

THE SOCIO-SPATIAL AESTHETICS OF SPACE FORMATION

A New Perspective on the Concepts and Architecture
of Walter Gropius and Aldo van Eyck

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SUMMARY

Introduction and problem statement

This dissertation deals with 'architectural space formation', which is understood as the part of architectural and urban design that concerns the creation and structuring of physically defined spaces of inside and outside character separately as well as in relation to each other and to open space. Furthermore, it focuses on the fundamental significance of space formation in architectural design and aesthetics as well as the question of how Walter Gropius and Aldo van Eyck referred to space formation in their approaches towards architectural design and aesthetics separately, compared to each other, and in relation to the discussion of architectural space and space formation at the beginning of the twentieth century.

In English, the term 'space formation' is a neologism; it exists merely as the literal interpretation of the German term 'Raumbildung'. In the English language, the phenomenon of the creation of physically defined spaces has been addressed as either the 'defining' (Ching 1979) or 'organisation' (Unwin 1997) of space; within the German language, this phenomenon has remained a familiar concept in architectural discourse since the end of the 19th century. However, and whether or not it is explicitly named as such, the phenomenon of space formation in architecture has been discussed in different ways over the last five decades. Firstly, and mainly apart from the German language, the phenomenon has appeared in several educational books that explain the basic artistic principles of architectural design.⁹ Secondly, in other primarily German-language studies, architectural space itself has taken centre stage in a

⁹ Ching 1979, Von Meiss 1986, Unwin 1997, Janson 2006.

conceptual way.¹⁰ Despite the diverging perspectives, both types of space formation examination primarily deal with architectural space at the level of its physical condition and as a synthesis of solid forms and 'empty' space. Next to this, the purposive (i.e., use-related and socio-spatial) meaning of space formation is addressed in a rather marginal way, while an aesthetic examination of space formation—that is, the handling of space formation in terms of sensuous perception—is more or less neglected. Since the 1980s, several other studies have quite successfully approached architectural space from a use-related, socio-spatial, and partially cultural perspective.¹¹ In comparison with the aforementioned educational books and the explicit theories on architectural space, these studies focus on architectural (and urban) space in terms of its individual and collective use and appropriation—including the moment of use-related orientation and movement in space—and also partially in connection with its perception, which includes that of associated social and cultural meanings.

In relation to all these (implicit) references to architectural space and (aspects of) its formation, this dissertation's firstly focuses on space formation itself to thereby add to the existing knowledge a more concrete understanding of the artistic and aesthetic significance of space formation within architectural design and aesthetics. By adopting the previously mentioned studies' use-related and social perspective on architectural space, my research takes as its starting point the assumption that the fundamental significance of space formation firstly lies in its purposive meaning to create defined spaces for particular and various uses and kinds of appropriation. Furthermore, the significance lies in the corresponding quality of space formation to separate and connect spaces with one another and with open space through their physical enclosing and opening as well as through their spatial arrangement or configuration. In this vein, I regard space formation as representing an essential means for the spatial organisation of practical and social life. Secondly, this research departs from the assumption that space formation also represents the constituent of architectural design that characterises architecture as a visual art and epitomises its aesthetic quality—that is, the quality of architecture to generate a particular aesthetic experience.

My contribution to a more concrete understanding of space formation's significance within architectural design and aesthetics is now oriented towards the theoretical question of how—at the space formation level—the (use-related and socio-spatial) purposiveness of architectural design and its aesthetic experience are related.

¹⁰ Ungers 1963, Joedicke 1968, 1985, Van der Laan 1977, Meisenheimer 1978, 1984, Hajnóczy 1988, Schubert 2016.

¹¹ Hillier and Hanson 1984, Feldtkeller 1989, Hertzberger 1996, Hillier 1996, Van Gameren 2006, Psarra 2009.

This orientation has resulted in the elaboration of a particular theory on space formation: the thesis of the socio-spatial aesthetics of space formation, which I explain in Chapter 1.

This dissertation's second concern is to both combine this design-theoretical focus on space formation with historical research and investigate Walter Gropius's and Aldo van Eyck's approaches to architectural design and aesthetics from the perspective of this thesis. Here, I refer to Gropius as a protagonist of the so-called 'Neues Bauen,' and to Van Eyck as a protagonist of Team 10. The reason for particularly focusing on Gropius and Van Eyck is motivated by the fact that they likewise approached architectural space from use-related (Gropius) and socio-spatial (Van Eyck) perspectives, which played a decisive role in their overall approaches to architectural design. Next to this, both perspectives include a clear reference to space formation, although this reference is implicit in different ways. Most importantly, however—and different from the aforementioned studies as well as the approaches of all other protagonists of the Neues Bauen and Team 10—Gropius's and Van Eyck's approaches include a theoretical examination of the concept of space, within which the individual human perspective on space plays a pivotal role. This last difference is highly significant, since in my thesis of the socio-spatial aesthetics of space formation, the moment of the individual, sensuous perception of space plays a decisive role in the abovementioned relationship between the aesthetics and purposiveness of architectural design at the space formation level.

As a result, my investigation of Gropius's and Van Eyck's approaches to architectural design and aesthetics focuses on both their specific references to space formation¹² and their respective approaches to the perception of (architectural) space. Furthermore, I investigate whether and how they relate space formation and spatial perception to each other, and whether and how space formation and the associated purposiveness of architectural design are related to architectural aesthetics in a different way.

The underlying ambition in combining design-theoretical argumentation with historical research is to firstly position my thesis of the socio-spatial aesthetics of space formation in a broader theoretical and historical context. Secondly, this provides me

¹² Rather than referring in my investigation to different 'concepts' of space formation, the term '(implicit) reference' was chosen because neither Gropius nor Van Eyck explicitly dealt with space formation as an independent subject of architectural design; accordingly, they did not use the term 'space formation' at all. Both acknowledged and dealt—in different respects—with the self-evident reality of architectural space and the corresponding design-related significance of the arranging, enclosing, and opening of spaces.

with the opportunity to critically and comparatively investigate Gropius's and Van Eyck's approaches towards architecture from a new perspective. In addition, both can be positioned in relation to the examination of architectural space and space formation as it developed at the end of the nineteenth and the beginning of the twentieth centuries within the so-called 'kunstwissenschaftlichen' (art-scientific) architectural discourse. From this contextualisation, conclusions may in turn be drawn regarding how architectural space and space formation have been developed, approached, and understood during the first half of the twentieth century.

Structure

As an extensive introduction, Chapter 1 begins with the theoretical basis of my analysis of Gropius's and Van Eyck's approaches to architectural design and aesthetics. This basis firstly includes the thesis of the socio-spatial aesthetics of space formation and secondly includes this study's basic approach for investigating Gropius's and Van Eyck's approaches from the perspective of this thesis. The chapter concludes with the formulation of the resultant research questions, the applied methodological approach, and the study's relevance in relation to existing research on Walter Gropius, Aldo van Eyck, and the art-scientific discourse on architecture at the end of the nineteenth and the beginning of the twentieth centuries.

In Chapter 2, space formation again takes centre stage. Prior to the discussion of Gropius's and Van Eyck's positions, the various (implicit) references to space formation within European architectural theory are summarised from the Renaissance period up to the beginning of the twentieth century. Then, three particular approaches to space formation from the beginning of the twentieth century are discussed in detail: those of art historians August Schmarsow and Paul Frankl and that of architect and architectural theorist Leo Adler. This selection of authors is based on their attention to space formation both in purposive and aesthetic terms in addition to that which distinguishes them from other views on architectural space and space formation as it developed at the end of the nineteenth and the beginning of the twentieth centuries.

The following five chapters discuss Gropius and Van Eyck. Two subsequent chapters first investigate their respective approaches to the perception of (architectural) space and secondly discuss their (implicit) references to space formation. Here, Gropius's and Van Eyck's approaches to the perception of space are explained in the context of how they approach or conceive (architectural) space itself. These approaches are further explained in relation to contemporaries, in relation to each

other, as well as against the approach of August Schmarsow. In turn, their references to space formation are situated within the context of their general approaches to architectural design and are exemplified based on the analysis of the selected buildings.

In the seventh chapter, the findings of the previous four chapters are brought together, and the issue of whether and how the perception of space is related to space formation is discussed alongside the associated concepts of architectural aesthetics, which are eventually followed by some final considerations.

Chapter 1: The thesis of a socio-spatial aesthetics of (architectural) space formation, basic approach, research questions, methodological approach

Starting with the definition of space formation as an interplay of the enclosing, opening, and arranging of materially defined spaces, this interplay is firstly argued to generate, in the shape of a given space-forming structure, a configuration of 'enclosed spatiality' and 'outside orientation'. Continuing with an investigation of the use-related and socio-spatial meanings of space formation (with reference to Georg Simmel's sociological theory on space), it is further argued that the socio-spatial meaning(s) of space formation to create distance and proximity, as well as the associated meaning of a (social) appropriation of space, become objectified in this space forming structure, and are sensuously to be perceived. By referring in turn to Gernot Böhme's perception-oriented concept of aesthetics, it is further argued that these meanings are to be perceived—and thus become aesthetically effective—as part of both the sensuous perception of a given architecture as a spatial environment (as a surrounding space) and its simultaneous perception as an 'opposed' object. Moreover, it is argued that by comprising use-related and socio-spatial meaning(s), space formation forms an integral part of practical social life, and that it forms such an integrated part by objectifying its socio-spatial meanings and by influencing the aesthetic experience of architecture in this vein. Here, the socio-spatial effect of a given space forming structure (of one of its elements) is intrinsically tied to such an influenced aesthetic experience. As a result, the use-related and socio-spatial architectural content is integrated into its aesthetic experience at the space formation level; this aesthetic experience is integrated, in turn, into the use-related and socio-spatial functionality of architecture, and, hence, into the realm of use, practical life, and social reality itself. This interrelation indeed qualifies, so the argument, the aesthetics of space formation as socio-spatial aesthetics.

From the perspective of this particular thesis on space formation - and based on the abovementioned more detailed explanation of motivation, this dissertation investigates Walter Gropius's and Aldo van Eyck's approaches to architectural design and aesthetics through the following research questions:

How did Gropius and Van Eyck refer to the human perception of (architectural) space?

(Chapters 3 and 5)

How did they refer to space formation? How did they use space formation as a means of design?

(Chapters 4 and 6)

Did they link the perception of (architectural) space with space formation (the aspects they referred to), and if so, how did they do so?

(Chapter 7)

Did they link the purposiveness and aesthetics of architectural design in different ways; and with what particular concept of architectural aesthetics did they do so?

(Chapter 7)

Analysing Gropius's and Van Eyck's approaches in this way implies the possibility of situating both in a broader context of architectural theory: the examination of space formation as an (essential) element of architectural design and aesthetics as it took place within that art–scientific discourse on architecture. Also, for this reason, my research was initiated by investigating the notion of space formation within this discourse. Next to situating Gropius and Van Eyck in this specific theoretical context, I analysed their approaches to (the perception of) space in the context of the Neues Bauen (Gropius) and Team 10 (Van Eyck). Next to their (implicit) references to space formation and their approaches to the perception of (architectural) space, the third research subject has been their concept of architectural aesthetics and the question of whether and how the three subjects were related. In this vein, my examination of Gropius's and Van Eyck's views on architectural design and aesthetics developed into a stepwise approach towards the present relationship between space formation, space and its human perception, and their concepts of architectural aesthetics.

Furthermore, this examination included the analysis of their work as practising architects—that is, their effective use of space formation as a means of design. The

selection of case studies was determined by my intention to more or less cover the comprehensive timespan of Gropius's and Van Eyck's lives as practising architects, to exemplify their theoretical positions, and to compare theory and practice. The kind of building analysis I applied was determined by the aim of analysing the particular type of space formation.

However, before I give a summary of my examination of Gropius's and Van Eyck's corresponding views in Chapter 2, the approaches or references to space formation of August Schmarsow, Paul Frankl, and Leo Adler are explained. Three references to space formation that in the course of my research turned out to be the most relevant concerning my aim of identifying considerations that confirm my approach to space formation are discussed.

Chapter 2: The approach of August Schmarsow and two other approaches to architectural space formation

Having also been a subject of architectural theory in the Renaissance period and the following centuries¹³—mainly in use-related terms—architectural space did not take centre stage in explicitly aesthetic terms prior to the last third of the nineteenth century. Moreover, at the very end of the nineteenth century, August Schmarsow (1893, 1896) indeed developed a first fundamental aesthetic theory on architectural space and its formation and 'proclaimed' the enclosing of space to be the very (aesthetic) essence of architectural design. Following Schmarsow's definition of architecture as 'Raumgestalterin' (the 'creatress' of space), architectural space and its formation developed into an essential and generally accepted category in the aesthetic examination of architecture among German-speaking art historians and architects.¹⁴ As a result, space formation was generally recognised—at least within the German-language area—as an essential feature of architectural design no later than the 1920s both in purposive and aesthetic terms. Within this context, Paul Frankl and Leo Adler directly referred to the purposive use-related function of architectural space formation—either the aspect of composition or that of enclosing—and simultaneously connected the use-related function with the aesthetics realm.

¹³ Alberti [1443–52] 1965, Palladio [1570] 1984, Laugier 1753, Durand 1802–05, Schinkel 2001, Hegel [1835–38] 1984, Bötticher 1842, Semper [1860–63] 1977.

¹⁴ Loos [1898] 1962, 1927, Riegl 1901, Berlage 1905, Schindler 1912, Strnad 1913, Frankl 1914, Schmarsow 1914, 1919, 1921, 1922, Gutkind 1915, Schumacher 1919, 1926, Karow 1921, Sörgel 1921, Brinkmann 1922, Zucker 1922, 1924, Frey 1924, Adler 1926, Klopfer 1926, Heufelder 1928.

On the basis of a comprehensive explanation of Schmarsow's, Frankl's, and Adler's overall theories on architecture and their included approaches to (the perception of) space and/or references to formation, this chapter concludes with the following considerations. Although all three of them refer to space formation in the context of three differing superordinate theories of architecture, they recognise a certain use-related meaning of architectural space formation. Here, Adler refers to the enclosure's protective meaning, wherein it provides protection from 'threatening dangers', whereas Schmarsow points to the socio-spatial significance of the enclosing and opening of defined spaces. Frankl, in turn, identifies the use-related meaning of space formation to provide space for use-related activity.

On one hand, and although Schmarsow acknowledges a certain socio-spatial meaning of space formation and Adler acknowledges an aesthetic notion of space, only Frankl conceives the purposive meaning of space formation as an aesthetic content—that is, a content of perception and aesthetic experience. As a result, only Frankl's approach implies an integration of the purposiveness and aesthetics of architecture. On the other hand, however, in his reference to space formation, Frankl neglects the inside-out relation and excludes the corresponding socio-spatial meaning of space formation. Accordingly, in his reference to space formation as the forming of a composition of defined inside spaces, the aspect of enclosed spatiality and that of outside orientation are absent.

Next to this, Frankl's reference to the realm of perception is rather general and abstract; if at all, he refers to the sensuous perception of architectural space in terms of visual perception. In this regard, Schmarsow succeeds at more clearly defining, through his theory on the human perception of space, the aesthetic relation between human beings and the built space because this relation herein implies a comprehensive, visual–corporeal examination of (architectural) space. The resulting essential value of Schmarsow's approach is that it allows for more clearly understanding the perception of architectural space as a dynamic experience of two modes of a spatial enclosure: the enclosing both of the built space and of the perceiving subject itself. Since this theory additionally transcends a mere object- or form-oriented aesthetics, it may also contribute to a more thorough understanding of how we perceive the socio-spatial meaning of space formation and, accordingly, its integration in the aesthetics realm—that is, in the aesthetic experience of architecture.

Chapter 3: Walter Gropius's approach to (the perception of) space

As a protagonist of the Neues Bauen, Gropius's approach to (the perception of) space is characterised by approaching space—which is conceived as an objectively given reality of unlimited spatial extension and potential motion—from the perspective of the individual human subject. We may herein distinguish between two perspectives: that of the designing architect and that of man in general. From this ambition follows Gropius's general concept of space as number and motion by which the objectively given condition of pure three-dimensionality and motion is modified. The condition is modified to an interplay between (the perception of) unlimited motion and limited, perceptible portions of space—that is, portions of three-dimensional extension. This striving for mediation distinguishes Gropius, for instance, from Moholy-Nagy and Van Doesburg, as he least aims to adapt the perception or the experience of space to new conceptions or realities of space.

At the same time, however, the specificity of Gropius's approach lies in his ambition to make space tangible in mental–psychological rather than sensuous terms. Owing to this orientation, this approach is also characterised by the neglect of the corporeal—the anatomical–physiological constitution of man in space and its significance to the human perception of space due to its characterisation by the resultant neglect of the experience of architectural space as a (relative) enclosure of the perceiving human being. Furthermore, with regard to the identification of space and motion as well as the human perception of the latter, Gropius neglects the aspect of corporeal movement *in* space (and time). As a result, his concept of space as number and motion misses a fundamental part of the human perception and examination of (architectural) space. Rather, this perception is reduced to a pure mental mode of perception, while the sensuous perception of spatial enclosure thus enclosed spatiality 'disappears' in the recognition of space as physically defined volumes or partitions of space. The sensuous perception of openness and outside orientation 'dissolves', in turn, into the recognition of space as motion. As a further result, Gropius's approach differs—as do those of many other contemporaries—from Schmarsow's aesthetic theory, herein also disregarding Schmarsow's clarification of the human perception of space as a comprehensive, visual–corporeal examination of (architectural) space.

Chapter 4: Gropius's (implicit) reference to architectural space formation

On one hand, Gropius's implicit reference to architectural space formation is consistent with his approach to (the perception of) space, particularly with regard to the enclosing and opening of space, while on the other hand, it is strongly related to his overall approach to architectural design. It is an approach that primarily developed from the beginning of the twentieth century until the mid-1930s and that Gropius himself critically reflected after World War II but whose fundamental orientation and underlying motivation remained valid in later years. This overall approach comprises various constituents: firstly, his preoccupation with rationalising building production; secondly, his strive for an industrial style in architecture; and thirdly, the resultant demand of synthesising design and industrial production as well as his specific interpretation of typification in architecture. Finally, as is the general case with the Neues Bauen, the approach includes the ambition to design the use itself, whereby the concept of use includes the societal dimension of use (including its economic conditionality).

Gropius's overall approach to architectural design implies a production and a use-related reference to space formation. This reference is not explicitly stated, although it implicitly results from this approach. As far as it was based on this overall approach to architectural design, Gropius's implicit reference to space formation therefore refers to space formation—it may be in terms of the enclosing, the opening, or the arrangement of spaces—as a practical tool in the designing and therefore in the spatial organisation of use. Accordingly, Gropius's reference to space formation at least implies a clear superimposition, if not a substantial neglect, of the immediate socio-spatial meaning of separating and enclosing spaces as well as opening and relating rooms because it correspondingly and practically emphasises the spatial arrangement of spaces. The socio-spatial meaning (or content) of space formation, which is to create protection and privacy by means of shaping enclosed spaces, does not seem to have played a particular role in Gropius's view. In line with his approach to (the perception of) space, a clear notion of architectural space as enclosed spatiality cannot be detected in Gropius's approach to architectural design.

Building analysis

The analysis of the Bauhaus building and various residential building designs (Dessau Törten, Dammerstock, Siemensstadt, Buckow Rudow) confirms this conclusion: for

these buildings, the primary although implicit reference to space formation concerns the use-oriented arrangement of partitions (or volumes) of space, which is complemented by a corresponding practical and rather technical separation and connection of spaces. Spaces are arranged next to one another rather than designed as enclosed spatiality, and they are neither related nor opened to one another as such types of spaces. In the Bauhaus building case, this kind of space formation is combined with a disintegration of the building as a space-forming entity and with the resultant dualism between the building and its surroundings, although both are at least partially counteracted at a space-forming level by the design of a central courtyard-like space. The moment of disintegration is additionally balanced at a form-related level by means of a homogeneous façade design. The analysis of the residential building designs imply a clear architectural tendency to a spatial separation of the inside from the outside areas. This separation is unified with a non-designed relation between the dwellings themselves and is almost always a separation between a series of dwellings, arranged next to and above one another within a linear building structure. This separation is balanced by the presence of balcony spaces and is again counteracted by the (formal) design of the façade. However, on the basis of several educational buildings, I could demonstrate the general architectural orientation towards the designing of enclosed outside spaces and courtyards as well as the designing of a spatial dynamic between an enclosed spatiality and outside orientation. In the shape of a semi-circular high-rise building, this orientation eventually found its way into residential architecture. Nevertheless, Gropius's design for Buckow-Rudow particularly illustrates the inconsistent nature of his (implicit) reference to space formation.

Chapter 5: Aldo van Eyck's approach to (the perception of) space

Van Eyck's approach to (the perception of) space is also characterised by approaching space from the perspective of the individual human being, although the human experience *in* space rather than the perception *of* space takes centre stage here. Based on Henri Bergson's philosophy, particularly his view of time as '*durée*' (duration), this experience-oriented approach to space firstly refers to space in terms of its 'interiorization' in unity with that of time. Architecture, including spatial design, is regarded as a means of framing and enabling such interiorization. Linking this concept to Martin Buber's notion of '*Zwischen*', the experience in space and time becomes linked to the realm of inter-human and socio-spatial relations and is thus substantiated in an

ontological sense. By simultaneously extending Buber's notion to space, and particularly to architectural design, his 'Zwischen' becomes an architectural-spatial 'in-between' realm. Van Eyck consequently defines this 'in-between' as establishing socio-spatial relations at various levels and subsequently enabling and framing their experience.

Within this conception, the perception *of* space dissolves into the notion of an all-encompassing 'interiorization' of space and time, as the identity-related experiences of belonging and encounter are what counts: '*the encounter between the worlds—two areas, the encounter between me and the outside world, the encounter between me and the fellow human being*'.¹⁵ At the same time, Van Eyck also points to the perception of enclosure and openness—at least in terms of the *sensation* of being enclosed, infinitive extension, and the two fundamental types of man's spatial sensations. However, this rather implicit reference to the sensuous perception of (architectural) space remains an intrinsic part of the 'interiorization' of space and substantiates its existential dimension. Comparing Van Eyck's approach with those of Schmarsow and Gropius, we can conclude that he shares with Gropius the same lack of any reference to the realm of body-related perception or experience *of* space. Schmarsow's anatomical-physiological approach, which integrates sensory perception and the corporeal examination of space, is again 'replaced' by a purely psychological concept that takes an inner feeling—or experience—as the very point of departure. However, the difference between both psychological concepts is that sensuous perception turns into mental recognition in Gropius's case and (self-)experience in Van Eyck's case. In addition, Van Eyck refers to the perception of space in concretely sensuous terms, although his reference to the sensation of enclosure and openness remains integrated into and thus subordinated under the experience *in* space. In line with this difference between Van Eyck and Gropius, the . and opening—play a central role in his approach to architectural design, as does the creation of (a synthesis of) enclosed spatiality and outside orientation.

Chapter 6: Aldo van Eyck's (implicit) reference to architectural space formation

Despite the importance the enclosing and opening of space represented for Van Eyck, he also referred to space formation in an exclusively implicit way, meaning he neither mentioned nor discussed space formation itself. At the same time, and as far

¹⁵ Forum 1960 3, 265.

as the architectural implementation of the 'interiorization' of space by the creation of 'in-between' realms is concerned, the forming of defined spaces and spatial relations plays a central role in Van Eyck's approach to architectural design. Moreover, he regards the enclosing and opening of space and the resultant shaping of enclosed spatiality and outside orientation as the two essential instruments in creating 'in-between' spaces, thereby enabling a specific experience and thus the interiorization of space. As a further result, Van Eyck's implicit reference to space formation clearly differs from that of Gropius in that it does not neglect the socio-spatial meaning of space formation but rather takes centre stage.

At the same time, however, Van Eyck's overall approach to architectural design and, accordingly, his reference to space formation are connected with a keen focus on the principle of 'relativity'. He identifies the principle relative nature of the material and immaterial world with the term 'twin phenomena', which basically implies that reality establishes itself in various respects as a reciprocal relation between two opposed phenomena, or rather between two phenomena that we render as opposing each other. For Van Eyck, the principle of relativity—the 'twin-phenomenological' nature of reality—takes a similar design-determining position as did the Industrial Age for Gropius in that it represents the overall concept of reality that must be also established at the level of architectural design. From this follows his orientation towards the implementation of particular design-relevant 'twin phenomena'. Here, Van Eyck's design-relevant twins are 'inside–outside' and 'open–closed', with a clear (socio-) spatial significance, and 'part–whole', 'large–small', or 'diversity–unity', with a rather formal significance. The most general twin phenomena are those of 'architecture–urbanism'. Owing to the fundamental significance he attributes to such a 'twin-phenomenological' way of designing, the design of spatial 'in-betweens' or 'in-between' spaces is complemented by other forms of designed twin phenomena. This, however, implies a potential superimposition of that design of 'in-betweens' spaces by the application of a rather formal way of design.

Building analysis

The analysis of the various buildings confirms this argument. Firstly, the overall development of Van Eyck's architecture can indeed be interpreted as oscillating between the creation of spatial 'in-betweens' and the formal implementation of a 'twin-phenomenological' design approach, particularly by the design principles of 'part–whole' and 'diversity–unity'. In the Orphanage building, the presence of both can be demonstrated along their complementing implementation. The Pastoor Van Ars

Church and the Sonsbeek Pavilion, whose realisation followed the design and construction of the Orphanage, demonstrate a clear focus on space formation and the creation of 'in-between' spaces. The ESTEC and Tripolis projects, however, indicate a clear superimposition of the creation of (the configuration of) 'in-between' spaces by the formal implementation of the twin phenomena 'part-whole'. The Court of Audit in turn exhibits an integration of the latter in the present type of space formation.

Chapter 7. Conclusions

The concluding analysis of Gropius's and Van Eyck's approaches to architectural design and aesthetics deals with the question of whether or not they related space formation (the element or aspect to which they referred) to the perception of space, whether or not they linked the purposiveness and aesthetics of architectural design in different ways, and with what particular concept of architectural aesthetics they did so.

In terms of Gropius, it is argued that such connection is not at all present or possible on the basis of his approach to (the perception of) space nor through his manner of referring to space formation; rather, both the approach and type of reference complement each other in their abstractness—the abstractness on one hand concerning the realm of immediate sensuous perception and on the other hand concerning the realm of the immediate socio-spatial meaning of space formation. Here, this abstractness illustrates Gropius's fundamental abstraction from the immediate social being as well as the concretely spatial existence of man.

The answer to the question of whether or not Van Eyck links the perception of space to space formation is more complicated than in the case of Gropius. It is firstly more complicated since, in Van Eyck's overall approach to architectural design, the immediate socio-spatial meaning of space formation plays a significant role. It is secondly more complicated because this link is present only in an indirect way: in Van Eyck's approach, the moment of perception dissolves in the form of two spatial sensations into an all-encompassing 'interiorization' of space (and time). The sensuous perception *of* space thus transforms into a sensuous (self-)experience *in* space. As a result, the creation of (a configuration of) spatial 'in-between(s)'—thus, architectural space formation—is *not* conceived as an object of aesthetic perception, but rather as a medium of this (self-)experience.

Therefore, both views on architectural design and aesthetics lack an actual concept of the sensuous perception of (architectural) space. Correspondingly, and in different

ways, they both lack a concept of the significance of architectural space's sensuous perception concerning the integration of the socio-spatial meaning of space formation in the aesthetic experience of architecture. Consistent with this lack, neither Gropius nor Van Eyck link the perception of—or experience in—space with the architectural aesthetics realm. By contrast, for both architectural aesthetics concern the design and appearance of architectural form.

Final considerations

What makes Van Eyck's approach so interesting in this respect is that the socio-spatial meaning of space formation nevertheless takes centre stage in his understanding of architectural design and that he explicitly mentions the sensation of spatial enclosure and openness. Owing to a traditional (object-oriented) concept of architectural aesthetics, however, the realm of sensuous perception remains separated from architectural aesthetics and dissolves instead into the realm of (self-)experience *in* space. In this vein, what occurs in Van Eyck's approach is an opposite kind of integration in that the socio-spatial meaning of space formation does not become integrated into architectural aesthetics through the perception *of* architectural space; rather, both the socio-spatial meaning of space formation and the perception—or sensation—of space become integrated into the experience *in* space and into what Van Eyck regards as the fundamental purpose of architectural design: the 'interiorization' of space. As a result, in Van Eyck's approach to (architectural) space, the socio-spatial meaning of space formation is *not* conceived as content that becomes aesthetically effective, but is rather conceived to become directly socio-psychologically and socio-spatially effective.

Despite this contradiction, Van Eyck's approach is so interesting and valuable from the perspective of my thesis of a socio-spatial aesthetics of space formation because it confirms the fact that, without overcoming a mere object-oriented concept of architectural aesthetics, a true integration of the aesthetics and the purposiveness of architecture cannot be realised. This true integration is, or rather would be, one wherein the aesthetics of architecture neither dissolve into nor superimpose the purposiveness of architectural design.

In this context, I point again to August Schmarsow's aesthetic approach to architecture and the involved transcending of a mere object-oriented concept of architectural aesthetics—an approach that also contributes to a more thorough understanding of

how we perceive the socio-spatial meaning of space formation and, accordingly, a more thorough understanding of its integration into the aesthetic experience of architecture.

Finally, the existence of this approach at the very beginning of this century reveals a particular shortcoming within the development of modern architecture in the first half of the twentieth century. The shortcoming of the Neues Bauen (including Gropius) was that its members failed to continue developing the theoretical examination of architectural space and its formation at the beginning of the twentieth century. In particular, its members did not adopt Schmarsow's theory of architecture as 'Raumgestalterin' (the 'creatress' of space); rather, architectural aesthetics remained merely object-oriented, formal aesthetics. At the same time, and as the analysis of Paul Frankl's and Leo Adler's conceptions makes evident, it is a shortcoming that was rooted in the discourse itself.