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ARCHITECTURAL SPACE
Categories and Experience

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ABSTRACT

Space has always been the subliminal theme of the architectural project. Despite which fact, its explicit consideration as part of the architectural theory is relatively recent.

Through the research, observation and practical exercise, present work attempts to contribute into the developing theory of architectural space, considering both its formal and experiential dimensions in a number of case studies.

Four spatial sub-categories constitute the formal part of the enquiry and give the structure to the work in general: space of building - or of-space, space on building - or on-space, space in building - or in-space, and inter-space. Each sub-category is individually considered in four dedicated chapters, while in the final one they are considered together as parts of unified spatial whole.

The case-studies are observed through the drawings and essays. While experience is described in the essays, the formal definition of the spatial sub-categories is shown in the interpretive drawings.

The work offers basic methodological principles of spatial categorization with related theoretical premises for further integration with the growing body of research into the architectural space.

CONTENTS

"Our environments and architecture change our brains, and our brains change our behaviour."

- Juhani Pallasmaa

"The sense of space... Nothing is more important. [...] the space within becoming a reality of the building."

- Frank Lloyd Wright

"Your sacred space is where you can find yourself again and again."

- Joseph Campbell

Opening chapter:
SPATIAL CATEGORY

THEME

Space has always been one of the fundamental elements of any building. It also has always been the subliminal theme of the architectural project. Yet, its explicit consideration and specific application by architects are very recent. For most of history, architects implied the space without naming it with this term. The reason for that lies partially in a variety of meanings that the term was associated with at different times.* Architectural historian Adrian Forty writes that *"as a term, 'space' simply did not exist in the architectural vocabulary until the 1890s"* (Forty, p. 256). American art historian Charles W. Millard writes that *"in the long history of theoretical writing on architecture none of the most prominent writers, from Vitruvius through Alberti and Filarete to Montgomery Schuyler, has so much as mentioned space as an architectural component"* (Millard, p. 448). As of the beginning of the 21st century, the term of space contains more meanings than ever before.** That is why at the very onset of the present work it is important to state that it is dealing specifically with the architectural space.

By the architectural space, we mean such purposefully intended three-dimensional space that is defined by or related to a building as part of the architectural project. For the sake of rigour and brevity let us call it archispace.

* The term 'space' appears in English in the middle of 14th century, when it meant *"extent or area; room"*. It is the short form of the Old French 'espace', which came into use in the 12th century as *"period of time, distance, interval"*. Itself it was derived from the Latin 'spatium', meaning *"room, area, distance, stretch of time"*. The general modern meaning of the term, that is *"the unlimited or incalculably great three-dimensional realm or expanse in which all material objects are located and all events occur; the portion or extent of this in a given instance; extent or room in three dimensions"* began to be associated with the term from the late 17th century. (www.etymonline.com; www.dictionary.com; www.merriam-webster.com)

** Some of the most widespread meanings of the term today are: curved space, cultural space, virtual space, etc. The "Dictionary of Architecture and Building Construction" of N. Davies and E. Jokiniemi, among others, lists a dozen of terminologies containing the word 'space' paired with other words (e.g. s. coordinates, s. frame, etc.); while the singular word is defined in rather common terms as *"an area or volume bounded actually or theoretically; a continuous extension in three dimensions; a bounded area within a building"*.

The fact that the term of space was not part of professional architectural lexicon until recently does not mean, however, that its sense has not been expressed in other terms. The notion of room has historically been a semiotic identity of architectural inner space. Louis I. Kahn wrote that *"the room is the beginning of architecture"* (A+U, 1971). Since the primordial shelters, through the temples of antiquity, the 19th century railway stations, and into contemporary commercial centres - room has been the protagonist of archispace. This architecturally enclosing of space, revealing its portion, whether fully or partially, whether for practical reasons or spiritual motivations, seems to be the fundamental and universal architectural instinct in a human being. Gottfried Semper, writing in the 1860s, was one of the first architects and theorists to ponder deliberately about the enclosed space as the category of the architectural project (Forty, p. 257).* This idea, however, was growing gradually among architects who intended it in different terms since the early treatises.

Tracing the theme

LEON BATTISTA ALBERTI

Leon Battista Alberti used extensively the word 'space' in his 'De Re Aedificatoria' ('On the Art of Building', 1443-1452), applying it in many senses that existed at his time. In the second chapter of the first book, for example, he clearly means the areas under the term of space, when he writes: *"... under the title of platform, we shall likewise include all those spaces of the buildings, which in walking we tread upon with our feet."*.

For Alberti, a building consists of the typological architectural units, which he calls 'the distinct parts', and which are united together according to specific principles. He writes: *"The whole force of invention and all our skill and knowledge in the art of building is required for partitioning because [of] the distinct parts of the entire building and, to use such a word, the integrity of each*

* In German language the word 'raum' means both 'space' and 'room'. According to Adrian Forty, this fact might have assisted Semper and other German authors to naturally relate the two. (Forty, p. 256)

of those parts, and the union and agreement of all the lines and angles into a single harmonious work that respects function, dignity and delight. For if a city […] is no more than a great house, then a house is no less than a small city. Why may it not be said that the parts of a house are so many small houses, such as the courtyard, the parlour, the portico and the like?" (Lefaivre, p. 57).

It seems that the concept of architectural unit has latently embedded in it the idea of specifically architectural space, which notion is supported by the following passage: *"By the exercise of sure and admirable ratio and method, he [architect] knows how to conceive in his mind and spirit and then materialise in built form whatever most beautifully accommodates the worthiest deeds of man."* (Ibid., p. 54). The built form 'accommodates' the deeds of man, that are taking place within it - or inside the space defined by the room. If archispace did not exist for Alberti as a separate architectural category than, clearly implied, it did so as the property of the architectural form, which itself was property of the architectural unit. What is also notable about the quoted passage is that implied architectural space was supposed to possess certain qualities related to the purpose for which it was conceived.

ANDREA PALLADIO

Andrea Palladio continued the Albertian line of theory based on the architectural units, elaborating on it in more practical terms. In his 'I Quattro Libri dell'Architettura' ('Four Books of Architecture') of 1570, he writes: *"What contributes also to conveniency is that the rooms for summer be ample, spacious and turned to the north; and those for the winter to the south and west, and rather small than otherwise. We seek the shades and winds in summer, and in winter the sun. Besides, small rooms are much more easily warmed than large. But those which we would make use of in spring and autumn must be turned to the east and ought to look over greens and gardens. In this particular part, studies and libraries ought also to be as the morning is the most proper time of all other to make use of them"* (Ibid., p. 154). Though Palladio, like Alberti, still uses the word 'space' in different senses throughout his book, it is notable that he uses the term of 'spatiality' as one of the specific qualities of the enclosed space.

Palladio derives this quality not only from the enclosed space's purpose but also from its relation with the outside space, or environment, as well as from the sensorial experience of a human being inside, like the experience of light and temperature. For Palladio, the architectural space is not only implied as a distinguishable architectural category, but its qualities indeed are a factor in the project. If only he would formulate his ideas in a dedicated theory, Palladio might have anticipated the 19th century discourse on the enclosed space by 300 years, but there was still a way to go from its perception as a matter of course to the deliberate pondering.

GOTHIC CASE

In the period following Renaissance, the spatial theme can be traced through the pages of the French architects, in the country where the most significant single buildings were shaped exactly around space. François Blondel wrote in his 'Cours d'Architecture' ('Course of Architecture', 1675-1683): *"I have nothing to say on the love attributed to our nation for light and free space, since it is admitted at the same time that this still contains elements of the Gothic and in that sense is very different from the taste of the ancients, nor on the arguments that we must be allowed to add to the inventions of the ancients..."* (Ibid., p. 212). This short remark by Blondel reminds us that the enclosed architectural space had existed already for some time, and in few places, if at all, it was more visible and more powerful than in Gothic Cathedral. Space here is not the derivative of shape, it is the catalyst of shape. Hegel saw Gothic religious space as *"transcending its purposiveness, and in which, by means of its spatial enclosure [...] an independent religious idea was realized."* (Forty, p. 257).

During the period of High Middle Ages, hundreds of cathedrals were erected in central Europe and in each of them, there wasn't more important theme than the inner space, intentionally conceptualized to produce specific spiritual atmosphere. The architects of said region and time, nevertheless, failed to explicitly include the theme in their professional debates. However, several decades after Blondel's observation of his nation's 'love for free space', there the theme saw its further and moderate development.

JEAN COURTONNE

Somewhat less known is the contribution by French architect and theorist Jean Courtonne who included, even if in concomitant manner, the theme of the inner space into his treatise 'Traité de la Perspective Pratique, avec des Remarques sur l'Architecture' ('Treatise on the Practical Perspective, with Some Remarks on the Architecture') published in 1725.* Courtonne suggests the notion of the inner space through that of the outer one, or exterior, when he notices that the former has been generally neglected among the two. He seems to continue from where Palladio has left, implying the interior as purposeful space of human experience. One of Courtonne's novelties was the didactic idea that the interior and the exterior of a building must be related to each other to produce 'overall satisfactory architectural experience'. He writes: *"... in France, as well as in Italy, we have palaces and houses built in previous centuries, on the exterior of which reigns a rather beautiful architecture, while nothing about the interior distribution corresponds to it: there are no conveniences, it seems that our architects have affected to banish daylight [...] it is often difficult to find the proper place for a bed; fireplaces take up too much space in the bedrooms, which would seem large, if in addition to that defect the doors were not so small, giving a poor idea of the places into which they lead. But if by virtue of the happy discoveries that have been made in the past century the French have invented a new art of distribution [...] we must make every imaginable effort to strengthen that reputation [...] by combining the exterior with the composition of the interior, one causes a secret pleasure to be born in the soul of the spectators..."* (Ibid., p. 292).

The notion of 'interior distribution', described by Courtonne, was his another novelty and a qualitatively new step towards the recognition of the architectural space as a separate category of 'purposeful composition'. Additionally, Courtonne rejected the symmetry and the variety as the necessary methods of

* Jean Courtonne (1671-1739) was French architect and professor at the Académie Royale d'Architecture. Among his most notable works are Hôtel de Noirmoutier (1721-24) and Hôtel de Matignon (1722-24), both in Paris. The latter one accomodates the official residency of the French Prime Minister since 1935.

composition. For him, the plan is the conformation of rooms, influenced, apart from the purpose, by specific site conditions, including the environmental conditions. He values simple systems of proportions and sensorial qualities of the interior over its shape, as he continues: *"... but the natural arrangement of the rooms of an edifice, in which the nobility, the grandeur and the proportions that befit them must be conserved, is what makes a distribution perfect: their difference lies not in the figure..."* (Ibid., p. 292). Throughout his discourse, Courtonne captures the category of the architectural shape beginning to share its authority with the themes of spatial quality and spatial distribution.

JEAN N. L. DURAND

The theme was taken a step further by another French architect and theorist Jean-Nicolas-Louis Durand in his course at the École Polytechnique de Paris.* As Courtonne, Durand believed that the distribution of the units was something that informs the definition of shape, rather than adapts to it. In his course lessons, Durand argues: *"If one disposes an edifice in a manner such that it is appropriate for the use for which it is intended, will it not differ noticeably from another edifice destined for that same use? Will it not naturally have a character, indeed, its own specific character? If the diverse parts of that edifice, intended for diverse uses, are each arranged in the manner in which they should be arranged, will they not differ necessarily from each other? Will not that building offer a degree of variety?"* (Ibid., p. 480).

In order to illustrate his theory, Durand proposed the distributional schemes of the spatial units, which he called the 'constituent parts'. These parts were to compose the entirety of a building, and in turn, were to be composed individually of the architectural elements (walls, floors, columns, beams, roofs, windows, decoration, etc.), which he calls the 'primordial elements'. Here, Durand still remains 'classical' as he continues:

* Jean-Nicolas-Louis Durand (1760-1834) published his influential course textbooks collectively as 'Précis des Leçons d'Architecture' ('Handbook of the Lessons of Architecture'; 1805, '09, '13), which in its freshness, corresponded to the post-revolutionary atmosphere in France. Eventually its influence, especially in the part of the formal rationality, reached well into Modernism.

"Once we have become thoroughly familiar with all those diverse objects, which are to architecture what words are to discourse, or notes to music, without perfect knowledge of which it is impossible to proceed further, we shall see (1) how they can be combined, that is to say how they can be arranged each in relation to the others both horizontally and vertically, (2) how, using such combinations, it is possible to form the various parts of buildings, such as porticoes, porches, entrance halls, staircases, both exterior and interior, rooms of all kinds, courtyards, grottoes and fountains. Once these various parts are well known to us, we shall see (3) how one must combine these in their turn to compose the whole of a building." (Ibid., p. 482).

When Durand describes the general strategy of architectural design, he uses such terms as 'unity and separation', 'single or several masses', 'solids and empty spaces', etc. In addition to this tendency for abstract syntax, Durand's 'constituent parts' had their formal character strongly informed by economic motivations, resulting in less sculptural and more 'orthogonal' design. Altogether, this might have contributed to stimulate the thinking of an 'architectural essence' as opposed to an 'architectural ornament', as well as to approach the design process with less 'combinatorial' and more 'generative' attitude.

Writing on distribution, Durand relates this notion to that of 'type by use'.* He writes: *"... by disposition, what is understood is nothing other than the art of arranging, according to our customs, the various parts that make up a residential building, for we do not talk in terms of the disposition of a place of worship, a theatre, law courts, etc."* (Ibid., p. 482). Indicatively, the dwelling becomes the first architectural 'genre' to be emancipated from the framework of the morphological type. Subsequently, the theme of architectural space, so it seems, started to generally evolve at the time when the dominion of the morphological type and architectural unit started to decrease. Up until that period of

* Adrian Forty, in his book 'Words and Buildings' (Chapter 'Type', p. 304), distinguishes between three architectural types: 1) type by morphology (courtyard building, basilica, etc.), 2) type by use (dwelling, theater, etc.), 3) type by process, or Semperian type (terracing, walling, roofing, etc.).

change, architectural space existed as a quality of the two, anonymously.

GOTTFRIED SEMPER

In the middle of the 19th century, German architect and theorist Gottfried Semper was tracing down the origins of architecture through the 'primordial elements' (see section 'Durand') and related technology.* His idea was to propose the notion of type not as a model or a use, but as a *"potentiality of four main processes involved in building: terracing (masonry), roofing (carpentry), the hearth (ceramics), and walling (textiles)"* (Forty, p. 306). According to Semper this should have made *"apparent the derivation of objects and forms from their primordial motives and style changes conditioned by circumstances"* (Ibid.). Semper traced the wall 'motif' down to the idea of a 'primitive' fence weaved from branches and grass, which he called 'Wickerwork' - *"the essence of the wall"* (Hvattum, p. 70). He wrote: *"the wall is that architectural element that formally represents and makes visible the enclosed space as such, absolutely, as it were, without reference to secondary concepts."* (Ibid., p. 71). Captured in this short sentence, space turned from an abstract notion with multiple meanings into the architectural category - in its part of the spatial enclosure. Six years later, Semper stated in his lecture that *"the future of architecture in general […] lay in mighty art of space creation"* (Mallgrave in 'Style etc.', p. 48).

While Semper unlinked ideologically the architectural space from the notions of unit and type, it still remained attached to the notion of shape. What was new on that matter, was that the shape became a consequence of human life taking place in some space which, thus, became a catalyst. The fundamental union between them was to be found in the man's need for a *"spatial-symbolic home"* (Hvattum, p. 71). *"The spatial idea in its original conception"* (Ibid.) was manifested through the notion of enclosure

* Gottfried Semper (1803-1879) elaborated on his history and theory of architecture in two seminal and inter-related works: 'Four Elements of Architecture' ('Die vier Elemente der Baukunst', 1851) and 'Style in the Technical and Tectonic Arts Or Practical Aesthetics' ('Der Stil in den technischen und tektonischen Künsten oder Praktische Ästhetik', 1863).

as the act of distinction between the human inner and outer worlds.

Semper illustrated his theory of 'types by process' (terracing, walling, roofing, the hearth) using the Caraib Hut, he had seen at the Great Exhibition of 1851 (Forty, p. 306). For him the hearth symbolised the very center of the architectural project, that around which the community gathered and surrounded itself with enclosure.* Not by chance, it looks, Semper chose a dwelling as his example - in the same 'type by use' where previous architects saw the 'spatial qualities', he successfully saw the 'spatial matter'.

Semper's writing on the archispace is relatively short compared to his overall theory of architecture. Yet, of it all, the spatial idea became arguably the most influential one. It was quickly picked up by the leading architects of the time, who either expanded or commented on it. Adolf Loos wrote that *"the architect's general task is to provide a warm and liveable space"*; H. P. Berlage stated that *"... a building should not be considered primarily from the outside. [...] the purpose of architecture is to create space, and it should thus proceed from space"*; Peter Behrens said in a lecture that *"architecture is the creation of volumes, and its task is not to clad but essentially to enclose space"* (Forty, p. 257).

CAMILLO SITTE

If Semper was focused on the space contained inside the architectural enclosure, his disciple Austrian architect and theorist Camillo Sitte translated this idea on the city scale (Forty, p. 256). In his book 'City Planning According to Artistic Principles' ('Der Städtebau nach seinen künstlerischen Grundsätzen') of 1889, Sitte continued the ideological line of the enclosure as a formal definition of space by recognizing the vertical dimension of the city. When on the architectural scale this formal definition happens through the architectural elements, than on the urban

* Semperian understanding of architectural space included strong humanistic component, which remained undeveloped. While two published volumes of 'Style etc.' were focused on the 'internal' influences on architecture (materials and technology), an unfinished third volume was planned for the 'external' ones, such as social, cultural, and historical factors. (Mallgrave in 'Style etc.', p. 51)

scale it happens through the larger objects - the buildings. Sitte saw the planning not as a set of programmatic blocks, but rather as a series of non-orthogonal 'picturesque' courses integrated organically with plazas. Thus, at the risk of oversimplification, one might compare the Sittenian streets to the 'urban corridors', and the squares to the 'urban rooms'. The risk of such comparison, although suggestive, lies in the fundamental variations in human experience of architectural and urban spaces. Interestingly, some similar ideas were already formulated, remaining undeveloped. Alberti, 300 years earlier, was himself quoting the previous sources when he wrote that the 'city is nothing but a big building, and the building is nothing but a small city' (see section 'Alberti').

The new term in Sittenian discourse is the 'space' itself. He called the city planning the 'Raumkunst' - or the 'art of space'. As it might be known, in German language the word 'raum' means both room and space, hence plaza - urban room. Though still bound by the idea of enclosure, Sitte's theory is seminal as part of the spatial theme's development, because through his work the architectural space, as a category, was now identified on the outside of the buildings. It was possible now to talk about two distinct categories of the architectural space - the internal one, and the external one, with latter linked to urbanism (city) and former linked to architecture (building). Considering the Semperian and Sittenian discourses together, archispace gradually emerges beyond the domains of interiority and exteriority, rising the prospect of the third unifying category.

LÁSZLÓ MOHOLY-NAGY

The new intermediate category of archispace was developed collectively within the movement of Modernism, where it was called the 'floating space' - neither internal nor external but the one which *"morphs from one into another"* (Moholy, p. 44). The original modernistic ideal was the fusion of the three arts - architecture, sculpture, painting - into one. It was the artist and the Bauhaus professor László Moholy-Nagy to produce one of the most thorough descriptions of the modernistic understanding of the architectural space. In the dedicated chapter of his book 'The New Vision and Abstract of an Artist' (1947), he writes: *"... space is a reality of sensory experience. It is a human experience like*

others; it is a means of expression like others. Other realities, other materials" (Ibid., p. 57).* Moholy suggests that space is objective and moldable entity. The challenge is to understand that which seems to be the only non-physical objective entity that architects creatively operate with, like they do with the elements.

Moholy proposes understanding of space through the experience - as *"a biological function of everyone"*, and asserts that it *"must be tested by the means by which space is grasped, that is, by sensory experience"* (Ibid.). As the means of spatial experience, Moholy highlights four basic human senses: sight (vision), movement (vestibular sense), hearing (audition), and equilibrium (equilibrioception), although he separately sites the sense of touch, and puts forward his awareness that other senses existed, of which little was known. These quantifiable means of spatial experience can lead to the possibility of further grasping the *"actual felt quality of spatial creation, the equilibrium of taut forces held in balance, the fluctuating interpenetration of space energies..."* (Ibid., p. 59). In this one exhilarating passage, Moholy suggests that there is a direct link between the quantifiable means of spatial experience, and the qualifiable spatial experience itself. Importantly, it is clearly an operative idea, that architects could put directly into the practice. Further, he elaborates on the notion of 'spatial creation' in terms of the balance of the related sensory experiences within the architectural space. Moholy unites the distributional strategy with the sensory experience and thus suggests the idea of a 'sensory composition'.

On the formal dimension, Moholy seems to have seen more than just three types of spaces. He wrote: *"... in architecture not sculptural patterns, but spatial relations are the building elements, the inside of the building must be inter-connected, and then connected with the outside by spatial divisions. [...] The next stage will be space creation in all directions, space creation in a continuum"* (Ibid. p. 63). If before Moholy, representing here the

* 'The New Vision and Abstract of an Artist' (1947, New York), quoted here, is 4th and expanded edition of László Moholy-Nagy's previous work 'From Material to Architecture' ('Von Material zu Architektur', 1928).

whole of Modernism, there had been clear distinction between the inside space and the outside space, than during his time such distinction was de-materialised. The means of this de-materialisation, as follows from the quote, was in the 'spatial relation' - a new building element of in-between articulation, universally introduced by Modernism, at least as a theory.*

With the 'floating' spatial distribution mediated by the 'spatial relations' on the one hand, and the sensory experience on the other, Moholy obtains a compositional assessment tool adequate to the spatial category of architecture. The spatial project can be understood through the notion of spatial experience. Remaining firmly modernistic and objective in his reasoning, Moholy doesn't move beyond the "safe zone" of the quantifiable biological responses, although the implication of the space as an emotional and qualifiable matter is clearly present throughout his discourse.

Moholy acknowledges that the understanding of the architectural space is hardly completely calculable. He writes that *"space is effected on the measurable plane by the limits of bodies, and on the non-measurable plane by the dynamic fields of force. Space creation becomes the nexus of spatial entities, not of building materials"* (Ibid. p. 62). Since there is no data to quantify the spatial 'fields of force', it seems that Moholy is referring here to the realm of quality, 'understood' by emotions, as if to anoesis. As a result, Moholy considers the spatial experience from two distinct standpoints. One is measurable, and relating to the sensory perception - it is objective. Another is unmeasurable, and relating to the emotional perception - it is subjective. The questions of sensorial-emotional spatial experience was to remain an ongoing subject of research and debates in the development of the architectural space theory.

ROBERT VENTURI

Although Postmodernistic architects are generally thought to *"lessen the importance attached to 'space'"* (Forty, p. 268), Robert

* The Barcelona Pavilion by Mies van der Rohe seems to be more exception than a rule, as even his output more often dealt with the 'open' internal space, rather than the 'floating' one.

Venturi dedicated part of his book 'Complexity and Contradiction in Architecture' (1966) to the theme. In the chapter 'The Inside and the Outside' he traces the architectural space on the subject of its differentiation and formal definition throughout the course of the history, always in relation to experience.

Venturi's critique of the 'Modernistic space' is focused surely not on the category itself, but rather on the character that it assumed unequivocally in the period. He implies that the character of 'floating space', of 'space as a continuum', resulted in the loss of the spatial identity itself, becoming a kind of a spatial compositional exercise for its own sake. He argues for the value of then disregarded 'spatial enclosure', stressing importance to *"protect and provide privacy, psychological as well as physical..."* (Venturi, p. 70). *"A building is a harbouring thing."* - he quotes Khan, and goes on to elaborate on the differentiation between the inside and the outside spaces (Ibid.). Though, at first glance, it seems that Venturi ventures back in time, disregarding the theoretical advancement since the times of Sitte, it becomes clear throughout the pages that part of his concern is about the architects staying exclusively in the 'floating space', and overlooking the differentiated spaces before their full potential was understood. He sites Aldo van Eyck on that matter: *"Architecture should be conceived of as a configuration of intermediary places clearly defined. This does not imply continual transition or endless postponement with respect to place and occasion. On the contrary, it implies a break away from the contemporary concept (call it sickness) of spatial continuity and the tendency to erase every articulation between spaces, i.e., between outside and inside, between one space and another (between one reality and another). Instead the transition must be articulated by means of defined in-between places which induce simultaneous awareness of what is significant on either side. An in-between space in this sense provides the common ground where conflicting polarities can again become twin phenomena."* (Venturi, p. 82).

One of the spatial differentiations pointed out by Venturi is 'space in space'. He uses example of Villa Savoye to illustrate this idea: *"Its severe, almost square exterior surrounds an intricate interior*

configuration glimpsed through openings and from protrusions above. In this context the tense image of the Villa Savoye from within and without displays a contrapuntal resolution of severe envelope partly broken and intricate interior partly revealed. Its inside order accommodates the multiple functions of a house, domestic scale, and partial mystery inherent in a sense of privacy. Its outside order expresses the unity of the idea of house..." (Ibid., pp. 70-71). In this and other remarks Venturi implies that the spatial composition should start with the differentiated experience it is to accommodate, and continue with the formal expression. The letter, thus, is informed by the order of experience, and not by the abstract geometrical ideas. Essentially, Venturi proves that there is no need to necessarily follow the orthogonal scheme of spatial composition of planes, as advocated by Modernism, and that *"the interior configurations can contrast with its container."* (Ibid., p. 71). He calls it *"crowded intricacy within a rigid frame"* (Ibid., p. 72).

Venturi indicates that *"the crowded intricacies can be excluded as well as contained"* (Ibid. p. 71). He refers to the San Pietro Collonade by Bernini, to illustrate the architectural 'intricacies' brought out to the urban situation in order to achieve the formal relations between the open realm of the piazza and the contained realm of the building. The inner space of the building in this way continues into the outer space of the city through the shared elements and characters. Unfortunately, Venturi leaves this suggestive passage undeveloped, but the idea of an internal space as an 'external agent' remains itself valuable and intriguing.

Another spatial differentiation analysed by Venturi is the 'unattached lining', which produces the additional spatial layer between itself and the exterior wall. Venturi traces the use of such linings as an architectural device at service of the 'space in space' idea. He sites, among other, the loggia of the Louvre south façade, the Temple of Horus in Edfu. For Venturi the outer linings *"enhance the enclosed inner spaces by making them seem protected and mysterious"* (Ibid., p. 77). Thus, the formal idea finds its value in the emotional atmosphere it is intended to bring.

Venturi relates the emotional richness of experience to the formal

richness of space. He sites the interiors of John Soane on that matter. The Soane's use of sophisticated internal domes in many of his spaces *"work to enrich the sense of enclosure and light"*, as well as to provide *"complex effects of actually detached spatial layers"* (Ibid.). He supports the argument by the Kahnian motif of *"wrapping ruins around buildings"* (Ibid., p. 78), which provides specific light conditions in the resulting 'spatial layer' through the differentiated geometries of the wrapper and the wrapped.

While observing the urban situation, Venturi points out open and unused spaces, like those under the highways or various urban buffer zones. He calls it a 'residual space' or an 'open poché'. This urban 'residual space' is than related to the 'servant spaces' within the buildings. The 'servant space' is produced as result of the juxtapositions of different geometries within a building. Such spaces, therefore, are natural part of the 'differentiated' composition. *"A building should have bad spaces as well as good spaces"*, as he quotes Kahn (Ibid., p. 82).

If the 'residual spaces' and 'servant spaces' result from the composition, and as such come after the major compositional parts are defined, the other kinds of differentiated spaces can result from the concept of the 'spatial needs', which comes before the composition. Here, Venturi sets the space in relation to both human condition and architecture itself. He illustrates the idea of a 'spatial need' on the example of a Baroque Church: *"The concave façade in the Baroque church accommodates spatial needs that are specifically different on the inside and the outside. The concave exterior, at odds with the church's essential concave spatial function inside, acknowledges a contrasting exterior need for a spatial pause in the street. At the front of the building outside space is more important. Behind the façade the church was designed from the inside out, but in front it was designed from the outside in. The space left over by this contradiction was taken care of with poché."* (Ibid., p. 84).

The contradiction between the spatial needs of the inside and outside spaces results in a shape of divisor between them - an expressive shape of a wall which reflects this tension. This shape is

a product of two simultaneous processes of a project - the one from the outside in, and another from the inside out. Venturi writes: *"Designing from the outside in, as well as from the inside out, creates necessary tensions, which helps make architecture. Since the inside is different from the outside, the wall - the point of change - becomes an architectural event. Architecture occurs at the meeting of interior and exterior forces of use and space. These interior and environmental forces are both general and particular, generic and circumstantial. Architecture as the wall between the inside and the outside becomes the spatial record of this resolution and its drama."* (Venturi, p. 86).

If compared to Moholyian abstract 'fields of force', within the spatial 'flow', the Venturian 'interior and exterior forces', within a spatial 'differentiation', link the archispace back to the category of shape. But unlike a 'classical' building, it is shape here that is informed by the space through the 'spatial need' rooted in human experience.

JUHANI PALLASMAA

The theme of architectural space and experience is continued in the work of Finnish architect and theorist Juhani Pallasmaa. In his observations, Pallasmaa engages both artistic and scientific arguments, which together with the author's distinct style, makes his reflections both poetic and objective. In his book 'The Eyes of the Skin' of 2005, Pallasmaa elaborates profoundly on the sensory experience of architecture and its relation to the realm of emotions and feelings. Throughout the pages, he considers the body as a creator as much as an instrument. *"The painter 'takes his body with him', says Paul Valéry. 'Indeed we cannot imagine how a mind could paint,' Merleau-Ponty argues."* (Pallasmaa, 'The Eyes of the Skin', p. 49). In architecture, like in other arts, the creative quality of body is attributed to both the author and the beholder. The author embeds into the building the sensory conditions that he himself has previously perceived through own body. The beholder engages with these conditions, again, by means of own senses. As result, an exchange and enrichment happen at the time of meeting. Here, the words of Frank Lloyd Wright come to mind: *"The space within becomes the reality of the building."* ('Frank Lloyd Wright on record', side 2, min. 15:00).

On this basis, partly quantifiable through the sensorial conditions, Pallasmaa gradually constructs the broader idea of correlation between the emotional atmosphere and a given sensorial complex residing in the building. He writes: *"When experiencing a work of art, a curious exchange takes place; the work projects its aura on us and we project our own emotions and percepts on the work. […] Enigmatically, we find ourselves in the work."* (Ibid., p. 69). Pallasmaanian thinking is both deeply poetic and responsibly scientific, and he gives to the sensorial experience a deeply qualitative meaning. For him, architecture is that organism which unites our mind, through our body, with the broader world, and frames the 'best things' about it, to which, ultimately, each of us can relate and loan for. He writes: *"In fact, a great architect releases images of ideal life concealed in spaces and shapes"* (Ibid., p. 60). Or again in other place, quoting Merleu-Ponty: *"We come not to see the work of art but the world in accordance with the work."* ('The Embodied Image', min. 3:55). Generally, throughout Pallasmaanian discourse, this idea can be synthesized as 'to see ourselves in the world through the frames and horizons of architecture'.

Pallasmaa understands the architectural space in terms of *"dynamic interactions and interrelations [of sensorial elements]"* (Ibid., p. 69). An idea reminiscent to the Moholian 'sensorial composition'. Yet, if related to somewhat ambiguous modernistic idea of 'dynamic fields of force', which operate on an 'unmeasurable plane', the idea of Pallasmaa is grounded into the human bodily condition. In the context of Pallasmaanian theory, this bodily condition is influenced by the sensory experience of space, which goes beyond the physiological responses and into a more holistic existential realm when *"images of presence give rise to images of memory, imagination and dream"* (Ibid., p. 48). If the sensorial qualities of the architectural space trigger an existential reaction, than their orchestrating becomes part of the project.

This empathic trajectory of architectural thinking reflects some earlier ideas of August Schmarsow. The latter developed a highly suggestive theory that for a given beholder the surrounding space is always a continuation of this beholder's body, through the

sensory apparatus, and mind, through the 'spatial intuition' and 'spatial imagination'.* Remarkable in their potential for practical implications, Schmarsow's ideas gained but modest effect at the time (Forty, p. 261). Pallasmaanian discourse falls in line with that of Schmarsow, or at least it can be correlated, and judging by the quantity of the former's publications, these ideas are slowly gaining some mainstream success, more than a century after their first explicit introduction.

Without delving "unqualifyingly" deep into the scientific arguments, Pallasmaa follows his well informed intuition and assumes his theory within a calm psycho-emotional condition, that is in such space that 'works' on us as if in a background, neither exceedingly expressive nor clinically sterile, neither expecting nor desiring to be noticed, but rather emanating an air of quiet significance. Pallasmaa relates this dignified influence, which architectural spaces exert on us, to the peripheral dimension in which they primarily operate. Here, he writes with reference to the phenomena of side vision: *"A remarkable factor in the experience of enveloping spatiality, interiority and hapticity is the deliberate suppression of sharp focused vision. […] The very essence of the lived experience is moulded by unconscious haptic imagery and unfocused peripheral vision. Focused vision confronts us with the world whereas peripheral vision envelops us in the flesh*

* August Schmarsow (1853-1936) was German art historian, whose writings on the architectural space were related but not limited to the theory of empathy. Schmarsow outlined his ideas in the essay 'The Essence of Architectural Creation' ('Das Wesen der Architektonischen Schoepfung') of 1894, published in English version in the book of 1994 'Empathy, Form, and Space: Problems in German Aesthetics, 1873-1893' by H. F. Mallgrave.

In his essay, Schmarsow inquires into the *"origin and innermost essence of architecture"* (Mallgrave, 'Empathy, Form... etc.', p. 282). He searches for this essence through the 'germinating seed' or the 'kernel' of architecture, which is to be inevitably present in all the buildings, from the most humble and imperfect ones to the most complex and monumental masterpieces. He finds this 'kernel' in the space organized by the architectural means and subsequently assumes that every building is first and foremost a 'spatial construct' (Raumgebilde).

Schmarsow's idea of architectural space includes the notion of the sensory experience as part of its form. The spatial form, according to Schmarsow, is always partly intuited by each human being, according to his or her particular sensory faculties. An individual body structure, sensitivity of skin, continued on the next page >

of the world. […] the quality of an architectural reality seems to depend fundamentally on peripheral vision, which enfolds the subject in the space. A forest context and richly moulded architectural spaces provide ample stimuli for peripheral vision, and these settings centre us in the very space." (Ibid., p. 14). Add here all others sensorial qualities of space, and its silent and invisible influence on us becomes quite pronounced and apparent. With all the sensorial contents, it is perceived all at once, as a totality.

This argument can be further supported by the Schmarsow's theory: since the surrounding space is, at least in part, a continuation of the beholder's body and mind which, operating through the perception, has no physical boundaries, the relation between the beholder and the surrounding space is reciprocal. The former gives to the latter as well as receives from it. Thus, according to the theory, our surrounding spaces undeniably affect us while being affected by us. Somewhere within this relationship a figure of the architect is standing, for we are dealing with architectural space. It is exactly this fact that makes this whole empathic discourse as much suggestive as potentially useful in practical terms.

Another argument relates to the building as it is and addresses the value of the de-functionalized space. Here, Pallasmaa quotes

muscular sensations contribute to this experience. The 'precious kernel' looked after by Schmarsow can be found *"as soon as we learned to experience ourselves [...] as the center of this space, whose co-ordinates intersect in us"* (Ibid., p. 286).

Schmarsow believes that the sensorial nature of human being grants us the sense of space ('Raumgefühl') and related spatial imagination ('Raumphantasie'). Having these two senses inherent in us naturally evokes, according to Schmarsow, the desire for their satisfaction in the art of spatial creation ('Raumgestaltung'). This art is architecture - *"the creatress of space ('Raumgestalterin') [...] in accordance with the human intuition of space"* (Ibid., p. 287-88).

Schmarsow molds the space around us with the space within us, and argues that ultimately they are inter-continious. One can notice here a philosophical precursor to later architectural floating and differentiated spaces. Since there is a creative reciprocal relation between a spatial creation and an individual, the two are empathically connected. We unconsciously contribute to the spatial creation and it latently contributes to our general condition. One flows into the other and our mind and body continue into the space.

Tadao Ando in order to elaborate on the idea: *"I believe in removing architecture from function after ensuring the observation of functional basis. In other words, I like to see how far architecture can pursue function and then, after the pursuit has been made, to see how far architecture can be removed from function. The significance of architecture is found in the distance between it and function."* (Ibid., p. 65). This idea of de-functionalisation is particularly important, because it can be seen as an operative tool to reveal purely architectural qualities of a building. What remains of architectural space, if the function is removed from it, how does it relate to us as human beings? While Pallasmaa states that architecture *"has to maintain its impenetrable secret and mystery in order to ignite our imagination and emotions"*, he leaves those questions opened (Ibid., p. 65). It is suggestive to think that the possible answer can be the purely architectural meaning.

According to Pallasmaa, *"the ultimate meaning of any building is beyond architecture; it directs our consciousness back to the world and towards our own sense of self and being. Profound architecture makes us experience ourselves as complete embodied and spiritual beings."* (Ibid., p. 13). Later, he accompanies this idea with that of the task of architecture: *"The timeless task of architecture is to create embodied and lived existential metaphors that concretise and structure our being in the world."* (Ibid., p. 76).

The being in the world, the reinforcement of the human capacity through the agent of architecture is yet again supported by scientific arguments, with which Pallasmaa interweaves his poetic discourse, similar to how architecture itself is an art sustained by the science of construction. *"While the brain controls our behaviour and genes control the blueprint for the design and structure of the brain, the environment can modulate the function of genes and, ultimately, the structure of our brain, and therefore they change our behaviour. In planning the environments in which we live, architectural design changes our brain and behaviour"* (Fred Gage, as quoted by Pallasmaa in 'Architecture and Neuroscience', p. 4). With this in mind, Pallasmaa suggests for architecture an 'attitude of mediation' between what is and what can be.

This, what can be, architect designs as a project. Together with floors and walls, architect designs a human experience. Pallasmaa quotes his university professor Alfred Brunsted on this matter: *"together with ability to imagine spaces, an architect must also be able to imagine human situations and conditions within those spaces."* ('Body, Mind and Architecture', min. 20:00). He argues that the ability to imagine the spatial experience becomes important professional skill of the architect, one's responsibility. This is also something that helps understand other buildings, other spaces.

Imagination and intuition

Tracing the theme of architectural space has led us from its formal categories to human experience as its very essence. It has been evident that the ability to 'embed' a possibility of future existential experience into the designed space, could if not should be considered as the fundamental part of the project. This ability is intimately connected with the architect's capacity of imagining the spatial experience.

During the lecture entitled 'Emphatic Imagination', given by Juhani Pallasmaa at the Bengal Architecture Symposium in 2016, the architect offered some valuable insights on that matter from his own practice. Here are his words: *"several years ago I was attending the opening concert in the concert hall which I have designed in northern Finland. I have been so busy during the last weeks before the opening that I had no chance to visit the construction site and hear the rehearsal of the orchestra. So, the first sound I heard was at the very opening. It was a solo violin piece... We, architects, are rather skillfull at imagining the visual things while it's a bit more unusual for us to imagine the acoustical things, and I was imagining the sound [during the design process]. So, when the real sound first hit my ear, it was exactly as I had it imagined. I felt so good that I said to myself, 'Juhani, this is it for you. Close your office.' And I did."* ('Empathic Imagination', min. 5:50). For Pallasmaa, the sensorial and emotional imagination of an architect must be developed no less than the visual imagination. Creating an experiential possibility is no less important than

creating a memorable shape. For the ability to imagine experience brings architect in contact with the future situations of lived life.

The ability to create an environment of experiential possibilities requires an imagination based on a wealth of knowledge and understanding, that architect absorbs and reaches during his life. This might be a long quest and it may explain why the mature works are often the deepest ones. It is, thus, possible to suggest that along that quest the trusted intuition should be a company of imagination together with the knowledge. On which matter, Pallasmaa ponders: *"Don't we usually design our buildings on the basis of functional, technical and aesthetic criteria, instead of imagining them as resonant settings and backgrounds for situations of lived life and intuiting the behavioural and mental interactions between spaces and their occupants?"* (Ibid., min. 8:40). Although the basic sensorial qualities, such as those of light, temperature, acoustics, air qualities can be pre-calculated, at least to a certain extent, it is less expected that the complex human condition, which fundamentally includes emotions, can be put into numbers. Here, the natural human ability of intuiting comes forward.

Leland M. Roth, in his book 'Understanding Architecture', draws an interesting parallel between the habitats built by animals and humans (Roth, pp. 3-4). A chambered nautilus shell is constructed unconsciously by its inhabitant as the record of one's life. A human being, also an animal but self-conscious, as well builds a habitat partly following the residuals of that natural subconsciousness. We might call it a natural intuition, working together with distinctly human capacity of imagination and pure reasoning, all often aimed at some meaning (philosophical, artistic, scientific), in order to produce a human habitat.

Alvar Aalto stated in his inaugural speech as a member of the Academy of Finland in 1955: *"I would like to express my personal, emotional view, that architecture and its details are in some way all part of biology."* ('Architecture as Experience', min. 28:15). This statement, clearly related to unconscious, was balanced at the same event by the reasoning, related to conscious: *"Whatever our task, whether large or small [...] opposites must be reconciled [...] Almost every*

formal assignment involves dozens, often hundreds, sometimes thousands of conflicting elements that can be forced into functional harmony only by an act of will. This harmony cannot be achieved by any other means than art. The final value of individual technical and mechanical elements can only be assessed afterwards. A harmonious result cannot be achieved with mathematics, statistics, or probability calculus." (Ibid., min. 3:10). Since architectural design involves both art and science, the development of informed intuition can be justly suggested for the architect. This informed intuition, thus, is integral part of the spatial imagination.

There is a difference between the imagination directed towards the object and the imagination directed towards the space. The spatial imagination inevitably has an emphatic element in it, while the formal imagination doesn't necessarily have one. Pallasmaa recognizes this as two levels of imagination: *"... One projects formal and geometric images and another one simulates sensory, emotive and mental encounter with the projected material entity. [...] The first level of imagination projects the material object in isolation from life. The second category projects the lived and experienced reality in our life or life-world. In the first case, the imaginatively projected objects remain as an external image outside of the experiencing and sensing self, whereas in the latter case, it becomes part of the designers existential experience as in the encounter with real material reality."* ('Emphatic Imagination', 26:30).

The first, formal level of imagination is related to the shape of the object as geometrical entity, as well as to basic measurable sensorial conditions pertinent to it, such as temperature, illumination, air condition, sense of proportion, sense of balance, tactile sense etc. In other words, it works with the object and for the object itself. While the second, emphatic level of imagination projects into that formal complex the existential possibilities of lived life, that what is non-measurable and intuited, *"embodied and emotive experiences, qualities and moods."* (Ibid., min. 40:00). In other words, it works with the human and for the human.

The architect, working on both levels, develops the capacity of

more complete, embodied imagination, enabling him or her to project the existential experience and the material form together, all at once.

The architectural space, imaginative experience and intuition, may not have been explicitly considered together all that often in the architectural discourse. In this, they are similar to the spatial category itself - latently, it has always been there.

Let us lightly prove the point using the following extract from the dialogue of 1985 between Philip Johnson and journalist Barbaralee Diamonstein on the subject of Johnson & Burgee designed Crystal Cathedral:

Diamonstein: *How do you think of this type of building as a place of worship, as contrasted to more traditional forms?*
Johnson: *Well, I'm surprised, it works marvellously. It has very religious light because we used almost opaque glass, it's all like being under water... You've been under water long enough? You know that lovely feeling, that beautiful light, when you do snorkelling? That's the light in this church, you see.*
Diamonstein: *Is that something that you do, snorkel?*
Johnson: *Oh no, I've never been underwater!*
Diamonstein: *So, how did you manage to create that?*
Johnson: *Well, I said to myself it must look like this underwater... and judging by Cousteau pictures it does look like that... Just use your imagination a little bit!*

Scope of the work

After the theme tracing has been completed, and the essential topics through which it is to be grasped, have been observed, it is possible to set the general scope of the work to follow.

Given a substantially abstract character of the theme and the intention to concretize it in more practical architectural terms, the scope of the work is set into the following mental framework: the goal of work, its method, and its intended value.

The goal of work is to deepen the conceptual understanding of the architectural space in relation to both its formal definition and the experiential possibilities it provides.

The experiential possibilities are related to the human self, emphatically understood as sensorial and emotional experience of individual in relation to the architectural space within which one is located. The self sensorial experience is referenced to the basic Aristotelian senses, the vestibular sense and the sense of proprioception. The self emotional experience is unquestionably more abstract concept, and in order to render it relatively feasible for the scope of the present work, it is proposed to be understood as the mental image of oneself in the world as emphatically seen from the architectural spaces. The latter portion of this definition relates to architecture, while the former relates to the general egosense as perceived through it. Architectural space, in this way, becomes the mediative place between the self and the world, a construct that puts this relationship into the focus. It is also the space where the two parts of the self experience overlap and become one existential self experience. Ones the notion of existential self experience is understood as a whole consisting of two parts, which in their turn are accessible through the above mentioned senses, it becomes less abstract and more operative in terms of its relationships with the concrete reality of the building.

The architectural space within the building is proposed to be understood as the whole divided into the parts or sub-categories. Once the category of architectural space is understood as the whole constituted from the parts, any number of constituent spatial sub-categories could be considered, if such attempt was to be made without a system. In order to arrive at a rational number of the spatial sub-categories, the generalization strategy is applied: to relate the architectural space of a given building to unavoidable elements of ground, air, and building itself. As a result, the following sub-categories are deduced: space of building, space on building, space in building, and inter-space.

Space of building - or of-space - is necessarily related to the building and the ground.

Space on building - or on-space - is necessarily related to the building and the air.

Space in building - or in-space - is necessarily related to the building and the building itself.

Let us define these three sub-categories as the differentiated sub-categories of architectural space.

Inter-space - a single space where the inherent characters and qualities of at least two of the differentiated sub-categories overlap. It is un-differentiated but composite sub-category.

Four identified sub-categories of architectural space are considered separately and as a relational whole through the analytical observation of the case-studies. The case-studies are divided into four chapters by sub-categories. Additionally, the fifth chapter is dedicated to relations between the sub-categoris as parts of the relational whole.

The case-studies are observed through the drawings and texts, with minor assistance of the photographs (since the cases are mostly well-known). While experience is described in the text, the formal definition of the spatial sub-categories is shown in the interpretive drawings. Therefore, the linguistic and the graphic expressions transmit that which is suitable to their natures. This might reflect as well the idea of 'measurable and unmeasurable', encountered in various places throughout the tracing of the theme. If drawings are concrete entities of illustrative nature, the experience-describing texts are less tangible and more metaphorical.

The drawings illustrate the formal definition of the spatial sub-category of each case-study, rather than its other aspects. Each drawing is specific to its subject in the way it constructs the view, although all of them share the same graphic vocabulary and technique. The drawings are made by hand on paper with the use of pencil, eraser and rapidograph.

It is hoped and intended that the value of the present work is to

be found by both reader and author in their architectural works, whether practical or theoretical. Deeper understanding of correlation between the spatial and existential dimensions of the architectural space appears to be of some value, or at least to be meaningful.

Present work considers the human experience in relation to architectural spaces and is not intended to involve deeply other architectural categories, maintaining its focused reductionist character. Complete understanding of human experience in relation to the architectural environment as a whole would require consideration of all other categories of architecture, to which the present work attempts to be a contribution.

Chapter 1:
OF-SPACE

PREMISES

Of-space - or space of building - is necessarily related to the building and the ground.

Observing the buildings, one may notice that their relationship with the ground usually results in two situations: 1) a space between the building and the ground is created; 2) no such space is created as the building stands on the ground, reminiscent to a wall. Each situation, nevertheless, produces relative kind of space: 1) space that can be precisely defined formally through the physical shape; 2) space that can not be precisely defined formally but rather referenced by the shapes. For example, by the shapes of ground and façade. Such spaces are more felt and described informally, or intellectually, in terms of specific atmosphere produced by the very presence of the building on the ground in space and within certain environmental conditions. Therefore, let us distinguish two further sub-categories within the space of building: the definite of-space and the indefinite of-space.

The definite of-space has long been part of typological units of morphological semantics, or composition. The colonnaded streets and galleries of the ground levels and semi-open courtyards in European cities are well known examples of such unit-spaces. An 'urban pocket' created when one building's façade is shifted inwards from the line of others is another example. In the countryside, an instance of the of-space defined by the typological unit could be a veranda or a porch.

Non-typological, morphologically unique definite of-spaces are becoming meaningful parts of contemporary architecture. The National Library in Doha by OMA, or KKL Congress Centre in Luzern by Jean Nouvel are among such buildings. In all cases, the definite of-spaces have their spatial and experiential role. You are within the building's realm without entering it, still outside. The definite of-spaces, therefore, are physical intermediate condition between the urban, rural, and architectural realms.

The indefinite of-space applies to every building, since every building is present as such. Presence of a building, as a feeling and understanding, surely depends on the myriad of factors, native not only to the spatial category of architecture, but to all other categories as well. Presence discussed in this work is intentionally related to the spatial observation. Moreover, it is fair to acknowledge, that the perception of the presence of a building is not limited to the ground only, as part of the of-space category. The presence is true for any spatial relation between the observer and the building, as it is also true beyond the realm of the physical reality and as a part of mental image of a building within the space of mind. Such intricate discussion of the presence of a building would go beyond the scope of this work. However, as it is certain to perceive the building from the ground in space, it falls duly into the field of observation related to the spatial category.

If the building's presence in space is to be possible to informally measure, than let us suggest the term 'intensity' as informal measurement of the building's presence in space. The higher is intensity level emanated by the building's presence, the larger is the field of influence or force it enacts on the beholder. This field is both emotional and intellectual, since buildings are perceived by both faculties, and it can be described through the "units" of qualities and characters perceived. They are the in-between product of the building's presence as it is and the beholder's state of mind. Much like a flower has its flavour and a musical piece has its mood, we perceive them as they are and fuse that which is perceived with our own mental state. It is an experience that gets to you in its own non-linguistic terms. Like art or nature.

On more grounded level, the presence of the building appears to be intimately connected to its location. The same building would have different presences in urban and rural conditions. Notre-Dame-du-Haut is part of landscape on the hills of Ronchamp. It wouldn't have possibly the same presence between the tower blocks of the Parisian 15th arrondissement. The most modest town-house would suddenly obtain a deal of charm if located on the green meadow of the pastoral landscape. Environmental context influences understanding of the meaning of place and space.

On the sensorial level, the building produces various relative content. Light and shadow conditions, both natural and electric. Possible change in temperature, movement and other air conditions, as one nears the building. Emerging smells related to the building's activities and physical condition. Changes in the sense of proprioception, proportion and balance. All these and other components of sensorial content are parts of the spatial realm. Perceiving all that in relation to the building underlines the fact that one is within the space of building.

On the emotional and intellectual level related to a beholder, the presence of the building is the subject of conscious or sub-conscious influence. From Pallasmaanian discourse, we saw that our environment inevitably influences our state of mind, and therefore our actions. As much so, the presence of the self is integral part of one's being, conscious or sub-conscious. It is believed by the author that humanistic heart of the architect's work is to create the architectural conditions for a beholder to consciously or sub-consciously obtain the good and creative feeling of the presence of the self in this world.

The experience of the presence of the self within the in-between realm of the building, the self, and the world is the red thread observation of this work. It starts within the space of building.

fig. a) © Jo Ouwejan (min. 0:45)

fig. b) © Factins

fig. c) © Creative Commons

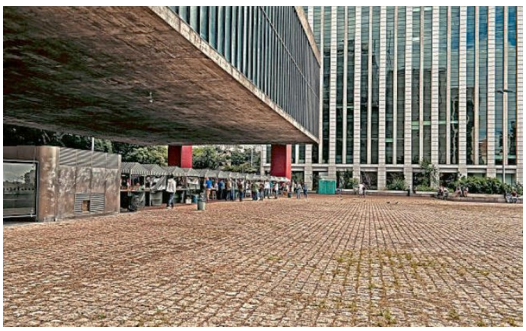

fig. d) © Rebeca Mello

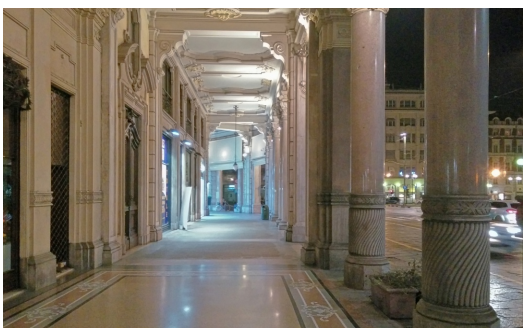

fig. e) © Author

fig. f) © Author

fig. g) © Jacky Yuen

fig. h) © CCA Mellon Lectures

PLATE 1. Of-space / **a, b)** *Mahastupa, outer and inner parikrama;* **c, d)** *MASP, terraço;* **e, f)** *Assicurazioni Generali Torino, view into and onto the gallery;* **g, h)** *Amsterdam Orphanage, view from garden and into yard*

Section 1.1. MAHASTUPA AT SANCHI

by Unknown author(s)
Part of the Buddhist complex at Sanchi
Sanchi, India
3rd c. BCA

Stupa represents the body of Buddha, his teachings, and memory. You walk around the stupa. And don't enter. There's no entrance. Stupa is an edifice where inside is out. For you are already in, in this life, this world, this universe. Stupa only reinforces this idea.

Mahastupa's cosmological diagram is set into its plan, in the figure of 'svastika'. Its outer of-space is defined by the outer 'vedika' (porous wrapper) and the paved path. Here, you perform 'parikrama' (circumambulation). You circle clockwise, preparing your mind for the passage into the inner 'parikrama' space. Mostly it's sunny and hot, no much wind, air is good, you hear the chants.

Once you're ready, you enter the 'torana' (portal), leading into the access space where, symbolically, you change your direction, as in the figure of a spiral galaxy. From there, you step into the inner of-space, and move counter-clockwise. You're in the architectural frame, about 3 x 3 m, defined by 'vedika' and 'medhi' (protruding base). The frame leads your consciousness by the path of unison. You hear the steps on the rough pavement, gradually becoming chant, your primary senses becoming dull, you start feeling self.

Sometimes, if you're ready, you walk up the stairs, on to the upper 'parikrama' path, about 4 m higher. Here, above the ground, you're technically in the on-space, between the building and the air, but metaphorically still in the of-space, because stupas are representations of mounds - continuation of the ground. Here, the third 'parikrama' phase is performed around the 'anda' (mound proper). 'Vedika' is lower here, revealing your body to the space. Your egosense, it is intended, will be revealed to you here, as part of the world. Like the stupa is 'an edifice where the inside is out', it enables for your consciousness to step out, and see your body as a stupa, which only strengthen your consciousness. But it is free. Sometimes.

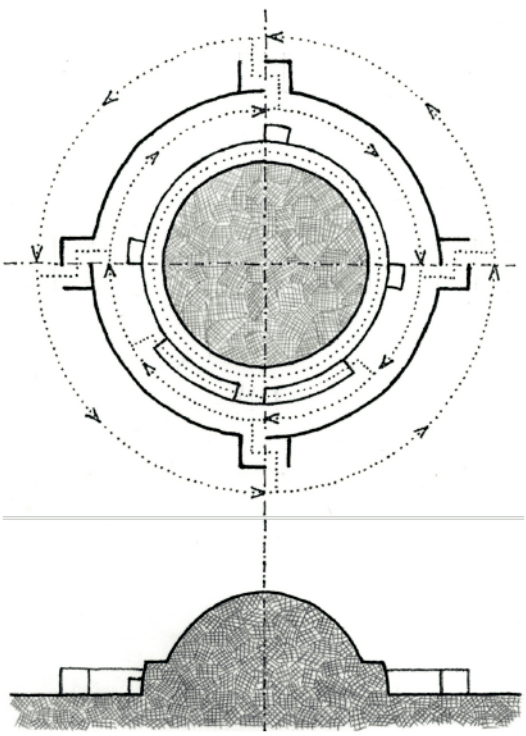

fig. 1.1. *Interpretive plan and section*

Section 1.2. MUSEU DE ARTE DE SÃO PAULO

by Lina Bo Bardi
Art museum
São Paulo, Brazil
1968

Although the plaza under the museum volume is a roof, and thus technically an on-space, from the standpoint of human experience it is a smooth continuation of the ground, from the Trianon park, through the avenida Paulista, and onto the terraço, all in one plane.

Both sub-categories of the of-space meet here: the definite and indefinite of-spaces. The definite one is formally defined by the perimeter of the building raised about 6 m above and spreading 70 x 30 m. You step in it from the avenida and into the public space, from the hot sun or rain into the shade and refuge, from the diffused city sound into the space where the human voice becomes more pronounced. They come here for manifestations, concerts, Sunday markets, views, 'to see and be seen', hear and be heard, think and be thought - it took its place in the minds, as collective personal space.

The indefinite of-space is not formally defined, but it is felt, it flows along the building, intensified by its very presence. Like an invisible orbit that exists due to the object at its center. When we pass from the indefinite to the definite of-space, we know this presence, as noticed by Herman Hertzberger in his comment on MASP: *"when underneath the building, you feel absolutely no sense of oppression due to the immense presence above you."* ('Space and the Architect', p. 106). It might enlarge you, make you stronger, creative.

MASP's of-space is both a frame and a horizon for human to experience oneself through this spatial construct. Here, within the definite of-space, a dialectics between life as it is on the ground and an art exhibition up in the air takes place. It opens the view and the way to the terraço overlooking São Paulo, as a metaphorical ground of possibilities that this great city has to offer.

MASP is an art museum, but the art is your life, it is you. The building provides you with frames and horizons to intensify the possibility of you experiencing yourself in this life.

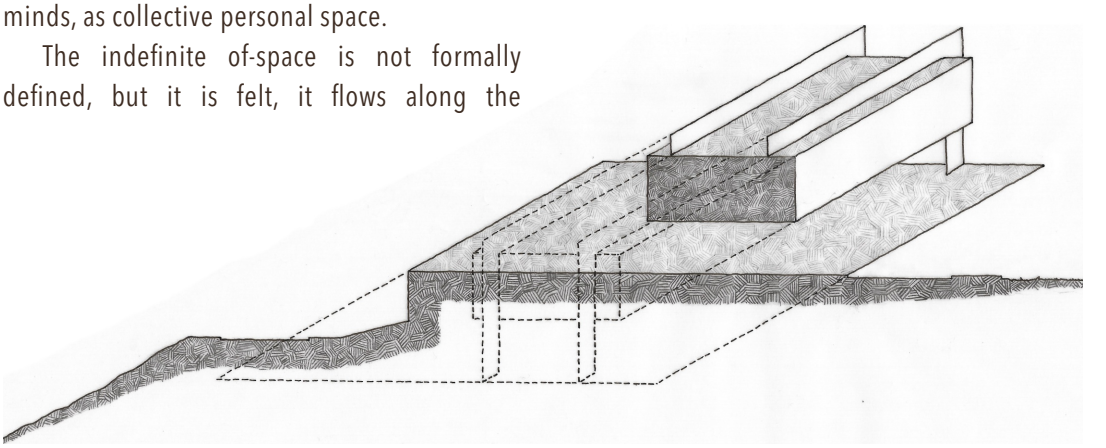

fig. 1.2. *Interpretive section-view*

Section 1.3. ASSICURAZIONI GENERALI TORINO

by Pietro Fenoglio
Office and residence building
Turin, Italy
1909

Between the building and the city, there is a place of common ground - the space of building. Here, within Assicurazioni, it is the definite of-space, formally defined by the colonnaded gallery.

Such galleries are characteristic of the area and the building is part of the system, where it has its place and experiential meaning. The orthogonality of linear movement in the area obtains its focal zone here, where via Cernaia bends diagonally into via Pietro Micca. The only diagonal bend in the area, it doesn't lose the sense of continuity, as does the right angle corner. Yet, it becomes an event on the urban path from Porta Susa to Piazza Castello.

It's a long walk through the gallery on the late autumn evening. Tall and wide, they appear empty on a solitary saunter. No walkers, few cars, and it's quiet, all too quiet, for a central zone. In the warm lantern light, sounds of steps hit the surfaces, punctuating rhythmically the presence of self in this world made by others. Like on the long empty stage. Without spectators. The space of grasping self. Protagonist. In the reflections of the glass façades, through the frames of intercolumnations. Into the perspective.

The definite perspective which inevitably connects beholder with the indefinite vanishing point of one's view. Two centers in predetermined space, referenced by the things and movement. Columns, portals, lanterns, mirrors, smells, sounds, lights, abstract thoughts, concrete ones, thoughtlessness. Static and dynamic spatial elements and beholder's condition become one presence in time. Space of gallery becomes the gallery of thoughts and feelings, available for observation of their bearer as one proceeds along.

Time and space are brought together in movement. Smooth space obtains pace, and time obtains count when met by an event of place. The diagonal bend. You pause. Look around. A spectacle of sight. 'Frozen music'. Held breath. You let go and move on. The melody of architecture flows again. A spatial force, an emotional push of the bent space makes you walk-not but dance. Into the perspective of life, choreographed by the architectural space of building.

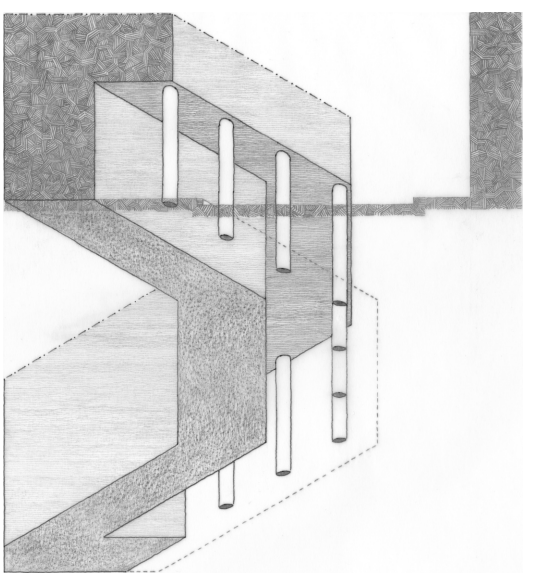

fig. 1.3. *Interpretive section-view*

Section 1.4. AMSTERDAM ORPHANAGE

by Aldo van Eyck
Municipal Orphanage of Amsterdam
Amsterdam, Netherlands
1960

"Make a bunch of places of each house and every city; make of each house a small city, and of each city a large house" ('Steps Towards a Configurative Discipline', p. 2). The Albertian idea, further developed by the architect, is materialized in form of the Orphanage. The house of children and the city of citizens, the structure evolves from the inside-out as much as from the outside-in, creating involved and intricate space of building.

There, within and around, children ones played. Barefoot, on the summer green lawns, they were capturing the sun drops reflected on the wall from the pocket mirrors. Among the moving shadows of the tree branches and leafs. Moving shadows of the worlds around them, and the sun drop of their home.

Indefinite worlds, only felt, not seen, shapeless but present, like the indefinite of-space flowing around the house, bouncing off the projected fronts where the shadows move. Fronts, projected into the indefinite.

Teacher calls them into the yard, it's a group singing class today. For him, 14 years old, whose family died from the war wounds. Tenor. For her, 9 years old, whose mother carried her around the dining room only two weeks ago. Falsetto. For her, 3 years old, who never knew the care or carelessness of parents, she's here since she remembers. This space she will remember. This yard, these voices, these benches, low walls, the swimming pool in the corner, and that bird of black and red high in the tree, hammering the bark. He has his own song. The space of the totality of presence within holistic sensorial and emotional atmosphere of in-and-out. Within the in-between condition of the definite of-space.

Defined by the semi open layout, it's in constant semantic dialogue with its indefinite counterpart. A 'twin-phenomena' space. A home within the world, and world within the home. A realm of living, articulated by the space of building.

The space of awareness of this inconsonant world between here and there, known and unknown, hoped for and real, memories and imagination, waiting and hasting and waiting... for mother to come for children who carry the sun in their pockets.

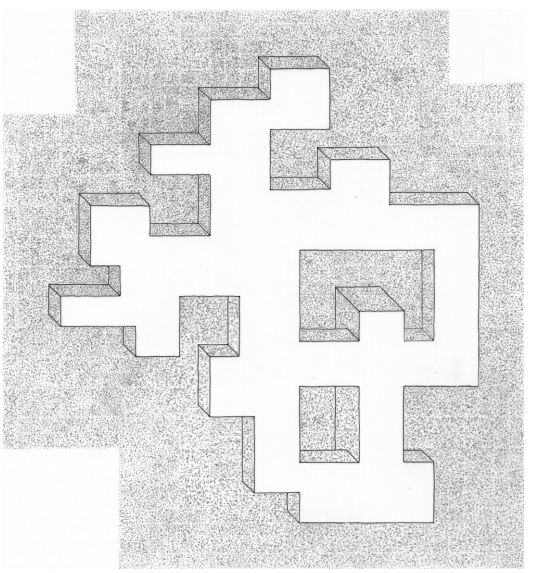

fig. 1.4. *Interpretive view*

Chapter 2:
ON-SPACE

PREMISES

On-space - or space on building - is necessarily related to the building and the air.

The on-space can be experienced through the architectural elements, through the shape of a building itself, or through both. Typical elements of the on-space are balconies and terraces. An example of the on-space generated by the shape is a stepped pyramid, like the Ziggurat of Ur in the present day Tell el-Muqayyar.

At least three experiential dimensions of the on-space are distinguishable. Let us call them the vertical, the horizontal and the diagonal dimensions. These dimensions are conceptually differentiated, because each one of them can be experienced separately. As follows from the name, the vertical dimension includes everything that provides the external experience of the building, starting from the level above the ground and going up until the top. Example of such would be the balconies of a classical façade. Similarly, the horizontal dimension includes everything that provides the external experience of the top of a building. Example of such would be a roof terrace. The diagonal dimension follows all around the building when the top of the building and its sides are morphologically united. The developments at this dimension of the on-space are often recent. Example of such can be the Ribbon Chapel in Hiroshima by Hiroshi Nakamura, or the Lego House in Billund by BIG.

Existence of the differentiated dimensions of the on-space suggests the possibility of the un-differentiated one. Indeed, this dimension would occur when at least two of the differentiated ones overlap with each other. Example of such is the Terrace Housing in Kauttua by Alvar Aalto. In this case, the vertical order is created by the horizontal dimensions of the terraces. Verticality and horizontality are perceived as equals, and therefore their perception blends.

All the dimensions of the on-space may be experienced statically, dynamically or in both, inter-related, ways. The notion of movement underlines these concepts. A balcony of a typical condominium is relatively static on-space, or the pointed one, for the movement in the horizontal dimension it provides is relatively limited if related to the human body. It may still be limited in relation to the in-space of the room, of which it is a separated part. On the other hand, the already mentioned Terrace Housing provides the dynamic on-spaces comparable with both vertical dimension of the façade and the in-space of the rooms.

The inter-related experience of both static and dynamic on-spaces, of both movement and pause, often informs the very morphology of a contemporary building. It offers thus, as much experience on it as in it. Beirut Terraces by Herzog & de Meuron is one such example.

Moreover, the experience of the static and dynamic on-spaces, in any dimension, may be continuous or fragmented. In first case, all the building is experienced on it without necessity to go in it. Such on-spaces are connected in the air. In second case, the on-spaces are disconnected in the air, and are accessible through the internal circulation. The already mentioned Ribbon Chapel and Lego House are good examples of both cases, respectively. Interestingly enough, unlike the morphology, the experience of the on-spaces of these two examples is always dynamic. Dynamic continuous in one case, and dynamic fragmented in the other.

Finally, the on-spaces may be oriented outward, inward, and in both ways, diagonally. In order to illustrate such three conditions let us construct a mental image of a rectangular condominium with one internal courtyard. Let it have the on-spaces distributed all around its shape. Some will be oriented outside, onto the street. Some will be oriented inside, into the courtyard. Let us now open the courtyard on one side and again populate the shape with on-spaces all around. The on-space in proximity of the resulted opening will be oriented diagonally, both inward and outward.

On the sensorial level, the character of the on-space changes

gradually together with the height of its location. The closer we are to the ground, the more sensorial content related to it we receive. The sounds of the environment, its smells, lights, air qualities all remind us of where we are, set the 'proprioception mood'. In its totality, we may sense the environment almost haptically from the low on-spaces.

The higher we go up in the air, the more air-related content we sense. The vestibular system works sharply here. When high enough, even the static on-space may cause the dynamic effect. High located on-spaces, therefore, intensify the senses and emotions to various degrees. Yet unknown senses and feelings may emerge as well. Both conscious and sub-conscious experience of self at the high on-spaces is, as such, unique. Together with broadening the visual and environmental panorama, as well as intensifying sensorial and emotional condition of the beholder.

The sensorial and emotional contents of environment are inter-connected, inter-felt within the on-space, constituting the experiential truth. The height may be fear, the air may be mood, the sight may be vision here at the place of on-space.

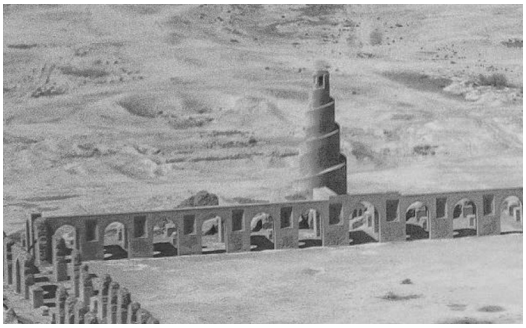

fig. a) © Glen Shackley

fig. b) © Creative Commons

fig. c) © Snøhetta

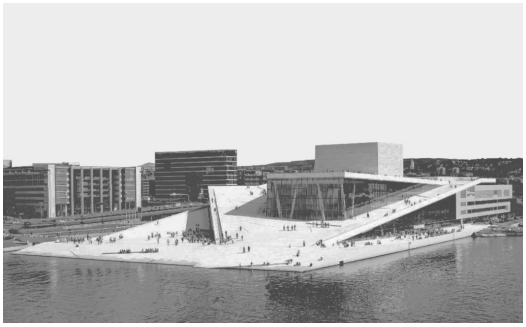

fig. d) © Christopher Hagelund

fig. e) © Sou Fujimoto Architects

fig. f) © Espace l'Arbre Blanc

fig. g) © Richard Copains

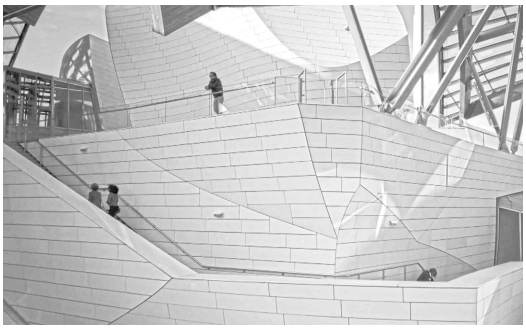

fig. h) © Fondation Louis Vuitton

PLATE 2. On-space / **a, b)** *Al-Malwiya, general view and procession;* **c, d)** *Oslo Opera House, general views;* **e, f)** *L'Arbre Blanc, views at and from;* **g, h)** *Foundation Louis Vuitton, views of the terraces and paths*

Section 2.1. AL-MALWIYA

by Unknown author(s)
Minaret of the Great Mosque of Al-Mutawakkil
Sãmarrã, Iraq
9th c. CE

Al-Malwiya ('twisted'; 'snail shell') minaret, stands on the upper point of the north-south axis of the mosque. The spiral path shapes the structure, providing the space on it. Apart from the small chamber on the top, it is a solid shape.

The axis runs from it through the northen riwaq (portal), than sahn (sky open prayer court), musalla (hypostyle prayer hall), and into the mihrab (niche) in the qibla wall. Together with it, long time ago, spreaded southward the adhān of muezzin, five times a day, calling for the prayer.

It was the muezzin who experienced the minaret's on-space back than. Up he went, the same path at different times: dawn, midday, afternoon, dusk, midnight. The same path at different sky, light, wind, temperature, sounds, smells. Malwiya taught muezzin Samarra. He learned the city from the air of its spiral, as he couldn't from the ground. The space on building is directed outward, communicating with its place, opening it under all the angles. The path is steeper near the top, harder, and the wind is stronger. There's no parapet, just a rope attached to the shaft. A dangerous path to the sky chamber.

There in the chamber, muezzin could rest. Regain his breath, knocked by the path. Clean his thobe from the dust. Remember the words, repeat them. Stand up and make few more steps on the sky terrace. 55 meters in the air, he stood alone with god. People, busy in their courtyards, were reminded of their faith by the potent ariose voice, coming from the sky.

Now, its people who walk the space on minaret. Faithful and less, local and not, but together. They move up and down, holding to those they meet with hands, afraid to fall down, blown by the wind. Fear unites the strangers.

For those who walk it, the space on Malwiya represents the metaphor of life as an act of meaningful movement towards the worthy goal. From the plane to the point by the found path. Dangerous, difficult, tiresome, beautiful, emotional, sensuous. The more so, the further it gets. To the chamber, where body rests and spirit rises, separated. Until the terrace, where feet are firm and soul is high, united. Into the view. Clear. From the space on building.

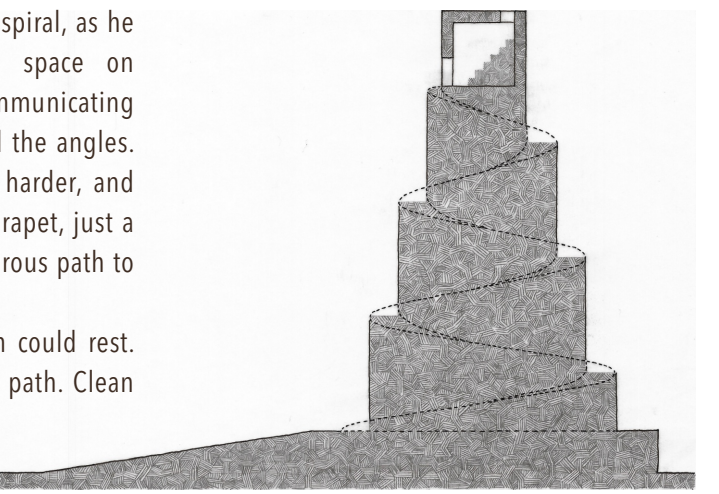

fig. 2.1. *Interpretive section*

Section 2.2. OSLO OPERA HOUSE

by Snøhetta
Opera and ballet theater
Oslo, Norway
2008

A ballerina with long blond hair steps outside the nordic fjord waters onto the marble sloping terrace of the building made just for that ('Oslo Opera House', min. 01:00). She wraps herself in a red towel and barefoot walks up toward the glass shape of the Opera House, between the local strollers and visitors in thick coats. Her wet footsteps will stay awhile after she's not there, provoking the curiosity of what was that. The building emerges from the fjord and slopes up several times until the sky deck. If you don't enter in it you'll have experience like that on it. Most don't enter.

"If you can create something that has a value and an authentic meaning to people, an authentic memory of something meaningful that happened to them, and not just a post-card image, it might allow them to be perhaps more civilized in the world that they exist within.", shares the achitect (Storm, min. 2). An on-space of high experiential potentiality, it gives the possibilities of such happennings. The experience here is emotional. Because of the views. Because of the freshness of the air. Because of the body location on the horizon line, between the water and the sky on the terrace of the building. A total on-space between the building and the air, this is a social place.

Some actors are inside, on the performance stage. And others are outside, on the stage of the sloping terracces of the on-space. All playing. *"Architecture is the tool to create better societies in a continuously developing society per se, in order to make people aware of themselves in the world and [...] try to become better humans through the physical surroundings. [...] I think that we need to be this dramatic, because we see our behavior changing over time, related to the spaces we actually inhabit."* (WIA, min. 3).

Going upwards the slope makes one move slower. A bit harder, and vestibular system is at work. It is the space of balance. Between body and gravity. Self and world. Here is the space of mediation, confrontation, observation.

The ballerina footsteps has dried out and you rise your head looking for the next one to behold. The movement, faces, voices, stone. Maybe now it is your turn.

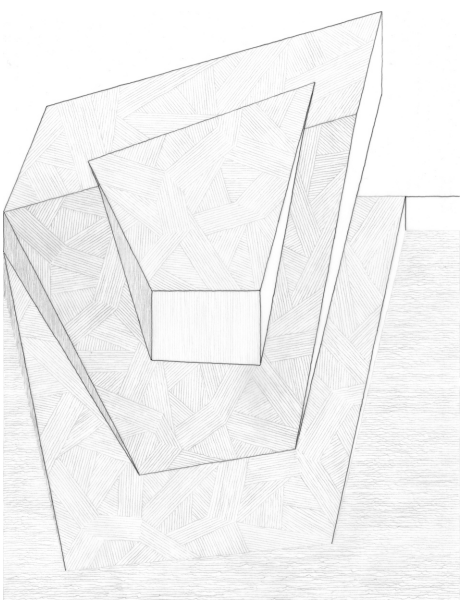

fig. 2.2. *Interpretive view*

Section 2.3. L'ARBRE BLANC

by Sou Fujimoto
Residential
Montpellier, France
2018

The city life of Montpelier often takes place outside, where even banal objects may obtain a charm once touched by soft lemon light of its air. Impressionists appreciated this quality of air and life within it, as show the paintings of Basille and Sisley. This quality was noticed by the architect, as he found his idea for the project in the air of the city.

"The project is based on the city, its beautiful air and good climate, which allows most people there to live half of their time outside the houses. We tried to transform this historical lifestyle of Montpelier into the contemporary high-rise building", explains the architect ('Between Nature and Architecture', min. 60:00). The result is the on-space densely populated with the spatial units for outdoor life between the tower and the city, in the air.

The on-space is developed in vertical dimension, and is composed of fragmented units, in form of balconies, whose size is taken relatively to extreme, some of them are inter-linked by air-stairs in case of duplexes. The air-rooms. The area of balconies is comparable to that of in-space rooms, as much of their use, and the experience provided is dynamic. Their experiential potential, therefore, curiously unites that what is native for the inside with the spatial sensorial content of the outside.

A dining area, a meeting place, a place to read and work can all be there, in light and air of Montpelier. Within the on-space, the usual experience obtains unusual meaning and might transcend its initial purpose. The higher it goes, more so, as gradually the usual senses are added by the vestibular experience of hight, balance and the sense of body location within the city space. There, it may be further added by the sense of pleasurable fear, the brother of sublime, as view of Mediterranean sea above the city expansively presents itself to the canvas of observation.

The housing as well obtains new meaning in presence of the on-space of this kind, as people enter their apartments in order to get back into the air of city life. From the group portraits of impressionists to the impressions of the space on building.

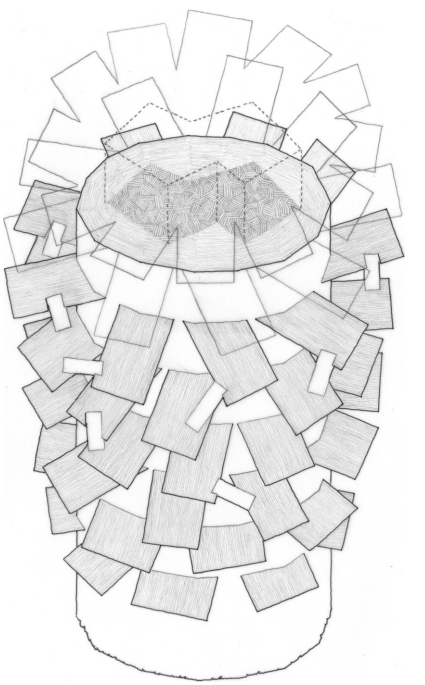

fig. 2.3. *Interpretive view*

Section 2.4. FOUNDATION LOUIS VUITTON

by Frank Gehry
Art gallery and cultural center
Paris, France
2014

Deep in the park stands the glass building, composed of two - one around the other. The in-space galleries and the on-space terraces. *"The glass building would be exuberance, and it would become a part of the park experience, with terraces and places to inhabit the building, while the solid part would engage with that and galleries and would bring the light from the top. [...] The sculptural building under the glass provides for a sequence of spaces on the outside for circulation."* ('Glass Galleon', min. 1:11; 24:00).

The outside spaces on the building can be accessed through many points within the in-space. Here, between the building and the air, the on-space can be experienced. Under the glass 'sails', the visitor goes with the wind, the smells and sounds of the park, sunlight or rain, other visitors, panoramas of Paris across Bois de Boulogne, and the shape of the building itself.

The on-space develops in diagonal dimension, as sides and top of building often merge entwined in paths and terraces around. Movement experience is dynamic and continuous, with many places for both pause and stride cross each other. This promenade is not unlike hiking on the mountain, under these strange parachuting 'sails', whose exaggerated supporting structure reminds of the forest, with many trees and branches, creating magnificent 'crowded intricacy' of lights and shadows. It is a continuation of the park experience but on the building and through the architectural elements. The on-space to discover for what it is, unrelated to the museum, just to be there, dreamy or excited, alone or in a company, but surely uplifted.

Native to on-spaces, full range of sensorial and related emotional contents are accessible through it. Constant exposure to elements, to vistas, and social interaction are happening on the paths. A gallery of life around the gallery art. Between the building and the air.

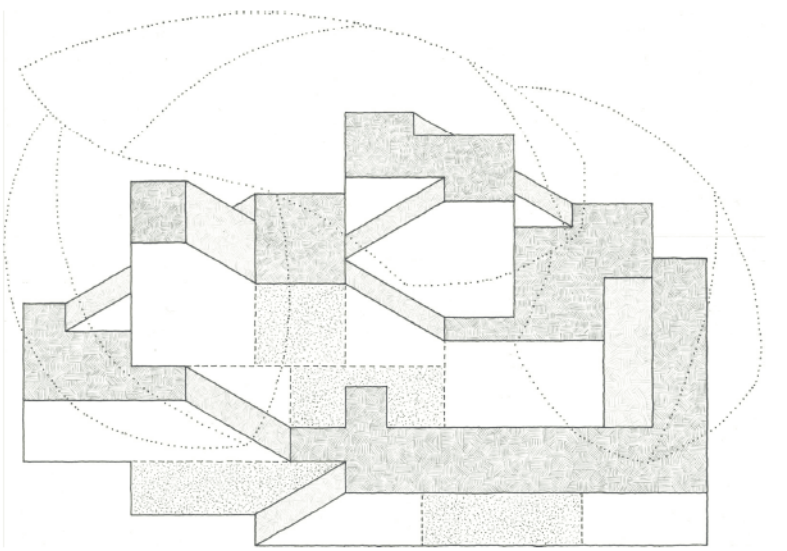

fig. 2.4. *Interpretive view*

Chapter 3:
IN-SPACE

PREMISES

In-space - or space in building - is necessarily related to the building and the building itself.

Human experience takes place mostly within the in-spaces. Statistically, a European citizen spends around 90% of ones life time indoors (europa.eu). It is safe to assert that since the introduction of the settled communities and relationships, the life of societies became increasingly house-bound. Not surprisingly, the production of architectural space has been oriented inward for most of its history. So it remains. So it will. For in-space goes beyond the questions of security and comfort. It is one of the basic human instincts (see 'Opening chapter', section 'Gottfried Semper').

As was learned from the Semperian discourse, the internal space originated as enclosure. Curiously, the same discourse suggests, that the enclosure wasn't total, but was open to the sky. Elements were not enemies, and enclosure was not a shelter. It was a symbolism of human ritual. It can be true for what and where it was. But so were the caves, and so were the dugouts. The in-space always has been a place of in-between the spiritual and practical needs of human being.

Intuitively, the in-space suggests a formal definition. Indeed, the present work deals with the buildings as physical objects of experiential reality. It is worth noting, however, that the internal space may be a completely open space. Such is the space of mind, a mental equivalent of the personal space of room. An in-space could be a place where an early Hindu monk sits and observes. He's in his space, created by his presence, inside-out (see 'Chapter 1: Of-space', section 'Mahastupa'). Therefore, symbolically, space can be expressed as a place. Place, as a space or location of meaning. Although, further enquiry into the 'internal space as the outside presence' would go beyond the scope of present work, it helps to understand that the formal definition of the in-space occurs gradually, from closed one to the open one.

Container is a basic formal definition of the in-space. Completely closed container is the total in-space. An opening in the container gives it some amount of the outside space in general, of-space and on-space included depending on the location of the container. If the opening is transparent but closed, the amount is light as energy, seen visually through the eyes and felt haptically on the skin. Giving emotional feeling of reassurance. As we may know, *"architecture is the masterly, correct and magnificent play of masses brought together in light"* ('Towards a New Architecture'). Unclose the transparent opening and other sensorial content will enter the in-space. Other amounts of the outside. The smell of rain if it rains, the sound of passers by if it's a ground floor, the wind, the sense of time. Other emotions will enter together with the sensorial elements and the in-space will become experientially involved with the world, while remaining itself.

A total in-space may be sensorially deprived, that is lacking the outside content. Which fact may lead to rising of other, less tangible and quantifiable senses, related to self. Within the in-space *"all space is sacred space"*, manifestes Steven Holl (manifesto for 'Ex of IN House'). Though, in most of buildings in-space seeks the outside content, it is arguably true that its 'precious kernel' lies deep within this spatial, sensorial and emotional separation. A total in-space is the space of mind only, a space of self as one is.

On the formal level, it can have any definition. The formal definition can have any level of above-mentioned gradation. That can have any kind of formal articulation. It can provide any sensorial and emotional condition. From complete isolation, to the blossoming of content. Even the notion of space by purpose or association to one can be contested in time and culture. In other words, the infinite variability between the characters and qualities related to the single in-spaces on many levels provide little ground for a feasible classification between them. However, if the in-space is not single standing but somehow connected to another, this would result in the notion of the arrangement order.

The arrangement order of in-spaces is what can be conceptually divided into the general recognisable patterns, acknowledging in

advance that those patterns can be inter-mingled, each time resulting in a new whole not as arithmetical sum but as a unified whole or gestalt. Hereby, three general in-space arrangement patterns are proposed: closed arrangement, open arrangement, contained arrangement. Each of them is related to the reference notions of the air movement and body location.

Closed arrangement occurs when the in-spaces are formally closed to each other and the air does not move freely between them. In-spaces in such arrangement are accessible one at a time by the means of access points, perceived as such, like doors.

Open arrangement occurs when distinguishable in-spaces are formally open to each other and the air moves freely between them. In-spaces in such arrangement are accessible one at a time, through the field of access, that is an access large enough not to be perceived as an access point, or not formally defined at all but rather felt through the very distinction between the in-spaces. The distinction itself is a subject to any number of variables, on experiential and formal levels, as might be a particular light condition, formal definition, presence of a certain object or a certain event.

Contained in-space occurs when one in-space is contained in another and the air may or may not move freely between them. In-spaces in such arrangement may or may not be accessible one at a time because of the possibility for a beholder to be located simultaneously in two distinct in-spaces.

On the experiential level, in-space acts as a powerful catalyst of inter-personal and collective relations. It can be a social arena or a private chamber. It can be the most secular and the most sacred of spaces. The collective in-space shows us our social group and our place in it. The private in-space is capable to explicitly demonstrate us who we are as individuals. See through the game. For the solitary in-space is a place to find yourself.

fig. a) © Kirk Kittel

fig. b) © Gopan Nair

fig. c) © Fernando Guerra

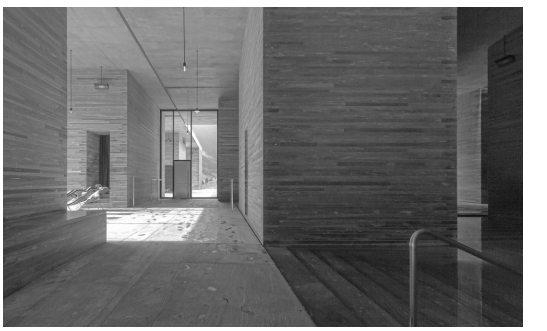

fig. d) © Kazunori Fujimoto

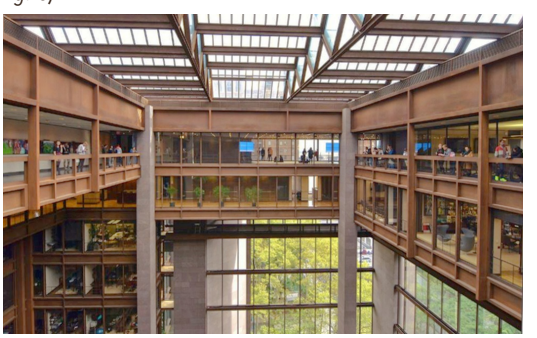

fig. e) © Gigi Brooks

fig. f) © Ford Foundation

fig. g) © Paul Warchol

fig. h) © Iwan Baan

PLATE 3. In-space / **a, b)** *Vihara n.2, views across and in;* **c, d)** *Therme Vals, views in;* **e, f)** *Ford Foundation, views in and across;* **g, h)** *Ex of IN, views of and in*

Section 3.1. VIHARA N.2

by Unknown author(s)
Part of the Ajanta Rock-cut Sanctuaries
Aurangabad, India
5th c. CE

The ideological basis of this early Buddhist type coincided with its production method - chiselling out the existing material, as if removing everything unnecessary and revealing the essential. The sanctuaries, built for the settled monks needed to correspond to their religious values, which major emphasis was set on the individual inner discovery.

At Ajanta, 'parikramas' (circumambulation) are performed inside Chaitya-grihas (a temple type), while monks live and learn in Viharas (a monastery type). It consists of verandah, peristyle, cells, shrine, votive chambers, vestibules, and shrinelets. All distributed in a square plan, symmetrically along the central axis connecting the access zone with 'garbha-griha' (sanctum sanctorum).

A monk's cell is total inspace. A room, roughly 2.8 x 2.8 x 2.4 (h) m, with one entrance point. Deep in the rock. It's black dark, somewhat cold, wet, with piercing acoustics and unusual smell, not known outside. A monk is in there. He thinks and observes his own thoughts, from his within he reaches out, he's letting go, he's in the world. Time matters not. He meditates.

Total inspace provides a condition for a monk's self-world reflection. It is easier here than under the tree. The inner sanctorum of cell is a space that mediates a monk's meditation.

He walks into the hall and shares his experience with other monks and students. It is half lit with light diffusing from the door and windows openings. It is different here - it is warmer, smells with the outside, sounds are softer, there are paintings, sculpture, it is visually rich, there's a deep formal spatiality, spreading through the columned linings into the ambulatory and further into the shrinelets and shrine. It has body and time matters here.

The hall provides for body senses and human contact. The cell is a space of mind.

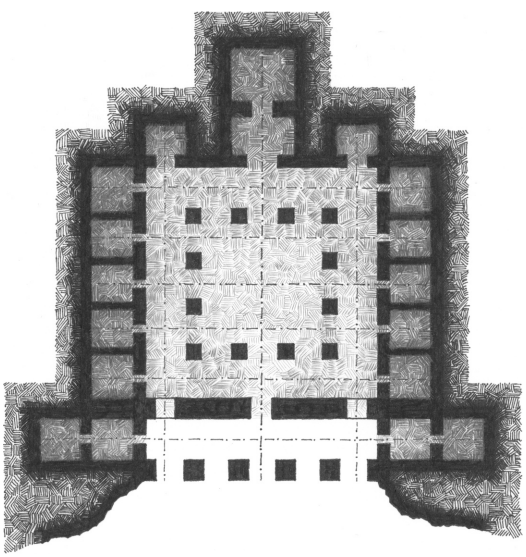

fig. 3.1. *Interpretive plan*

Section 3.2. THERME VALS

by Peter Zumthor
Thermal baths and therapeutical rooms
Vals, Switzerland
1996

The building grows from inside the rock. Not accessible from the outside, it is part of the hill as an outcrop, silently present in landscape.

Dark and glossy tunnel provides access under the ground. It leads into the spatial room-field of shapes 'brought together in light'.

It is a non directional field, inviting for a stroll. People are heard there, not seen yet. The voices and sounds of water fill the warm and arid air, echoed from the stone surfaces. So is the daylight, glimmering into the darkness of the rock with golden waves. Behind the blocks there's an indoor pool filled by the hotspring, other visitors, other blocks, and more light.

Surrounded by the meandering stone monoliths, one observes a familiar but never before seen world. Maybe from the books, the myths. As if built by giants, or geology itself, it has primordial, atemporal character. *"Because this is what I wanted to achieve"*, says the architect ('Long Interview', min. 07:50). In the atmosphere where reality meets myth, bathing returns to its roots as a ritual. In all times - purification of body and mind by water.

Each monolith provides a specific bathing ritual. Flower bath filled with golden petals, red fire bath, blue ice bath, sound bath as a tall cavity resonator are all amplifying the sensorial capabilities of body through relative material and atmospheric qualities. Human in scale, these in-spaces are sensorially attuned to individual embodied experience, providing the possibilities to empathically become part of them, imbued into haptically emotive therapy.

Together with the space in building, the bather gradually emerges from the stone into the light source, still unrevealed. Couple more blocks, corners, and suddenly one falls into the view of sweeping mountains, pastoral hillsides, and valleys, dissolving in the distance. Emotional culmination of spatial sequence.

"I want an emotional reaction. [...] You can correct an intellectual opinion, but there's no way to correct the feeling." (Zumthor Interview, min. 35). Both embodied and spiritual emotions are densely arranged into the spatial composition. Yet, it is graceful, with harmonies, contrasts, intervals, and overwhelming revelation. After all the movements, there you stand, almost naked, facing the horizons and white peaks of life, rejuvenated from within the space in building.

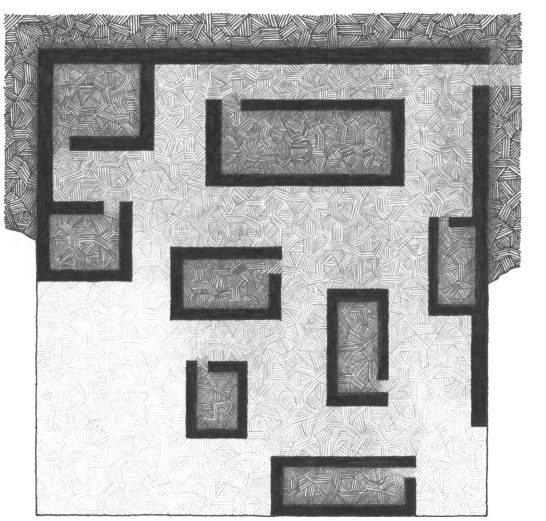

fig. 3.2. *Interpretive plan*

Section 3.3. FORD FOUNDATION

by Roche Dinkeloo
Office building
New York, USA
1968

"I always felt that there ought to be some way to enrich the lives of people working in the offices. And I always had a tremendous sympathy for those people. Eight hours a day there, than you're dashing to get home and kind of descending the next day." ('Kevin Roche on Ford Foundation Building', min. 00:30). The empathy of architect informs approach to spatial conception, where people would be engaged with more than a work-space but life-space of contemporary urban culture.

The in-space is arranged in closed order, where transparent offices are stacked vertically and face the common space with the garden, wrapped in glass. *"It would do two things. It would give an open space, a relieve space. It would allow people to see each other across the way to reinforce this community idea. Another thing that we hoped to do was to have the garden open to the public."* ('Renovating the Ford Foundation', min. 01:20). The glass atrium, wrapping two sides of the building, visually connects all of its interior to the outside.

Big city life on the 42nd street runs by, as the East river calmly flows its waters in the backdrop. And children are jumping in the playground on the left. Everything paces in its own way and for its own reasons. Everything meets through the in-space of the atrium, in the eyes of the people who are working in the offices. As well, for their own reasons, around a common space.

People from the street are coming in the terraced garden. They enter into sunlit enormity of space. It is filled with smells of plants, flowers, and sounds of running water, from the fountains in the pools. It is grand and one looks up from the garden. On the floors of moving people in the offices. A place to stroll, pass through, observe, to make a sketch. An urban pause, an office pause.

Big enough to diffuse the emotions, tension of the office hours. Small enough to be a private space. In the shade of eucalyptus tree. The in-space of the building provides the places for life in all her facets.

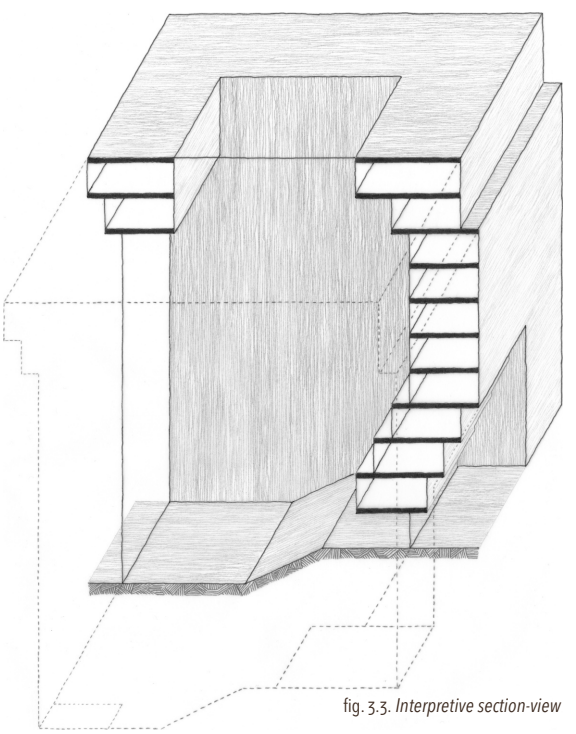

fig. 3.3. *Interpretive section-view*

Section 3.4. EX OF IN

by Steven Holl
House
Rhinebeck, USA
2016

"The house explores a language of space, aimed at inner spatial energy, strongly bound to the ecology of the place", states the architect's description (steveholl.com). Part of the studio research into the inner space of architecture, the house stands as a manifesto for abstraction as the cause of architecture.

The in-space is arranged in open order, defined by shapes, objects, and sensorial spatial content. Of which one dominates. Light. *"So, leave it to a man, who builds a house to try to put the sky right on the ground"*, architect cites a poet ('Ex of IN House', min. 01:00). The light of cardinal directions and the sky light all have their ways. Coming through the large spherical cut-outs in the shape of the building, the different kinds of light fuse into one dynamic spatial order, changing in time.

If space is a language, as was intended, than the shape and light must be its verbs. Together with shapes, light in-forms purposeful spaces by architectural suggestion rather than indication. Suggestion engages, indication dictates. There must be an entrance in the half-tone of the concave shape. I'd like to stay there in the angle of the spheric light. Observe, read, think. Body tends to where it feels, instinctively. Abstraction valorizes the act, and gives meaning to non-action. Through the engagement of being in space.

"You work with your spatial idea, with the spatial excitement, and you find how the functions work. [...] This house has zero bedrooms, but it sleeps five.", says the architect (Ibid., min. 03:00). A guest-house, an experiment in de-functionalization as a measurement of spatial potential, this building proves it real. Here, the tagline is reversed and the 'function follows form', while the form follows the light, creating the space of rich experiential possibilities.

An engaging space becomes emotional as it arises the sense of discovery. Curiosity and instinct lead the body through space until it finds its place of meaning. Poetic spatial atmosphere, achieved through the intentional abstraction, provides the stimulating dialectics between the state of space and space of mind. A dialectics of experiential self discovery within the space in a house.

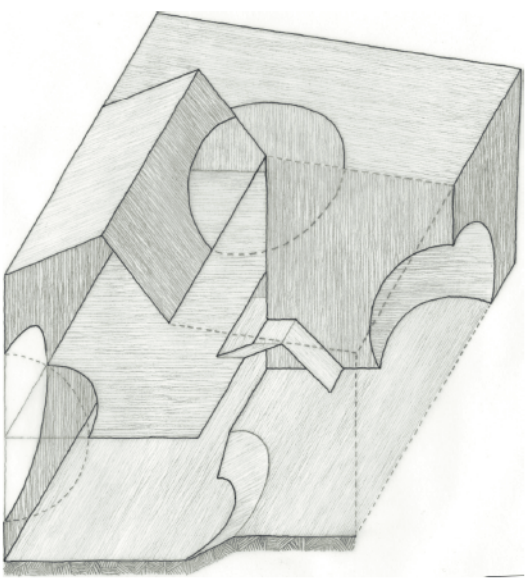

fig. 3.4. *Interpretive view*

Chapter 4:
INTER-SPACE

PREMISES

Inter-space - is a single space where the inherent characters and qualities of at least two of the differentiated sub-categories overlap. It is un-differentiated but composite sub-category.

Let us relate by convention in present work the notion of 'character' to the formal definition of a given spatial sub-category, and the notion of 'quality' to its sensorial and emotional content. In order to constitute an inter-space both notions must be present. For example, an of-space may have strong formal character of the in-space, but if it is not enclosed than its sensorial qualities remain those of the of-space. It is than what it is by its own definition but only with some degree of character of that another space.

The level of gradation of each notion differs from case to case, and it may often happen that the overlapped space has more qualities than characters of the overlapping one and vice versa. Moreover, the very gradation of characters or qualities may differ and does differ together with gradual changes of formal definition and amount sensorial content, respectively. In order to illustrate this phenomena, let us construct a following mental image. Imagine a section of the building in the area of its covered arcaded passage (further 'arcade') at the ground level. The arcade defines the of-space. On one side of the arcade, there is a lush garden. On another side there is a restaurant on two floors. There is no wall between the restaurant and the arcade. From the depth of the interior, the tables gradually emerge until the very arcade. The visitors deep inside would be in the in-space as it is, while the visitors at the border with the arcade would be in the in-space with very strong qualities and somewhat less strong characters of the of-space. Gradation will happen between the locations in the depth and at the border. There as well, it will further happen between the locations on the ground and on the first floor.

The question than arises of how to distinguish which space overlaps and which is being overlapped. It is easily resolvable once

the basic definitions of the differentiated spatial sub-categories are applied in relation to the location of beholder. If one is located between the building and the ground, one is invariably within the of-space. It than can have, for instance, some formal characters and sensorial qualities of an in-space. Same applies to the other two differentiated spatial sub-categories.

Finally, we are able to introduce six basic, or 'archetypal', conceptual configurations of spatial sub-categories.

1) Of-space with in-space characters and qualities.

2) Of-space with on-space characters and qualities.

3) On-space with in-space characters and qualities.

4) On-space with of-space characters and qualities

5) In-space with on-space characters and qualities.

6) In-space with of-space characters and qualities.

The resulting configurations may be further configured, producing continuously a new complex whole, which may be further definable in terms of relational phenomena case by case.

Additionally, it is theoretically possible for an inter-space to have characters and qualities of two differentiated spatial sub-categories overlapping instead of one. This will result in additional three configurations: 7) of-space with in-space and on-space characters and qualities; 8) on-space with in-space and of-space characters and qualities; 9) in-space with on-space and of-space characters and qualities. In practice, these configurations might seem harder to distinguish. In order to do so, the basic definition of the spatial sub-categories must be applied in relation to the location of beholder and in relation to the notion of dominance of one of three references: ground, air and building. Parkrand in Amsterdam by MVRDV is the example of the 8th configuration. Here, inside one of its characteristic voids, we are within the

space which relates to both the building and the air, however the air's presence is quantitatively more dominant. At the same time, we are located relatively low near the ground surrounded by enormous shapes of the building. Hence, we are within the on-space with strong of-space and in-space characters and qualities.

On sensorial and emotional levels, by their very definitions, the inter-spaces are relational spatial entities. This gives them the highest amounts of sensorial and emotional potentialities among the four spatial sub-categories by the way of combination. One can sense the environmental air movement and feel the intrinsic comfort of home when situated within the on-space with in-space characters and qualities.

On the experiential level, similarly, the relational nature of inter-spaces provides high amounts of experiential possibilities. One can experience a social interaction intrinsic to the in-spaces when situated within the of-space with in-space characters and qualities.

Inter-spaces are becoming increasingly widespread constituents of contemporary architecture. Such buildings as 60 Richmond Housing in Toronto by Teeple Architects, or The Six in Los Angeles by Brooks + Scarpa are among many buildings constituted with the use of inter-spaces. At the same time, traditional elements and units become less recognizable and the borders between them fuse. In this process, the architectural semantics gradually obtains new entries not yet defined. In a state of art where meanings often exist without names, the relational notion of the inter-space may be useful as a contribution into structuring of understanding of the formal definitions.

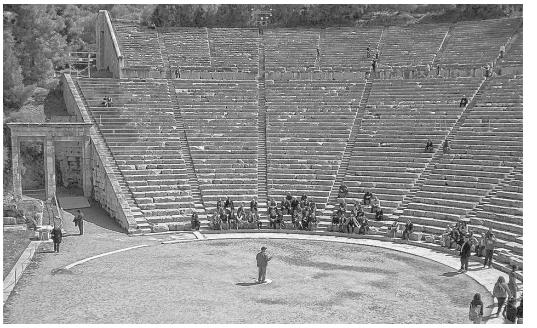

fig. a) © Roberto La Forgia

fig. b) © Demetrius Hillsdale

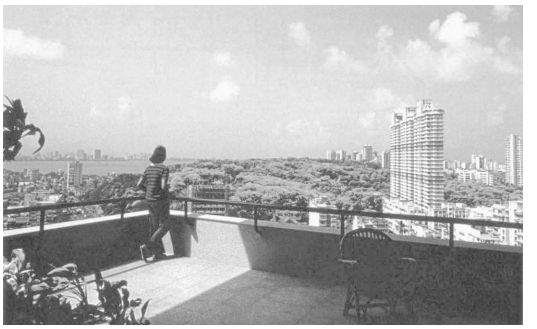

fig. c) © Hasan Uddin-Khan

fig. d) © Hasan Uddin Khan

fig. e) © Valerio Manassero

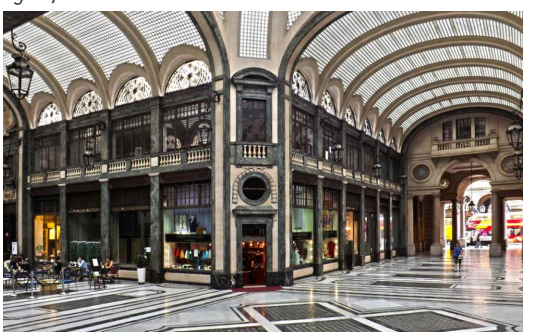

fig. f) © Giovanna Dalberti

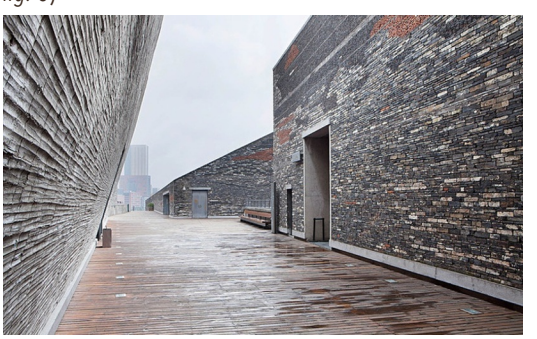

fig. g) © Iwan Baan

fig. h) © Tom Serkis

PLATE 4. Inter-space / **a, b)** *Theater of Epidaurus, view in and at;* **c, d)** *Kanchanjunga Apartments, view in and from the terrace;* **e, f)** *Galleria San Federico, views in and from;* **g, h)** *Ningbo Museum, deck and general views*

Section 4.1. THEATRE OF EPIDAURUS

by Polykleitos the Younger
Greek Theater
Epidaurus, Greece
4th c. BCE

Three differentiated sub-categories meet within the single space of building. Here, it equally relates to the ground, air and itself. Theatron as the shape of ground, orchestra as the interiority, are set into the open air, as the stage of life. In here and far beyond. We are within the inter-space of building.

It was part of Asclepeion, a healing complex. Interpretation of dreams in Abaton, hotspring bathing in Thermai, shock therapy in Thymele were among the program (warwick.ac.uk/Epidaurus). So was the dramatic play experience in the Theater.

Theraupeutical effect, as part of the theatric experience, was to be achieved through both the sensorial output of the performance and its very story. Greek tragedies often dealt with reversal or overcoming of the fortune by the protagonist, provoking strong dramatic emotions, like pity and fear, resulting in a cathartic experience, with subsequent psycho-emotional purging of beholder (auth. after Aristotle's 'Poetics'). At the same time, the musical accompaniment, through the acoustics, affected one's body as well. Acting profoundly on both body and spirit, the theater building, at the time of performance, provided the holistic physical and emotional atmosphere of improving the collective human condition of the Greek society.

Today, the theatric plays have changed, together with the meanings, instruments, sound-light effects, genres and the spectators themselves. Spiritual emotions are not collective anymore. Neither is the myth. Constructions of human mind last less than that of architecture. Emotional constant is directed towards the perennial characters and qualities of surrounding nature.

In sweeping green waves, natural spatial matter gravitates towards the open theatron. Its grandeur, perspectives, freshness, timelessness are directed into the beholder by the building. Amplified, they resonate with one's bodily-spiritual emotions, like the frequencies of human voice with the shape of piered klimakes. All at once, human being and nature are united within the edifice of their mutual labour. Emphatically, the most sublime characters and qualities of nature begin to be projected back into it, from within the human being as from the center, mediated by the building.

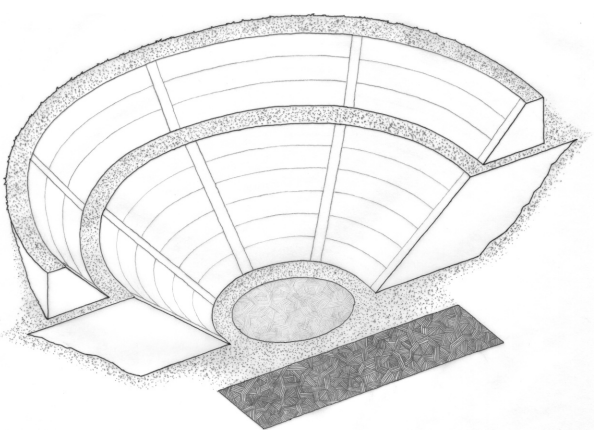

fig. 4.1. *Interpretive view*

Section 4.2. KANCHANJUNGA APARTMENTS

by Charles Correa
Residential
Mumbai, India
1983

"I think that architecture is a sculpture, but with the gestures of human occupation.", shares the architect ('My Work, My Thoughts', min. 17:20). A tall stone monolith is sculptured by the spaces chisled out along its corners. A mixture of a terrace and a room, they are the spaces in-between. The inter-spaces, configured from the on-space with in-space characters and qualities.

The on-space dominates for it is open outward and shares the air and wind with the city where it stands. The apartments inside have several levels. They are fronted by inter-spaces, which idea is inspired by the spatial unit of veranda in an indian colonial bungalo ('Charles Correa Lecture at RIBA', min. 09:00). Protecting the inner spaces from sun and rain of the outside, verandas mediated between the two. So does the inter-space, with full sized trees and plants, not only it protects from the elements but thrives on them, as a sky garden.

The in-space character is found here in the room-like proportions comparable to those inside, and its qualities are found in the experiential possibilities that the space offers. Everything that one might do inside the house could be done here and more. A space for social meetings, a living room, a dining room, a studio, a billyard room - the assumption of the roles. De-functionalized. For the space has no programmatic function as its reason but a spatial purpose of living in a house and outside of the house at the same time.

Therefore, the inter-space combines the security and comfort of a room, with the sensorial content of the sky terrace. The breezes coming from the Arabian sea, its wide angle panorama over the metropolice, the rustle of the leafs moved by the breeze in trees, the screams of gulls and noise of cars, sirens all fill the inter-space at once, as you turn the page of the afternoon novel sitting on the sofa in the shadow of the upper floor. Mixed emotions in the space of mixed qualities.

As the city densifies and the inside multiplies, the open space becomes the limited resource. Here in the shared space, between the city and nature, the answer may be found in meeting of the two. A sculpture of the human occupation with the natural gestures. Big city life in the small garden-room, within the inter-space of building.

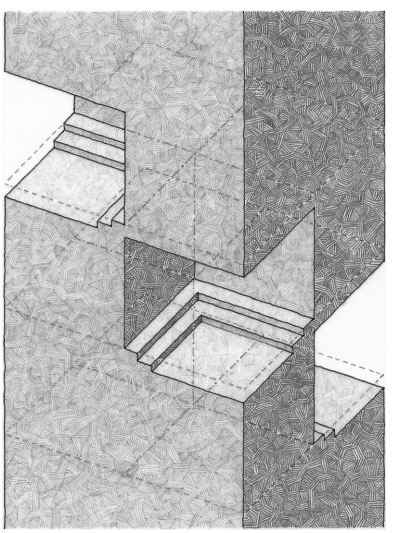

fig. 4.2. *Interpretive view*

Section 4.3. GALLERIA SAN FEDERICO

by Eugenio Corte, Giovanni Canova
Commercial gallery
Turin, Italy
1933

Inter-spaces have been part of the urban culture since a long time. Some of them developed into a morphological type, a type by use or both. Such is the case of a covered street, known as the gallery. Changing somewhat in shape and obtaining different characters and qualities of spatiality, it is based on the same idea of pedestrian street and accommodate public life in a condition between the city and interior. Here, stands the inter-space, between the building and the ground, it is configured from the dominant of-space with strong in-space characters and qualities.

As one moves in the of-space of the arcaded street, the building splits in two and welcomes in between. One enters in and yet continues walking on the street. Under the roof of glass, along the shops and restaurants, and cinema within, one's in the city room while on the city street.

The character of in-space is given by proportion. It has a human scale, not overwhelming one. The place is not too high and not too low, not too long, as wide as tall. It is arranged in open order, from the formally distinctive parts, which break the street-like monotony and create a formal spatiality. The parts are related to the entrances, the galleries proper, and the central intersection zone.

The qualities of the in-space are given by the use and by sensorial content, native to it. At the same time, the of-space content is omnipresent. The tables of the bars are scattered on the pavement, or it is floor. Over-the-coffee chatter fills the space between the marble walls, fusing with sounds of cars and city noise. It's warmer here, but most prefer to keep their hats and coats. The smells are soft and sweet, but the air is that of the street. A place of meeting, staying, waiting, arriving in. As much as leaving, passing through, be on the way, it is a place of momentarily pause in urban movement.

A personal space of public nature, a city offering, here one might experience self, as part of community and individual within it.

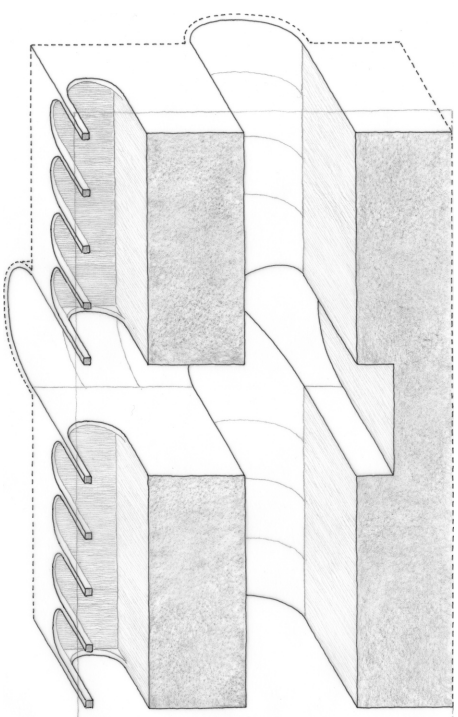

fig. 4.3. *Interpretive view*

Section 4.4. NINGBO MUSEUM

by Wang Shu
Museum of History and Tradition
Ningbo, China
2008

"There had been 30 thirty old villages around the area, 29 of which were completely demolished. This was a place with almost all memory erased. What I did carries a sort of connotation. From solid rectangle it grows upward, where the building starts cracking, like a mountain in the traditional painting. The shapes between cracks resemble faintly the buildings, as an abstract representation.", explains architect ('Wang Shu's Philosophy of Architecture', min. 11:00). Walking through the cracks between the shapes, one may feel like walking in the streets of memory of a lost village.

Here, one is on the building while walking between other buildings. One is within the inter-space, between the building and the air, configured from the dominant on-space with strong characters and qualities of the of-space.

The on-space develops in horizontal dimension on a platform, a traditional dimension of Chinese architecture, exemplified by the royal palaces. It is continuous and dynamic, as the allegorical streets flow one into another, giving access into museum spaces. Between the shapes we walk, sometimes disoriented, as thread of memory gets often lost in the past. We stumble upon the stairway that leads from nowhere. A stairway from the lost memory into unfounded now.

The sensorial and emotional content is that of in-between the air and the ground, the future and the past. Exposed to elements, we smell the modern city in the museum. It envelops us haptically as shapes are made of ashes of lost villages. Within the on-space we are absorbed into the presence of past buildings, emanated through the indefinite of-space of the metaphoric streets.

Observing between the shapes of ghostly village the modern glass skyscrapers, framed by them, one may perceive the culture in time and one's place in it. This inter-space provides the experiential possibilities for a human to observe oneself at the horizon line, between the air and the ground, between the future and the past in present world.

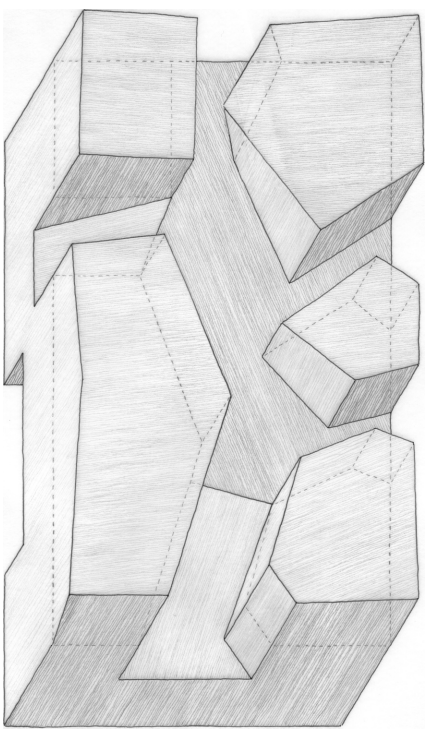

fig. 4.4. *Interpretive view*

Chapter 5:
SPATIAL RELATIONS

PREMISES

Space can be considered as a relationship. Between objects, events, and other spaces defined in variety of ways.

Following the observation of the parts, we may turn our attention to the whole as constituted from the parts in this final chapter. Spatial sub-categories are the parts and any building is the spatial whole. Therefore, any building would be a valid entry into this chapter. Here are some buildings that differ in their spatial arrangement and relations.

Let us consider under the notion of spatial arrangement that which describes the location of the distinct spatial entities, their sensorial and emotional contents within the spatial whole. Under the notion of spatial relation, in a complementary manner, we understand the particular state of affiliation between those distinct spatial entities, their sensorial and emotional contents within the spatial whole.

Although only one spatial sub-category with its gradations is enough to produce spatial arrangement and relations, such situation was observed in the previous chapters. At this point, at least two distinct spatial sub-categories are required to conclude the enquiry. The more spatial sub-categories participate in the arrangement, the more relations might be created, the more sensorial and emotional content might be produced, the higher experiential potentiality can be achieved.

On formal level, no matter how the entities of the spatial sub-categories are arranged, it would necessarily produce a certain presence of a building, immediately grasped through the in-definite of-space. Further one enters the arrangement, one also enters the spatial relations. Formal relations may produce a certain formal energy, felt through the space. Convex surface has a reflective force, it pushes the space out. Concave one absorbs the space, pulls it in. Relations and articulations of the formal

definitions create spatial dynamics, choreograph the spatial movement. They create that distinctively formal spatial feeling, enveloping, almost haptic, spatial sense.

On the sensorial level, all the complex of human senses may participate in the experience of the spatial whole. Some of them may be constantly involved and some occasionally. The sensorial content may be deliberately chosen as part of the project, with some of it brought forward and some softened down. The gradations of the sensorial content may very by places, changing the intensity of its presence. In other words, it can be part of architectural composition in the same way as shapes are. Furthermore, it can provide experiential links between the shapes, creating a more inclusive composition where environment is part of it, as if one of the building blocks. Example of such sensorially inclusive architectural composition is the Moriyama House in Tokyo by Ryue Nishizawa. Here, the in-spaces are arranged separately in the garden which becomes the circulation of-space.

On the emotional level, similarly, spatial relations are capable to produce a more complete emotional whole. Different parts of the whole may have different emotional character. As well as being the result of composition, emotional content may inform the form of the composition. Some parts of it may have neutral emotional presence, some may have more pronounced. The whole may have a general emotional character or a differentiated one, consisting of many emotions. Emotions can be light and consorting or deep and profound. Such are emotions within the in-space of the Chapelle du Rosaire de Vence by Henri Matisse. When English art critic Alastair Sooke entered it for the first time in order to analyse its space, he soon found himself in tears overwhelmed by emotions ('A Cut Above the Rest', min. 16:00). It was a small space of immense emotions.

The relations between senses and emotions within architectural spaces participate in creation of architectural atmospheres together with all other categories, as form and materials, without which consideration it would be difficult to speak more of atmospheres. As with emotions, however, atmospheres need not

necessarily arrive as consequence. They may also arrive before and be the intended basis for a building as integral part of the process from conception to execution. Such are the works of Peter Zumthor who seeks to create 'atmospheres of lived experience' more than anything else ('Atmospheres', p. 16).

There, in-between the spatial relations occurs the experience of the human being as continuous relational phenomena. Bodily sensorial experience and emotional mental experience becomes one existential experience where architectural spaces play their silent mediative role. A role in the story of human existence, of individual life, taking place within the spaces of building.

fig. a) © Kurt Hultquist

fig. b) © Richard Schooler

fig. c) © The Rolex Learning Center (min. 02:00)

fig. d) © The Rolex Learning Center (min. 12:20)

fig. e) © Norimaki Parale

fig. f) © Geoffrey Bawa Trust

fig. g) © Alvar Aalto Foundation

fig. h) © Anders Bengtsson

PLATE 5. Spatial Relations / **a, b)** *Fallingwater, general and entrance views;* **c, d)** *EPFL Learning Center, public circulation area and interior;* **e, f)** *Bawa House, living room and garden;* **g, h)** *Aalto Studio, views from studio and from garden*

Section 5.1. FALLINGWATER

by Frank Lloyd Wright
House
Mill Run, USA
1935

"The sense of space... Nothing is more important. And that is the sense of the new architecture - the space within, becoming a reality of the building. And the roofs and the walls taking place accordingly. That's the new thought, that we call Organic Architecture, to which I dedicated my life." ('The House On the Waterfall', min. 01:00).

The famous house on the waterfall unites all three differentiated spatial sub-categories into one unified spatial whole. Its connection to the ground occurs through the definite of-space, formally defined by the shape of building, cascading in plan by following the natural rocky outcrop of the hill. Here, in the cascades, one finds several entrances from the ground into the building. The space on building is generously offered through the terraces, expanding into the lush natural environment. The in-spaces are differentiated into those of private and collective nature.

Additionally, the building provides a small inter-space in curious location. It is a platform stairway, hanging from the in-space just over the water of the Bear Run mountain stream. Located above the ground in the air, and under the building, this is the inter-space configured from the on-space with of-space qualities and characters. It closes the circle of physical integration between the house and all the elements of its natural environment.

All spatial sub-categories are inter-connected but remain clearly differentiated. Spaces are arranged in closed order, open in visual sense. Each in-space is supported by the dedicated on-space. Separated by the enclosure of the glass, each pair is located at the same level. The principle of differentiation continues within the in-space. Leisure time, rest, and learning all have their dedicated places, and therefore the experiential potentiality is also structured by the spatial arrangement.

From outside to within and outward again, human experience is immersed into the sensorial content relative to all three sub-categories, one by one. The house, therefore, provides total sensorial experience within the natural environment, in a clearly articulated spatial unity of differentiated sub-categories.

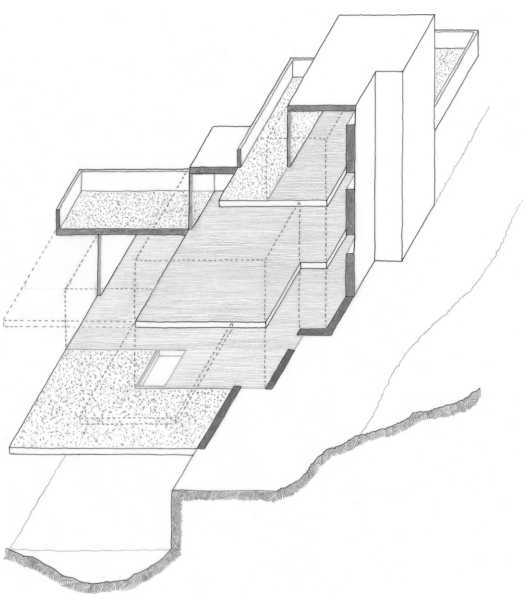

fig. 5.1. *Interpretive section-view*

Section 5.2. EPFL LEARNING CENTER

by Sanaa
Multi-purpose
Lausanne, Switzerland
2010

The building is free standing on the lot. Indefinite of-space flows around, filled with the place - its air, light, wind, sounds, smells permeated by lake Geneva. The building's presence is intense but mild and inviting, as its calm undulations.

The of-space is defined by undulations. It is a public space. The sounds are diffused in all directions, amplifying the voices. The landscape is inverted here. The concrete hill sweeps over, the ground is flat as a slab. Spacious, dark, glossy, noisy space, set into the light and calm.

The light-yards change the qualities of space. Penetrating and illuminating the dark on a bright day, this light almost transforms into a solid shape. A light-room with benches and tables. It is warmer here, sky-open but quieter. The inside access points are also here.

Once in, we are in the landscape of hills, valleys and light. A dynamic curved space, curving time - slower in the valley, faster down the hill. No indications but discovery, no limits but horizons. The in-space of emptiness, rich in potentiality, providing for events and experiences. Space between events. Some programmed. Auditorium on the hillside. Library in the valley. Lake view from the summit. Some accidental. Meetings, observations, epiphanies. In the infinite number of paths and horizons there is infinite number of intersections and visions.

"For us it is not a question of empty space. It's a space of exchange when people meet people. [...] The function of a space is often transformed by the way the people use it. It is for people to invent the use. The more freedom they have, the more they use their imagination, more than one function may come to life." (Rolex Learning Center, min. 15).

The body is always engaged and its dialectics with mind is high within the spaces of the building. The sensorial contrasts within the of-space are acute. Inside, the landscape is emotional, but the way to those emotions lies through the physical act of climbing up and down the hills, experiencing the muscular sense of balance and spatial proprioception. Once there, through the effort, the landscape of possibilities opens up, and all the paths into the spectacle of life become apparent at once.

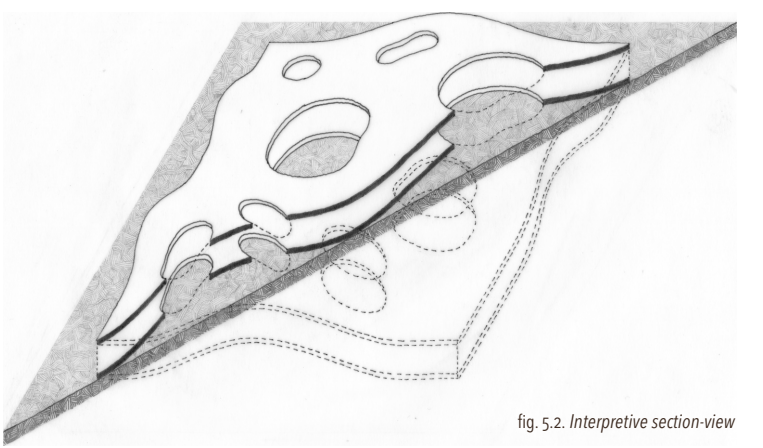

fig. 5.2. *Interpretive section-view*

Reading 5.3. BAWA COLOMBO HOUSE

by Geoffrey Bawa
House
Colombo, Sri Lanka
1960-1970

"Architecture should play to all the senses – the smell of vegetation after rain, the sound of birds and the wind in the trees, the texture of clay floor tiles and rough plaster..." (Robson, p. 18). Such were the thoughts of the architect, such were the houses he built. Gradually, over the period of decade, through the reconstruction and adaptation of the existed bungalows, the house was composed of many smaller houses interconnected by the sky-open gardens. The work of spatial synthesis, it has no space without characters or qualities of other.

The spatial whole is unified by principally two sub-categories: the in-space and the inter-space. The inter-spaces are configured by the dominant of-space with strong qualities and characters of in-space, that is by courtyards as the spatial units.

Two spatial techniques, mostly present in theory and less in practice, are applied within the house: the in-space gradation and the arrangement of different sub-categories in open order. The gradation is achieved through porosity of enclosure and insertion of internal gardens near the openings. Therefore, gradated in-spaces always have certain amount of sensorial content of the outside. On some occasions, two sub-categories are arranged in open order, which results in genuinely floating space. The sensorial content is fully inter-changeable between the two and movement through the house becomes the experience of continuously varied complementary sensations.

When one is not moving throughout the house, the house is moving by the dweller, as here it is closer to be alive as it can get. Not a machine, a living environment, a spectacle to behold. Like the stork-billed kingfisher in the living room. Or the monsoon in the corridor. Dynamic space of intimate life. One is at home, within a house within the nature. Together both are changing through the seasons and in time. One is another, life is integrated. One never though here that it could be otherwise. Sensorial experience becomes emotional, as only thing needed to get a smile on one's face is walk through the house that brings about unity between nature and human.

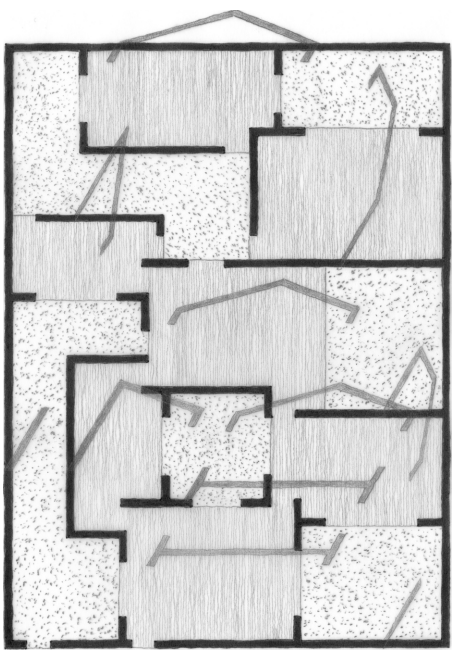

fig. 5.3. *Interpretive section-view*

Section 5.4. AALTO STUDIO

by Alvar Aalto
Architectural studio
Munkkiniemi, Finland
1955

Open to the south and the garden, and enclosed to the north and the road, the spatial whole of studio is composed by two sub-categories: the of-space and the in-space.

The of-space on the north indefinitely flows along the sloping wall and road. Its reserved and dynamic character is emanated through the modest yet recognizable presence within dense natural context and private houses.

On the south, the building formally defines the of-space by the semi-open courtyard and ground amphitheater within it. Allegoric space of events, immersed into the garden. Of lectures, meetings, presentations within the smells of berry bushes and breath of nearby bay. Of creative observation rooted in the soil of unconscious historicity, memory and imagination. Space of varied experiential possibilities.

The in-space of the studio embraces the of-space theater. Between them, there is white nordic light mediating. It rays through under oblique angle, and the formal definition of enclosure follows it, giving the dynamic character to the working space. Most of the sensorial content here, however, is not of environmental but of psychologic nature. Emanated by the collaborators, within the common creative space, where feelings of the process are generating the atmosphere. Deeply emotional human space. A collective in-space of personal nature where human is the source of its content. The space between the cell of reflection and temple of sharing.

Two spaces meet in the place of third dimension. It is defined by wide bent spatial frame. Through convex shape one may observe both spaces and latently the self. A space-metaphor of creative existential necessity to see oneself looking, and uderstand if one is looking the right way. From inter-spatial frame of vision, between the human and natural spaces, through the drawing board and into the theater of life.

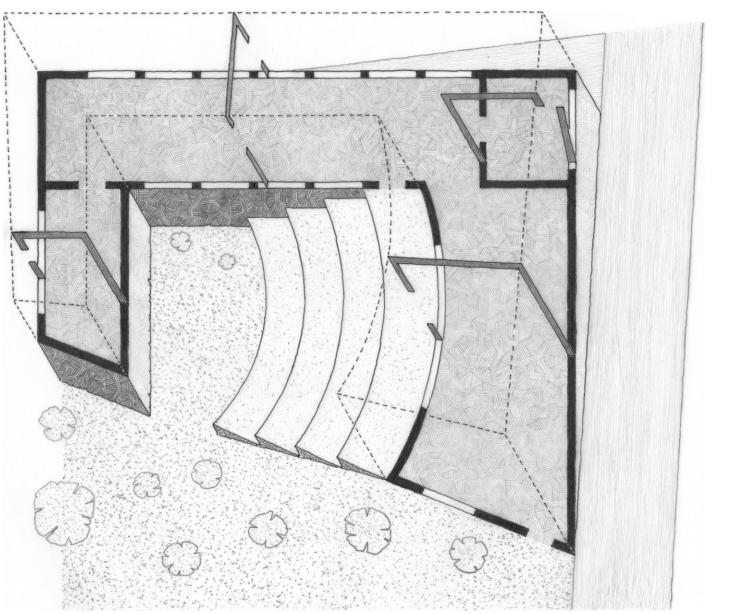

fig. 5.4. *Interpretive view*

CONCLUSIONS AND PERSPECTIVES

At the onset of the present work, the goal was set and basic theoretical definitions were formulated. As they were being tested and their understanding was being deepened gradually throughout the pages, author was exploring the architectural spaces, some imaginatively and some in reality, which in itself resulted in dynamic experience consisting of both expected and unexpected elements. It was experience of an experience.

In a certain way expected, yet still by surprise, came the experience of describing spaces. There is a notable difference in describing the real space and the imagined one. Imagining space incorporates imagining the human situation, which sometimes results in strong emphatic experience and therefore is deeply emotional. Often, the experience of imagined and intuited spaces is even more profound than that of the real ones. It can give access to some existential reality that can not be seen or touched, but it is nevertheless. The reality of imagination is also a reality - emphatic one. This, among others, was the case of the Amsterdam Orphanage, which at any rate wouldn't be possible to experience as such in reality, because nowadays it has a different purpose. Imagining the children experience in relation to the space of building was deeply moving experience for the author.

Another more unexpected than not aspect of the author's experience was the naturally changing stylistics of description related to each case. The reason for this seems to be found again in the fact that describing spaces, apart from their formal characters and qualities, means describing the experience and this was naturally different with each case. In a certain way, the essays were writing themselves with the help of author. L'Arbe Blanc experience was airy, light, easy and so is the essay language. Therme Vals experience was dramatic, dense, complex and so is the essay.

Architectural space is experience, but the architectural enquiry into it also means formal structure and method. This is where four

basic spatial sub-categories come into place, giving the work both its formal structure and method, as follows: 1) space of building - or of-space - is necessarily related to the building and the ground; 2) space on building - or on-space - is necessarily related to the building and the air; 3) space in building - or in-space - is necessarily related to the building and the building itself; 4) inter-space - a single space where the inherent characters and qualities of at least two of the above mentioned three sub-categories overlap. As follows from the definitions, the first three sub-categories are of differentiated nature, while the fourth one is of composite nature.

As work progressed, the observation of each spatial sub-category suggested complementary notions. The of-space observation suggested its two natures: the definite and the indefinite ones. The on-space suggested the organizational dimensions and patterns: vertical, horizontal and diagonal dimensions; outward, inward and diagonal orientations; static and dynamic characters; continuous and fragmented arrangements. In-space suggested the arrangement orders: closed, open, and contained arrangements. Inter-space, as follows from its very definition, resulted in six major and three additional configurations, following the same principle: each one differentiated sub-category overlapped by another results in six configurations; each one differentiated sub-category overlapped by another two results in additional three configurations. It is to be noted that more concepts related to each sub-category were observed, however, an effort was made to distinguish the most general ones, with potential to be applied as operative concepts within methodology of formal spatial observation.

Additionally, two independent but inter-related concepts were appearing to often accompany spatial observation, namely experiential potentiality and de-functionalisation. Former was considered as an amount of possibilities for an experiential event to take place in a given space, while later was considered as a measure to which such event is possible if not related to the function contained. Hence, the 'unmeasuring the measured' and experiential potentiality of space as the environment of sensorial

and emotional content which in-forms the function rather than follows it. Case studies vividly exemplifying this idea were the Ex of IN and the EPFL Learning Center.

Finally, the observation of three differentiated spatial sub-categories seemed to gradually suggest their differentiated experiential nature as follows: 1) the of-space suggested the experiential nature of reality - between the human self and the very ground one stands on; 2) the on-space suggested the experiential nature of dream - between the human self and one's vision; 3) the in-space suggested the experiential nature of self within - between the human self and one's character. Therefore, using three differentiated spatial sub-categories and creating composite inter-spaces with them may result in a more involved and complete human experience.

At the level of perspective development, present work contains methodological principles and basic operative concepts for further in-depth research into the theme of architectural space. The further research appears to require the integration with other fields of knowledge, as well as with other fundamental categories of architecture.

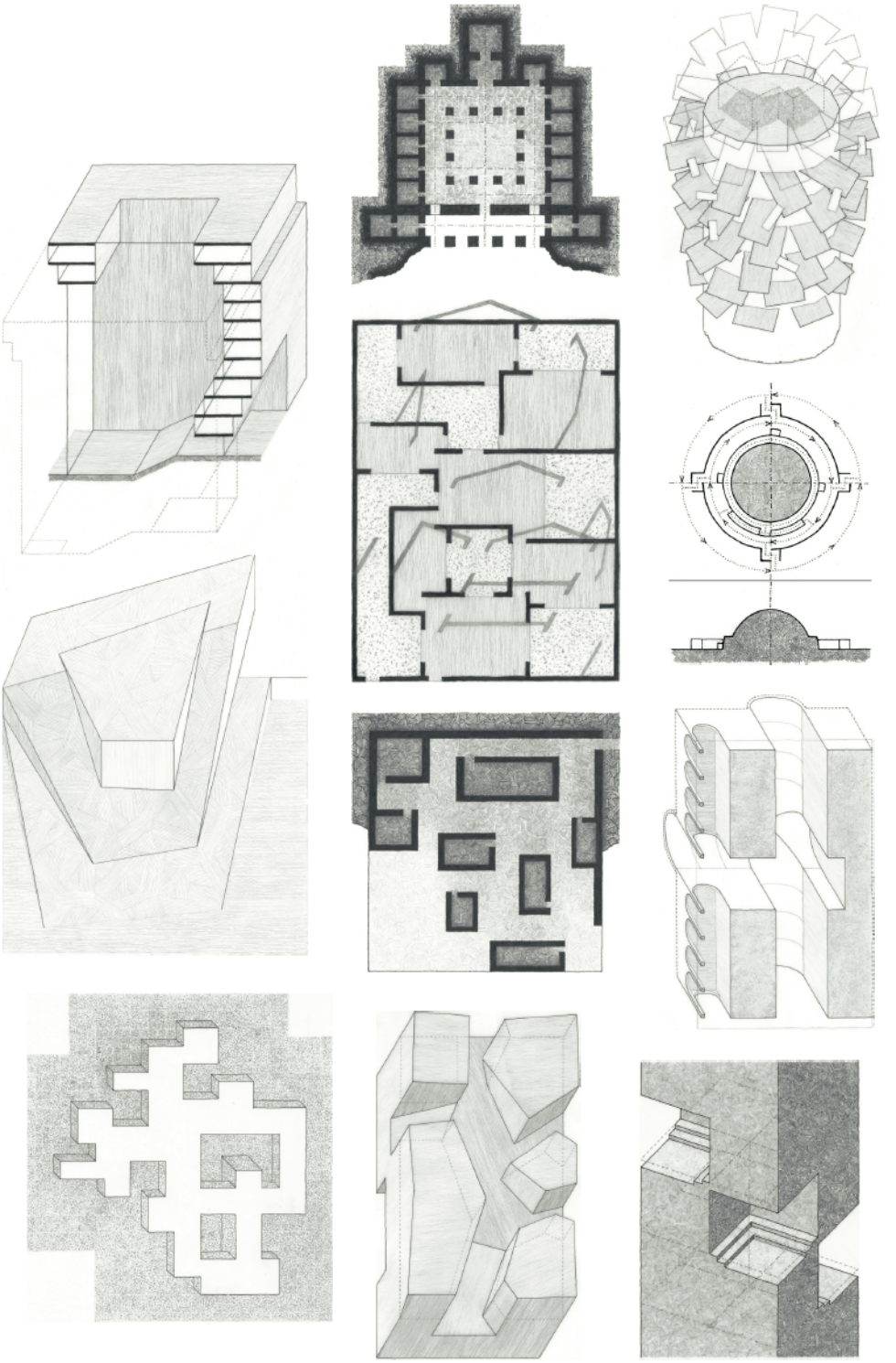

PLATE 6.1. Drawings

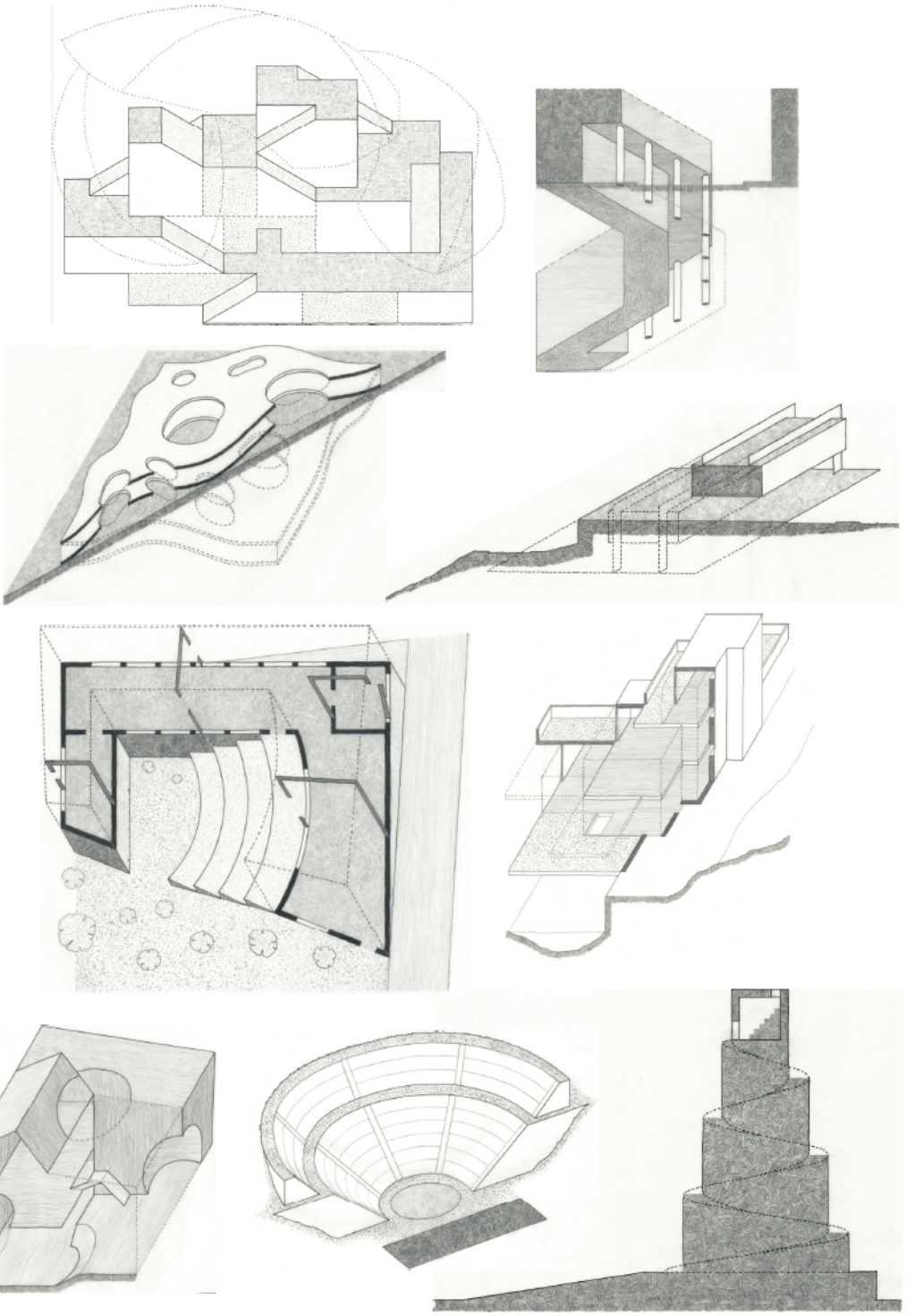

PLATE 6.2. Drawings

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GLOSSARY

a

abaton - (with regard to Epidaurus) a building of the stoa type, divided in two parts, for men and women, where patients slept overnight and received cure while asleep, or otherwise, engaged in treatment the next morning. (auth. after)

analemmata - a retaining wall in ancient Greece and Rome, especially one supporting the side of a classical theatre. (Davies, p. 15)

anoesis - a state of mind consisting of pure sensation or emotion without cognitive content. (dictionary.com)

archetype - the original pattern or model from which all things of the same kind are copied or on which they are based; a model or first form; prototype; an inherited idea or mode of thought in the psychology of C. G. Jung that is derived from the experience of the race and is present in the unconscious of the individual. (dictionary.com, merriam-webster.com)

Asclepius - ancient Greek god of medicine. According to myth, he was born demi-god on Mt. Titthion near Epidaurus, with medical skills inherited from his father Apollo. After gaining the ability to rise the dead, Asclepius was killed by Zeus and deified afterwards. (auth. after ancient.eu, Asclepius)

c

chaitya - in Hindu architecture, a chamber containing Stupa, with latter usually occupying most of space (auth. after Jarzombek, p. 235)

character - in present work - formal definition of a given spatial sub-category (auth.)

chattri - meaning 'canopy' or 'umbrella', in Indian architecture, a rooftop kiosk or pavilion having a dome, usually supported on four columns; a 'canopy' in abstract form of 'umbrella', standing on one central pier; the chattri denotes the umbrella of the Buddhist ideal under which the monk finds shelter and faith. (Jarzombek. pp. 215, 801)

chiasmus - a rhetorical or literary figure in which words, grammatical constructions, or concepts are repeated in reverse order; a crosswise or inverted arrangement between the contrasting syntactic elements of parallel phrases. (oxforddictionaries.com, merriam-webster.com)

composition - the act of combining parts or elements to form a whole.

composition, spatial - symphony of emotions. (auth.)

d

dialectics - any systematic reasoning, exposition, or argument that juxtaposes opposed or contradictory ideas and usually seeks to resolve their conflict : a method of examining and discussing opposing ideas in order to find the truth. (merriam-webster.com)

diazoma - the wide horizontal walkway between the lower and upper tiers of seats in a Greek theater. (Harris, p. 310)

diwan - term of Iranian origin describing a reception hall, either in a house or a palace. Later on the word is also used to describe a government ministry. (Petersen, p. 66)

e

egosense - existential sense of self within broader world. (auth. after collinsdictionary.com)

empathy - 1) the psychological identification with or vicarious experiencing of the feelings, thoughts, or attitudes of another; 2) the imaginative ascribing

to an object, as a natural object or work of art, feelings or attitudes present in oneself: by means of empathy, a great painting becomes a mirror of the self. (dictionary.com)

epiphany - a sudden, intuitive perception of or insight into the reality or essential meaning of something, usually initiated by some simple, homely, or commonplace occurrence or experience; a literary work or section of a work presenting, usually symbolically, such a moment of revelation and insight.

f

fetish - 1) an object regarded with awe as being the embodiment or habitation of a potent spirit or as having magical potency; 2) any object, idea, etc., eliciting unquestioning reverence, respect, or devotion. (dictionary.com)

form -

g

garbha-griha - womb chamber; the most sacred chamber in a Buddhist and Hindu temple, a centrally situated windowless room in which the deity and linga were located. (auth. after Davies, p. 167)

gestalt - a configuration, pattern, or organized field having specific properties that cannot be derived from the summation of its component parts; a unified whole. (dictionary.com)

gravitas - seriousness or sobriety, as of conduct or speech. (dictionary.com)

griha - in Hindu architecture, a hall preceeding 'chaitya' and often forming with it one space (auth. after Jarzombek, p. 235)

i

idiomatic - having a distinct style or character, especially in the arts. (dictionary.com)

iwan - a large vaulted hall having one side open to a court; prevalent in Parthian, Sassanian, and Muslim architecture. (Harris, p. 550).

k

ka'aba - a small, cubical stone building in the courtyard of the Great Mosque at Mecca containing a sacred black stone and regarded by Muslims as the house of God. It is the objective of Muslims' pilgrimages and the point toward which they turn in prayer. (Jarzombek, p. 803)

kinesthesia - the sensation of movement or strain in muscles, tendons, and joints; muscle sense. (dictionary.com)

klimakes - the stepped aisles between wedges of seating in a Greek theatre building. (Davies, p. 209)

l

location - geografic position with its qualities and characters. (auth.)

logeion - a raised platform for spoken performance in a classical Greek theater, often on top of 'proskeneon'. (auth. after Harris, p. 599)

m

ma - in Japanese architecture, it is a space between object and object, between event and event. It is thus an in-between space within or between other, more definible, spaces. (auth. after 'House of Sugimoto', 'Arata Isozaki - Time, Space, Existance')

mandala - a Hindu or Buddhist diagram of the cosmos, often used to guide the design of Indian temple plans. (Jarzombek, p. 803)

materiality - the state or quality of being physical or material.

mihrab - a niche or decorative panel in a mosque designating the qibla. (Jarzombek, p. 804)

minaret - a lofty, slender tower attached to a mosque with stairs leading up to one or more projecting balconies from which the muezzin calls

the faithful to prayer. (Jarzombek, p. 804)

morphology - 1) in biology: study of the shapes and arrangement of parts of organisms, in order to determine their function, their development, and how they may have been shaped by evolution; 2) the form and structure of anything.

muezzin - the crier who, from a minaret or other high part of a mosque, at stated hours five times daily, intones aloud the call summoning Muslims to prayer. (dictionary.com)

musalla - literally, a place where prayer is performed, although in practice it has come to refer to large open spaces outside cities for that purpose; notably, in Samarra, musallas are found inside the city. (Petersen, p. 208)

n

nihilism - total rejection of established laws and institutions. (dictionary.com)

nowness - the quality or state of existing or occurring in or belonging to the present time. (merriam-webster.com)

o

odeion - a small ancient Greek or Roman theater, usually roofed, for musical performances. (Harris, p. 673)

orchestra - in classical Greek architecture,

p

paradigm - a [cognitive] framework containing the basic assumptions, ways of thinking, and methodology that are commonly accepted by members of a scientific community. (dictionary.com)

paraskenion - architectural projections one or two storeys high on either side of the stage building 'skene' in a classical theatre. (Davies, p. 267)

parietal - of or relating to the walls of a part or cavity (dictionary.com)

program - a planned, coordinated group of activities, procedures, etc., often for a specific purpose, or a facility offering such a series of activities.

proprioception - sense of the body position in space; sense of the relative position of body segments in relation to other body segments. (auth. after physio-pedia.com)

proskenion - in the ancient Greek theater, a building before the skene; the earliest high Hellenistic stage; later, the front of the stage. (Harris, p. 771)

phenomenology - the study of the development of human consciousness and self-awareness as a preface to or a part of philosophy; the study of phenomena; the system of Husserl and his followers stressing the description of phenomena. (merriam-webster.com; dictionary.com)

place - the meaning of space or location. (auth.)

plasticity - in pictorial art: the quality of depicting space and form so that they appear three-dimensional;

q

qibla - the direction toward which Muslims face to pray, especially the Ka'aba at Mecca in Saudi Arabia; the wall in a mosque in which the mihrab is set, oriented to Mecca. (Jarzombek, p. 805)

quality - in present work - sensorial and emotional content of a given spatial sub-category. (auth.)

r

riwaq - is an arcade or portico open on at least one side. It is an architectural design element in Islamic architecture and Islamic garden design; as an arcade element the structure is often found surrounding and defining the courtyards of mosques and madrasahs, and used for covered circulation, meeting and rest, and ritual circumambulation; the

arcade element is also found along principal walkways of larger bazaars. (wikipedia.org)

s

sahn - courtyard of a mosque. (Petersen, p. 247)

sanctuary - a sacred or holy place; the most sacred part of a church, in which the principal altar is placed; an especially holy place in a temple; a church or other sacred place where fugitives are immune from arrest. (Jarzombek, p. 805)

shape - any solid, geometrically describable embodiment. (auth.)

skene - a backdrop structure or stage building in a classical Greek and Roman theatre, with spaces inside for the players, and sometimes richly decorated. (auth. after Davies, p. 330)

somatic - of the body; bodily; physical; as opposed to spiritual. (auth. after dictionary.com)

syntax - 1) the way in which linguistic elements (such as words) are put together to form constituents (such as phrases or clauses); 2) a connected or orderly system, harmonious arrangement of parts or elements, as can be the syntax of classical architecture. (merriam-webster.com)

stupa - a Buddhist memorial mound erected to enshrine a relic of the Buddha and to commemorate some event or mark a sacred spot. Modeled on a funerary tumulus, it consists of an artificial dome-shaped mound raised on a platform, surrounded by an outer ambulatory, with a stone vedika and four toranas, and crowned by a chattri. In Sri Lanka, the name for stupa is dagoba, and in Tibet and Nepal, it is chorten. (Jarzombek, p. 806)

t

tholos - any classical Greek building type with a circular plan, especially a round peripteral temple. (Davies, p. 382)

thymele - particular tholos at the Asclepeion of Epidaurus. (warwick.ac.uk)

v

vestibular sense - awareness of body balance and movement. (cliffsnotes.com)

vihara - a Buddhist monastery in Indian architecture, often excavated from solid rock, consisting of a central pillared hall, surrounded by the chambers and fronted by a verandah. (auth. after Jarzombek, p. 807)

vicarious - experienced or realized through imaginative or sympathetic participation in the experience of another. (merriam-webster.com)

vocabulary - any more or less specific group of forms characteristic of an artist, a style of art, architecture, or the like.

z

ziyada - an enclosure, in the form of rectangular wall, of the entire mosque complex or its part, as in the Great Mosque of al-Mutawakkil in Samarra, which has two ziyadas (one outer and closed on all four sides, one inner and opened on the southern side); a space which separates the mosque from the city; ziyadas were common to congregational mosques in the early Islamic period. (auth. after archnet.org; dome.mit.edu; Petersen, p. 318)

ziggurat - a temple tower in Sumerian and Assyrian architecture, built in diminishing stages of mud brick with buttressed walls faced with burnt brick, culminating in a summit shrine or temple reached by a series of ramps: thought to be of Sumerian origin, dating from the end of the 3rd millennium BCE. (Jarzombek, p. 807)