelter is significant for it is so telling when superposed on to other contemporary ideas and concepts related to living environment, especially refracted through the daily socio-political context. Looking at how potent the use of the sole term can be, we see the strength of the concept itself and the power it carries within the collective memory. The use is always deliberate, mostly meant to discredit or harm another's position or way of doing, proposing that the targeted object is bygone or defunct. However, by shifting the focus to a different point in the story timeline, there is another cave, a grotto, and a completely different set of values attached to it. The antique grotto is far from defunct; it serves as a place of origin, housing divine powers and mystical forces. Everything we know came from it. Even the matter itself, the primal archi-form that was born in the earth's core, materialises in the primordial way through the grotto. It is still a shelter, keeping the most precious items, being the place that protects and care, and primitive in its purest shape.[4]

Then, there is the question of inside and outside, the relation determined by the human nature formed through fear, living alongside the universe and its forces. The cave-shelter, be it divine or profane, is the ultimate threshold lying between the two and the first piece of nature that became appropriated. It might be the initial point of mental distinction between in and out, at least in terms of evaluating one against the other using safety and comfort as the primary metric. We tend to shape our personal truths and subjective realities by building them upon our shelters. So, inside and outside could be just a construct of an endangered species searching for protection. We sense that, how both are fundamentally different and how there is a clear line of separation. Practically, we could debate and probably prove that there is no such thing as a definite demarcation between the two, but emotionally the line is clear.

Another point of break between the two entities becomes apparent when introducing the intimacy, in its spatial poetic sense.[5] Although a much more complex topic, it is tightly related to the original idea of a shelter. Moreover, it grows out of it, of a highly personal, innate relationship humans developed with the surrounding. It can be said that various spatial relations drawn from intimacy transcend the generalised division of inside and outside and are often clearly present in other contexts of nature and built, but it is the primal intimacy of humans and the surrounding grown in the cave-shelter that later branched out towards the rest of the world. That is why we intuitively know where our intimate place begins and ends regardless of the physical space itself. We see materialised boundaries, they can be well mapped and defined but they mean nothing unless there is an emotional backup from that earliest sense of intimacy we inherited.

An inner instrument calibrates itself while lived experience grows, as new territories are met and embraced. It draws new mental boundaries as the time passes, building the places of intimacy, storing them in carefully organised emotional registers. Each one's instrument coordinates itself differently but as in the storytelling, each one's borders are just being a part of the same universal weave. Even when far and remote in time and space, and one cannot recognise the existence of the other, we do share the same origin, same emotional memory of our intimate self and places we inhabit. This is how we build our new threads we then weave in a common story passing it further for others to carry on.

WA CASE

> Now, it's like that movie in 'The Croods' - people wanted to stay
> in the cave. Some wanted to stay in the cave, and that young girl,
> she wanted to go out and live again and deal with the challenges
> of living in a different world.[6]

Western Australia is a peculiar place. All that ever inhabited this land, from
thousands years ago to this day; all living creatures existed and exist with and
in spite of the land. The nature larger than life and old as the Earth can be,
takes a stronghold. Where physical distance does not matter because infinity
cannot be measured. Things hidden from us are yet to be discovered, but that
ancient crust below and above the Indian Ocean is what makes it so special. It
is harsh and relentless but giving to the point of exploit and destruction. Still,
the land seems to be forgiving towards careless and greedy, maybe because it
is so grand and immense that even the most selfish exploits remain trifling. So
does the humanity as a whole against this colourful backdrop under the biggest
sky dome there is.

Exploring the current moment and local context, one thing stands as a giant
figure fuelling nearly all human endeavours, lives, and relations in and around
this place in recent history. All the big shifts shaped by the selfish ambition
to own and control, to hold power and direct others, most of that happened in
the rush of pursuing exploits of the land, in the relentless hunt for resources.
Regardless of what that did and what it still does to other living creatures, their
lives, and memories, still inhabit the place. The vigour of pride hovers above all
the hurt and lost, just adding layers and layers of golden dust and rust, a shallow
burial ground where stories are laid to be forgotten.

Exploits of the land is what drives all the booms, busts around here, and is by
far the most important engine of the society.[7] The pride of many and the source
of abundant wealth, the spoils of which many of us enjoy being sucked into the
obliviousness, losing sight of land, the vastness and importance of all the stories
being untold.

In this grand land, there is a place holding tens of thousands years of stories. A
shelter and a memory register engraved into the old crust of the land. A cave.
One of the few places of intimacy that has been a core of the story and the origin
itself. We who take pride in our civilisational progress being overwhelmed
by own intellectual importance; we tend to spend our lives being ignorant to

what came before, we take the land and the memory as spoils of conquest, an exploit, and for granted. That we do not know how to read and understand the stories, to access the memory treasure, we compensate by negligence, insults, and tendentious renditions. We are burying the story. Throughout the eternity, this shelter kept providing, evolving, and changing alongside the land and the living, cherishing the harmony of coexistence in harshness. Although now wounded and hurt, that special place still holds ground.[8]

But back to the boom and progress; one should conclude that a destruction like this is nothing more than just a natural flow of events shaping our universe as is. A trace in the landscape. Why would such a miniscule trace be of any concern when there is a big picture of things to be looked at? We are pushing forward. Is this just a way of leaving a mark in the memory, another tiny log in the collective register? This is how it was meant to be. Because humans are being the active part of the timeline, and not all memory makers are storytellers, there is also the other kind, the one that does not tell much, one that buries instead. So, are we all the same, being a part of the same weave no matter what we may think about actions of others? The mater of leaving a mark of one's existence while making a terminal wound on others — that is just how we go as species. Being a sacred shelter for thousands generations makes no difference, it is not even a decent obstacle. And these shelters turned out to be divine — just as ones where oracles made their ways long ago.

BUILDING THE INTIMACY

From April to September 2020, throughout autumn, winter and the first spring, an unintended intimacy building exercise occurred. Somewhat forced by the world occurrences that shifted our attention, the big shift has opened a field of different perspectives. Once again, the story of origin resurfaced with offerings. It was a time to find and embrace own cave, a shelter. To construct one out of memories on a tiny piece of the grand land. Just figuring out how to become an ally and build trust. The conflict and harmony of inside and outside, intimate, and else.

Spending time staying in touch with that piece of land, day-by-day, observing and rethinking, inevitable changes appeared on the surface while nature went through its cycle. With all the changes the land went through, in all the simplicity and grace, it was the finest example of how an entity of a so different kind can become easy to understand. It is right to believe that at points when

things are clear, true intimacy can arise. With that intimacy in sight, the shelter becomes more and more palpable, and folly keeps at bay. Safety is conquered by embracing the shelter and habitat regardless of physical and spatial. We use space to define things, to be sure and to stick to the facts, to spot our bodily presence in some context, but true intimacy exists in other realms being materialised only by chance. We read our emotions into places and spatial relations without realising how highly personal and detached they are from the physical world. The moment internal balance shifts, places become lost, almost as if they do not exist in their physical form anymore. Those strange experiences of spatial ties and their potency to shape one's feeling of safety and comfort are phenomenon that deserve to be explored with passion. Without any generalised attitude, a personal, highly subjective journey.

All there was to be done is to document the nature's flow, how it leaves the traces of time on the surface, marking each step just to keep track of what happened, who has been there and why. Even with human meddling, the flow was just a sober string of events; the slow pace that grinds with ease kept going. Micro shelter grew larger, the inside started leaving the boundaries of spatial and things became clearer.

But that fails to appreciate how safe and warm it must feel in that WA cave [...] [9]

CONSEQUENCE

Concluding that regardless of physical scale, the act of conscious engagement with a piece of land in a period of time awakens senses, calibrating them against the change of natural cycles. The consciousness represents a crucial part of this exercise. It serves as a vehicle of intention that makes a difference between a random documentarian act and a phenomenological action, no matter how unstructured it is. It also performs as a catalyst of insights, clues, moving the whole thing forward.

That phenomenological action is based on interpretation where contextual observations create a primary image of experience. The process then employs the concept of poetic imagination resulting in the context changing the original meaning, becoming a slightly different image, a subject of a new cycle. With each subsequent iteration, the similar change occurs until the observed subject has become personalised, reinvented, and familiar.

The meaning of that newly reinvented context is that now it has a potential of a safe place and is ready to become a part of the interior boundary, a spatially intimate place. It cannot be a question of inside and outside but is a relation between intimate and else. Intimate equals a familiar, safe place that can become a shelter when in need. And, it might be a cave too, a new place of origin of a different kind.

NOTES

1	Morrison, interview.
2	Worthington, "Scott Morrison scrambles to assert control."
3	Mulligan, and Correia, "Facts."
4	Moravánszky. *Metamorphism: Material Change in Architecture.*
5	Bachelard. *The Poetics of Space.*
6	Morrison, interview.
7	National Mining Day, "WA's Economy."
8	Turner, "Juukan Gorge."
9	Worthington, "Scott Morrison scrambles to assert control."

BIBLIOGRAPHY

Bachelard, Gaston. *The Poetics of Space*. Boston: Beacon Press, 1994.

Bayne, Tim and Michelle Montague, ed. *Cognitive phenomenology.* Oxford: Oxford University Press, 2011.

Christofides, C. G. "Bachelard's Aesthetics." *The Journal of Aesthetics and Art Criticism* 20, no. 3 (Spring, 1962), 263-271. https://doi-org.dbgw.lis.curtin.edu.au/10.2307/427324.

Dalmas, Franck. "Cœur, Temps and Monde in Le forçat innocent of Supervielle: A Poet's Existential Metaphors of Prison and Shelter." *Studies in 20th & 21st Century Literature* vol 33, issue 1 (Date of Publication). https://doi.org/10.4148/2334-4415.1695.

Magrini, James. "Dwelling and creative imagination in Gaston Bachelard's phenomenology: Returning to the poetic space of education and learning." *Educational Philosophy and Theory,* 49, no. 8 (2017), 759-775. https://doi.org/10.1080/00131857.2016.1194738.

Moholy-Nagy, László. *Von Material zu Architektur.* München: Langen, 1929. https://digi.ub.uni-heidelberg.de/diglit/moholy_nagy1929.

Moravánszky, Ákos. *Metamorphism: Material Change in Architecture.* Basel/Berlin/Boston: Walter de Gruyter GmbH, 2017.

Morrison, Scott. "Interview with Karl Stefanovic, *Today Show.*" Interview by Karl Stefanovic, Today Show, Nine Network, 24 August 2021, transcript, https://www.pm.gov.au/media/interview-karl-stefanovic-today-show-4.

Mulligan, Kevin and Fabrice Correia. "Facts." *The Stanford Encyclopedia of Philosophy* (Winter 2021). https://plato.stanford.edu/archives/win2021/entries/facts/.

Reisman, David. *Sartre's phenomenology.* London, New York: Continuum, 2007.

Rolls, Alistair Charles and Elizabeth Rechniewski, ed. *Sartre's Nausea: Text, Context, Intertext.* Leiden: Brill, 2004.

Rizo-Patron, Eileen, Edward S. Casey, and Jason M. Wirth. *Adventures in Phenomenology: Gaston Bachelard.* New York: SUNY Press, 2017.

Sartre, Jean-Paul. *Nausea.* London: Penguin, 2021. Kindle eBook.

Smith, David Woodruff. "Phenomenology." *The Stanford Encyclopedia of Philosophy* (Winter 2016). https://plato.stanford.edu/archives/win2016/entries/phenomenology/.

Taylor, Mark, and Julieanna Preston, eds. *Intimus: interior design theory reader.* Chichester: Wiley Academy, 2006.

Turner, Rebecca. "Juukan Gorge won't be the last priceless record of human history to be legally destroyed by mining." *ABC News,* 11 Jun 2020. https://www.abc.net.au/news/2020-06-11/juukan-gorge-aboriginal-heritage-site-just-one-of-many-destroyed/12337562.

"WA's Economy Best In World During Covid-19 Pandemic," National Mining Day, https://www.miningday.com.au/was-economy-best-in-world-during-covid-19-pandemic/.

Worthington, Brett. "Scott Morrison scrambles to assert control as Dominic Perrottet opens the international border." *ABC News*, 15 October 2021. https://www.abc.net.au/news/2021-10-15/nsw-international-border-perottet-morrison-naional-cabinet/100542740.

NEW COMFORT: TOWARDS THE POST-PANDEMIC LIVING

A B S T R A C T

Recent periods in global history have put some heavy strains on
the human condition. Changes in living have subsequently led
to spontaneous bottom-up adjustments of housing units. During
2020 and 2021 the definition of spatial features of these changes
has been the main objective of three Master's course workshops
at the Department of Architecture and Urban Planning, Faculty
of Technical Sciences, Novi Sad. Results of those workshops
served as a pool of solutions for the research that followed. Using
obtained data, abstract diagrams of architectural functionality
are transcribed. They are applied to an algorithm and computer
software that implements the algorithm, which has produced a wide
range of spatial solutions. Both analytical and numerical approaches
to the produced solutions, with additional criteria that have been
applied and tested against some well-known theoretical thoughts
from recent history, provide an insight into the possible future of
multifamily housing.

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POST-PANDEMIC ARCHITECTURE,
METHOD OF DESIGN,
ALGORITHM,
CONTEMPORARY ARCHITECTURE

INTRODUCTION

Research conducted in the field of influence of living restrictions imposed by the pandemic conditions in global society on possible architectural outcomes is still quite rare. There are many reasons for this: the world has not yet faced post-pandemic circumstances, while restrictive terms that underline most of the everyday activities are still in the state of constant reconsideration and change. Both of these facts oppose the very nature of architectural thinking and design: being the discipline that aims at comprehension of ephemeral as ever-changing parameters inside of much more resilient architectural forms and structures, from the smallest spatial levels (e.g. inside the room) to the very complex ones (e.g., urban environment), extremes of the spectrum of possible activities are very important to be set and repeated in order for architectural design to 'react'. This 'reaction', as can be noted with some previous pandemics (most prominent being the 1918 Spanish flu and the Modernist movement that followed), usually leads to the form of a new architectural paradigm.

This phenomenon has been of interest to some authors,[1] especially when overlapped with rather strict regulations for architectural certifications such as BREAM and LEED or standards for indoor air quality.[2] Conclusions in this research point to the need for restrictive usage of mechanical ventilation systems in buildings due to necessary prevention of disease spread, which has been recognised in artificial environmental conditions. This means that future architectural design should rely on natural double-sided ventilation and more openable windows as a way of protecting residents from future health epidemics.[3] This human-centred approach changes the standpoint from which the architectural research community has been investigating energy-efficiency matters.

Some authors have noted that home design will be the one with the most probable change,[4] pointing to flexible and adaptable spaces,[5] but also to the necessity of more prominent partitions between departments with wider corridors and doorways in buildings as well as more staircases.[6] This kind of conclusions regarding apartment building layout illustrate not only the spatial results of rules regarding social distancing, but also shed a new light on the public-private space relationship in a pandemic and, probably, in post-pandemic times.

In recent times, the interior of homes has also undergone significant changes.[7] Working from home, lack of interactions in public space and blurring the line between private and office time or real and virtual communication has led to self-made home-offices, home-gardens and even home-gathering spaces in controlled environments. The emphasis on personal needs and interests, which

are now manifested in their entirety due to restricted movement, together with sanitary regulations, are the most prominent characteristics of the transitions and transformations that the home interiors have endured. Likewise, the extension of real to include virtual has also been observed, as previously stated in the papers researching the ways technology changes human condition in the last decades of the 20th century.[8] Therefore, it can be concluded that future home and apartment spaces, irrelevant of newly built or remodelled, call for not only changes in layout, but also a new architectural vocabulary and new hierarchy of architectural value, where architectural standard formulated as "one-size-fits-all" has become outmoded.

Putting aside strong relations that architecture as discipline has had through history with politics and capital, as well as professional aspirations towards landmarks that illustrate triumph of human over nature, even the idea of post-pandemic utopia of "wishful abundance of moral awareness, harmony with nature, grassroots empowerment and technological smartness",[9] architecture is at the point where, with accumulated knowledge and adjustment of professional ethical scale, it could significantly contribute to the transdisciplinary endeavour that pandemic has put before researchers, thus contributing to the social comfort that has always been one of the focuses of discipline. The aim of this research is to offer a design methodology that could help with this process, while avoiding the obvious shortcoming of abolishing one spatial or ethical standard only to create another. Although the whole method strongly relies on advanced computer usage, precisely on the automation on the part of the architectural design process, architectural expertise still holds the key point. Algorithms and custom-made computer software are considered in this research as experimental instruments of the highest value, introducing knowledge that traditionally belongs to the non-architectural field and fostering a transdisciplinary approach, while allowing the creativity process to take unexpected turns. This appears especially at the point where spatial layouts are being qualified.

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To reach that point, the main goal of research has been set: to observe and classify bottom-up changes that appear in home interiors, separate the essentials that have the significance to change the existing standards, and implement those standards to create a pool of solutions chosen by the criteria of compatibility. This criterion allows for the chosen solutions to create simple spatial connections in between units, thus creating the possibility of apartment building or rowhouses plan layout. Primary data set observed from bottom-up has been gathered as a starting point for discussion during workshops at the Department of Architecture and Urban Planning, Faculty of Technical Sciences, Novi Sad, in 2020 and 2021, and resulted in layouts that concluded the workshops.

2. METHODOLOGY

Methodology that has been applied for this research is as follows:

> 1. Architectural solutions and data obtained as the results of workshops held during the academic years 2019/2020 and 2020/2021 have been analysed to establish functional patterns that transcend the programme of the building itself. This means that these patterns appear the same in designs for public or private buildings.
> 2. These patterns have been transformed into an algorithm that describes functional and spatial connections and relations.
> 3. An algorithm has been translated into software.
> 4. Since software represents a specific type of model, meaning that it incorporates a relatively high level of abstraction, functional solutions that appear because of software use take over different spatial configurations, while remaining constant in assigned functional relations and patterns.
> 5. In order to classify the pool of solutions produced, additional criteria have been introduced. These criteria are necessary to establish initial units that could be used further on as a starting point for the composition of multifamily housing.
> 6. Finally, obtained solutions have been compared with prominent examples of contemporary architectural experiments.

Main part of the research, where algorithms and software are used, may not be considered a traditional approach to architectural design. However, it is also not a new one.[10] As Silvio Carta states, "Unlike traditional architects, computational designers need to start their work by modelling the design problem and elaborating a logic that allows all parts of the design to be hierarchically related and processed. Once the design logic has been elaborated, this approach requires the use (or development) of an algorithm whose implementation will allow the final design to be computed."[11] Unfortunately, the idea of this automated architectural design process is very often vaguely interpreted, leading to the vision of computers utterly replacing architects and designers, followed with a multitude of justified criticism.[12] At this point in time, the development of this methodology is quite far away from that vision. The main reason is the fact that good design metabolises a plethora of subjective quantifiers: intuition, emotion, nostalgia, and artistic expression being some of them. This means that logic and function, no matter how well studied and implemented, cannot stand alone as a guarantee of good or even excellent design. Even neural networks, as technology that is being widely used today, faces difficulties when it comes to selection of training data: regardless the uneven design quality of, for example,

existing layouts that are used for training, there is also a lack of any existing layout example if the design problem is rather new (as we are facing with post-pandemic architecture right now). These ideas have been summarised in the opinion of David Rutten, "Ultimately, a computer has no idea what it's doing, let alone why it's doing it. Understanding stuff is what humans are good at."[13] In this research, the computer is used as a design tool only in the parts where unforeseen results are expected, creating countless possible solutions that could be clustered and classified in order to reveal some aspects of design that might stay hidden for the human alone. In that sense, this research could be classified as a hybrid approach, synthesising the possibilities of machines and human designers.

3. WORKSHOPS RESULTS

Workshops have been organised in the following manner:

3.1 Workshop 1

In October 2020, 20 Master's students were encouraged to act as student mentors to the fourth-year students from undergraduate studies (94 students) in order to collect case studies of spatial transformations in public or private buildings alike, focusing on the following: entrance zones, separation of visitor space and space used by residents/employees, self-isolation spaces and spatial changes that are imposed by social distancing. Undergraduate students were to use the pool of collected case-studies for their subsequent studio projects related with different types of public buildings.[14] Formulation of the patterns themselves is the result of discussions between undergraduate and 20 Master's students, divided into groups together with the teaching staff.

The results of the Workshop 1 demonstrate the recognition of the following spatial patterns, or new additional zones in architectural space:

> ● Containment space (94/94): space with specific equipment used in order to separate external, possibly contagious environment, from internal, sanitary, thread-reduced space and space used by significantly less residents/visitors in the specific moment in time.
> ● Increase in the number of entryways or exits, where possible (37/94): this approach has multiple benefits, amongst which are: reduction of bidirectional movement in the interior space, possibility of creating isolated zones, or differentiation between visitor and residential space.
> ● Increase in hybrid interior zones (35/94): living room/home office, bedroom/home office, glazed balcony/home office, being the most prominent.

● Increase in green areas in the interior (32/94): due to the lockdown restrictions, genuine human need for natural environment (biophilia) has been manifested through different forms of home or office gardening.
● Increase in provisional elements that can create isolated bedroom and/or toilet space isolated apartment), where available (23/94).

3.2 Workshop 2

In November and December 2020, following the data collected, analysed and processed, 20 Master's students designed 14 different architectural typologies, whose layout is a direct result of the research conducted in the first phase (Figure 1).[15] Additionally, special attention has been attributed to the matters of architectural theory and historical and contemporary thoughts and examples that could serve as a framework for the presented research.

It is well known that the separation of functions from the domain of the private to the domain of the public sphere, as one of the dominant programme and spatial strategies of housing policies during the 20th century, especially when it comes to the apartment and its transformation, make the domain of a private family apartment even more isolated and separated from the "sphere of social reproduction."[16] However, in recent decades, we have witnessed the process of hybridisation of public and private through the renewal of private sphere functions. It is also present in the domain of household economy through work and activities related to consumption, but also through spheres of society, such as culture and education which culminated in the last two years of COVID-19. Today, Peter Sloterdijk's thesis stands as never before, that "citizen seeks to expand his living room into a cosmos and at the same time impresses the dogmatic form of a room on the universe".[17] In this way, a large number of micro-worlds are formed, "micro-interiors" that appear today as a spatial form, created as part of the process of individualisation of society, "where everyone creates a city for themselves" reaching its zenith under the influence of the COVID-19 pandemic.

The question arises as to how architectural practice today can respond to these hybridisation processes? How to find an adequate spatial and programmatic framework for complex public-private relations which are traditionally linked to the spatial level of the city? And what is more important, how to give an answer simultaneously to the process of individualisation and 'purification' on the one hand, and the process of hybridisation on the other hand, whose influence in the pandemic situation is evident?
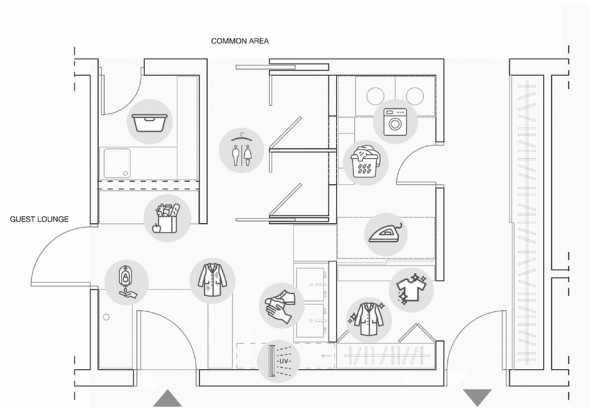
Housing
Sanitary zone

At this very moment, the hygiene level in the entrance zone of our homes must be high, in order to prevent spreading covid19- infection. This particular solution represents a detailed thought-out function scheme of the entrance zone.

There is a small "dirty" zone, by the entrance, where habitants can disinfect their hands, take off their shoes and coats and put them away for cleaning, and then step into the "clean" zone. In addition, there is one more counter to arrange groceries with a window to a pantry. Right next to the entrance there is a cleaning and disinfection area, where habitants can wash their shoes and bags, and put their coats and jackets into a closet with an installed UV lamp. The clean clothes are in the cabinet connected to the laundry room, and the dressing rooms are on their way to a common area. Entrance and exit zones are separated, except for short-term guests, whose shoes and coats stay in the dirty zone while they are in the guest lounge.
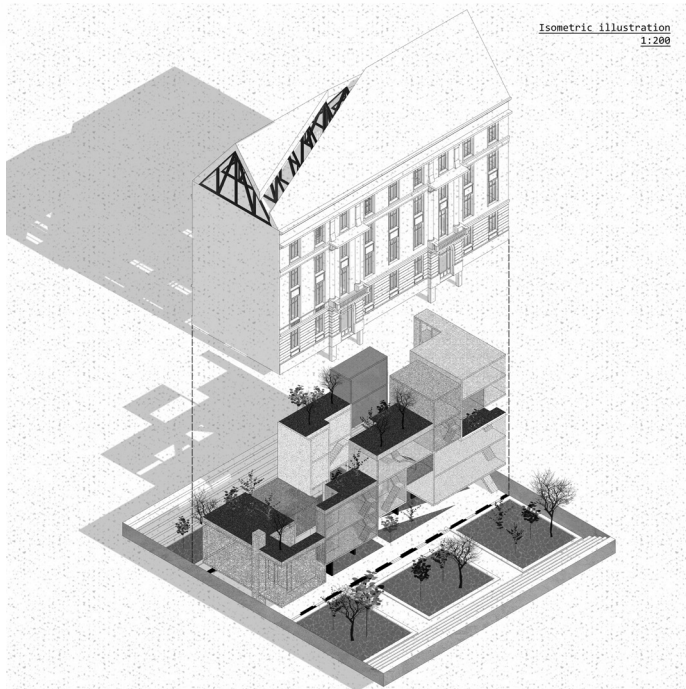
UP: Fig. 1. The containment space, an example of the Workshop 2's result, designed by Master's students Nikoleta Stamenković and Tamara Milutinović.

CENTER AND DOWN: Figs. 2a, 2b, 2c. The transformation of the existing building according to the conclusions of the previous Workshops (authors: Staša Zeković, Marko Mihailović, Andrej Grković – Master's students, together with Petar Mirković, Dejan Ecet, Jelena Atanacković Jeličić – teaching staff).

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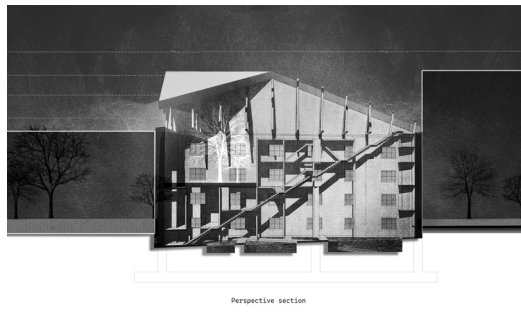
3.3 Workshop 3

Finally, the work in April and May 2021 was completely dedicated to further examination of new possible post-pandemic relations between public and private space inside a multifamily building, where a specific case study was analysed and transformed. The selected case study had a number of limitations, where the most important ones were the following: historical importance and central location in the city (thus lacking green spaces in the nearby surroundings). Biophilic design, as well as the availability of double-sided ventilation, as concluded in previous workshops, were the leading ideas of the project (Figures 2a, 2b, and 2c). The workshop was organised with five Master's students and three members of teaching staff.

4. ALGORITHM AND COMPUTER SOFTWARE

4.1 On Algorithm And Software

The application of algorithms in architectural design is one of the techniques that, although not new, have recently experienced rapid development.[18] In support of this thesis is the fact that all mainstream CAD software, in addition to basic tools which primarily serve as an aid in more efficient production of architectural drawings, integrate a special segment of advanced tools into the palette, the so-called script editor. In addition to the script editor add-on, which implies some knowledge of the programming language, there is also an add-on for the so-called visual programming.[19] The basic idea of these software add-ons is to deepen the interaction between the human and computer in order to transform the role of the architect into the creator of the mechanism, generating appropriate solutions in relation to the set parameters. The parameters can be of different character depending on the programming language in which they are expressed. At the same time, parameters represent the greatest challenge in terms of quantification of architectural problems,[20] i.e., how to convert an architectural problem into a number or parameter that can serve as an input to an algorithm that will generate appropriate solutions based on this data.

For the purpose of this research, an algorithm was developed in the Python programming language, which uses Rhinoceros software for an advanced level of the manipulation of geometric elements as a modern tool in architectural design. In the case of this research, the algorithm, simply put, serves as a tool that generates the disposition of rooms within a residential unit in relation to the dimensions of the rooms and their mutual relations.

Functional schemes that were the result of the research presented in the previous chapter were used as input data for the algorithm. Functional schemes, as an aid in architectural design, are identified as an integral part of design in various forms.[21] In this case, the functional scheme is defined by the rooms and mutual relations that make up one housing unit. Relations are defined by a direct connection, or more precisely by answering the question: Does the room have an opening from the immediate environment? (Figure 3)

In the context of the algorithm, each room contains input data which, in the basic case, contain the name of the room, the dimension of the room (width and length expressed in meters) and the relation, that is, the interconnection. Since determined systems or predefined systems reduce the possibility of unforeseen solutions,[22] a variation of room dimensions (width and length) was introduced, as well as the contact between rooms defined by a matrix. Hence, the final description of the functional scheme shown in the previous illustration in the form of the programme code consists of the room name, width (w), length (h), width + variation ($\Delta w = w + \Delta$), length + variation ($\Delta h = h + \Delta$) and ordinal number of the room, and the contact is defined by a matrix, binary: 1- with contact, 0-no contact (Figure 4).

After the input data defined in this way, the algorithm calculates the possible layout of the rooms and generates solutions that in large numbers correspond to the initial functional scheme. Each generated housing unit, in addition to the form consisting of rooms with predetermined dimensions and relations, also contains metadata which consist of the following:

A-   Area of generated layout, and
P-   Perimeter of generated layout.

Due to the fact that the algorithm generates a large number of solutions that fully correspond to the set initial conditions, it was necessary to introduce additional parameters that would reduce the set in the direction of those solutions that have a greater possibility of combining with each other. This possibility is important from the point of view of creating the floor base of the inter-family housing unit and/or increasing the housing density on the construction plot. For the purposes of this research, and in order to achieve the above, the bases with a higher degree of compactness were selected to make the interconnection easier. Compactness is qualified through two parameters (Figure 5):

P/A-   Perimeter and area quotient,[23] and
C-   Number of vertices of generated layout.

1.	Room 1
2.	Room 2
3.	Room 3
4.	Room 4
5.	Room 5
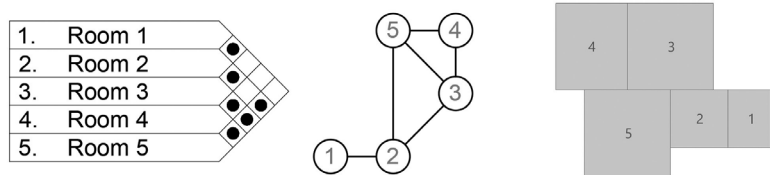
w h Δw Δh No   contact

Room1=(3, 3, 1, 1, 1)   touch = [[9, 1, 0, 0, 0],
Room2=(4, 3, 0, 1, 2)   [1, 9, 1, 0, 1],
Room3=(6, 6, 1, 1, 3)   [0, 1, 9, 1, 1],
Room4=(5, 5, 1, 0, 4)   [0, 0, 1, 9, 1],
Room5=(7, 6, 1, 1, 5)   [0, 1, 1, 1, 9]

];
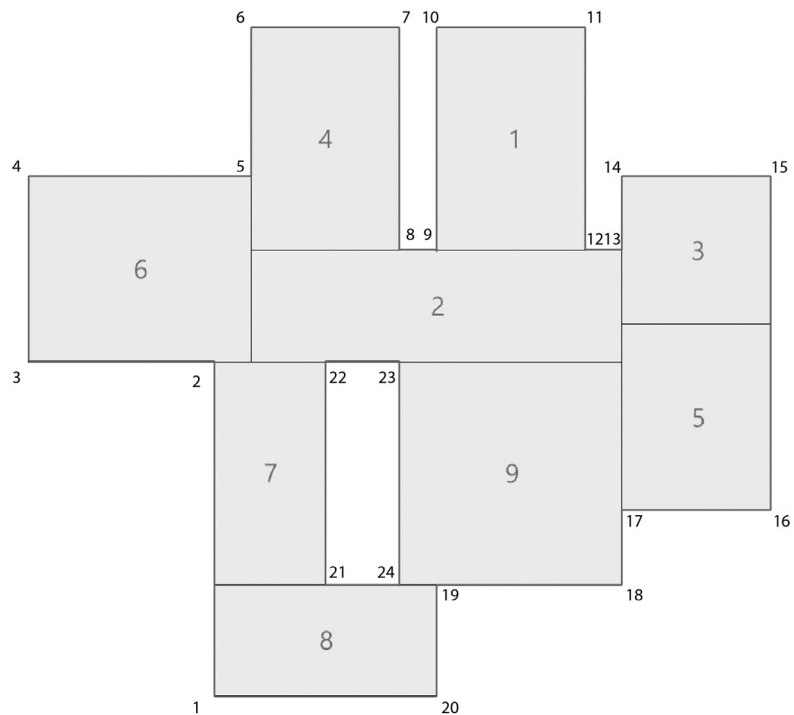
UP: Fig. 3. The relationship matrix, the initial graph and a layout from the set of possible optimised layouts.

CENTER: Fig. 4. The relationship matrix (initial graph in the lines of the programme code).

DOWN: Fig. 5. The figure displays an example of a generated layout. In this case, the layout is under ordinal number 133, area (A): 216m2, (P) perimeter 108m, perimeter and area quotient (P/A)): 0.5 and 24 vertices (C).

4.2 The Use Of The Proposed Method In The Context Of Previously Established Set Of Criteria In Relation To Post-Pandemic Condition

The first step in the application of the algorithm is to define the functional scheme (initial graph), i.e., to define the dimensions of the rooms and their relations. For the purposes of this research, three spatial dispositions were selected (Figures 6-11). Functional schemes (graph) as well as the dimensions and purposes of space represent a synthesis of the results of research conducted in Workshop 1 and described in the chapter titled 'Workshop results'. The entrance zone in the proposed schemes is defined as a block and represents a kind of the disinfection barrier (containment space) in which it is possible to disinfect food and clothes before entering the clean part of the apartment. The bedrooms, living room as well as a glazed balcony are at the same time workspaces. The bedrooms are dimensioned to include ancillary spaces (toilets and additional work area).

4.2.1 Scheme 01
An example is a model that, in addition to the listed rooms, contains a visitor space. The visitor space is connected by one type of entrance hall, which allows a division in two ways of movement: for guests and residents, as well as a possible additional exit from the residential unit. The bedrooms are connected by a glazed balcony which is also a workspace and allows work from home.
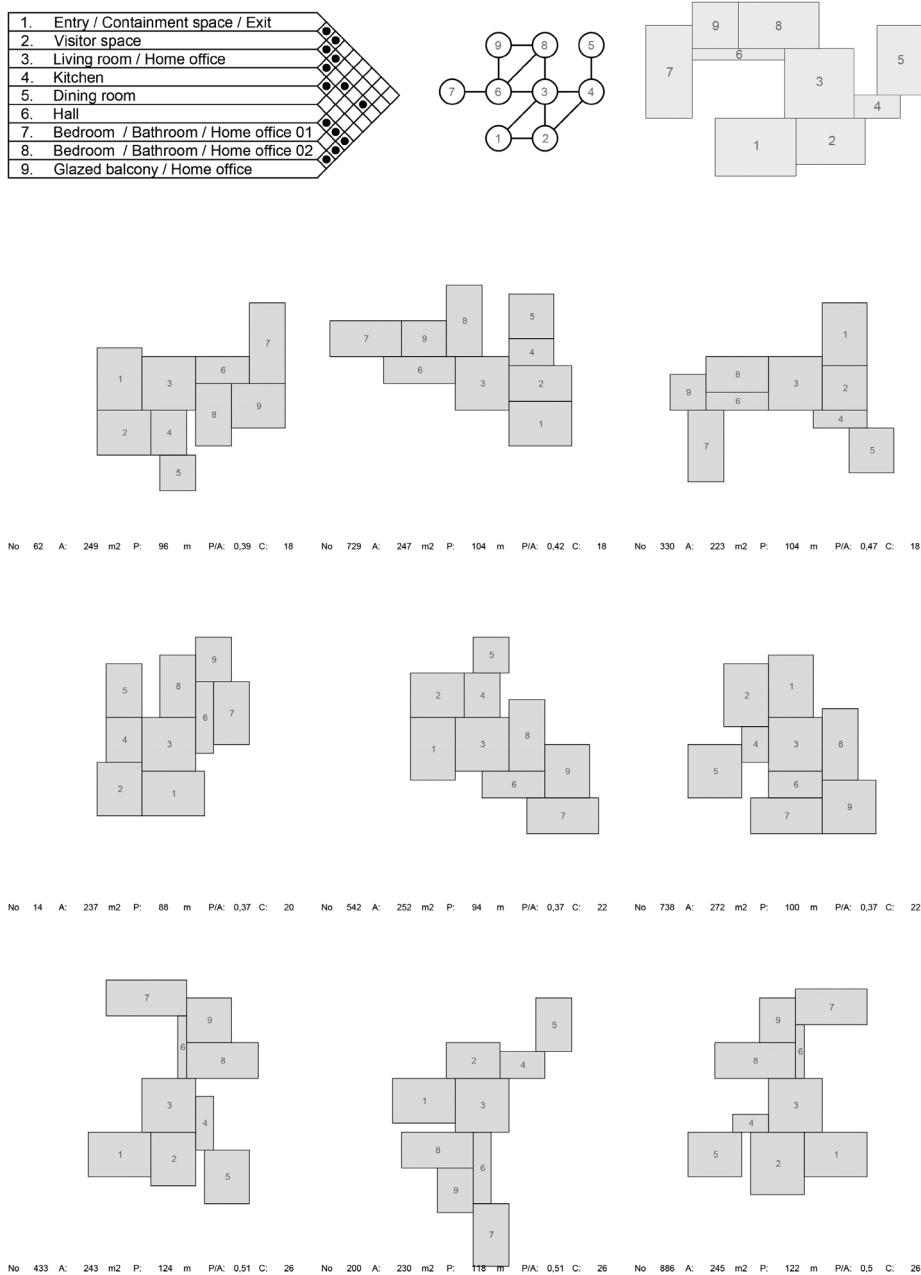The first row: layouts with a minimum number of vertices; the second row: layouts with the smallest perimeter and area quotient; and the third row: examples with a large number of vertices and a high value perimeter and area quotient.

4.2.2 Scheme 02
This example introduces bedrooms separated from home offices, which have been implemented into the living room and two glazed balconies.

4.2.3 Scheme 03
This example explores the possibility of a larger housing unit, providing six bedrooms with three glazed balconies/home offices and an open concept kitchen (with kitchen island) that forms a singular space with the dining and living area. The glazed balcony has been envisioned to form a small atrium space inside a housing unit.

| 1. | Entry / Containment space / Exit |
2.	Visitor space
3.	Living room / Home office
4.	Kitchen
5.	Dining room
6.	Hall
7.	Bedroom / Bathroom / Home office 01
8.	Bedroom / Bathroom / Home office 02
9.	Glazed balcony / Home office

No 62 A: 249 m2 P: 96 m P/A: 0,39 C: 18   No 729 A: 247 m2 P: 104 m P/A: 0,42 C: 18   No 330 A: 223 m2 P: 104 m P/A: 0,47 C: 18

No 14 A: 237 m2 P: 88 m P/A: 0,37 C: 20   No 542 A: 252 m2 P: 94 m P/A: 0,37 C: 22   No 738 A: 272 m2 P: 100 m P/A: 0,37 C: 22

No 433 A: 243 m2 P: 124 m P/A: 0,51 C: 26   No 200 A: 230 m2 P: 118 m P/A: 0,51 C: 26   No 886 A: 245 m2 P: 122 m P/A: 0,5 C: 26

UP: Fig. 6. The relationship matrix for Scheme 01, the initial graph and a layout from the set of possible layouts.

DOWN: Fig. 7. Displays of some of the generated layouts according to the functional scheme 01.

1.	Entry / Containment space / Exit
2.	Hall
3.	Bedroom / Bathroom 01
4.	Bedroom / Bathroom 02
5.	Glazed balcony / Home office 01
6.	Glazed balcony / Home office 02
7.	Kitchen
8.	Dining room
9.	Living room / Home office
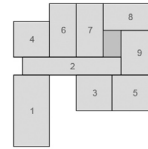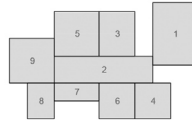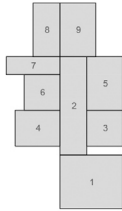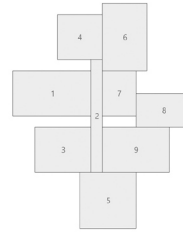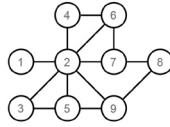
No 257 A: 205 m2 P: 82 m P/A: 0,4 C: 18   No 36 A: 192 m2 P: 86 m P/A: 0,45 C: 20   No 626 A: 180 m2 P: 84 m P/A: 0,47 C: 18
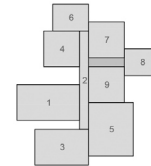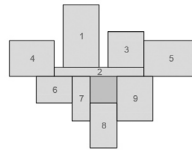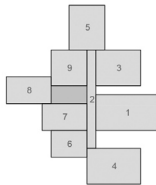
No 150 A: 161 m2 P: 106 m P/A: 0,66 C: 28   No 65 A: 155 m2 P: 100 m P/A: 0,65 C: 28   No 45 A: 165 m2 P: 98 m P/A: 0,59 C: 28
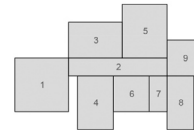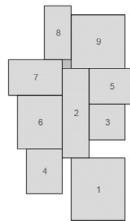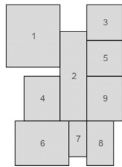
No 260 A: 197 m2 P: 80 m P/A: 0,41 C: 20   No 943 A: 236 m2 P: 96 m P/A: 0,41 C: 28   No 566 A: 194 m2 P: 82 m P/A: 0,42 C: 20

UP: Fig. 8. The relationship matrix for Scheme 02, the initial graph and a layout from the set of possible layouts.

DOWN: Fig. 9. Displays of some of the generated layouts according to the functional scheme 02. The first row: layouts with a minimum number of vertices; the second row: layouts with the smallest perimeter and area quotient; and the third row: examples with a large number of vertices and a high value perimeter and area quotient. The formed atriums are marked in green.

1.	Entry / Containment space / Exit
2.	Kitchen / Dining room / Living room
3.	Bedroom / Bathroom 01
4.	Bedroom / Bathroom 02
5.	Bedroom / Bathroom 03
6.	Bedroom / Bathroom 04
7.	Bedroom / Bathroom 05
8.	Bedroom / Bathroom 06
9.	Glazed balcony / Home office 01
10.	Glazed balcony / Home office 02
11.	Glazed balcony / Home office 02
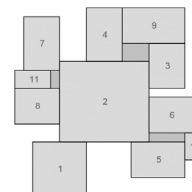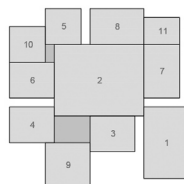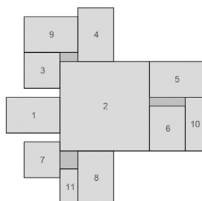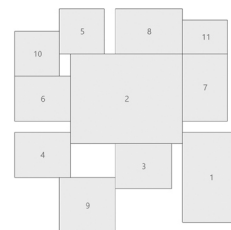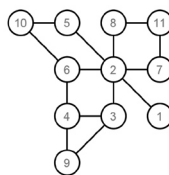
No 591 A: 292 m2 P: 128 m P/A: 0,44 C: 32

No 908 A: 297 m2 P: 140 m P/A: 0,47 C: 36

No 338 A: 300 m2 P: 142 m P/A: 0,47 C: 38
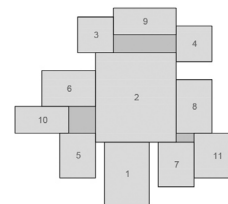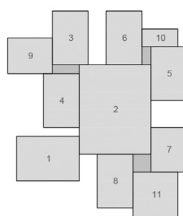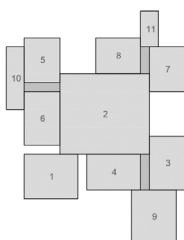
No 939 A: 304 m2 P: 154 m P/A: 0,51 C: 44

No 486 A: 308 m2 P: 148 m P/A: 0,48 C: 44

No 1 A: 309 m2 P: 160 m P/A: 0,52 C: 44
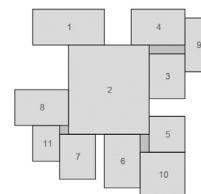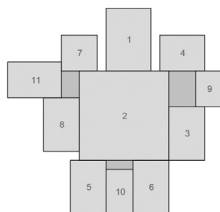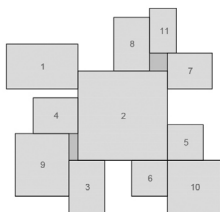
No 94 A: 353 m2 P: 152 m P/A: 0,43 C: 40

No 274 A: 318 m2 P: 144 m P/A: 0,45 C: 38

No 986 A: 305 m2 P: 140 m P/A: 0,46 C: 42

UP: Fig. 10. The relationship matrix for Scheme 03, the initial graph and a layout from the set of possible layouts

DOWN: Fig. 11. Displays of some of the generated layouts according to the functional scheme 03. The first row: layouts with a minimum number of vertices; the second row: layouts with the smallest perimeter and area quotient; and the third row: examples with a large number of vertices and a high value perimeter and area quotient. The formed atriums are marked in green..

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5. DISCUSSION OF RESULTS

Although only the selected solutions are presented in the previous chapter, Figure 12 better illustrates the percentage of the generated solutions corresponding to the initially set functional schemes. The "obstacle" that the software faces, similarly to the "analogue" design, is when the given dimensions are too rigid, that is, when the given range is too narrow for potential variations. A more detailed analysis of the generated solutions can demonstrate a large percentage of "expected", especially in the case when the variations of dimensions are equal to zero. From this we can conclude that the degree of unforeseen solutions depends on the degree of variation, not only in terms of the range of sizes in which the dimensions of individual rooms are, but also in terms of the way in which the diagram itself is created.

Likewise, although the compactness of the base is a criterion from which traditional design usually begins (as a consequence of the fact that the plots are mostly relatively compact in shape), in the case of generating a base from a given functional scheme (graph), this is a property that needs to be additionally achieved. In this research, the "compactness" of the solution is achieved by introducing two additional criteria: the number of vertices (angles) and perimeter and area quotients, where solutions with low values of both parameters (relative to the others in the set) were considered 'more compact' than others.
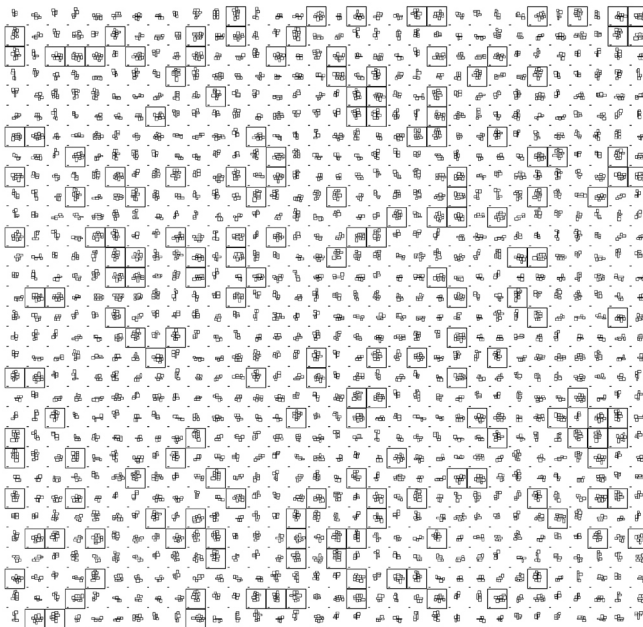
Fig. 12. The output – variations of layouts as can be seen after the software concluded calculations for the initial graph in question. Layouts inside a square meet the given functional criteria. This figure represents the number of "correct" solutions vs. the "incorrect" ones.

The reasons for introducing the category of "compactness" are better illustrated in Figures 13 and 14, which exhibit the possibilities of combining individual housing units into a more complex whole due to, for example, the requirement for a higher numerical value of housing density. As a consequence of introducing glazed balconies in the algorithm as well as double-sided ventilation, a significant number of atrium spaces appear, which consequently due to their dimensions imply a relatively small number of floors that would be possible in such a building. In addition, these spaces reopen the question of the public/private relationship, which, as stated above, is one of the fundamental theoretical questions related to the future of post-pandemic architecture.
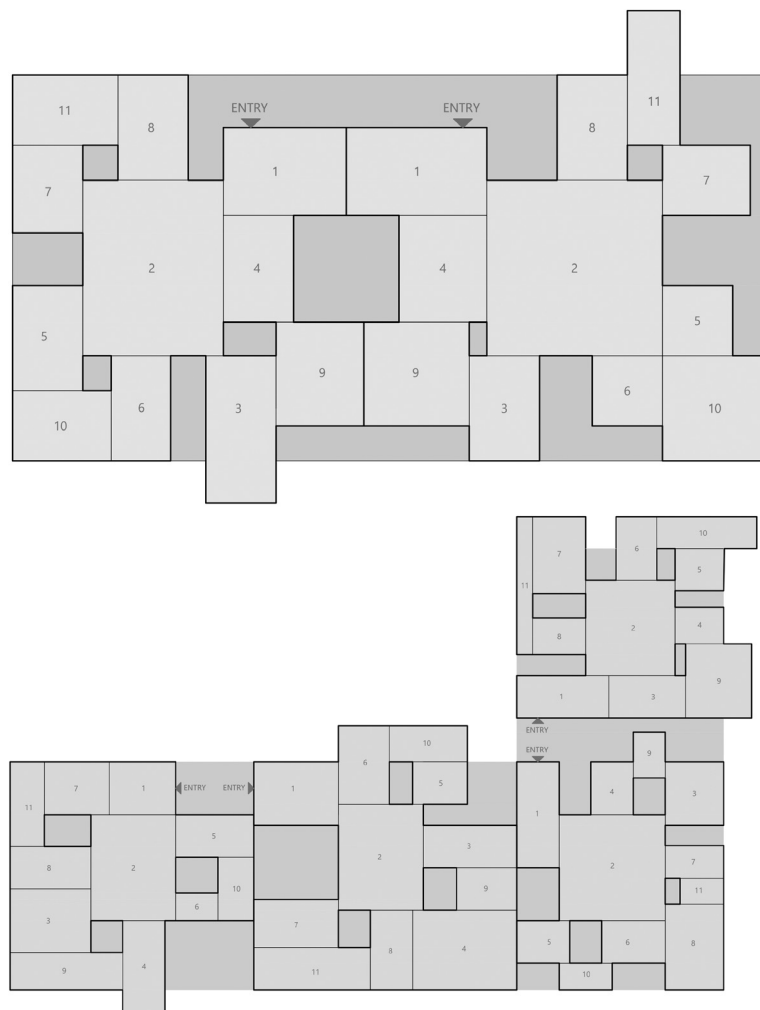
UP: Fig. 13. A possible combination of two housing units generated based on Scheme 3. Although the units are the result of the work of a "machine", the way they are assembled is the result of the work by a human – an architect. (Author: Dejan Ecet)

DOWN: Fig. 14. A possible combination of four housing units generated based on Scheme 3, in the case of a corner plot. (Author: Dejan Ecet).

The space of the apartment is often viewed as a static system, a spatial container of everyday life where the processes that shape the society in which we live are happening independently or with little impact on its changes. Henri Lefebvre[24] defines public space as a dominant space, the space created through discursive regimes and analyses of spatial planning professions as well as expertise knowledge to create a space. He defines the private sphere, the residence, the dwelling house as a space of appropriation, a space that is produced from daily action, and within the framework of everyday life, as a reflection of the individual. However, the private sphere of the home is not just a mere reflection of the society in which it arises, but a place where new or transformed spatial assemblies and processes in society are in meaningful and complex relationships. The dichotomous nature of the relationship between the public and the private and its understanding is addressed as a central theme in the work of Walter Benjamin,[25] Hannah Arendt,[26] and Jurgen Habermas.[27] Arendt and Habermas make a clear distinction between the area of private, hidden household space and public political space – 'Space of Appearance'.[28] However, they also argue the constant interdependence of these two domains in the formation and transformation of social values which affect the creation and transformation of spatial systems. Habermas, when describing the emergence and transformation of the public sphere in modern society, argues that it can be understood primarily as a sphere in which private interests appear as public, where the regulation of everyday life is related to the household, although he moves the domain of private to the sphere of public interest.[29]

These theses are largely applicable to pandemic and post-pandemic society, primarily viewed in the context of the interdependence of public and private, where social norms and values ultimately have a decisive influence on the level of spatial delimitation. Thus, the basics presented in Figures 13 and 14, although fluid at first glance, actually demonstrate a new relationship to "public grading" of space, where the "right of access" is seen as a deeply transformable category, more susceptible to individual decision-making rather than the community that comprises the entire multifamily structure.

6. CONCLUSIONS AND FURTHER RESEARCH

The concepts of public and private space, such as with N. John Habaraken,[30] can be viewed as relative and dependent on the direction of movement. Moving outwards towards wider scopes, we always enter the public space, while on the way back, going inwards, we enter the private space, where the feeling of what kind of space we are in depends on the space with which that space is in

relationship with. It is this topic, the correlation of individual spaces within a housing unit and the definition of their largely hybrid purposes that is at the heart of this research. Consequently, methods were selected to place the "relations" of individual spaces and the possibilities of their, even spatial, transformability, in the foreground. Respecting the bottom-up principle set in this way, it is possible to place the relations and conflicts between the private and public spheres at the spatial level of the apartment. Thus, set concept, dominated by the transformable nature of the programme zones, the ability to adapt to the needs of one of the domains, or the ability to accept changes in the situation and nature within the programme zone, forms a spatial framework that becomes a place for communication and mutual adjustment of public and private.

Understanding space as a "personalised" product that is expressed through the multitude and complexity of different needs, actions and procedures allows, on the one hand, its universal applicability, while on the other hand it is deeply rooted in the context in which it operates. This understanding forms the core of the presented research. In this way, the space defined by the strategies, through the process of implementing simple tactics, adapts to newly created situations and functions, creating its own dynamics within the strategies of the generated space.

Moving towards the stated goal, the following shortcomings could be deduced:

> 1. Data that was the basis of this research has been collected through observations by 94 architectural students in their final year of undergraduate studies and 20 Master's students, supervised by teaching staff. Since the data collection has been conducted during the course of the pandemic, and since spatial transformation that have been set for students to focus on relied only on previous experience, it can be said that this data pool should be adjusted and expanded when the pandemic conditions pass.
> 2. There is still not enough medical research data regarding the efficiency of some of the individual spatial patterns stated in the chapter titled 'Workshop results' (e.g., Figure 1). When further research is conducted, different spatial patterns (conclusions of the Workshop 1) could gain additional significance factors. This could lead to patterns that are necessary and the ones that are provisional if some other sanitary conditions are met (e.g., different technological solutions like air purifiers or simple social distancing).

3. In this research, data has been sourced by observations from private and public interior spaces alike, but the conclusions deduced from that data have been applied only to private, housing interiors. If public spaces would be examined, there would be, for sure, stronger influence of social distancing that would have to be calculated, as presented in some contemporary research.[31]

4. Design method presented in this research, specifically the algorithm and software used for architectural design, is at this point in time present only in the architectural scientific community and not in architectural faculty curricula. This means that it still cannot be implemented in everyday architectural practice, limiting the public reach of what we called the unforeseen layout solutions.

Nevertheless, it is very important to also note the following:

1.Although the primary pool of data has been gathered only through observing and relying on the experience of the pandemic conditions, it also relies on a long history of architectural and urban transformations that were implemented in order to fight different types of diseases (e.g., black plague, tuberculosis, the Spanish flu, to name a few), and architectural expertise gained through previous professional practice and knowledge in providing sanitary conditions in different types of facilities (e.g., hospitals). Thus, the primary data pool obtained through Workshop 1 can be considered as relevant.

2. Even though not widely disseminated amongst architectural education curricula, the utilisation of the "machine" (computer) in architectural design process can provide better and deeper insight into possible spatial solutions for the problem stated. When used in the right manner and the right phases of design process, this kind of hybrid approach to architectural design can even offer the "unforeseen" solutions.

3. In the context of foregoing, a significant novelty in the method presented is the introduction of qualifying parameters (number of vertices (C) and perimeter and area quotient (P/A)). These parameters enable a targeted selection from a relatively large set of functionally correct architectural layouts, thus providing one step further towards the utilisation of "machine" in the architectural design process. Parameters have been selected in the manner that reflect a common call for more rational constructive solutions, while not putting at risk architectural creation based on immeasurable parameters.

4. This research has been guided by strong conviction that architectural solutions can bring significant, sometimes even dominant influence (e.g., energy efficient buildings) when built environment dilemmas are in question. That is why the possibility of technological solutions for some sanitary conditions have not been considered here.

5. As stated in the previous chapters, the dichotomy of public and private in architectural space is an ever-changing category, even more in times when societal challenges become turbulent, as in a present moment. That is why spatial patterns that illustrate the transformation due to the pandemic have been sourced from both private and public examples and compared to the prominent theoretical thoughts on the subject. Nonetheless, positioning the obtained solutions into the context of progressive architectural practice is a goal set for further research.

Combining individual solutions provided by the software into a single plan of, as presented, multifamily building, is still a process that rests firmly on the expertise of an architect, and here, computers can be of little, if any help, in providing alternative solutions. This is because real-life simulations, with all parameters involved, including the ones that are almost impossible to quantify (as stated before: emotion, atmosphere, reminiscence, the experience of art, amongst others) are still out of reach for modelling that is necessary for creating an algorithm. This leads to the conclusion that the presented results can only be used as a functional basis for further architectural research, as a first layer which can be considered as a matter of course. Regardless, the presented architectural multifamily layouts indicate a future where demarcation between public and private space could be more fluid and subject to frequent fluctuations, while private (in the narrowest sense considered) encompasses hybrid properties with strong reliance on relationship with nature.

NOTES

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1   Naglaa A. Megahed, Ehab M. Ghoneim, "Antivirus-built environment: Lessons learned from Covid-19 pandemic", *Sustainable Cities and Society* 61 (2020). https://doi.org/10.1016/j.scs.2020.102350.

2   Bogdan Andrei Fezi, "Health engaged architecture in the context of Covid-19", *Journal of Green Building* 1 (March 2020); 15 (2): 185-212, DOI: https://doi.org/10.3992/1943-4618.15.2.185; Naglaa A. Megahed, Ehab M. Ghoneim, "Indoor Air Quality: Rethinking rules of building design strategies in post-pandemic architecture", *Environmental Research* 193 (2021). https://doi.org/10.1016/j.envres.2020.110471.

3   Z. D. Bolashikov and A K Melikov, "Methods for air cleaning and protection of building occupants from airborne pathogens." Building and environment Jul;44(7):1378-1385 (2009), 1378-1385. DOI:10.1016/j.buildenv.2008.09.001.; Stamatina Th. Rassia, "How Architecture Fails in Conditions of Crisis: a Discussion on the Value of Interior Design over the COVID-19 Outbreak". SN *Oper. Res. Forum* 1, 13 (2020). https://doi.org/10.1007/s43069-020-0014-9.

4   Fabian Dejtiar, "Is Coronavirus Pandemic Accelerating the Digitalisation and Automation of Cities?" [Una pandemia acelera la digitalización y automatización en las ciudades?] 27 March 2020, ArchDaily. Accessed 23 Nov 2021. https://www.archdaily.com/936064/is-coronavirus-pandemic-accelerating-the-digitalization-and-automation-of-cities> ISSN 0719-8884; Courtney Priday, "Architecture after coronavirus", 5 May 2020, (Accessed 23 November2021). available at: https://exepose.com/2020/05/05/architecture-after-coronavirus/.

5   S. Capolongo, A. Rebecchi, M. Buffoli, A. Letizia, S. Carlo, "COVID-19 and cities: From urban health strategies to the pandemic challenge. A decalogue of public health opportunities", *Acta Biomedica* 91 (2) (2020), 13-22. https://doi.org/10.23750/abm.v91i2.9615; Oliver Wainwright, "Smart lifts, lonely workers, no towers or tourists: Architecture after coronavirus", *The Guardian*, 13 April 2020.   https://www.theguardian.com/artanddesign/2020/apr/13/smart-lifts-lonely-workers-no-towers-architecture-after-covid-19-coronavirus.

6   Naglaa A. Megahed, Ehab M. Ghoneim, "Antivirus-built environment: Lessons learned from Covid-19 pandemic", *Sustainable Cities and Society* 61 (2020). https://doi.org/10.1016/j.scs.2020.102350.

7   Dirk H.R. Spennemann, "Residential architecture in a post-pandemic world: implications of Covid-19 for new construction and for adapting heritage buildings", *Journal of Green Building* 1 (January 2021); 16 (1), 199–215. DOI: https://doi.org/10.3992/jgb.16.1.199.

8   W.J.T. Mitchell, *City of Bits: Space, Place, and the Infobahn* (Cambridge, MA: MIT Press, 1995); *E-topia: Urban Life, Jim – But Not as We Know It* (Cambridge, MA: MIT Press, 1999); *Me??: The Cyborg Self and the Networked City* (Cambridge, MA: MIT Press, 2003).

9   Sapna Papu, Shreyasi Pal, "Braced for Impact: Architectural Praxis in a Post-Pandemic Society". Advance. Preprint. https://doi.org/10.31124/advance.12196959.v1.

10   The origins of the approach date back to the beginning of the second half of the 20th century. Some of the important researchers and authors will be mentioned in the chapter "Algorithm and computer software".

11   Silvio Carta, "Self-organising floor plans", *Harvard Data Science Review*, 23 July 2021, 3, DOI: 10.1162/99608f92.e5f9a0c7.

12   Daniel Davis, "Generative design is doomed to fail", (20 February 2020). Accessed 23 November 23 2021. https://www.danieldavis.com/generative-design-doomed-to-fail/.

13   David Rutten, "The inevitable and utter demise of the entire architectural profession", (10 February 2021), Accessed 23 November 23 2021). https://discourse.mcneel.com/t/unpublished-opinion-piece/118250.

14   Jelena Atanacković Jeličić, Dejan Ecet, Saša Medić, Albert Topić, ed., *AP3- Architectural Design 3- exhibition catalogue* (Novi Sad, the Department of Architecture and Urban Planning, Faculty of Technical Sciences, 2021). http://kabinet505.ftn.uns.ac.rs/wp-content/uploads/PDF/AP3-arhitektonsko-projektovanje-3.pdf.

15   Jelena Atanacković Jeličić, Dejan Ecet, Petar Mirković, ed., *In search of New Comfort Architecture, Studio 01B AP-AP, Exhibition catalogue* (Novi Sad, the Department of Architecture and Urban Planning, Faculty of Technical Sciences, 2021). http://kabinet505.ftn.uns.ac.rs/?p=2974.

16   Jurgen Habermas, *The Structural Transformation of the Public Sphere – An Inquiry into a Category of Bourgeois Society* (Cambridge, MA: MIT Press, 1991).

17   Peter Sloterdijk, "Talking to Myself about the Poetic of Space", H*arvard Design Magazine*, No. 30 (Harvard University Graduate School of Design, 2009). http://www.harvarddesignmagazine.org/issues/30/talking-to-myself-about-the-poetics-of-space.

18   Silvio Carta, "Self-organising floor plans", *Harvard Data Science Review*, 23 July 2021, 3, DOI 10.1162/99608f92.e5f9a0c7.

19   Revet-Dinamao, Rhinoceros-Python script editor; Grasshopper, AtoCad-Atolisp and other.

20   Christopher Alexander, *Notes on the Synthesis of Form* (Cambridge, Harvard University Press, 1964)

21   SYNTACTIC (Designing with Space Syntax) (plugin for Grasshopper© made by Pirouz Nourian and Samaneh).

22   Manuel De Landa, Deleuze and the Use of the Genetic Algorithm in Architecture, 2002; Delanda, M: Deleuze and the Use of the Genetic Algorithm in Architecture, video lecture, 2009. Retrieved from https://www.youtube.com/watch?v=50-d_J0hKz0&t=103s.

23   This way of expressing "compactness" comes from mathematics, particularly the so-called isoperimetric problem: "isoperimetric problem, in mathematics, the determination of the shape of the closed plane curve having a given length and enclosing the maximum area. (In the absence of any restriction on shape, the curve is a circle)", "Isometric problem", *Encyclopedia Britannica*, accessed 25 November 2021, https://www.britannica.com/science/isoperimetric-problem. A particular case of the isoperimetric theorem says that among all rectangles of a given perimeter, the square has the largest area. (See also: Tom M. Apostol and Mamikon A. Mnatsakanian, "Isoperimetric and Isoparametric Problems", *The Mathematical Association of America Monthly* 111 (February 2004): 118-136. https://www.maa.org/sites/default/files/pdf/upload_library/22/Ford/Apostol118-136.pdf.

24   Henri Lefebvre, *The Production of Space* (Blackwell, Oxford, 1991).

25   Walter Benjamin, *Arcades Projects* (Cambridge, Massachusetts, London, The Belknap Press of Harvard University Press, 1999)

26   Hanna Arendt, *The Human Condition* (Chicago, London, The University of Chicago Press, 1998).

27   Jurgen Habermas, *The Structural Transformation of the Public Sphere-An Inquiry into a Category of Bourgeois Society* (Cambridge, MA: MIT Press, 1991).

28   Hanna Arendt, *The Human Condition.*

29   Jurgen Habermas, T*he Structural Transformation of the Public Sphere - An Inquiry into a Category of Bourgeois Society* (Cambridge, MA: MIT Press, 1991).

30   N. John Habraken,"Control Hierarchies in Complex Artifacts", Proceedings of the Conference on Planning and Design in Architecture at the International Congress on Planning and Design Theory, (Boston, The American Society of Mechanical Engineers, 1987). https://www.habraken.com/html/downloads/control_hierarchies.pdf.

31   Hassan Ugail, Riya Aggarwal, Andrés Iglesias, Newton Howard, Almudena Campuzano, Patricia Suárez, Muazzam Maqsood, Farhan Aadil, Irfan Mehmood, Sarah Gleghorn, Khasrouf Taif, Seifedine Kadry, Khan Muhammad, "Social distancing enhanced automated optimal design of physical spaces in the wake of the COVID-19 pandemic", *Sustainable Cities and Society* 68, 2021. https://doi.org/10.1016/j.scs.2021.102791.

BIBLIOGRAPHY

Alexander, Christopher. Notes on the Synthesis of Form, Cambridge, Harvard University Press, 1964.

Apostol, Tom M., and Mamikon A. Mnatsakanian, "Isoperimetric and Isoparametric Problems", The Mathematical Association of America Monthly 111 (February 2004): 118-136. https://www.maa.org/sites/default/files/pdf/upload_library/22/Ford/Apostol118-136.pdf.

Arendt, Hannah. "The Human Condition", (Chicago, London, The University of Chicago Press, 1998).

Atanacković Jeličić, Jelena, and Dejan Ecet, Petar Mirković, ed., In search of New Comfort Architecture, Studio 01B AP-AP, Exhibition catalogue, (Novi Sad, the Department of Architecture and Urban Planning, Faculty of Technical Sciences, 2021), http://kabinet505.ftn.uns.ac.rs/?p=2974.

Atanacković Jeličić, Jelena, and Dejan Ecet, Saša Medić, Albert Topić, ed., AP3- Architectural Design 3 - exhibition catalogue, (Novi Sad, the Department of Architecture and Urban Planning, Faculty of Technical Sciences, 2021). http://kabinet505.ftn.uns.ac.rs/wp-content/uploads/PDF/AP3-arhitektonsko-projektovanje-3.pdf.

Benjamin, Walter. "Arcades Projects", (Cambridge, Massachusetts, London, The Belknap Press of Harvard University Press, 1999).

Bolashikov, Z. D. and A K Melikov. "Methods for air cleaning and protection of building occupants from airborne pathogens." Building and environment Jul;44(7):1378-1385 (2009), 1378-1385. DOI:10.1016/j.buildenv.2008.09.001.

Capolongo, S., and A. Rebecchi, M. Buffoli, A. Letizia, S. Carlo. "COVID-19 and cities: From urban health strategies to the pandemic challenge. A decalogue of public health opportunities", Acta Biomedica 91 (2) (2020): 13-22. DOI: 10.23750/abm.v91i2.9515.

Carta, Silvio. "Self-organising floor plans", Harvard Data Science Review, 23 July 2021, 3, DOI: 10.1162/99608f92.e5f9a0c7.

Davis, Daniel. "Generative design is doomed to fail", (February 20, 2020). Accessed 23 November 2021. https://www.danieldavis.com/generative-design-doomed-to-fail/.

De Landa, Manuel. Deleuze and the Use of the Genetic Algorithm in Architecture, 2002.

Dejtiar, Fabian. "Is Coronavirus Pandemic Accelerating the Digitalisation and Automation of Cities?" [Una pandemia acelera la digitalización y automatización en las ciudades?] 27 Mar 2020. ArchDaily. (Trans. Johnson, Maggie). Accessed 23 Nov 2021. https://www.archdaily.com/936064/is-coronavirus-pandemic-accelerating-the-digitalization-and-automation-of-cities> ISSN 0719-8884.

Fezi, Bogdan Andrei. "Health engaged architecture in the context of Covid-19", Journal of Green Building 1 (March 2020); 15 (2): 185–212, DOI: https://doi.org/10.3992/1943-4618.15.2.185.

Habermas, Jurgen. "The Structural Transformation of the Public Sphere-An Inquiry into a Category of Bourgeois Society" (Cambridge, MA: MIT Press, 1991).

Habraken, N. John."Control Hierarchies in Complex Artifacts", Proceedings of the Conference on Planning and Design in Architecture at the International Congress on Planning and Design Theory, (Boston, The American Society of Mechanical Engineers, 1987). https://www.habraken.com/html/downloads/control_hierarchies.pdf.

Isometric problem, Encyclopedia Britannica Accessed 25 November 2021, https://www.britannica.com/science/isoperimetric-problem.

Atanacković Jeličić, Rapaić, Maraš, Ecet_ New Comfort: Towards the Post-pandemic Living

Lefebvre, Henri. "The Production of Space" (Blackwell, Oxford , 1991).

Megahed, Naglaa A., and Ehab M. Ghoneim. "Antivirus-built environment: Lessons learned from Covid-19 pandemic", Sustainable Cities and Society 61 (2020). https://doi.org/10.1016/j.scs.2020.102350.

Megahed, Naglaa A., and Ehab M. Ghoneim. "Indoor Air Quality: Rethinking rules of building design strategies in post-pandemic architecture", Environmental Research 193 (2021), https://doi.org/10.1016/j.envres.2020.110471.

Mitchell, W.J.T. "City of Bits: Space, Place, and the Infobahn" (Cambridge, MA: MIT Press, 1995).

Mitchell, W.J.T. "E-topia: Urban Life, Jim – But Not as We Know It", (Cambridge, MA: MIT Press, 1999).

Mitchell, W.J.T. "Me??: The Cyborg Self and the Networked City", (Cambridge, MA: MIT Press, 2003).

Papu, Sapna and Shreyasi Pal. "Braced for Impact: Architectural Praxis in a Post-Pandemic Society". Advance. Preprint. https://doi.org/10.31124/advance.12196959.v1.

Priday, Courtney. "Architecture after coronavirus", 5 May 2020. Accessed 23 November 2021, https://exepose.com/2020/05/05/architecture-after-coronavirus/

Rassia, Stamatina Th. "How Architecture Fails in Conditions of Crisis: a Discussion on the Value of Interior Design over the COVID-19 Outbreak". SN Oper. Res. Forum 1, 13 (2020). https://doi.org/10.1007/s43069-020-0014-9.

Rutten, David. "The inevitable and utter demise of the entire architectural profession", (10 February 2021). Accessed 23 November 2021), https://discourse.mcneel.com/t/unpublished-opinion-piece/118250.

Sloterdijk, Peter. "Talking to Myself about the Poetic of Space", Harvard Design Magazine, No. 30 (Harvard University Graduate School of Design, 2009). http://www.harvarddesignmagazine.org/issues/30/talking-to-myself-about-the-poetics-of-space.

Spennemann, Dirk H.R. "Residential architecture in a post-pandemic world: implications of Covid-19 for new construction and for adapting heritage buildings", Journal of Green Building 1 (January 2021); 16 (1): 199–215. DOI: https://doi.org/10.3992/jgb.16.1.199.

Ugail, Hassan and Riya Aggarwal, Andrés Iglesias, Newton Howard, Almudena Campuzano, Patricia Suárez, Muazzam Maqsood, Farhan Aadil, Irfan Mehmood, Sarah Gleghorn, Khasrouf Taif, Seifedine Kadry, Khan Muhammad, "Social distancing enhanced automated optimal design of physical spaces in the wake of the COVID-19 pandemic", Sustainable Cities and Society 68, 2021. https://doi.org/10.1016/j.scs.2021.102791.

Wainwright, Oliver. "Smart lifts, lonely workers, no towers or tourists: Architecture after coronavirus", The Guardian, 13 April 2020. https://www.theguardian.com/artanddesign/2020/apr/13/smart-lifts-lonely-workers-no-towers-architecture-after-covid-19-coronavirus.

SMALL INTERVENTIONS – RESEARCH METHOD FOR [SMALL] PUBLIC SPACES REDESIGN

A B S T R A C T

Urban life has to be deprived of unnecessary physical regulations, restrictions and environmental threats in order to enable freedom of social engagement and action in public space. Evidently, present excessive control and fear in public spaces diminish the quality of social relationships. COVID-19 has intensified this phenomenon, calling it the New Normal. This calls for a discussion on new mechanisms through which a city can overcome socio-spatial discrimination in the following ways: creating a platform to advance present understanding of the evolving dynamics between the pandemic and architecture, synthesising the existing knowledge, discussing lessons to be learned, and exploring transformative solutions towards more sustainable and resilient design strategies in the post-COVID era.

As a response to the New Normal, Small Interventions is a model which enables public spaces to gradually improve through a series of small, carefully designed and strategically selected interventions in public spaces with mutual cooperation of the city administration, experts and citizens. The subject of Small Interventions are small spaces realised with a modest budget, short deadlines and accelerated procedures. From a planning perspective, Small Interventions are part of the dynamic, flexible and adaptable urbanism that keeps up with the changes of socio-spatial relationships caused by COVID-19.

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KEY WORDS

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SMALL INTERVENTIONS,
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DYNAMIC,
FLEXIBLE,
ADAPTABLE URBANISM

I DEATH OF [SMALL] PUBLIC SPACE + FALL OF PUBLIC MAN

One of the ways citizens get to know the city is through their identification with its public spaces that are used as polygons for establishing a dialogue between citizens and the city. In that way, collective memories are built from which it is possible to read city identity.[1] Public spaces are considered as spaces of diverse and distinctive use, usually owned by the City, that are available, accessible, acceptable and adaptable to all the citizens.[2] This also includes spaces whose use has previously not been urbanised and officially planned, but which citizens have spontaneously begun using, transforming and appropriating. If "the city is in itself the powerful symbol of a complex society", in accordance with Lynch, then public spaces are viewed as the driving force behind the development of the city that "not only offers security but also heightens the potential depth and intensity of human experience".[3] As Jacobs stated in her book *The Death and Life of Great American Cities*, citizens through social relationships, engagement and action in public spaces bring safety to the city by being "eyes upon streets [...] and belonging to those we might call the natural proprietors of the street."[4] Safety – eyes upon streets – and collective experience based on sociability and serendipity define freedom of the city where one form of urban freedom cannot be sacrificed by another.[5] Public spaces, as Ardent said, enable the citizens to be heard and seen by others, assuring them of the existence of the outside world and themselves, otherwise they "would be deprived of things essential to a truly human life".[6] However, "what makes mass society so difficult to bear is not the number of people," according to Arendt, but the fact that the world "lost its power to gather them together."[7]

Although, in the last few decades, public spaces have shown a lack of true power to gather people together, pandemic measures have shown that right now the reign of fear and security has the power to empty public spaces completely. Under the auspices of *security*, as part of the imposed COVID-19 experiment, which has been going on for the last two years, the world has united in imposing new security mechanisms and measures to fight the virus. At a time when medicine has not yet come up with an appropriate answer, the basic measure is to maintain physical distancing in public and private spaces. According to Megahed and Ghoneim, all measures adopted during an emergency have become a part of everyday life, changing habits and behaviours that can be a positive or negative intervention in architecture and approach to urban planning.[8] However, what we could witness in the early stages of the pandemic era is the rigid approach to confining people to homes, ending free movement and the use of urban space. The ban on gatherings, even in open public spaces, has become a basic determinant of the struggle for the security of the *New Normal.*

For about two years now, we have been watching the death and emptiness of public spaces in person, exactly as Bauman predicted by society moving from "solid" modernity to "liquid" phase, analysing the consequence of an unbalanced personal life and empty urban life in which society is under the domination of uncertainty and constant risk. Liquid modernity, as well as the meaning of the word liquid itself, means that society engagement is constantly tested, examined and a subject of scrutiny by enhancing insatiable consumption, unforeseen social relations, temporary solutions, mobility and adaptability to a new era of knowledge and technology. In other words, in his book *The Consequence of Modernity*, Giddens claims that instead of "entering a period of post-modernity, we are moving into one in which the consequences of modernity are more radicalised and universalised than before."[9] For Giddens, the consequences of modernity are a result of discontinuities by which modern society is separated from traditional social order and they are: "pace of change", "scope of change" and "the nature of modern institutions."[10] These changes in human condition have brought the lack of engagement, participation and action in the production of public spaces that Sennett elaborates on in his book *The Fall of Public Man*, where "the environment prompts people to think of the public domain as meaningless."[11]

In his new research regarding the *New Normality*, Salama analyses changes in the collective psychology of the society associated with the understanding of human needs in using public spaces by revising the notions of social interaction, assembly of people and simultaneity. An active engagement, representing the direct experience of a person with a place and the people within it, is limited or directed more towards passive engagement, involving the need for gathering and encounter without being actively involved.[12] These questions address the future of public spaces, especially in terms of establishing an active citizen participation in public space. The question is: How to re-establish dialogue between the city and citizens affected by the new form of sociability through redesign of public spaces?

Given that the public space is an essence of the city as well as community constructions, and bearing in mind the challenges the *New Normal* brings, this paper aims to propose a new spatial grammar i.e., a collaborative urban design method called Small Interventions (*Male intervencije*) – acronym MI which translates as WE in English. It was developed on the basis of the expansive review of studies and practices dealing with the issue of public space design focusing on the last three decades of liquid modernity, and it was already tested by the implementation of six pilot projects in Banja Luka from 2019 to 2021. Those

experiences were brought together and published in a book *Small Interventions in Public Space/Research Methodology*.[13] The reason for the new research method is the fact that there is no adequate database of public spaces (those that are used as collective spaces and those that are public/city property) that could present their potential and unique values. Data on public space is fragmented and mostly not open to citizens. Analysis of public policies and reports has indicated a lack of programmes and projects of collaborative urban design in public spaces as well as absence of mechanisms and tools for citizens' participation and engagement in urban design and the decision-making processes. However, there have been several bottom-up events in the last five years in Banja Luka, showing the need for new design approaches in order to create a more liveable future city and to improve a smart community development. Although the idea of Small Interventions was originally created and implemented in the pre-pandemic period, this research method may be the key to re-social interaction of people in public space.

The Small Interventions method explores and facilitates new ways of establishing relationships between public space and citizens through collaborative design processes. Using digital media and tools in combination with massive small design practices, the method allows citizen engagement in public spaces even during the pandemic times, while strengthening social cohesion, and a sense of attachment and identification with public space. When using Small Interventions, the city learns how to overcome socio-spatial discrimination by creating a research method that improves the current understanding of the evolving dynamics between the pandemic and the city, making public spaces as polygons of dialogue for all actors included in the redesign process. The existing knowledge on public spaces, both theoretical approaches and practices, is synthesised in a comprehensive way, making it a part of the Small Interventions – research method. Discussing the lessons and guidelines that can be learned and followed, Small Interventions establish sets of mechanisms, tools and methodological steps for public space transformation towards more sustainable and resilient design strategies in the post-COVID era.

II THEORETICAL FRAMEWORK: "MASSIVE SMALL"

New form of sociability described by Bauman (*Liquid Modernity*) and Giddens (*The Consequence of Modernity*) has seen a fundamental shift in the way people identify with the city. According to Bishop and Williams, the shift has brought with itself a number of problems affecting social-spatial relationship such as:

political, economic and environmental uncertainty; vacancy of public spaces caused by the loss of traditional industries; revolution in work, changing the way of living and using public space (alienation, isolation); intensity in the use of public space resulting in multi-use space both for work and free time that is enabled by revolution in information and communication technologies; counterculture and activism for new uses of public spaces; and creative milieus first investing in marginal areas testing and adopting them to change the image of an area.[14] In terms of urban planning, this shift has shown that the main problem of public spaces that are dead is the lack of connection between the *top-down* and *bottom-up* approach observed and used separately by urban planners and city authorities, even though both are necessary for the redesign of public spaces.

The *top-down* approach originally arose from utopian concepts of permanence and was created in a time of intensive urbanisation supported by massive plans, permanent solutions and lasting results – the dream of permanence. It is used in decision-making and planning of urban interventions where initiatives, being solved in the long-term, have started from the city council and authorities. These initiatives refer to large-scale projects without consideration of citizen participation, engagement and action in public spaces, as the focus is only on the results instead of the process of revitalisation and redevelopment of urban spaces. According to Kelvin Campbell, an urban planner and a founder of international project *Smart Urbanism*,[15] top-down consists of a system that is mostly closed and with high expectations relating to: planning procedures that are complicated, hierarchically regulated and long-term requiring to be successfully implemented, thus stifling freedom, creativity and innovation as well as the progressive development of the city; a strictly regulated model for space design, creating mechanisms, tools and steps that lead directly to final results – complete regulation – where there is no room for experimentation, learning and creation of new approaches, models and ways of thinking; restrictions and limitation typical for planning and design operating system.

For Campbell, the consequence of this approach is reflected primarily in the term of size referring to large-scale spaces, hierarchy involved participants, long-term processes and plans that require equally massive results. Such an approach is related to large-scale urban renewal projects, and it is not appropriate to "liquid modernity" and the current changes in society imposed by COVID-19 measures. This approach, affected by the loss of traditional industries, has contributed to vacancy of public space that over time has become abandoned, unsecured and degraded by excessive fear and excessive control due to lack of resources and power for their redesign caused by economic, political and environmental

uncertainty. There is a lack of public spaces but, above all, lack of well-designed and comfortable spaces as "public life has also become a matter of formal obligation."[16] It is closed to citizen participation abolishing their right to the city and its highest forms: "liberty, individualisation in socialization, environs (habitat) and way of living (habiter),"[17] as Lefebvre stated.

The *bottom-up* approach is based on the "The Theory of Communicative Action", German philosopher and sociologist Jürgen Habermas, producing the term collaborative planning. The importance is in dialogue as "the fundamental human need to share, to communicate, to connect with other living beings, and to leave a deep impression on them."[18] In a world created from the *bottom-up*, the focus is on the process in urban planning. Initiatives have started from *small* actors, organisations or individuals, taking themes from everyday life and working on local projects as a way of responding to economic, environmental, political and social issues. In that way, an activism for new uses of public spaces supported by creative milieus has been initiated, giving an opportunity for the interested public to participate in the decision-making and design processes of the city. For Campbell, the *bottom-up* approach consists of a system that refers to: simplifying process and procedures resulted from the activities of interest groups or individuals, with an aim of loosening their strict regulations and rules; spontaneous design solutions which are the result of experimentation, trial and error where only the best and sustainable solutions have survived; collective action as a way individuals or groups are organised in the planning process.

The challenge of the Small Interventions method has been how to connect these two approaches (*top-down* and *bottom-up*) to work simultaneously during the redesign process of public space. In order to respond to this challenge, a new concept "massive small"[19] created by Campbell is used as a base for the method development. Massive small is a simultaneous principle focusing not on the result – design – but the process that has led to the redesign of public spaces of "small" scale in a way that there is always a dialogue between the city and citizens. In order to respond to the lack of resources, power and control in the world of economic and political uncertainty, the dream of performance in urban planning is shifting to the concept of "temporary city" proposed by Bishop and Williams, where it is necessary "to unlock the potential of sites now, rather than in 10 years' time."[20] By experimenting with looser planning visions and adaptable design frameworks, the focus is on short-term projects for redesigning public spaces whose temporary initiatives and activities may be refined, modified, developed or implemented in phases over time responding to society's requirement to be efficient, cheap and economical. The challenge of
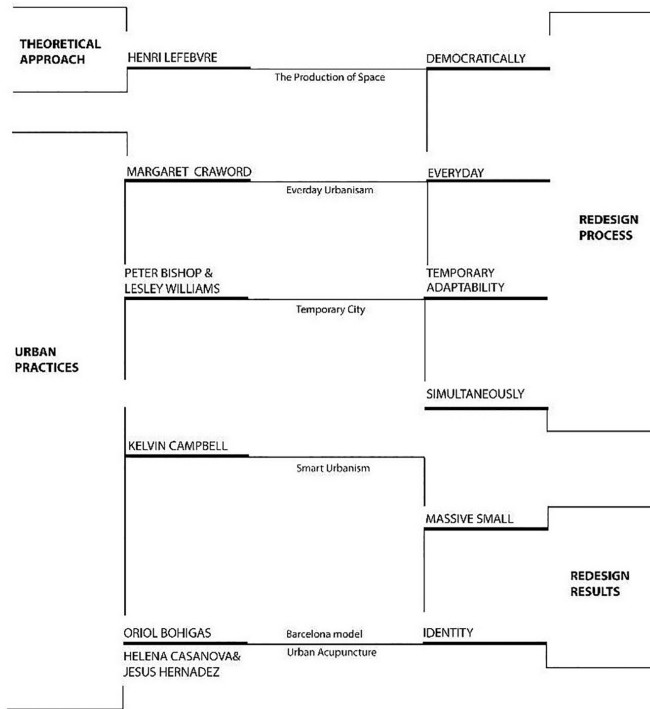
Fig. 1. Defining Small Interventions terms

identifying the points of conflict and tension that have to be improved, modified, transformed, rehabilitated and assigned new meaning and sense (sense of place) creating a feeling of the identity and affiliation they lacked is defined by using the experience of the *Barcelona model*[21] and *Urban Acupuncture*.[22] In order to understand the participation of all actors engaged in the redesign of public spaces seen as another challenge, Lefebvre's theoretical approach of democracy where a man is a social being who interacts with "others" and "different" is primarily achieved in a "social space" that is a "social product."[23] Lefebvre's right to the city is like a "cry and a demand."[24] On the one hand, it is a cry against the intensification and extension of the urban that pushed to the extreme "division of labour, social segregation and material and spiritual separation."[25] On the other hand, it is a demand for renewal of urban society that not only passively inhabits the city but makes the city as an oeuvre by participating in producing urban spaces as "places of encounter, the assemblage of difference and priority of use over exchange value."[26] Thus, the right to the city formulated by Lefebvre is actually "transformed and renewed right to urban life" suggesting gatherings, meetings and confrontation of differences. The lack of diversity and urban life

in public spaces represents a challenge of activating and reconnecting human needs with public space that relies on creativity and imagination already present in everyday life is understood by Crawford's concept of *everyday urbanism*.[27]

By analysing all the problems and challenges in urban planning presented in theoretical approaches and practices (Figure 1), Small Intervention has a role of a mediator between two worlds *(top-down* and *bottom-up)*, using them simultaneously and managing a dialogue between the city administration and citizens but, at the same time, including professionals in the redesign process of public spaces. It is, on the one hand, based on the terms derived from above-mentioned principles directly involved in the processes of redesign of public spaces (democratically, temporary, adaptability and everyday), and on the other hand, there are terms that are only linked to the improvement of public spaces calling them results of the process (massive small and identity).

Small Interventions is seen as a new urban grammar as it develops an original research method for the redesign of public spaces by using a multi-sector and collaborative approach to public spaces that is *massively small*, efficient, flexible, transparent, democratic, dynamic, adaptable and temporary. Innovation is evident in connecting of theoretical urban design approaches and practices in a way that the research method is tested in a real environment adapting its tools and mechanism to the cultural context. It combines both the *top-down* and *bottom-up* approaches in urban design in order to create *massive small* spatial interventions limited by resources, budget and time considering the local context and human resources, legislative and the lack of funds. It works as a creative hub for developing and sharing ideas, knowledge and experience about public spaces, strengthening the power of community engagement.

By using different, adaptable and collaborative mechanisms and tools, the Small Interventions method includes citizen direct enrolment in all stages of the design process as well as the maintenance and upgrade of the place after it is *finished*. Public spaces are seen as a tool for community building in which the city belongs to its citizens, elevating levels of participation up to the point where citizens can actually design and govern their own public spaces.

III SMALL INTERVENTION METHOD: THE RIGHT TO URBAN LIFE

Small Interventions is a research method for redesign of public spaces that are small in terms of budget, size and implementation time and can be efficiently transformed within limited funds and resources with engagement and contribution of a large number of different types of actors. The research method comes from the position that punctual small interventions in public spaces has an effect in transforming not only the specific public space but a wider urban area, making a grid of potential events and polygons essential for interconnection of the City (as City administration),[28] Professionals and Citizens and their engagement with public spaces enhancing their participation in urban design processes.

The Small Interventions research method has three strategic objectives:

1. Strengthening awareness of public spaces through its systematic revalorisation and its collaborative urban design based on small interventions; consequently, enhancing living environment and sense of community belonging.
2. Strengthening the common language and dialogue between the professional, scientific communities and citizens in the processes of design and management of public spaces.
3. Proposing and introducing novel procedures and tools for public space design and management that would facilitate small interventions and overcome the gap between the bottom-up and top-down processes; and that could easily be implemented in other cities in the region adapting it to the cultural context.

The research approach is a systematic overview, considering problems of small public spaces, analysing their potentials and offering programme guidelines for the redesign of public spaces, instead of proposing only design solutions. The principal task of the Small Interventions research method is to systematically and comprehensively observe, map and redesign public spaces, creating a strategic and vibrant network of Small Interventions projects in a defined city location. The aim is to create a socio-spatial system that enables guided co-design processes in urban space through an organised set of mechanisms and tools facilitating the implementation of new urban space, but also behavioural patterns.

The Small Interventions method consists of three main research processes and related groups of activities, which are called components, implementation and testing. These processes are focusing on different types of specific results and outputs and are also targeting different types of actors.

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Components is about a professional study and assessment of public space aimed at defining guidelines for their redesign. The existing public spaces represent future polygons for small intervention implementations that have to be detected, classified according to size and a type of morphological characteristics, themes, and programmatically directed and mapped in order to be further implemented in practice. Implementation is about defining mechanisms, tools and actors that enable collaborative redesign processes and transfer of components into the spatial framework of the city. Testing is the final development process that refers to its verification of both components and implementation through a placement in a real physical and social context. Testing is an opportunity to summarise the expected and achieved results of the Small Interventions research method, define the benefits of pilot projects through comparative analysis and discussion and guidelines and recommendations for future projects of small interventions.

Even though they are developed gradually over time, components, implementation and testing are mutually connected and interfering and they form a part of a unique whole. For instance, components are defined by specific spatial and social context to which they adapt according to the preliminary result of testing. On the other hand, to perform testing and define components, it is necessary to establish implementation mechanisms and actors. The relationship between components, implementation and testing can be followed through 10 methodological steps that should be understood and followed in order to apply the Small Interventions method.

III.1 Methodological steps

This paper presents methodological steps of the Small Interventions method that lead to the whole process of redesigning public space in the city in an integrative, collaborative, and, after all, meaningful and innovative direction. This means that the outline and the subject of the research area are defined in advance.

MS1/DETECTION/duration: 15 days; main actors: Small Interventions team, Professionals, City: The research process begins with the public spaces problem of DETECTION in the defined research area of the city that can be significantly improved with minimal intervention raising the vitality of a city to a higher level. The problem of detection of public spaces not only refers to their sizes, morphological types and functions, but also focuses on places of conflict and vitality loss. It is also related to their relationship with users/ citizens and vice versa, their integration with other public spaces, their role in the society, procedures and mechanisms of their maintenance, management and design as well as the question of engagement of actors in their redesign process. It depends on the social and cultural context of each city and can be changed,

subtracted and added in relation to the discussed problems in the example of Banja Luka. Through field work, the creation of public/online surveys in which citizens can propose their space of conflict and research of available studies, strategies, design projects and planning documents, the Small Interventions team (in the case of Banja Luka) worked together with Professionals and the City, transforming problems into potential places where Small Interventions can be implemented. The result of this process is the creation of a network of detected locations recorded on existing city maps, giving insight into the public spaces in the city where it is necessary to intervene.

MS2/CLASSIFICATION/duration: 15 days; main actors: Small Interventions team, Professionals: The second research activity is the CLASSIFICATION by which the network of detected public spaces is linked to components relying on dimensions of public space: temporal, spatial, and functional, and actors. Time refers to the preparation period and implementation of small intervention projects depending on the available budget and resources. Space represents a place – an acupuncture point that needs to be reactivated, and the function serves to create programmatic guidelines for reactivation of public spaces. Actors are users of public spaces and without them public space does not exist, so they are integrated in all three components and they are not observed individually in this research.

By putting these dimensions in relation, three components are created of which two are related to classification: size (created of temporal and spatial dimensions) and typo-morphological pattern (composed of spatial and functional dimensions). Size refers to the dimension of the subject polygons, the estimated value of the small intervention implementation and the time required for its preparation and implementation, while the typo-morphological pattern defines the significance and position of the subject polygons in the urban matrix of the city. That way, the detected public spaces are classified according to their sizes (in terms of dimension (XS, S, M,L, XL), time (30,45, 60, 90 and 180 days) and value (ranging from 1,500 to 50,000 euros)) and typo-morphological pattern (urban point, urban pocket, urban capillary, urban rooms, urban field and urban corridor), and developed in relation to the programme guidelines – themes (greenery, traffic infrastructure, water management, small forms and urban patterns), forming these three components together.

MS3/THEMATIC/duration: 15 days; main actors: Small Interventions team, Professionals, Citizens: The third component is a theme created with functional dimensions that determines the function, programmatic guidelines, character and manner of using the subject polygons for small interventions. This component

is related to the next research activity called THEMATIC which implies the recognition of open public spaces through dominant themes i.e., whether they are predominantly green, traffic or water supplied spaces, small forms or urban areas. Each theme according to size can be an XS, S, M, L or XL intervention, as well as an urban point, pocket, capillary, room, field and corridor according to the type-morphological pattern.

MS4/REFERENCING/: After the detection, classification and thematic of public spaces, the next activity is REFERENCING, necessary for defining programme guidelines for the public space redesign and it is achieved by making a comparative analysis of detected locations and examples of good practices. This actually means that every detected, classified and thematic location in the city is joined by an equivalent example of good practice taken from the contemporary architectural and urban world scene (Figure 2). The illustration of a specific example itself is not a quick design solution for a specific location, but only one of the possible ways to redesign the location.
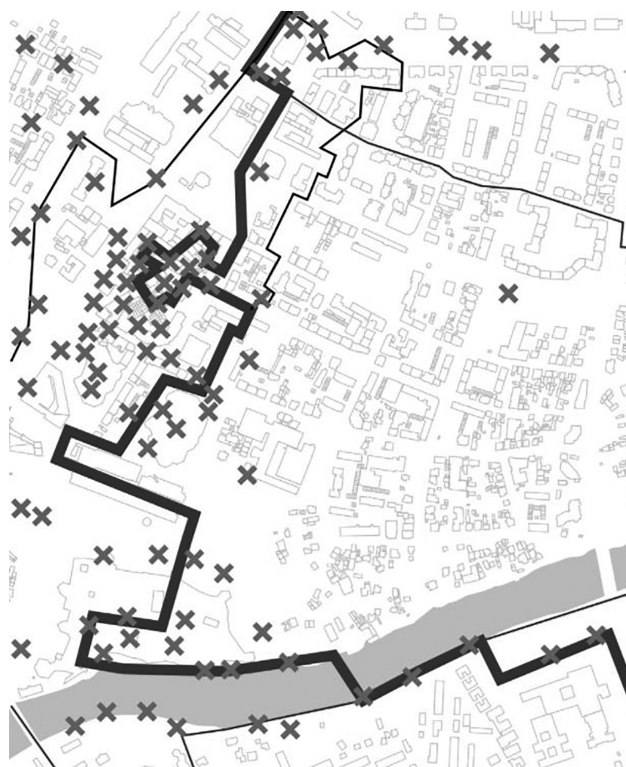

Fig. 2. Referencing is achieved by assigning examples of good practices to detected city locations

MS5/MATRIX/duration: 10 days; main actors: Small Interventions team, Professionals, Citizens: After all the activities have been carried out, the detected components of small urban spaces have to be banded together into one operating system in order to define programme guidelines for their redesign, making this complex multi-layered process MATRIX pattern. The process of making a matrix pattern implies multidimensional unification of components of size (including dimension, the implementation deadline and value), typo-morphological pattern, theme and examples of good practice in relation to each individual detected public space. The matrix pattern of each detected location contains four main elements: 1) location of the small intervention (a map or a photograph); 2) programme guideline as a proposal for location improvement based on an adequate example from contemporary practice (a photograph, an illustration, a map); 3) description of the small intervention indicating implementation deadline and estimated financial resources required for implementation; 4) location description and application of small interventions at the location. The interconnection of the matrix pattern of individual spatial polygons with the above-mentioned components creates a matrix pattern of all detected locations within one theme. In that way, instead of an instant solution, the programme guidelines for the redesign of public spaces are proposed by making a Thematic Catalogue obtained from the matrix patterns that elaborate programme themes separately: greenery, water management, traffic infrastructure, small forms and urban areas. Each theme is a result of one thematic catalogue, giving transparency and an overview of all the locations of possible small intervention implementations to the city, significantly improving readability for citizens and facilitating professionals in the application process for new design solutions.

MS6/MAPPING/duration: 10 days; main actors: Small Interventions team, Professionals: Placing the matrix pattern in the city spatial framework and georeferencing the catalogues is done through the MAPPING process and uses the method of urban acupuncture with the aim of curing the disease of urban degradation and the decline of social integration already present in public spaces. Based on the urban acupuncture method, acupuncture points are selected and mapped in a way that each has the potential to become a vibrant place with a rich public life preventing divisions, encouraging citizen interaction and helping with development of social cohesion. These interventions have a predominant functional dimension (theme) in relation to the spatial dimension, which implies that they are not related only to a specific location, but have the possibility of multiplication to a certain number of points in the city.

The focus is on careful selection of detected acupuncture points in which urban interventions are implemented, which with their coordination and symbiosis produce large-scale effects, building a capillary network – a cardiogram, which is subsequently expanded and supplemented with new interventions. The term cardiogram is analogous to the heartbeat and is the original name used by the Small Interventions team for networking public spaces in Banja Luka. In the case of Banja Luka, due to the lack of updated plans and maps, the mapping process includes the production of a new map that is also used to record all the planning assumptions taken from spatial planning documents and urban development programmes. The result is the map that records all the architecture points that are connected parallel with major pedestrian communications, through passages, hinterlands and inactive by the cardiogram, making a database for future projects. Each architecture point represents potential pilot project.

MS7/SELECTION/duration: 10 days; main actors: Small Interventions team, Citizens, Professionals, the City: The project database of Small Interventions is formed by combining the results of the method of components including the projects georeferenced through the thematic catalogues, mapping acupuncture points and the production of the cardiogram, and projects nominated by different actors through an open and online application form. It implies the next step: pilot project evaluation and selection. According to the principles of Small Interventions (democratically, temporary, adaptability, everyday use, massively small and identity) and relying on the steps, mechanisms and tools of the research method, a set of five criteria for the evaluation and selection of projects is defined. The main evaluation criteria are: 1) the City requirements, theme popularity (effect) and citizens' needs; 2) location; 3) mechanisms and actors; 4) steps and procedures; 5) financing. The criteria is used for the verification of potential feasibility for a number of candidate projects in order to select a smaller number of sustainable and resilient projects of interest to the city and citizens. In the selection process, the projects are sorted by description, size and budget and presented through an interactive table linked to online application forms containing basic information (the project name and description) and research method components (size, type-morphological pattern, themes of public space and location) and mechanisms and tools of co-design/ construction/financing / participation, actors, specific procedures, budget and implementation time.

MS8/ PILOT PROJECT DESIGN/duration: 20 days; main actors: Small Interventions team, Professionals/: Projects must pass all the phases of detailed planning and design to be considered for selection. Here project proposals need to be elaborated, referring to the revision and determination of specific project

UP: Fig. 3. Constructive Workshop with students - Small Scale project

DOWN: Fig. 4. Citizen Work Actions: Cleaning the City - Small Intervention pilot project

goals such as: defining a dynamic plan of activities of the actors and their roles; defining the mechanisms of co-design, construction and participation; defining an indicative budget, plan and mechanisms; defining a project communication plan of activities and expected results among citizens and other target groups. Co-design mechanisms refer to a set of activities and tools leading to a common solution of urban design for a particular space through design and decision-making processes. They use digital participation tools and open new forms of communication between Cities, Professionals and Citizens in accordance with today's way of living and current trends in the use of digital technologies. The design solution is performed within one or more of the proposed mechanisms: Creative Workshop, Studio Project, Competition and Small Design Intervention. In terms of selecting the best design solution, there are steps of selection: by jury experts, online public voting by jury experts and citizens, and the first level of selection is made by jury experts, while citizens make the final selection.

MS9/PILOT PROJECT CONSTRUCTION/duration: 1-7 days; main actors: Small Intervention team, Professionals, Citizens, the City: This step refers to a set of the urban design activities or scenario that improve public spaces, referring to its realisation in a real spatial framework by which it gets its physical form. This includes the physical engagement and direct interaction of all the participants by use of the performance incentive mechanisms accompanying the activities of operational character (such as materials procurement and field preparation) and procedural character (such as signing the contracts, obtaining permits and approvals, etc.). Its primary mechanism is called Constructive Workshop with students and citizens where they physically participate in the construction activities, while at the same time gaining practical knowledge of traditional and/ or specific types of construction (Figure 3).

The mechanism called Citizen Work Actions implies one-day mass citizens' physical participation in public space where through physical activities, the citizens conquer the spaces, contributing to their more intensive use and maintenance in the future (Figure 4). Small Interventions projects encourage the application of performance incentive mechanisms that refer to non-standard ways of building and performing outside the established urban practices, raising awareness of the themes and issues associated with public space. Besides the funds provided by the City for the implementation of Small Interventions through different construction mechanisms, it is usually necessary to raise a portion of funds from other sources. In this regard, the following financing mechanisms are proposed, referring to non-standard forms of different actors' participation in the project financing process: collective financing (crowdfunding), endowment

and the inclusion of socially responsible companies. These actors involved in the financing process form the network of Small Interventions partners i.e., making a base of active financiers. Through the preparation of the adequate contracting procedures, at the same time there is a need to check the possibilities of simplifying the existing legal procedures by shortening the construction time.

MS10/ EVALUATION/duration: project lifetime and at least 6 months after; main actors: Small Interventions team, Small Interventions partners: Small Interventions means the continuous and engaged work on improving public spaces and raising citizens' inclusion in the processes of their transformation. The Small Interventions model is being continuously monitored, improved by experience based on learning, and adaptable to the dynamic structure of everyday life and the latest trends and technologies. During the implementation of each of the projects, it is necessary to perform the following: an internal evaluation of defined steps and mechanisms in relation to the criteria of their efficiency, adaptability and innovation (Small Interventions team); the projects evaluation based on the participants reactions and experiences (the City, citizens and experts) and monitored via direct contacts and specially designed questionnaires; the evaluation of the project's impact on the community measured by monitoring the users number of a particular public space (Small Interventions sites) and the evaluation of the public reactions on social networks. It implies questionnaires for the participants distributed before the action and monitoring the intensity/ frequency of pilot site users during and after the action. The Small Interventions method, presented in this set of methodological steps, can be adapted to each social context, initiating positive changes in public spaces and communities by turning problems into potentials.

These methodological steps could be monitored in two ways:

> 1. Chronologically – from the detection of problems and potentials of public space to the small intervention realizations – in relation to mechanisms and tools that are specific to each type and size of small interventions.
> 2. Diagonally following the engagement of the certain actors engaged in the redesign process of public spaces that is related to specific steps.

All the methodological steps were carried out through intense communication and dissemination activities which were strongly supported by digital tools and social media. Communication relied on digital technologies, used in order to facilitate dialogue between citizens, the city and professionals, to enhance the

process of collective learning, support participatory pilot project implementation and to engage citizens with project activities. The use of digital technologies is also aimed at raising awareness of the digital shift in decision-making processes among both the city and citizens, promoting decision-making and making public space management transparent and open.

By establishing new communication models between the city and citizens using existing digital tools, available and widely used among local communities (e.g., the Viber community, online application forms, etc.), the method allows citizens to participate in decision-making processes, but also to propose design solutions. It initiates the identification of stakeholders who will be invited by the city council to provide design and/or funding modifying existing legislation and accelerating legal procedures. The redesign of public space design is conducted by Small Interventions on original, design-conscious and engagement principles. It envisages sustainable /circular approach requiring constant citizen feedback on which every step and activity in redesign process is built (e.g., Propose location, Propose project idea, Apply your project, Apply to participate, Apply for design solution, Apply for donation, Vote for the best design solution, Share your story, Vote for the most successful Small Interventions project for this year, etc.). The advantage of this approach is reaching out to more citizens and reducing the cost and human resources.

IV THE FUTURE IS IN SMALL

Public spaces have the power to bring together the city and its citizens by initiating the engagement of both. On the one hand, the city allows the citizens to belong to the city by allowing them to act in organised and spontaneous actions in the public space. On the other hand, citizens, through active participation and engagement in the production of public spaces, identify with the city and make the city belong to the citizen. This implies that urban life has to be free and deprived of unnecessary physical regulations and restrictions and environmental threats in order to enable a freedom of social relationships, engagement and action of both the city and citizens in public space. In the light of the *New Normal*, public spaces carry the potential for reconnection. Unlike closed and private spaces, open public spaces offer the possibility of the urgent redesign in terms of creating a network of small interventions, integratively affecting the new interactions between the city and citizens.

The engagement of both is accomplished through collective power of Small Interventions that make *massive small* changes in the process of public space redesign, raising public awareness of public spaces that reflects the intensity of their use, significantly improving the dialogue between the city and citizens by activating local community, re-establishing local community spirit, and improving open public spaces management. In the whole process, Small Interventions include professionals that are urban activators, mediators, moderators and catalysts for the whole process of urban planning and management of open public spaces. The experience of Small Interventions testing in Banja Luka has envisaged and evidenced behaviour changes of all the actors involved in the redesign process of public spaces who learn to work together through project engagement. The city administration and its communication with citizens and professionals is significantly improved through invitations for cooperation, open source database, simplification and acceleration of administrative procedures, creation of potential open public space network owned by the City. Professionals have developed co-creative skills in terms of providing critical thinking and design solutions based on a common strategy and through engaging and inviting young local talents. That has opened new opportunities for young talents and strongly supported a collective design scene. The citizens, who were involved in all the project phases and most of the activities, have reflected and accepted the initial premise that the city belongs to their citizens. The fact they were able to experience the method directly and to see the result of the pilot project that they were involved in has eventually triggered change in their behaviour towards being more involved in maintaining and using the place. In other words, the Small Interventions method has encouraged the citizens to get involved in other similar projects and motivated them to create, use, maintain and upgrade their own public space environment.

By introducing collaborative design approaches into existing planning procedures and novel tools and guidelines for open public space redesign and management, Small Interventions could contribute to a wider and systematic change in urban design practices, after all, in regions passing through transitions and with lack of planning tradition or bottom-up movements in urban space. Given that the method consists of three main interrelated processes (components, implementation, and testing), it can be easily and partly adapted to different cultural contexts, local specificities, and applied in other cities in the region. In the case of Banja Luka, the Small Interventions project has contributed to establishing a knowledge base of public spaces in the city that brought together both tangible (e.g., physical features, accessibility, etc.) and intangible (e.g., a sense of place, memory), features of urban space, and identified public space problems and potentials. Through the method application, new data and knowledge is generated.

Small Interventions can set in motion the future activities related to changes in existing regulations and policies, standards and protocols: a systematic form for open public space management; procedure acceleration and simplification; detection, selection and programme guidelines for open public spaces; citizen and professionals engagement in all project phases from location detection to applying, participating, selecting and evaluating design project and form of direct communication between the city and citizens.

The urban dynamics and the dynamic structure of everyday life are becoming more and more fluid every day, more uncertain and unpredictable, which implies that we should act small, act continuously and act together. Time of megaproject implementations in urban space that we evidenced in the second half of the 20th century is already passing[28], and new, more dynamic, adaptable and open processes of public space design are coming. The Small Interventions method is an experimental platform that enables different types of small and collaborative projects to emerge, triggering wider change and innovation in design practices.

NOTES

1   Boyer, The City of Collective Memory: Its Historical Imagery and Architectural Entertainment, 2001.

2   United Nations. New Urban Agenda. UN Habitat. December, 2016. https://unhabitat.org/about-us/new-urban-agenda.

3   Kevin Lynch, *The Image of the City* (Cambridge, Massachusetts, and London, England: Massachusetts Institute of Technology, 1990) 5.

4   Jane Jacobs, *The Death and Life of Great American Cities* (New York: Vintage Books (A Division of Random House), 1961), 35.

5   Joan Ockman, "A tale of two villages, Jane Jacob, Marshall McLuhan and their visions of collective life" in *Architecture and Collective Life,* edited by Penny Lewis, Lorens Holm and Sandra Costa Santos (London and New York: Routledge, 2022)

6   Hannah Arendt, *The Human Condition* (Chicago and London: The University of Chicago Press, 1998), 58.

7   Arendt, *The Human Condition,* 52-53.

8   Naglaa A.Megaheda and Ehab M.Ghoneim, "Antivirus-built environment: Lessons learned from Covid-19 pandemic", *Sustainable Cities and Society* 2020, Vol 61, 102350, https://www.sciencedirect.com/science/article/pii/S2210670720305710.

9   Anthony Giddens, *The Consequence of Modernity* (Polity Press, 1996), 3.

10   Giddens, *The Consequence of Modernity*, 6.

11   Richard Sannet, *The Fall of Public Man* (England: Penguin Books, 1978), 12.

12   Ashraf M Salama, " Coronavirus questions that will not go away : interrogating urban and socio-spatial implications of COVID-19 measures", *Emerald Open Res* 2020, 2:14 (https://doi.org/10.35241/emeraldopenres.13561.1).

13   Link:https://drive.google.com/file/d/1_F_tICFGlcyPUxpTICPJHYHUxSchoVcH/view

14   Peter Bishop and Lesley Williams, *The Temporary City* (London and New York: Routledge, Taylor & Francis Group, 2012), 21-35.

15   Link: https://smarturbanism.org.uk/

16   Sannet, *The Fall of Public Man*, 3.

17   Henri Lefebvre, *Writing on Cities*, translated and edited by Eleonore Kofmana and Elizabeth Lebas (Oxford and Massachusetts. Blackwell Publishers Ltd, 2000), 19.

18   Kaja Pogačar, "Urban Activator – Participatory and Bottom-Up Tool of Urban Change: Definition and Selected Examples". *Prostor* 2014, 22(2), 193.

19   Link: https://massivesmall.org/.

20   Bishop and Lesley, *The Temporary City,* 3.

21   Oriol Bohigas, "Strategic Metastasis", in *Barcelona: Spaces and Sculptures* (1982-1986). Barcelona: Ajuntament de Barcelona, (Area of Urbanism and Public works and Joan Miro Foundation, 1987), 11-24.

22   Helena Casanova and Jesus Hernandez, *Public Space Acupuncture: Strategies and interventions for activating urban life* (New York: Actar Publishers), 2014..

23   Henri Lefebvre, *The Production of Space* (Oxford, UK & Cambridge, USA: Blackwell, 1991).

24   Lefebvre, *Writing on Cities*, 158.

25   Lefebvre, *Writings on Cities*, 19.

26   Lefebvre, *Writings on Cities*, 18.

27   Chase, John Leighton, Crawford, Margaret and Kalinski, John, eds. *Everyday Urbanism* (New York: The Monacelli Press, 2008).

28   Manuel Solà-Morales, *De cosas urbanas* (Barcelona: Gustavo Gili, 2008).

BIBLIOGRAPHY

Arendt, Hannah. The Human Condition. Chicago and London: The University of Chicago Press, 1998.

Ashraf M. Salama, "Coronavirus questions that will not go away : interrogating urban and socio-spatial implications of COVID-19 measures", Emerald Open Res 2020, 2-14 (https://doi.org/10.35241/emeraldopenres.13561.1).

Bauman, Zygmunt. Liquid Modernity. Cambridge: Polity Press, 2006.

Bishop, Peter and Williams, Lesley. The Temporary City. London and New York: Routledge, Taylor & Francis Group, 2012.

Boyer, Christine. The City of Collective Memory: Its Historical Imagery and Architectural Entertainment. Cambridge: MIT Press, 2001.

Casanova, Helena & Hernandez, Jesus. Public Space Acupuncture: Strategies and interventions for activating urban life. New York: Actar Publishers, 2014.

Chase, John Leighton, Crawford, Margaret and Kalinski, John, eds. Everyday Urbanism. New York: The Monacelli Press, 2008.

Giddens, Anthony. The Consequence of Modernity. Polity Press, 1996.

Grazer, Brian, and Charles Fishman. A Curious Mind: The Secret to a Bigger Life. New York: Simon & Schuster, 2015.

Jacobs, Jane. The Death and Life of Great American Cities. New York: Vintage Books (A Division of Random House), 1961.

Joan Ockman, "A tale of two villages, Jane Jacob, Marshall McLuhan and their visions of collective life" in Architecture and Collective Life, edited by Penny Lewis, Lorens Holm and Sandra Costa Santos. London and New York: Routledge, 2022.

Kaja Pogačar, "Urban Activator – Participatory and Bottom-Up Tool of Urban Change: Definition and Selected Examples". Prostor 2014, 22(2), 188-199.

Lefebvre, Henri. Writing on Cities, translated and edited by Eleonore Kofmana and Elizabeth Lebas. Oxford and Massachusetts. Blackwell Publishers Ltd, 2000.

Lefebvre, Henri. The Production of Space. Oxford, UK & Cambridge, USA: Blackwell, 1991.

Lynch, Kevin. The Image of the City. Cambridge, Massachusetts, and London, England: Massachusetts Institute of Technology, 1990.

Naglaa A.Megaheda and Ehab M.Ghoneim, "Antivirus-built environment: Lessons learned from Covid-19 pandemic", Sustainable Cities and Society 2020, Vol 61, 102350, https://www.sciencedirect.com/science/article/pii/S2210670720305710

Oriol Bohigas, "Strategic Metastasis", in Barcelona: Spaces and Sculptures (1982-1986). Barcelona: Ajuntament de Barcelona, (Area of Urbanism and Public works and Joan Miro Foundation, 1987), 11-24.

Sannet, Richard. The Fall of Public Man. England: Penguin Books, 1978.

Stankovic, J., Karan, I., Trkulja, T. & Aleksic, D. Male intervencije u prostoru/metodologija: Studija za aktiviranje potencijala javnih prostora Banja Luke, ured. M. Stankovic & Diana Stupar. Banja Luka: Arhitektonsko-građevinsko- geodetski fakultet Univerziteta u Banjoj Luci i Grad Banja Luka, 2020.

Solà-Morales, Manuel. De cosas urbanas. Barcelona: Gustavo Gili, 2008.

United Nations. New Urban Agenda. UN Habitat. December, 2016. https://unhabitat.org/about-us/ new-urban-agenda.

DA LI JE JAČI OSEĆAJ MESTA MOGUĆ?
ANTROPOCEN, NE-RELACIONO I HIJAZME
Stefan Janković

Antropocenske debate su konačno stvorile epohalni senzibilitet u pogledu opsega i obima ljudskog ekološkog otiska na planeti, ali su takođe aktuelizovale važnost mesta unutar kompleksnih ekoloških tekstura. Proširujući koncept hijazma, ovaj rad se bavi neizvesnim lokalizacijama u antropocenskoj eri i zalaže se za jači osećaj mesta. Prvo, rad kritikuje pristupe koji ozbiljno podrivaju mesto prenaglašavanjem njegove funkcije u širim prostornim procesima i koncentrisanjem isključivo na ljudske simboličke konstrukcije. Drugo, rad tvrdi da, uprkos ponovnom fokusiranju na materijalnost i obezbeđivanju ogromne uloge ne-ljudima kao posrednicima u komponovanju mesta, naglašavanje ontologije tokova pronađenih u kolažnim pristupima i dalje drži mesta podređena prostoru. Pod pretpostavkom da se ne-relaciono mora shvatiti ozbiljno u eri antropocena, konačno, rad raspravlja kako mesta, kao hijazme, predstavljaju delimične ontološke kondenzacije sa različitim elementima koji nisu izloženi i samo su „lokalno" povezani. Pored ne-relacionog, tvrdi se da, da bi se stekao jači osećaj mesta, granice se moraju smatrati nečim što dozvoljava prisustvo umesto razdvajanja, kao i događaje koji spajaju i razdvajaju različite temporalnosti. Osim ovog ontološkog prilagođavanja, rad se završava razmatranjem kako bi arhitektura mogla sazvati izdržljivost mesta unutar promenljivog hijazmičkog konteksta antropocena.

KLJUČNE REČI: ANTROPOCEN, HIJAZAM, TEORIJA MESTA, NE-RELACIONO

NE ŽIVETI U PEĆINAMA: FENOMENI I SLIKE ZEMLJE I SKLONIŠTA
Aleksa Bijelović

"E sad, to je kao u onom filmu 'The Croods' – ljudi su želeli da ostanu u pećini. Neki su želeli da ostanu u pećini, a ta mlada devojka, želela je da izađe i ponovo živi i da se nosi sa izazovima života u drugačijem svetu."

Rad prikazuje lično iskopavanje širokog koncepta unutrašnjosti, njegovih značenja i višestrukih aspekata. Tačnije, njegova moćna prostorna poetika ukorenjena je protiv tradicionalnih pogleda koji se generalno koriste u i oko arhitektonske profesije. Zadržan je na različitim čitanjima koristeći lokalni društveno-politički kontekst neobičnog mesta zapadne Australije kao šarenu pozadinu u svrhu interpretacije.
Reč je o subjektivnim realnostima i njihovom odnosu. Iako je pokrenut svakodnevnim životom ovde i sada, on odražava mnogo širu sliku ljudskog stanja našeg vremena i sveprisutnog koncepta pećine, krajnje ljudske kolevke ugrađene u naše jezgro. Priča je i o poreklu i svemu što počinje u pećini.

„Ali ne razume se koliko sigurno i toplo mora biti u toj WA pećini [...]"

KLJUČNE REČI: UNUTRAŠNJOST, FENOMENOLOGIJA, KONTEKST, DIJALEKTIKA, POETIKA

NOVA UDOBNOST: KA ŽIVOTU NAKON PANDEMIJE
Jelena Atanacković Jeličić, Milan Rapaić, Igor Maraš, Dejan Ecet

Nedavni periodi u globalnoj istoriji su stavili teška opterećenja na ljudsko stanje. Promene u životu su kasnije dovele do spontanih prilagođavanja stambenih jedinica odozdo prema gore. Tokom 2020. i 2021. godine definisanje prostornih karakteristika ovih promena bio je glavni cilj tri master radionice na Departmanu za arhitekturu i urbanizam Fakulteta tehničkih nauka u Novom Sadu. Rezultati tih radionica poslužili su kao skup rešenja za istraživanje koje je usledilo. Koristeći dobijene podatke, transkribovani su apstraktni dijagrami arhitektonske funkcionalnosti. Primenjeni su na algoritam i kompjuterski softver koji implementira algoritam, koji je proizveo širok spektar prostornih rešenja. I analitički i numerički pristupi proizvedenim rešenjima, uz dodatne kriterijume koji su primenjeni i testirani na nekim poznatim teorijskim razmišljanjima iz novije istorije, daju uvid u moguću budućnost višeporodičnog stanovanja.

KLJUČNE REČI: POSTPANDEMIJSKA ARHITEKTURA, METODA PROJEKTOVANJA, ALGORITAM, SAVREMENA ARHITEKTURA

MALE INTERVENCIJE – METOD ISTRAŽIVANJA ZA REDIZAJN [MALIH] JAVNIH PROSTORA
Jelena Stanković, Diana Stupar, Isidora Karan

Urbani život mora biti lišen nepotrebnih fizičkih propisa, ograničenja i ugrožavanja životne sredine kako bi se omogućila sloboda društvenog angažovanja i delovanja u javnom prostoru. Očigledno, prisutna preterana kontrola i strah u javnim prostorima umanjuju kvalitet društvenih odnosa. COVID-19 je intenzivirao ovu pojavu, nazvavši je Nova normala. Ovo zahteva diskusiju o novim mehanizmima pomoću kojih grad može da prevaziđe društveno-prostornu diskriminaciju na sledeće načine: stvaranje platforme za unapređenje sadašnjeg razumevanja dinamike koja se razvija između pandemije i arhitekture, sinteza postojećeg znanja, diskusija o lekcijama koje treba naučiti i istraživanje transformativnih rešenja ka održivijim i otpornijim strategijama dizajna u post-COVID eri.

Kao odgovor na Novu normalu, Male intervencije su model koji omogućava da se javni prostori postepeno unapređuju nizom malih, pažljivo osmišljenih i strateški odabranih intervencija u javnim prostorima uz međusobnu saradnju gradske uprave, stručnjaka i građana. Predmet Malih intervencija su mali prostori realizovani sa skromnim budžetom, kratkim rokovima i ubrzanim procedurama. Iz perspektive planiranja, Male intervencije su deo dinamičnog, fleksibilnog i prilagodljivog urbanizma koji ide u korak sa promenama društveno-prostornih odnosa izazvanih COVID-19.

KLJUČNE REČI: JAVNI PROSTOR, MALE INTERVENCIJE, DIZAJN, DINAMIČAN, FLEKSIBILAN, PRILAGODLJIV URBANIZAM

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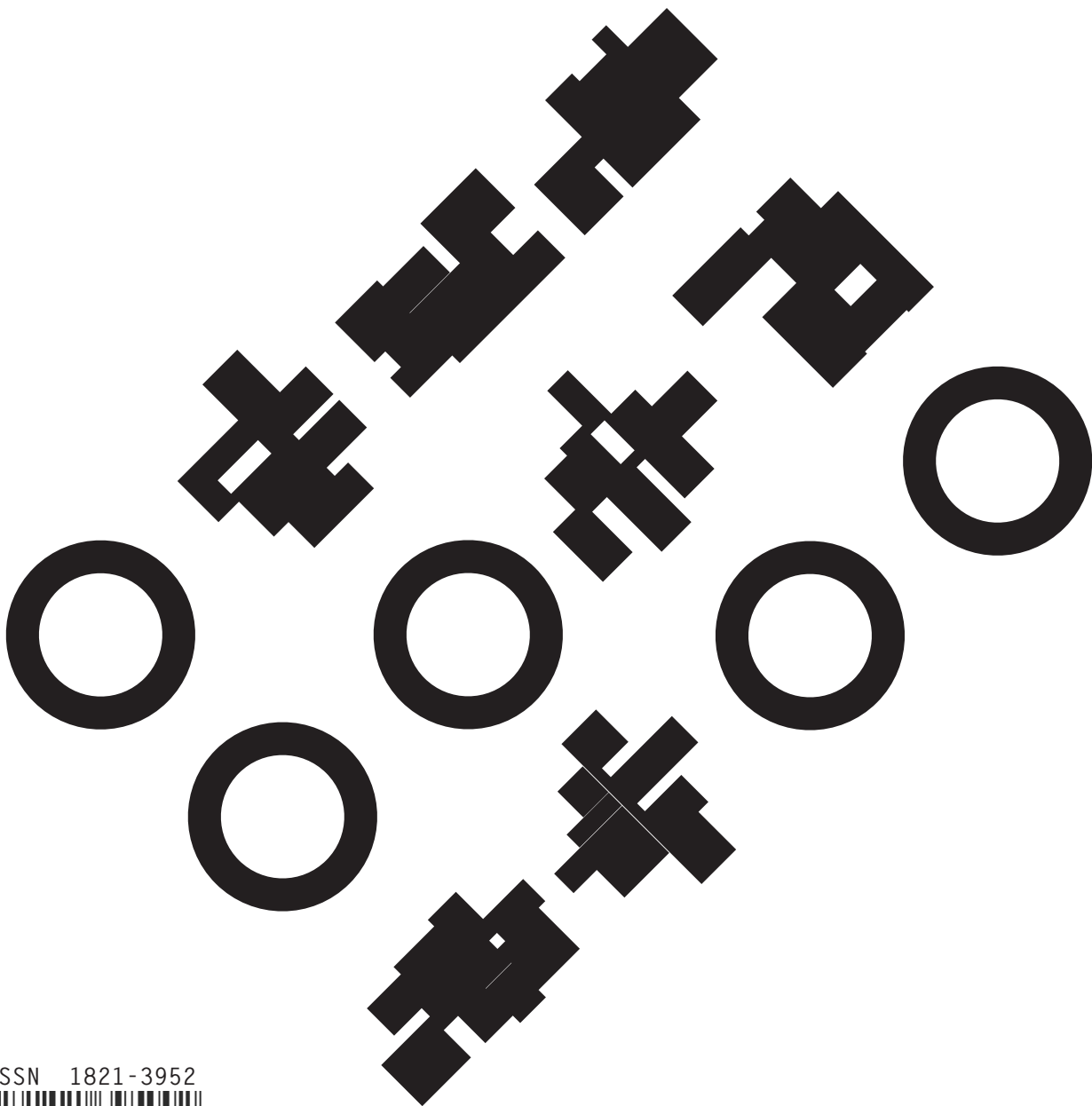Reprints of articles published in SAJ can be purchased. If you have any queries, please contact the Editorial Office at saj@arh.bg.ac.rs.