

Leo Stukardt: 24HR Block
Stavros Gargaretas: Evolving Room
Jayson Johnstone: Adaptive Dwellings

As the collective framework was the point of departure of 'The Adaptive City' graduation studio, we took the reflection requirement of the P4 as an opportunity to relate our individual projects back to the collective framework. Furthermore, to find overlaps, contradictions and draw conclusions, we created a collective reflection. This reflection is a working document, an extraction of a Google Document shared online, that is intended to be extended and added by us and other graduation studio students as a platform to maintain a dialogue.

Aspect 3: Compendium
the relationship between the methodical line of approach of the studio and the method chosen by the student in this framework

The framework of The Adaptive City dissects the city into 4 research questions. In how far does the individual project follow that method? Are all 4 questions equally tackled (useful/important for a design within that city)?

Leo Stukardt: As in the framework i think all four research sections are non-hierarchical and have been dealt with in different phases throughout the process. While the categorization of drivers in the 'why?' and the definition of time-cycles in the 'when?' proved to be very helpful as a starting point for the project i feel that the 'what?' section has been developed throughout the process. Although the 'who?' is very important in the "24h Block" it acts more as a tool of evaluation than design. For me it turned out to be the most immaterial/intangible part and it is hard to visualize it in renderings or drawings. Nonetheless i think a project cannot be fully successful without positioning itself towards all 4 research questions.

Jayson Johnstone: I agree that all 4 research questions are necessary to position the individual projects. That being said, 'Adaptive Dwellings' focuses mainly on the questions 'Why' and 'What'. The individual project actually combined them together in many ways looking at how elements in images are stating desires. So the research into desires and elements ('Why' and 'What') section is tackled in a much more profound way then the 'Who' and 'When' sections.

Stavros Gargaretas: I think any adaptive system, must address these 4 research questions which have been dissected in the collective research of the studio. I do agree that these are non hierarchical, and this became clear during our individual explorations, where the importance of each question shifts dramatically from project to project. In the 'Evolving Room', for example, The 'Why' question does not form the starting point (something evident in other projects of the studio). Rather, it explores the effects of introducing adaptiveness to an element of the city; the room [what] by a careful understanding of time-cycles [when]. The question of 'who' is then implied in the exploration of a user and how he interacts with the element, but is not a starting point to the project.

Aspect 1:
the relationship between research and design

To what extent does your individual project act as a design-prototype for the general research framework?

Leo Stukardt: The starting point of the studio and the overall research question asks in how far our live in the city could be improved by a drastically increased adaptivity of the city. The "24hr Block" envisions compression of activities through structural adaptation as an alternative to vertical densification. Based on the premise that every square meter should be in use throughout the 24-hour cycle of a day it serves as a platform to question the mostly fixed relationship between space and user. It attempts to blend the borders between who owns, uses and regulates the city by creating a system of temporary usage-ownership relations and self-regulation. Projected on the larger framework it therefore identifies the disadvantages of apartments and houses as investments or commodities. Opposed to current systems of monthly or annual leases the "24hr Block" shows the advantages of faster cycles such as the daily one in order to distribute and assign space in the city.

Jayson Johnstone: Where the '24hr Block' tackles time and space usage, the 'Adaptive Dwellings' tackles desires. With desires as the starting point to adapting dwellings, the individual project acts as a design-prototype for how we can translate stated dwellings desires into design solutions even within the spatial limitations of the city. This is done by tackling 'how desires affect elements of dwellings?' and 'how these elements could adapt to further respond to desires?'. 'Adaptive Dwellings' are a prototype for how psychological drivers could be applied to designing adaptive dwellings.

Stavros Gargaretas: I think this question asks whether the individual projects seem a logical prototype/ product of the research framework we have set up.

In a way, the process of dissecting 'adaptiveness' into four key questions was vital in the development of all individual projects. An understanding of these questions in isolation allowed each project to really focus its research to very distinct starting points, something which would not have been possible without this distinct research framework. It then follows that each project dissected its research in a similar manner, and built its own hierarchy.

The 'Adaptive Dwelling' builds on the importance of human desires as a starting point to his research and uses open source information from Pinterest to expose the potential of starting off with this focus. The 'Evolving Room', more similarly to the '24 hour block' explores the concepts of space usage and time, but exposes the potentials of sensory technology [motion tracking] in testing this relationship. What is important therefore is that the framework of the research isolates important angles on adaptivity, off which each project builds its own story. This becomes clear in a discussion such as this, where very different prototypes can be easily compared.

The framework aims to collage those 4 researches into one image of the city. In how far can the individual design be projected on the entire city (range/influence/scale/...)?

Leo Stukardt: I think at this point it is important to look synergies, conflicts and contradictions between all design prototypes that were developed in the studio. Since this block needs to be extremely hybrid in its program in order to work efficiently over 24 hours i believe it cannot be endlessly reproduced. At the same time i observed several occasions of fractal-like self similarity on different scales. I therefore believe that certain principles of the logic like the expansion and contraction of space could be applied to any element of the city. However the same does not go for the technologies that the "24hr Block" employs.

Jayson Johnstone: The aim for 'Adaptive Dwellings' is to create a logic for collecting dwelling desires through social media and adapting space to fulfill them. At one level the ambition is that this logic can be applied to all dwellings in the city or even outside the city and even to programs that are not related to dwelling but leisure or education for example. At a more practical level, the specific solution that are developed to respond to those desires would only have a small range of influence on the city.

Stavros Gargaretas: As the 'Evolving Room' projects on a new living condition, a new relationship between how we interact with our built environment, it can be assumed that its scope implies a wider application to what is suggested in the project. In this sense the project is generic in that it questions whether new

[sensory] technology could alter our experience of the city, and goes further to give hints into new material technology, which could be developed as a result. The project could, therefore, be seen as a prototype for a new logic for the city, which is not confined to a site, at least at this developing stage.

Aspect 2: Why?

the relationship between the theme of the studio and the subject/case study chosen by the student within this framework (location/object)

Drivers are separated into collective needs and individual desires. The framework states that those are non-hierarchical, does the case-study support that statement or can one be prioritized? How does scale effect this hierarchy or lack there of?

Leo Stukardt: To some extent it makes sense that with increasing scale collective needs are favored over individual desires. A city where the infrastructure would be optimized for one person's way from home to school would be a highly inefficient one. However a systematic and strategic approach as employed in this studio allows for the translation of one small-scale element into an ubiquitous system.

Still, when looking at the different projects priorities and emphasis on particular drivers becomes apparent. While the "24hr Block" is based on a collective efficiency and fair use of space the hypothesis is that individual desires can be matched more effectively as well.

No one would want to live highly efficient, robotic city without identity and this identity emerges through individual desires. At the same time a city only that only full fills individual desires could never be efficient without a collective intelligence.

Jayson Johnstone: 'Adaptive Dwellings' falls clearly on the side of individual drivers and clearly elevates the desires of the individual over the desires of the collective. I think in dwellings, this hierarchy is acceptable to return the mass produced city dwelling to the individual. For too long city dwellings have been arrays of copied elements, layouts, and spaces and it's time to give back control to the dweller of their living space. I think if you take this model of individualistic desires too far then you end up with a model resembling suburbia and the model that 'Adaptive Dwellings' proposes assumes a cosmopolitan culture and lively city life. So, I would agree with the '24hr Block' that at the scale of the dwelling I can prioritize individual desires but at some level the collective priorities will have to come first. In that sense, needs and desires are always hierarchal.

Stavros Gargaretas: I think this question is particularly interesting. The difference between the prioritization of collective needs in the '24 Block' and Individual desires in the 'Adaptive Dwelling' rises an interesting relationship between scale and the hierarchy of the different drivers. Could Individual desires not be the driving point for the 24 hour block? Or rather, a more interesting question would be, how far are individual desires influencing the collective intelligence of the '24 block'?

The 'Evolving Room' project is testing the hierarchical relationship between collective needs [*prioritized at the scale of the block*] and Individual desires [*prioritized in the adaptive dwelling*] within the same scale; namely that of the body to its immediate surrounding. Could this hierarchy shift from one to another?

The starting vision of an 100 % ergonomic space is challenged through each users demand for comfort, view and personal space. In doing so the project begins to define in a dynamic way the notion of space efficiency as a dynamic interplay between ergonomomy and user desires; a custom Neufert. Having said this, as has been raised in previous discussions, the project cannot talk about space efficiency without discussing how the space saved is used by other users. This is something that needs to be addressed, and that should become clear in the rendering of how the 'room of different users' will interact.

Individual projects are developed on different scales with different foci. Do you consider the individual prototypes as compatible?

Can the research on different scales compliment each other?

Leo Stukardt: Obviously in the current stage compatibility is limited. But a city is never fully coherent. Systems can therefore compete or be assimilated later on. Also it is not the role of one design prototype to solve the entire city. While focusing on an entire urban block it is important to zoom into a single apartment but it is not the priority. Here another project like the "Evolving Room" which is focused on the immediate surroundings of one individual can reveal flaws or offer alternatives to the system of the block. The evaluation and comparison between the prototypes is a crucial step in the process.

Jayson Johnstone: Yes the evaluation of the prototypes is a crucial step but I'm starting to doubt the comparison between them. I think they need to be seen more as complements or alternatives like the example of how the 'Evolving Room' could reveal flaws or offer alternatives to the block but the ability to compare them is very limited because of the different starting points and assumptions in each project. For example, how do you compare the '24hr Block' to 'Adaptive Dwellings' where the latter promotes mass customization of dwellings to individual desires and the former promotes "collective efficiency"? Because these 2 projects are fundamental opposed in their design philosophies it becomes extremely difficult to evaluate. Is space efficiency more important than individual happiness? Can we measure the psychological impact of promoting the collective needs over the individuals? I think this only shows that it's important to offer alternatives and as stated above "a city is never fully coherent".

Stavros Gargaretas: I think the overall structure of breaking down the individual prototypes to different scales, although maybe not intentional, is particularly interesting.

Of course, for direct comparison between different starting points, it would make sense to all work on the same scale. If this was the case then you could really learn about the benefits of prioritizing efficiency over individual desires and so on. I agree with Jayson, that **comparison** becomes the key matchup between the projects. This brings us back to the global currency that we are looking for. How do we compare projects which have a different starting points, as well as different ingredients?

But here is where the unconventional structure of the studio might really offer insights. While a direct comparison might not be feasible, the *logic* at the scale of the 'evolving room' could be set against the logic of the 'Adaptive Dwelling'. Elements of negotiation, compromise and desires inhabit both systems. We can compare at the level of the logic of these systems; not at a resulting efficiency value. We can evaluate the logic of the individual projects and try to understand through this, the benefits of one to the other, or how one could reinforce the logic of the other. Of course a global currency would be ideal, but there is so much richness in each proposed system, that it is almost ideal that they sit next to each other without a direct comparative value to summarize them.

The framework separates the elements of the city and interrelates them. How many elements of the city work according to the individual prototype? Is it generic or specific? What is growing, shrinking, how are these elements reacting to one another?

Stavros Gargaretas: The evolving room project explores the real-time adaptation of a room based on behavioural data. As the project proposes an ever transformation space, the interrelation between the room and the adaptation of services becomes a vital question. Although the project itself focuses on the relation between these two elements [dwelling and services], it suggests a new dynamic relationship between the elements of the city; [manifest in the setting out of a new material which should accommodate for this level of high adaptation].

In this way, the project presents an instance of how this dynamic and adapting relationship between us and the elements of our environment could change our relation to our city. The importance of this system, therefore, goes beyond the room on which the project is based, to talking about an new way of working, traveling and interacting with our surroundings.

Jayson Johnstone: Adaptive Dwellings proposes a project where desires are directly linked to elements; at least, it posits that the material elements are the only

tangible data we can collect to analyse dwelling desires. Therefore, every element is treated as separate and unique. Furthermore, each element is ranked in relation to the other elements to understand the hierarchy between stated desires. In that way, for one having many doors to access the exterior is more important than having many windows and for another the opposite is true. This method enforces the need for developing a specific adaptation for each element or at the least developing an adaptation of the adaptation to reuse the system. So far then, each element is able to adapt independently and challenges the interconnectedness proposed by the collective framework.

Aspect 4: Who?

The relationship between the project and the wider social context

Who owns? Uses? Regulates? Is this separation/definition possible within your individual project? How could your project challenge these relationships and to what extent would it create new ones?

Stavros Gargaretas: The adaptiveness of the elements of the city, could not be understood without the exploration of who owns, uses and regulates that particular element. A proper understanding of these three categories is vital if the adaptiveness of any system is assessed. The evolving room has collapsed these three distinct roles onto the user of the 'room', who both owns and uses the 'evolving room'. Regulation occurs on the level of one user to the next, in an emergent co-existence, where one regulates and negotiates with his neighbour. This intentional allocation of the three roles onto the user of 'the evolving room' implies an emergent urban structure. Although this is implied, it is not rendered yet in the project, something necessary if the project is to propose such a distinctly different social condition.

Jayson Johnstone: The existing relationship between own/regulate/use of dwellings is that everyone is a user because we all live in dwellings and that all owners are users. Not all users of dwellings are owners and in that case the user can't adapt the dwelling so the target for the adaptive dwellings is the owner/user.

Leo Stukardt: All owners are users, yes. But doesn't it make a difference if someone owns one apartment or if they own 100 apartments? The "24hr Block" challenges the current relation between owning and using. Each user owns a minimum space for storage and technical items but the space in which the user will perform his activity is created temporarily and not owned. This allows an equal generosity of space. Your apartment can be 100 square meters large when you use it and compresses down to 10 when you are gone. High-tech socialism.

Aspect 5: When?

The collective framework establishes two concepts of time.

Patterns of behaviour and usage can be mapped on different cycles (day, week, year,...). Linear mappings over time can let the system 'learn' and refine those cycles.

Are both concepts employed in the design prototype? Is one more important than the other for adaptation?

Stavros Gargaretas: It is particularly interesting that this chapter breaks down the concept of time in adaptation into two distinct notions; namely that of the patterns over time versus the linear mapping. The interrelation between these two notions could be used to define adaptiveness in any so called 'adaptive system'. For example, the evolving room project uses these two elements of time to describe its evolving character.

The 'adaptive' character of the system is introduced within its ability to map user behaviour and understand his/her behavioural cycles over time. The 'evolving' character of the system, then becomes a response to linear changes within these

cycles, which does not influence the cycle itself, but the way that behaviours within these cycles are carried out.

Jayson Johnstone: At the moment, the Adaptive dwellings don't consider time in the research or design of the individual project; yet this is a crucial part of 'The Adaptive City' and will be considered in the future.

Leo Stukardt: I agree that 'adaptability' needs both, cyclical pattern recognition and linear evolution. Throughout the development of the project however i found it more useful to analyze and respond to patterns. In the end the evolution or learning behaviour is important, but how do you show that? I also feel that the linear feedback is more a technical matter, while the work with patterns opens up ways of interpretation, emphasis and design decisions regarding those patterns.