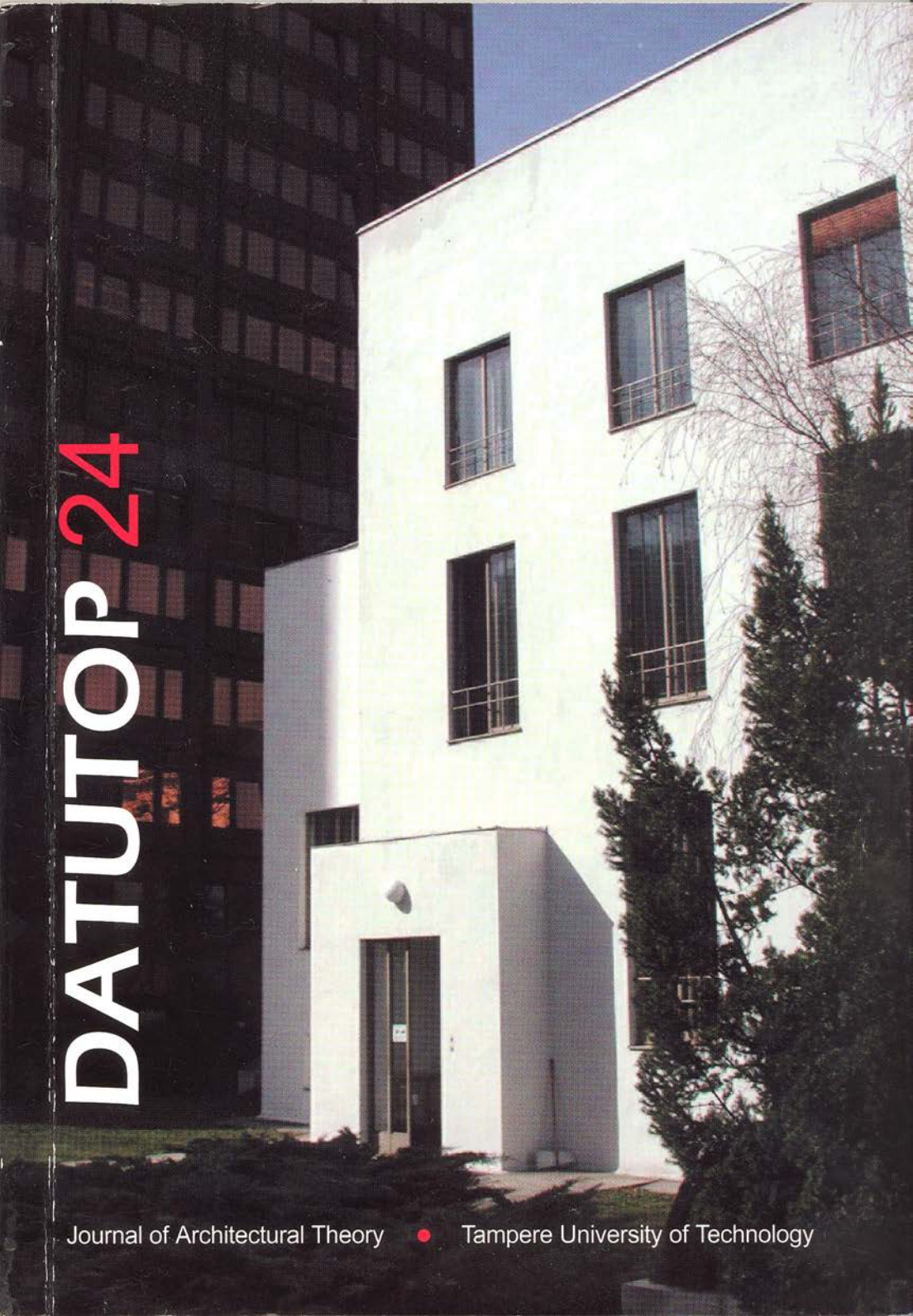

DATUTOP 24

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Architecture – Being Given

Temporality in the Design Process

1. Setting: design and cognition

In this paper essay I would like to discuss the temporal qualities of design process in architecture.[1] The title of the paper, *Being Given*, has been borrowed from the book by Jean-Luc Marion (Marion 2002). It seems this title exhibits emotional and epistemological power and depth, which is certainly worth discussing in the context of architectural design. What is given is done with. It is finished in its givenness. It is there for us. It has happened. When we add "being" to what has happened we emphasise a past moment, we make it vivid and we make it last – we prolong it. It becomes a continuum and is made of being present.

In some schools of architecture design is seen as an approach to reality, as an awareness of reality. This awareness can be understood, interpreted and transformed within the process of design. We can even say that *the designing becomes the process of cognising the reality* in an active and transformative way. The reality is being given in design.

If Tim Smithers is to be believed, a cognitive approach to design is rather common:

> *"This assumption, that any theory of design process must be a cognitive theory, is so widespread that often it is not even made explicit.* [...] *As a consequence, the terms and concepts used to present theories of Design as Cognition cannot be operationalised well enough to support the construction of effective explanations of human design behaviour: why designers do what they do, when they do it, and how they do it – we are not asking for predictions here, just good explanations! Instead, they have a more descriptive folk-theoretic status: they can be effective in describing what happens, but not explaining why and how it does."* (Smithers 1996, 567-568).

Nevertheless, if we look at the design theories, and especially design theories in the realm of architecture,[2] we find the epistemological setting not so widespread as one might suspect. The design literature can be grouped into four different loosely defined types.

The first type of books could be called compendiums. They are constructed in a similarly way to the great work of Vitruvius – systematically discussing everything that could have some connection to architec-

ture, taken as broadly as possible. Examples of this approach are Geoffrey Broadbent and Sven Hesselgren (Broadbent 1988, Hesselgren 1972). The compendiums are compiled on different criteria. Broadbent, for instance, discusses a wide variety of issues from perspective to the architectural educational curriculum. Hesselgren relies on the psychology of perception. Some of the compendiums become regionally-applicable handbooks (see, for instance, Kemper 1979).

The second type consists of books and articles describing architectural design in the form of logical or mathematical systems. The founder of this trend, Christopher Alexander, explains the goal as follows:

> *"My main task has been to show that there is a deep and important underlying structural correspondence between the pattern of a problem and the process of designing a physical form which answers that problem."* (Alexander 1970, 132)

This school has been reinforced by the new development in information technologies (e.g. Salingaros 2000; Gero & Sudweeks 1996). The logical direction of this type is established by seeing design as a specific space syntax (Hillier & Hanson 1984; Hillier 1996; Hillier 2000).

The third type of books describes architectural design as a pictorial and diagrammatic analysis of architecture and spatial form. These could be called pattern-books. They are usually hand-drawn with relatively little text and are largely used in education as the first introduction to architectural representation (e.g. Baker 1996; Clark & Pause 1996; Ching 1996).

The fourth type of books and articles describes design as an overall method or as a process of creation. The scope of disciplines, where the creation takes place, is varied: from architectural design to the management of goods and traffic control (e.g. Broadbent & Ward 1969; Hubel & Diedra 1984; Jones & Thornley 1963; Jones 1980; Lawson 1994; Schön 1982; Schön 1987; Rowe 1987; Machett 1968).

Few of the above authors deal with the temporality of design[3] or with the process of architectural design as an epistemological setting (Vesely 1995; Dunin-Woyseth, Noschis 1998; Michialino 1996; Perez-Gomez 1988; Harfield 1999; Pearce, Toy 1995; Crinson & Lubbock 1994). As I see it, the line of Dalibor Vesely and Alberto Perez-Gomez looks most promising and rich for further development. In the present paper I try to describe and investigate some possibilities for design theory in architecture to *be discussed more as a cognitive discipline from the perspective of temporality.*

The motivation for the paper can be found in the words of Christopher Jones who, in a complementary way to the demands of Smithers cited above, rejects Matchett's "fundamental design method" (FDM). Jones suggests, having compiled a comprehensive overview of seven prefabricated strategies, two strategy control methods, nine methods of exploring design situations, four methods of searching for ideas, eight methods of exploring problem structure and five methods of evaluation:

> *"Although the aims and results of FDM seem to be good, the means by which they are achieved involves mystery and possible danger. Matchett's claim that he has found a way of changing 'the threshold of consciousness' and of perceiving and manipulating the 'structure of thought' sounds both incredible and ominous: one is reminded of both quack psychology and of brainwashing."* (Jones 1980, 189)[4]

2. *Designing takes time*

Architectural design is for me an active state of mind, where various *problems of space, understanding of space and evaluating of space* are dealt with. Whether the notion of 'space' embraces the mind or the reality (which is commonly understood as something independent of the mind) or even belongs to both, is not our concern here.[5] We can settle here with the following assumption: what we call space is largely intersubjective and at least partly open to different persons as subjects and authors.

The unfolding of architectural design can be illustrated by the normal practises of architectural studios. The whole process of designing takes place between interviews and meetings with the clients. These meetings, sometimes very lengthy, usually consist of discussions on the bases of drawings and mock-ups. The drawings or mock-ups of the design can be called 'design descriptions'. The common, everyday language in the form of a dialogue is used to create meanings for the design sketches or drawings, after which the meanings of these are debated and discussed. At the beginning, the meanings of lines, colours and planes are settled and these meanings are then related to the desires and possibilities of the clients. This we might call the *first* dialogue. The manifold dialogues in architectural design have been described by Donald Shön and Bryan Lawson (Lawson 1994; Lawson 1997; Schön 1991; Schön 1982; Schön 1987).

A dialogue, as an imaginary precedent, can take place within the fantasy of the person making the design when he or she is developing design ideas. The possible meanings and interpretations from the viewpoint of society or the client can be imagined by the designer and the modifications made without the real dialogue going on. It can be seen as a certain self-criticism, or even censorship, applied by the designer. He or she acts as if from different roles or modes of social being, incorporating means and ends simultaneously. The designer's mind acts as if from different points of view, creating a series of possible dialogue scenarios as well as a series of possible worlds adopted to these scenarios. This

second dialogue takes place between the design meetings.

The internal second dialogue also predicts the *third* dialogue between the design ideas and the reality as imagined by the designer. In this case, the dialogue is between the possible qualities of objective reality (thingness and materiality) and the designing subject. The foundation for this type of dialogue is the education or personal experience drawn consciously or unconsciously from the life-world. This dialogue can thus be seen as 'touching', reflecting or simulating the objective reality by the designer.

While the first dialogue and probably partly the second take place using common language, the third dialogue is highly subjective and personal. It seldom takes the form of verbal explanation, usually involves sketches and drawings, but can also be purely synthetic imagination.

All of these dialogues involve the directedness of thought and the duration of time. One thought or idea follows another. I believe this constant modification of design ideas is the actual process of designing. As the tense of the word indicates, it is "being done", *it is the presence of doing something.*

We can describe that presence as the experience of the present moment – "now". This is the awareness of the ideas and the relationships of these ideas *in the focus of the mind*. It is only within this particular presence of the moment, "hanging on", that we can imagine the design as a whole gradually being created, sedimenting layer after layer. This presence as the focus of the mind justifies for us the abolition of the design personality (in its full richness), especially of psychological or psychoanalytical directions. Within this presence we can operate with the elements that are conscious, or were conscious and are remembered. If something is totally unconscious (either of a personal or collective type) it cannot be focused on and has to be investigated by other means.

These dialogues describe for us the temporal qualities of the design process. They specify the constant circular return to the series of "present nows" of the design process as they make themselves visible to the mind.

3. *Consciousness of internal temporality*

We find the phenomenological interpretation of a similar problem of temporality in Husserl's *Lectures on the Phenomenology of the Consciousness of Internal Time*, that were delivered between 1905 and 1917, published by his student Martin Heidegger in 1928 (Husserl 1991, 3). In these lectures, Husserl develops Augustine's line of thought into a phenomenological interpretation of time consciousness. For the present paper I have decided to return to the original phenomenological method of Husserl. In architectural thought the phenomenological method is usually connected to the Heideggerian legacy.[6] Both Husserl and

Heidegger admitted the important differences in their philosophical agendas. Indeed, in a letter to Alexander Pfänder, Husserl writes:

> *"I arrived at the distressing conclusion that philosophically I have nothing to do with this Heideggerian profundity, with his brilliant unscientific genius; that Heidegger's criticism, both open and veiled, is based upon a gross misunderstanding; that he may be involved in the formation of a philosophical system of the kind which I have always considered it my life's work to make forever impossible."* (Husserl 1997, 428)

Heidegger himself says that he is not dealing with phenomenology itself, but with "what phenomenology itself deals with". He also interprets the phenomenological method of reductions quite differently, comparing himself with Husserl:

> "For Husserl, *phenomenological reduction, which he worked out for the first time expressly in the* Ideas Toward a Pure Phenomenology and Phenomenological Philosophy *(1913), is the method of leading phenomenological vision from the natural attitude of the human being, whose life is involved in the world of things and persons, back to the transcendental life of consciousness and its noetic-noematic experiences, in which objects are constituted as correlates of consciousness.* For us *phenomenological reduction means leading phenomenological vision back from the apprehension of being, whatever may be the character of that apprehension, to the understanding of the being of this being (projecting upon the way it is unconcealed).*" (Heidegger 1988, 21)

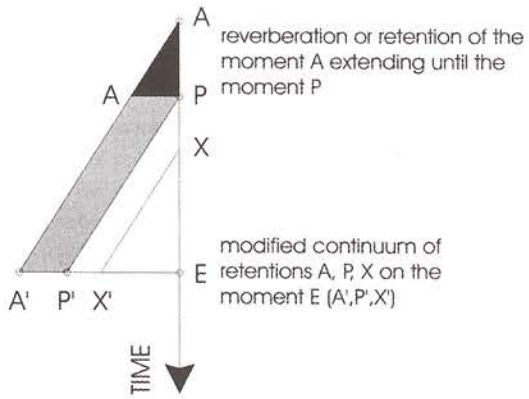
One can ascertain three main elements of Husserl's theory[7] that can be used to explain the inner temporality of the design process in architecture: Firstly, the unity of temporal objects in *retentions* and *protentions*; secondly, *double intentionality* within the re-presentation of temporal objects; and thirdly, the *different modes of re-presentation* that constitute a special freedom of thought. The interplay of these elements can give us an explanation of how the mind works within the architectural design.

One assumes that while designing, an object of this activity is held within the focus of the mind. This means that when the mind deals with it, it does this as "now", here, in the present moment. During a certain period the "now" is clear and vivid, then other thoughts follow. Sometimes these are related to previous thoughts, but not necessarily. The new thought 'covers' or 'shades' the clarity of the previous ones and establishes itself as another 'now', pushing the previous ones to the 'past'. In every 'now' the thought is held steady and focused, having the structure and identity of its own.

This 'running-off' mode of an object, whose identity and entity can be held in the focus of mind, is described by Husserl as a *reverberation* or

retention. As long as the retention lasts, the thought or experience has its own temporality; it remains the same and its duration can be perceived as the same. This 'now', the 'source-point' from which the object of thought starts its enduring, is called a *primal impression*.

As the thought endures and changes, we can return again to the once primal impressions that we are aware of; that is, to return to the object previously thought and then abandoned for a shorter or longer period of time. This is a memory. The *primary memory*, the reverberation of the moment, as the 'comet's tail', is a series of retentions and the object still has the identity of its 'now'. The *secondary memory* – the true recollection – is quite different; it must be distinguished from the primary memory as retention.

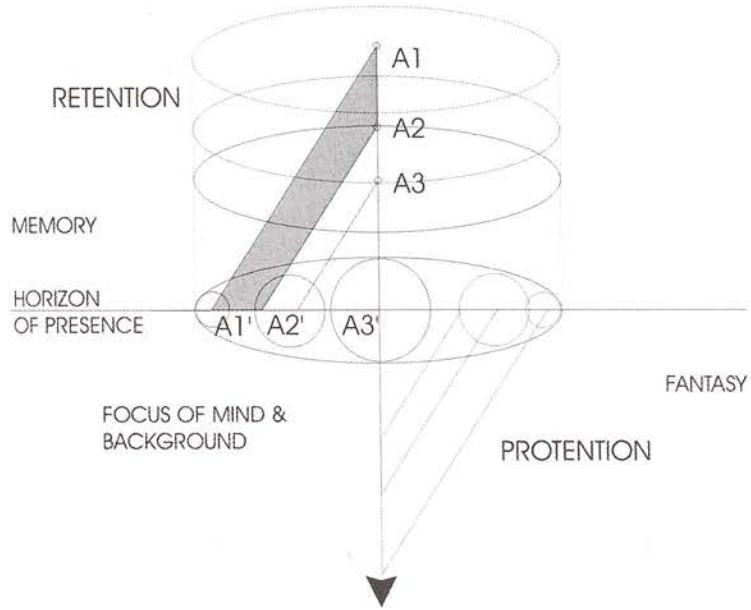


Husserl distinguishes at least three different modes of secondary memories (referred to also in his text as 'reproduction' or 'recollection'). They can be described as follows:

1. Flash. A memory rises to the surface, as a slice or flash. The remembered is a vague, probably intuitive and momentary phase. The object of thought is not repeated.

2. Continuum of re-presentation. A memory in which the temporal object is completely built up afresh in a continuum of retentions and in which we perceive it again, as it was – but only "as it was". The whole process is a re-presentational modification of the perceptual process with all of the latter's phases and stages right down to and including the retentions: but everything has the index of reproductive modification (Husserl 1991:39).

3. Fulfilled reproduction. An object of thought is completely built up. This remembered object can be grasped as "complete in one time-point". The characteristics that are built up originally in the temporal process (its duration) become constituted member by member, phase by phase and can now be grasped in this retrospective as something intact. The looking-toward or looking-back at what is given retentionally – and the retention itself – is fulfilled in re-presentation proper: what is given as just having been shows itself to be identical with that which is recollected. The essence of the object of primal impressions is revealed. This can be seen as *an intentional object with its possible meanings*.



As there is the primary memory so also is there a primary expectation – *protention*. The antithesis of the 'now' – perception – are the retentional and protentional directions of the mind. *Thus perception and non-perception, in the form of retentions and protentions, constantly blend into each other.* The presence of the moment can be seen as a result of weaving together the continuum of modifications of primary memory and the continuum of primary expectations, soon becoming 'now'. These primary expectations form a similar continuum of constantly modified objects of thought. The modification takes place on the basis of the fulfilment of the expectations.

According to Husserl, the protentional direction is founded by every memory. Recollection is not expectation, but a horizon directed towards the future. In a way, every recollection fulfils its former expectation layer or horizon, but this horizon is fixed. It is fixed by the present moment, when the recollection takes place. The consciousness flows continuously. This also means that memory, as re-presentation, flows continuously. Everything new reacts to the old, the forward-looking intention belonging to the old, is fulfilled and determined.

There are further important aspects of exposing the immanent time flow that seem to be essential from the viewpoint of architectural design. When Husserl discusses the recollection or re-production he points to the *freedom* involved in it for the thinking subject.

Noteworthy differences emerge between the original and the reproduced running-off modes belonging to the process of sinking backwards in time. The original presentation and its running-off modes of experience are something fixed, something of which we are conscious through affection. Husserl draws our attention to re-presentation. This is something that is not fixed. *On the contrary, we are free to run the re-presentations at will. We can do it at different speeds, with differing clarity and with different articulation.* This is exactly what happens during designing: we constantly return to the once thought ideas or objects and play them 'off' as different modes of secondary memories – recollections – and after that adjustments are made. This is done until the designer is satisfied with the modification and the object of design fully developed.

4. Design between the actual and possible

But this type of approaching the world is common to many human activities. All our being in the world as well as being of the mind is probably conducted the same way.

In architectural design we can point out a clear speciality: the recollections of design ideas and sometimes the development of design are represented in an other medium then language or pure thought. They are transformed into design sketches, scribbles and drawings, sometimes into models and mock-ups. From a Husserlian point of view, these are *representations* of *re-presentations*.

The epistemological sequence is prolonged and enriched: we deal with the presence of (1) thought, (2) the secondary memory of this thought, (3) the alienated representation of the thought as memory and (4) the new presence of reality on the basis of the thought as *being given* again as 'now' at this very moment. The new presence, as an interpretation of one's own design ideas, reacts *retentionally* and *protentionally*. This can be seen as double intentionality. The object of thought is seen in its identity and entity, but within a new time frame of its own entity, present 'now' – making it a reflection, something that is alienated from one's continuous life-world. Within the alienation, the design ideas are also partly welded into the thingness and materiality of the life-world.

The object of design is reflected in the focus of the mind as a manifold and clarified result in different meaning layers. It can be seen as the development of personal ideas and goals. It can be seen as a solution to a design task. It can be seen as a holistic, spatial and structural entity. It can be seen as a social statement, etc.

We can add one more cycle of similar running-off mode to architectural design, namely the building or, more precisely, *what is built*. If architectural design is executed according to its description (working drawings, for instance), it is represented in another medium, which epistemologically is not really more different than a sophisticated model. It is the second alienation pushing the initial idea further into the epistemological past. The past, present and future of the built can be seen through the same modes of primary and secondary memory as well as through re-presenting the built in drawings, texts and other types of media. It enters in its transformed mode into the new presence.

5. Drawings and sketches as descriptions

But a powerful impact can be seen in this second cycle of architectural design *being given* as 'built'. The once personal, intimate or veiled is blended into the life-world, to the existence in its raw presence as thingness and spatiality. The two cannot be easily separated.

In the natural attitude of cognising the life-world no such parallel layers of fantasy and reality are consciously built by the mind of the observer. If in the natural attitude, layers of protentional fantasy are indeed built into the process of cognising, they definitely do not exhibit the same existential power as in the design process. On the contrary, to operate constantly and correctly in the life-world the re-presentations with the index of existence (immediate past) and the fantasies with the index of non-existence (possible future) are kept clearly separated.

In the sphere of design, the drawings, or whatever form the design descriptions take, create a frame *where the index of existence and non-existence are mixed*. The sophisticated drawing can represent a possible building (still existing only in the focus of the mind) or an actual building as a measured worldly thing. The drawings can even represent a building that once was a worldly thing but has now perished.

What will become, is thus treated as *present* (in the focus of the mind) and as *past* (re-presentations with retentional modifications) within the very same moment. This is described by Gadamer as follows:

> *"Being present does not simply mean being there along with something else that is there at the same time. To be present means to participate. If someone was present at something, he knows all about how it really was.* [...] *Thus watching something is a genuine mode of participating. Here we can recall the concept of sacral communion that lies behind the original Greek concept of* theoria. Theoros *means someone who takes part in a delegation to a festival.* [...] Theoria *is a true participation, not something active but something passive* (pathos), *namely being totally involved in and carried away by what one sees."* (Gadamer 1997, 124-125)

This participation as presence in the focus of the mind is the platform of joining together the different modes of consciousness. In architectural design, it usually starts with watching, not just glancing, but with a systematic and repetitious watching. Within this process the different modes of consciousness emerge and complicated time frames are created.

I believe that this radicalised attention of blending the actual and the possible, existential and fantasised can be explained through the expression 'having-been-designed'. Before any real design project starts, the knowledge of designing has to be there. This knowledge is in the form of a goal or a method, something that is consciously done. It is the knowledge of social and personal practise in having done it before. This goal or method builds on the specific credibility and 'latent existence' of design fantasies in advance, as an epistemological setting.

The blending of the past and the future into the presence of designing has another powerful source: the knowledge of a social and personal practice of *having-been-built* as the realisation of design. This gives the design fantasies an especially powerful ontological load, as the possibility of existence in the form of an actualisation. The knowledge of building, either personal or through the practise of the language of social origin, is so powerful that it gives to the design fantasies and representations, and also probably the conventional representations of design, a specific meaning – described by Husserl as "memories of the present". It is probably no coincidence that in his account on "being", Heidegger makes use of the practise of *building* and *dwelling* as a powerful archetypal and existential source:

> *"The entire range of the inflections of the verb 'sein' is determined by three different stems.... 2. The other Indo-European radical is* bhu, bheu. *To it belong the Greek* phuo, *to emerge, to be powerful, of itself to come to stand and remain standing."* (Heidegger 1959, 71)

> *"What, then, does* Bauen, *building,* mean? *The Old English and High German word for building,* buan, *means to dwell. It signifies: to remain, to stay in a place. The real meaning of the verb* bauen, *namely to dwell, has been lost to us.... Where the word* bauen *still speaks in its original sense it also says how far the nature of dwelling reaches. That is,* bauen, buan, bhu, beo *are our word* bin *in the versions:* ich bin, *I am,* du bist, *you are, the imperative from* bis, *be. What then does* ich bin *mean? The old word* bauen, *to which the* bin *belongs, answers:* ich bin, du bist *mean: I dwell, you dwell.... Building as dwelling, that is, as being on the earth, however, remains for man's everyday experience that which is from the outset 'habitual" – we inhabit it, as our language says so beautifully: it is the* Gewohnte. *For this reason it recedes behind the manifold ways in which dwelling is accomplished, the activities of cultivation and construction. These activities later claim the name of* bauen, *building, and with it the fact of building, exclusively for themselves."* (Heidegger 1971, 146; 147;148)

To conclude this paper I would like to point out one more possibility of understanding the actual and possible, existential and fantasised or, in the context of this text, the present and future. In some languages the verb "to be" and its form "being" cannot be used to predict the future time tense of an expression. For instance, in both the Estonian and Finnish languages the *future* within the realm of *verbs does not exist.* They are only in either present or past forms. Does this mean there is no future? The grammatical nuance is usually overcome with the words like 'tomorrow', 'the day after', 'soon' or in a clear statement such as "in the future". On the level of verbs, a special modification can be seen giving the verb a temporal possibility of the future. It is the addition to the verb that constitutes *conditional speech.* In English it is similar to the double meaning of the phrase "would you?"

This issue of time and grammatical tense has clarified for me a very trivial understanding: that *the future is always conditional.* It is possible, but not certain – as the presence is in its participation. For architectural design this triviality has a major interpretation. Due to the complex shifting between presentations and representations and the re-presenting of these, the past, present and future are layered together. What *will be* or *can be* – what is being given as something that *was* – was described. What belongs to reality, to existence – what is *actual* - is being given instead as *possible.* What is *possible* – what is *conditional* – is being given as real, existential and *actual.*

I believe this radical epistemological shift is the goal of architectural education and constitutes the essence of architecture – *architecture as being given.*

Notes

1. The following paper is an extended version of a conference paper, "Architecture – Being Given", presented at the 2003 ACSA International Conference, Helsinki, July 27-30, 2003.
2. As the expression "architectural design" has an ephemeral character, the literature concerning it covers very different subject matters, from very different methodologies. A simple way of defining "design literature" can be derived from Hanno-Walter Kruft, who has defined "architectural theory" as any written document on architecture (Kruft 1994, 15). Thus "design literature" can be seen as anything written about design and architectural design.
3. Steve Harfield points out, in his essay on architectural design as process, that having gone through "a survey of more than 250 sources", very few feel the need to explain what 'process' is: "Yet although the term *design process* is nearly ubiquitous in discussions of design thinking, design methods, or design practice, and while much valuable information can be inferred from the literature on these subjects about those specific activities that design process might comprise, our understanding of the implications and obligations of the term process itself remain precisely that: inferential." (Harfield 1999, 174).
4. Unfortunately I have not been able to find any thorough exposition of this method, except

for a schematic diagram in E. Matchett (1968), "Control of Thought in Creative Work", *The Chartered Mechanical Engineer*.

5. It seems fruitful for the direction of thought chosen in this paper to believe that space, as a fundamental category or modus of being, belongs to the archetypal sphere of the mind. This sphere of mind lies below and before any experience and is universal for all human beings. But here this can be referred to only as a belief, because it requires thorough exposition and argumentation.

6. The phenomenological approach has proved its usefulness for architectural investigations since the 1960s. The majority of recent collections and anthologies of architectural theoretical writings have identified phenomenology, chiefly through the legacy of Heidegger (e.g. Mugerauer 1985, Kruft 1994, Nesbitt 1996, Leach 1997). Neil Leach groups under the heading of 'phenomenology' the authors Heidegger, Gaston Bachelard, Hans-Georg Gadamer, Henri Lefebvre and Gianni Vattimo (Leach 1997, 83). For Leach, phenomenology represents a model for understanding human existence. Nordic authors identifying themselves with the phenomenological approach – Christian Norberg-Schulz and Juhani Pallasmaa – also rely mostly on Heidegger. Under the phenomenological school Norberg-Schulz groups Heidegger, Merleau-Ponty and Bachelard, and also mentions the philosophy of Otto Friedrich Bollnow and L. Kruse (Norberg-Schulz 1980, 21,203; Norberg-Schulz 1988; Norberg-Schulz 1965). Pallasmaa identifies phenomenology as a method of both Husserl and Heidegger, but without separating their approaches. He also makes use of Bachelard's poetic interpretation of space under the name of phenomenology (Pallasmaa 1996, 450). The phenomenological school outside Heideggerian interpretation is described by Michael Hays as the "Essex school": Dalibor Vesely, Perez-Gomez, Peter Carl, Marco Frascari and Daniel Libeskind. Hays finds their phenomenological approach close to the philosophy of Husserl and Merleau-Ponty (Hays 1998, 462-463).

7. I have chosen to use Husserl's method for several reasons, other than well-established tradition. Firstly, his philosophical system is orientated towards epistemology and not ontology, which is the main emphasis of Heidegger. Secondly, his philosophical system is orientated towards the reality and universality of the subject, and he tries to overcome any solipsism of the mind through *intersubjectivity*. The intentions of the present paper are parallel to these two orientations: I have taken the epistemological approach and identified the subject with the design personality as the foundation for studies. Thirdly, Husserl's later analysis of consciousness is highly dynamic – it takes into consideration the duration and sequence of thinking processes – the same processual qualities emphasised in describing design as a process. Fourthly, Husserl's method grew from criticism of psychologism, that seems still today, a century later, a powerful foundation for architectural studies, and will probably intensify in the near future under the practical pressures of environmental studies. And finally, a strictly personal reason, I feel strongly that there is a certain similarity and closeness between the thought patterns in the phenomenological method and our experience of architectural design. It should also be acknowledged that the phenomenological method would restrict the investigation to that of the plane between the subject and the world as well as between the subject and other subjects. The use of the phenomenological method does not bring forward the richness of social relations and the social context, for which the schools of critical theory or structuralism seem to be much more appropriate. I attempt to overcome this obstacle by making use of the notion of *intersubjectivity* in Husserl's transcendental phenomenology. I also avoid, as far as possible, hermeneutic and semiological questions of verbal and textual language, that inevitably occur within the social relations, as these questions deserve a special study in their own right.

References

Alexander, Christopher, *Notes on the Synthesis of Form* (Cambridge, Mass.: Harvard University Press, 1966).

Baker, Geoffrey Howard, *Design Strategies in Architecture: An Approach to the Analysis of Form*. 2nd ed. (London: Spon, 1966).

Broadbent, Geoffrey, *Design in Architecture. Architecture and the Human Sciences* 2nd ed. (London: David Fulton Publishers, 1988).

Broadbent, Geoffrey; Ward, Anthony (eds.), *Design Methods in Architecture* (London: Lund Humphries, 1969).

Ching, Francis Dai-Kam, *Architecture : Form, Space & Order*. 2nd ed. (New York: Van Nostrand Reinhold, 1996).

Clark, Roger H.; Michael Pause, *Precedents in Architecture*. 2nd ed. (New York: Van Nostrand Reinhold, 1996).

Crinson, Mark; Jules Lubbock, *Architecture - Art or Profession? Three Hundred Years of Architectural Education in Britain* (Manchester: Manchester University Press, 1994).

Dunin-Woyseth, Halina; Noschis, Kaj, *Architecture and Teaching* (Lausanne: Imprimerie Chabloz S.A., 1998).

Gadamer, Hans-Georg, *Truth and Method* (New York: Continuum, 1997).

Gero, John S.; Sudweeks, Fay (eds.), *Artificial Intelligence in Design '96* (Dordrecht: Kluwer Academic Publishers, 1996).

Harfield, Steve, "The Lure of the Sirens' Song: Part 1, First Thoughts on Process". *Journal of Architectural Education*. 52/3, 1999.

Hays, Michael K., *Architecture Theory Since 1968* (Cambridge, Mass.: MIT Press, 1998).

Heidegger, Martin, *The Basic Problems of Phenomenology* (Bloomington, Ind.: Indiana University Press, 1988).

Heidegger, Martin, "Building Dwelling Thinking", in *Poetry, Language, Thought*. (New York: Harper and Row, 1971).

Hesselgren, Sven, *The Language of Architecture* (Barking: Applied Science Publishers, 1972).

Hillier, Bill. 2000. "The New Rigour: The Implications of an Analytic Theory of Architecture". *International Congress: The Future of the Architect*. Universitat Politecnica de Catalunya, Barcelona, 2000.

Hillier, Bill, *Space is the Machine: A Configurational Theory of Architecture*. (Cambridge: Cambridge University Press, 1996).

Hillier, B.; Hanson, J., *The Social Logic of Space* (Cambridge: Cambridge University Press, 1984).

Hubel, Vello; Lussow, Diedra B., *Focus on Designing* (Toronto: McGraw-Hill Ryerson Limited, 1984).

Husserl, Edmund, *On the Phenomenology of the Consciousness of Internal Time* (Dordrecht: Kluwer Academic Publishers, 1991).

Husserl, Edmund, *Psychological and Transcendental Phenomenology and the Confrontation with Heidegger* (Dordrecht: Kluwer Academic Publishers, 1997).

Jones, Christopher J., *Design Methods* (Chichester: John Wiley & Sons, 1980).

Jones, Christopher J.; Thornley, D. G., *Conference on Design Methods* (Oxford: Pergamon Press, 1963).

Kemper, Alfred M., *Architectural Handbook: Environmental Analysis, Architectural Programming* (Chichester: John Wiley & Sons, 1979).

Lawson, Bryan, *How Designers Think: The Design Process Demystified*. Completely rev. 3rd ed. (Oxford: Architectural Press, 1997).

Lawson, Bryan, *Design in Mind* (Oxford: Butterworth-Heinemann, 1994).

Leach, Neil, *Rethinking Architecture: A Reader in Cultural Theory* (London: Routledge, 1997).

Marion, Jean-Luc, *Being Given. Toward a Phenomenology of Givenness* (Stanford, Cal.: Stanford University Press, 2002).

Michialino, Paola, *Design and Pedagogy* (Louvain-la-Neuve: EAAE, 1996).
Matchett, E., "Control of Thought in Creative Work". *The Chartered Mechanical Engineer*, 1968.
Mugerauer, Robert; Seamon, David (Eds.), *Dwelling, Place and Environment –Towards Phenomenology of Person and World* (Oxford: Oxford University Press, 1985).
Nesbitt, Kate (ed.), *Theorizing a New Agenda for Architecture. An Anthology of Architectural Theory* (New York: Princeton Architectural Press, 1996).
Norberg-Schulz, Christian, *Architecture: Meaning and Place: Selected Essays* (New York: Electa/Rizzoli, 1988).
Norberg-Schulz, Christian, *Genius Loci: Towards a Phenomenology of Architecture* (London: Academy Editions, 1980).
Norberg-Schulz, Christian, *Intentions in Architecture* (Cambridge, Mass.: MIT Press, 1965).
Pallasmaa, Juhani, "The Geometry of Feeling: A Look at the Phenomenology of Architecture", in Nesbitt 1996.
Pearce, Martin; Toy, Maggie (eds.) *Educating Architects* (London: Academy Editions, 1995.
Pérez-Gómez, Alberto, "Abstraction in Modern Architecture: Some Reflections in Parallel to Gnosticism and Hermeneutics", *VIA*. 9, 1988.
Rowe, Peter G., *Design Thinking* (Cambridge, Mass.: MIT Press, 1987).
Salingaros, Nikos A., "The Structure of Pattern Languages", *Architectural Research Quaterly*, Vol. 4, 149-161, 2000.
Schön, Donald Alan, *The Reflective Practitioner: How Professionals Think in Action* (Aldershot: Avebury, 1991).
Schön, Donald Alan, *Educating the Reflective Practitioner* (San Francisco: Jossey-Bass, 1987).
Schön, Donald Alan, "Reflection in Action", *Transactions* 2. Vol. 1. No. 2, 1982.
Smithers, Tim, "On Knowledge Level Theories of Design Process", in Gero & Sudweeks (eds.), 1996.
Vesely, Dalibor, "Architecture and the Question of Technology", in Pearce & Toy (eds.), 1995.