ON REALITIES AND HORIZONS OF DESIGN IN ARCHITECTURAL EDUCATION

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PhD 2001

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February 2001

A thesis submission in partial fulfilment for the degree of Doctor of Philosophy

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ACKNOWLEDGEMENTS

I would like to thank my teachers, who guided me to the sphere of architectural studies: Prof. Rein Zobel and Dr. Ene Grauberg from Tallinn as well as Dr. Alexandr Gerbertovitch Rapaport from Moscow.

This thesis is the result of a rich exchange of ideas experienced in the School of Architecture in University of Portsmouth. I am grateful to my supervisory team: Wendy Potts, Prof. Colin Stansfield Smith and Dr. Kevin McCartney. I am also grateful to all members of the school, particularly to Dr. Richard Bunt and Dori Gislason, with whom the problems of architectural epistemology were discussed in research seminars.

Deserving special mention is the ORS Awards Scheme Scholarship for International Research Students. Without this scholarship the completion of this thesis would have been highly questionable.

I also owe a special debt of gratitude to Wendy Potts and to my partner Edda Soolep for continually offering their assistance and encouragement to my work.

DECLARATION

This thesis is the sole work of the author and has never been previously published.

ABSTRACT.

In this investigation the normative documents and the key-texts describing the current perception of architectural education in UK and EU were analysed. The description of design phenomena in *Criteria for Validation* (RIBA, ARB) was interpreted in the form of design domains. The domains were seen as a typology of meaningful, partly overlapping, wholes. The design phenomena, structured into domains, was then tested against the definitions of "design", "architectural design", "architectural knowledge", "architecture" and "architectural profession" in the *Strategic Study* (Strategic Study of the Profession. Phase 1. Phase 2. 1993), the *Burton Report* (Steering Group 1992) and the *European Commission Council Directive*.

The realities around which the design domains polarised - of objective and subjective origin - we then approached from the point of view of the design personality. The intermediate zone, which was called the horizon of design, is the area, where ambiguities in the domain of design results make themselves visible.

To investigate the state of mind in designing, which was called “the focus of the mind”, we turned to Husserl’s *Lectures on the Phenomenology of the Consciousness of Internal Time*. This exposition of phenomenological method in relation to consciousness and its being “in time”, explained the epistemological complexities we discovered on the horizon of design and saw previously as the ambiguity in design results. The designing process was interpreted as the use of conscious functions of presenting, re-presenting and representing. Within the presence of mind we also made use of the intersubjective quality in conventional representations of design, that is passively embedded in the culture of the architectural profession.

The experience of teaching and learning in the sphere of architecture was explicated by the intersubjective quality contained in conventional representations of design and studio culture. The conventional representations are passively hidden in the traditions of the architectural profession, but can be made actual and present. This transformation to actuality happens in the teaching and learning experience founded on studio culture. Here we found support for the belief, that architectural design is an intellectual, collective and historical discourse.

In the last part of the investigation Husserl's method of reductions was used. The iterative quality within design projects, which persistently return to the epistemological complexity in re-presentations and representations, results in a radical departure from the natural attitude. It also results in the differentiation of existential and design horizons.

0. INTRODUCTION.

0.1. Political interests and ideological concerns in architectural phenomena.

0.1.1. Political interests.

On the dawn of the new millennium, the internationalisation and unification of Europe and co-operation in economic, political and cultural affairs is unprecedented. This development is accelerated by the rapid growth of globalisation through the world-wide use of information technologies. Architecture, in terms of education and legislation, stretching across the spheres of economy, politics and culture is an important part of these recent trends.

The methods and objectives of national and international accreditation and validation in architectural education are actively discussed in the current and future member countries of the European Union. The problem of diversity and different historical preferences in the pedagogy of architecture, even within one nation, coupled with the free movement of the work-force of the architectural profession illustrate the complexity of the present situation. The *European Commission Council Directive* (*EC CD*), Comparative study of different European schools of architecture and urban planning by the Institute of Advanced Architectural Studies, University of York and the publications on national systems of architectural education by the European Association of Architectural Education (EAAE), are some to review the overall situation in Europe (EC CD 1985, No L 223/ 17; Orbasili, Worthington 1995; Mabardi, Girelli 1997; Mabardi 1997).

There is an interest in the mutual recognition of architectural registration between the United States of America and the United Kingdom as well as within the EU (Fielden 1993, 18). Also, keen interest can be seen from China and Japan in the investigation of mutual recognition in the architectural profession (Williams 1993, 13). This gives the British efforts to describe and define architectural education and the validation criteria and procedures, a more global and important focus for investigation and analysis.

The Royal Institute of British Architects (RIBA) is currently involved in validating the curriculum of architectural education on a national and international level. With the Architects Registration Board (ARB), it has created a joint panel

that published recently the criteria and procedures for validation (Part 1. Procedures of Validation; Part 2. Criteria for Validation 1997). *Criteria for Validation* takes into consideration the two previous major studies: *The Burton Report* (Steering Group 1992) and *Strategic Study* (Strategic Study of the Profession. Phase 1. Phase 2. 1993). *The Dearing Report* (Higher Eductaion in the Learning Society 1997) has created a new framework for the whole of higher education in the UK. In this framework, architectural education has been investigated and its future directions proposed by *Architecture Education for the 21st Century*, known as the *Stansfield Smith Report* (Architecture Education for the 21st Century 1999) and by *Quality Assurance Agency Subject Benchmark Statements for Architecture, Architectural Technology and Landscape Architecture.* (QAA Subject Benchmark Statements 2000)

Together, these reports and documents create an interesting and broad platform, from which to investigate the current perception of architectural education in the UK and EU.

0.1.2. Ideological concerns in architectural phenomena.

Interest in architectural education in current political and social discussions should also be viewed in a wider context. If we ignore the political and pedagogical frames, we can find architectural education in close association with environmental issues. In some schools, environmental studies act as the umbrella, embracing architectural education as a minor part of studies in the environment. Sometimes the notion "built environment" is used loosely as a synonym for "architecture". Usually the expression "built environment" incorporates the studies traditionally known as architecture, building, engineering, land management and sometimes geography. For example, the Centre for Education in the Built Environment was established in January 2000 by UK Higher Education Funding Council in University of Cardiff. (http://cebe.cf.ac.uk) This trend naturally intensifies interest in the specificity and subject matter of architectural studies.

It is possible to interpret architecture as the man-made or man-transformed environment. In this case, the whole planet covered with settlements and cities, farmed land, artificial landscapes, or only ditches or fences as well as invisible energy, transportation and information network channels. Architecture globalised to infinity on Earth. The problems of sustainability in the global environment, that man has transformed for good and evil, have initiated deep concern in architectural

studies, which is seen first as an important part of these transformations, and secondly, sometimes even as the one to be made responsible and blamed for the threatening changes.

For its own part, architectural education is trying to expand its borders and broaden its objectives. The narrowing of the market in many countries in traditional areas of architectural expertise such as housing and planning has suggested viewing architectural education as more liberal and overarching (Fielden 1993; Mabardi, Girelli 1997). Creating a broader based education is seen as a better springboard for future architects (Architecture Education for the 21st Century 1999).

We see these ideological concerns as a growing pressure to investigate again and again the current foundations of architectural education, and thus its attitude towards nature and man.

0.2. Epistemological content and fundamental qualities of education in architectural phenomena.

0.2.1. Epistemological content in architectural phenomena.

Besides the current political interests and the ideological concerns in architectural education and legislation, we should also emphasise the relatively powerful epistemological content of it:

> It has long been recognised that architecture is a worthy intellectual subject in its own right and that architectural education offers a special way of learning. Recently it has become a pedagogic model for other subjects because of its project-based iterative focus. (Architecture Education for the 21st Century 1999, 3)

But, it was only in 1972 that Bill Hillier, John Musgrove and Pat O'Sullivan called for changes:

> A few voices crying in the wilderness that architecture contained its own fundamental disciplines could not stop the onward march of these simple and powerful ideas, and by and large they still hold the stage today. (Hillier, Musgrove, O'Sullivan 1972, 29:3:2)

The "simple and powerful ideas" they referred to concerned the understanding that architects were not fit to generate new knowledge for themselves and that this was the job of 'related' disciplines. The educational consequences of these ideas were

seen by the authors in a milieu containing a rich variety of related disciplines. Students were to be well grounded in each of them. This made the education of architects "broad and shallow", the designer's field thus became "more complex and less structured". Hillier, Musgrove and O'Sullivan proposed that design research would "constitute an extension of the designer's basic cognitive capability". The aim of design research is thus, the investigation of judgements in a design process coming "from the pre-existing cognitive capability" in the form of knowledge -

> ... knowledge of the instrumental sets, solution types, and informal codes, and occasionally from right outside: an analogy perhaps, or a metaphor, or simply what is called inspiration. (Hillier, Musgrove, O'Sullivan 1972, 29:3:10)

The shift in current methodologies of education from the "knowledge taught" as static and shallow information, to the more dynamic "knowledge acquired" and "knowledge applied" is clearly seen. Continuous professional development (CPD) and life-long learning are the visible attributes of the shift in Europe and North America. Ernest L. Boyer and Lee D. Mitgang suggest in their review of architectural education in the US, that the definitions in the accreditation of the architectural curriculum should be changed so that "fundamental knowledge", "design", "communication" and "practice" become newly interpreted as: "discovery of knowledge", "integration of knowledge", "sharing of knowledge" and "application of knowledge" (Boyer, Mitgang 1996). Architectural education can thus be seen as the collection, revision, interpretation, transformation and creation of architectural knowledge.

The question - what is the specific architectural "knowledge" or "its own intellectual subject" within the architectural phenomena? - is still open. Nearly 30 years after the "lonely call" of Hillier, Musgrove and O'Sullivan, the answer is still under construction. There is a relatively large and diverse body of literature on architectural design, knowledge, theories and methods. We will describe that briefly in the first chapter (See 1.3.2.).

We have found the most interesting building blocks for the "edifice of architectural knowledge" in recent works of such scholars as Joseph Rykwert, Alberto Perez-Gomez, Dalibor Vesely and Hubert Damisch. They have concentrated on investigations that expose the epistemological layers of pre-structuring and

ordering of the world within architectural phenomena.[1] Within their research, we have found the richness and complexity in describing architectural phenomena, that is felt both strongly and intuitively in the everyday practice of architecture.

Within the background of political interests and ideological concerns, we would like to examine this epistemological approach to architectural education.

0.2.2. Assumption of fundamental qualities of education for architectural phenomena.

As Mark Crinson and Jules Lubbock conclude in their review of architectural education, the greatest formative force in built environment, at least since WW II, must have been the system of professional education. They attempt to demonstrate how its influence has grown in the past three hundred years and especially, in the recent decades, through institutionalising the educational system (Crinson, Lubbock 1994).

The same idea is clearly visible in the *Stansfield Smith Report*:

> At the Oxford Conference [1958] the responsibility for the transmission of knowledge in architectural education transferred to the Universities and state-funded higher education from architectural practice. Schools can claim that during this period they have earned the authority to teach without prescription, and because of the demise of public practice the profession outside academia, (except for a few isolated examples of private practice), is not in a position to share much of the responsibility for education. (Architecture Education for the 21st Century 1999, 2)

Architecture as a phenomenon claims to have its own "fundamental discipline", "intellectual subject", or simply specific "knowledge". We propose to investigate whether this claim can be supported and whether it is connected to architectural education.

The importance of education within schools of architecture is probably catalysed further by the rapid development of information technologies and new media techniques. The changes of context within which architects have to operate, can

[1] In the history and theory of architectural experiences and architectural representations they have built the general direction of what we would like broadly to identify with architecture's "own fundamental disciplines" (Perez-Gomez; Pelletier 1997, Perez-Gomez 1983, Vesely 1995, Vesely 1985, Vesely 1987, Vesely 1999, Damisch 1994, Rykwert 1996).

really be addressed only in a highly dynamic and at the same time systematic, sphere of studies.

It is beyond question, that central to architectural education is design. So, we may conclude that design in architectural education is the source, or the central part of this source, creating the "fundamental discipline" of architecture. In other words: it is in design, where the learning as cognizing activity takes place - where the knowledge in its specific form or forms is obtained.

However, a bitter criticism of this general direction of reasoning can be found. It is found at the cutting edge of the current science of information technologies - the investigation of artificial intelligence in design:

> This assumption, that any theory of design process must be a cognitive theory, is so widespread that often it is not even made explicit. ... The problem is that Cognitive Science does not yet have any well established theoretical understanding of the cognitive capacities used during design, ... 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)

The epistemological content of architecture and its education will have to be constantly represented and developed in the research. Otherwise programmes and aims and methods of architectural education will remain on the level of politics or ideologies, and thus be extremely vulnerable to the rapid changes of economic or governmental policy when in reality, the real challenge would be in preparing for the future shifts in the understanding of world and man.

This research attempts to move closer to answering these demands. We ask how architecture can be thought of, in its fundamental notions of "design" and "knowledge". We believe today that means investigating the education of architecture and explicating its epistemological content.

We start with a simple question: How can we think of architecture? We can think of architecture in the form of a tautology: Architecture is what architects do. The question then is: Who are called "architects" and what do they do? From this momentary position, we can look at the history of the notion "architecture" in reverse order. We start from the present moment and move backwards as far as necessary, but the main interest remains with the current situation.

Thus we can reformulate the primary question: **How can we think of "architectural design" and "architectural knowledge" in the current perception of architectural education?**

0.3. Methods and scheme of investigation.

0.3.1. Methods of investigation.

The investigation is divided into three parts, identified as chapters. In the first chapter we ask: How can architectural design and architectural knowledge be defined and what is the role of education "in the field of architecture" (EC CD 1985, No L 223/ 17)? This is an analysis of the current situation in structuring architectural education in the UK and EU. In the second chapter, we ask: How can we think of architectural design? This is an analysis of the design process from the point of view of the designing personality. In the third chapter we ask: How can we think of architectural knowledge within the education of the designing personality? This is an analysis of the design process from the point of view of architectural education.

The methods used in the investigation are the following: In the first chapter, the method is critical textual analysis for describing and comparing the definitions of the expressions "architecture", "architectural design" and "architectural knowledge" in the normative documents and their sources. We then interpret the findings as a model of the design phenomena. In the second and third chapter we investigate and develop the model comparing it with a theoretical epistemological methodology as well as with a personal empirical experience and published descriptions of these experiences in architectural design and education.

For the epistemological methodology we have chosen a phenomenological approach. It has proved its usefulness for architectural investigations since the

nineteen-sixties. The majority of recent collections and anthologies of architectural theoretical writings have identified phenomenology chiefly through the legacy of Martin Heidegger (Mugerauer 1985, Kruft1994, Nesbitt 1996, Leach 1997). Neil Leach groups under the heading of phenomenology authors like Heidegger, Gaston Bachelard, Hans-Georg Gadamer, Henri Lefebvre and Gianni Vattimo (Leach 1997, 83). For Leach, phenomenology represents a model for understanding human existence. The 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, 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 not really 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).

For this investigation we have decided to return to the original phenomenological method of Husserl.

Husserl and Heidegger themselves, admitted the important differences in their philosophical agendas. In a letter to Alexander Pfänder, Husserl wrtes:

> I arrived in 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 said that he was 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)

We have chosen to use Husserl's method for several reasons, other than well-established tradition: Firstly, his philosophical system is orientated towards epistemology, not ontology that 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 solipsism of the mind in intersubjectivity. The intentions of this investigation are parallel to these two orientations, we 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 frequently 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. Lastly, a strictly personal reason, we feel strongly that there is a certain similarity and closeness between the thought patterns in phenomenological method and with our experience of architectural design.

We acknowledge that phenomenological method would restrict the investigation into the plane between the subject and the world as well as between the subject and other subjects. The use of phenomenological method does not bring forward the richness of social relations and social context, for which the schools of critical theory or structuralism seem to be much more appropriate. This obstacle we attempt to overcome by making use of the notion of “intersubjectivity” in

Husserl's transcendental phenomenology. We 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.

We also acknowledge that the phenomenological method of Husserl would not allow us to investigate the existential qualities of the world in its full spectrum, but this direction has been examined for the sphere of architecture by the Heideggerian school of architectural theory and criticism, particularly, by Nordic authors. Nevertheless, we have attempted to keep this direction open in this investigation by carefully using the expression "existential" only for enduring, live experience of the subject and by describing other entities that "are" - as "real" within the realities of social and objective origin.

0.3.2. Scheme of investigation.

In the first chapter the main sources of the analysis have been *Criteria for Validation* (Part 2. Criteria for Validation 1997) and the two reviews that were a part of the foundation studies for it: *The Burton Report* (Steering Group 1992) and *Strategic Study* (Strategic Study of the Profession. Phase 1. Phase 2. 1993). We compare these with the *EC CD* of 10 June 1985 concerning "diplomas, certificates and other evidence of formal qualifications enabling the holder to take up activities in the field of architecture under the professional title of architect" (EC CD 1985, No L 223/ 17). We also make use of the current *Stansfield Smith Review Review* and *QAA Subject Benchmark Statement* to be aware of the latest development in the area. The EAAE source on architectural education has been *The National Systems of Higher Architectural Education in Europe* (Mabardi, Girelli1997).

In the second chapter we analyse the functional model, interpreted from the official documents and the key-texts from the viewpoint of design personality. Our attention is paid to the central domain - design as process. Here designing is seen as the focus of mind. This focus of mind we investigate with the explication of consciousness described in investigation *On the Phenomenology of the Consciousness of Internal Time* (Husserl 1991). The retentional and protentional qualities of consciousness help the understanding of the dynamic relationship between presentation and representation as design tools. Thus we analyse the realities and horizons involved in the model of architectural phenomena obtained

from the key texts. Through differentiating the design horizon and existential horizon, emerging in the design phenomena, we develop the functional model into a model of epistemological realism.

In the third chapter we abandon the static viewpoint of design personality and try to analyse the genesis of the design personality through education. We make use of the reductions described in *The Crisis in European Sciences and Transcendental Phenomenology* (Husserl 1991) and in an *Article for the Encyclopaedia Britannica.* (Kockelmans 1994). We see architectural education as a series of reductions as in separate design exercises as well as in the overall curricula. These reductions, comparable to phenomenological and eidetic reductions of Husserl, radicalise the epistemological layers of the developing design personality. Within this process of radicalisation, different forms of knowledge can be identified. These we try to describe when transforming the model of epistemological realism into the phenomenological model.

1. ON DOMAINS AND DEFINITIONS OF DESIGN IN ARCHITECTURAL EDUCATION.

(FUNCTIONAL MODEL)

1.1. DESCRIPTION OF DESIGN IN ARCHITECTURAL EDUCATION, DEFINED BY *CRITERIA FOR VALIDATION.*

1.1.1. Domains of design.

Criteria for Validation is an ideal source for investigating the general perception of architectural education in the UK. Firstly, it is dense and concise. The text can be analysed in full detail and the notions can be defined locally, paragraph by paragraph. The notions can also be defined in the overall context, found in the text as a whole. On the national level it covers requirements for Part 1 and Part 2 of the RIBA Examination in Architecture and takes into consideration two major reports on architectural education: *The Burton Report* and *Strategic Study of the Profession*. (Strategic Study 1993, Steering Group 1992) So, we are dealing with three layers of meaning for the expressions we are interested in: the local position in the text, the text as a holistic object; and the text as the representation of the foundation reports. The text, being supported by the two above named reports, allows us to interpret the central notions "architectural design", "architecture" and "architectural knowledge" within the context of the wider consulted perception within the profession.

Secondly, on the international level it is written "in the spirit of European Commission requirements, as set out in the Architects Directive". (Part 2. Criteria for Validation 1997, 7) It is also widely accepted that *Criteria for Validation* give guidance to the schools of architecture outside Britain, who nevertheless want to compare the quality of their education to the RIBA requirements. This adds an other source of meaning to the text of *Criteria for Validation.*

“Design” as verb and substantive has been widely used in *Criteria for Validation* and in its reference texts. It is used in many quite different connotations, constituting at first glance slightly different layers of meaning in the course of the text.[2] For example, we can look at the following sentence that interprets “design”

[2] See the full usage of the expressions in APPENDIX .

in three different ways. All these contexts constitute different meanings. The different expressions have been underlined by us:

> The teaching of design is central to architectural education and the understanding of the process of designing is fundamental to the creation of good design." (Part 2. Criteria for Validation 1997, 11)

By focused attention we can identify three parts in the sentence: **the knowledge about design; the process of creating design; and the result created.**

We learn from this short quotation several proposals. Firstly, design as an object or process, can be taught. It must therefore involve some knowledge or skill. This knowledge or skill probably can be demonstrated and observed. It is open to people as something collective. Secondly, designing as activity is a process, it involves time, duration or transformation. Thirdly, the result of designing, the thing done - the design - involves creation. The word "creation" usually refers to something new, something that was born, came to being, from the activity of designing.

Criteria for Validation aims, as is clear from the title, to give general criteria as guidelines for architectural education in a validation process. It recognises architectural design as a unique and most essential part of architectural education. (Part 2. Criteria for Validation 1997, 8,11) At the same time *Criteria for Validation* avoids defining "design" or "architectural design" in an open and explicit way. This is probably because the whole text, in its totality, can be seen as an enlarged definition, that creates comparable settings for design-orientated architectural education in the UK and abroad. In the course of the text, the borders and essential qualities involved in architectural education are described as an institutional framework.

This becomes even more evident when we remember that *Criteria for Validation* is always accompanied by the real evaluation of practical results and educational outcomes of teaching process, monitored by the validating Visiting Boards. So the Visiting Board is comparing two settings for design education: the generalised text of *Criteria for Validation,* and the results of a teaching process in a school of architecture. These results create an independent existential meaning of "design" and "architectural design", probably more important, than the text itself. This diminishes the self-constituting power of the text, but we try to overcome this by investigating the key-texts for *Criteria for Validation*. These reports, involving

much effort in negotiating the terms and expressions, are themselves based on the existential meanings of a large variety of educational outcomes. So we are confronted with the double reflection or abstraction of a variety of existential meanings for "design" and "architectural design".

We believe that the descriptions in *Criteria for Validation* give us valuable introductory information on the qualities meant by the expressions “design” and “architectural design” (as words and notions).

Meanings for the word “design” or "design related items", used in the text, can be grouped into six different categories, types or interpretations, that we call domains. These domains are not pure philosophical or scientific categories, because their borders are diffused and they overlap each other. We must also consider them as interpretations from the text and thus they are connected to our personal preferences. The domains can be named in the following way: **design as process, design as result, design personality, design conditions, design realisations and design as universal action.**

DESIGN AS PROCESS. There is the process of designing, an activity that involves design. The verb “design” itself or other verbs creating a sense of process or continuity, are used in this case. Here expressions like “process of designing”, “creation of good design”, “aspects of designing” and “design is a holistic process” can be pointed out.

> Design is a holistic process and dexterity in it is derived from the practice of iteration: regular practice of the skill of designing through a variety of projects and structures. (Part 2. Criteria for Validation 1997,19).

DESIGN AS RESULT. There is the result of the process, usually referred to as a substantive and sometimes as a complex expression enlarged by attributes. Here expressions like “realisation of a design concept”, “design portfolio”, “successful architectural design”, “architectural design proposal” and “presentation models of the final design” can be highlighted. This domain is so clearly defined, that we analyse it in greater detail below (See section 1.1.4.).

DESIGN PERSONALITY. This is the focal point in the process, someone who acts as the director or conductor of the process and the creator of the result. We

may even see the director or creator, as a mediator of the designing process. Here expressions like “designers”, “design concept”, “design intentions”, “developing design personality” and “design team” can be indicated. This section refers to a human personality or a group of personalities acting as a team.

> The students should be showing evidence of a developing design personality and also the ability to deal with qualitative three-dimensional solutions ... . (Part 2. Criteria for Validation 1997,11)

We have decided to use the word "personality" deliberately, because it embraces all the human action in its entire spectrum - mind, philosophical subject, psychological and physiological subject. Within the first approach it also overwhelms the human body with its instincts, intuition and will.

DESIGN CONDITIONS. There are certain premises like conditions (or knowledge, skills and understanding) concerning the design process and design personality. Here expressions like “teaching of design”, “ability to carry through design intentions”, “design constraints”, “social context of design”, “cultural framework for design” and “knowledge of design” can be remembered. These are conditions that probably precede the process and the result of designing.

> In all design programmes the cultural framework and context for design must be made explicit, theoretical texts should be listed that may be helpful to explain the tutorial approach taken, together with reference to past and current built projects. (Part 2. Criteria for Validation 1997, 11)

The overall text of *Criteria for Validation* makes us aware that design never exists in a vacuum. This domain operates with a wide variety of disciplines and subject areas like, knowledge of characteristics and performance of materials, principles of structure and methods of construction. These are the necessary conditions to perform the design. But here we can also refer to another direction in design conditions - it is the reason for designing, the aim of designing. This direction is described as "the needs of clients, building users, construction workers and the community" (Part 2. Criteria for Validation 1997, 11).

DESIGN REALISATIONS. In the text we can also find hints that design as a result, creates or catalyses new realisations, which are the actual aim of the design process as overall phenomena. Clear indications of this are expressions : “a strong relationship between design, technical and environmental realisation” and

“rigorous process of realising design”. One of the expressions is differentiated enough to constitute a short definition of architecture itself:

> It is the design of a well balanced and integrated whole which has the potential to lift the solution from pragmatic building to a piece of architecture. (Part 2. Criteria for Validation 1997, 11)

This is also the domain that clearly describes the connection of design with the reality of everyday life - life-world. It connects the design result with design realisations - something new is being created as a technical realisation and environmental realisation, something is transformed. Usually in the field of architecture it is a building or group of buildings, something that has been built.

DESIGN AS UNIVERSAL ACTION. We can also find in the text a very broad and overarching meaning of the word “design”. It operates in the form of a meta-language on a different level, compared to the general use of the expression in the text. It can be interpreted as something extremely universal, if the general use of the word is taken to be in an architectural context.

> These courses should be tailored specifically to the needs of architectural students and should be designed to enrich their skills for the practice of architecture. (Part 2. Criteria for Validation 1997, 20)

The words “tailored” and “designed” are used here as synonyms. Here “design” can be understood as any process of preparing, devising or creating something new. For example, the verb or substantive can be used in expressions like: "the design of foreign policy", "design of computers - architecture of computers", "the design of research in chemistry". In these instances the meaning of "design" or "architecture" is so broad that it specifies nothing, it is used as an universal pronoun for any action. We will not investigate this domain in detail, although from an historical viewpoint the shifts in language can be very informative. It could explain how the project based approach was taken over by other professions or disciplines.

1.1.2. Sequence and succession of the domains.

In the meaning context of the whole text, a logical sequence and succession can be restored between these domains. This logical sequence is supported by practical empirical experience in the sphere of architecture.

There are always the design conditions, that involve knowledge, skill, ability or context, as well as the demand for some activity. These conditions are articulated through a personality, who has to be aware of them, who has the motivation, and the social position, to act as a design personality. The motivation and position of the design personality are created and backed by the design conditions. That personality is then involved in the design as process, operating as the focus of designing and creating the result - a design. During that process, the design conditions and design personality are "channelled" into the results. For an outside observer the result acts like an agent or a token of the design conditions, design personality and design process - all taken separately or united together. Design as result is then used to create something new or to transform something, that already exists. In the case of architectural design the result is usually a description of a building, that has the potential to become “a piece of architecture” due to the special design input - definition given by *Criteria for Validation* (Part 2. Criteria for Validation 1997, 11). This last member of the sequence we call the design realisations. If the motivation of the designer was the reason for the transformation of the reality, then the realisation is the end product. Having once been built, it can be compared and tested against the initial motivation of the designer and the design conditions. The quality of "being built" also allows the comparison of the design results and design realisations by outside observers.

We find support for the general logic of the sequence and succession in design domains from everyday practise. The whole process is formalised in design contracts, which describe the process in similar terms as domains. There are the conditions for the design, including the general description and parameters of the object to be designed. There is the time scope of the design process and the formal characteristics of the result. In some contracts the process is taken further and the design realisations - a building - becomes the object of contract. The same is true of a particular design project. At the beginning the designer clarifies the information and necessities for the future project. Then the designing takes place, on various levels of sophistication. Lastly the result is evaluated from the viewpoint of initial needs and conditions by the designer and client(s).

This gradual sequence of the domains, we would like to call "**design phenomena**" and investigate as a model in greater detail. (See Illustration 1) We call this model functional or instrumental[3].

1.1.3. The pragmatic description of the design phenomena.

All these domains and the logical sequence between them in the model and the text of *Criteria for Validation* can be understood from a pragmatic viewpoint. Thus architectural design is a continuous process, from the beginning (conditions of design) to the end (realisations of design). The result and realisation of the process can be seen as the end product of the sequence. The description of this succession from one domain to the other creates a deceptively simple picture of a logical algorithm or functional diagram, resembling the description of computer software. A similar suggestion is remembered:

> Perhaps the most characteristic feature of the literature on design methods is the prevalence of block diagrams, matrices and networks of many kinds that resemble, to varying degrees, the diagrams and calculations that computer programmers use. (Jones 1980, 61)

There are input and output, as well as logical chains to inform the correct answers. In this algorithm, the constraints and problems inside the chain can be approached pragmatically. Changing or adding domains or the elements identified within, the logical build-up of the process can change and improve the results. For instance we can look at the modification of the model for design process by Geoffrey Broadbent. The simple linear model of the sixties, consisting of - briefing, analysis, synthesis, evaluation and implementation - was modified under the influence of Thomas Kuhn's paradigms to facilitate under synthesis also, a "filter" of preconceptions. The later version of the design model also made use of conjectures and Karl Popper's theory of refutations (Broadbent 1988, 465,467).

> Since that was written I have developed a more sophisticated set of Evaluation / Refutation devices which I like to think of as 'filters'. These are based on a Paper by Hillier, Musgrove and O'Sullivan entitled Knowledge and Design (1972)./…/ I also know that my adaptation is viewed with some scepticism by the named authors. But they were looking for a *theoretical* structure for architectural research

[3] Interpreting the "practical design tool" as an instrument or organism of design process.

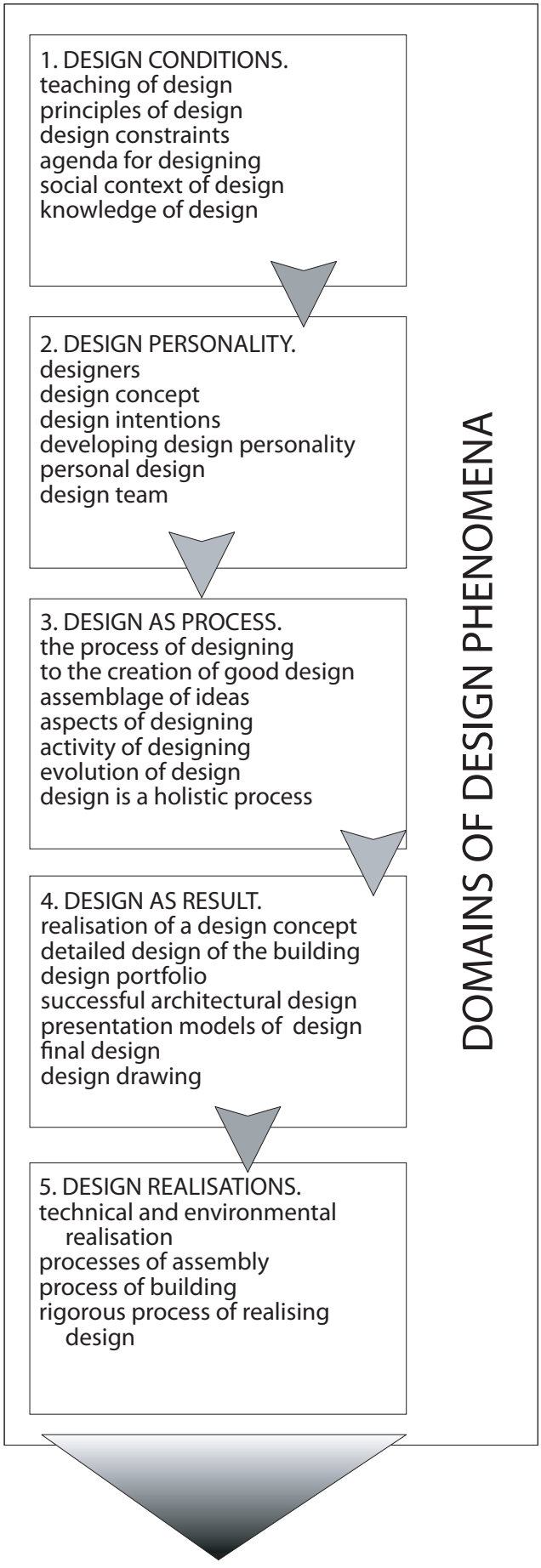

ILLUSTRATION 1

> whilst I was looking for a practical design tool. (Broadbent 1988, 466)

So the functional model operates as "a practical design tool". It is not a reflective description but rather, a pragmatic recipe. The functional model is not really interested in specifying and constituting the realities and categorical entities within the phenomenon. It is interested in the end result. It treats the elements as logical steps connected with causal, or possibly causal, relationships. But the functional model as the "practical design tool", cannot investigate design process from the viewpoint of its inner development and dynamic, nor from the viewpoint of its genesis. This is the source of bitter criticism, an example of which is in the introduction by Smithers (Smithers 1996, 567,568).

These functional or instrumental models of the design process in architecture are easily used as working methods, being parallel to the empirical and existential layers of design itself. They become the "black box" or "glass box" type of action schemes, where we really do not know very clearly what happens between input and output. But these models loose their credibility as soon as they are used in the form of theoretical explanation without existential backup - models that seek to define design and designing. They leave aside the epistemological differences between mental and material, real and possible, particular and universal as well as personal and social. All these entities within the design process are seen, if described at all, as functional elements and their philosophical essence and limits are ignored. This is admitted by J. Christopher Jones when describing the "logical, systematic, behaviouristic and operational character of the new design methods":

> Certainly one can find rigid insensitive examples of operational analysis in which people are treated (or mistreated) like natural objects and processes, i.e. as instruments that do not have a conscious life of their own. The risk of committing this sin may be unwelcome but it is a risk we may have to take if we are to controle, rather than be controlled by, the consequences of man-made evolution. (Jones 1980, 72-73)

Our functional model of the architectural design phenomena in educational framework, interpreted from the text of *Criteria for Validation*, commits the same mistake. Without the existential meaning giving value to the design results as a secondary plane, it looses its credibility.

The complementary side of the improvement to the functional model of the educational process is to describe the naming and defining of the domains involved in architectural design and to investigate how the domains themselves are constituted. The investigation into the constitution of these definitions introduces the analytical and philosophical meanings to the phenomenon of design in architecture. These philosophical meanings of defining architectural design lack the particular existential reality, but they gain epistemological credibility as definitions.

The different realities within the domains and connections among the domains identified in design phenomena, can be analysed through definitions in the main reference texts of the *Criteria for Validation* and in the *EC CD.* Before doing that, we return to the main document itself for an overview of clearly defined design results.

1.1.4. Definition of design results in *CRITERIA FOR VALIDATION*.

The domain of the design as a result is rather thoroughly and exactly described in *Criteria for Validation*, being one of the most important elements and outcomes of architectural education. From the overall context of the text, one can interpret the design result as an ideal solution. It is described as "holistic resolution" or "successful realisation" in the form of a network of ideas and hierarchies of meanings. The main attributes for the design result as an ideal solution are the "knowledge of" and "awareness of". This knowledge and awareness is a myriad of conditions, described as principles of structure, environmental control, construction, cultural and regional context, needs of users and community etc. The design result is "ideal" in two meanings; it is orientated towards its goal in the form of the "best possible" solution and, it is in the form of "ideal possibility" - in the sphere of knowledge, understanding and awareness, in short in the sphere of the mind. This all clearly implies that the design result is in the form of a specific meaningful content of a mind.

At the same time, the only way of describing or accessing design results is the "conventional representation". This conventional representation is definitely something other than the sphere of knowledge, awareness or understanding. It is representing and standing for something and in doing so, it is something different to the object that it represents. So one might say that the design result, in fact, consists of several layers, that veil or cover the content of it.

This conventional representation consists of several demands :

> … students should be able to demonstrate a developing skill and understanding of the practice of graphic techniques and modelling techniques which will
>
> : convey the three-dimensional arrangement, character and appearance of an architectural design project, using perspective, axonometric and isometric projection as appropriate;
>
> : present the project in terms of plan, section and elevation, to scale and with sufficient and clear dimensions and annotation to indicate the principal parts of the project; …
>
> : represent the character and spatial quality of the project;
>
> : use the conventions of architectural technical drawing to convey matters such as structure, construction, material assembly and fixing techniques; (Part 2. Criteria for Validation 1997, 16)

As soon as we attempt to leave the functional sequence of domains we can see in the design results a strong epistemological dichotomy - the old sign-meaning dichotomy. It is also clear that, when the design results in "an ideal solution" it is veiled and represented by a conventional representation, there must be a third party or agent in the dichotomy - the possibility of making meaningful connection between the representation and represented. In the case of the designer, making that connection, we are probably speaking of the rules in the domain of design phenomena, that we called design as process. For our investigation, this dichotomy describes the epistemological complexity hidden in the functional model, and in particular in the domain of design results and process.

This third party in communicating design results, brings into the functional model of design domains a powerful background and subject matters of its own. Here we see that the formal descriptions of design results contain at least four different elements:

1. the subject area - "**graphic techniques and modelling techniques";**
2. the methods to be used - **"three-dimensional arrangement, using perspective, axonometric and isometric projection";**
3. and requirements to secure the validity of the design - "**to scale and with sufficient and clear dimensions".**
4. special meanings in the design - **"character and spatial quality".**

All of these elements are expected to be met in an architectural design. In addition to the epistemological complexity of the design result, the description suggest that there are some additional design conditions, not mentioned or hinted at in the text before. It will be impossible to use methods of creating perspective and different projections in the results or within the process of designing, without profound knowledge of geometry, trigonometry and arithmetic. So the different domains conceal certain internal elements that are inevitable for the design phenomena as a whole.

We also see a strong overlap between design results, process and conditions. We can even say, that design results act as a special medium for the different domains proceeding it in the model. The design result is not just a result of the process, but a clear token and proof of the implementation of the design conditions. We might then identify the design results as signs of an inner language of design personality, but within some overall conventions. So the language of design results is at the same time, at least partially, universal for the design team and for society as a whole.

1.2. DEFINITIONS OF "ARCHITECTURE", "ARCHITECTURAL KNOWLEDGE" AND "ARCHITECTURAL DESIGN" IN THE KEY-TEXTS FOR *CRITERIA FOR VALIDATION*.

All the reviews referred to in *Criteria for Validation* are more specific in defining, what “architecture” and “architectural design” can be. In this section we try to compare these definitions to the described domains of design as overall phenomena and concurrently, enlarge and specify these domains more precisely.

1.2.1 Definitions of "design" and "architectural design" in *Strategic Study*, *The Burton Report* and *EC CD*.

In *Strategic Study* design is the major contribution of an architect to the construction industry and to society as a whole.

> Within the construction industry architects have two great assets: they are still in the best position to speak for the user. … they know how to design, ie their training has been devised to help clients turn aspirations into reality. … The distinctive skill of architects lies in their ability to provide design solutions which satisfy the needs of both clients and users. Delivering both the functional and aesthetic benefits of design, architects have a critical central role in the building process, as the leaders of the design team. (Strategic Study 1993, 5,6)

Design is the process where aspirations of clients are transformed into solutions in "reality" - in the building process. The design maps the aspirations into " the skilled and cost sensitive allocation of physical resources", with this, design solves "immediate as well as longer term accommodation problems of users, clients and society".

> Design is by no means the exclusive preserve of architects but architects by virtue of their long and difficult training, are in an excellent position to apply knowledge and judgement to hard and controversial decisions which have, more often than not, long term consequences. … Design is the core of the architect's contribution to the construction industry and to society. (Strategic Study 1993, 7,8)

We see that the definition of "design" in the *Strategic Study* merges design conditions, design process and design realisations. It specifies only that design is a fundamental contribution of the architectural profession and it is a distinctive and specific skill as a result of the long and difficult training.

In *The Burton Report* design is also seen as a skill:

> Design is a complex and developing skill, difficult to learn, involving dynamic working relationships with many other participants in the building process - many of whom also fulfil a critical design role. It is no more nor less than integrating all the elements in an harmonious working whole. … We are convinced that in all these domains[as: "design team", "design management", "changing requirements of clients, users and society"] the architect's most effective contribution is made possible by the central design skills, especially through the

> myriad connections of the design process. (Steering Group 1992, 9,10)

So “design” is a process where complex and developing skill is used to connect in "myriad" entities into “harmonious working whole”. The definition has not changed very much in recent years.[4] This definition welds together the following elements: "architect" as person, "architect's contribution", architect's reflection of "design skills" and "design process". It also identifies the architect as a participant in the building process. We see again that in a short definition, all the domains of design phenomena are involved. The architect is involved in entities “initial ideas in design”, “design as personal activity” and probably “assemblage of ideas”. The architect is also involved in the last domain of design realisations.

We see further, that the process of design is believed to be the unique and most effective contribution of an architect. The effectiveness is based on the "central skill of design". We can also interpret here that the process of design is dynamic and that it requires time - unfolds as a certain duration.

The Burton Report worked also with another, fairly broad set of definitions of “design” in architecture and building, as well as in other areas where people make things. The set of definitions in loose interpretation constitute the same domains as described before. The first definition in fact is a part of the definition found in *Strategic Study*:

> 1. Design involves the skilled and cost-sensitive allocation of physical resources, despite uncertainty, inadequate information and shifting goals, to solve immediate as well as long-term accommodation problems of users, clients and society at large. (Steering Group 1992,10)

[4] The definition has not changed much in 20 years. In 1972 John Harvey defines architect: “The essential faculty of an architect is then that of design. Whatever he may lack, he must have the capacity to plan, to devise, to invent. Obviously he must also have at least such knowledge of the technical process of building as will enable him to design reasonably, taking advantage of the properties of materials, using them with economy, and producing structures that are durable …” (Harvey 1972:18) In fact we may be quite confident as with certain loose interpretation we might say that the definition has not changed much in nearly 2000 years: " The architect should be equipped with knowledge of many branches of study and varied kinds of learning, for it is by his judgement that all work done by the other arts is put to test.… Consequently, since this study is so vast in extent, embellished and enriched as it is with many different kinds of learning, I think that men have no right to profess themselves architects hastily, without having climbed from boyhood the steps of these studies and thus, nursed by the knowledge of many arts and sciences, having reached the heigts of the holy ground of architecture.… Arrangement (διαθεσιξ) includes the putting of things in their proper places and the elegance of effect which is due to adjustments appropriate to the character of the work. Its forms of expression (ιδεαι) are these: groundplan, elevation, and perspective. … All three come of reflexion and invention. Reflexion is careful and laborous thought, and watchful attention directed to the agreeable effect of one's plan. Invention on the other hand, is the solving of intricate problems and the discovery of new principles by means of brillancy and versatility." (Vitruvius 1960:5,10,13-14)

In the first section we can recognise the design conditions - as the knowledge of problems identified by society - the users and clients; as the knowledge of solving them in uncertainty and in future - working with possible changes, not tested or real; and as the knowledge of the world in which the society operates - "allocation of physical resources". We can summarise - this is the domain of design conditions as the knowledge and intuition of the life-world.

> 2. Design is the underlying organisation of an artefact; design management is the organisation of information so that others can develop and construct that artefact.
> 3. In its most general sense, design denotes the continuous thread, the translation of ideas into achievement; it is a total process. It provides the common ground for fruitful complementary and joint working between the designing professions, a strong counter to current fragmentations. (Steering Group 1992,10)

The second and third definitions can be described like the design process - as " the underlying organisation of an artefact" and "the translation of ideas into achievement". This involves dynamic change but also refers to specific meaningful content in the design process - organisation and translation of something that changes. The expressions "artefact" and "achievement" also refer to design as result. The third section indicates the totality of the design process, referring to the continuity of some aspects going through all of the domains described.

The sections describe the mechanism of involving the dichotomy, found in the design results of *Criteria for Validation.* We can interpret from these sections of the definition, that the design process with "underlying organisation" and "translation" is the source and real playground for the epistemological dichotomy in the design results

> 4. Architectural design is the harmonious integration in a building of the many aspects of shelter, such as space, proportion, form, materials, construction technique, services, functional, financial and aesthetic requirements of the user, light, colour, art and landscape. Design management is the technique to bring the design to fruition. (Steering Group 1992,10)

The fourth section describes the domain of design as result becoming the realisation - “the harmonious integration in a building of the many aspects of …”. This section has two important interpretations for us: Firstly it prolongs the process of designing, as the transformation of design results into realisations and is a part designing process. Secondly it implies that there is some meaningful content of designing in the realisations. The extension of design phenomena from design as result, to the design as realisation, duplicates the meaning-giving act in design process and design results. Like the design result being the representation of previous domains in some forms of language, the same can be said of design realisations. They act, or stand for the design results as their source. Another process of "translation" occurs. This meaningful content in realisations involves knowledge ("design drawings", "materials", "construction technique") and evaluations ("proportion", "aesthetic requirements", "colour" and "art").

The domain of design conditions is quite thoroughly and exactly described in *EC CD*, related directly to architectural education.

“Design” and “architectural design” are given in the EC CD mostly through design conditions, that are inevitable to create design as result. In Article 3 they are described as the lay-out of studies in the architectural training. They are grouped as “knowledge of” or “adequate knowledge of”; “skill” (“ability to create”) and “understanding of”. So all of them are personalised apprehensions of some knowledge.

In seven of the acquisitions out of the eleven that describe the scope of knowledge involved in architectural education “design” is mentioned and we underline it:

> Education and training … shall be provided through courses of studies at university level. Such studies shall be balanced between the theoretical and practical aspects of architectural training and shall ensure the acquisition of: 1. **an ability to** create architectural designs that satisfy both aesthetic and technical requirements, …
>
> 3. **a knowledge of** the fine arts as an influence on the quality of architectural design, 4. **an adequate knowledge** of urban design, planning and the skills involved in the planning process, … 7. **an understanding of** methods of investigation an preparation of the brief for a design project, 8. **an understanding of** the structural design, constructional and engineering problems associated with building

> design, 10. the necessary **design skills** to meet building users` requirements within the constraints imposed by cost factors and building regulations. 11. **An adequate knowledge** of the industries, organizations, regulations and procedures involved in translating design concepts into buildings and integrating plans into overall planning. (EC CD 1985, No L 223/ 17,18)

The rest, describe the knowledge and understanding that is related to and vital to architectural education, but is not formally related to design. Here knowledge concerning history and theory, fine arts, methods of investigation, society, physical problems and industry is mentioned. All of this knowledge is described as different elements connected to architecture as a general aim of the training “in the field of architecture”.

We might conclude that design conditions in *EC CD* are given in dialogue between personality and society. Knowledge, skill and ability is strictly person orientated and can be effectively used only **by and through** design personality. On the other hand society regulates and controls the outcomes of the knowledge, skill and ability; setting out the standards by naming and defining them. In this case the society that has moderated the definitions is the European Union. Only in two acquisitions, however, can we trace hints of design personality involved directly (in the eleventh - the “translating design concepts” and in the first - the “creation of design” are mentioned); we believe that this is a case where design conditions are merged with design personality.

In the seventh acquisation, the design result is mentioned - “ a design project”. It is interesting that in all the descriptions only the substantive "design" is used and the processional character of design can be seen only through applying skills or understanding how to achieve the design as result. We interpret this as the directional difference between the source reports of *Criteria for Validation* and *EC CD*. When the reports tend to merge conditions, process and result, then the *EC CD* adopts the more personality orientated approach and merge conditions and personality leaving the process more separated and articulated.

1.2.2. Definitions of "architectural knowledge" in *Strategic Study*, *The Burton Report* and *EC CD*.

In *EC CD* we see how architectural phenomena is connected to many types of knowledge, skills and abilities. But, very often, we also hear about specific architectural knowledge:

> Architectural knowledge is special - a perfect case of the special nature of professional knowledge. Architectural knowledge is characterised by being related to design of the buildings and their use. It connects and transcends many other bodies of knowledge in an holistic, systematic and yet practical way. It is concerned with making real the aspirations of users. It involves determining the future as well as honouring and protecting the past. (Strategic Study 1993, 25)

Here the subject area and methods of design results are clarified. Not only is some specific knowledge outside the design phenomena indicated, but the very "**architectural knowledge**" is seen as a result or "**an holistic**" body that relates "**many other bodies of knowledge**". So architectural knowledge operates as a frame or a special kind of context above other types of knowledge. It is noteworthy, that nothing is said about the object of that specific knowledge, so it operates chiefly as a goal or principle.

Definition of "architectural knowledge" in *EC CD*. The Directive describes following subjects in relation to architecture:

> … an adequate knowledge of the history and theories of architecture and the related arts, technologies and human sciences", "a knowledge of the fine arts" and "an adequate knowledge of physical problems and technologies". (EC CD 1985, No L 223/ 17,18)

We assume that the knowledge concerning "activities in the field of architecture" is "architectural knowledge".

We see again, that it is almost impossible to specify the specific "architectural" quality in the knowledge. It is an interwoven complex of design conditions as well as the application of them during the design process. The only thing that relates totally different spheres of knowledge to "architectural knowledge" is "design" itself within the architectural phenomena. Even if we look at "architectural theory", "architectural philosophy", "architectural aesthetics", "architectural criticism" or "architectural history"- traditionally considered as specifically

architectural in character - we must conclude that all of them rely on rules and values constituted in their “root” spheres: philosophy, criticism as literary studies or historical studies. These different kinds of knowledge as specific disciplines are just “applied” to the architectural phenomena.

We further investigate the definition of transmitting and developing "architectural knowledge" *in Strategic Study*: (The underlining is ours.)

> But, aside from differences of emphasis and interpretation, the key value which most schools will surely seek to transmit to their students must relate to ‘quality of design - to what architecture is all about and what it means’ as one student put it, or ‘a belief in design as the generator ‘ as another described it.” (Strategic Study 1993,173)

Here, architectural knowledge can be seen as the "quality of design" and "belief in design". The object of the knowledge is veiled.

> There is no doubt in my mind, despite the invaluable and continuing contributions to the architectural programme of the universities, and despite architecture’s intimate and necessary relationship with the world of commerce, that there is no better institutional framework in transmitting and developing architectural knowledge than through that complex form of voluntary collaboration we call the architectural profession.” (Strategic Study. Phase II 1993, 25)

So the architectural profession is involved in design and architectural phenomena and has a major task nobody else can fulfil - keeping this knowledge alive. These definitions show clearly **how fundamental architectural education is believed to be from the viewpoint of “design conditions”, “architectural knowledge” and “architectural profession”.**

The possibility of transmitting and developing architectural knowledge introduces a new type of dialogue where the design personality is involved. The dialogue between other professionals of the craft. So we actually see a double dialogue involved in design phenomena: one from the direction of society and the other from the profession, unified in a process called education.

1.2.3. Definitions of "architecture" and "architectural profession" in *Strategic Study*, *The Burton Report* and *EC CD*.

Definition of "architecture" in the *Criteria for Validation* involves two approaches: In the overall meaning of the text it sees the "ideal" content of design results as the creation of architecture (positive assertion) and it then contrasts that with the "pragmatic building" (negative assertion) :

> Successful architectural design requires a sensible approach to planning, a balance of structural form, suitable materials and processes of assembly. … it is the design of a well balanced and integrated whole which has the potential to lift the solution from pragmatic building to a piece of architecture." (Part 2. Criteria for Validation 1997, 11)

So architecture in the form of "a piece of architecture" is differentiated from a building (a usual design realisation) via that "ideal" content - "a well balanced and integrated whole". These sections broaden the parameters of our initial interest in "architectural design" to investigate the phenomenon of architecture itself. It is quite clear from the definition that "successful architectural design", within certain evaluations, creates something we call architecture. **So "architectural design" is not only central to the architect's activities, but also it is a fundamental and substantial attribute to the whole phenomenon of architecture**.

This conclusion is also reinforced by the definition of architecture in *EC CD*, where architecture is defined exclusively through the activities of an architect as professional and personality:

> For the purposes of this Directive, activities in the field of architecture shall be those activities usually pursued under the professional title of architect. (EC CD 1985, No L 223/ 17)

The same approach is adapted in *Architecture and Town Planning Education in the Netherlands*, where architecture is defined as "designed building" and the criterion of being "designed" comes from the person qualified to do it - "architect"[5] (Orbasli, Worthington 1995, 2). The same holds true in comparison of the

[5] Orbasili and Worthington in their study really downgrade the heavy cultural and historical meaning of the title "architect": " Although the title "Arcitect" has deep-seated historical roots in European culture, its current professional standing stems from social and economic changes in the mid-nineteenth century. … The modern dilemma for the architectural profession is that architects are often no longer head of the building team, increasingly rejected by the client, and driven by commercial self-interests, rather than a broader altruism." (Orbasli, Worthington 1995,18)

architect's relation to architecture in the majority of European countries (Mabardi, Girelli 1997).

"Architecture" in the EC CD is **defined very precisely through the legal aspect of the personality of architect and in the qualities of the personality defined through the education.** It is also widened into a typology, called " activities in the field of architecture". This broad typology suggests once more that "architectural design" should be seen in broader context. This context we will call architectural phenomena. We will use the description "phenomena" deliberately to keep the borders of the definition of architecture open. This we hope will secure that nothing important connected to the meaning is left aside.

We have to conclude that all the domains of design phenomena are also included in the "field of architectural activity" - in architectural phenomena.

Definition of architectural profession in *Strategic Study*:

> Both architects and their clients agree that the profession's unique contribution to the built environment and the process of construction is:
> - a blend of artistic and technical skills
> - vision
> - an understanding of how the separate elements of aesthetics, space and function can be effectively brought together in a building
> - the ability to convert user requirements into reality. (Strategic Study 1993, 25)
>
> … the client still perceives that the conceptual design stage provides the highest degree of added value delivered by the architect. The unique contribution of the architectural profession is seen to be in its blend of artistic and technical skills and this contribution is at its height during the design phase of the project …. However, clients need to be made aware of the value of design input throughout the building process - restricting the architect to conceptional design alone may lead to situations where excellent design concepts are profoundly comprised by poor implementation. (Strategic Study 1993, 15-16)

This unique contribution that defines architectural profession is, in the context of that previously stated, the ability to join “architectural knowledge” in the process of design with the existing circumstances, that solves the problems of the clients or of society as a whole. If we try to describe that in the language of domains in design phenomena, we see that profession is defined through the overall process from design conditions to the design realisations. This overall participation takes us back to the unified element or content in the design phenomena that we started with from the pragmatic viewpoint.

The definitions of “architectural profession” and “transmitting architectural knowledge” add even further domains to the design phenomena. We see that architectural “design” is also closely related to the built environment and to the world of commerce being part of design conditions, sometimes referred to also as design constraints. So the whole architectural phenomena becomes, from an analytical point of view, even more ephemeral and many-faceted.

1.2.4. Definitions in *QAA Subject Benchmark Statements*.

Whilst this investigation was in preparation, a further source, describing architectural education, was published: *Quality Assurance Agency Subject Benchmark Statements*. The statements were produced to "describe the nature and characteristics of programmes in a specific subject." We are particularly interested in the academic standards for architecture. We will briefly compare the main definitions in the document with the findings in *Criteria for Validation* and in its key-texts.

We will concentrate on the following definitions or descriptions: "design", "architectural design", "architecture", "architectural knowledge". We go through these in the order of appearance in the text.

The definition of "architecture" in the *QAA Subject Benchmark Statements* is probably the largest in the scope of its meaning when compared to any of the other texts we have analysed. It embraces everything that can "be", in the literal sense of the meaning:

> It ["the discipline of architecture"] addresses the accommodation of all human activity in all places under all conditions, understanding our place within differing physical, historical, cultural, social, political and virtual environments. Architecture proposes, forms, and

> transforms our built environment, and does so through an engagement with the spaces, buildings, cities and landscapes in which we live. (*QAA Subject Benchmark Statements* 2000, 3)

It is difficult to find something that is left out of the definition. It refers to everything man deals with ("all human activity"), in totality of space ("all places") and in totality of time and possible modes ("under all conditions"). So the definition expands into infinity. The political intentions of this definition we do not know. It certainly moves strongly in the direction proposed by the *Stansfield Smith Report* , that "recognises a broader base, or wider perception, of the subject than just a narrow vocational discipline" (Architecture Education for the 21st Century 1999, 3). But for this investigation, the epistemological consequences of the definition are really important. The definition focuses on the intellectual discourse and the intellectual enquiry in the discipline of architecture transcending in its goal (but not confronting) vocational interests of professional practice. This is clearly stated in the introduction of the text:

> We have sought, however, to delineate the discipline's boundaries so as to allow undergraduate awards in architecture to embrace a broad constituency, insisting on a sense of intellectual enquiry beyond the professional practice of the subject. (*QAA Subject Benchmark Statements* 2000, 3)

So architecture as the goal of the domains of design results and realisations, is firstly an intellectual discourse.

The definition of "architecture" also makes a strong connection between time and place. We can interpret that architecture overwhelms past, present and future as modes of time - "architecture proposes, forms, and transforms our built environment". After that the time-scope in the built environment is connected to specific places of human existence - "through engagement with the spaces, buildings, cities and landscapes in which we live" (*QAA Subject Benchmark Statements* 2000, 3).

The same breath of infinity in the definition of architecture, can be observed defining "design" in the text of *QAA Subject Benchmark Statements*:

> Design is the core activity of an architectural education. There is, however, no single, unified theory of design which is generally accepted. Indeed it is the contested nature of design as an activity that provokes debate, encourages diversity, and advances the subject. Nor

> is design a single category of activity. The relationship among design process, design programme and design projects can be developed, communicated, received, criticised and realised. It is the interaction of ideas, intentions and operations that gives the core of the subject area its distinctiveness, … (*QAA Subject Benchmark Statements* 2000, 3)

The fundamental quality of design for education is stressed, once again. But the "what-ness" of design itself remains obscure. It is definitely an activity. Everybody, having some experience in the field of architecture, instinctively can agree with everything said in the quotation, but as a self-standing definition of design it does not explicate a specific meaning. If we try to extract the "distinctiveness" of the "core of the subject area" - design as the core activity of an architectural education - we end up with "interaction of ideas, intentions and operations".

The formal design results are described in concordance with *Criteria for Validation.* They are to be communicated through the conventions of architectural representation. The different mediums also contribute to developing design ideas, thus becoming the part of the process.

"Architectural knowledge" is described as specific meta-knowledge in several places in the text. Firstly in the discipline of architecture it is seen as drawing "on knowledge and skills from the human and physical sciences, the humanities and the field of fine and applied arts." Secondly, knowledge is seen as rich, varied and interdisciplinary. Thirdly, it creates value in itself:

> But the knowledge, understanding and skills that an architectural education imparts is broad, holistic and value in itself, as befits a distinct, academic discipline. (*QAA Subject Benchmark Statements* 2000, 3)

Fourthly, the "central skill to the acquisition of all architectural knowledge" is identified with "self-reflection", that is gained through the practice of the design project.

To compare the *QAA Subject Benchmark Statements* with the other texts, we have found that it is more fluent in uniting the domains of conditions, process and results into a holistic object of studies, with several complex relationships between them as different aspects of architectural design. It also develops the notion of "design process" on several levels. It identifies the notion with general category of

activity and then unites it with different "sub-designs" (environmental, structural and architectural) referring to them in plural: "design processes". (*QAA Subject Benchmark Statements* 2000, 3,4,6,7,8)

So we have to turn towards more specific analysis of "architectural design" and "architectural knowledge" through the realities in which they exist.

But the excursion to the key-texts of *Criteria for Validation*, *EC CD* and *QAA Subject Benchmark Statements,* has not been fruitless. We believe the most important outcome of the analysis of different domains is the confirmation of the assumption, **that architectural education with its special relation to design, is the formative power and essential for defining the architectural profession as well as architecture as a overall phenomenon.**

Before analysing the realities involved in the domains of design we will briefly look at the etymology of the word, to see how this fits with the description of design domains.

1.3. BACKGROUND OF THE WORD "DESIGN".

1.3.1. Etymology of the word "design".

The meaning of the verb and substantive - "design" is vast as was hinted at in the description of the domain "design as universal action". It covers the field of thinking, doing and completing anything. The current short, and universal meaning is given as:

> *DESIGN* - the process of developing plans or schemes of action; more particularly, a design may be the developed plan or scheme, whether kept in mind or set forth as a drawing or model. … Design is a word used loosely in all the arts, and particularly in their instruction, to mean composition, style, or decoration. … An all-over design is a regularly repeated decoration covering an expanse. Such loose, localized uses of the word are usually comprehensible in context but may confuse readers or listeners who correctly suspect that design in aeronautics, for example, is another thing. (The New Encyclopaedia Britannica 1991)

Layers of historical meaning in the word can be traced in etymological development of the stem word. *Design* as a verb is derived from the French: *desinner* (14th c.) and *designer* (16th c.). Generally, the word meant: " to denote, signifie, or shew by a marke or token, to designe, prescribe, appoint". The French word itself, is a derivation from the Latin: *designare* or *dissignare*. The stem-words of these were probably *signo*, *signare, signum* - to mark, mark, token or sign. (Ladina-Eesti sõnaraamat 1986, 222,603)

The shades of meaning for the old Latin word *designo, designare* gives us all the complexities we could interpret from the *Criteria for Validation* and its key-texts. It can mean:

1." to mark, to signify " ,
2." to depict in outlines, to sketch, to draw ",
3." to suggest, to hint ", "to hint with words, "to hint at somebody in speech",
4." to name, to appoint ",
5." to contrive, to plan ".

The derivations, with slightly different meanings, are *designatio* - "to appoint", "to mark", "to arrange" and *designator* - "marker", "arranger", "judge". (Ladina-Eesti sõnaraamat 1986, 222)

The Latin word *signo* means:

1.” to mark, label, designate”,

2.” pace with firmness”, “ to point somebody out with honours”,

3.” to seal something “,

4.” act of coining “,

5.” to notice, to examine, to observe “.

It has a strong sense of authority and representation in its meaning, still visible in the English word stem "sign", suggesting signing and "standing for".

In Italian the verb was used in the 16th century as “to designe, contriue, plot, purpose, intend; also to draw, paint, embroither, modle, pourtray.” In French the 17th century dessigner was used as “to design in the artistic sense”. The English word combines all these senses.[6]

The substantive *designer* is derived from the verb *design* and it generally means “the one who designs”. The meanings are:

1. “One who originates plan or plans.” (1670)

[6] We have tried to list the historical meanings for the verb and substantive *design*:

a. Historical meanings of the verb connected to Latin *designare* and French *designer*. Generally as “to mark out, nominate, appoint, designate.”

1. “To point out by distinctive sign, mark, or token; to indicate.” (1593)
2. “To point out by name or by descriptive phrase; in *Law*, to specify by title, profession, trade, etc.; to designate, name, style.” (1603)
3. “Of names, signs, etc.: To signify, stand for.” (1627)
4. “To appoint to office, function, or position; to designate, nominate.” (1596)
5. “To appoint or assign (something *to* a person); to make over, bestow, grant, give.” (1572)
6. “Hence, with mixture of substantive *design* : To set apart in thought for the use or advantage of some one; to intend to bestow or give.” (1664)
7. “To appoint, destine, devote (a thing or person) to a fate or purpose.” (1593)

b. Historical meanings connected to substantive *design* (French *dessigner*): Generally as “to plan, purpose, intend.”

8. “To form a plan or scheme of; to conceive and arrange in the mind; to originate mentally, plan out, contrive.” (1548)
9. “In a weaker sense: To purpose, intend, mean.” (1660)
10. “To purpose or intend (a thing) *to be* or *do* (something); to mean (a thing) to serve some purpose or fulfil some plan.” (1703)
11. “To have purposes or intentions (of a specified kind). (1749)
12. “To have in view contemplate.” (1677)
13. “To intend to go or start; to be bound for (a place). To intend to start upon a certain course; to mean to enter upon a pursuit.” (1644)

c. Domain connected to substantive *design* (Italian *disegnare*, French *dessiner*): Generally as “to sketch, delineate, draw; to fashion artistically.”

14. “To make a sketch of (an object or scene); to sketch, draw. To trace the outline of, delineate. To make the preliminary sketch of (a work of art, a picture, statue, ornamental fabric, etc.); to make the plans and drawings necessary for the construction of (a building, ship, machine, etc.), which the workmen have to follow out.” (1635)
15. “To plan and execute (a structure, work of art, etc.); to fashion with artistic skill or decorative device; to furnish or adorn with a design.” (1666)
16. “To trace the outline of a figure or form; to put a graphic representation on paper, canvas, etc.; to draw sketch. To form a fashion a work of art; in a narrow sense, to form decorative figures, devise artistic patterns.” (1662)(Oxford English Dictionary:520)

2. “In bad sense: One who cherishes evil designs or is actuated by selfish purposes; a plotter, schemer, intriguer.” (1649)
3. “One who makes an artistic design or plan of construction; a draughtsman; one whose business is to invent or prepare designs or patterns for the manufacturer or constructor.” (1662)
4. “Frequently used attribute in fashion, etc., to denote goods bearing the name or label of a famous designer, with the implication that they are expensive or prestigious.” (1966)

The substantive *design* has clear meanings that relate it to thinking and planning:
1. “A plan or a scheme conceived in the mind of something to be done, the preliminary conception of an idea that is to be carried into effect by action, a project.” (1593)
2. “Purpose, aim, intention.” (1588)
3. “The thing aimed at.” (1657)
4. “Contrivance in accordance with a preconceived plan, adaptation of means to ends, prearranged purpose, as the argument from design.” (1665)
5. “In bad sense - crafty contrivance, an instance of this in architecture.” (1704)
(The Shorter Oxford English Dictionary 1972)

The generally accepted meaning of the etymological context of the word "design" stemming from Latin words "*designo*" and "*signum*" fits well within the extended area of the layers of meanings, described as design domains. The old usage of the word has a clear process-like meaning and the substantive concerning subject, is derived from the verb. A promising paradox emerges here: We started with the tautology (architecture is, what architects do) getting rid of the historical meaning field. Then, the architect was defined through architectural design and the education of architectural design. Through the verb *design,* the historical meaning field is founded again, and enters the discussion at another level. But, the most interesting aspect of etymology, we consider to be the strong indications of the processual qualities of design - how it relates to the past, presence and future.

The group of expressions discussed within etymology, create a possibility of a threefold interpretation of *design*:
1. something to be fulfilled in the future - design as planning, intending, expecting;
2. something to be fulfilled with "authority", decision or viewpoint, gained as present - design as appointing, designating, naming;

3. something referring to the past gained or finished, something mediated, something standing now and referring to something before - design as signifying, hinting, suggesting, depicting, unveiling.

1.3.2. The literature on architectural design.

The literature on "architectural design" and especially on "design" is vast. As the word itself is so loaded and has an ephemeral character, the literature concerning it covers very different subject matters from very different methodologies. The easy method of defining "design literature" is similar to the method of Hanno-Walter Kruft, who has defined "architectural theory" as any written documents on architecture. (Kruft 1994, 15) So "design literature" can be anything written about design and architectural design. We have grouped the literature into loosely defned classes.

The first great class 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 architecture, taken as broadly and as loosely as possible. Here, authors like Geoffrey Broadbent and Sven Hesselgren can be mentioned (Broadbent 1988, Hesselgren 1972). The compendiums are compiled on different criteria. Broadbent discusses a wide variety of issues from the perspective of curricula. Hesselgren relies on the psychology of perception. Some of the compendiums become regional handbooks (Kemper 1979).

The second class is 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 with the following words:

> 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 (Salingaros 2000; Gero, Sudweeks 1996). The logical direction of this class is established by seeing design as a specific syntax (Hillier, Hanson 1984; Hillier 1996; Hillier 2000).

The third class of books that describe architectural design as a pictorial analysis of architecture and spatial form. These could be called pattern-books, they are usually

hand-drawn with relatively little text (Baker 1996; Clark, Pause 1996; Ching 1996).

The fourth class of books and articles that describe design as an overall method or as a process of creation. The scope of disciplines, where the creation takes place, is various: from architecture to management of goods and traffic control (Broadbent, Ward 1969; Hubel, Diedra 1984; Jones, Thornley 1963; Lawson 1994; Lawson 1997; Schön 1991; Rowe 1987; Machett 1968). Probably the most comprehensive of these reviews is by Jones, who has compiled an 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 (Jones 1980). Only one of these methods can be interpreted as working on an epistemological level: Matchett's "fundamental design method" (FDM) and this is rejected by the author:

> 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)

Very few of the authors deal with the process of design [7] and with the process of architectural design in education (Vesely 1995; Dunin-Woyseth, Noschis 1998; Michialino 1996; Perez-Gomez 1988; Harfield 1999; Pearce, Toy 1995; Crinson, Lubbock 1994).

[7] Steve Harfield in his essay on architectural design as process, points out that having gone through "a survey of more than 250 sources" (Harfield 1999, 174), very few feel the need to explain what process is.

1.4. SUMMARY AND CONCLUSIONS FROM THE INTERPRETATION OF THE KEY-TEXTS.

1.4.1. Summary of the texts.

We can **summarise** the analysis of the current definitions and descriptions in the official normative documents and in the key-texts:

1. The notions of “architectural design” as well as “design” are difficult to define exactly due to the complex linguistic build-up and heavily loaded historical and contemporary meanings. This gives the notion a synthetic and ephemeral character.

2. The complex build-up of the meaning of “design” is complemented by dynamic and “merging” quality in design conditions, design process and design results when we attempt to description the phenomena as a whole. This dynamic quality, we have tried to preserve in the investigation, approaching "design" as an open phenomenon. The dynamic and “merging” quality holds to be true in current reports as well as in the archetypal etymological meanings emerging from the past.

3. It is also apparent, that the process of “architectural design” is connected to and surrounded by, a whole set of different conditions that relate the phenomena to the larger context. These conditions, often not related to design itself, together with the context in which they appear, can be identified as complementary and inevitable for architectural output of design, we have called for the moment “architectural phenomena”.

4. Some of the necessary design conditions, due to the universality of their build-up, operate as "meaningful content" in the design process, in the design results and in the design realisations. The conditions as meaningful content are reflected and translated into the different domains and, at least partly, can be identified as a meaning in conventional representations of design. This language-like quality seems to be the foundation of unity in the whole design phenomena.

5. There is “no better institutional framework” for transmitting and developing “architectural knowledge”, than the architectural profession itself. Obtaining architectural knowledge is thus not only acquiring different elements of knowledge

in the course of education, but also "living-into" that knowledge through voluntarily participating in the profession.

1.4.2. Conclusions from the texts and suggestions for the next phase of investigation.

From the analysis of the official documents and key-texts we can make the following **conclusions:**

1. The design phenomena can be structured into different domains, which exhibit a meaningful unity as types and are ordered in logical time sequence in their unfolding.

2. The notion of "design", in the domains of design process and design results, is essential for the sphere of architecture, as the uniqueness of architectural profession and architectural knowledge is defined and measured mostly through design phenomena.

3. The design conditions related to the design process directly or indirectly set up a context that can be seen as a dialogue between designer as subject and society. Knowledge, skill and ability in the normative documents and key-texts are strictly person orientated and can be effectively made use of only **by and through** the designer as a personality. At the same, time society regulates the criteria of identifying the individual as a design personality within the profession, both legally and essentially.

4. The acquiring of knowledge, being aware of knowledge and applying knowledge, are the fundamental activities in education. In the normative documents and key-texts, "architectural knowledge" is seen operating in the process of design as a meta-knowledge, unifying or floating above all other types of knowledge.

5. Within the domains of design results and design process we can observe a dichotomy between the sphere of mind and the sphere of representations. We identify this dichotomy with the epistemological complexity, hidden in the functional (instrumental) model of design phenomena.

6. The merging of different domains in the official documents and in the key-texts, as well as the etymological meanings suggest that the expression "design" is connected to time, exhibits the sequential qualities in the form of human understanding as past, present and future.

7. Architectural education can be seen fundamental in two aspects:
In the course of unfolding design activities, architectural knowledge overwhelms all other types of knowledge from the perspective of the architectural profession.

and : **In the course of unfolding design activities, architectural knowledge is "lived-into", being central to the identification of the architectural profession and its sphere of activity.**

Taking into consideration the definitions, that were extracted from the normative documents and key-texts, we attempt to analyse the domains found in the phenomena of architectural design from the epistemological view of the design personality. The epistemological view of the overall direction of this investigation seems important because of several **suggestions:**

: an epistemological view would characterise the domains described in design phenomena as how they are connected to the realities of man and the world as well as to describe what kind of relationship can be identified between the domains themselves as parts of these realities.

: an epistemological view would help to describe how certain knowledge of the design personality can overwhelm different types of knowledge involved in the design process and what the qualities are of this kind of "meta-knowledge".

: an epistemological view would help to describe the temporal quality within the domains; to show how knowledge can change during the process of a personality "living-into" the field of architecture - whilst somebody is in the process of participating in the profession.

: an epistemological view would also take into consideration the teaching process - how changes in knowledge are connected to creator /observer relationships and

how that in turn, would allow for an approach to the phenomena of architecture being perceived by society.

2. ON REALITIES OF DESIGN IN ARCHITECTURAL PHENOMENA.

(EPISTEMOLOGICAL MODEL)

2.1. INTERPRETATION OF THE TEXTS - AN EPISTEMOLOGICAL MODEL.

2.1.1. Subjective and objective realities in design phenomena.

Any model that takes into consideration the epistemological point of view, is based on the pre-given philosophical setting. This philosophical context is in some form of axiological preferences and moulds the creation of the model. So far we have refrained from clearly specifying the philosophical approach for the investigation. We have described the domains from the natural attitude and common sense, guided by textual analysis, extracted definitions and overall logic of the texts.

To analyse the different domains analytically, from the epistemological point of view, we have to decide the philosophical approach. As we have seen from the previously described definitions - architecture is largely specified through the design activity of an architect as a personality. The *EC CD* exclusively defines the “field of architecture” through the legal subject – this being the personality of an architect as the member of the profession. He or she is the member of society who fulfils the prescribed normative requirements and on the basis of these, can be considered an architect. Within *EC CD* framework the requirements are given through the typology of knowledge, skills and abilities as well as through the typology of awards of the schools within the EU. These schools are believed to have sufficient rigour to prepare students for the necessary requirements, that have been negotiated by the member states.

The person awarded the title of “architect” acts as a legal subject with the knowledge, awareness and skills prescribed by normative documents. The legal subject thus is one, normatively regulated, aspect of a design personality. The expression "personality" is often used within a psychological context, referring to a particular member of society, a particular person. We have used the name for a domain, where the 'focal point” or the director of the design process is investigated. So the word "personality" for us has been so far a legal, psychological and philosophical subject in the full spectrum of possible meanings.

The human body with its instincts, intuition and will has been part of it. Nevertheless, we are interested in that universal, which is common in the designing process for all architects, so we will not be interested in the psychological personality or the body of a particular person. Neither are we interested in the legal subject, but we are interested in the meanings that this legal status brings forward. So the specification we move towards, is to investigate the personality of the architect as the philosophical subject with the ontological, epistemological and axiological aspects of that subject. This undoubtedly limits our investigation, but at the same time it allows clarification of the realities and horizons, within which we attempt to investigate the domains of design phenomena.

The domains we have found and grouped, are surely different in their realities as well as being different in operating through a variety of mediums (See Illustration 2). The initial ideas in design differ from the design personality. The creation – assemblage of ideas – differs from the design personality and the design drawings. The design drawings have different phases of development before becoming the design results and these differ from the realisations. All these entities must somehow be grouped according to their meanings and functions. The wider entities within the design phenomena are named differently and these names are used differently. We can rely here on the everyday practice of designing. There are strongly felt differences in thinking of design, talking of design, representing design and experiencing the design as “being built”.

The difference can also be observed in the time sequence of the domains as the representation of certain causal relationships between them. The design conditions, that are necessary to accomplish design, usually precede the process itself. The elements in domains, like "design drawings", "final design", "detailed design of the building" are used before the "process of building" or "rigorous process of realising design" really starts.

The starting point for developing the epistemological model, we suggest, could be the personality of an architect. We have seen how the knowledge, awareness and skills of an architect define the profession and the sphere of architecture. It is the personality of a particular real human being within the continuum of his or her identity, that we investigate through a philosophical subject. So the basic foundation of our model would be a personality - thinking and remembering

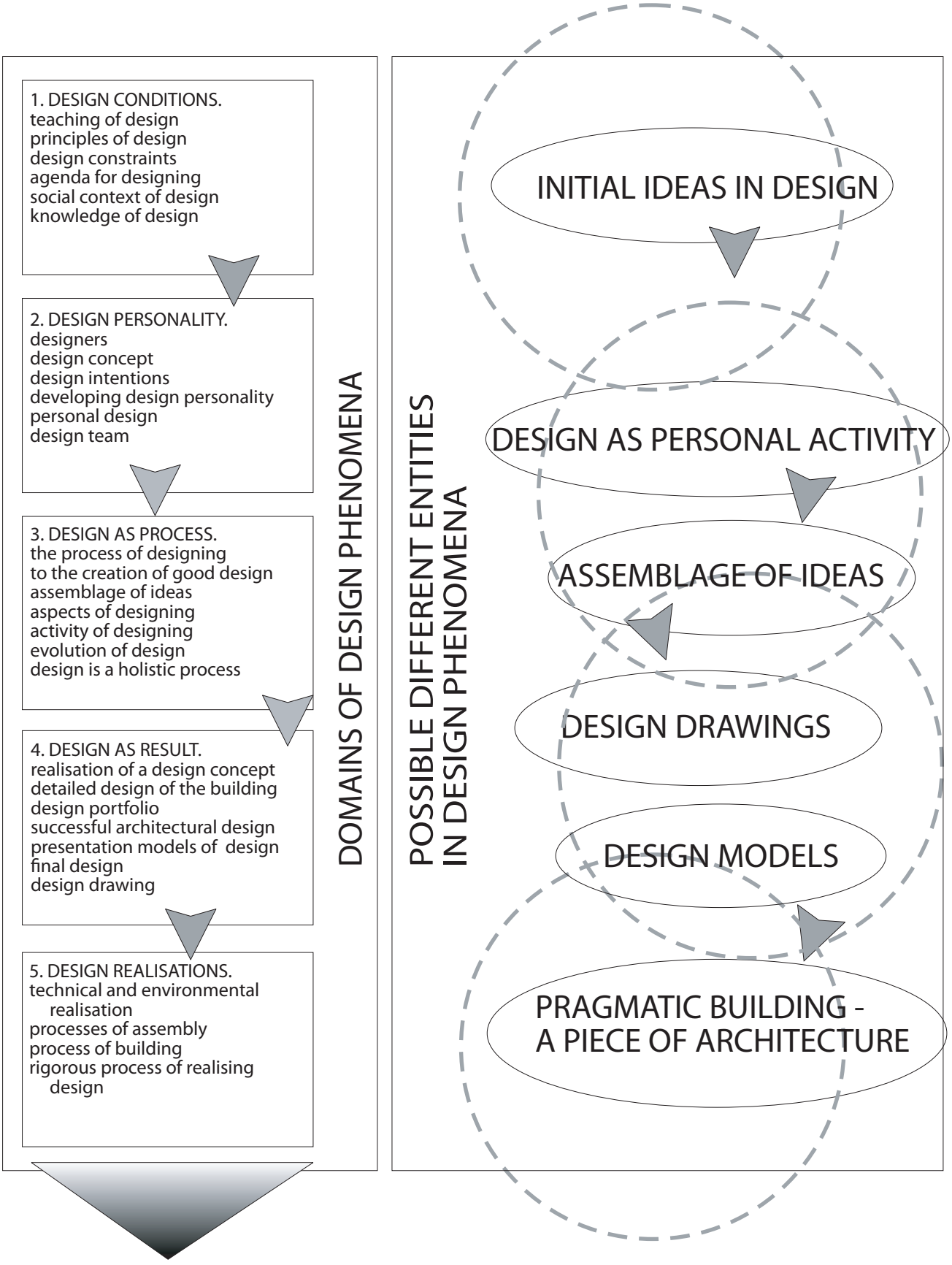

ILLUSTRATION 2

subject - "I" - in the broadest meaning of the notion. We may conclude that the simple tautology - architecture is what architects do - is the setting from where we can start to investigate the epistemological viewpoint of the domains described in the normative documents and key-texts.

The abilities, knowledge, skills and teaching related to personality are clearly separate entities if we compare them to design realisations – the making of a building. The personality is also different from design sketches, drawings and the final three-dimensional models of design. These entities are all specified by the materiality, by the physical aspects of their existence. So the first large division that we might propose from an epistemological viewpoint, taking its naiveté as far as we can, is to clarify the realities of "I" as opposed to "Non-I". Every designing personality has to be aware of itself as "I", when the process of design is conscious. These realities of "I" and its negation are identified as being of subjective and objective origin. The philosophical separation of these realities has to remain continuous within the process of developing the epistemological model. Separating the mental and non-mental realities we hope to question everything there is or can be in the phenomena we investigate. These realities are referred by us as “subjective reality” and “objective reality”. Subjective reality is the apprehending subject or self and we consider it in relation to a human mind. Objective reality is the rest that is or can be, being apprehended by the mind and what is seemingly autonomous of the subject[8]. It involves everything that differs from subjective reality.

We believe the first domain – design conditions – can be seen as a part of "I" - subjective reality. For the moment we will not investigate how the conditions are given, presented or created. Clearly the second domain – design personality – with "design concepts" and "design intentions", belongs to the subjective reality. This is the domain from which we started the building of the epistemological model according to the definitions in normative documents.

[8] "I am aware of a world, spread out in space endlessly, and in time becoming and become, without end. I am aware of it, that means, first of all, I discover it immediately, intuitively, I experience it. Through sight, touch, hearing, etc., in the different ways of sensory perception, corporeal things somehow spatially distributed are *for me simply there,* in verbal or figurative sense "present", whether or not I pay them special attention by busying myself with them, considering, thinking, feeling, willing./…/ I find continually present and standing over against me the one spatio-temporal fact-world to which I myself belong, as do all other men found in it and related in the same way to it. This "fact-world", as the word already tells us, I find to *be out there,* and also *take it just* as *it*

Difficulties of identifying entities, start within the third domain – design as process. This domain has an ambiguous quality. Some of the elements are definitely related to the subjective reality – "assemblage of ideas", "the understanding of the process of design", "design decisions". Ideas, understanding and decisions must be a part of the designer's mind, in their final form they can be identified with the conscious mind. Some entities are intermediate like "the creation of good design" ,"evolution of design" and "activity of designing". These intermediate elements share the qualities of subjective and objective realities and indicate a movement or action. There are also elements within this domain that obviously belong to the objective reality – all the artefacts of design as representations: sketches, drawings, three-dimensional cardboard models. These are by no means a part of "I", but nevertheless can be observed as being involved in the conscious design process. Here we should refer to the language-like quality we observed in describing the definitions. The process of design, seen from "inside" designing mind, can be described as gradually involving transformations of both realities. We can imagine the process of designing consisting of many ideas and many descriptions that switch there places during the course of the process. We are dealing with a gradually changing set of design representations and design ideas - a set of signs as objects and their meanings. The dichotomy of design results we found in the *Criteria for Validation* and *Strategic Study* probably starts within the process of designing and is summarised in the results.

The fourth domain – design as result – shares the ambiguity and complexity of the design process, but to a different extent. When the subjectivity of the design process stems from the relation of representation to its foundation - a personal holistic solution of ideas, then the subjectivity of the design results (the knowledge and awareness, somehow observable, in the result) is founded within some collective – intersubjective origin. This refers back to the collective origin of design conditions and to the complexity of "I" within its own genesis, as well as within relation to other similar "I"s.

At least a part of the fourth domain – design results – and the fifth domain of design realisations belong to the objective reality. They, as finished products of the process, remain visibly steady and unchangeable and seemingly "outside" the

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gives itself to me as *some-thing that exists out there.* All doubting and rejecting of the data of the natural world leaves standing the *general thesis of the natural standpoint.*" (Husserl 1967,101;106)

subject. They have the same joint qualities as objective reality, as something opposed to subject and something approachable by outside observers.

Using the two fundamental categories: subjective and objective realities, we can identify them in the model of design phenomena (See Illustration 3). The design phenomena thus polarises around the two realities.

From the epistemological point of view we can summarise the findings in **subjective reality** as:

INITIAL IDEAS IN DESIGN. These constitute the conditions for design. In the broadest sense, it is the knowledge of everything - about the world as "Non-I" and about oneself as "I". The genesis of these initial ideas, as a part of personality, we investigate as the next stage.

We see the DESIGN AS PERSONAL ACTIVITY as the application of the knowledge, awareness and skills. These form the necessary conditions for design prosecc. We also see the understanding of aims and values in the knowledge of world and "I", that forms the motivation or necessity, for the design process.

And finally, we see ASSEMBLAGE OF IDEAS as ideal design motivated by aims and values and grounded in the knowledge of design personality. The design is ideal in two interpretations: it is ideal as a part of mental process such as the consciousness of the design personality and it is ideal as leading towards the best possible realisation of aims and values.

In **objective reality** we can summarise the findings as:

The DRAWINGS and MODELS OF THE FINAL DESIGN. They are the descriptions in some form of language, representing the ideal design solution. This we can describe as simulations of ideal design in conventional representations. For instance; three-dimensional models in different materials and in partial construction details in full scale.

PRAGMATIC BUILDING. This is the realisation of the ideal design, that has been described in some understandable form and is the final transformation of

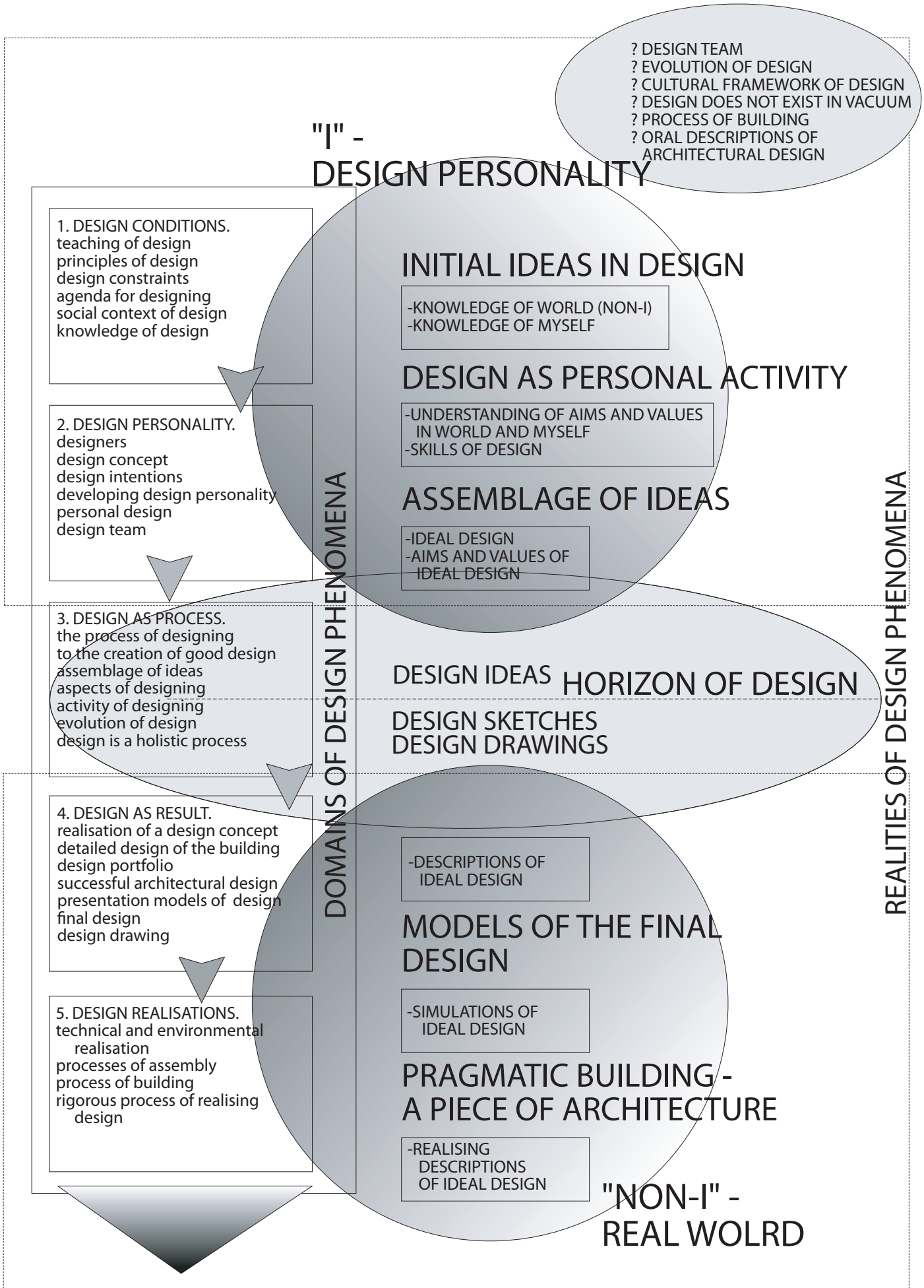

ILLUSTRATION 3

design ideas in objective reality. This is the seemingly steady realm of “Non-I” that has gathered new qualities.

The **intermediate zone**, the transformation zone between these two realities we have identified with a horizon - horizon of design. It is on this horizon, where we propose to investigate the dichotomy and ambiguity found in design process and in design results. In the process of designing as on the horizon of special language, some of the subjective reality is translated into the form of the objective reality.

This epistemological model presents serious questions or even contradictions:

1. What is the origin of initial ideas of subjective reality?

2. What is the relation of “I” to other similar subjects? Here entities within the key-texts like "design team", "cultural framework of design" and "design does not exist in a vacuum", can be highlighted as not having found their way into the epistemological model in this stage of investigation.

3. How do design ideas form a stable complex of meanings and how is the process of translating them into an understandable language of conventional representations conducted?

4. How are descriptions of ideal design related to design realisations and how is the process of transforming the design results into design realisations to be conducted?

2.1.2. Subjective, objective and social realities in design phenomena.

We identified the personality of designer in the "field of architectural activities" with the subjective reality – “I”. From the definitions that we described, it became evident that certain abilities, knowledge and skills are necessary for the design personality to be legally accepted as one. The knowledge and skills cannot be absolutely immanent to the subjective reality, otherwise there would be no reason for social practice of education. At least some part of knowledge, awareness and skills must be the result of education. The cultural framework and context and specifically, professional background are involved in the development of the design personality as a subject. To incorporate these entities into the model we probably need to devise a new reality or substance for the model.

We see the new reality of social origin. To name it at the same level of abstraction as the differentiation of “I” and “Non-I” we have called it “We-They”. Into this reality, we have introduced all the necessary settings for the subjective reality that allow the personality to become, to develop, to mature - as complete member of a larger unity – the society – the collective function or vector of different personalities in totality. It must represent the collectivity as well as the conventions, we have found, interpreting the design results in *Criteria for Validation* and the design education of "living into" the profession in the key-texts.

Social reality must influence the subject as a design personality. It would be correct to say that design personality only develops within the social reality. The whole text of *Criteria for Validation* as a description of skills and knowledge involved in the sphere of architecture is dependent upon the assumption, that social reality can transform and validate design personality.

Social reality can be seen as influencing personality gently and sometimes unconsciously as culture and consciously as institution. Among the institutionalised forms of social reality probably the most powerful is the state, its laws and norms. Also more or less formal or informal institutions can be named here as parties, religious communities, professional communities and different social groups. In the case of architecture, the role of professional community seems to be decisive. So we can identify social reality as an institution and a culture (in its largest possible meaning). In the first layer of the social reality operates on subject rigidly through laws, norms, regulations and the second layer, gently through customs and habits.

It is also obvious from the definitions we described that social reality participates in evaluating design process, design results and design realisations. In the case of architecture the realisation of design is largely only possible through the participation of society in the process of transforming objective reality.

Within this reality we believe, the evaluations of objective reality are formed. These become the aims and goals in the field of architectural activity for the design personality. The collective necessity for architectural design is largely generated within this reality.

It is interesting to see how social reality engages the subject as well as the objective reality in this process of design transformation. It is our belief that social reality as a collective force cannot directly influence subject nor can it directly experience objective reality, "the world out there". Mind as personality can apprehend objective reality through experience. We can say in figurative speech - it can experience "within" itself. The experience is part of the subject, its identity. Within that experience, the objective reality becomes “mine” - it becomes my understanding of my life-world. It is me in that world, that “I” recognise every morning as a participant and sole foundation of my life. Social reality is always collective and that collectivity detaches it from a direct experience either of the subjective or of the objective reality. In a way we can say that the collectivity creates another intermediate zone. This intermediate zone or horizon unites and separates the realities, we have described . We have identified this horizon with language. (See Illustration 4) Here we mean primarily, the verbal and literal language, as creator and medium of social consensus, awareness, not to use the usual notion of "consciousness". Society only exists as reality through the medium of language. The laws and norms are transformed from collectively debated "language theatres", as personal experiences, into texts. Habits and customs are usually taught through the language of one's mother. So language is the layer that ties the subject to the social reality even before it becomes capable of reflecting oneself, knowing and experiencing oneself.

In architectural education a substantial part of knowledge also comes in the form of texts. Architectural history, theory, criticism and project briefs and presentations, all largely come in the form of texts. These texts make the knowledge understandable. In the case of architectural history Peter Carl says:

> Architects and historians are at least both part of the some species of history in which it is possible to share quite a bit - everything that can be expressed in language. A shared language necessarily implies a shared praxis (ethical behaviour), therefore the ongoing interpretation in particular situations of whatever is held by the culture to be universal value (anciently embodied in ever-reinterpreted explicit symbols, iconography, rituals, etc.). (Carl 1996, 75)

A shared language is the foundation of shared meanings and vice versa.

It is also possible that within this language horizon are other public mediums, that are parallel or sometimes independent of written or spoken speech. For instance,

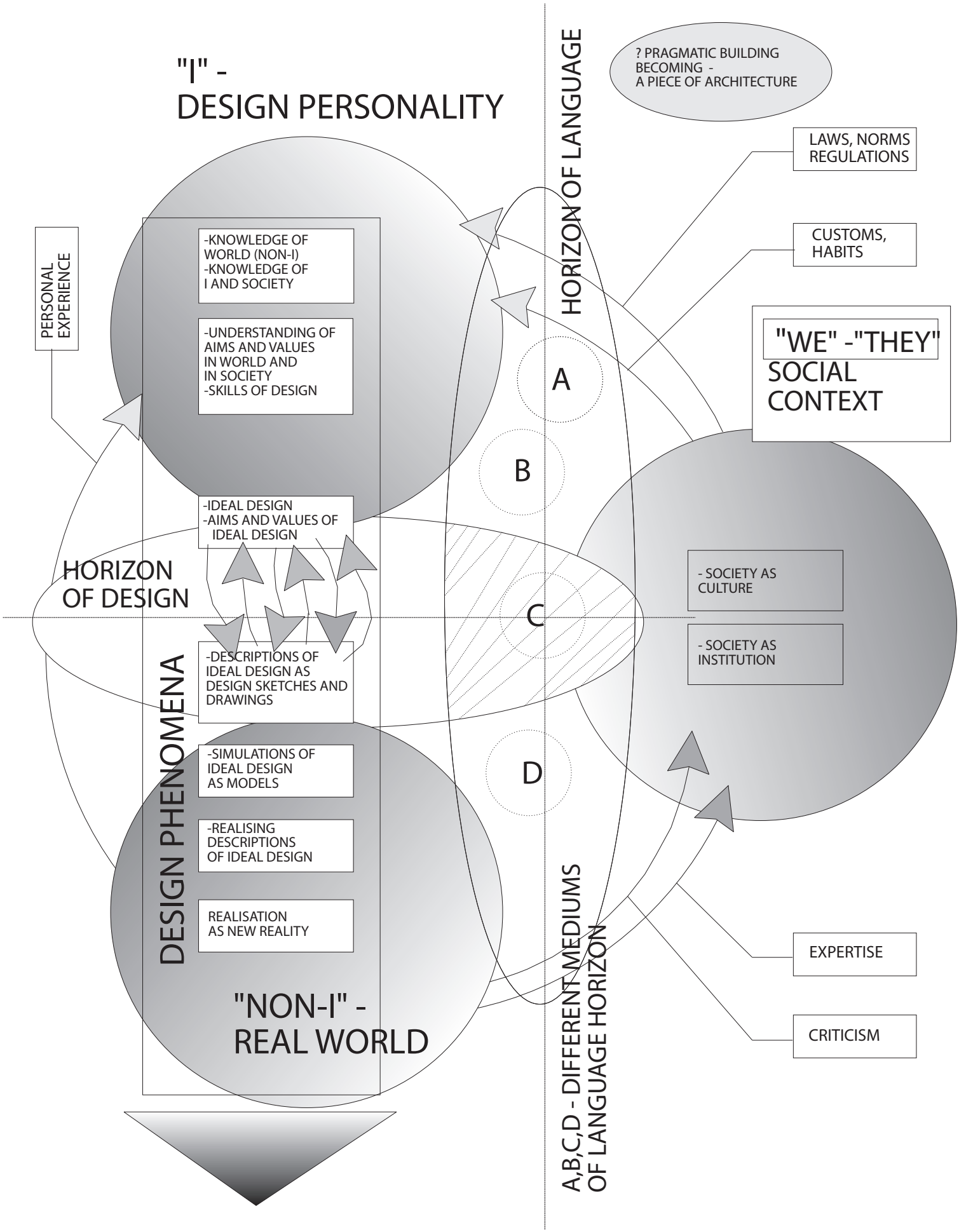

ILLUSTRATION 4

photographs or moving images, different sign languages, etc. In the case of architecture, several types of texts and mediums can be pointed out. There are different forms of texts such as: "normative criticisms", "interpretative criticisms", "descriptive criticisms". These can be seen in different rhetoric and methods. There are also photos, cartoons, diagrams and film documentaries as criticism in different mediums (Wayne 1978). With the development of computer networks, cd-roms, digital environments, a new interactive medium in the form of multimedia is created. All these different mediums must be in some form a part of that language horizon.

As our primary interest is the investigation of the design horizon we shall try to avoid the explication of social reality and the language horizon as much as possible. However, we have to incorporate it within the model as the domains of design phenomena in the normative documents and key-texts relate to it.

In establishing the two horizons: of design and of language, we not only separate the realities from each other, but also, we can see the overlap or conjunction. The ideal design or design ideas within the designer's mind, as a part of a thinking subject, can be described for society as on the language horizon. The medium of the description of design results then, would be verbal speech or written text. Very often the design results are supplemented with written explanations and specifications as well as with live presentations. In some extreme cases, the whole completed design can be conveyed in the medium of language horizon. A designer can, although it is very difficult, with certain well-chosen words and narrative describe the designed building or object in great detail. For example, the Michalangelo project for the staircase for San Lorenzo library in Flolernce:

> I have turned over in my mind, as in a dream, a staircase, but I do not think it is exactly the one I thought of then because it is clumsy. However I give it here …. (Vasari 1927:155)

Michaelangelo then describes how the new staircase was to be built. Of course, the foundations of it were probably built and according to some authors, he sent a clay model before the letter. (Heidenreich; Lotz 1974, 246) Nevertheless the new design was represented in a conventional letter.

Another example could be a hypothetical experiment of describing the fully developed design in a “mental co-ordinate” system. The position of the co-ordinates and the axes between them, can then be dictated and complemented with

the different elements of the design. In architectural office, this happens quite often on a smaller scale. When the architect has finished the design, he or she knows it by heart. Room by room or floor by floor can be brought back into the focus of mind and then described. During the building process it is quite common to explain or dictate the design solutions in full detail – by telephone!

So we must conclude that the horizons of design and of language do intersect or we might even say, that they are to a certain extent parallel. Abstract or concrete meanings of design can be conveyed on both horizons. In the third chapter we try to show that this parallelism is the only possibility for design education in architecture.

However, the influence of social reality, the conventions of collectivity must not be included as absolutely determining relationships. Subjective reality is influenced by personal existential experiences derived directly from the objective reality. The results of these experiences can change or overthrow the common beliefs and understandings that have been developed through the social reality.[9]

[9] In the sphere of architectural experiences a personal example could be appropriate here. It is the common knowledge from the sources of architectural history as well from my peronal studies that the classic Greek architecture made use of optical distortions. The verticality of columns, their intermediate distances, as well as the curvature of the stylobase is used to bring the experience of verticality and horizontality as close as possible to ideal. The experience of Parthenon proved in my case the opposite. It seems all the distortions were applied to make the perspective view of the temple more stretched and thus longer and higher - in short, more powerful.

2.1.3. Dialogues of the parallel horizons of language and design.

This parallel quality of the horizons involved helps us to introduce temporality to the previously linear and timeless model of realities. The language horizon, parallel to the design horizon, can be seen as a dialogue between social reality and subject. It unveils the cyclic quality of design process, where descriptions of ideal design are evaluated and transformed on the language layer by society and then modified by the design personality. This can be illustrated by the common practise of architectural studios: The whole process of designing takes place between interviews and meetings with the clients. These meetings usually consist of discussions on the bases of design descriptions. So the language is used to create meanings for the design and then to debate and discuss the meanings.

This dialogue as precedent or paradigm can take place within the designing personality when he or she, is developing design sketches and drawings. Then, the possible meanings and interpretations from the viewpoint of social reality can be imagined by the personality designing and the modifications made without real dialogue going on. It can be seen as a certain self-criticism, or even a 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 and creates a series of possible scenarios of dialogue as well as a series of possible worlds to adopt to these scenarios.

The internal dialogue also predicts for us the third type of dialogue between the designing subject and the objective reality. In this case, the dialogue is between the possible qualities of objective reality imagined and the designing subject. The foundation for this type of dialogue is the personal experience drawn consciously or unconsciously directly from the life-world. This dialogue can thus be seen as "touching", "reflecting" or "simulating" of objective reality by designing the element within the "focus of the mind" as the active process of design.

Within the parallels of the language and the design horizons we can thus see three types of dialogues. The subjective reality reaches out to moderate the ideal design on the language horizon with social reality and on the design horizon with the objective reality. The subjective reality is reaching inwards to moderate the ideal design on imagined language and design horizons, as if with possible partners. All of these dialogues involve the directedness and duration of time. This constant modification of design ideas is the actual process of designing. As the form of the

word indicates, it is the "**presence"** of doing something. We can describe that "presence" as the experience of 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. This "presence" as the "focus of the mind" justifies for us, the abolition of the design personality (of its full richness), especially, of psychological or psychoanalytical directions. Within this "presence" we can operate with the elements that are conscious, or were conscious. If something is totally unconscious (either of personal or collective type) it cannot be focused on.

The dialogues we described only help the temporal quality to emerge and specify the constant circular return to the series of "present nows" as they make themselves visible to the mind in the design process.

Within the period of circular return the ideal and the experienced objective qualities in design constantly replace each other or transform into each other.

The next task is thus to investigate what takes place on the design horizon in regard to temporality and in regard to the transformation of ideas. This, is to investigate the dichotomy of design results found in the *Criteria for Validation*.

We turn towards an investigation of consciousness - the explication of "I". The process of designing is conducted by the designing personality, at least partly, in a conscious way - meaning that consciousness is taking an active part in it. We might say, that consciousness is the context and medium of the "focus of the mind" for the design personality. Being interested in the universal qualities of consciousness, we can definitely refer to the particular act of designing as a part of it. This we hope will enrich the understanding of temporality involved in the design consciousness.

2.2. INTERNAL TIME IN DESIGN PROCESS.

2.2.1. Internal time from the viewpoint of Husserlian phenomenology.

This imaginary dialogue reveals an important insight to the thinking processes of the designing personality. It rarely happens that the design solution is established in a moment, like a flash of lightening, presenting the proposed building or object intact, with all its meanings, relations and identity, and in sufficient detail. Usually the designing, as a flux, takes place in a sequence of time. The imaginary dialogues that we examined are not only part of worldly time, the measured objective time, that is given as the spatio-temporality of the natural world which we can observe as independent observers. They also belong to the internal time of consciousness, the awareness of one's conscious focus of mind. This difference of worldly time as something collective, as well as internal time, as something utterly personal and highly subjective, is not very often understood or made explicit.

The first to investigate temporality, this fundamental epistemological question of human understanding was Aristotle and after him, Aurelius Augustine. These two concepts of time have become standards in philosophy. Heidegger starts his analysis of time with Aristotle and Husserl with Augustine. According to Heidegger, the Aristotelian concept is more rigorous and the stronger, while Augustine sees some dimensions of the time phenomenon more originally. (Heidegger 1988, 232) Aristoteles sees time as a measure of movement and at the same time as something, that embraces everything. The last characterisation, Heidegger calls - “holdaround, since it holds beings - moving and resting - around”. (Heidegger 1988, 252) The Aristotelian concept is developed by Heidegger, in a critical manner, into the pillar of his ontological goal - *Dasein*.

Augustine agrees with Aristotle in many propositions, but at the same time strives to the experience of the present enduring moment. In his *Confessions*, he formulates the question of consciousness of inner time as the “present moment”, incorporating both the past and the future:

> Those two times therefore, past and to come, in what sort are they, seeing the past is now no longer, and that to come is not yet? As for the present, should it always be present and never pass into times past, verily it should not be time but eternity. If then time present, to be time, only comes into existence because it passeth into time past; how

> can we say that also to be, whose cause of being is, that it shall not be: ... (Augustinus 1961, 239)

We find the phenomenological interpretation of the problem of time in Husserl's *Lectures on the Phenomenology of the Consciousness of Internal Time*, that were delivered between 1905 -1917 and published by Heidegger in 1928. (Husserl 1991, 3) In these lectures, Husserl develops Augustine's line of thought through a criticism of Franz Brentano and Hermann Lotze into a phenomenological interpretation of time consciousness. He strongly opposes the "objectifying" and "psychologysing" of time in the form of empirical nature:

> Now when we speak of the analysis of time-consciousness, of the temporal character of the objects of perception, memory, and expectation, it may seem as if we already assuming the flow of objective time and then at bottom studying only the subjective conditions of the possibility of an intuition of time and of a proper cognition of time. What we accept, however, is not the existence of a world time, appearing duration, as appearing. These are absolute data that it would be meaningless to doubt. To be sure, we do assume an existing time in this case, but the time we assume is the immanent time of the flow of consciousness, not the time of experienced world. (Husserl 1991, 5)

We have found three main elements of his theory that 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; Thirdly, the different modes of re-presentation. Interplay of these elements can give us an explanation of how the mind works within the design process as if in an imaginary dialogue.

2.2.2. The unity of temporal objects in retentions, memories and protentions.

We assume that whilst designing, an object of this activity is held within the focus of mind. This means that when the mind deals with it, it does this as "now", in the present moment and "here". 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 to the "past". In

every "now" the thought is held steady and focused, having a structure and identity of its own:

> Every temporal being "appears" in some running-off mode that changes continuously, and in this change the "object in its mode of running off" is always and ever a different object. And yet we continue to say that the object and each point of its time and this time itself are one and the same. (Husserl 1991,28)

As an example from architectural design we might hold in focus of our mind the volume of a facade with its openings, configuration, materials and proportions. Then we may slip into the relation of this facade to the site plan, to its context, its urban or rural background, starting with a new thought duration and taking into consideration the properties of the site. The identity of the facade, with its structural elements is becoming a past though, it is no longer in focus and remains obscurely in the background, or fades totally away, until brought up again as a new duration of thought. The thought of the facade was followed by the thought of the site and they can be interpreted of as two separate thought-durations, the latter pushing and transforming the first into "past".

The identity of one thought is then substituted with the identity and entity of another, following thought. However, the further we move from the initial "now", the greater is the fusion and compression that manifests itself. The vivid and clear reverberation of the thought is pressed into a bleaker imprint of its identity.

> A reflective penetration of the unity of a many-membered process lets us observe that an articulated part of the process "contracts" as it sinks back into the past - a sort of temporal perspective (within the original temporal appearance) as an analogue of the spatial perspective. In receding into the past, the temporal object contracts and in the process also becomes obscure. (Husserl 1991, 28)

This "running-off" mode of an object, whose identity and entity can be held in the focus of the 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", "source-point" from which the object of thought starts its enduring is called a primal impression. Within the reality of the mind thus every “impressional consciousness” constantly flows, "runs-off", passes over to the retentional consciousness and becomes modified by the internal time. So we might say that

each later object of thought is modified in its running-off mode. But Husserl insists that each later retention is not only a modification that has taken its beginning in primal impression; each is also inevitably a continual modification of all earlier continuos modifications.

> And each retention is already a continuum. … But this now-apprehension is, as it were, the head attached to the comet's tail of retentions relating to the earlier now-points of the motion. (Husserl 1991,31;32)

This is illustrated by Husserl in a diagram, that we have redrawn. (See Illlustration 5a, on the basis of Husserl 1991, 29; Merleau-Ponty 1996, 417) The illustration is drawn to fit the general logic of the time sequence in our model.

As the thought endures and changes, we can return again to the once retentional impressions. 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 is 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.

> Memory - and this is equally true of retention - is not image-consciousness; it is something totally different. What is remembered, of course, does not now exists - otherwise it would not be something that has been but something present; ... it is natural to say at first (as Brentano did) that the actually present perception becomes constituted as presentation on the basis of sensations and the primary memory becomes constituted as representation [Represäntation], as re-presentation [Vergegenwärtigung], on the basis of phantasies. Now just as re-presentations can attach themselves immediately to perceptions, they can also occur independently without being joined to perceptions, and these are secondary memories. (Husserl 1991,34-35)

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:

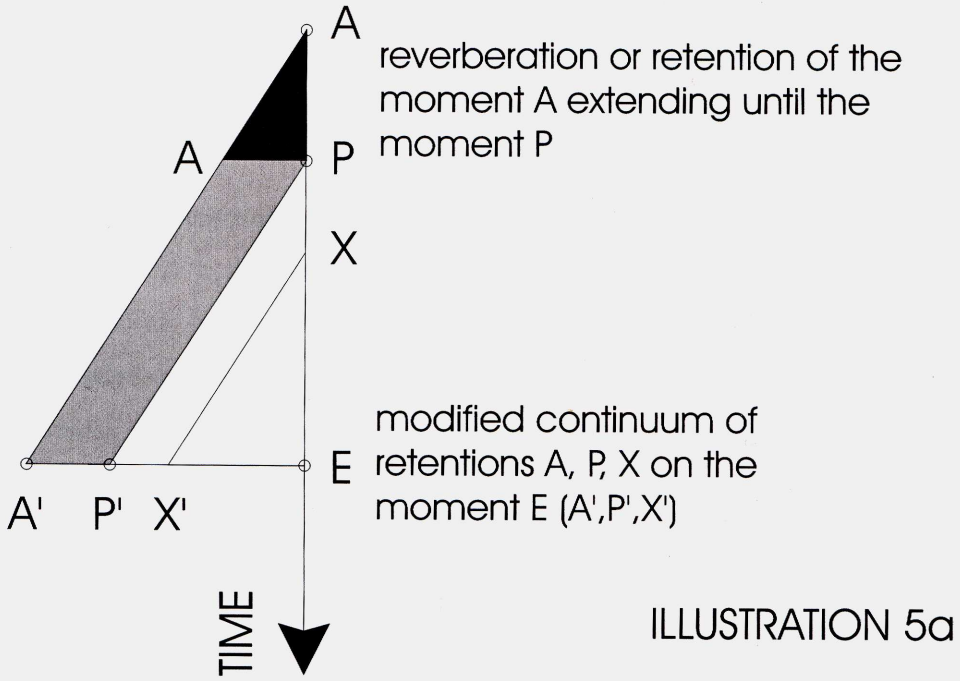

ILLUSTRATION 5a

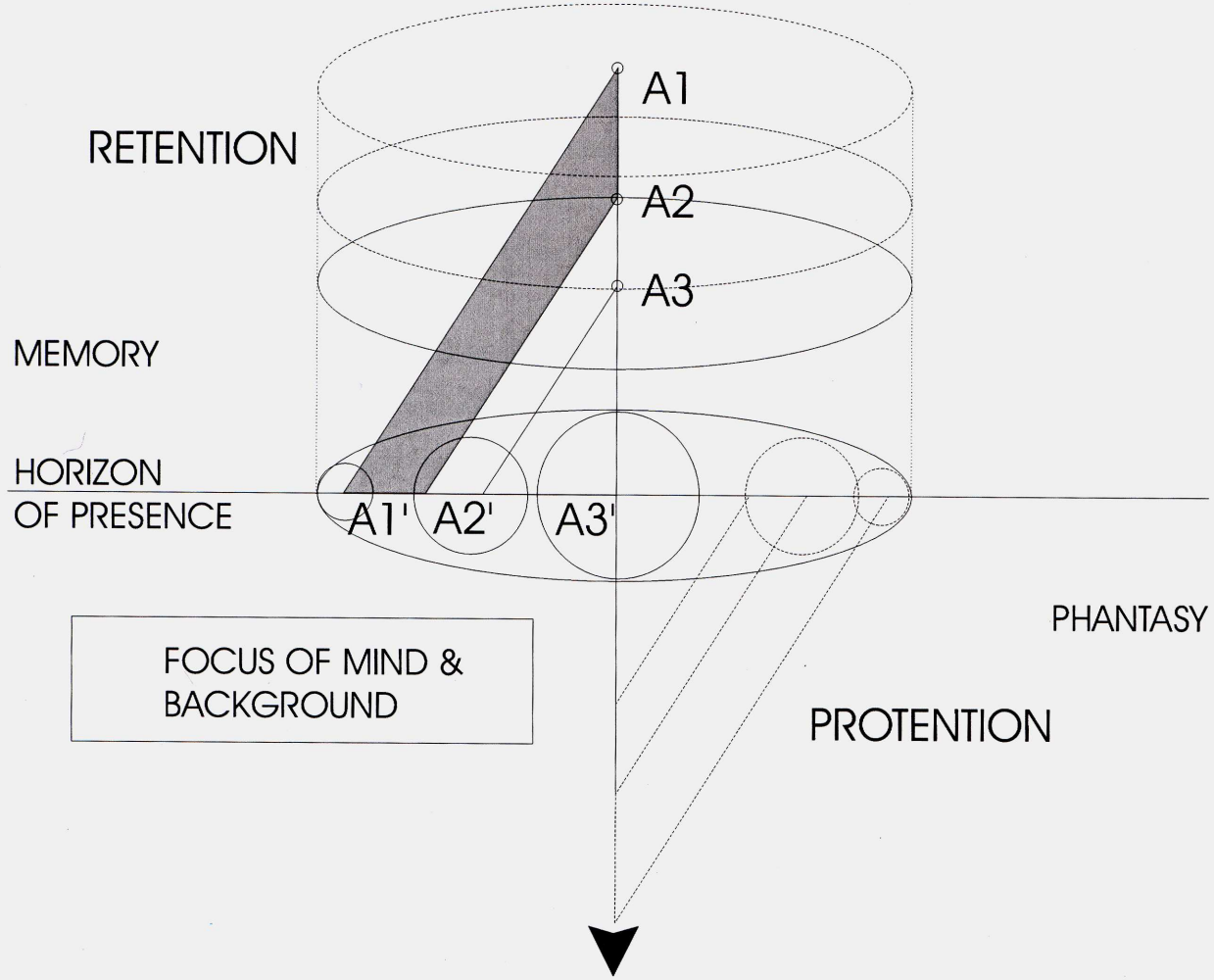

ILLUSTRATION 5b

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 primal impressions object is revealed.

In our example, the running-off mode in the thought of a facade is now intact as "left behind", as "remembered", and can step into the new thought duration of the site with the relation to the facade being a member of that new duration as "complete in one time-point".

However, we have to return to retention as primary memory. So far we have only expanded on the past, retrospective direction, of the immanent time of the consciousness. The phenomenological analysis of immanent time also presents the future, the prospective aspect of thought.

As there is the primary memory so also is there primary expectation - **protention**. The antithesis of the now - perception - is the retentional and protentional directions of the mind. So 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, becoming "now". These primary expectations form a similar continuum of constantly modified objects of

thought. The modification takes place on the basis of fulfilment of the expectations.

This, definitely, reminds us of the design horizon. On the design horizon the constant remembering and modification of what is remembered, takes place. It takes place within the focus of mind, but it also takes place as a specific language. In the form of conventional representations the language of architectural design lets us remember, what was done before and to attempt to anticipate what might come. We will return to this duplication of retrospective and prospective quality in the design process at the end of this chapter.

According to Husserl, the protentional direction is founded by every memory. Recollection is not expectation, but it has an 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. Thus, this forward-directed intention itself is thus aimed at a series of possible fulfillments. The intention belonging to the expectation is memorial intuition inverted.

> Now in order to understand the insertion of this constituted unity of experience "memory" into the unitary stream of experience, we must take the following into account: every memory contains expectation-intentions whose fulfillment leads to the present. Every process that constitutes its object originally is animated by protentions that emptily constitute what is coming as coming, ... As the recollective process advances, this horizon is disclosed in ever new ways and becomes richer and more vital. And in this process the horizon is filled with ever new recollected events. Those that formerly had only been indicated in advance are now quasi-present - quasi in the mode of the actualizing present. (Husserl 1991:55)

When the retentions constitute the living horizon of the reverberation of now then the protentions, as founded on recollections to be fulfilled, constitute the living horizon of the actualisation of now. This was built on the protentional qualities of the memories. At the same time primary expectation is active in the present moment as well.

> In general, expectation leaves much open, and this remaining-open is again a characteristic of the components in question. But as a matter of principle, a prophetic consciousness (a consciousness that passes itself off as prophetic) is conceivable; that is a consciousness for which every characteristic belonging to the expectation of what is coming to be lies within view. (Husserl 1991:58)

This citation reminds us of the definition of architectural design in *Strategic Study* and it is tempting to compare it to the retentional and protentional qualities of consciousness. (See section 1.2.1.) *Strategic Study* identifies architectural design within the framework "uncertainty, inadequate information and shifting goals". Within this framework, largely retrospective and prospective, design is the "allocation of physical resources", to solve "immediate, as well as long-term, accommodation problems of users, clients and society at large."

Husserlian notion - "what is coming to be lies within view" is an important characteristic of consciousness and describes some aspects of designing that we have seen in the key-texts.

2.2.3. The freedom of immanent time in re-presentations.

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 is 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. These are the different aspects of freedom that we have articulated separately:

1. Different speed. We can carry out the re-presentation with more speed or more slowly. We can slow down the previous retention to a "stand-still", with meditation- like focus of mind. We may let the re-presentation just float there.

2. Different clarity. We can carry out the re-presentation with clarity or confusion. We can re-present it in great detail or as an obscure, shadow like, form.

3. Different articulation. The re-presentation can be ready-made, like a flash, but it can also be built step by step as an articulation. And, every articulation can then be re-presented at a different speed.

The freedom of re-presentation also allows the articulation of the object not to be in the original sequence. We are free to choose how to do it. We can also return to the same beginning again and again. The only rule that can be observed in the freedom of re-presentation is the inevitability that running-off mode of thought sets the re-presentation further back into the past.

> But if I thus return again and again to the same beginning-point and to the same succession of time-points, that beginning point nevertheless continuously sinks further and further back in time. (Husserl 1991, 50)

These aspects of freedom do not belong to the object re-presented, but to the mode of re-presenting, belonging to the experience of re-presenting. The mode of experience is something we can deliberately return to.

There is a noteworthy difference between the primary and secondary memory. Within the retention one can be absolutely certain of the experience, it is happening "now", but this is not so certain in the case of secondary memories. In the freedom of re-presenting lies also the question of validity. The re-presentation can actually be false in its recollection or, more than that, it can be of something that never occurred. The further to the past a memory is pushed, the more acute is the question of validity.

The deliberately "falsified" recollection is a mere phantasy. The fantasising belongs to the freedom of recollections and it can be seen as another mode of "experience". This experience is of nothing existential. Although, phantasy stems from the re-presentation, it differs from re-collections as secondary memories.

> In mere phantasy no positing of the reproduced now and no coinciding of this now with a past now is given. Recollection, on the other hand, posits what is reproduced and in this positing gives it a

> position in relation to the actually present now and to the sphere of the original temporal field to which the recollection itself belongs. (Husserl 1991, 53)

We may conclude, that the further away from the present moment we turn our attention, the larger amount of freedom we can apply to memories and fantasies. The source of the freedom is different as we saw. In the re-presentations the freedom lies in the intact quality of the memory, the more it recedes the more flash-like it remains. The retentional quality of process is not active, unless deliberately sought up, with questionable validity. In the fantasy , on the contrary, the relation of the object to the time flow is not presented at all. It remains hovering, and the time sequence can be established only through the recollection of fantasy. Time constituting quality of the re-presentation can then only refer to the act of fantasising, as something in the past, but the object of the fantasy itself is not built in the time positing form as it is within the memories

We here again, may turn to architecture to see the basic definitions within which Husserlian phenomenology works within the sphere of architectural design. The recollection or re-presentation and the fantasy, are the fundamental building blocks in the design process. The design process is the constant return to the design conditions whether in the form of the experience of the actual site, regulations, brief, interviews with clients or as something "kept in mind", remembered; and creating fantasies on the basis of the re-presentations.

We have to note an important difference between epistemological philosophy as cognizing and architecture. Philosophy, and probably any science, human or exact, will try to keep the re-presentations and fantasies separate. Architecture, on the contrary, deliberately blurs and diffuses the differences. What is actual[10], is attempted to be conceived as possible, and what is possible is attempted to be conceived as actual. What belongs to the real world is approached in the mode of fantasy and what belongs to the design personality as fantasy, is approached in the mode or re-presentation.

To investigating the above, we need to be more precise in describing the differences between phantasy and re-presentation. Therefore we turn to the problem of intentionality in re-presentations.

2.2.4. Double intentionality within re-presentation of temporal objects.

This is the way in which Husserl begins to explain the process of cognition as particularised event. The duration of each thought is seen as a separate entity. Within this separation there is a certain ideal limit. This limit constitutes the duration as "now" with its retention, reverberation:

> Perception here is therefore an act-characteristic that joins together a continuity of act-characteristics and is distinguished by the possession of that ideal limit. A similar continuity without this ideal limit is bare memory. (Husserl 1991, 42)

But at same time, cognition is the continuos flow of immanent time. The ideal limit of separate durations is accomplished within the totality or unity of consciousness. As soon as we start to particularise the constitution of the "rough now", as soon as we divide this "now" further, it in turn immediately breaks down into a finer now and a past, and so on.

In re-presentations, a specific double intentionality occurs, there is the immanent unity of the re-presentation and the processual unity of "now". This "now" is the focus of mind now. These unities as constituants of parallel time join together. The fact that the unities are parallel also makes me conscious of the re-presentation. The double intentionality, born from the unity of the time flow "which I am conscious", "the unity of what is remembered", is the reason that allows constitution of the expectation-intentions. It is the initial source of fantasy as well.

The epistemological consequences of this double intentionality are far-reaching. Everything that in the wider sense appears, is presented, is thought of, is recollected; is directed back to the phenomenological reflection. Everything has to undergo "an immanent objectivation". This unity as objectivation, includes perceptual appearances, memories, expectations in the universal time-constituting formation.

> Thus re-presentation of every sort, as flows of experience possessing the universal time-constituting formation, also constitute an immanent object: "an enduring process of re-presentation running off in such and such a way". (Husserl 1991:53)

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[10] We do not use the word "real" here, although, we refer to the objective reality, because of possibility of fusing it with the reality of subjective origin. So actual would help to make the distinction between what has happened in

This unity of double-intentionality can now be used as the unifying device between the natural life-world "out there" - objective reality and the cognizing subject. Through the retrospective direction of presence, the understanding and meaning of what is existential is built up. The Cartesian gap between *res cogitans* and *res extentia* is loosely bridged. It does remind of the Platonic *anamnesis* as a source of ideality and knowledge.

> ... it produces a reproductive consciousness of a re-presented immanent object. It therefore constitutes something twofold: first, through its form as a flow of experience it constitutes the re-presentation as an immanent unity; then, the moments of experience belonging to this flow are reproductive modifications of moments belonging to a parallel flow, ... and since these reproductive modifications involve an intentionality, the flow is joined together to make up constitutive whole in which I am conscious of an intentional unity: the unity of what is remembered. (Husserl 1991, 54)

The unity of double-intentionality is further developed by Husserl. In re-presentations the protentional expectation is not only built up to the fulfilling horizon of that expectation, not only to the "then-present" consciousness; but also, it builds it up to the consciousness of the "living present" of the very moment of recollection.

> That means - and this is a fundamental part of a priori phenomenological genesis - that memory flows constantly, since the life of consciousness flows continuously and does not merely piece itself together link by link into a chain. Rather everything new reacts to the old; the forward-directed intention belonging to the old is fulfilled and determined in this way, and that gives a definite coloring to the reproduction. (Husserl 1991, 56)

This produces the "empty" intention. It is the temporal background of recollected or perceived objects. It is a unitary intention related to a multitude of interconnected objectivities coming to fulfillment. Husserl compares it with the spatial background. Each "thing" in perception has its other side, coming from the recollection, as background. "Foreground is nothing without background"(Husserl 1991, 57) So we are dealing with the foreground and background of the consciousness of time.

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objective reality and what is possible.

> For the temporal thing: its insertion into the temporal form and the temporal world; on the other hand, the temporal thing itself and its shifting orientation in relation to the living now. (Husserl 1991, 5)

We can interpret the temporal background and foreground as identity of flowing consciousness as an act, and identity of the objects of consciousness. This can be seen as the basic structure for cognition. We have tried to describe it on the diagram of inter-relatedness in the focus of mind and the temporal background. (See Illustration 5b) The double intentionality anchors the experience of presence in the identity of the mind (the empty intention of the temporal background) as remembering of oneself and the memorable duration of conscious acts; and in the identity of the re-presented objects as a series of recollections within different "slices" of the same background. This is the validity of re-presentations and the foundation for the difference of fantasy. In the fantasy only the background intention is built up.

While the designing architect constantly returns to his or her design, an architect as a designer goes through all its aspects and meanings in the focus of mind. Sometimes the chain of reasons is "played-back" more quickly an sometimes it is “played back” more distinctly, element after element having returned to the "sub-thoughts" in their separate durations. Every return to the object of design creates new layers like the comet’s tail, as well as making it possible to modify the object according to the evaluation of the chain in "now". The double intentionality helps to explain the process of transformations on the design horizon, the retrospective power of the designing mind as well as the persistence of design ideas, but it does not show the blurring and diffusing of the re-presentations and phantasy.

2.2.5. Different modes of re-presentation.

Within the Husserlian concept of time consciousness, there is an interesting explication of a particular mode of re-presentation, that is similar to fantasy. It concerns the memory "as consciousness of having-been-perceived". This is the philosophical construction for the ontological direction of the subject. It mostly concerns the difference between existential and reflective:

> The appearing of the external, as an experience, is a unity belonging to the consciousness of the internal; and to the consciousness of the internal corresponds the reproduction of the internal. Now there exists two possibilities for the reproduction of an event: the reproduction of what is internal can be a positing reproduction, and therefore the appearance of the event can be posited in the unity of immanent time; or the reproduction of what is external can also be a positing reproduction that posits the temporal event in question in objective time but does not posit the appearance itself as an event belonging to internal time, and thus also does not posit the time-constituting stream in the unity of the total life-stream. (Husserl 1991, 59-60)

So one and the same re-presentation can be approached in two modes. The mode of recollection within the immanent time flow brings forward the richness of its meanings in retentional modifications. The mode of "having-been-perceived" brings out the richness of re-presentation towards existence. But within the last mode, it is detached from the flow of consciousness, from the identity of myself. The second route creates a possibility for another mode, which is called "memory of the present". This is the sphere of intuition of external time and external objectivity. Husserl gives an example of a memory of the illuminated theatre, that can be re-presented as something present. "What is remembered appears as having been present" (Husserl 1991, 60) This way, the representation of the "earlier perception" becomes given "as if now". It is not taken as a memory, but as something "being-present of the perceived object". We interpret this as the self-constituting power of the natural life-world.

As an example of this identifying process we might describe a phantasy that sometimes occurs (at least to me). Let us imagine that we sit in a room (a place) and think. The reflection or experience of me and the place then fades away and we think of the streets and the city, where I am at that very moment. In a way we perceive in the fantasy, the city (or landscape), the street and the house "externally", as if looking at it from a high perspective. The city is built up in the

fantasy of the recollections and re-presentations of its representations. It is then possible to imagine the place, I am in the same way "externally", in the same mode of re-collections. Suddenly, the "externalised" fantasy becomes close to the experience of the place from "inside", as originally given, as the "memory of having-been-perceived". The two durations "cling" together, "sink" into each other with the specific momentary revelation of **being one and the same**. The object of the different modes was the same but the approaches were built on different modes of re-presentation.

Quite interestingly, "memory of having-been-perceived" is contrary to the fantasy, where the object of thoughts, was to be seen only in unity of self, on the temporal background. But both, phantasy and the "memory of having-been-perceived", are cut loose from the immanent time constituting ability of consciousness.

But the existential direction of the "memory of having-been-perceived" is taken even further by Husserl: He shows us the transformation of this mode of consciousness into "memory of the present".

> Yet another type of immediate reproductive intuition of temporal objects must be taken into consideration in the sphere of the intuition of external time and external objectivity …. Whether on the basis of earlier perceptions or according to a description or in some other way, I can also represent to myself something present as now existing without now having it before me "in person". … I do not posit what is remembered as remembered; I do not posit the object of the internal memory in the duration belonging to it. (Husserl 1991, 62)

Husserl says that this mode of re-presentation is connected to the surroundings. These are the surroundings of the appearance, surroundings of the intuition. This is the background function of the double-intentionality built on the immanent time flow.

> While we still have something past in fresh - although empty - memory, an "image" of that something can simultaneously emerge. … Thus the appearance that hovers before me reproductively is indeed not characterized as having existed internally and impressionally, and what appears is not characterized as having been perceived in its temporal duration. (Husserl 1991, 62;63)

The lengthy excursion into the epistemological philosophy of the time-consciousness of subjective origin needs a summary.

2.2.6. Conclusions on internal time-consciousness.

We have witnessed the explanation by Husserl of consciousness and its elements in a dynamic "state of affairs". This dynamism is drawn from the temporal character of the reality of mind. For us it is the investigation of the design horizon from the direction of the design personality as subjective reality. This is an explanation for Smithers, for how the mind can be believed to work. How can we summarise the constitutive elements and modes of consciousness as an universal phenomena?

1. We see two directions in the focus of mind as presence. These are the retentional and protentional modifications of experience. They can be seen as the retrospective and prospective activity of the consciousness, interpreted in the "duration of a moment" as *a priori* structuring directions of mind.

2. The retrospective direction involves different types of objects of consciousness: memories - re-presentations. There are at least three types: memory as a flash, memory as a continuum and memory as a fulfilled re-presentation.

3. The re-presentations, with the retrospective and prospective directions, create the freedom of subjective discourse, the freedom within the immanent time consciousness. This freedom can be described as different aspects of the focus of the mind: speed, clarity and articulation. The speed, clarity and articulation are three different modes of re-presenting. They may be closely related to different types of re-presentations.

4. The double intentionality is created in the presence of the focus of mind by the time-constituting ability of consciousness. This special many-layered intentionality overwhelms the reality of world, the objective reality, as immanent objectivation of thought.

5. A temporal background as unity and validity of mind is created on the basis of double-intentionality. In relation to the temporal background two modes of consciousness - re-presentation and phantasy - can be differentiated.

6. A temporal background as unity and validity of existence of the world is created on the basis of double-intentionality. In relation to the temporal background two modes of re-presentations can be differentiated. They are the "memory of having-been-perceived" and the "memory of the present".

Now, the further task would be to interpret the consequences of the constitutive elements and modes of consciousness as universal phenomena for the development of the model of design phenomena?

2.3. RE-PRESENTATION AND REPRESENTATION IN DESIGN PROCESS.

2.3.1. The parallel horizons of design and existence.

We can return to the epistemological model (See Illustration 4) and ask: How can we apply the new knowledge, having visited the phenomenological explication of consciousness? There is the direct connection between the world and the designing subject, described by us as the personal experience. But the whole Husserlian construction is about the elements and modes of this experience as universal epistemological approach to the world and oneself. This is the open horizon between subjective reality and the objective reality. This is not however the same horizon as the one of designing, because it must be a universal horizon, open to everyone. On this universal horizon the subject finds the validity of the existing world and the identity of its own being. On the basis of Husserlian explanation we must conclude that there is **another intermediate** zone between the two realities of subjective and objective origin in our model - the horizon of existence. This horizon, as the realm of cognition for the subjective reality, is also something that validates the intersubjective direction of the mind - the validity within the social sphere. Through the existential horizon, the overall meaning is created for the language horizon. This horizon is not only connected to designing , so it must be given credit as a separate element. We have attempted to investigate this in the next diagram (See Illustration 6).

The probable elements of the cognition are quite similar to the reversed sequence of design phenomena: There is “something out there”, that is given or presented. There is the universal time-constituting ability of consciousness to internalise the “thing-in-itself” through the immanent time-consciousness within these presentations. There are the re-presentations as "memory of the present" and

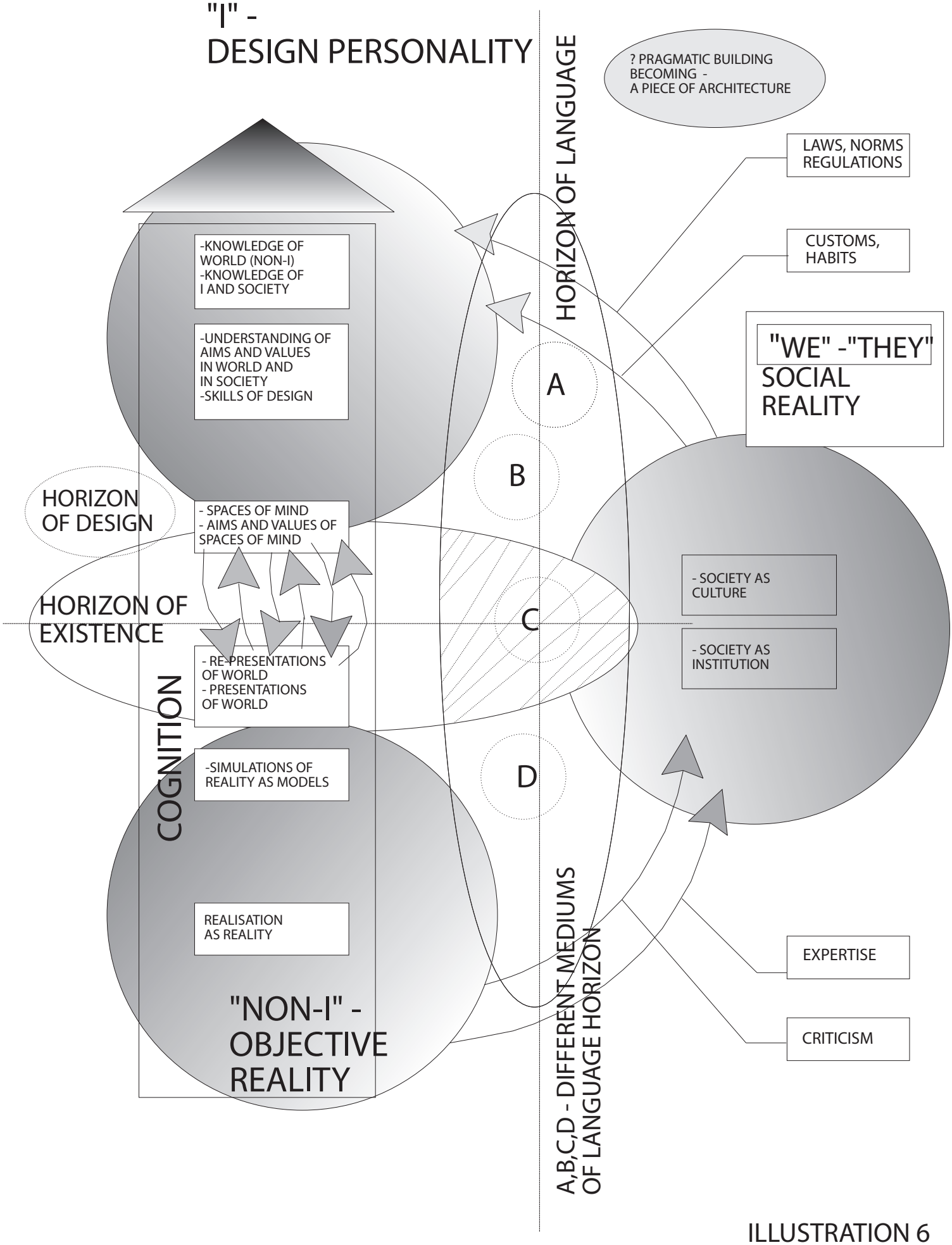

ILLUSTRATION 6

"memory of having-been-perceived". There are the expectations of the prospective direction of the mind. And lastly there is the self-conscious knowledge, awareness and understanding as the unity and identity of the subject.

Clearly this model does not represent the whole complexity of cognition. It leaves out the abstract qualities of the real world, it does not take into consideration social practice in the form of epistemological layers, built within the language horizon. But what this model does confirm, is that in the “focus of mind” several different elements, layers and modes of consciousness fuse or collide. The question is whether the horizon of design and the horizon of existence do intersect and how much do they intersect? Let us ask from the direction of the design experience, which of these elements, layers and modes of consciousness are involved in a design project.

The cognition of an architect overwhelms the existential object in full intentionality: it grasps the object in full geometry, tangibility, colour, "as if seen" from different angles; it proposes the construction in the form of the structure of the object, the possible difficulties or elegance of its construction. It proposes the social intentions for the client, society or for the creator of the object himself. It does not matter whether it deals with an existing building or with an existing or imaginary site. The point of departure is the surrounding background of the design project. This phase includes the two directions in the “focus of mind” - the retentional and protentional modifications of experience. It involves the freedom of immanent time consciousness. The mind again and again focuses on the experience, sometimes going to the repetition of initial experience in the form of returning to the existential beginning continuously.

The cognition then transforms the existential object of life-world into the "memories of having-been-perceived" and the "memories of the present". This is the anchoring mechanism of keeping the validity of existence within the re-presentations. The repetition of the returning to the initial experience has transformed at the same time, the memories also, into the retentional modifications (the Husserlian description of the comet's tail), constituting the double-intentional time flow. Within the freedom of immanent time of consciousness the two different modes of re-presentation are kept simultaneously parallel. The architect keeps in mind the experience of the existing surroundings and recollects, what he or she has thought about it.

Within the design process of something "to be built" (on the basis of initial experience or within initial experience) the protentional expectation of natural attitude is transformed into a far-reaching fantasy. The fantasy as the "design emerging" has the most interesting characteristics. It can be considered to be the part of the "memories of having-been-perceived" and the "memories of the present" with the index of possible future existence. But this index of future is treated in "focus of the mind" with the same existential validity as the re-presentations. Protentional fantasy of a now-moment is blended into the memory and it starts to develop a new possible world of potential space.

In the natural attitude of cognizing the life-world no such parallel layers of fantasy are consciously built by the mind. If in the natural attitude, the layers of fantasy are built in the process of cognizing, 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 and the fantasies with the index of future, are kept largely separately.

In the sphere of design, that, what will become, is thus treated as present (in focus of the mind) and as past (re-presentation with retentional modifications). This is described by Gadamer:

> 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 lie 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 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.

We believe 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 practice within doing 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. It is 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 re-presentations and probably to the "conventional representations" of design, a specific meaning - "memories of the present". It is probably not a coincidence, that in his account on "being", Heidegger makes use of the practise of building and dwelling as a powerful archetypal and existential source.[11]

Making use of the knowledge of “having-been-designed” and “having-been-built” is not a natural attitude towards the life-world. On the contrary, it is something that is learned in a very specific environment - under the teaching of somebody who knows it and has the experience of it "before"[12].

Here, at least two methods can be described: The precedent studies of already designed and built objects, and the personal example of designing. In the precedent studies a kind of “anatomy” of the design process, design result and design

[11] " 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)

[12] Well known suggestion in the history of architectural education: “… but let him principally enquire in every Building what there is particularly artful and excellent for Contrivance and Invention, and gain a Habit of being pleased with nothing but what is really elegant and praise-worthy of Design: And where-ever he finds any thing noble, let him make use of it, or imitate it in his own Performances; … let him study to bring it to Perfection in his own Works.” (Alberti 1965:206)

realisation is attempted (Baker 1996; Norberg-Schulz 1988; Meiss 1996; Clark, Pause 1996; Ching 1996, Lawson 1997).

The personal example is known to every studio teacher. The most simple way of doing it, is to cover the student's design with tracing paper and draw the possible solution on it, modifying the existing design or the site plan. The modification is explained in words. The words very often mean nothing without the lines and curves on the tracing paper, as the drawing means very little without the words. But the two together create a possibility to glance into the presence of somebody's mind designing, no matter how veiled it may be. This is where the overlap of the horizons of design and of language becomes really determining. This procedure is emphasised in *QAA Subject Benchmark Statements*:

> Each design outcome tends to be unique, non-repetitive and immanent in its conception and development. … During the project, the student transforms a field of inquiry into a proposition or scheme. The learning process is characterised by continual dialogue. Students learn from talking with each other and their tutors, and from the comments from other people invited to the project reviews. The most important learning experience comes from what is known in other disciplines as self-reflection, a skill central to the acquisition of all architectural knowledge and skills, and one that is constantly developed. (QAA Subject Benchmark Statements 2000, 5)

The knowledge of "having-been-built" can be found in the discipline of architectural history. What else can architectural history attempt to be other than descriptions of interpreting design conditions, design process and, especially, design realisations as a previously fulfilled activity?

> As an idea, buildings may simultaneously stand for something other than exactly and materially what they are, and have a semi-autonomous existence which can fascinate across time. Architects tend to seek the absolute side of this simultaneity, historians trust the material side. (Dunster 1996, 129)

The knowledge involved in the re-presentations as "having-been-designed" and "having-been-built", really operates as a meta-knowledge. The epistemological

value of it can be summarised as the re-presentation of previous design processes in the immanent time sequence. What was planned, created and realised can be seen as the mode of re-presentation. This knowledge makes it possible to radicalise within the capacities of universal characteristics of consciousness the specific attention towards different modes of time constitution. Making use of these modes, we believe, constitutes the process of designing. However, the process of designing is not as natural as the cognizing in the natural attitude , but is a result of careful teaching and repetitive practise.

This is one possible explanation for the characteristics of ephemeral time frames found in the etymological background of the word "design" and in several places in the key-texts, referring to "architectural design" and "architecture".

2.3.2. Specific mediums of re-presentation in design phenomena.

We may proceed further and ask what kind of memories as re-presentations “focus of the mind” produces in the design process? Due to architectural education, different modes of thought can be used on the horizon of design. These modes can be interpreted as a reduction of the experience of the reality of life-world into re-presentations.

We can identify the following modes (as active presentation, re-presentation and phantasy):

1.The mode of presenting space and time. The perception of possible spatio-temporal object. The viewpoint remains “I”-centred, the gravity is “on”. The materials of the presented are articulated and vivid. This is the natural standpoint as experience with its retentional and protentional modifications.

2.The mode of re-presenting space and time. The reality-like re-presentation of perception of remembered spatio-temporal object or surrounding. The viewpoint remains “I”-centred, the gravity is “on”. The materials are articulated. The objective reality, as experienced, is undergoing the immanent objectivation of thought. The re-presentation could be in the form of retentional continuum, "memory of having-been-perceived" and "memory of the present". The objects of the process: memory as flash, memory as continuum and memory as fulfilled re-presentation, could be used simultaneously.

3. The mode of phantasy of space and time. The reality-like re-presentation of perception of remembered spatio-temporal object or surrounding. The viewpoint remains I-centred, the gravity is “on”. The materials are articulated. The re-presentation could be in the form of retentional continuum, "memory of having-been-perceived" and "memory of the present". The objects of the process: memory as flash, memory as continuum and memory as fulfilled re-presentation, could be used simultaneously.

4. The mode of modified fantasy of space. The reality-likeness is concentrated only on the system of describing space. The space is described as a surface or its absence. The time is internal, its speed changeable at will. The viewpoint is simultaneous, the gravity is “off”. Materials are dim and non-articulated.

5. The mode of presenting re-presentation. The re-presentation is apprehended in reality-like fantasy. The viewpoint remains "I" centred, the time and gravity are "off". The re-presentation is treated as "memory of having-been-perceived" or "memory of the present".(Example: The ideal design goes on in a mentally operated "three-dimensional" model, where the model is only imagined.)

6. The mode of abstracting presentation of re-presentation. The space, time and gravity are “off”. The re-presentation remains as a mathematical and geometrical plane of lines and angles. The viewpoint is simultaneous. The “vision” and “image” of the design process fades away. "Memory of the present" looses its re-presenting qualities and can be treated as essence or meaning.

7. The expression of abstraction. The meaning and value of the design is expressed in an inner “speech” or dialogue. Possibly, we cannot tell whether this expression is still a part of the design process or represents something else.

All of these imaginable modes of presentations and re-presentations can be approached within the freedom of immanent time. Played “back” and “forward” at will in different articulations. So we are dealing with more than twenty possible combinations, but different people can probably articulate even more different modes for the “focus of mind”.

These different modes stem from the possibilities and the structure of consciousness, but not all of them can be a part of an ordinary cognition process. It

is quite clear from the list of the modes, that the abstractions and re-presentations of presentations cannot be achieved without a profound knowledge of design and specifically using the conventional representations. Here again we can refer to the knowledge. This knowledge of “having-been-designed” and “having-been-built” is something that is learned through the teaching of somebody who knew it “before”.

In investigating the consciousness of which designing as a focus of mind must be a part, we have approached and detailed the horizon of design from the direction of design personality as subjective reality. We have seen the possibilities stemming from the overall characteristics of consciousness, but we have found that certain differences in the design process are largely being reversed to that of cognition. We have articulated the necessity for the horizon of existence. We assume that some of the modes of consciousness, within the immanent time flow, can be used in the design process as specifically tailored to the extreme possibilities as well as being used simultaneously with other ordinary modes of cognition.

We have come quite close to the language-like quality of design artefacts. These artefacts, in being experienced or re-presented, exhibit a particular understanding or knowledge of their own. So far, we have not investigated this language-like quality at all, although we have actively made use of it in the examples.

2.3.3. Specific mediums of representation in design phenomena.

Alternatively, we can approach the design horizon from the direction of objective reality. To be more exact, we can approach the design horizon, as the outside observers of the interaction between the design personality and “the world out there”. We have to give account also of the fact, that we are observing the interaction from a similar point of view, as the “design personality out there”.

Within the design process we can find, that certain objects, or things, or processes are used and that they have a significance and meaning. They belong to the sphere of objective reality, but reflect or represent, stand for, design process and design ideas. In the political documents and key-texts they are called "conventional representations".[13]

Thus we have returned to the dichotomy noted in the design process and in the design results, that were analysed earlier. It also reminds us of the specific dialogue we found on the horizon of design. This personal dialogue was "touching", "reflecting" or "simulating" of objective reality by designing subject within the “focus of mind”.

> There seems a general consensus that the act of drawing during the design process is indeed an extremely reflective one in which the designer “talks to himself” through the pencil. The idea that it is difficult to think and talk about the design matters without holding the pencil is commonly expressed by designers. (Lawson 1997)

We are calling these design results, that have some kind of objectively observable form or collective meaning - representations, to distinguish them from the design ideas in the form of presentations and re-presentations.

Let us attempt to create a list of these representations, open to outside observers, from the knowledge of everyday design practise. Again, they form loose typology, where the boundaries of each type overlap:

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[13] This is the reason why we have used the word "re-presentation" for the activity of consciousness, although Husserl uses the word "representation" sometimes as synonym for "re-presentation". We thus reserve the word "representation" for the artefacts of design, seemingly free and independent of mind and found in the sphere of objective reality.

1. Design sketches and scribbles. These are usually personal signs on some kind of surface. Very often their meaning remains obscure and without additional explanation they do not represent anything for the outside observer.

2. Design drawings or paintings. These are usually created using the techniques borrowed from fine arts and their representational power for society and for the designer comes from the conventions of fine arts.

3. Design drawings to scale. Here we can think firstly of plans, elevations, and sections created in the design process. These are specific architectural representations, known foras long as the profession has been known (Vitruvius 1960, Alberti 1965, Kostof 1977, Harvey 1972, Braunfels 1972, Simson 1962) These specific drawings are usually founded on geometry. The geometrical build-up of the representational system of design drawing has been taken over by many modern industries involved in the creation of things.

4. Design constructs. Here we deal mostly with perspective, axonometric and isometric drawings of different types. Probably some compositions that combine the above techniques and the representation of light can also perform as composite constructs. All these constructs have a complicated structure. They are usually connected to the plans, elevations and sections. Very often, they form a system of conventional representations, that have a "character and spatial quality" (Part 2. Criteria for Validation 1997, 16).

5. Design models as three-dimensional constructs to scale. The representational quality of the mind directed towards the objects in the objective reality allows us to perform a test or experiment of design realisation. The realisation of design ideas can be completed at different scales - it can be abstracted or it can be represented one to one exactly. Models as three-dimensional constructs in architectural design are probably founded on the basis of geometry, on the basis of fine arts in the form of sculpture and on the basis of a scientific approach to an experiment.

6. Full size three-dimensional constructs. Here we deal with the extreme occasion, where the designer represents the design ideas and intentions in realisations. The language-like quality of the representation is skipped. This is the usual case in some parts of the world for vernacular buildings, where the concentration of

resources is so minimal, that designer is able to realise the design by himself. Then the building itself , the realisation can be treated as the representation.

During the history of architecture the “mediums” to create these different artefacts have changed. They have started with drawings on the sand and stone or red lead on calf-skins and copper engravings. Currently ordinary paper and tracing paper are being replaced by the keyboard and the monitor screen. With the development of information technologies all of these different types of representations can be simulated in a digital environment and within that, there will probably be many new derivations.

Looking at the different types of representations, we can see, that the different modes of re-presentations we identified in the former paragraph, are really possible to be conceived as an ideal, as a part of consciousness, only after the process of mastering them in a specific conventional language. It is impossible to think of a designer, who can manipulate a complicated building in the “focus of mind” as a set of imaginary plans and sections, not having practised it sufficiently on paper or on the computer screen. The same applies to the re-presentations of architectural models.

So we have come to the assumption, that some of the universal characteristics of consciousness that are used in architectural design in a special way, are really set to work with the help of design results in the form of representations. Not having compared architecture with other professions or disciplines it would be correct to say that that it may not be a unique way, but it will be a particular way that explains the temporal dynamics and the epistemological driving force in the design process.

It has become clear from the analysis that not only has the design process to be treated in a dynamic form, but also the design personality as the subjective reality has to be investigated in its development, in its genesis. In short, dynamically. However, before that, we can ask: Would the design representations supply us with some kind of universal qualities or characteristics within their being, that predetermine the results regardless of the particular design personality? This is the same type of question we applied to the universal qualities of consciousness.

2.3.4. The epistemological possibility of objectified representations.

The question of universal qualities within the sphere of design representations is even more important for this investigation, if it exhibits an inclination towards epistemology. Two recent investigations in the form of *opus magnum* have caught our attention: *The Origin of Perspective* (Damisch 1994) and *Architectural Representation and the Perspective Hinge* (Perez-Gomez; Pelletier 1997). Both of these investigations make extensive use of the epistemological underlying structure of the form of architectural representations.

The question of representing space is relatively old. It is also relatively complicated from the philosophical point of view, if we want to be precise: What is the "space" to be represented? It can be approached as a Kantian "thing-in-itself", an Husserlian "spato-temporal life-world" or a Heideggerian *Dasein*. We can suspect that the way representation itself is philosophically determined effects the understanding of notion of "space" itself.

To simplify the argument we can say that the question of representing space is largely the historical question of the relationship between *perspectiva naturalis* (or *communalis*) and *perspectiva artificialis*. *Perspectiva naturalis* deals with the laws of natural vision. *Perspectiva artificialis* can be seen as "a serviceable method for constructing images on two-dimensional surfaces" (Panofsky 1991, 36).

Perspectiva as an understanding of vision and distance was formulated by Euclid and mentioned later by Lucretius and Vitruvius. Euclid demonstrates how the appearance of objects is a function of their relationship to the observer. This relationship could be expressed accurately through geometry. (Perez-Gomez 1997, 13) Interpretations in the translations of the passage in the *Ten Books on Architecture* by Vitruvius, where he makes use of "scenographia" and "*circini centrum*", indicate that linear perspective was not fully understandable in Antiquity (Panofsky 1991, 38-40; Perz-Gomez 1997, 46[14]) Without entering into the argument with that claim, it would still be fair to remark that the description by Lucretius does resemble the construction of vanishing point, the main conceptual cornerstone of the linear perspective (Lucretius 1966, 385).[15] His understanding of

[14] "In 1.2, Vitruvius describes this scenographia/ sciographia, rendered to modern English translations as "perspective." As we will demonstrate, these modern translations fail to do justice to the original text, in which there is no obvious allusion to a geometric construction analogous to the Renaissance perspectiva artificialis."(Perez-Gomez 1997, 46)

[15] "Though a colonnade runs on straight-set lines all the way, and stands resting on equal columns from end to end, yet when its whole length is seen from the top end, little by little it contracts to the pointed head of a narrow

vision also reminds us of the picture plane or "window" - he makes use of "idols" (in Latin: "membrana" and "simulacrum") which can be "seen through" (Lucretius 1966, 362).

According to Perez-Gomez the real *perspectiva artificialis* must be identified with the Renaissance, where it could be postulated independently of traditional theories of optics. Filippo Brunelleschi has been known as the first to "construct" a systematically organised linear perspective drawing and Jacobo Vignola has been known as the first to introduce the distance point (the point outside the field of representation, that would serve as a reference marker in determining the rhythm of diminution of transverse lines - usually equal to the distance between the eye of the observer and the plane of image).

> Before the introduction of the distance point, *perspectiva artificialis* had been, strictly speaking, a heterogeneous collection of intuitive monocular constructions based on the apex of the cone of vision as a simplified eye. (Perez-Gomez; Pelletier 1997, 33)

According to Perez-Gomez, architects of the Middle Ages did not conceive the building as a whole and the notion of scale was unknown.[16] Even the artisans, builders and architects of the Renaissance "had not developed a mentality that would allow individual projections to be coordinated within the universal, operational framework of descriptive geometry". (Perez-Gomez; Pelletier 1997, 39-40) Their collective space did not yet exhibit the homogenous, geometric and infinite entity that was to be developed by the post-Galilean science. Nevertheless, the abstraction and thus the difference between space imagined and space represented is emerging. Panofsky points out how in the paintings of Jan van Eyck, the picture frame transforms into a “window to the imaginary world”.

> The picture has become a mere “slice” of reality, to the extent and in the sense that *imagined* space now reaches out in all directions beyond *represented* space, that precisely the finiteness of the picture

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cone, joining roof with floor, and the right hand with the left, until it has brought all together into the point of a cone that passes out of sight."(Lucretius 1966, 385)

[16]We can only partly agree with that. The document of St.Gall has nothing to do with the building process itself, what can be referred as "constructive practice" by Perez-Gomez. It is the geometrical schema drawn with red lead on the faces of five calfskins. The drawing contains more than forty buildings and is in the scale of 1:192. (Probably using the measure 1/16 of a Carolingian inch representing a foot in nature. The scale itself must have been used the multiplication to 12. 12 x 16 = 192.) The plan is dedicated to Gozbert - the abbot of St.Gall from 816 - 836. When this is not "conceiving of a whole building", it obviously is very close to it. This is made absolutely clear already in the preamble of the plan: “I have sent you, Gozbert, my dearest son, this modest example of the disposition of a monastery, that you may dwell upon it in spirit … and know my love toward you; think not that I laboured at this design because we believe that you had need of instruction, but rather believe that we drew it through the love of God out of fraternal affection, for you to study only. Farewell in Christ,

> makes perceptible the infiniteness and continuity of the space.(Panofsky 1991, 60-61)

The space as representation in the painting, does itself not form a unified system, except the for perspective structure of the horizontal and vertical lines and planes. The scale for an architect's eye is clearly different: the figure of Virgin, the wall of the main nave and the trancept, all exhibit different heights. The heights as the relative scale is not unified by the representational system of perspective.

Some ten years earlier Brunelleschi had achieved a similar result between the space “experienced” and the space “represented”, when he created the painting of baptistry of San Giovanni. The painting could be compared with the view from a specific point in the portal of the Florence cathedral. Brunellechi’s experiment with the hole in the painting and the mirror, to compare it with the view, constituted two important abstractions. It defined the horizon of view as an infinite and ideal line and reduced the observer to an infinite abstract point - “point of view” (Damisch 1994, 124). This abstraction of “I” into the "subject"[17] of Descartes in the form of geometrical reduction and open to verification and measurement, opens a new epistemological layer for the *perspectiva artificialis*.

Perspectiva artificialis developed into a an effective instrument for comprehending and changing the given reality of the world after several conceptual inventions. Kepler's theory of vision with the "optical image within the eye" created an understanding of an image, that can exist independently of the observer. This was further developed by the use of *camera obscura*. Galileo assumed that the world is based on "fixed essences and mathematical laws deployed in a homogenous, geometrized space" (Perez-Gomez; Pelletier 1997, 55). Newton postulated the natural light as a compound that could be analysed into its component colours. This was the first step in disarming light of the divine quality, that so far id had always. Newton and Leibniz developed the infinitesimal calculus. Contrary to the Medieval or Renaissance cosmology, where number and geometry were the link between human and divine, the post-Galilean number and geometry transformed into technical and instrumental devices for solving practical tasks.

Amen.”(Braunfels 1972:46)

[17] Here we can refer to another painting by Jan van Eyck (Portrait of Giovanni Arnolfini and His Wife Giovanni Cenami). The perspective structure of the painting is inconsistent, there is no single vanishing point as geometrical construction. Instead of a vanishing point as the “counter eye” of the observer’s subject, there is the‘legal subject’ of two witnesses, reflected on the spherical surface of the mirror. The subjects of witnessing the event are ‘behind’ or at least in the same 'space' as the self of the embodied observer of the painting. (Panofsky 1991, 173; Damisch 1994, 130)

> Desargues, however, was the first to bring this point at infinity to theories of perspective and stereotomy. … Desargue maintained that all lines in our ever-changing, mortal, and limited world actually converge toward a real point. Although this point was infinitely distant, it was present and susceptible to human control and manipulation. … However, the prevailing philosophical and theological connotations of infinity, as well as the resistance of traditionally minded painters, craftsmen, and architects, made Desargues's system unacceptable to his contemporaries. Nevertheless, his basic aims would be fulfilled near the end of the eighteenth century by Gaspard Monge's descriptive geometry. (Perez-Gomez; Pelletier 1997, 71)

Since Brunelleschi there has been an interest in the relationships between *perspectiva artificialis* and plans and elevations of the object represented. Alberti is one of the first to emphasise the unity between design ideas, plans and elevations and architectural models in the design process.[18] In his book *On Painting* he suggests that the architect should describe depth when drawing the footprint of a building - *ichonographia* - meaning on the parallel plane of the horizon (*ex fundamenti descriptioni*) (Perez-Gomez; Pelletier 1997, 27). In the second paragraph of the first book, he postualtes the existing world within totally geometrical terms in the tradition of Euclid (Alberti 1991, 39) The architectural drawings should be executed "without altering the lines and maintain the true angles" as well as "exactly on the basis of controllable measures"(Transaltion by Perez-Gomez. Perez-Gomez; Pelletier 1997, 27).

Villalpando praised the plans and elevations as special cases of perspective - projection of the shadow cast by the building's footprint within the parallel rays of omnipresent light - God. Thus the perspective was the section through the natural cone of human vision, where the eye is smaller than the object. Orthogonal projections on the other hand represent the divine vision, where the "eye" could be equal to the size of the object (Perez-Gomez; Pelletier 1997, 57;123). The distance between perspective drawings on the one side and plans and elevations on the

[18] "This I can say of myself, that I have often started in my Mind Ideas of Buildings, which have given me wonderful Delight: Wherein when I have come to reduce them into Lines, I have found in those very Parts which most pleased me, many gross Errors that required great Correction; and upon a second Review of such a Draught, and measuring every Part by Numbers, I have been sensible and ashamed of my own Inaccuracy. Lastly, when I have made my Draught into a Model, and then proceeded to examine the several Parts over again, I have sometimes found myself mistaken, even in my Numbers." (Alberti 1965:207)

other side, was overcome by the introduction of sections. Sections probably originated as the analysis of a building that could be seen as a gnomon or a shadow tracer. Measuring time and space was the prime concern of the renaissance architect. It was driven by the search for eternal truth and by the desire to reveal a "measured" reality of the world experience (Perez-Gomez; Pelletier 1997, 20;41).

With the post-Galilean concept of homogeneous space along the axes of *x, y* and *z*; the scientific projections emerged and became a "legitimate embodiment of architectural ideas", because they were more accurate and appropriate to describe the world.

> The "spatiality" that referred to the immediate network of intentions relating man's embodied being with the *Lebenswelt,* and that allowed for the apprehension of his place in a hierarchical order, could now be replaced by geometrical space. … At this historical juncture, geometry and number were able to become instruments for the technical control of practical operations and, eventually, for an effective technological domination of the world. Through the new science of mechanics, man began to subject matter to his will. (Perez-Gomez 1983, 10)

So eventually, the control and precision demanded by the Industrial Revolution, transformed drawing methods into a representational system, that brought the translation between drawings and realisations into an absolute equation. However, this also constituted the ontologisation of this new representational system as an human construct in the existential world.

For architects and engineers the core subject was now descriptive geometry. Jean-Nicolais-Louis Durand based his design method entirely on the descriptive geometry and even perspective itself was not considered to be precise enough. Another instrument of representation was devised - axonometry. An axonometric drawing objectified buildings on the two-dimensional surface "truly" - in homogeneous, infinite, measurable space. From the epistemological point of view that was a real achievement - the **definite observer** of the perspective with his particular “point of view”, was removed[19] (Perez-Gomez; Pelletier 1997, 85)

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[19] The axonometric drawings are to be revived again in the history of architecture as the 'cubist' representations by Le Corbusier, as the 'metaphysical painting' by Georgio de Chirico or as the 'axonometric constucts' by Aldo Rossi.

Through the history of *perspectiva artificialis* and descriptive geometry, we have seen how the representations and consequently the re-presentations in architectural design exhibit a variety of universal epistemological layers, “built in” their collectively understood form.

For the following discussion we can summarise the epistemological consequences of the representational systems in architectural design stemming from history of *perspectiva artificialis*:

1. Privileged position of vision as a vehicle of knowledge, started in classical Greece. The existential and intuitive adjusting of buildings and other artefacts to diminish or enhance the differences between non-visual knowledge and *perspectiva naturalis*. (For instance Vitruvius and Lucretius)
2. The apprehension in a single meaningful unity of a designer’s experience the design ideas, ideal projections and architectural models of three-dimensional quality. (For instance Alberti)
3. The apprehension in a single meaningful unity of the designer’s experience and re-presentations of the objects of life-world separated by the particulation of space and time. (For instance vision as the "window to the world" by Dürer)
4. The division of a singular experience of life-world into the “subject” of the observer and the “object” represented form a finite “point of view”. (For instance the "counter-eye" of Renaissance)
5. The apprehension in a single meaningful unity of the experience of the life-world, the quantifiable two-dimensional representation and the abstract "subject" of the observer. (For instance Brunelleschi, van Eyck)
6. The unity of an instrumental system of descriptive geometry in plans, elevations, sections, perspectives and axonometrics. (For instance Villalpando, Desargues, Monge)
7. The finite and measurable two-dimensional representation of an object in the infinite space, without a definite observer. (For instance Durand)

2.3.5. Modification of design horizon within immanent time and space.

The epistemological layers, embedded in the different representational systems, are uneven and contradictory among themselves, but as different historical "slices" of development, they also embody the different *a priori* settings in different systems. Thus the use of different representational systems like perspective, plans or axonometrics probably also brings out different epistemological preferences. These preferences are made use of by different architectural movements or schools, but they could be used within one design process as if looking at the object of design from a different epistemological "points of view".

All of these different epistemological layers, or preferences as possibilities , hidden in the form "conventional representations" we began to examine from the direction of objective reality. The reason for that was the fact that the representations had a relatively objective form, belonging to the material reality of the world, and thus being open to the observation of outside observers. The question to be answered is: Do the epistemological layers found in the history of the architectural representational systems stem from the objective or subjective reality?

If we consider that the *perspectiva naturalis* within the experience of the life-world is an adequate presentation of the objective reality, then we must assume that the development of *perspectiva artificialis*, *camera obscura*, photography and film/ video, in their final development, are the true and sufficient representations of the objective reality. They also surpass, as a form of knowledge, the experience of the life-world. The life-world could be tested against, and measured from, these representations. For the design process this means: Through the "touching", "reflective" and "eroding" qualities of design representations in relation to the objective reality, the life-world can be efficiently presented, re-presented and thus also manipulated. This is the belief that the techniques of representation of space on the two-dimensional surface are reflecting the objective reality in sufficient truth and that the architectural drawings stand as an analogue for the real building.

This simple, but practical conclusion, will have important implications for our investigation from the epistemological point of view. It means that the numbers, arithmetic, geometry and logical arguments belong to the sphere of objective reality. They are "discovered" from the objective reality as a special form or

structure of that reality. This is advocating an extremely powerful realist, and at the same time positivistic position.

This position is criticised by Vesely as the dominant current understanding in architectural education:

> It is not too difficult to discover that this oversimplification has its roots in the dogmatically accepted belief in the universality of technical (instrumental) thinking. As result, not only technical thinking itself but also a technical way of making have become the standards against which any kind of making is measured. …
>
> It is important to see that it was not utilitarian and purely technical interests but a metaphysical quest that gave mechanics such a privileged position. It was in the domain of mechanics that the mathematisation of physical movement could be investigated or explored and finally accomplished….The science invented by human ingenuity is a construct. It is a productive science, motivated by an ambition to be nothing less than *creatio ex nihilo*, traditionally linked only with divine creativity…. This new, unusual confidence has its origin in the drastically simplified representation of reality, which became possible because of the deep metaphysical faith in the mathematical nature of reality sanctioned by divine presence."(Vesely 1995, 44;49-50)

Taking this criticism seriously we could point out another possibility. We can consider the *perspectiva artificialis,* as well as geometry and arithmetics, to be a construct of human consciousness. A construct that has nothing to do with the objective reality – it is" *creatio ex nihilo*" in its true form. A construct that belongs to the sphere of mind and thus is creation in the sense of the word. The objective qualities of this construct can be explained then, not as reflections of the objective reality, but as a collective understanding, an intersubjective sediment, within the sphere of knowledge.

None of the latent epistemological layers in the representational systems are really explained in the general course of architectural studies. They are "handed down" like the mathematical or geometrical knowledge in the form of conventional architectural representations or descriptive geometry. They form the unreflected knowledge where all the possible historical and current epistemological layers of

representation are “put in action” without articulation. They are used intuitively and are established by learning from a teacher or mentor.

So what are these representations in the form of different modes of *perspectiva artificialis* about? These are not a part of a natural attitude towards the life-world nor are they cognition of it, but instead they are a systematic interpretation of the form of consciousness itself. Understanding of this consciousness as something universal is the result, emerging in the “course of architectural education”. We can consider it to be the similar radicalisation of consciousness as we saw in the development of different modes of time consciousness. Similarly, different layers of space consciousness are approached simultaneously within the representational process of design.

This other possibility would be more consistent with the phenomenological approach, that we have selected for this investigation. It would agree that the different modes of *perspectiva artificialis* are the invariants of rationalisation of the life-world of the natural attitude. They are the radicalised collective re-presentations in the form of an intersubjective language and they describe the modes of human consciousness. These modes are not a part of objective reality, but are a universal, collective explanation of the experience of the life-world. Husserl says:

> But now questions arise. This process of projecting and successfully realizing occurs, after all, purely within the ***subject*** of the inventor, and thus the meaning, as present ***originaliter*** with its whole content, lies exclusively, so to speak, within his mental space. But geometrical existence is not psychic existence; it does not exist as something personal within the personal sphere of consciousness: it is the existence of what is objectively there for “"everyone" (for actual and possible geometers, or those who understand geometry). Indeed, it has, from its primal establishment, an existence which is peculiarly supertemporal and which - of this we are certain - is accessible to all men, first of all to the actual and possible mathematicians of all peoples, all ages; and this is true of all its particular forms. And all forms newly produced by someone on the basis of pregiven forms immediately take on the same objectivity. This is, we note, an "ideal" objectivity. It is proper to a whole class of spiritual products of the cultural world, to which not only all scientific constructions and the

> sciences themselves belong but also, for example, the constructions of fine literature.(Derrida 1989, 160)

Husserl then proceeds to constitute the collectivity of the ideal structure. He finds it in the " *persisting existence* of the "ideal objects" even during periods in which the inventor and his fellows are no longer wakefully so related or even are no longer alive"(Derrida 1989, 164). The source for the persisting existence can be found in written documents. The important function of written, documenting linguistic expression is, that it makes communications possible without immediate or mediate personal address. Through this, the collectivity of man is lifted to a new level. Written signs are, when considered from a purely corporeal point of view, sensibly experienceable; and it is always possible that they may be intersubjectively experienceable in common. But as signs they awaken, as do linguistic sounds, their familiar significations. The difference of written signs is in the time scale. The awakening is something passive; the awakened signification is thus given passively:

> … similarly to the way in which any other activity which has sunk into obscurity, once associatively awakened, emerges at first ***passively*** as a more or less clear memory. In the passivity in question here, as in the case of memory, what is passively awakened can be transformed back, so to speak, into the corresponding activity: this is the capacity for reactivation that belongs originally to every human being as a speaking being.(Derrida 1989, 164)

The writing-down, then effects a transformation of the original mode of geometrical sphere with its validity in spatio-temporal life-world, into another “medium”. The meaning-structure within the geometrical sphere is put into words. As Husserl says: "It becomes sedimented". The observer, then, can make it self-evident again: can reactivate the self-evidence. In the architectural design the representational system can be taken to the conceptual construction, and this construction can be taken to the geometrical meaning as something "sedimented". The geometrical meaning can then be made self-evident by reactivating its existential meaning. But this is not usually the case. Instead of going through the complicated process of re-presenting the whole history of geometry to measuring techniques and counting numbers, a passive understanding of the expression of geometry is chosen. In this passivity "the realm of things that are bound together and melt into one another associatively, where all meaning that arises is put

together passively". This passivity is created by a phenomenon of "language seduction":

> It is easy to see that even in [ordinary] human life, and first of all in every individual life from childhood up to maturity, the originally intuitive life which creates its originally self-evident structures through activities on the basis of sense-experience very quickly and in increasing measure falls victim to the ***seduction of language***. Greater and greater segments of this life lapse into a kind of talking and reading that is dominated purely by association; and often enough, in respect to the validities arrived at in this way, it is disappointed by subsequent experience. (Derrida 1989, 165)

In architectural design, on the contrary, the "seduction of language" brings forward all the different epistemological layers hidden in human history, and allows the passive use of them as complicated hierarchical structures. The structures that “touch”, “reflect” and “erode” the world can be seen as sediments of the human mind through centuries.

In this interpretation, the horizon of existence undergoes a further modification, it is not just an intermediate zone between objective reality and subject, but the articulation of collective and universal modes of space and time. These modes are dominated by the consciousness in the collective form. These modes are the collective existential language, that veils the objective reality. Within this veiling, the life-world thus ceases to be the objective reality as experienced and becomes the embodiment of collective human modes of time and space. Architectural design with its different layers of time consciousness and different layers of representing space, then can be seen as an expedition to these collective, universal and pregiven modes of space and time. Through the process of education these modes of representing space are unified with the modes of re-presentations of experiences as the consciousness of time. The medium of these modes is the “focus of mind”, where the past and future become one as presence of the moment.

2.4. CONCLUSIONS: DESIGN PHENOMENA WITHIN INTERNAL TIME OF CONSCIOUSNESS.

2.4.1. The horizon of existence as a borderline between personality and world (subjective and objective reality) is epistemologically the same for an architect and for an observer. In the case of an observer the modes of space and time remain largely passive and are intertwined with the life-world. Through designing, the horizon of existence is transformed into an actively and willingly manipulative form of cognition as memory, experience and phantasy, where different directions of consciousness can be used simultaneously or separately at will. This transformation can be described as an horizon of design, where the past and future presentations of space are freed form existence.

2.4.2. The representations of design belong to the life-world of empirical nature; they are tangible and steady. This creates a situation when the design in the focus of mind with its retentional possibilities is not perceived as something belonging to the immanent time-constituting stream, but becomes a memory of "having-been-perceived", possibly even a “memory of the present”. The object that is represented in such a way, is not only a part of designing subject, but also a detached entity in the form of collective representations.

2.4.3. The “eroding” and “touching” quality in architectural design can be seen through the handed-down knowledge of geometry. Geometry as the fundamental method of creating design results and design realisations is the foundation for conventional representations. The ideal language of geometry performs a double function: Firstly, it operates as an hermeneutic decoding device, making the representations and realisations of design meaningful as collective human collaboration and production. Secondly, it validates the intersubjective modes of space and time cognition – creates the “objective” sources for shared existential meanings, that are largely understandable for the majority of people. These functions geometry produces due to the language seduction, that is hidden in handed-down, sedimented, abstracted and abbreviated knowledge, emerging within the teacher – student relationship. The “eroding” and “touching” quality in architectural design as human mode of space and time recognition enters as presentation into the internal time of consciousness. In re-presentations of these presentations, a specific double intentionality occurs. There is the immanent unity of the re-presentation and the processual unity of "now". This "now" is the focus of mind at present, and due to practice and knowledge of “living in profession” it is transformed into an actively and willingly modified horizon of design. These two unities of double intentionality as constituants of two time sequences can run parallel or merge. The fact that these unities are parallel makes me conscious of the re-presentation. The double intentionality, born from the unity of the time flow "which I am conscious", "the unity of what is remembered", is the reason that allows constitution of the expectation-intentions. It is the initial source of design fantasy (imagination). When the two unites of double intentionality join together the internal time consciousness is not articulated and the sense of existence is built into the modes of space and time recognition – “memory of the present” and identity of “having-been-perceived” are brought forward.

So one and the same re-presentation can be approached in two modes. The mode of recollection within the immanent time flow brings forward the richness of its meanings in retentional modifications. The mode of "having-been-perceived" brings out the richness of re-presentation towards existence. But within the last mode, it is detached from the flow of consciousness, from the identity of self. Within architectural education the self of designer, as reinforced identity in being conscious of space presentations, re-presentations and conventional representations of these, can be developed into the level, where the second mode – indexation towards existence – never really achieves the detachment from the identity of self. It remains active as the background of consciousness. Designing in "the focus of mind" thus involves the repetition of the re-presentations and the representations of these, for the designing mind as sequence of acts of consciousness. This sequence because of its developed background, is at the same moment "transparent" on two horizons: in memories and fantasies it creates an invariant – as immanent meanings of the spaces of mind for the designer (design horizon), in experiences and in presentations it creates an invariant – as transcendental meanings of the spaces of mind for the observer (existence horizon).

2.4.4. In our model, it is the "focus of mind" that we identify with "the living horizon of the now" that forms the horizon of design. The horizon of design is constituted by the retentional and protentional modifications of experience. In the freedom of immanent time, three different modes of consciousness are blended together: The retentional re-presentations, the "memory of the present" and protentional phantasis as "the memory of having-been-perceived". The design fixed in the "presence" thus brings forward the steady identity and meaning of the design.

2.4.5. Architectural design takes place on the borderline of personality and world. It is the dialogue on the horizon of design between presentation of world and re-presentations of mind. The goal of the design process is an ideal, intentional, universal object of thought - an invariant within the spaces of mind. From the epistemological point of view, the object of thought is largely an *a priori* summa of design conditions cleared of existence, described and modified in the ideal language of design and then secured again in possible existence as the modes of space. This can be seen as a possible existence of re-presented and represented. The possibility of such a process lies in the radicalisation of the different modes of immanent time of consciousness and collective understanding of different modes of space. **Architectural design is thus transformation of the re-presentations of past and future of the life-world into the spaces of mind as presence.**

Still this model presents us with unanswered questions:
How do the design results transform from their state of language-like signs to the objective reality and what is the part of society within it?

How does a pragmatic building transform into "a piece of architecture.

3. ON HORIZONS OF DESIGN IN ARCHITECTURAL EDUCATION.

(PHENOMENOLOGICAL MODEL)

3.1. INTERPRETATION OF DESIGN HORIZON – A PHENOMENOLOGICAL MODEL.

3.1.1 The collectivity of designing and building.

During this investigation we have made use of the philosophical expressions "memory of the present" and "memory of having-been-perceived". We interpreted these expressions in the architectural sphere as knowledge of something "having-been-designed" or knowledge of something "having-been-built". We also made use of the hidden epistemological settings within the formal structure of "conventional representations" in architectural design and suggested it is the intersubjective form of the horizon of existence, that veils the objective reality.

All these devices of analysis in the sphere of architecture seem to have a strong indication of collectivity – an interaction of several similar subjects, when seen in the time sequence of design phenomena. These devices also assume a meaningful understanding and communicative action between these similar subjects. We started this investigation from the point of view of subjective reality and turned towards social and objective realities via horizons of languages and design. In this approach, so far, we have viewed the subjective reality in the condition of status quo, as if being something completed or as if captured within a particular duration of time. The different time modes of consciousness, the knowledge of designing and building as well as making use of conventional representations, all diverting the mind from the natural attitude towards the world, indicate the necessity to look at the subjective reality in its development.

We believe the development of the subjective reality in the sphere of architecture can be found in the collective origin of design phenomena. If we look at the epistemological model, the relation or activities between design results and design realisations cannot be seen, nor are they described. In everyday practice the design results, in the form of working drawings, are handed over to somebody, who realises (makes real in the correct sense of the word) the descriptions of the design ideas. So the descriptions of design ideas as representations, themselves become

the source of interpretation. Somebody, who has to realise the design ideas, has to interpret the artefacts of special conventional representations. Although society, as the social reality, passively participates in developing the design through laws, norms, regulations, customs, habits, expertise and criticism, this participation remains remote. Society cannot be involved directly, but is represented by specific individuals – the client or clients, the builder or builders and the critic or critics. These specific individuals do represent to some extent the society, but they cannot be equalled to the whole of social reality. At the same time these individuals, as personifying some aspects of the societym, are similar to the subject of the architect as designer and for us, indicate another subjective reality within our model.

In a simplified example, we can describe the realising of any design as a collaboration of three persons. These three persons are the embodiment of three subjects: an architect, a client and a builder. The simplified process of design can be imagined as follows: The client explains the aims and constrains of design. The architect goes through the design process and describes the design in conventional form. This conventional representation relies on language horizon, that creates collectively understandable, and thus conventional, meanings. When this design, as something described, is agreed between the client and the architect, it becomes the foundation for transforming the reality. This transformation of reality is arranged by the builder according to the interpretation of design descriptions: he also relies on the collectively understandable meanings. Only after this process has been completed, can we say that the design process has been finalised.

This entire process is possible as a collective effort founded on all three horizons: the horizon of language with mutual understanding within the different modes of language mediums, the horizon of design with mutual understanding within the different modes of design descriptions and finally, on the horizon of existence. The horizon of existence with intersubjective modes of space and time, is the collective possibility or belief in the transformations of objective reality. Before the design process, three equal subjects are confronting the objective reality sharing (or largely sharing) similar understanding of it in the form of space and time modes. Then the complicated collaboration between them takes place involving several epistemological transformations. Equally, after the design process the same three subjects are confronting the transformed or modified objective reality and through shared language, can verify if the design result projected to the future and

collectively agreed, has become something they imagined before. Very often this is not the case, either in a positive or negative sense, but that already involves not only epistemological judgements, but also axiologial judgements. From the epistemological point of view, we can suggest, that when the design process is finalised its object, with its meanings, is collectively open on all three horizons (See Illustration 7). Before realising it is open only on two horizons, that of language and design.

On the horizon of language the object of design, having been built, is the summa of abstract aims, values and meanings. It is open for discussions in different language mediums. On the horizon of design it is in the form of the descriptions of the object designed: It is open for interpretations. On the horizon of existence it is the object designed in its existence. Thus it is also open for the collective modes of space and time. With its being here and now, all the participants become equal observers of it. All these observers can be identified with the subjective reality. This status of observing is not empty, it contains the knowledge of "having-been-designed" and "having-been-built" and it operates simultaneously on all the three horizons. Where the horizons of design and existence intersect, where the realisation in its being operates also as a representation, there the ontological being of the object of design becomes the description of design ideas, but in a much more powerful form than in conventional representations. It has obtained the enigmatic status of the "thing-in-itself", partly apprehensible through the modes of space and time.

3.1.2. Architect and observer. The possibility for architectural phenomena.

Thus, within the total time sequence of unfolding design phenomena, we can identify three stages. The first is the pre-design stage, where all the participants are observers. The second is the design stage, where designer acts as the conductor of the process and other subjects observe the process. This is the design process itself, that we have examined above in its domains and duration. By participating in the observing, the other subjects remotely become also designers when the collective horizons of existence and language become really important part of the design process. In the third stage, the post-designing and post-realising stage, all the participants are again in the status of observers.

These stages can be clearly seen when we take the simplified example of three subjective realities (architect, client and builder) to the extreme ends. One being

the case where one person acts as all three different subjects and the other being a case where the object of design takes the effort of a whole society or a nation.

In traditional cultures, it happens quite often that one person is in a need of shelter and then, designs and builds it. He or she can do all the work alone. We might even downgrade the scheme and say that building the shelter is at the same time designing it. The description and realisation of the design are the same. As the articulation of different realities in this case remains only contextual all of the three horizons we identified, become merged. The bodily existence and activity of that subject is the "speaking" of the inner language and describing the design. In extreme cases the object of desire, design and building remains unreflected. It is an integral part of existence and cannot be identified as a separate entity. Within the sphere of buildings, the existence is formulated by often unreflected archetypal meanings, secured on the level of language, mythology or religion.[20] There is no active collectivity in the process, it is all hidden in collective archetypes of a single subject, but nevertheless we can identify the three stages of observing: before and after, as well as the stage of doing.

The other extreme case of a hypothetical design process could be one, in which no subjective realities can be identified. We can imagine of a project, that is so overwhelming, that no single effort is strong enough to solve it. This project could be the pyramids of Egypt or Sumer; a gothic cathedral[21] or tunnels and bridges across the seas. All these goals could be achieved with the collaboration and collective effort of a huge amount of people. This also means a considerable effort of ensuring that the design process will produce a reliable, possible, and above all, largely accepted realisation. We may then think of several stages or layers of the language horizon involved in design. First the aims, then the possible design strategies etc. are debated. The design process is constantly described and monitored. The same happens with realising the design. We can imagine the work-groups, committees and informal parties being involved in debating and voting. So we might conclude that society, involved in this process, is at the same time client, designer, builder and observer of the object of design. Here again, we can differentiate the stages of observing and doing as separate aspects of one and the

[20] We can rely here on an example of traditional building habits of Estonian culture and its closest Finno-Ugric neighbours (Finns, Votjaks, Maris). The oldest built forms, described by expressions: "koda", "saun" and partly "rehi", have survived in their spatial articulation, as etymological stem-words and as mythological and sacred meanings for three to four, thousand years. These archetypal structures disappear only in the beginning of 20th century, with the development of professional architecture and modern techniques of production (Soolep 1991)

same event.

We have attempted to describe the collective quality in designing and observing in the model (See Illustration 7). The collective efforts in design, the interpretations of conventional representations and shared meanings introduce a new member of the model. It is of the same quality as subjective reality – the designer. We have called this member the "observer", because he or she is "observing" the design process and results. In the most simple cases the observer is the builder, who identifies the design drawings as possible changes in objective reality. In a more sophisticated case, the observer is the client or the designer himself. The epistemological process is quite the reverse of the one described from the viewpoint of "I" as a design personality, possibly architect. The design descriptions are interpreted in the reverse order - into the design ideas. The descriptions of ideal design, that are intersubjectivly and collectively open, are transformed into the sphere of ideal again. What is the base or foundation of this interpretation? Where do the similar meanings to the signs come from? From the first source we described: it must be the social reality with its functions of culture and institution. But the subjective reality, as the design personality can grasp the direct experience from the objective reality in the form of personal involvement. The other subject has the same possibility - the life-world they share, is similar for both of them. This is the collective status of observing and sharing the horizon of existence: the modes of time and space. This similarity may largely come from social reality moulding for the subject, the possibilities of cognising the objective reality. In this case the epistemological setting is built within the subject by society. On the other hand, despite different social backgrounds and philosophical preferences, the existential, the space as experience, is quite similar to all human beings.

Thus we can say that design process, the creation and usage of design artefacts, constantly fluctuates between the horizons of existence and language. In these fluctuations, that reminds us of chains of re-presentations within protentional and retentional directions, the design process “touches” and “erodes” the objective and social realities.[22] This fluctuation does not stop with the realising of the design, on

[21] Otto von Simson describes the collective conceptual, religious, economic and political efforts involved in designing and realising the cathedrals of Milan and Chartre (Simson 1962,18-20;159-182).

[22] This is where the ideal design "touches" the objective reality through the universal modes of existence. But this mode is blended together with the special techniques of the design horizon, where this existence is described in the language of geometry and arithmetic. The horizon of existence is thus only partly present and partly covered by the veil of prevailing language of the social reality.

the contrary, it carries on as the object of design and is now much more clearly established in its ontological power. Its existence within the modes of space and time, can be compared with the design artefacts on design horizon and with the expectations of the society on the language horizon. This continuation of fluctuations we will call “architectural phenomena”. The observer as subjective reality can now experience the designed and the built. The unity or differences of these become apparent and the “observer” can describe the experience on the language horizon, where it gradually, in different mediums, is acknowledged by society.

So we have to see, in the model of design phenomena (Illustration 7), two separate processes of transformations between realities - the design phenomena, that starts with designing subject and with the help of similar subjects fades into the objective reality like “thing-in-itself”, and - the architectural phenomena, that is picked up from this “thing-in-itself” revealed in the modes of space and time, and interpreted as well as described to society. Epistemologically the architectural phenomena is supported by two possibilities of “observers” consciousness; “memory of the present” as the indication of existence and the knowledge of “having-been-designed” and “having-been-built”. These possibilities are for us the quintessence of the collective quality in designing and observing. For the society the architectural phenomenon is a language, the **language spoken**. For the architect the architectural phenomenon is an idea, the **idea realised**. For the observer of the architectural phenomenon is a space, the **space experienced**.

Architectural phenomena described as an experience of a new reality designed, as a description of that new reality and as an indication of collective knowledge hidden in its being; suggests two important consequences:

Firstly, when something has been designed and built before, the knowledge and experience of this, becomes abstracted from the actual object designed and built. It becomes a universal attribute for the modes of space and time. Anything that can be experienced as modes of space and time can then be approached as architecture. To paraphrase the famous poetic sentence of Nicolaus Pevsner: the bicycle shed is architecture, because Lincoln Cathedral has been built. Through the precedents, through the experience, that many buildings have been designed and built - before,

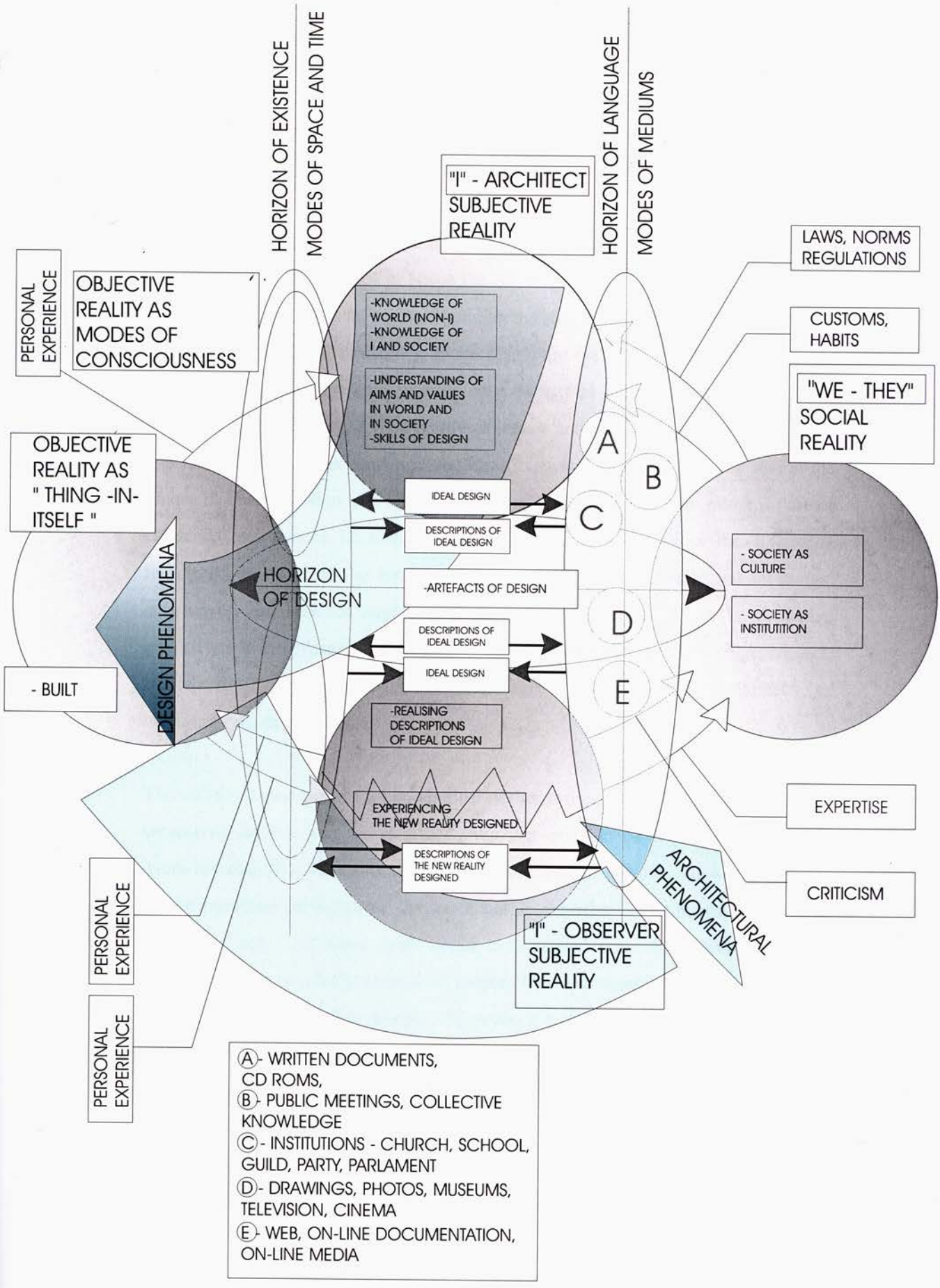

ILLUSTRATION 7

the collective knowledge of that, broadens the realm of architectural phenomena. Even nature could thus become a part of architectural phenomena. It can be approached as the design of the Great Designer, Architect of the universe, and it can be approached as the stepping stone and subject matter for transformation, as the possible "anagogic"[23] field for design of humans. The representational and intersubjective quality in design realisations entering the architectural phenomena and being indivisible form the existence of these representations bring forward the possibility of an attitude that everything existent within the modes of space and time is designable.[24]

Even if we leave the observer out of the chain and substitute him with the architect himself, who is perceiving his own creation and is comparing the two separate experiences; we must admit that the architectural phenomena include not only ideal designs and their descriptions, but the fundamental characteristics of the objective reality as modes of space and time.

Secondly, when something has been designed and built before, the knowledge and experience of this, becomes in the natural attitude inseparable from horizon the of existence. As personal and collective intentions become possible to be interpreted form the being of the object realised, similarly the ontological possibility of something becoming built, hides a possible new meaning within the design artefacts. Thus architectural designs, due to the borrowed ontological possibility of being-built, can enter the architectural phenomena even before realised and before entering the horizon of existence. The descriptions of designs that can, and also possibly cannot, be built may enter the sphere of architectural phenomena on their own. The drawings of a bicycle shed are a part of architecture, because Lincoln Cathedral has been built. Through this special possibility of collective ontological meaning, the design artefacts differ form the artefacts of fine art as paintings, drawings and sculptures, although their medium is the same as for architectural representations.

This abstract or universal knowledge of something being built creates the autonomy of the design horizon, that due to the collective historical background

[23] We use the expression "anagogic" in the same meaning as the method of "*anagogicus mos*" made use by Abbot Suger justifying his efforts in rebuilding the church in St. Denis (De Administratione, Panofsky 1979, 47,49), derived from Plotinus (Gilson 1955, 83) and Pseudo-Dionysios (Copleston 1966, 95)

[24] We have seen how the "project based focus" as methodology has been taken over by other disciplines as economy or social studies. Recently we have witnessed how life itself has become subject of designing in nanotechnology and genetic modifications.

can sustain a self-sufficient being of its own. The autonomy of the design horizon is founded on the ontological possibility of its existence.

3.1.3. The collectivity of observing and teaching.

We can now ask how the subjective reality of an observer develops into the subjective reality of an architect. This is the question of the development of a design personality. There are formal criteria that make the difference between an observer and an architect. These are described in the normative documents and in the *EC CD*, but we can also refer to the essential differences. These are found on the design horizon and indicated as special mediums of re-presentations and representations and exhibit different epistemological build-up, if compared to the natural attitude towards the world.

It is quite clear that the transformation into a design personality involves particular studies. There are the knowledge, awareness and understanding as well as the specific skill of design, required to operate as a design personality in the field of architecture. This has been the overall consensus of societies at least for a long time in Europe and in modern North America. The consensus has clear historical roots within culture (Harvey 1972, Kostof 1977, Briggs 1974, Radding, Clark 1992, Shelby 1977).

When we attempt to see the designing personality in development, either through the stages of design process or the general genesis of design personality, the starting point is the collectivity of observing. The horizon of design is missing. There is the experience of the world and the shared language. The experiences, knowledge and beliefs about the objective reality can be represented on the horizon of language. As we suggested, in some latent form, the horizon of existence does contain the passive knowledge of “having-been-designed” or “having-been-built”, but it is not actual or visible yet. We assume that within the educational process the qualities of observer are transformed into the qualities of a designing personality with that latent and passive knowledge being made actual. It is the knowledge taught as education and the knowledge acquired in the process of "living-into" the profession.

If we try to investigate the phenomenological model substituting the subjective reality of a design personality with the student of architecture, an observer, who is making the effort to become a member within the design phenomena, then we can

interpret the model in a new way. Even the very first design exercises, with virtually no knowledge of design process, nor of the techniques of describing it, exhibit all the elements we described in the design phenomena in their full epistemological complexity. There are the design ideas and the descriptions of these ideas, that are reviewed by the teacher. There are the horizons of language and existence on which the design descriptions are supported. Nevertheless there are also differences. Due to the relative autonomy of the design horizon, the realising of design is not necessary. The student works very seldom get built as realisations and when they do, they are usually of a limited scale. The objectives of the design project can be explained in the form of language, then the objectives can be measured against the design ideas described. From the epistemological point of view the student is describing the object of the design in possible modes of space and time in the form of design artefacts and as the meanings of design, he or she is trying to make use of in the design, in the form of written or oral text. The teacher then attempts to evaluate whether the design meanings are readable and appropriate within design artefacts, but also whether they are possible and appropriate as modes of space and time, as “if realised”. This open possibility, that on both sides of the design horizon, is never taken to its final reality, creates a situation where the student is confronted not just with objective reality, but also with the interpretation of the objective reality by the teacher. That interpretation gradually unfolds on the language horizon and due to the different experiences of the teacher and student is quite different in its meaning. We also believe that social reality goes through similar transformations. Social involvement can be simulated, by fellow students and teachers, but the effect remains limited and is confined to reviews. So the design process in education is really focusing on describing design ideas and interpreting them between two subjective realities.

3.1.4. Architect and student.

What happens in this dialogue between the teacher and student? We believe the dialogue resembles the architectural design process, where ideal and representative qualities in design process continuously change their positions and transform into each other. Student and teacher go through that process as descriptions of design are being interpreted and evaluated by both of them. This is the "living-in" quality of the learning process. In this specific dialogue, another shift takes place: the alienation from the objective and social reality (as from the observer's approach) is created by the imaginary interpretations of objective and social realities through the teacher's personality. Different teachers have different interpretations of these realities as well as different ways of talking about them. This results in the first part of the student's studies usually being confusing and bewildering: nothing seems to hold as previous beliefs about the world and society are questiones. The image of the objective and social reality is radicalised into a new state: into a state of different values-biased interpretations, symbols of the world and people. We have called these radiacalised ideas or complexes of ideas "imagos". (See Illustration 8) So the student as designer operates with the double realities: of personal experience of world and society outside of the profession and imaginary or possible realities as part of his or her interpretations of teachers imagos within the profession. In a way, we see interpretation of another interpretation and this is taking place on the highly abstract horizon of language.

Due to the disconnectedness of the observer-orientated realities of social and objective origin in architectural education, the horizons of existence and language are blended "within" the design horizon. The teacher's personality blends them into a unified dialogue where design artefacts, experience of space and time and language become indivisible. The process becomes multi-modal where all the mediums take part and are taken into consideration simultaneously. Due to the integrity and autonomy of the design horizon, intuition and empathy take over and complex value loaded meaning structures are communicated, probably largely unconsciously, from the teacher to student. The investigation of these modalities could be very difficult as we lack the means of describing them. They make use of the "presence" of the moment, when the different horizons are welded together and the experience is close to theatre or happening performance. The "presence" of the moment tranforms communication into a poetic image, difficult to describe and take apart rationally. It is quite clear that ordinary language is modified in such a situation. The words used to describe (or probably more correctly "guide") the

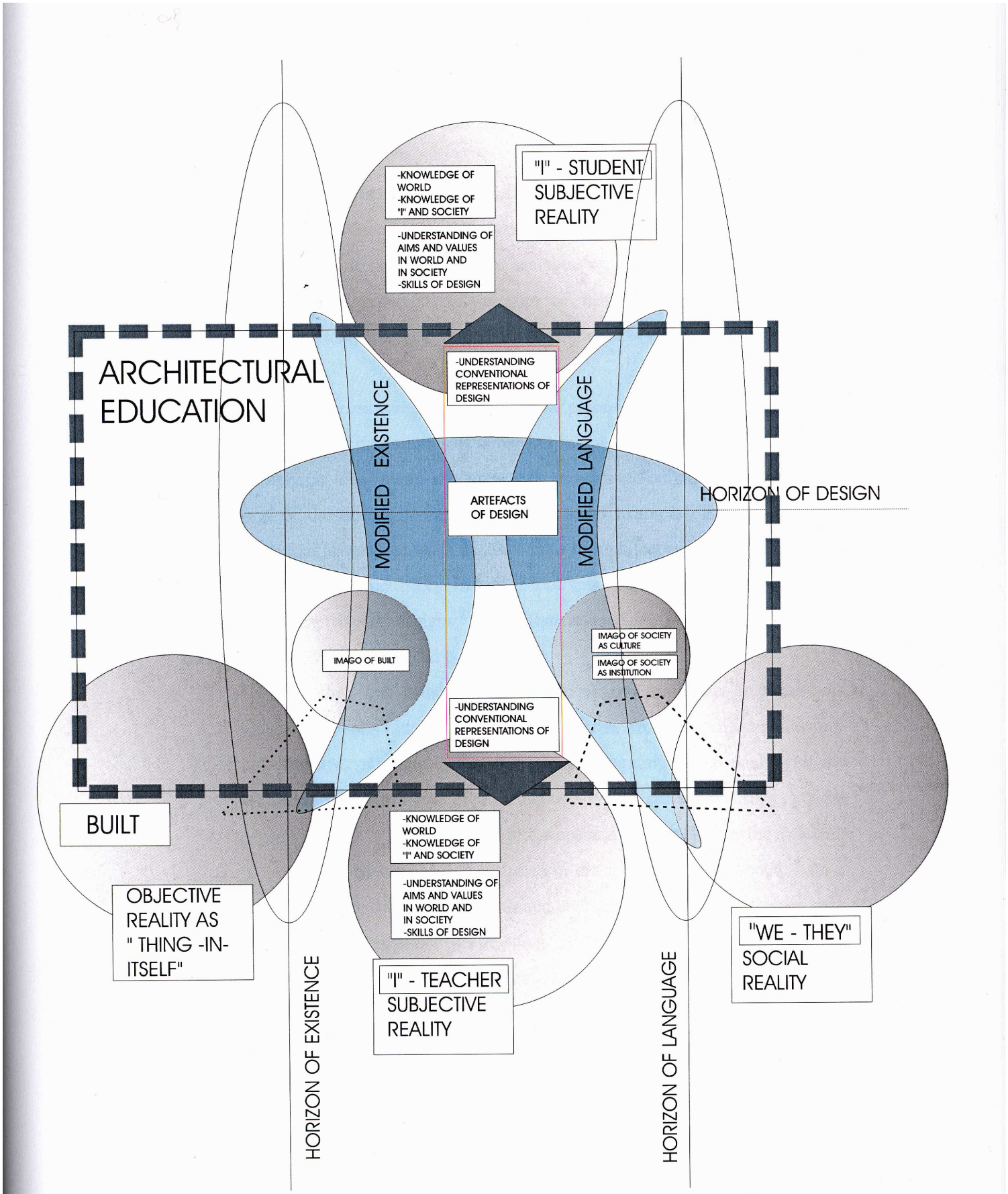

ILLUSTRATION 8

thoughts and the situation, are used poetically, metaphorically and analogically. They often mean nothing outside that very moment of the designing process.

On the language horizon we can detect several different modes of verbal communication integrated into a live process of transformation. Listening to the tutorial discussions of a teacher-student dialogue we can detect meanings of the words and expressions coming from philosophical, historical, literary and existential contexts, all mixed together in a particular reverberation of the moment.

The educational process can probably only take place when the design horizon and language horizon are intersecting. It is hard to imagine a teaching process only on the design horizon. The "living-in" quality can be achieved only through the gradual explanation of the design process and the personal example of the teacher. Of course, historical knowledge leads us sometimes to architects, who have learned to design from personal experiences. But if we look more closely we see that they have studied "built" or "drawn" designs.[25] Since Renaissance another source of studying became widely available: printed books:

> On the other hand, the technique of educating the architect was significantly altered by the development, from the fifteenth century onward, of a new genre of European literature which dealt with the theory and practice of architecture…. One could go directly to the books on architecture that first appeared in a trickle in the fifteenth century, broadened into a stream in the sixteenth , and opened onto a floodplain in the seventeenth and eighteenth centuries. … the age of a gentleman architect was dawning. . (Shelby 1977: 4)

This becomes visible with Alberti establishing a new attitude towards architecture in the Renaissance, where doing and knowing were separated for the first time in an architect's profession.[26]

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[25] "… but let him principally enquire in every Building what there is particularly artful and excellent for Contrivance and Invention, and gain a Habit of being pleased with nothing but what is really elegant and praise-worthy of Design: And where-ever he finds any thing noble, let him make use of it, or imitate it in his own Performances; … let him study to bring it to Perfection in his own Works." (Alberti 1965:206)

[26] " Victor Hugo has taught that printing killed architecture. Whatever the future will reveal about this prophesy, which seems to have reached fulfillment, printing certainly affected the craft guilds critically. The manuscript trade manual was kept in the control of the guild; a printed manual became common property. The trade manual provided the apprentice with what seemed like a "teach-yourself" short-cut, but a threat was present for masons in revolution in taste and the abandonment of the old masonic procedures based on geometrical working in favor of new arithmetical harmonic schemes developed with the arrival of Arabic numerals, such as the ones proposed by Leone Battista Alberti and in Germany by Durer."(Rikwert 1980:136)

Through the teaching and learning process the state of mind of an architect, open within the design process, is recognised and imitated by a student and gradually he or she is lifted through trials and errors to a similar state of mind.

So we may conclude that through radicalisation and alienation the observer's state of mind, a new cognition for an architect is created. This we described that in the different forms of internal time consciousness in the previous chapter. The investigation and description of developing this specific state of mind is our next task.

3.2. RE-PRESENTATIONS AND REPRESENTATIONS AS REDUCTIONS.

3.2.1. Architectural design as a series of reductions.

Learning architectural design starts with the learning of conventional representations within the field of architecture. Historically these representations have been usually plans and three-dimensional models (Kostof 1977 ; Harvey 1972; Briggs 1974). Occasionally these could have been accompanied by textual specifications.[27]

The medium of representation as well as the process of learning how to use it has sometimes been the realising of the design itself. This is the possibility where the architect as the designer accomplishes the design himself or closely explains how to do it with a personal example of doing it. Within this process the different aspects of design are met in an undifferentiated way. The pure example of this type of representation is the practice of master-masons during the Middle Ages:

> The architect began his career as a mason`s apprentice. For three to seven years, depending on the period and the country, he learned to dress stone under strict supervision (with heavy punishments). The companion or Geselle then had to leave the master for a year to travel. During this time he would visit other lodges and acquire additional know-how and practice. Eventually he would pass master`s examination, which usually required completing a work within a limited time as well as solving standardized but difficult design problems. … Upon passage of this ordeal the young mason was

[27] We know about the architectural representation in Ancient Greece: "Sometimes they used a wax model (τυπος) of ornamental details, and occasionally a general model (παραδειγμα) of the whole building. The specification for the Arsenal at the Piraeus has been preserved and translated: it gives full instructions as to dimensions, materials, thicknesses of wall, and time of completion."(Briggs 1974:23)

> certified as a master and given his registered mason`s mark, which would usually identify him and his work for a lifetime. (Shelby 1977,12)

In Ancient Greece the architect was sometimes associated with the carpenter's or the smith's profession. The medium of his work was then wood or metal (Briggs 1974:12). This can be seen as an echo of the mythological belief in *daidala*, a magical artefact, that was to be designed and composed of several materials, like wood, metal, textiles and jewels. The most well known designer of such magical artefacts was the mythical architect Daedalos (Perez-Gomez 1985).

Since Renaissance the orthogonal projections in the form of plans, elevations and sections (all epistemologically being specific sections of imaginary visual pyramid)
have been the predominant means of representing the design.

Currently, the main representations for the architectural profession are still plans, elevations and sections, these are the main medium to work with, as well as three-dimensional models to describe and test, that which has been worked out. The revolution in digital media and information technologies have not yet changed the final outcome of the main design artefacts.[28]

The first meaning and significance of plans, elevations and sections, that we may simply call architectural drawings, comes in architectural education from the comparison of these with design realisations, usually buildings or parts of buildings. This is the first transformation of an observer towards the field of architecture. Simple architectural drawings are usually quite easily readable by those outside the profession. People, buying a house or an apartment, can easily identify rooms, the connections between different rooms and usually also the windows and doors. The source of this possibility of understanding the representations is probably general intelligence or knowledge, where from similarity and comparison, or even from rules of descriptive geometry the meanings for the lines and angles of the representation are gained. The situation is quite opposite with complicated architectural drawings, where the sections describe open spaces through many conventional stories or where traditional

[28] Saying this, we of course, acknowledge that the full digitalisation of architects domain of work: the general information, the description of the site, the design process and realising and manufacturing of design; can create a totally new epistemological setting, even a possibly new reality of virtual origin. This new reality could easily be

horizontal surfaces are tilted or bent. Then the untrained mind can only understand these representations with great difficulty, if it can understand them at all.

The techniques of gaining the knowledge and awareness of architectural drawings are diverse in different schools[29], but the result is always comparable with the requirements described in *Critera for Validation*: “three-dimensional arrangement, using perspective, axonometric and isometric projection”; “to scale and with sufficient and clear dimensions” and "character and spatial quality" (Part 2. Criteria for Validation 1997, 16). The universality of these requirements can be seen in the fact, that from whatever country or culture architects come, they all are capable of reading the architectural drawings of present or past times. There might be minor stylistic or typographic differences, but the essence and general principles of representing design are universal.

From the epistemological point of view we can ask: What happens when the designer makes use of the architectural representations? How is it different from the natural standpoint of an observer? With using architectural representation some qualities of experience are suspended. We briefly mentioned this before, listing possible mediums of re-presentation and representation (See sections 2.3.2 and 2.3.3). When something is representing, is reflecting or is standing for something else, it must go through a transformation. Experiencing a site and experiencing the representation of it, as a topographic survey map, are different. Both experiences unveil and suspend certain essences. It is easy to measure heights and distances as well as configurations of objects and relations between these objects on a map, but impossible to understand the meaning, the character and the colourfulness of it in different moments of a day or a year. The map thus is a specific interpretation of the site and we experience it as a representation of it. We might say that the map reduces the existence of a site into an interpretation of essential but specific qualities of that existence for someone, who has created it as a representation.

A similar reduction of existence can be seen when looking at the final stage of the design process, when the “holistic resolution” of design is translated into architectural drawings. The drawings, as representations of the design object in the

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seen as unification of subjective and objective directions, that we have tried to separate. This full spectrum digitalisation in architectural representation, we believe, needs another thorough and self sufficient investigation.

[29] For instance in the Estonian Art Academy the first acquaintance with architectural representation comes through investigation of graphic surfaces and different measuring practices (survey of details, buildings and sites) in Portsmouth University it is gained through different design projects (design of a seat, minimal living project, precedent studies and investigations of building details to full scale).

focus of mind, are a slice out a certain moment of its reverberation. The drawings do not reveal the different stages of the development of design, nor are they capable of hinting at the possible future of the meanings attached to the design object within the focus of the mind. Shortly, the drawings do not exhibit the retentional and protentional qualities of the designers mind.

Learning to operate with the conventional representations in architectural education can thus be interpreted as learning to operate with reductions of reality. Firstly the reality of objective origin and secondly as the reality of subjective origin. This indication of both reductions, we believe, were seen in discussing the different modes of re-presentations as internal time consciousness, where the given experience gradually "sank" into the presentations and recollections of these presentations. These reductions are not arbitrary, but collectively shared within the profession. Epistemologically they exhibit the first step in departure from the single natural standpoint of an observer, because the reductions create a secondary and parallel language of experiencing the world. This is the moment, when the design horizon starts to emerge.

Here we also have to return to the representational systems in architectural design stemming form the history of *perspectiva artificialis*. We found in the studies of Panofsky, Damisch and Perez-Gomez, that there are diverse epistemological consequences in different representational systems. There are several possibilities: the possibility of unity or meaningful content in visual experience, ideal projections and three-dimensional models; the possibility of finite and infinite observer, creating diverse subject-object relations; and the possibility of instrumental descriptive geometry, creating descriptions of finite and measurable objects in infinitely constructed space. All these possibilities rely on collectively shared knowledge, but that knowledge is largely unidentified, as much of it comes through the "language seduction" and is in passive form. It is taken over because of tradition or the mentor's authority.

Survey maps, as well as architectural plans and elevations, are just specific cases among the different representational systems. Using these different representational systems does not only bring forward the reduction of realities, it is also the sophistication of the design horizon that emerges within the reduction. Due to the diversity of epistemological layers, the sophistication of design horizon can develop in different directions. We believe that these directions are an

embodiment of the work and the experiments of generations participating in the profession. Consciously understanding the meanings of the representational system or unconsciously just making use of it, is the second step of departure from the natural standpoint of an observer. If we compare the reduction of realities to the secondary and parallel language of experiencing the world, then the sophistication of the design horizon can be compared with the development of different dialects of that language, forming chains of "inner structure" or "syntax".

We can also look at the different representational systems in architectural design in a more universal way. If one or several representational systems are used in the design process either separately or simultaneously, not only is the design object of this process pre-structured by the epistemological consequences of the systems, but the essence or conceptual sequence in designing becomes "sedimented". The act of designing (the essence of the designing process) is differentiated from the meaning or content of a particular design object (the essence of design). With the differentiation "empty" categories (devices, types or structures) for conducting design process are established. Here we can refer to the time frames within the consciousness as well as to the mediums of re-presentation and representation. Thus the awareness and use of, at first glance formal, representational system(s) creates predetermined changes in epistemological layers of the designing mind.

3.2.2. Phenomenological reduction from the viewpoint of Husserlian phenomenology.

The reduction of objective reality and the differentiation of conceptual devises for the design process in architecture can be interpreted, in concordance with the method of this investigation, as phenomenological and eidetic reductions.

Phenomenological reduction is the cornerstone of Husserl's method and philosophical system. It is the first liberating move to open up the possibility to investigate consciousness as something self-sufficient. With this, consciousness is taken in its pure form and innermost essential structure. For this purpose the existence of objective reality, the "world out there", has to be understood through a modification. It has to be suspended, put out of use, as the general thesis of the natural attitude of mind. Husserl's phenomenological method and philosophical system are by no means the subjective idealism that his reduction series is sometimes interpreted as. He firmly constitutes the world as the reality for all men:

> Whatever holds good for personality, also holds good, as I know, for all other men whom I find present in my world-about-me. Experiencing them as men, I understand and take them as Ego-subjects, units like myself, and related to their natural surroundings. But this in such wise that I apprehend the world-about-them and the world-about-me objectively as one and the same world, which differs in each case only through affecting consciousness differently. Each has his place whence he sees the things that are present, and each enjoys accordingly different appearances of the things. … Despite all this, we come to understandings with our neighbours, and set up in common an objective spatio-temporal fact-world as *the world about us that is here for us all, and to which we ourselves none the less belong* .(Husserl 1967:105)

But this understanding creates only the natural standpoint of the facts. This we have identified with the natural standpoint of an observer. Husserl proposes to change this attitude radically and look behind the natural life-world, the realm of consciousness, that is an inevitable part of it. For that purpose he used Descartes's method of absolute doubt. Doubting in an object, where "being" in general is not doubted, is to doubt in the principles constituting that object. This can be seen as an attempt of doubting. But it is impossible to doubt universally in everything, keeping the attempt to doubt and universal doubting in the same act of consciousness under the unifying form of simultaneity:

> … we cannot at once doubt and hold for certain one and the same quality of Being. It is likewise clear that the *attempt* to doubt any object of awareness in respect of its *being actually there necessarily conditions a certain suspension (Aufhebung) of the thesis*; and this is precisely this that interests us. (Husserl 1967:108)

Thus the universal doubt in being and the being of that doubt are not the same plane of being. The suspension is not the transformation of the thesis, nor the change of its components.

> And yet the thesis undergoes a modification - whilst remaining in itself what it is, *we set it as it were "out of action", we "disconnect it", "bracket it"*. It still remains there like the bracketed in the bracket, like the disconnected outside the connexional system. We can also say: The thesis is experience as lived *(Erlebnis), but we make no use of it*, and by that, of course, we do not indicate privation (as

> when we say of the ignorant that he makes no use of a certain thesis); in this case rather, as with all parallel expressions, we are dealing with indicators that point to a definite but *unique form of consciousness*, … (Husserl 1967, 108,109)

So the procedure of disconnecting as special reduction creates the phenomenological $\varepsilon\pi o\chi\eta$. The phenomenological $\varepsilon\pi o\chi\eta$, as a result of the bracketing method defines a new domain of investigation, though only a limited one. The entire natural world remains continually "there for us" or "present to our hand" and will ever remain as a "fact-world" of which we remain conscious. There is no doubt of it "being there".

> If I do this, as I am fully free to do, I do *not* then *deny* this "world", as though I were a sophist, *I do not doubt that it is there* as though I were a sceptic; but I use the "phenomenological" $\varepsilon\pi o\chi\eta$, which *completely bars me from using any judgement that concerns spatio-temporal existence (Dasein)*. (Husserl 1967, 111)

This type of suspension is referred to with the expression "phenomenological reduction". It is exactly the phenomenological reduction, which for the first time sets the intentional objects free as essential constituents of our intentional experiences.

The reduction of reality in the process of architectural design definitely reminds us of phenomenological reduction. Here the objective reality undergoes several types of modifications: as the experience, as the presentation and re-presentations of this experience and as representations of these states of mind. But, we can point out certain differences as well. The philosophical phenomenological reduction has an absolute direction, once carried out, it always remains the foundation for further analysis. The phenomenological reduction in the sphere of architecture seems to have a relative direction. It is taken up for a certain period and then dropped. This happens on both horizons: of existence and of design.

On the horizon of existence the objective reality is suspended as the mind constantly returns to the presentation of it, the analysis of a site is a constant return to the re-presentations of it, this is how the "memory of the present" is created. What this means, is that in the design process the investigation of the existent site

is substituted with the investigation of its presentation to the designing consciousness and the analysis is really a comparison and judgements of a series of recollections. This is a phenomenological reduction in its pure form, but as the design develops, the reduction itself is suspended and the designer returns to experience of the existent site, sometimes in the form of recollection of initial experience, sometimes in the form of a new experience, actually going back to the site. With this, a new layer of experience, the reduction starts as if from the beginning. Thus the initial reduction does not remain as the sole foundation for further design. The first stage of design very often consists of several different layers of such a series of suspended phenomenological reductions.

On the horizon of design similar parallel reduction takes place. It cannot be called phenomenological reduction, because it deals with representations, that in their essence are descriptions of interpretations stemming from phenomenological reductions. Nevertheless the mechanism of their instrumentality is very similar. Despite its semantic function, representations in architectural design belong to the objective reality and have their own existence in the life-world that alienates them from the designer. Within the correct phenomenological reduction their objective reality, once achieved in conventional representation, should have been suspended ("bracketed") and only presentations and re-presentations of it made use of. To a certain extent this happens in limited cases, where designing and realising tend to fuse into each other. Usually design process, nevertheless, consists of multiplied returns and modifications within the design representations. Thus the mind of the designer returns to the existence of representations and suspension of their "objective" reality starts again.

In the process of architectural design the phenomenological reduction as a cognitive method is frequently used, but it never seems to be taken to the logical end, from the point of view of philosophy. It is trapped between existence and its representation, it is trapped between the experience of actuality and the representation of possibility. This we referred to previously as the presence of designing.

3.2.3. Eidetic reduction from the viewpoint of Husserlian phenomenology.

In Husserl's philosophical discourse the phenomenological reduction is followed by eidetic reduction. The eidetic reduction is designed to bring forth the essential forms or *eidos* in experiences but as experiences that have now been suspended from the reality of the life-world, these essences are part of consciousness. Husserl uses the following names to clarify the procedures: "eidetic intuition", "ideation" and "method of free variation"(Kockelmans 1994, 132). The eidetic intuition and ideation are described in *Ideas*, it seems so close to the experience of architectural design that we refer to it in the lengthy quotation:

> There are reasons why, in phenomenology as in all eidetic sciences, representations,[30] or, to speak more accurately, *free fancies,* assume *a privileged position over against perceptions,* and that, *even in the phenomenology of perception itself, excepting of course that of the sensory data.*
>
> The geometer when he thinks geometrically operates with imagery vastly more than he does with percepts of figures or models; and this is true also of the "pure" geometer, who dispenses with the methods of algebra. In fancy it is true he must toil to secure clear intuitions, and from this labour the drawing and the model sets him free. But in actual drawing and modelling he is restricted; in fancy he has perfect freedom in the arbitrary recasting of the figures he has imagined, in running over continuous therefore of an infinite number of new creations; a freedom which opens up to him for the first time an entry into the spacious realms of essential possibility with their infinite horizons of essential knowledge. The drawings therefore follow normally *after* the constructions of fancy and the pure eidetic thought built upon these as a basis, and serve chiefly to fix stages in the process already previously gone through, thereby making it easier to bring it back to consciousness once again. … Hence, if anyone loves a paradox, he can really say, and say with strict truth if he will allow for the ambiguity, that the *element* which *makes up the life of phenomenology as of all eidetical science* is *"fiction",* that fiction is the source whence the knowledge of "eternal truths" draws its sustenance. (Husserl 1967:199,201)

[30] These are called in our terminology re-presentations to differentiate them from the architectural representations as artefacts of design.

The method of free variation makes use of the intuited *eidos*. Husserl recommends to start with a concrete fact, which is then set free to float in our imagination. The floating has to be operated within the limits of the type or class of that individual. We start from particular observation of a known individual specimen of a kind of thing, a meaning, an act, a relation, etc. With the help of memory and imagination the object is left open for variations and modifications. The result would be a plurality of different variations. Through varying our position in regard to the object and through varying its background, a nucleus or unity emerges. It is not connected to experience and an experienceable world due to free imagination. The unity is like an invariant, one overlapping essence, appearing in all the variants (Kockelmans 1994, 143).

The process of eidetic reduction itself is very similar to the design process. If we look at the list of re-presentations we articulated in the design process, we can interpret these as different mediums of free variation. Every one of them is carrying a certain character of its own, thus suspending some of the qualities of consciousness, or some of the qualities of revived experience. With this the different variations around the same object of thought, are created in the focus of mind. The *eidos* of the design object is thus gradually developed or we might say, a possible invariant as a meaningful nucleus for the design object is unveiled and constituted.

This description of the result of eidetic reduction is also remarkably similar to the goal of the design process – a design as "holistic resolution". We detected on the design horizon a reduction that reminded us of phenomenological reduction, but could not have been one. Is it possible that this is an architectural equivalent of eidetic reduction? With some modifications we can agree with this suggestion. But as withphenomenological reduction so is the eidetic reduction not taken to its logical conclusion in architectural design. Eidetic reduction in philosophy as the search for the best possible solution in the form of unity or nucleus in architectural design stops as soon as the satisfactory solution is found. With this the *eidos*, "essence" or "inner structure" of the design is fixed. After that the attempts of "de-reduction" start to secure the design as a possibility to the existential reality of life-world. Design steps back to the phenomenological phase of "noematic analysis" in reversed order.

> The method of phenomenological reduction (to the pure phenomenon, the purely psychical) accordingly consists (1) in the methodical and

> rigorously consistent epoche of every objective positing in the psychic sphere, both of the individual phenomenon and of the whole psychic field in general; and (2) in the methodically practiced seizing and describing of the multiple "appearances" as appearances as their objective units and these units as units of component meanings accruing to them each time in their appearances." (Husserl 1997:164)

In the final process of design the “component meanings” have created an eidetic system and suitable “appearances” have to be found for it. These “appearances” can be seen as representations, pushed back to objective reality and in their final stage being the realisations or “built” itself.

These both unfulfilled reductions, we suggest, explain from the direction of consciousness, the “eroding” and “touching” qualities of architectural design.

Ontologically both these reductions for architectural design are secured in collective representational systems and epistemologically they bring forward the change in the natural attitude of the observer.

3.2.4. Architectural education as a series of reductions.

The phenomenological and eidetic reductions in architectural design are themselves the target of modification or suspension, if we return to the education. In every design project the reductions are carried out and so during the course of curriculum several series of reductions are created. These reductions themselves form a multiplicity of variants. They differ in every project just as the design projects themselves are diverse. They differ under the supervision of every teacher just as their personalities and preferences are diverse. Gradually, we believe, an invariant emerges for the student. In the most general terms we can call this a pattern of designing, a method of making use of one’s consciousness in the mode of designing.

The passive source of the pattern of designing emerging as a method we found in the learning of collectively created representational systems. Here designing comes forward as “sedimentation” discovered in the act of following the shared design language. Due to the build-up of a representational system as representing or modifying something else, the student inevitably find themselves struggling with epistemological questions, described in the phenomenological method as

reductions. At the beginning of their studies this struggling is probably is largely unreflected or unconscious.

Within studio teaching we can also refer to the active source of the emerging the pattern of designing. It is the repetitive character of studio reviews. Epistemologically a studio review is a simulation of a designing mind. This experience is described through language. When the student's work, as the representations in the form of architectural drawings, is reviewed, we can distinguish two directions. Firstly, it aims towards past: what has been done and why it has been done. The embodiment of this could be teacher's or reviewer's effort to understand and imagine the representations. Secondly, it aims towards the future: what will have to be done and why it will have to be done. This is the suggestive part of teaching where several propositions are made, that have to be worked through in detail (their *eidos* has to be discovered). These are the protentional and retentional qualities of the design process, that are now represented through the poetic language of the teaching process. The interpretation of the presentations as the presence of designing, is the ongoing discussion among the participants of the review. The continuous or reverberating quality of the moment can be seen in local language contexts, which usually loose their specific meaning outside of the reviewing.

This a pattern of designing, a method of making use of one's consciousness in the mode of designing, which is achieved through the passive repetition of representational systems and the active repetition of reflecting design process within the other language. It can be viewed from philosophical point of view as completing the phenomenological reduction. In a single design project, the focus of mind is trapped between the existence and representation, constantly returning to existence and thus to the world of facts in natural attitude. In a series of design projects, once the existence has been suspended, the being of representations, does not allow the consciousness to naturalise the experience of the *eidos* of designing. The particular object of design falls back to the natural standpoint (with the index of possibility or future), but the designing mind itself obtains another epistemological layer. This gradual fulfilment of phenomenological reduction for the designer is to us, the horizon of design. Through passive and active repetition the design horizon emerges from an existential horizon. It does not substitute the horizon of existence, nor does it modify it, but it suspends the horizon of existence. When this has happened, the horizon of existence and horizon of design become

parallel like two membranes through which the objective reality as “thing-in-itself” as well as social reality as culture and institution, can be approached. With this the radical change in a designer’s epistemology has happened, there is never a returning back to the naïve natural standpoint.[31]

The design horizon itself can be suspended wilfully by consciousness, when an architect acts as a “normal” personality in mundane situations, but it is difficult as the world is given dominantly to the modes of space and time, and these can easily “slip” into possible chains of free variations on the design horizon.

The change, that which we have named as a radical departure from the natural standpoint of the observer is not produced or obtained easily. It “sediments” within a series of design exercises and projects. The empirical investigations on architectural education show the length of studies in Europe between five to eight years (Orbasli, Worthington 1995,58; Mabardi, Girelli 1997) Although the requirement by *EC CD* is four years of full-time studies at a university level (EC CD 1985, No L223/18), the real length of architectural studies with required practice periods in Europe is around seven years (Orbasli,Worthington 1995,60). This period of time seems to be universal even in different economic, political and social contexts[32]. As the length of a certain education can be believed to be a consensus between the profession and political or governmental bodies, we may assume, that the general time period for the educational experience is the result of both social practice and consensus in society. Members of the profession believe that the important qualities within the education of architecture have been achieved within this time period within the current practice and methods of teaching.

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[31] “The world is pregiven thereby, in every case, in such a way that individual things are given.... Things, objects (always understood purely in the sense of the life-world), are "given" as being valid for us in each case (in some mode or other of ontic certainty) but in principle only in such a way that we are conscious of them as things or objects *within the world-horizon*. Each one is something, "something of" the world of which we are constantly conscious as a horizon. On the other hand, we are conscious of this horizon only as a horizon for existing objects, without particular objects of consciousness it cannot be actual / *aktuelle* /. Every object has its possible varying modes of being valid, the modalizations of ontic certainty. The world, on the other hand, does not exist as an entity, as an object, but exists with such uniqueness that the plural makes no sense when applied to it. Every plural, and every singular drawn from it, presupposes the world-horizon. This difference between the manner of being of an obejct in the world and that of the world itself obviously prescribes fundamentally different correlative types of consciousness for them.”(Husserl 1970, 143)

[32] The time period between seven to ten years is referred in Middle Ages, when the education an organisation of master-masons was well established (Shelby 1977,12; Briggs 1974,61,73). In 1920 Tallinn Technical School was opened. It was higher educational establishment with the aim of teaching engineers, architects and technicians. The courses were divided into two stages, both three semesters. The professional title of an engineer or an architect was certified after receiving the diploma and going through a year of practice. Due to the build-up of programmes the length of studies was still five or six years, which shows the volume of Tallinn Technical School to be similar to the technical universities abroad (Ehitusinsenerid TPIst.1986,14: Tehnika Ajakiri.Nr.6.1932). The social practice transformed the possibility of the three year curriculum into length of six to seven years.

The epistemological transformation of a designer's consciousness is one possible explanation for the relatively universal time span of architectural studies: if it was just mastering the skill of creating representations or collecting relevant information it could easily be compressed.

3.3. DESIGN PERSONALITY AND TRANSCENDENTAL REDUCTION.

3.2.1. The alienation of objectified representations and the fragmentation of the mind in the design process.

In the process of reductions in presenting, re-presenting and representing the object of design we can see another epistemological possibility in addition to the eidetic structure of design activities as "empty" categories. This is the alienation of design objects in representations. When the phenomenological and eidetic reductions are not taken to their logical conclusions from the point of view of philosophy, the consciousness repetitively returns to the primal point of departure. In the case of re-presentations - to their existence and in the case of representations - to the existence of design artefacts. In the case of design artefacts as preliminary or intermediate design results, we believe, the design process stops or takes an other direction or level.

Every design sketch or drawing, when given a collectively understandable or conventional form of representation, undergoes a modification. Every such object is the result of the focus of the mind in action. It is the result of a series of thought reverberations, the *eidos* of that thought-presence. In a more tangible example, we might refer to the drawing process of an architectural detail. The designer sketches several lines of the detail, plan, elevation etc. and within drawing these lines he chooses one of them, that "looks good" or "seems right". Having done that, he or she describes the line in a more "objective" way – with a collectively accepted method of representation. The line (colour, angle, circle etc.) becomes chosen. It is the invariant of thoughts, the eidetic atom among other design decisions. As a representation of its meaning, the meaning that was present in the focus of the mind (probably as the result of the phenomenological reduction(s) of its existential value), it becomes passive. After the act of being represented, it enters into the process of design as the presentation of that language. Its initial meaning remains hidden under the representing form. With the modification of this representation it is pressed back into the past and this can happen infinitely. In the series of

modifications the series of meanings become “covered up”. This we see as the alienation of representations from the presence of the focus of mind.

The production of design artefacts consists of several layers of alienated representations, each one building on the shoulders of previous ones and creating a local and passive meaning-context of its own. They are also sliced out of the time sequence of the design process. They become a part of the fixed past. In their eidetic readiness they represent a stage, where designing as the focus of the mind stopped. Their new entry into the design process is governed epistemologically as the presentation of the description of past re-presentations, more exactly, as the invariant of past re-presentations. This alienation in design representations can be described as fragmentation of the designing mind – the thought itself becomes a representation to oneself and thus has to go through a suspension and cannot be held in the same plane of thought. As in the case of geometry, the initial meaning of representation transforms through the “language seduction” and stays in a passive mode. It can only be revived with a conscious effort of “playing back” the reasons for which it obtained its form (re-presenting it in full internal time sequence) and by recalling the intentions in the moment of its creation.

The second level of fragmentation we can identify in the design personality. It can be interpreted in the possible or real dialogues that the designing subject goes through during the design process: The dialogue with the client or, in the case of education, with different teachers. The dialogue with society, or in the case of education with the reviewing group. The dialogue with oneself, trying to fulfil or stand against the possible suggestions of these real or imagined dialogues. All of these different directions create the additional meanings contexts for the alienated architectural representations.

The third level of fragmentation we can identify in an additional, but necessary, sphere of knowledge. So far we have turned towards the narrow channel of design process and design representations. The *Criteria for Validation*, as well as *EC CD* create a broad normative based area of skills, awareness and knowledge, that is considered to be necessary for the designer in the field of architecture (histories and theories, technologies and human sciences, fine arts, building technologies, constructional and engineering problems, environmental studies, industries and organisations. EC CD 1985, No L223/18). These relatively separate domains of

knowledge, with their own “roots”, create additional spheres of structural and hierarchical meanings within the designing mind.

3.2.2. The radicalisation of epistemological horizon in architectural education as the de-fragmentation of mind.

The fragmentation of consciousness in the design process and in architectural education, as we have described it, must have some source or mechanism of de-fragmentation, because designs are finished and many students enter the profession successfully. The question is, can we find within the method that we have chosen for this investigation, a suggestion to explain the possibility to overcome the breadth of knowledge and its fragmentary nature?

We believe the answer can be found in an interpretation of eidetic reduction within architectural education. In the design projects we saw an unfinished phenomenological reduction and in the course of design education a finished form of it, that we identified with the emergence of the design horizon. This second type of phenomenological reduction (or to be more exact the invariant of several phenomenological reductions in summa) for the developing subject suspends the life-world from the horizon of designing. With the experience of several design processes brought to conclusion, the essence or *eidos* of design process emerges as the differentiation of the process and its content. This we saw as the sophistication of the design horizon. We can modify that thought further and say that in building the design horizon (as a complete phenomenological reduction) the complementary process of the sophistication of this horizon appears. This can be seen as eidetic reduction. As eidetic reduction from the point of view of philosophy was uncompleted in particular design projects, it can be seen as completed in the course of education. Thus the emergence of the design horizon as a radical epistemological change for the subject, can be viewed from different directions. From one direction the existence in the life-world is gradually suspended (phenomenological reduction). From the other direction, the *a priori* forms of consciousness and collectively “sedimented” structures of consciousness are brought forward as a sophistication of the design horizon (eidetic reduction). Both of these reductions as completed or nearly completed only appear in the totality of education.

Under the totality of education we have to consider not just modern curricula, but any gradual and persistent method of obtaining knowledge in architectural

phenomena. In extreme cases it may be seen that there is no active tutor or mentor (or we do not know about him). For instance, the great architect Brunelleschi has been reported to have been educated as a goldsmith and practised painting and sculpture before taking an interest in the knowledge of building and designing. He educated himself largely by Ancient Roman tradition - "satisfying himself seeing and measuring", which took many years (Manetti 1970, 54). The first indication of sharing expertise in building matters comes after three to four years after he left for Rome, where he studied the ancient ruins (Klotz 1990, 54). It took him nearly twenty years before he made the proposal for the cupola of Santa Maria del Fiore, although he had been consulted on other matters earlier. (Manetti 1970, 58).

The sophistication of design horizon as eidetic reduction in architectural education can be seen as the development of the design personality. This is where, on the basis of collectively shared representational systems and universal epistemological settings embedded in these, a unique design personality emerges. **It is unique because the change of horizons and the departure from the natural standpoint of an observer can be obtained only by consciousness and only from the direction of consciousness of the particular designer.** The QAA benchmarks suggest: "Each design outcome tends to be unique, non-repetitive and immanent in its conception and development" (QAA Subject Benchmark Statements 2000, 5) Just as the different design project are unique and non-repetitive, so are the design personalities, going through the process of transformations which itself is universal.[33] We see the development of a unique design personality, that happens after the radical epistemological layers of an observer transform into the layers of designer, as the unifying possibility for de-fragmenting the mind in the design process. When the eidetic reduction of design processes (themselves as "appearances" or "experiences") has reached its invariant, the clarity of operating among different layers of knowledge emerges as the self-awareness of the unique design personality. This is the logical subject matter of "fundamental discipline" or "intellectual subject" in the sphere of architecture (Architectural Education for the 21st Century 1999,2), the "architectural knowledge" operating as meta-knowledge above other particular spheres of knowledge in "the field of architecture".

[33] Here, we believe, is the reason why architecture can be charged as "architecture that is good" and "architecture that I like", frequently used by practising architects and not always considered to be one and the same.

3.3.3 Transcendental reductions of the life-world – an interpretation of architecture as “being”.

The possibility of a universal ontology of subjective reality is suggested by Husserl in *Encyclopaedia Britannica* article. Before the period of working with lectures on the internal time consciousness and *Idea of Phenomenology* Husserl uses expressions "phenomenological" and "transcendental" interchangeably. (Kockelmans 1994:120) This meant that the "transcendental reduction" had not yet been fully developed. In *The Amsterdam Lectures* Husserl admits:

> Apriori truths are not so easy to arrive as we thought in earlier times. They arise as authentic eidedic truths in apodictic insight only from out of their original sources in intuition. These sources, however, must be disclosed in the right way. They can only become fruitful [useful] by means of methododical formulation and through completely unfolding their horizons. (Husserl 1997:216)

The methodological approach to the transcendentality of the world was achieved by Husserl through a special reduction, that was a continuation of phenomenological and eidetic reductions.

> For the transcendental philosopher, who through a previous all-inclusive decision of his will has instituted in himself the habituality of this transcendental "parenthesizing", even the "mundanization" [Verweltlichung], treating everything as part of the world] of consciousness, which is omnipresent in the natural attitude, is inhibited once and for all. Accordingly, the consistent reflection on consciousness yields him time after time transcendentally pure data, and more particularly it is intuitive in the mode of a new kind of experience, transcendental "inner" experience. (Husserl 1997:172,173)

Kockelmans suggests two other ways: the transformation of phenomenological psychology is used in the *Encyclopaedia* article and in the *Amsterdam Lecture*. The transformation from the life-world is described in *Crisis*. We make use of the last exposition as this is connected to the time modes of subjective reality, we considered to be important in the design process.

Through reduction of “I”, a transcendental intersubjectivity can be reached. We can think of a recollection, that deals with what is past. This past is the memory of “having-been-perceived”, its meaning can be exposed as something which

presence has passed. Within that meaning is the background of that recollection in the same mode of being passed. To this meaning also belongs a past "I" of that previous present. The original "I", on the other hand, is that of immediate presence, of that presence to which the recollection (as re-presentation) itself belongs. Starting from this "I" in its reverberation we can constitute a self-temporalization as enduring through its pasts. Thus it "constitutes in itself another as other" (Husserl 1978, 185)

> Thus, in me, "another I" achieves ontic validity as copresent /kompräsent/ with his own ways of being self-evidently verified, which are obviously quite different from those of a "sense"-perception. Only by statring from ego and the system of its transcendental functions and accomplishments can we methodically exhibit transcendental intersubjectivity and its transcendental communalization, through which, in the functioning systems of ego-poles, the "world for all", and for each subject *as* world for all, is constituted. (Husserl 1978, 186)

This "world for all" in its new form radically differs from the natural point of view of the life-world. It is the world of essences and essential structures that stem form the universal subjectivity and thus is open for the transcendental consciousness to be understood and made use of. Husserl says: "Accordingly, a phenomenology properly carried through is the truly universal ontology, as over against the only illusory all-embracing ontology in positivity – and precisely for this reason it overcomes the dogmatic one-sidedness and hence unintelligibility of the latter …" (Kockelmans 1994:247). This we can see as a possibility for the sphere of architecture to constitute its own "being", that is freed from the "illusory all-embracing ontology in positivity".

With the gradual fusion of phenomenological reduction into the eidetic in several design projects (and thus design processes) and in the emergence of the design horizon, we can suggest the change within self-awareness of consciousness ceases just to be epistemological. It transforms into the ontology of its own self-referential foundation. The new "being" for subjective reality as the consciousness of the design personality is created. Within the eidetic transformation a unique mind emerges and this is the powerful unifying force overcoming the fragmentation of the mind. According to Husserl the purification of "I" could be carried even further and we can see it at work within design phenomena. We believe that the knowledge of "having-been-designed" and of "is-being-designed"

create a new ontological state of "to-be-designed". This is the courage **"to be" – to be an architect**. Within this courage "to be" the presence of the focus of the mind opens completely in a new way. The horizon of design (with different time frames, different mediums of re-presenting and representing, epistemological settings) within its sophistication and structure is then the background, "the double intentionality", of that presence. The fragmentation of mind, we proposed above, is overcome by the presence of "becoming" an architect. Of course, truly the fragmentation of mind only can happen with the sufficient development of the design horizon, it is inevitable for the free variation in phantasy. With "becoming" an architect the uniqueness of the design personality is also made subject to the invariantness among other subjects of the same kind. The unity or the universal part of this uniquenesses, described in invariantness of designing minds, can be observed. It can be observed through the transcendental reduction of one's "I" into the unity of other "I"-s. Within this unity of uniqueness the new being of "I" in its transcendental form is opened. This is the step to purity, that takes the courage "to be". Shortly, this is the "quality" in being architect.

This transcendental being of an architect cannot be promoted as something that inevitably happens in every case of radical transformation into the designing mind. We would like to propose this, like a goal, a perfect resolution, for the profession. When we agree that this "being" an architect, resembles something like the transcendental reduction of Husserl, the world and the human mind are laid open before him in their essential as well as in their concrete presentations. Through the immanence of consciousness a transparent clarity is achieved, the whole of the life-world in its infinity of possible variations in past and future is made accessible. This is not like the double membrane of horizons of design and existence – it is built within the deepest layers of subjective reality itself, subjective reality, understanding oneself in the world as architecture.

Thus we might rephrase the previous suggestion: the new "being" for subjective reality as consciousness of design personality is the courage **"to let go"** and the courage **"to be"**. The validity of such a new "being" can only be a consensus of similar subjects, participating through collective representations, shared language and transcendental purification the possibility of insight into that new "being".

3.4. CONCLUSIONS FROM THE PHENOMENOLOGICAL MODEL.

3.4.1. Design process, proceeding in its totality, from design conditions and ideas to design realisations, brings forward the collective quality in design phenomena. This collectivity in building and observing sets the foundation for the architectural phenomena. Realisation of design, seen in its epistemological complexity emphasises the representational and intersubjective quality not only in design representations but also in design realisations, open to everyone in the natural attitude of the life-world.

3.4.2. The representational and intersubjective quality in design realisations entering into the architectural phenomena and thus being indivisible form the existence of these realisations, brings forward the possibility of an attitude that everything existent within the modes of space and time is regarded as designable. The whole life-world can thus be apprehended as an object of design.

3.4.3. Due to the ontological possibility of being realised and becoming a part of architectural phenomena, the representational quality of design artefacts undergoes an epistemological modification. The passive or latent existence is interpreted into the design representations during designing and in understanding the design results.

3.4.4. Due to the representational quality of design artefacts the objective and subjective realties undergo a suspension or reduction in the design process, that results in the emergence and sophistication of the design horizon for the designing consciousness. Within one complete design project or process the reductions have a similarity to unfinished philosophical reductions of phenomenological and eidetic origin.

3.4.5. In the process of teaching architectural design the mentor or teacher alienates the student from the realities of objective and social origin, substituting them with his (her) own imagos. Within design education in architecture, due to the passive collective quality of representational systems and active collective quality of studio teaching, the phenomenological and eidetic reductions are completed for the consciousness of design personality, resulting in the radical departure of natural attitude and differentiation of existential and design horizons.

3.4.6. With the emergence of the design horizon, the self-awareness is reviled for the particular designer as one's unique capability of going through the design process with its transformations of the past and future of the life-world into the spaces of mind as presence. This self-awareness is in the form of a method or meta-knowledge that de-fragments and unites the breadth and diversity of different types of knowledge in architectural phenomena. This we would like to identify primarily with the expression "architectural knowledge".

3.4.7. The collective origin in design as well as in architectural phenomena allows us to believe that a unity could be found in the uniqueness of self-awareness of every design personality. This unity can be reached with the transcendental purification of one's consciousness and can be seen as the final goal for a design personality in the architectural profession. This opens "inside" the consciousness as an approach to the "world as architecture". **Architectural knowledge thus stops being a method or epistemological meta-knowledge and transforms into an ontology of its own kind – the courage "to let go" and "to be" –**

- an architect.

4. SUMMARY.

4.1. Two themes in the investigation.

We now look retrospectively at the process and the conclusions of the investigation in order to summarise the findings. Two themes can be pointed out that have guided the enquiry. The first theme is best explained through the expression “presence”. The second theme is a set of models that were developed and represent, in a diagrammatic form, a description of “design” in architectural education.

The theme of presence describes the condition of thought that we have attempted to remain faithful to throughout the investigation. It can be explained by the following meanings. Presence is the “fact, condition or state of being in one place and not elsewhere”. Simultaneously it is the “fact, condition or state of being within sight or call, at hand” . It has the specified status of being present, in the particular place at the same moment. Presence combines in appearances space and time, both in undifferentiated archetypal form. It endures, lasts and continues, it is of a duration of a particular length. “But from the viewpoint of the beholder that which stands-there-in-itself becomes that which re-presents itself, which presents itself in what it looks like. … It rests in the manifestation , i.e. emergence, of its essence (Heidegger 1968, 61). The investigation unfolds as the presence of different objects: These are the presence of the profession, the presence of designing, the presence of the mind, the presence of observing, the presence of teaching and learning, and lastly as the presence of being.

The presence of the architectural profession we saw through the normative documents and the key-texts describing the current perception of architectural education in UK and EU. We interpreted the description of design phenomena in

Criteria for Validation in the form of design domains. The domains were seen as a typology of meaningful, but partly overlapping, wholes. The design phenomena, structured into domains, was then tested against the definitions of "design", "architectural design", "architectural knowledge", "architecture" and "architectural profession" in the *Strategic Study*, the *Burton Report* and the *EC CD*.

The presence of designing we saw as “design” taking place in the intermediate zone between the realities of objective and subjective origin. These are the realities around which the design domains polarised, when we approached them from the point of view of the design personality. The intermediate zone, which we called the horizon of design, is the area, where ambiguities in the domain of design results make themselves visible.

The presence of the mind was seen in the personality; the personality who – makes use of the knowledge, the awareness and the skills in the sphere of architecture during the process of design. To investigate the state of mind in designing, which we called “the focus of the mind”, we turned to Husserl’s *Lectures on the Phenomenology of the Consciousness of Internal Time*. This exposition of phenomenological method in relation to consciousness and its being “in time”, explained the epistemological complexities we discovered on the horizon of design and saw previously as the ambiguity in design results. The presence of mind in designing we interpreted as the use of conscious functions of presenting, re-presenting and representing. Within the presence of mind we also made use of the intersubjective quality in conventional representations of design, that is passively embedded in the culture of the architectural profession.

The presence of observing helped us to identify the collective quality in designing and in realising design, that can be observed in the normative documents and key-texts, as well as in the conventional representations of architecture. It also concludes that design phenomena, as a design project or process, helps to define the architectural phenomena. Through existence and language, architectural phenomena becomes accessible to society.

The presence of teaching and learning in the sphere of architecture is explicated by the intersubjective quality contained in conventional representations of design and studio culture. The conventional representations are passively hidden in the traditions of the architectural profession, but can be made actual and present. This

transformation to actuality and presence happens in teaching and learning experience founded on studio culture. Here we found support for the belief, that architectural design is an intellectual, collective and historical discourse.

Lastly, we turned to the presence of "being". This is the speculative part of the investigation, where Husserl's method of reductions was used. A particular design project or process, as well as design education can be seen as the duration. This duration, in both cases, being a meaningful whole with a beginning and an end, can also be seen as presence in an "endured" form. The iterative quality within design projects, which persistently return to the epistemological complexity in re-presentations and representations, results with the radical departure from the natural attitude. It also results with the differentiation of existential and design horizons. In its final form of transcendental reduction, a special kind of "being" for consciousness was proposed as ambition: "to be" – an architect.

The second theme was a set of models that were developed to explain and describe the findings of analysis. The models were also "a practical design tool" for the investigation. Historically, the first model was the one we called epistemological. It contained three realities (of subjective, objective and social origin) and also the horizons of design and language. It was an abstract summary of personal design experience. The model, as such, was void of meaning. It did not specify the elements and content of design phenomena, nor did it explain the epistemological complexities at the edges.

It was thus necessary to move in different directions: to find the realm where the design phenomena was systematically specified and to find a philosophical setting in the form of epistemological methodology. The specification of design phenomena used were those, found in the normative documents and their key-texts of UK and EU. We interpreted these as the current perception of architectural education, because formally these texts define the architectural profession and the sphere of its activities in Europe. The initial model was built from the designer's point of view. This, together with the fact that *EC CD* mostly approaches the "field of architecture" through subject, resulted in choosing epistemological methodology of a subjective origin. Though considered old-fashioned, Husserl's phenomenological method appeared to fit this investigation.

So, we filled the model with a description of design phenomena, investigated it in the form of domains and definitions and only then turned to analyse how it can be structured according to the phenomenological method. For the sake of clarity the second, founding stage of the investigation was presented in the first part. In the second and third part we developed the model, to take into consideration the findings in the normative documents and key-texts. The modified model was then compared with the interpretations of the phenomenological method as well as with a personal empirical experience in design and education.

4.2. Conclusions of the investigation.

We found when analysing the normative documents and key-texts that the expressions connected to the word "design" were difficult to define exactly due to their complex linguistic build-up and heavily loaded meanings. This gave the expressions a synthetic and ephemeral character. The complex build-up of the meaning of "design" was complemented by the dynamic and "merging" quality in the phenomena. The conditions, process and results were often indivisible. This dynamic and "merging" quality held to be true in current reports as well as in the etymological meanings emerging from the past.

The design phenomena was structured into different domains, which exhibited a meaningful unity as overlapping types and were ordered in a logical time sequence in their unfolding. These were: design conditions, personality, process, result and realisations. The activity of "design", in the domains of the design process and in the design results, was essential for the sphere of architecture, because the uniqueness of the architectural profession and of architectural knowledge was defined and measured chiefly through this. In the normative documents and key-texts, "architectural knowledge" was seen as a meta-knowledge, unifying or floating above all other types of knowledge in the process of design.

The design conditions, related to the design process directly or indirectly, set up a context that can be seen as a dialogue between designer and society. Knowledge, skills and ability involved in design were seen in the normative documents as person orientated and were effectively made use of only **by and through** the designer as a personality.

Within the domains of design results and the design process a dichotomy or ambiguity was observed between the sphere of mind and the sphere of

representations. We identified this dichotomy with the epistemological complexity, hidden in the functional (instrumental) model of design phenomena. The ambiguity emerged when no distinction was made between the design object as a developed hierarchy of ideas and relations and the design object as a description of ideas in conventional representations. The language-like quality of conventional representations, presenting a “meaningful content” seemed to be the foundation of unity in the whole design phenomena.

The merging of different domains in the official documents and in the key-texts, as well as in the etymological meanings suggested that the expression "design" is connected to time and exhibits the sequential qualities in the form of human understanding as past, present and future.

The general conclusion for the first part was that architectural education can be seen as fundamental in two aspects:
In the course of unfolding design activities, architectural knowledge overwhelms all other types of knowledge from the perspective of the architectural profession.

and :

In the course of unfolding design activities, architectural knowledge is “lived-into”, being central to the identification of the architectural profession and its sphere of activity.

We then proceeded to describe the domains of design in a model and analyse these from an epistemological point of view.

The horizon of existence as a borderline between personality and world (subjective and objective reality) was seen as epistemologically the same, both for an architect and for an observer. In the case of an observer, the modes of space and time remained largely passive and were intertwined with the life-world. Through designing, the horizon of existence was transformed into an actively and willingly manipulative form of cognition as memory, experience and phantasy where different directions of consciousness were to be used simultaneously or separately at will. This transformation was described as an horizon of design, where the past and future presentations of space are freed from existence.

The representations of design belonged to the life-world of empirical nature; they were tangible and steady. This created a situation where the design in mind, with its retentional possibilities, was not perceived as something belonging to the immanent time-constituting stream, but becomes a memory of "having-been-perceived", possibly even a “memory of the present”. The object that was represented in such a way, is not only a part of the designing subject, but also it is a detached entity in the form of collective representations. This collective quality in architectural design was seen as the handed-down knowledge of geometry, a description of the human modes of space recognition within the internal time of consciousness. It involved the repetition of the re-presentations and the representations of these, for the designing mind as a sequence of acts of consciousness. This sequence was also at the same moment "transparent" in memories and created an invariant - as immanent meaning of the spaces of mind for the designer.

The horizon of design was constituted by the retentional and protentional modifications of experience. In the freedom of immanent time, three different modes of consciousness were blended together: The retentional re-presentations, the “memory of the present” and the protentional fantasies as “the memory of having-been-perceived”.

Architectural design was thus a dialogue on the horizon of design between the presentation of world and the re-presentations of the mind. The aim of the design process was an ideal, intentional, universal object of thought - an invariant within the spaces of mind. From an epistemological point of view, the object of thought was largely an *a priori* summa of design conditions cleared of existence, described and modified in the ideal language of design and then secured again in possible existence as the modes of space.

The general conclusion for the second part was:
Architectural design is the transformation of the re-presentations of past and future of the life-world into the spaces of mind as presence.

The possibility of such a process was seen in the radicalisation of the different modes of the immanent time of consciousness and of the collective understanding of different modes of space.

The design process that proceeded in its totality, from design conditions and ideas to design realisations, brings forward the collective quality in design phenomena. This collectivity in building and observing was seen to set the foundation for the architectural phenomena. Realisation of design, seen in its epistemological complexity emphasised the representational and intersubjective quality not only in design representations but also in design realisations; open to everyone in the natural attitude of the life-world.

The representational and intersubjective quality in design realisations brought forward the possibility of an attitude that everything existent within the modes of space and time could be regarded as designable. The whole life-world can thus be apprehended as an object of design.

Due to the ontological possibility of being the representational quality of design artefacts was seen to undergo an epistemological modification. The passive or latent existence was interpreted into the design representations during designing and in understanding the design results.

The objective and subjective realties were believed to undergo a suspension or reduction in the design processes, this resulted in the emergence and sophistication of the design horizon for the designing consciousness. Within one complete design project or process the reductions had a similarity to unfinished philosophical reductions of phenomenological and eidetic origin. Within design education in architecture, due to the passive collective quality of representational systems and the active collective quality of studio teaching, the phenomenological and eidetic reductions were completed for the consciousness of design personality, resulting in the radical departure of natural attitude and differentiation of existential and design horizons.

With the emergence of the design horizon, the self-awareness was reviled for the particular designer as one’s unique capability of going through the design. This self-awareness was in the form of a method or meta-knowledge that de-fragmented and united the breadth and diversity of different types of knowledge in architectural phenomena. This we identified primarily with the expression “architectural knowledge”. This was the knowledge, that stems only from the design process of architecture and was utterly self-sufficient and self-referential.

The collective origin in design as well as in architectural phenomena allowed us to believe that a unity could be found in the uniqueness of self-awareness of every design personality. This unity could be reached with the transcendental purification of one's consciousness and could be seen as the final goal for a design personality in the architectural profession. This opened for the consciousness a new understanding – the understanding that "world is architecture".

Architectural knowledge stops being a method or epistemological meta-knowledge and transforms into an ontology of its own kind – the courage "to let go" and "to be" – an architect.

In these two last conclusions we have found a way, how to think of "architectural design" and "architectural knowledge". Both expositions were seen through the understanding of the creator in the sphere of architecture and thus have been closely related to his or her development, to the emergence of self-awareness, that we call education. Only in the development of this self-awareness can we explain these notions in their essential complexity.

We hope that this way of thinking of design and knowledge will enrich the studies in architectural education as an intellectual and historical discourse of its own right.

4.3. Possible future investigation.

In this investigation we set ourselves a question: How can we think of architectural design and architectural knowledge in the current perception of architectural education? We chose the epistemological approach and thus interpreted knowledge in the widest possible way. Architectural knowledge was seen firstly as a specific method within an unfolding of design phenomena and secondly as a possible ontological foundation for the unity of profession.

Architectural knowledge can also be seen in a more narrow interpretation. We can point out in architectural phenomena several layers, that could be called knowledge: thematic knowledge[34], contextual knowledge, knowledge of histories

[34] We refer here to the "thematic knowledge" described by John Habraken: "Thematic knowledge is the knowledge of what is not different, what is to remain constant. … Indeed, thematic knowledge does not depend on function, meaning, or techniques; it is a knowledge of built form to the extent that it is a shared form, and to that extent only. … Hence, when we speak of types, patterns, systems, and styles, we describe various ways in

and theories, knowledge of environment and technologies and etc. All these different types of knowledge we have not investigated. Systematic study of this typology would hopefully clarify the relations between the horizons of design and language, as well as create valuable information for the understanding of the development of the subjective reality from the point of view of the professional community and of society.

Another area of studies, that we have not been able to conduct, concern the personality of the designer in its full spectrum. Even within the method, we have applied, it would be necessary to proceed towards the borders of consciousness. From one side it transcends towards existence in the form of body and bodily actions as voluntary or involuntary representation of "I". Here areas which would be important to consider may include for example: composition and graphic representation, dance as the movement of body in presenting space. From the other side, it transcends towards "non-existence". The investigation of consciousness, that we have made use of, rightfully reminds us of a powerful intellectual school – the studies of unconscious. We still often do not know how and where the creative impulses emerge. One of the explanations advocated by the psychoanalytical school is that it is the unconscious that is responsible for the creativity of human being.

A particularly interesting parallel can be seen in the analysis of collective archetypes by Carl Gustav Jung and in the phenomenological philosophy of Husserl. The retrospective and prospective directions in the meaning and existence of symbols for Jung, constitute the epistemological horizon from which it is possible to access the build-up the world. His symbols act as the Husserlian time consciousness and the transcendental reduction and will complement the philosophical discourse with the cultural.[35]

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which a social body can share form." (Pollack 1997, 284,286) Similar area of knowledge is described by Dalibor Vesely in *Architecture and the Conflict of Representation:* "The essence of this paradox is our inability to see that uncritical faith in symbolism, historical reference, meaning, etc., could be, and very often is, only a disguised form of technological rationality. It this is not recognised, the paradox is likely to take the form of vicious circle in which only immanent values are taken into account. As a consequence, anything that transcends the circle and might support our critical understanding is considered to be either irrelevant or dubious."(Vesely 1985, 36)

[35] "A symbol loses its magical or, if you prefer, its redeeming power as soon as its liability to dissolve is recognized. To be effective, a symbol must be by its very nature unassailable. It must be the best possible expression of the prevailing worldview, an unsurpassed container of meaning; it must also be sufficiently remote from comprehension to resist all attempts of the critical intellect to break it down; and finally, its aesthetic form must appeal so convincingly to our feelings that no arguments can be raised against it on that score."(Jung 1971, 47)

"The symbol is not a sign that veils something everybody knows. Such is not its significance: on the contrary, it represents an attempt to elucidate, by means of analogy, something that still belongs entirely to the domain of the unknown or something that is yet to be. Imagination reveals to us, in the form of a more or less striking analogy, what is in process of becoming. If we reduce this by analysis to something else universally known, we destroy the

We also see a further necessary possibility to develop in the investigation. With the overall digitalisation of the world in information technologies, the horizons of existence, design and language tend to fuse into one and the same format – the other subjects, society and objective reality become presented on the digital "screen". The possibility of "virtual reality" has to be investigated in the context of the phenomenological model.

All of these unvisited directions, that can be pointed out in the general approach of this investigation, we consider important for further stages of studies.

Outside the general direction of this investigation, we see two major philosophical traditions that could be used as different methodological systems in contrast to phenomenology. The model of epistemological realism can be approached not only from the point of view of subject, but also from the directions of both society and existence.

We have found a suitable theoretical base for further development of social context in the "theory of communicative action", developed by Jürgen Habermas. Habermas makes use of the tripartite division of being in the form of "social, objective and subjective worlds", which are distinguished from the life-world (Habermas 1981, 84).

For further development of the model of epistemological realism from the direction of objective reality, we have identified the philosophy of Heidegger. We would propose not to turn towards the legacy of later works of his, that is traditional, but on the contrary, to the earlier ones. This would be consistent with the direction of this investigation as in his earlier works, Heidegger developed the criticism of Husserl. In the *History of the Concept of Time* Heidegger develops his personal approach towards phenomenology and in *The Basic Problems of Phenomenology* he redefines the notion of "objective reality" from the existential point of view (Heidegger 1988; Heidegger 1992). Both of these philosophical constructions would enrich the environment in which to develop the model of epistemological realism.

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authentic value of the symbol; but to attribute hermeneutic significance to it conforms to its value and its meaning." (Jung 1953, 287)

We believe that the complementary exposition of architectural design and architectural knowledge within these three philosophical methods (phenomenology, existentialism and social action) would produce sufficiently well defined notions and clearly grounded boundaries for architectural education.

APPENDIX.

THE WORD “DESIGN” IN *PART 2. CRITERIA FOR VALIDATION*.

THE WORD "DESIGN" IN *PART 2. CRITERIA FOR VALIDATION*.

- Comprehensive Design Project p.7.
- a strong relationship between design, technical and environmental realisation p.8.
- a design based approach to the whole educational programme p.8.
- design based studies p.8.
- responsible design p.8.
- design and design related studies p.8.
- Architectural Design p.9.
- Environmental Design p.9.
- the teaching of design is central to architectural education and the understanding of the process of designing is fundamental to the creation of good design p.11.
- successful realisation of a design concept requires an ability to carry through design intentions p.11.
- an approach that is fully resolved through the detailed design of the building or project p.11.
- designers p.11.
- applying principles of environmental design to their projects p.11.
- design portfolio p.11.
- project devised to develop the design ability p.11.
- initial investigations in design to the assemblage of ideas, through to complete and fully integrated projects p.11.
- all aspects of designing p.11.
- design programmes p.11.
- a developing design personality p.11.
- successful architectural design requires a sensible approach to planning, a balance of structural form, suitable materials and processes of assembly p.11.
- it is the design of a well balanced and integrated whole which has the potential to lift the solution from pragmatic building to a piece of architecture p.11.
- design does not exist in a vacuum p.12.
- courses should be designed to maintain p.12.
- designing is a controlled discipline which extends from the past through the present and on into the future as a continuos process p.13.
- personal design p.13.
- activity of designing p.13.
- environmental design /…/ examines the function of buildings to provide healthy and comfortable conditions p.13.
- design of building services p.13.
- alternative building design p.13.
- resolution of design p.14.
- structural and constructional design p.14.
- design of projects p.14.
- responsible and reliable design decisions p.15.
- an oral description of an architectural design p.15.
- written reports which accompany an architectural design proposal p.16.
- convey the three-dimensional arrangement, character and appearance of an architectural design project, using perspective, axonometric and isometric projection as appropriate p.16.
- to scale and with sufficient and clear dimensions and annotation to indicate the principal parts of the project p.16.
- sketch models generated during the evolution of design as well as presentation models of the final design p.16.
- development of their design p.16.
- computer as an other design tool p.17.
- various members of the building and design team p.17.

- design is a holistic process p.19.
- design constraints p.19.
- agenda for designing p.19.
- integrated design of complex buildings p.19.
- these courses /…/ should be designed to enrich p.20.
- social context of design p.20.
- extended cultural framework for design p.21.
- the final design and process of building p.21.
- skills in computer aided design p.22.
- rigorous process of realising design p.23.
- the skill and the authority to lead the design and building team p.23.
- knowledge of design p.34.
- design drawing p.34.

DOMAINS OF THE USE OF "*DESIGN*":

1. DESIGN CONDITIONS.
teaching of design
ability to carry through design intentions
design based studies
design and design related studies
principles of design
to develop the design ability
design programmes
design does not exist in a vacuum
computer as an other design tool
design constraints
agenda for designing
social context of design
cultural framework for design
skills in computer aided design
knowledge of design

2. DESIGN PERSONALITY.
designers
design concept
design intentions
initial investigations in design
developing design personality
personal design
design team

3. DESIGN AS PROCESS.
responsible design
the understanding of the process of designing
to the creation of good design
assemblage of ideas
aspects of designing
activity of designing
resolution of design
responsible and reliable design decisions
evolution of design
design is a holistic process

4. DESIGN AS RESULT.
responsible design
to the creation of good design
realisation of a design concept
detailed design of the building or project
design portfolio
successful architectural design
design of building services
alternative building design
structural and constructional design
oral description of an architectural design
architectural design proposal
presentation models of the final design
development of their design
final design
design drawing

5. DESIGN REALISATIONS.
a strong relationship between design, technical and environmental realisation
processes of assembly
it is the design of a well balanced and integrated whole which has the potential to lift the solution from pragmatic building to a piece of architecture
process of building
rigorous process of realising design

6. DESIGN AS META-LANGUAGE.
a design based approach to the whole educational programme
courses should be designed to maintain
design of projects
these courses /…/ should be designed to enrich

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GLOSSARY

Conventional representations (in the sphere of architecture):
Within the designing process we can find certain objects, or things, or processes, that are used, have a significance and meaning – representations. They belong to the sphere of objective reality, but reflect, represent or stand for design ideas. Conventional representations rely on a universal language horizon of signs. This horizon creates collectively understandable, and thus conventional, meanings for the representations in design phenomena. When this design, as something described, is agreed collectively, it becomes the foundation for transforming the reality. Conventional representations are the main way of describing or accessing design ideas and the results of these ideas within the design phenomena. Conventional representations reveal the meaningful content of the design conditions, the design results and the design realisations.

Under the conventional representations of architecture we can name two- or three-dimensional design constructs: plans, elevations, sections and models of the design, as well as their perspective, axonometric and isometric derivations. The mediums of conventional representations are usually drawings, models or digital images.

The descriptions of design ideas as conventional representations are the source of interpretation for evaluating the design ideas and for realising the design. The collective efforts in design, the interpretations of conventional representations on the basis of shared are the foundation of design phenomena. Learning architectural design starts with the learning to understand and to operate with conventional representations within the sphere of architecture. In this investigation we assume that conventional representations in architectural education can thus be interpreted as learning to operate with reductions of reality. Firstly the reality of objective origin and secondly the reality of subjective origin, are both represented.

The control and precision demanded by the Industrial Revolution, transformed drawing methods into a representational system, that brought the translation between drawings and realisations into a nearly absolute equation. However, this also constituted the ontologisation of this new representational system as a human construct into the existential world.

Under representations we mean any artefacts of design, which are either conventional or strictly personal without being accessible as signs for the observer of the design process.

Design:

"Design" as substantive and verb has broad and ephemeral field of meanings. In this investigation expressions "design" and "to design" always refer to design in the sphere of architecture. Sometimes the adverb or adjective "architectural" is used when referring to design. This means that we believe that the object in question belongs only to the sphere of architecture. When design is referred to without these qualifications we deal with design in the sphere of architecture, but acknowledge, that the meaning of design may refer also to other areas of human activity.

From the formal point of view "architectural design", as specific activity, is not only considered by the *Strategic Study*, *Criteria for Validation*, *EC CD* and *QAA Subject Benchmark Statements,* central to the architect's activities, but also it is a fundamental and substantial attribute to define whole phenomenon of architecture.

In this investigation we have identified the activity of designing with the "focus of mind" of the architect. The enduring horizon of the "now" and the re-presentation of former similar horizons, create the horizon of design, where the retentional and protentional modifications of experience and fantasy are fixed in the "presence", bringing forward the static identity and meaning of the designing as spaces of mind. Within English and Latin etymology of the word "design", a threefold temporal structure can be interpreted for design:

1. something to be fulfilled in the future
2. something to be fulfilled with "authority", decision or viewpoint, gained as present
3. something referring to the past, gained or finished, something mediated, something standing now and referring to something before.

In designing, the usual ontological and epistemological attitudes towards the life-world are disconnected: What belongs to the reality of the world is approached in the mode of fantasy and what belongs to the design personality as fantasy, is approached in the mode or re-presentation of the reality of the world. Temporally, what will "become" in the sphere of design, is treated as present (in the focus of

the mind) and as past (memory of having-been-perceived). What is actual, is attempted to be conceived as possible, and what is possible is attempted to be conceived as actual. The blending of the past and the future into the presence of designing has another powerful source. It is the knowledge of a collective and personal practice of "having-been-built" as the realisation of design. This gives to the design results an especially powerful ontological load.

Architectural design takes place on the borderline of personality and world. It is the dialogue on the horizon of design between presentation of world and re-presentations of mind. The goal of the design process is an ideal, intentional, universal object of thought - an invariant within the spaces of mind. Architectural design is thus the transformation of the re-presentations of past and future of the life-world into the spaces of mind as presence.

Existence:

The phenomenological method of Husserl would not allow us to investigate the existential qualities of world in its full spectrum, but this direction has been examined for the sphere of architecture by the Heideggerian school of architectural theory and criticism, particularly by Nordic authors. Nevertheless, in this investigation we have attempted to keep this direction by carefully using the expression "existential" only for enduring, live experience of the subject and by describing other entities that "are" - as "real" within the realities of social and subjective origin. Existential experiences are derived directly by the subject from the presence of objective reality.

The Husserl's phenomenological *εποχη*, as a result of the bracketing method defines a new domain of investigation, though only a limited one. The entire natural world remains continually "there for us" or "present to our hand" and will ever remain as a "fact-world" of which we remain conscious. There is no doubt of it "being there" – in the state of existence. "If I do this, as I am fully free to do, I do *not* then *deny* this "world", as though I were a sophist, *I do not doubt that it is there* as though I were a sceptic; but I use the "phenomenological" *εποχη*, which *completely bars me from using any judgement that concerns spatio-temporal existence (Dasein)*" (Husserl 1967, 111).

There exists two possibilities for the reproduction of an event: the reproduction of what is internal can be a positing reproduction, and therefore the appearance of the event can be posited in the unity of immanent time; or the reproduction of what is external can also be a positing reproduction that posits the temporal event in question in objective time but does not posit the appearance itself as an event belonging to internal time, and thus also does not posit the time-constituting stream in the unity of the total life-stream (Husserl 1991, 59-60). The second route creates a possibility for another mode, which is called "memory of the present". This is the sphere of intuition of external time and external objectivity, which we identify in this investigation as existence.

Modes of space and time are dominated by the consciousness in the collectively shared form. These modes are a form of intersubjective language, that veils the objective reality. Within this veiling, the life-world thus ceases to be solely the objective reality as existentially experienced, but also becomes the embodiment of collective human modes of time and space. This double presentation we call the horizon of existence as a borderline between personality and world. In a single design project, the focus of mind is trapped between the existence and representation, constantly returning to existence and thus to the world of facts in natural attitude.

Presence:

The theme of presence describes the condition of thought that we have attempted to remain faithful to throughout the investigation. It can be explained by the following meanings. Presence is the “fact, condition or state of being in one place and not elsewhere”. Simultaneously it is the “fact, condition or state of being within sight or call, at hand” . It has the specified status of being present, in the particular place at the same moment. Presence combines in appearances space and time, both in undifferentiated archetypal form. It endures, lasts and continues, it is of a duration of a particular length.

Heidegger describes presence in the following way: “But from the viewpoint of the beholder that which stands-there-in-itself becomes that which re-presents itself, which presents itself in what it looks like. … It rests in the manifestation , i.e. emergence, of its essence. But all the definitions of being that we shall now list are grounded in, and held together by, that wherein Greeks unquestionably experienced the meaning of being, and which they called ousia, more fully

parousia. … For parousia we have in German a corresponding term – An-wesen [presence], which also designates an estate or homestead, standing in itself or self-enclosed" (Heidegger 1968, 60,61).

Presentation:

Within the experience something is given, presented or articulated for the consciousness. This we call presentation. Husserl calls it "primal impression". In the focus of the mind every "impressional consciousness" constantly endures, flows, "runs-off", passes over to the retentional consciousness and becomes modified in its running-off mode (Husserl 1991, 28-32). The ideal limit of enduring, reverberating of the primal impression as presentation for the focus of mind can be described as presence. Thus presentation simultaneously reveals the existence and the *a priori* forms of consciousness as well as collectively "sedimented" structures of consciousness, through which the existence is presented. "The world is pregiven thereby, in every case, in such a way that individual things are given.... Things, objects (always understood purely in the sense of the life-world), are "given" as being valid for us in each case (in some mode or other of ontic certainty) but in principle only in such a way that we are conscious of them as things or objects *within the world-horizon*. Each one is something, "something of" the world of which we are constantly conscious of as a horizon. On the other hand, we are conscious of this horizon only as a horizon for existing objects, without particular objects of consciousness it cannot be actual /*aktuelle*/. Every object has its possible varyng modes of being valid, the modalizations of ontic certainty. The world, on the other hand, does not exist as an entity, as an object, but exists with such uniqueness that the plural makes no sense when applied to it. Every plural, and every singular drawn from it, presupposes the world-horizon. This difference between the manner of being of an obejct in the world and that of the world itself obviously prescribes fundamentally different correlative types of consciousness for them."(Husserl 1970, 143) This we have described in the models as horizon of existence.

When the ideal limit of the endurance and the reverberation of the primal impression as presentation for the focus of mind has elapsed the primal impression transforms into secondary memory, recollection, re-presentation.

Reality:

In addition to the experience of existential in the world (spatio-temporal life-world of facts) we are aware of other entities that "are" for us or "are" presented to us that do not have the same quality of existence. Here fantasies, delusions, illusions or hallucinations can be named. These can be present in consciousness as "real" as everything existential. To allow the investigation to develop without being drawn to the ontological arguments we have called everything "reality". To identify the usual themes of philosophical enquiry we have used three distinctions of reality: of subjective, objective and social origin. The existential quality of presentations we have related to the reality of objective origin and in an undifferentiated and unsophisticated form identified with "life-world". "This characteristic manner of apprehension in sense perception and in its single-level character also permit a definition of the *real* object. This definition, which certainly has its limits, is first derived strictly within this analysis of perception and its object. For Husserl [and for this investigation], this sense of the 'real' signifies the most original sense of reality: a real object is by definition a possible object of a simple perception. … I expressly emphasize that this concept of 'real', reality correlative to simple sense perception, is a very particular concept of 'real', precisely the one that determines the analysis of the reality of the world as Husserl carries it out" (Heidegger 1992, 61).

Re-presentation:

As the thought endures and changes in the focus of mind, we can return again to the once retentional impressions. That is, to return to the object previously thought of and then abandoned for a shorter or longer period of time. This is a memory. The primary memory, the presentation, 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. This we call re-presentation. "Memory - and this is equally true of retention - is not image-consciousness; it is something totally different. What is remembered, of course, does not now exist - otherwise it would not be something that has been but something present; ... it is natural to say at first (as Brentano did) that the actually present perception becomes constituted as presentation on the basis of sensations and the primary memory becomes constituted as representation /Represäntation/, as re-presentation /Vergegenwärtigung/" (Husserl 1991,34-35).

Husserl distinguishes at least three different modes of re-presentations:
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 primal impressions object is revealed.

The deliberately "falsified" recollection is a mere fantasy. The fantasising belongs to the freedom of recollections and it can be seen as another mode of "experience". This experience is of nothing existential. Although, fantasy stems from the re-presentation, it differs from re-collections as secondary memories.

The recollection or re-presentation and the fantasy, are the fundamental building blocks in the design process. The design process is the constant return to the design conditions whether in the form of the experience of the actual site, regulations, brief, interviews with clients or as something "kept in mind", remembered; and creating fantasies on the basis of the re-presentations.