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STYLE AND TECTONIC

PROM A.W.N. PUGIN, GOTTFRIED SEMPER, OTTO WAGNER,
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COMPARISON BETWEEN THE CONCEPTS OF STYLE AND TECTONIC

Style : from Latin, stilus. Means a sharp, slender pointed instrument used by the ancient in writing on wax tablets. Also means an etching needle, an engraving tool. Later comes to mean manner or mode of expression in language, way of using words to express thoughts, specific or characteristic manner of expression, execution, construction of designⁱ

“The term tectonic derives from the Greek word tekton, signifying carpenter or builder. The corresponding verb is tektainomai. This in turn is related to the Sanskrit takshan, referring to the craft of carpentry and the use of axe..... In Greek it appears in Homer, where it alludes to the art of construction in general. The poetic connotation of the term first appears in Sappho, where the tekton, the carpenter assumes the role of the poet.”ⁱⁱ

In comparison between the concepts of style and tectonic, the work of A.W.N. Pugin, Gottfried Semper, Otto Wagner and Herrmann Muthesius will be investigated one by one to find the meaning of both concepts.

- i Webster Dictionary. New York : Prentice Hall, 1988. P. 1332.
- ii Kenneth Frampton. Studies in Tectonic Culture : The Poetics of Construction in Nineteenth and Twentieth Century Architecture. Cambridge, MA : MIT Press, 1995. P. 3.

THE PROBLEM OF STYLE

Herrmann Muthesius remarked on the battle of the styles of 19th century architecture that “from the beginning of the century till his time, great stylistic confusion obviously still reigned. It is probable that history will close the chapter of 19th century architecture with this event of the repetition of all past styles as the essential characteristic of the period”.¹

The problem of style had first been outlined by Heinrich Hubsch in *In Welchem Style sollen wir bauen?* 1826 (*In What Style Should We Build?*). Even though Hübsch’s study preceeded the formation of eclecticism in Germany, it set out almost every issue of eclectic debate.² He attempted to identify the objective principles of the development of a new style based on “need”, that is comfort and solidity. For Hübsch, a style is best defined by its primary elements of roof and supports, which the two basic types are trabeated and arcuated system. Another factors affecting the creation of style are building materials, both local and traditional, the technology arising from materials, the need for protection and durability as conditioned by climate, and also cultural aspirations.³ Hübsch evaluated the various styles in the history of architecture on the basis of these criteria, and their suitability to modern needs. By eliminating all styles that saw unsuitable for his time, he was left with a choice between pointed and rounded arched (*Rundbogen*) systems. Believing in the latter to be both poetic and capable of development, and because the verticality of Gothic limited the width of wall openings which made it inappropriate for contemporary interiors, he decided that the *Rundbogenstil* would be suitable for the development of the style of his time.

As the discussion on style accelerated in the 1840s, almost everyone opposed eclecticism. Rudolf Wiegmann, who wrote a remark on Hubsch treatise in 1829, complained that the present tendency to build with Greek, Roman, Byzantine, Gothic and Italian forms reduced architecture to the viewpoint of fashion, and depicted an age in which architecture had lost its organic relation with the technological developments and spirit of the time.⁴

AUGUSTUS PUGIN : THE TECTONIC VALUE OF GOTHIC ARCHITECTURE

At the time of the German debate on style became accelerated, the spiritual and cultural discontents of the 19th century England was expressed by A.W.N. Pugin. He advocated a direct return to the spiritual values and architectural forms of the Middle Ages. While his 1836 *Contrasts*, was more of a diatribe against a degenerate present rather than an architectural thesis with an indication of how ecclesiastical architecture might be renewed, it is in his *True Principles of a Christian or Pointed Architecture* of 1841 that he gave more cogent advice as to the manner in which a truly Catholic architecture might be revived. For Pugin, architecture was a religious and ethical affair. His passionate commitment to the moral rigor of early Christianity led him to the realization of both symbolic and tectonic implication of Gothic architecture. By considering the moral implication of the Gothic, he saw it as suitable for the architecture of his time. The precepts of his true principles is that "there should be no features about a building which are not necessary for convenience, construction or propriety; second, that all ornament should consist of the enrichment of the essential construction of the building"⁵ He saw the neglect of these two rules is the cause of all the bad architecture of his time. Pugin distinguished applied ornament from the decorative elaboration of tectonic features, and was convinced that tectonic form should be largely determined by the nature of the material. For him, all these conditions had been best met in the English Gothic manner of the 15th century⁶ In his argument, a depreciation of the Greek temple lay in its misapplication of stone to forms deriving from timber construction. He wrote :

Grecian architecture is essentially wooden in its construction, it originated in wooden buildings..... Vitruvius shows that their buildings were formerly composed of trunks of trees, with lintels or brestsummers laid across the top, and rafters again resting on them..... but it is not extraordinary that when the Greeks commenced building in stone, the properties of this material did not suggest to them some different and improved mode of construction.⁷

In Pugin's view, unlike the Greek temple, a pointed church is the masterpiece of masonry. He emphasized that it was essentially a stone building, its structural elements were all peculiar to stone, and could not be consistently executed in any other material.⁸ As Pugin might be familiar with arguments advanced by Cordemoy and Laugier, he was also convinced that a column should be a freestanding, load bearing support. But unlike them, Pugin praised the tectonic virtues of the pointed arch and the flying buttress. He also stressed that Christopher Wren, instead of dispensing with flying buttress in St. Paul's Cathedral, merely built a screen wall to conceal them.⁹ Arguing that the form should be derived directly from construction, Pugin rationalized what Laugier had criticized as the excrescence of the Gothic. He justified the pinnacle as an essential counter weight to the thrust of the buttress. Kenneth Frampton pointed out that Pugin, deprecated the flat-topped church tower, saw the pitched roof as the sine qua non of a pointed architecture, first for it was sufficiently aspirational in a religious sense and, second for it was sufficiently steep to throw off snow without imposing too much strain on the tile fixing.¹⁰

Regarding the tectonic value of Gothic architecture, Pugin saw the false Baroque dome of Wren's St. Paul's as an example of the preponderance of scenographic effect which cause his dissatisfaction with the Classic and the Baroque.¹¹ For Pugin, Gothic represented the highest point of tectonic concept in architecture, that is the rationality of construction procedure, the truthfulness of material and construction, the revelation of structural system that constituted form. But as the theorist of structural rationalism, Pugin

was not interested in the development of an appropriate nineteenth century style. Unlike Viollet le Duc, Pugin expressed minimal concern for the integration of new methods and materials.¹²

He was against the project of an evolving style for it might deviate from the true principles of Gothic architecture. He regarded the flat, four-centered arch of the English Decorated manner as a symptom of the cultural decadence that led inevitably to the concealed buttress of St. Paul's.¹³

Within the context of Gothic architecture, Pugin's treatise was to discredit scenographic eclecticism, and to establish in its stead architecture as an art of construction, predicated on logic, climate and the pragmatic precepts of intelligent craft production. Pugin used neither the word style nor tectonic. But from his writings, the "true principles", refer rather to the tectonic concept than style. For when he referred to style, it imply a more negative connotation of superficial and scenographic quality of architectural appearance. He mentioned "style" when he referred to the great defects very common in modern pointed buildings that arose from the great fundamental principle of decorating utility not being understood.¹⁴ He condemned architects that applied the details and minor features of the pointed "style" to classic "masses" and arrangement; they adhered scrupulously to the regularity and symmetry of the latter, while they attempt to disguise it by the mouldings and accessories of the former.¹⁵ Such a tectonic application of the features of any "style" onto another was for him unethical because all ornament should consist of enrichment of the essential construction of the building and reveal the truthfulness in the methods of construction.

Though he did not clearly differentiate style and methods of construction, style came to be associated more with accessories, embellishment and inessential decoration while tectonic concept meant the essence of Gothic architecture, thus it became his true principles.

GOTTFRIED SEMPER : DER STIL AND THE DOUBLE CONNOTA- TION OF TECTONIC

Style and tectonic took a different connotation. Gottfried Semper's work *Der Stil* and *Four elements* were based on the tectonic concept of the technical arts. The radical implication of the emerging technologies for form was taken up and considered by Karl Botticher in his *Die Tektonik der Hellenen*, 1846. He and Semper have often been compared, and in most cases the comparison has been prompted by Botticher axiomatic differentiation between core- and art-form (*Kern und Kunst form*) and Semper's seemingly related view.¹⁶ Wolfgang herrmann has given a clear picture of Semper-Botticher relationship which is essential for an understanding of style and tectonic in Semper's view.

Botticher had written in the preface and elsewhere in *Die Tektonik* of space-enclosing walls that were like curtains of carpets. He asserted that it was necessary to arrive "at a primary moment.....that would contain every germ and element that advance the development of every subsequent stage proceeding from it", and that woven carpets "served, at all times and everywhere, in their capacity as space-creating surfaces, be it as cover, enclosure, or floor", and that the Arabs "up to today treat the house as if it were a tent hung with colorful carpets",¹⁷ and finally that the wall "Is unrelated to the ceiling and has its origin in the concept of enclosure and space exclusion." Though Semper had not read Botticher until 1852, all this agree with many ideas he had expressed in the *Four Elements*. On the *Kernform* and *Kunstform*, Botticher wrote: "the concept of each part can be thought of as being realized by two elements: the core-form and the art-form. The cor-form of each part is the mechanically necessary and statically functional structure; the art-form, on the other hand, is only the characterization by which the mechanical-statical function is made apparent."¹⁸ Semper did not object this formulation. But his comment was that "the author separates the core-form from the art-form in the details, why not also with regard to the temple

as a whole? The parts of an architectural work of art can be explained as material parts of a construction not only by their real or symbolic significance; they also have a traditional and historical significance.”¹⁹

Semper’s view parted from Botticher on the attributed character of the art-form. Botticher contrasted a work of nature and a tectonic structure. He explained that unlike the work of nature, the life force causes the embryonic form to unfold, tectonic makes its forms out of dead materials and is unable to express this process in any other way than in semblance to the natural unfolding, which seems as if applied and added to it from the outside.²⁰ Semper did not agree with this instance, he wrote, “I admit that decorative symbols have no real static function, but it is wrong to conclude that they are applied and added from outside.”²¹ In *Der Stil*, Semper’s theory of the relationship of core-to-art form started from the construction of Western Asia in the process of cladding a wooden core with metal plates.²² Because experience had taught that the metallic cover gave sufficient supporting strength, there developed a tubular metal style in which the wooden core transferred its functions to the cover and then vanished.²³ Semper wrote about the type of hollow tube that it was retained in Assyrian columnar structure even after a metamorphosis into a style using stone had taken place.²⁴ He wrote that as the result, “the art form arose simultaneously out of both the covering and the structure; in this way the opposites were resolved.”²⁵ In Semper’s view, with the people of antiquity, construction withdrew more and more from the core, became peripheral, and became identified with decoration, in which the emancipation of monumental form from matter was accomplished in the Greek style.²⁶

Finally in Greek art the two elements merged into each other. Semper’s interpretation imply the symbolic language of tectonic, of analogous forms and their transformation into stone. In fact, Botticher wrote about this matter in *Die Tektonik* that, in the Greek tectonic, “the intention is not to characterize the stone as dead stone but, on the contrary, to let the dead substance of the stone fade away.....As soon as

the stone is covered by a form analogous to its idea (i.e., an art-form), the concept of the stone has disappeared and that of the analogue takes its place."²⁷ Though Botticher differentiated between the constructive and the decorative element, he also stressed their dependence on each other. The relationship of the core to the art-form was the basis of the unique organic character of Hellenic tectonics.²⁸ In fact, both Semper and Botticher took a very similar view, that the art-form arises at the same moment that the mechanical scheme of the core-form is conceived, the two are thought of as a unity and are born simultaneously.²⁹ Both the structural part and decorative symbol are closely related that one cannot be altered without affecting the other and that each must be a primary element born simultaneously with the whole. This close correlation made it impossible for decoration to be applied arbitrarily to structural parts. This will restrain any subjective and arbitrary desire to cover the core-form with symblos. The essence and the idea of a structural part prohibit arbitrary decoration as one pleases. So, the different symbols and decorative attributes of a structural part cannot be considered pure adornment. Thus, it is important to realize what they really were : a covering suggestive of a function performed by the core to which it closely related.³⁰

Semper's discussion on the Four Elements, *Der Stil*, and his theory of cladding (*Bekleidung*) explicitly emphasized the symbolic-structural function of the art form and its relationship to the tectonic concept of the building. Corroborated by evidence of the Caribbean hut he saw in the Crystal Palace Exhibition of 1851, Semper's Four Elements comprised of a hearth, an earthwork, a framework, roof, and an enclosing membrane. His Four Elements were possessed of significant etymological ramifications.³¹ He rationalized a great deal of his ethnographic theory on an etymological basis. He distinguished the massiveness of the fortified wall, as indicated by the word *die Mauer*, from the light, screenlike enclosure signified by the word *die Wand*. The latter word is related to the word for dress, *Gewand*, and to the verb *winden*, which is to embroider.³² In his view, the earliest basic structural artifact was the **knot**.

Following the knot was the primary nomadic building culture of the tent and its textile fabric.³³ Semper was aware of the archaic conjunction of knot and joint, the former - der Knoten, the latter = die Naht. Both words are connected to the concept of binding (Verbindung). Thus, the most significant basic tectonic element was the knot or joint. Naht can also be related to the Indo-European root *noc*, Latin *nec-o*, which means need, necessity.³⁴ By Semper's characterization, knot became the oldest tectonic symbol.

Kenneth Frampton pointed out that "Semper's emphasis on the joint implies that a fundamental syntactical transition is expressed as one passed from the stereotomic base of a building to its tectonic frame, and that such transitions are of the very essence of architecture."³⁵ Semper assigned certain tectonic crafts to each of the four elements : textile to the art of enclosure and thus to the wall, carpentry to the structural frame, masonry to the earthwork, and ceramics to the heart. Semper's theory of cladding evolved from his thesis of the transformation of wall mats, carpets and wickerwork. Those mats that are in the form of weaving, knotting tectonic arts, were the original space divider and only later that "the light mat walls were transformed into clay tile, brick, or stone walls."³⁶ It emphasized his *Stoffwechseltheorie*, the theory of symbolic conservation, in which the mythical or spiritual values attaching to certain structural elements cause them to be translated into petrified compressive forms. The dressing or cladding of the wall then, was viewed as a kind of petrified fabric symbolized a transformation of nomadic textile forms into a more permanent material.

Semper gave the definition of tectonics that it "deals with the product of human artistic skill, not with its utilitarian aspect but solely with that part that reveals a conscious attempt by the artisan to express cosmic laws and cosmic order when molding the material."³⁷

Semper found in Botticher's *Die Tektonik*, where tectonic was defined as "any activity having to do with building and furnishing."³⁸ Semper's definition widened the notion

tectonics into a category comprising all the technical arts. As Herrmann noted that Semper might not wish to invite a comparison of *Der Stil* with *Die Tektonik*, yet his analysis on style on the technical and tectonic arts based mainly on tectonic and symbolic concepts of those arts. In his essay *Wissenschaft, Industrie und Kunst* (Science, industry and Art), Semper gave the three different causes of the general crisis of style that it arises out of, first the alienation of the arts from their original motifs, second the devaluation of material and labour, and third the loss of the ability of the art form to exercise a specific function in relation to the historical moment. These three causes, along with his emphasis on the relationship of the *Kernform* and *Kunstform*, show that Semper did not see style and tectonic as two separate concepts. Rather, they interrelated and depended upon each other. For style consisted of both technical and symbolic language of tectonics. The value of tectonics also lay in the *Kern-Kunstform* relationship. For Semper material and construction were subject to the same evolutionary process as any other artistic phenomenon. When change from one to another, some motifs, though modified, were also transferred, but they always retain their character through representation and symbolization.³⁹ It is the poetics of tectonic, that is the heart of his theory.

From the style-tectonic interrelated theory of Semper, both style and tectonics took a different connotation in Otto Wagner and Herrmann Muthesius.

OTTO WAGNER, HERRMANN MUTHESIUS : THE MEANING OF BAUKUNST (BUILDING ART)

As Semper once remarked that the new style could not be achieved by the work of individual artists but by that of centuries and that until then one must admit what it must be, it was left to the next generation to pursue the technical and tectonic consequences of his theory, together with the legacy of his scientific, architectural realism.⁴⁰ Otto Wagner disappointedly, perhaps mistakenly, saw Semper as lacking sufficient courage to push his tectonic insights to their logical conclusion, namely that a new style must depend of necessity on a new means of construction.⁴¹

The concept of style and tectonic in both Wagner and Muthesius lay in the differentiation of the word *Stilarchitektur* and *Baukunst* along with the concept of *Sachlichkeit*. The word *Baukunst* had become a key term for architects in the first decade of the 20th century. "Building-art", signified a beauty that must be built-in, not applied. It meant an art govern by necessity, construction and utility.⁴² Wagner attempted to apply the tectonic legacy to the modernizing realities of the twentieth century metropolis.⁴³ It was manifested in his major theoretical text, *Modern Architektur*, 1896. The text was slightly modified and reissued in 1898, 1902, and finally 1914 under the different title, *Die Baukunst unserer Zeit*. The change of the title testified to Wagner's allegiance to the realist approach of Muthesius in *Stilarchitektur und Baukunst*, 1902. The term *Baukunst* indicated an approach to *Sachlichkeit*, in the sense that it responded objectively to the socio-technical building task of everyday life rather than to the ideals of high art.⁴⁴ The transformation of Wagner's thought and his inclination towards *Sachlichkeit*, or objectivity and straight forwardness, also showed in the modification of his text and the deletion of his reference to *Secessionstil*. *Baukunst* came to be associated with the truth of technology and util-

ity, and the tectonic concept of building became an inseparable part of its meaning.

But both Wagner and Muthesius argued not for a pure *Sachlichkeit*, but rather, for a *Sachlich Kunst*. They both stood in awe of the great technological achievements of the nineteenth century and their dramatic display of rationality and functionalism. Still, both of them accepted limits to their realist programs. They sanctioned the role of speculative innovation from a functional base. In this sense, Wagner's architectural realism may be described through its constant symbolic exploitation of function.⁴⁵ Although Wagner's use of style did not come as close to tectonic as in Semper, it did not take as much negative connotation as in Muthesius. While Wagner was still in search for the style of his time, Muthesius rejected style as superficial and meaningless. For Wagner, style meant both appearance and inner reality. His work came close to Semper's theory to demonstrate a precise relationship between an articulated skin and the development of a building in depth.⁴⁶ From Semper's *Bekleidung* theory, Wagner assumed for its capacity to synthesize lightweight panel construction in both stone and metal. At this connection, Wagner seemed to embrace the metaphor of the mask of which Semper had written that "Masking does not help, however, when behind the mask the thing is false." Wagner did not intend falsehood by masking, but rather, as Frampton noted, the creation of "tectonic veil" through which and by which it would be possible to perceive the spiritual significance of the constructional form, as it lay suspended between the pragmatic world of fact and symbolic world of value.⁴⁷ Fritz Neumeyer wrote about Wagner's contribution in this regard :

Like the floating garment that clothes the female body in ancient Greek sculpture, revealing as much beauty as it conceals, Wagner's treatment of the structure and construction exploits a similar kind of delicate, sensuous play that was probably only evident to a connoisseur of a certain age and experience. Exactly this principle gives the interior of the Postsparkasse its quality

of silk-like transparency. The glass veil is lifted up on iron stilts that carefully cut into its skin and gently disappear. Semper's theory of "dressing" could find no more ingenious interpretation.⁴⁸

In the church of Saint Leopold Am Steinhof and the Postsparkasse, brick structures were sheathed or dressed with thin sheets of marble, set in a mortar bed, and seemingly anchored to the wall with metal bolts, themselves capped with aluminum heads.⁴⁹ Yet, the anchor bolts had only a limited functional value. The enhanced and articulated bolts only held the panels in place during the first three weeks of construction while the binding mortar bed hardened.⁵⁰ The bolts were decoratively treated form-work. In such ornamental conception, the construction is not enriched with ornament expressive of its purpose, but rather the decoration (the bolt heads) is invented with a constructional meaning seemingly inspired by necessity. This decorative artifice was the "symbolic functionalism", in that the bolts represent the technological, economic, and time-saving attributes of this type of construction.⁵¹

Wagner's use of artistic constructional form was also evident in his design for the Vienna Stadtbahn. Iron was used to represent functional forms, and at the same time, iron supporting screen is used as a decorative motif. The transparent iron work of the girder provided a layer of decoration which allowed the eye to penetrate the surface and see what was behind. In this sense, Wagner offered the possibilities for the modern artistic treatment of material in his subtle decoration of a structure. Neumeyer remarked about this matter that in Wagner's work the decorative application provided the necessary vocabulary to circumscribe the functional prose of reality, it had to be poetically wrapped as diligently as possible.⁵² Here the cleft between art and construction is bridged. Wagner found his way back to both Botticher's and Semper's double articulation of the tectonic where the Kunst and Koreform became one.

While Wagner came close to Semper's double articulation of the tectonic where style and tectonic seemed inseparable,

Muthesius's dichotomy between Style architecture and Baukunst marked the divorced between style and tectonic concept. He wrote :

It is hardly possible for people today to grasp that the true values in the building-art are totally independent of the question of style, indeed that a proper approach to a work of architecture has absolutely nothing to do with "style."

As in the last century, we became accustomed to regard architecture solely from the viewpoint of style, so there was the demand for the discovery-alongside the historical styles-of a new style, the style of the present, which could only be sought in purely outward appearances. In fact, attempts were not lacking to arrange the outer stylistic dress of building in a manner that at the time look modern.⁵³

The negative pole of "Stilarchitektur" asserted a resistance to the "battle of styles of the nineteenth century. He was also opposed to the seek for a "new style." For him, the name Jugendstil seemed to indicate the proffering of a new and already failing style. Rather than style, Baukunst should aimed at straight forwardness and utility. The building-art he wished to see was sought under a vision of emerging conditions of production, society and culture.

In the tectonic realm, Muthesius found "characteristic features of his time in the modern creation that served the newly established needs and that have no relation to the old formalities of architecture : in the railway terminals and exhibition buildings, in very large meeting halls, and further, in the general tectonic realm, in large bridges, steamships, railway cars, bicycles and the like."⁵⁴ He noticed a rigorous, scientific objectivity, an abstention from all superficial forms of decoration, a design strictly following the purpose that the work should serve. As Muthesius did not aim at a pure Sachlichkeit, but rather at a sachlich Kunst, example of such accomplishment lay in the treatment of new material, namely iron and glass. The railway terminal, the market hall, the broad glass-vaulted hall, and the urban commercial building with its extensive glass surfaces open-

ing onto the street are all offspring of the same concept, the new formal concept in a logical and unbiased manner. He asserted that it would be quite wrong to exclude buildings as the iron and glass public transportation stations from artistic consideration. For these buildings grew out of modern needs and were built with modern means.⁵⁵ He wrote :

Even the iron structures that already exist speak a language that is sufficiently eloquent to convince us artistically..... . These offspring of a new time and new aesthetic belong to the realm of art as much as the church and the museum ; indeed no one can object if we view purely engineered structures, such as boldly arching iron bridges, as interesting expressions of human artistic creativity.⁵⁶

Muthesius's vision became clear in Wagner's project which Muthesius himself acknowledged these accomplishment. He saw the architecture school of Otto Wagner as an ideal school that had worked toward and architecture that was both artistically freer and more considerate of the demands of purpose. As the result, the building-art was able and inclined from the beginning to form an alliance with the newly arising crafts.

STYLE AND TECTONIC

Conclusion

From the different approach toward the concepts of style and tectonic, style has been given both negative and positive connotations. The negative meaning of style came about when it was identified with superficial appearance, applied ornament or the molded outward look. When style was considered in this sense, its meaning was divorced from the tectonic concept, they became independent from each other. But when the word style was taken to be associated with the inner structure in terms of the relationship between inner structure and articulate appearance, both style and tectonic received double articulation through the symbolic expression of structure. They depended upon each other and became inseparable. This sense of style-tectonic concept became clear in Semper's theory ; the Kernform and Kunstform were one.. the structural part and the decorative symbol were closely related that one could not be altered without affecting the other. Each must be a primary element born simultaneously with the whole. In this case, the superficial outward appearance and applied ornament that existed without any relationship to inner structure had no contribution in formulating the style.

Pugin did not accept the symbolic expression of structure at the same level as Semper and Wagner. His strive for the truthfulness in the language of structure and the tectonic value lay in the revelation of structure while any kind of concealment was prohibited. It is possible that he would not accept the idea of tectonic mask in Semper's theory and Wagner's design. For Muthesius, his notion of Baukunst and his aim at sachlich Kunst, in fact, was not far from Semper's articulation of Kern-Kunstform. But his more realist approach along with his resentment in the "battle of style" led him to see style as superficial. Baukunst came to be related more to the tectonic concept of construction than to style.

Notes

- ¹ Herrmann Muthesius. *Style Architecture and Building-Art : transformations of architecture in the nineteenth century and its present condition*. Santa Monica, CA : the Getty Center, 1994. P.69.
- ² Harry Malgrave. In an introduction of Otto Wagner. *Modern Architecture*. Tr. H. Malgrave. Santa Monica, CA. : the Getty Center, 1988. P.14.
- ³ Heinrich Hubsch. and Carl Botticher,... . et al. In *What Style Should We Build : The German Debate on Style*. Tr. Wolfgang Herrmann. Santa Monica, CA.: the Getty Center, 1992, P.2-13.
- ⁴ Ibid., P.34.
- ⁵ A.W.N. Pugin. *The True Principle of Pointed or Christian Architecture*. New York : St. Martin's Press, 1973. P.1.
- ⁶ Frampton. P.37.
- ⁷ Pugin. P.2.
- ⁸ Ibid.
- ⁹ Frampton. P.38.
- ¹⁰ Ibid., P.39.
- ¹¹ Ibid., P.40.
- ¹² Ibid.
- ¹³ Ibid.
- ¹⁴ Pugin. P.71.
- ¹⁵ Ibid.
- ¹⁶ Wolfgang Herrmann. *Gottgries Semper : In Search of Architecture*. Cambridge, MA : MIT Press, 1984. P.138.
- ¹⁷ Carl Botticher. *Die Tektonik der Hellenen*, I. P.143. quoted in Herrmann. P.140.
- ¹⁸ Botticher. *Die Tektonik*. I. P.XV. in Ibid.
- ¹⁹ Gottfried Semper. In Wolfgang Herrmann. *Gottfried Semper : Theoretischer Nachlass an der ETH Zurich. Katalog und Kommentare*. 1981. Quoted in Herrmann. P.141.
- ²⁰ Herrmann. P.142.
- ²¹ quoted in ibid.
- ²² Semper. *Der Stil I*. P.389. in Ibid.
- ²³ Semper. *Der Stil I*. P.417. in Ibid.
- ²⁴ Herrmann. P.143.
- ²⁵ Semper. *Der Stil I*. P.389. quoted in Ibid.
- ²⁶ Herrmann. P.143.
- ²⁷ Botticher. *Die Tektonik II*, P.29. quoted in Ibid.
- ²⁸ Herrmann. P.144.
- ²⁹ Ibid.
- ³⁰ Ibid.
- ³¹ Frampton. P.86.
- ³² Ibid.
- ³³ Ibid.
- ³⁴ Joseph Rykwert. "Semper and the Conception of Style" in *The Necessity of Artifice*. New York : Rizzoli, 1982.
- ³⁵ Frampton. P.86.

- ³⁶ Gottfried Semper. *The Four Elements of Architecture*. and other writings. Tr. H. Malgrave. And W. Herrmann. New York : Cambridge University Press, 1989. P.103-104.
- ³⁷ Quoted in Herrmann P.151.
- ³⁸ Botticher. *Die Tektonik*. I. P.3. quoted in Herrmann. P.151.
- ³⁹ Rykwert. P.77-78.
- ⁴⁰ Ibid.
- ⁴¹ Ibid.
- ⁴² Fritz Neumeyer. "Iron and Stone : the Architecture of the Grosstadt." In H. Malgrave. Ed. Otto Wagner : *Reflections on the Raiment of Modernity*. Santa Monica, CA : the Getty Center, 1993. P.115.
- ⁴³ Frampton. P.90.
- ⁴⁴ Ibid.
- ⁴⁵ Stanford Anderson. "Sachkeit and Modernity, or Realist Architecture" in H. Malgrave. Ed. Otto Wagner. P.323-362.
- ⁴⁶ Frampton. P.89.
- ⁴⁷ Ibid., P.91.
- ⁴⁸ Neumeyer. P.135.
- ⁴⁹ Herrmann Muthesius. *Style Architecture*. P.37.
- ⁵⁰ Ibid.
- ⁵¹ Peter Haiko. "Otto Wagner : Die Postsparkasse und die Kirche Am Steinhof" in *Traum und Wirklichkeit : Wien 1870-1930*. P.88-105. Mentioned by Stanford Anderson In the introduction of Muthesius. *Style Architecture*. P.37.
- ⁵² Neumeyer. P.122.
- ⁵³ Muthesius. *Style Architecture*. P.78.
- ⁵⁴ Ibid., P.79.
- ⁵⁵ Ibid., P.74.
- ⁵⁶ Ibid.

Bibliography

Frampton, Kenneth. *Studies in Tectonic Culture : The Poetics of Construction in Nineteenth and Twentieth Century Architecture*. Cambridge, MA : MIT Press, 1995.

Herrmann, Wolfgang. *Gottfried Semper : In Search of Architecture*. Tr. Stanford Anderson. Cambridge, MA : Mit Press, 1984.

Hubsch, Heinrich and Carl Botticher, et al. *In What Style Should We Build : The German debate on style*. Translated by Wolfgang Hermann. Santa Monica, CA : Getty Center of the History of Art and Humanities, 1992.

Malgrave, Harry Francis, ed. *Otto Wagner : Reflections on the Raiment of Modernity*. Santa Monica, CA : Getty Center for the History of Art and Humanities, 1993.

Muthesius, Hermann. *Style Architecture and Building-Art ; transformations of architecture in the nineteenth century and its present condition*. Santa Monica, CA : the Getty Center for the History of Art and Humanities, 1994.

Pugin, Augustus W.N. *The true principles of pointed or Christian architecture*. New York : St.Martin's Press. 1973.

Rykwert, Joseph. "Semper and the conception of style" in *The Necessity of Artifice*. New York : Rizzoli, 1982.

Semper, Gottfried. "London Lecture of Autumn 1854 : On Architectural Symbols." In *RES Anthropology and Aesthetics*, ed. Harry Francis Malgrave, 9. Paris, 1985.

Semper, Gottfried. "London Lecture of December 1853 : On the origin of Some Architectural Style." In *RES Anthropology and Aesthetics*, ed. Harry Francis Malgrave, 9. Paris, 1985.

Semper, Gottfried. *Four Elements of Architecture and Other Writings*. Translated by Harry Francis Malgrave and Wolfgang Hermann. New York : Cambridge University Press, 1989.

Vischer, Robert, Conrad Fiedler ...et al. *Empathy, Form and Space : Problems in German Aesthetics, 1873-1893*. Translated by Harry Malgrave and Eleftherios Ikonomou. Santa Monica, CA : Getty Center of the History of Art and Humanities, 1994.

Wagner, Otto. *Modern Architecture : A guidebook for his students to this field of art*. Translated by Harry Malgrave. Santa Monica, CA : Getty Center for the History of Art and Humanities, 1988.