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Ephemeral occupancies: Non-linear approach to adaptable architecture

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Abstract: When dealing with the daily demands of a sustainable approach in architecture and the rapid development of society, we must accept change and time as an integral part of a building system. An adaptable approach understands architecture as a non-linear process which enables a dynamic response to changing environmental and contextual conditions with the aim to extend the life of a building. The application of adaptability is as ambivalent as the term itself. Therefore, the paper opens a discussion on different perceptions of adaptability in architecture. Adaptability cannot be only understood as moving partitions or vast open spaces. There is a variety of different principles leading to adaptability that can prove the versatility of use - from the basic understanding of flexibility to comprehensive polyvalence. The paper discusses the relationship between capacity and tendency of an architectural space and its components. The discussed relationship is based on actual and virtual properties of an object and their finiteness of interpretation. The paper focuses on non-linear strategies such as a narrative, feed-back and interpretation that could be applied to design to achieve adaptability as part of the proposed strategy called ephemeral occupancies. The manifold of strategies is discussed, and the result of the conceptual analysis is a framework distinguishing non-linear strategy supporting the divergence of capacity and tendency in the context of adaptability.

Keywords: adaptability, capacity, tendency, narrative, feed-back, interpretation, polyvalence

INTRODUCTION

An important aspect of sustainability in architecture is its long-life, which should be achieved by flexible responses to changes caused by the rapid development of social and economic demands on the programs, spaces, and technological and interior equipment of buildings. Therefore, we believe that adaptability in architecture is an important strategy in architectural design, not just an added value. Examining adaptability in the discourse on architecture from a broader perspective brings an unobstructed view of the issue of longevity and resistance to change. An important aspect is the time scale of the intervention. Longevity should not be about programs, functions, or typological characteristics. It should refer to the building and its construction system, which we perceive as hybridlike. A key factor in longevity is the independence of the shearing layers of the structural system and their time scale characterized by types of adaptability (1. Adjustability, 2. Changeability, 3. Reconfiguration, 4. Scalability within or outside the building volume, 5. Convertibility (Adaptive Reuse), 6. Movability (Austin, Schmidt, 2016).

We can group these scales into two basic scenarios that a building confronted with adaptability must face: 1. the possibility of a change of use; 2. the ability to change the building based on a change of context. In the construction system understood this way, we perceive the function as ephemeral. Ephemerality characterizes a short, fleeting, impermanent, or unstable extension, phenomenon, presence, or creation: of short duration (Gausa, Guallart, 2003). Ephemerality can be one-off (in nature, for example, annuals) or cyclical (in nature, for example, perennials that die for the winter in their above-ground system, but underground, in the root system, hibernate and wait for suitable conditions for growth). The framework of ephemerality defined in such a manner also agrees with Leaman's conceptual framework for change (cyclical and linear changes), which divided changes into two categories, with regard to the impact of changes: 1) Load - demands on spatial qualities, which can be a) sudden - cyclical change of low frequency of changes, linear short-term change; b) or constant (limiting) – cyclical change of high frequency, linear long-term change; 2. Adaptability is divided according to changes into: a) flexibility - cyclical changes of high frequency, linear short-term changes; b) adaptability - cyclical

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changes of low frequency, linear long-term changes (Leaman, 1992).

Such a defined framework of ephemerality creates a spatial relationship that we call occupancy: ownership, control, deed, habitation, holding, inhabitancy, possession, and settlement. Ephemeral occupancies are activities and events occurring within a building system that is ambiguous, generic, or specific. They require an open, polyvalent, free, democratic, and adaptable form. They work with hybrid material compositions of different temporal material flows, with dynamic settlement processes and new forms of ownership. Ephemeral occupancies establish a new way of thinking, lifestyle, and approach to climate change. Adaptable architecture encourages a change in the lifestyle, thinking and understanding of the period in which the premises are inhabited. So far, a huge effort has been made in sustainable and energy efficient and passive architecture to ensure the efficient operation of buildings without changing the lifestyle of users. Climate change caused by the speed and disproportionate increase of negative effects on the environment requires changes in our behaviour, daily activities, resources, production and composition of food, the way we work and look at the space we inhabit and use. In the same way, the incorporation of adaptability into practice requires a change in our relationship to space, to its ownership, use and qualities.

The paper is part of an on-going research focused on strategies for adaptable architecture that discuss the reasoning, strategies, and specific examples of adaptability in architecture. This paper explores the phenomenon of non-linear design processes expressing our perception of the adaptability application to carbon-neutral construction. The phenomenon is investigated using the scientific method of conceptual analysis based on examining the relationship between capacity and tendency in the context of adaptability. The study examines the creation of a conceptual system for applying adaptability approaches and strategies in architecture concerning the capacity and tendency of building systems and architecture.

LINEAR AND NON-LINEAR DESIGN THINKING

Designing architecture based on classical traditions is bound to a hard typology of the Neufert type, which works with the strict spatial organization and typological legibility. Also, the tradition of functionalism and modernism carries with it a monofunctional use and a generalized user. The weight of these entrenched patterns of creating and perceiving architecture often leads to limiting spatial qualities that make it difficult to cope with new and unpredictable changes and result in the need to undergo costly reconstructions or even demolitions. Such solutions carry with them a lot of embodied energy, which is based on fossil fuels and contributes to the production of carbon dioxide and environmental pollution. We can consider such a design system a linear one that can be expressed by very simple equations without variables or other complications. The linear system can lead to a clearly defined and legible typology limited to one function, or a set of predefined functions (rigid perception of mix-use). The basic principle is additivity: *"The system is considered linear if the sum of two solutions is a solution; in other words, if the sum is the exact sum of the parts."* (Saunders, 1997)

Based on the above, it is necessary to think about the architecture design strategy that would be based on a non-linear understanding of the process and typology. A state of simple adaptation could be considered a strategic goal. Adaptability can be defined in different ways, but the most common definition in the field of architecture is by Austin and Schmidt (2016): *"Adaptability can be defined as the capacity of a building/object to effectively adapt to the evolving demands of users and the environment/context, to maximize its value throughout its life."* The important terms in the definitions are capacity and value. The value of an architectural work (building) can be defined as a contribution to the field of economy, culture, urbanity, society, and sustainability. The capacity of a building in the context of adaptability indicates the maximum fitness of all building layers for changes. For a building to achieve a certain adaptable capacity, it must have specific characteristics.

Durmisevic (2018) defines properties of adaptability (from her perspective of reversibility) as: a) position, size, and sufficient access to daylight; b) position of circulation and entrances within the building and their mutual distance with respect to the need for dividing or connecting functional units; c) the construction system in relation to the circulation core, dimensions of the "module" and construction methodology (in case of possible deconstruction); d) clear floor height in relation to the exterior wall and daylight access; e) material compositions that have different life cycles; f) material compositions whose functions have different life cycles. A building's capacity to adapt (based on its properties) is supported by principles leading to adaptability such as: 1. Modular coordination; 2. Open plan; 3. Frame and specific space (open building); 4. Loose-fit; 5. Shearing layers; 6. Decomposition, Recycling and Circularity. For adaptable design, it is important to define its parameters, which are usually dealt with during changes. Yona Friedman defined adaptability parameters as the *use weight* of the room, calculated for a specific life cycle and *effort matrix*, availability of spaces, and their connection, for which he used qualities such as distance from the core or daylight and frequency (Friedman, 1975). A key component of a building system is *access*. If the chosen access system supports adaptability, we can call it a polyvalent component. In this context, the position of the staircase, an external gallery, double-helical stairs, or a polyvalent spatial organization supported by a central staircase could be considered polyvalent components.

Manuel DeLanda (2015) distinguishes the philosophical difference between property and capacity. Properties are always actual because an object, at a given time, has or does not have a certain property. But the capacity is not necessarily actual if the object, in the given state, does not require it. This means that capacity can be real without being actual. DeLanda calls this ontological state virtual. He compares this double life of material systems to Deleuze's understanding of the virtual: *"The virtual is not opposed to the real but to the actual. The virtual is fully real in so far as it is virtual …The reality of the virtual consists of the differential elements and relations along with the singular points which correspond to them. The reality of the virtual is structure. We must avoid giving the elements and relations that form a structure an actuality which they do not have, and withdrawing from them a reality which they have."* (Deleuze, 1994) DeLanda explains the concept of structure in Deleuze's definition of the virtual as a structure of possibilities. This structure can be defined by critical thresholds of its stability.

We can compare these critical thresholds to the critical points of failure defined in their observation of changes affecting adaptability by Gosling, Sassi, Naim, and Lark (2013). The critical threshold in this context is a failure understood as the inability of a building to meet specific requirements for functionality (technical performance), lifestyle, user, and market expectations (economic performance), and legal requests. The need for a change arises when one of these requirements comes into disharmony with the other. For example, when there is a difference between the requirements for functionality and the expectations of the users, the two requirements come into conflict and thus a correction is needed. Christopher Alexander (1979) looked at the problem in a similar way: *"The biggest key to the internal structure of any dynamic process lies in its response to change. Of course, culture does not move from one change to the next in discrete steps. New threads are constantly being woven, making change fluid. However, in terms of impact on the struc-*

ture, change becomes significant only at the moment when the failure of misfit becomes critical—the moment when it is recognized, and the users feel that something is wrong with the structure". (Alexander, 1979)

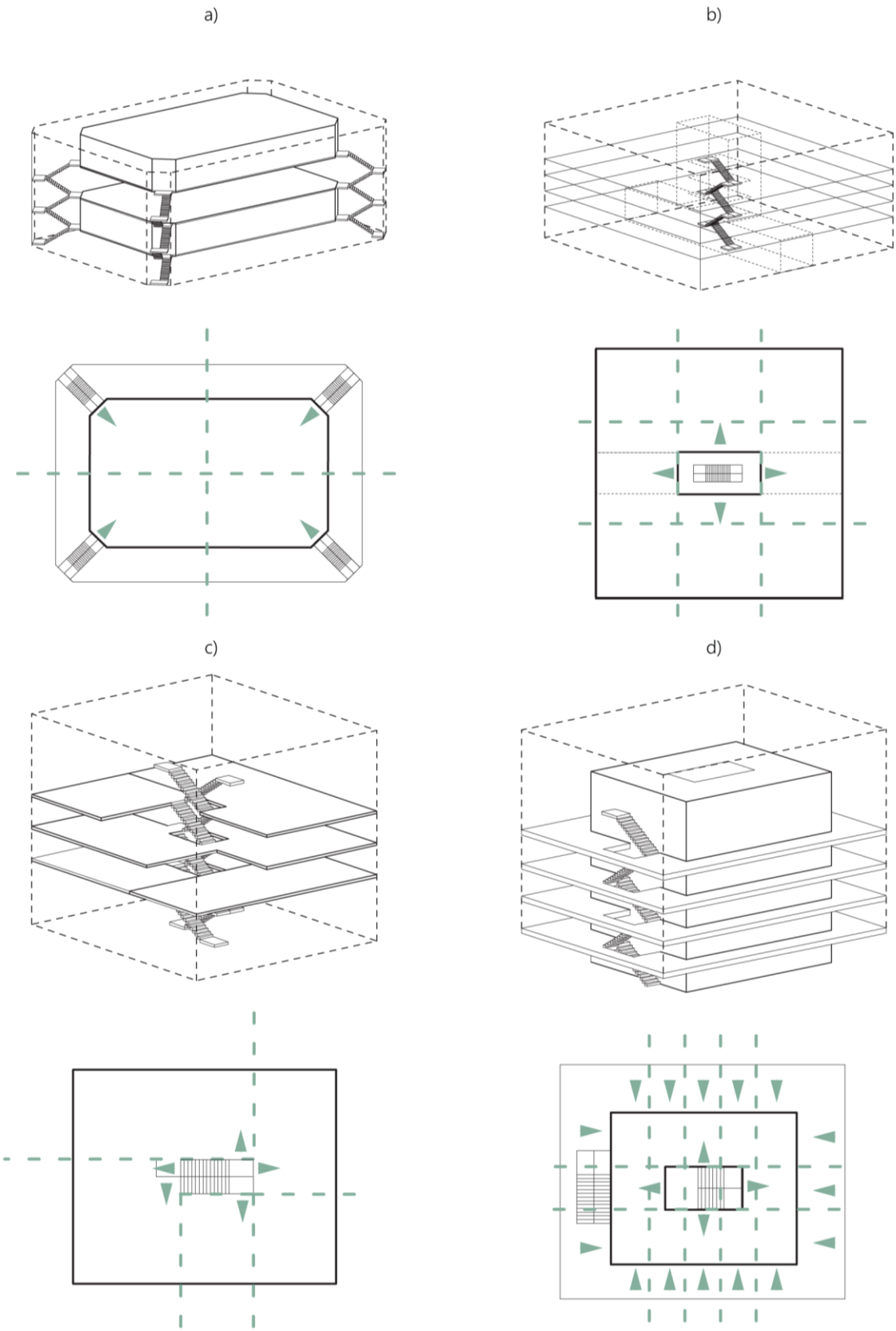

Fig. 1. Different approaches to access as a polyvalent feature in adaptable building. The type and position of the access component could enable adaptable operation such as separation, connection, or clustering of space in the future. a) corner access points – based on Roche office building by Christ & Gantembein, 2021; b) central access point; c) central access point with double-helical stairs; d) access points from external gallery – based on Máj cultural centre by SLLA, 2014. (Source: Lüley, 2023)

If we were to name a virtual state of an object that meets the above parameters, we could call it a tendency. In our case, we can define a tendency as the virtual state of an object that has specific properties with which it fulfils a certain capacity. The building's capacity to adapt (based on its properties) is supported by principles leading to adaptability such as: 7. Polyvalence; 8. Spatial plan (Raumplan); 9. Freespace; 10. Ambiguity; 11. Elastic space; 12. Frame and generic space. DeLanda defines the mutual relationship of capacity and tendency based on the finitude of their possibilities. Tendency has a limited number of possibilities, while capacity has an unlimited number of possibilities. In the context of adaptability, we could compare these two concepts to the relationship between generic flexibility and polyvalence. Pierre von Meiss presented a similar parallel, where he compared the mosque in Cordoba with the cathedral. The mosque in Cordoba is designed as a hypostyle hall, which at first glance appears to be an unusable space compared to the openness of the empty space of the cathedrals. Nevertheless, von Meiss argued that the density of Cordoba's columns offers fulcrums for easier interpretation, while the sparsity of the cathedrals' open space confuses users and forces them to enclose the space unnaturally. It creates a tension between their position in space and the limits of space (von Meiss, 1990).

Herman Herzberger, the author of the principle of polyvalence, reacts to this relationship in the same way. He says that generic space, which should be a suitable solution for constant changes, deprives architecture of its qualities and meanings. He also claims that multi-purpose solutions are proposed to provide specific final solutions for pre-determined purposes (Hertzberger, 2014). On the other hand, polyvalence in architecture provides the competence of spatial compositions that, when faced with unexpected situations, have the capacity to respond effectively. Polyvalence works with reference points that are represented within a building as components, spatial compositions, or situations. These reference points (singularities in DeLanda's interpretation) are points that, after crossing the critical threshold of an unsustainable state, provide a new interpretation and solution for a new situation. Hertzberger argues that an uncertain future and generic space left to future functions and future users means too much specificity. *"The building should listen more than speak."* (Hertzberger, 2014) In his concept, he turns to history and the present, and observes the way of life and the context. His message is: *"Architects should not provide neutral buildings, but buildings with character, explicit, recognizable, authentic, original without enforcing a specific taste and without deriving its characteristics from function and type"* (Hertzberger, 2014).

Meredith and Sample describe the generic as our new contemporary collectivity: *"History has become a diffuse narrative of contingencies. Our current state is a sort of post-modernism without semiotics, postmodernism without language. What is left is both whole and fragmented, bits and pieces of a flattened ontology where matter, data, and images are made inextricable. Today we value things that are both repeated and singular. We are constructing our worlds through representations of representations,"* (Meredith, Sample, 2016). In this case, it is a critical attitude towards the generic, when blanket solutions are masquerading as flexibility. We should approach the responsible design of adaptability with care and seek the correct application of tendency, capacity, competence, and polyvalence to spatial qualities. According to Salingaros (2004), the optimal method of achieving an adaptable design is to understand the processes of Darwin's theory. He means the evolution of a group of similar competing solutions for a specific project, from which the most adaptable one is always selected in the decision-making process. For such a process, it is necessary to create a set of criteria that are used in the selection of various alternative proposed solutions. For this reason, Salingaros proposes criteria based on adaptability that logically generate adaptable solutions. He suggests a parallel with computer science to achieve an effective strategy for designing an adaptable architecture. He therefore likens the design process to an algorithm: a set of steps that must be followed to produce the desired result.

There are two approaches to achieving a result in the field of design or research: 1. Initiated approach (Top-down) and 2. Evolutionary approach (Bottom-up). Based on his research, he was able to prove that the effectiveness of achieving results is comparable. 1. The initiated approach (Top-down) works with the selection of solutions in two processes: a) searching for a suitable prototype from the past (even from the recent one), which, although adapted to the given situation, may not be correct in the current one, b) virtual presentation of the use of the prototype in the head of the author in the design process. The initiated approach uses proven sources of forms and becomes the result of one person's decisions. Such an approach may not be ineffective, but it can be dangerous if the author relies on prototypes of architectural forms that are ineffective or even counterproductive in the given time and situation. There is still a group of architects that follows the Vitruvian model of architecture, which is based on "classical" rules. And that is the creation of a form that is completely thought out during the design stage and uses models of architectural expression according to one's own taste or belief. Their results are convenient, orderly, human-scaled, but the problem is their static, generalized and default form, which hardly copes with change.

2. The evolutionary approach (Bottom-up) works in the same sequence of processes as the initiated approach, but a) it selects from different sources. Instead of looking for ready-made prototypes, it uses models of behaviour and reactions to inputs and outputs during the generation of the design and during the expected life of the building. At this point, Salingaros relies on Christopher Alexander's models of architectural and urban patterns; b) in the second process of designing as such, i.e. the author's virtual world, several parties are involved in the process and look for a system (algorithm) of solutions applicable at the current time (Salingaros, 2004). Although these two approaches may appear to be very different from each other, this is not always true. In understanding the sequence of steps in design, they are the same, the difference is in the form of the selection of tools with which they work. It is also important to mention the type of architecture for which one of the approaches could be chosen. For unambiguous architectural forms of cultural character or small-scale residential architecture, the initiated approach might be the right choice, under the conditions mentioned above. Another, third possibility, is the synthesis of these two approaches, where one part of a building is designed initially, and the other parts are designed evolutionarily or left to their own evolution.

In the context of designing adaptive and adaptable architecture, Patrik Schumacher (2013) sets himself the task of defining relevant systems or urban formations that are to be networked, correlated, and adapted to each other. To compose and analyse space and urban structures, Schumacher relies on the breakdown into sub-systems of occupancy (use) and movement, which include the distinction and correlation of static and dynamic built environment and infrastructure. To achieve such a model, he suggests analysing the city and decomposing it down into subsystems and components on two levels: 1. form-spatial decomposition (layout, subsystems, or components) and 2. functional-social decomposition of the city. Each of these levels is supposed to create subsystems, which according to the previous division are formed into 1. different character typologies and 2. different functional typologies, understood as typical patterns of communication interaction. Decomposition is followed by synthesis, which can be understood as the composition of these relationships, which in parametricism is understood as correlation. If all subsystems are mutually correlated,

we can talk about a living structure ready to face various obstacles and especially changes.

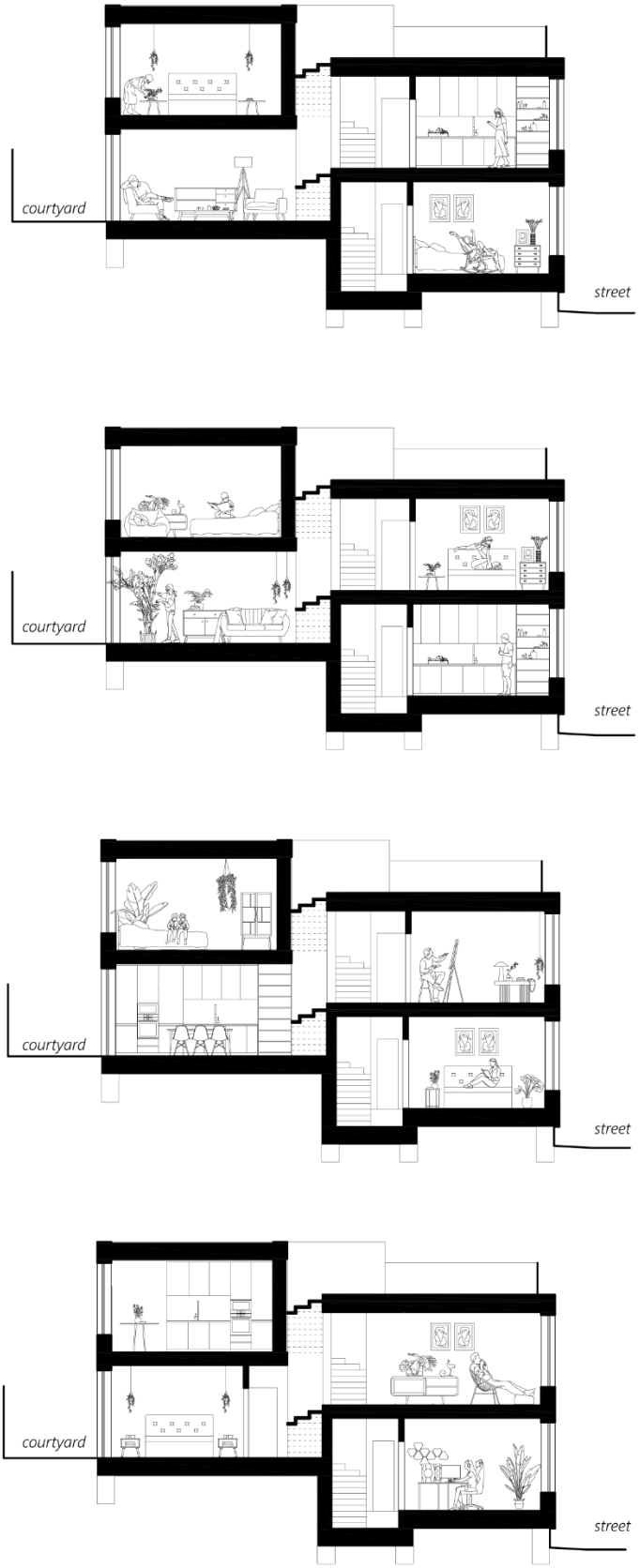

Fig. 2. Adaptable house NO.1 – non-hierarchical spatial organisation enables polyvalence of spaces. Every room of the house is connected to central circulation and services and can be interpreted by the users according to their preferences: orientation to exterior (street or courtyard), connectivity of the spaces and their position within the house. (Source: Lüley in cooperation with Eckhardt studio, 2023)

Schumacher distinguishes three types of correlation: a) Functional correlation, b) Formal-spatial correlation, and c) Form-functional correlation, which he defines as the correlation of patterns of the building environment with patterns of social communication that arise within them. In this case, functions are not a static definition of inhabited spaces but are conceived as parametrically variable, dynamic, and event narrative. Correlations understood in this way explain an architecture that is determined based on an anticipated event or social interaction established within its context. The building environment functions based on visual appearance, legibility, and the related capacity to create the framework and primary communication. In his book The Autopoiesis of Architecture (2011), Schumacher defines architectural order as an organization, phenomenological articulation, and semiological (symbolic) articulation, as three equally vital moments of a fully developed architectural project that could address the challenges of contemporary society. He distinguishes three programs – organizational, phenomenological, and semiological. The organizational program covers the physical constitution and distribution of spatial elements and their patterns and connections, the phenomenological program covers the cognitive readability and perception of space, and the semiological (social communication, sign interpretation) program covers the articulation of architectural organization and by mutual correlation, they create an architectural order or style with its aesthetics, which was also the goal of the parametricism manifesto. Schumacher suggests conceiving a non-linear model of architecture as a complex set of information that multiplies the social interactions that are expected in the proposed space (Schumacher, 2011).

Mitášová and Zervan worked with a similar division of the functions of architecture as well. They call the third function, after the denotative and cognitive ones, the autopoietic function, which: "*in addition to denotations and connotations mediates creative solutions of the so-called open or unsatisfactorily solved architectural problems and tasks in the creative dialogue of an architect with passing generations of creators of architecture. In this mediation and dialogue, no one can use only ready-made meanings and established codes, but emerging meanings are born, represented on the one hand by intra-architectural codes, which have a questioning and critical nature, and on the other hand, represented by emerging forms anticipating new solutions, which retrospectively require verifications and acceptance"* (Mitášová, Zervan, 2020). Such codes "*have the task of initiating the meaning of the self-regeneration of architecture."* Mitášová and Zervan define the autopoietic function through the evaluation of an architectural work, which is based on the relationship of two parameters: *"how creatively it is able to use the sedimented potential of architecture to solve an actual task; and how and with what creative inventions it enriches architecture."* They recommend the codification of the autopoietic function through a) multiplication and doubling of codes; b) polyvalent form; c) architectural programs generating transformable forms and spaces that oscillate around traditional prototypes, and d) hybrid elements, buildings, and spaces (Mitášová, Zervan, 2020).

DESIGN STRATEGIES AND METHODS

In such an established context, we can understand a non-linear system as a system of several variables entering the system, the result of which is significantly disproportionately greater than their input. Another understanding of non-linearity can be the cyclic evaluation of variables. Such a procedure is called iterative and works with tools such as a narrative (a scenario that defines the desired state under certain conditions), feedback, and interpretation. A narrative was specified by Schumacher as scenarios that define function not statically, but dynamically and variably. Henri Achten approaches the problem in a similar manner. He proposes "Interaction Narratives" as the organization of moments of interaction between a user and a system following a story, which is consistent with the style of interaction (Achten, 2018). In his work Narrative Architecture, Nigel Coates distinguishes three narratives: 1. Binary narrative (descriptive appropriation of the narrative form), 2. Sequential narrative (linear conception of events), 2. Biotope narrative (non-linear and variable narrative system). The biotope narrative is interesting in relation to our research. It derives from the biotope – a small, uniform environment occupied by a community of organisms in a mutually beneficial micro-world. In architecture, the biotope replaces the urban context, which contains several functions and events that are mutually supportive, yet independent (Coates, 2012).

In the context of a narrative, a biotope captures an interrelated set of conditions with its internal influences and dynamics. The urban context or building becomes a biotope narrative when the system of narrative components is combined with the system of functional parts, which can destabilize the physical reality of the territory, like dividing systems into sub-systems, thereby allowing it to be open to multiple interpretations. This is how paradigms of urban conditions and situations can be defined, knotted together in a continuous network. *"A biotope narrative without the need for formal organizational devices helps to create homogeneous conditions of equal opportunities. It simultaneously exhibits functional comprehensibility and stimulates inconsistencies, form, and fiction."* Coats tries to identify the two worlds that a user or passer-by perceives. It is the physical world he or she is in and the world of interpretations as he or she reads that world (Coates, 2012). Schumacher's parametric semiology, with which he wants to organize space and its articulation, indicates the same and is legible and interpretative. Likewise, the virtual world described by Deleuze and DeLanda and the principle of polyvalence can be interpreted the same way.

Salingaros defines the feedback mechanism as a tool for incorporating information into an algorithm for the growth of a complex system. Feedback is a two-way action occurring in two different contexts: 1. within a system of components of equal size and importance, and 2. within different levels of the system. An adaptable system uses feedback to influence both small and large scales. An important aspect of adaptability is that each step works with actual adaptation, thus we can arrive at a system that is alive and reactive (Salingaros, 2004). Based on the above, we can categorize the feedback based on the result as follows: 1. Additive result - to fulfil the conditions of the narrative, scenario, or final state, properties are added to the building system; 2. Reactive result - to fulfil the conditions of the narrative, scenario, or final state, the properties of the building system are modified.

The interpretation of an architectural work is described by Mitášová and Zervan (2020) in three steps: 1. Reconstruction of the autopoietic function and intra-architectural code against the background of already existing architectural codes and the challenges and tasks of culture and society – contextual reconstruction and reconstruction of the author's intention; 2. Hypothetical reconstruction of architectural decisions, which helps to connect the architect's intentions with the procedures in the work, must be identified by architectural codes. For this purpose, the authors of the method use hypothetical architectural drawings for examining alternative architectural decisions - architectural interpretation; 3. Reconstruction of the architectural singularity and the internal-architectural code, which should have the ability to connect different contexts and look for the answers it can provide and the extent to which it can connect the previous work of the architect with the current building (Mitášová, Zervan, 2020).

Although the authors use their method of interpretation mainly to investigate existing buildings, we can also use it for non-linear forms of design: 1. Contextual reconstruction of the autopoietic function and the internal-architectural code, where we can perceive the context as a relationship between two states of the architectural space at the point of the critical threshold – the need to change the function; 2. By using the feedback and the scenarios of possible anticipated development, we can infer a hypothetical reconstruction of spatial situations; 3. We can subsequently encode these into building system components and spatial configurations in order to provide answers for future interpretation. A degree of interpretability can also be suggested. Mitášová and Zervan (2020) present a dichotomy of interpretation methodologies, in which the opinion oscillates between an unlimited number of interpretations of a work and a single correct interpretation. We can compare such a relationship to the finiteness of possibilities and properties of capacity and tendency. If space has an infinite number of possible interpretations, it can be called generic and assigned to the properties of capacity. If a space has a specific number of interpretations, it can be called polyvalent and assigned to the properties of a tendency.

DISCUSSION AND CONCLUSION

Identifying the relationship between capacity and tendency clarifies the way we look at the strategies and principles leading to an adaptable architecture. At this point of the investigation, we no longer understand adaptability as stereotypical, or as an added value. We try to integrate it into the architectural composition as its integral part. In the context of the basic quality of adaptability (the same as the quality of sustainable, circular, and carbon-neutral architecture), which is longevity and durability, there is no clear distinction between adaptable and quality building. Many architects design smartly, qualitatively, and sustainably without thinking about adaptability, which can lead to viewing adaptability as an exhausted topic. However, the opposite is true, and its revival, inclusion in the educational process, and its confrontation with current subjects contribute to the improvement of architectural creation. As a result of the conceptual analysis of the relationship between the tendency and the capacity of the architectural space, the strategy of designing an adaptable architecture can be based on non-linear tools of anticipation of variable, dynamic, and event scenarios, their evaluation, and interpretation.

Such a strategy can be applied to the design process generally because it does not dictate the taste, style, or trend of the architectural form, but generates its internal architectural codes and manifold of (unlimited or limited) interpretation. The concept of ephemeral occupancy can work through several models and types of buildings. A potential typology for reinterpretation includes, for example, on-ground parking garages. A huge amount of embodied energy invested in a structure occupying a relatively large place within the city and urban context is transformed into objects with a function for an invention that is currently on the blacklist and heading for longed-for extinction. Automobile transport is one of the most criticized forms of mobility for which such palaces are built. The case study of the 1111 Lincoln Road parking garage by the Swiss duo Herzog and de Meuron is one example of dealing with this situation. The openness and architecture of the building offers versatility of use.

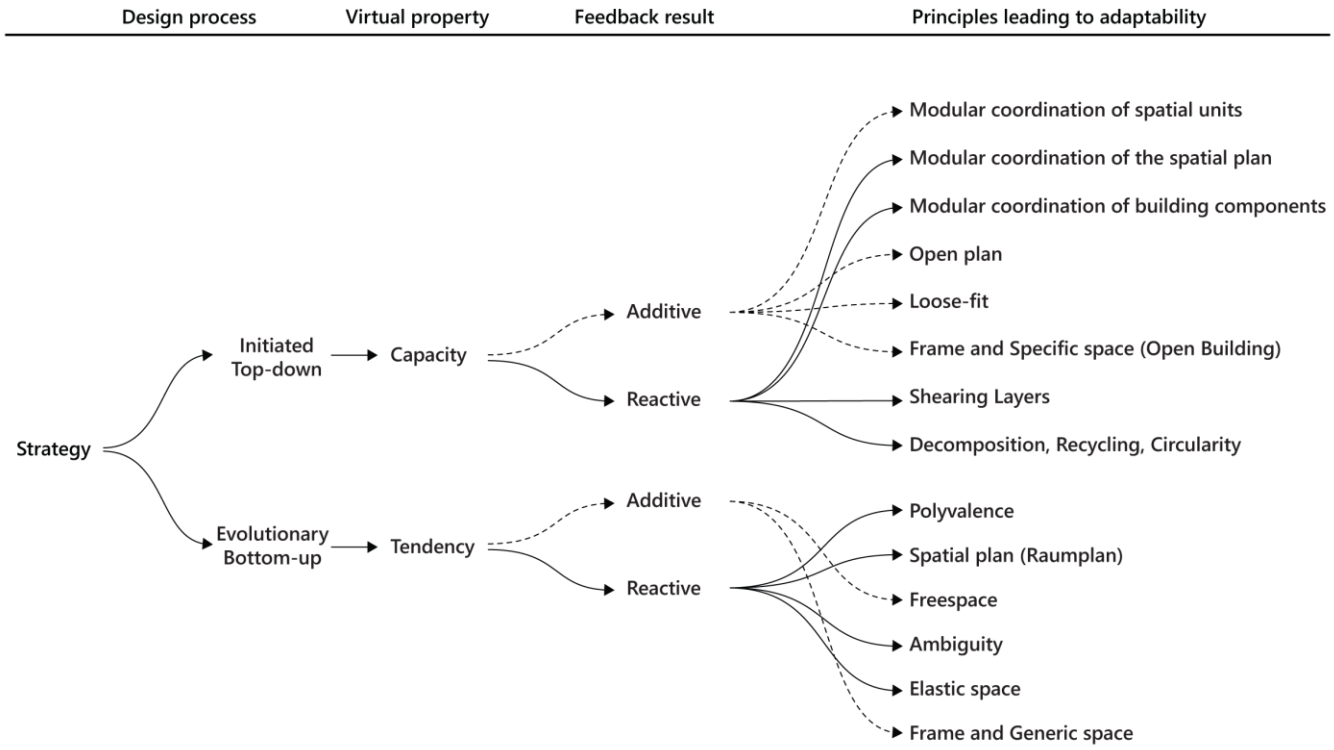

Fig. 3. Decomposition of strategy for adaptable design. The diagram shows the relationship between capacity and tendency in relation to feedback results and different principles leading to adaptability. (Source: Lüley, 2023)

Fig. 4. Adaptable house NO.2 – villa with a studio for a photographer and his family. The evolution of the design shows a) a preliminary solution with operation enabling adaptability. Adding access points and rotating the staircase enables the future division and different use weight of the rooms or units; b) and c) new access points and polyvalent staircase can divide the house up to 4 independent units. (Source: Lüley in cooperation with Eckhardt studio, 2023)

Parking garages conceived in this way (of course with a certain degree of economization and adaptation to other climatic scales such as the case study of 9th Avenue Parkade by Canadian architects Kaspian&5468796 Architecture) are a great example of ephemeral use, structures for the city, users, mobility, and future interpretation. Another use of the concept of ephemeral occupancy could be a solution to the issue of rental apartments, where the construction system itself would be stratified in the

form of shared ownership. We propose the construction of a generous structure that would belong to the state; for example, adaptable infill structures made of light, sustainable and local materials would belong to the municipality or city, and the equipment would be the property of either the tenants or the organization that would take care of the object. Such transformation of Friedman's spatial city into the current context and scale could be able to provide a variety of solutions.

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