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## THE HISTORY OF SPATIAL COHERENCE

The term spatial coherence is often used in academic articles related to architecture and urban planning, as well as literature of these branches. After all, in the spatial approach, this term has a very broad meaning that goes far beyond the mentioned fields. It can be found, among others in works on interior architecture, exhibition and design. The term coherence used in publications is often associated with the perception of high-quality space, or even spatial order, where it is usually described as one of the features distinguishing this phenomenon. Even so, there are no publications that would pay more attention to it. This article explores the history of the term spatial coherence, beginning with ancient works to contemporary books and articles. The key purpose here is to answer questions such as: What has been the perception of coherence in architectural treatises and academic articles related to this topic over the centuries, and how is it understood today? In this article the author also poses the question whether the concept of coherence has remained unchanged over time, or if it has evolved by following changes in the “trends”, preferences of designers and recipients, or as a consequence of technological development giving new design opportunities. With this, the article offers a new perspective on the fascinating process of the development of design arts, especially architecture and urban planning.

**Keywords:** architecture, building design, urban design, design history, spatial coherence, spatial order

### 1. INTRODUCTION

Coherence is an important component of spatial order [Radford 2009; Çalışkan, Mashhoodi 2017; Salingaros 2018]. It is occasionally used as a synonym for this concept, and sometimes even equated with it. However, most often it is regarded as

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one of the factors influencing the formation of spatial order<sup>1</sup> and for this reason, it is usually viewed as a positive trait. After all, coherence in a spatial approach has a very broad meaning that goes far beyond architecture and urban planning. It is used, among others in works on interior design [Marchand 2018, Greig, Riello 2007], exhibition [Filipova 2021], and design [Maffei, Fisher 2013].

However, as noted by the author, perceiving a coherent space as an unambiguously positive feature is not always justified. There are famous examples of internally coherent design implementations that ultimately do not create pleasant or harmonious spaces. An example could be some architectural realizations from recent years, e.g., part of contemporary, suburban housing estates composed of identical buildings, which, while apparently internally coherent, are also often too repetitive, and sometimes do not exhibit any coherence with the surrounding landscape and the former development. Due to the controversial subject matter, the question arises: How has coherence been perceived in architectural treatises and academic articles related to this subject throughout the centuries, and how is it understood today? Was the concept of coherence unchanged, or did it evolve following the changes in trends, preferences of designers and recipients, or as a consequence of technological development giving new design opportunities?

In addition to answering the above questions, the article also aims to present the story of the so far relatively poorly studied [Kaplan, Kaplan 1989] term of spatial coherence found in historical and contemporary written sources devoted to design, with particular focus on architecture and urban planning. It is hoped that by doing so, it will be possible to look at the development of these areas of design arts from a new perspective, and perhaps also to find new meanings and values in them.

## 2. RESEARCH METHODS

During the work on the article, the method of logical argumentation was used, as well as the method of historical-interpretative research, which involved collecting data and source materials, recording them, assessing their value, and finally interpreting them. The primary evidence was recognized historical architectural treatises, as well as contemporary books and articles written by renowned architects, urban planners and architecture critics. In the search for documentation, the collections of libraries, such as the *Library of the Faculty of Architecture at Poznan University of Technology*, but also digital repositories containing, among other things, digitized versions of historical literature, such as the *Bibliothèque Nationale de France*, or <https://books.google.pl>, proved invaluable. In addition to the aforementioned re-

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<sup>1</sup> Although there is no single set of such factors, coherence is usually listed as one of them. For example, according to Leszek Kozłowski [2016], “spatial order should be combined with issues of repetition, regularity, rhythm and coherence, which guarantee harmony”.

search techniques: logical interpretation and documentation collection, the paper also made use of description, explanation, literature studies and analysis.

### 3. THE HISTORY OF COHERENCE

By tracking historical architectural treatises, one can have the impression that the concept of spatial coherence did not exist at all centuries ago. Admittedly, already in the 1st century BC, Vitruvius uses the term “cohaerentiam” in his work *De Architectura Libri Decem* [1912], but it applies only to the coherence of elements of air, fire, earth and water, of which the material world was believed to be made from, as well as to building materials such as the coherence of a cement mixture, and the method of compiling machine elements. Vitruvius uses different varieties of the word “cohaereo” like “cohaerentiam”, “cohaerentes”, “cohaerescunt”, “cohaerere” [1912], which can be translated as “to stick or hold together, to cohere [...] A) with something else [...] B) in its parts, in itself” [Crooks, Schem 1861].

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III Itaque primum de lateribus, qua de terra duci eos oporteat, dicam. non enim de harenoso neque calcuoso luto 38 neque sabulone soluto sunt ducendi, quod, ex his generibus cum sint ducti, primum fiunt graves, deinde, cum ab imbribus in parietibus sparguntur, dilabuntur et dissolvuntur s paleaeque in his non cohaerescunt propter asperitatem. (5) faciendi autem sunt ex terra albida cretosa sive de rubrica aut etiam masculo sabulone; haec enim genera propter levitatem habent firmitatem et non sunt in opere ponderosa et faciliter aggerantur. ducendi autem sunt per verum 2 tempus et autumnale, ut uno tenore siccescant. qui (10) enim per solstitium parantur, ideo vitiosi fiunt, quod, summum corium sol acriter cum praecoquit, efficit, ut videatur aridum, interior autem sit non siccus; et cum postea siccescendo se contrahit, perrumpit ea, quae erant arida. ita 15 rimosi facti efficiuntur inbecilli. maxime autem utiliores (15) erunt, si ante biennium fuerint ducti; namque non ante possunt penitus siccescere. itaque cum recentes et non aridi sunt structi, tectorio inducto rigidoque obsolidate permanente, ipsi sidentes non possunt eandem altitudinem, qua 20 est tectorium, tenere contractioneque moti non haerent cum (20) eo, sed ab coniunctione eius disparantur; igitur tectoria ab structura seiuncta propter tenuitatem per se stare non possunt, sed franguntur, ipsique parietes fortuito sidentes vitiantur. ideo etiam Uticenses laterem, si sit aridus et 25 ante quinquennium ductus. cum arbitrio magistratus fuerit (25) ita probatus, tunc utuntur in parietum structuris. fiunt autem laterum genera tria: unum, quod graece Lydium appellatur, id est quo nostri utuntur, longum sesquipedem, latum pede. ceteris duobus Graecorum aedificia struuntur; 30 ex his unum τετραδωρον, alterum τετραδωρον dicitur. 31

3 sabulone soluto rec: sabulono luto x 4 intribus HS  
11 tenore Joc: tempore x 13 chorium H efficit H 14 sicciscendo HS 19 obsolidate (Kr) permanente Joc: obsolidati permanent x 20 que e tectorum G 24 fortuito S (H G)  
sidentes S: sedentes x 28 lydium H, lidiu GS 31 pentadoron x tetradoron x

Fig. 1. ‘cohaerescunt’ [Vitruvii 1912] – Public Domain

The word “coherence” is used relatively rarely, especially in historical architectural treatises. It does not occur, among others in the 15th-century books of Antonio di Piero Averlino [1965], or Francesco di Giorgio Martini [1841]. It also cannot be found in the early treatises of Alberti, e.g., in *De pictura (On Painting)* from 1435 [2011]. However it appears in his later treatise *The Ten Books on Architecture* of 1452 [Alberti 1986]. In fact, in some places the word “coherence” is used in a similar sense as in Vitruvius, to refer to physical bonds between materials<sup>2</sup>, however, it also occurs in relation to the search for beauty in objects made of various elements<sup>3</sup> (Fig. 2). The Latin version also involves the use of the word “discouenienti” [Alberti 1452], which relates to the beauty of diversity, whereby the author exhorts that it must be “things different, but proportionable to each other; but it is rather shocking, if they are unsuitable and incoherent” [Alberti 1986].

The concept of coherence does not appear in the 16th century in the works of Andrea Palladio [1581] or Iacomo Barozzio da Vignola [1635], or in the 18th century in the treaties of the French architect and encyclopedist Jacques-François Blondel from the same period concerning both architecture [1752-56, 1754, 1771, 1771-77, 1774] as well as garden architecture [1738]. Also in the later French books from the 19th century by Eugène Emmanuel Viollet-Le Duc [1863, 1873, 1893], it does not appear within any context. Like in earlier centuries, and so at this time, the dominant use of this term in writings related to architecture to describe the physical connections of building materials [Douliot 1832], but also, to a lesser extent, e.g., in the “genius structure of man [...] which is stronger than coherence”<sup>4</sup>, or in a more philosophical approach, pointing to “inner spiritual coherence of all things” [Wolff 1845]. At the same time, there were calls for a more harmonious architecture. As noted by Alain de Botton, one such appeal was issued in 1849 by John Ruskin: “A day never passes without our hearing our architects called upon to be original and to invent a new style, [...] What could be more harmful [...] than to believe that a new architecture is to be invented fresh every time we build a workhouse or parish church?” [Botton 2008]. De Botton writes further: “half a century later and in a similar vein, Adolf Loos appealed to architects to put aside their individual ambitions for the sake of collective coherence: The best form is there already and no

<sup>2</sup> ‘for those Parts which are dried and hardened, cannot be made to cohere again by any Art whatsoever, and those which are still moist, yield and give Way to the least Violence’ [Alberti 1986].

<sup>3</sup> In the Latin version, the word “cohaesione” is used [Alberti, 1452]; in the English version it was translated into “coherence”: “An Enquiry of the utmost Difficulty; for whatever that Property be which is so gathered and collected from the whole Number and Nature of the several Parts, or to be imparted to each of them according to a certain and regular Order, or which must be contrived in such a Manner as to join and unite a certain Number of Parts into one Body or Whole, by an orderly and sure Coherence and Agreement of all those Parts.” [Alberti 1986].

<sup>4</sup> In the original text: „l'ingenieuse structure de l'homme’ [...] Elle est plus forte que la cohesion” [Ledoux 1804].

one should be afraid of using it, even if the basic idea for it comes from someone else. Enough of our geniuses and their originality. Let us keep on repeating ourselves. Let one building be like another. We won't be published in *Deutsche Kunst und Dekoration* and we won't be made professors of applied art, but we will have served ourselves, our times, our nation and mankind" [Botton 2008].

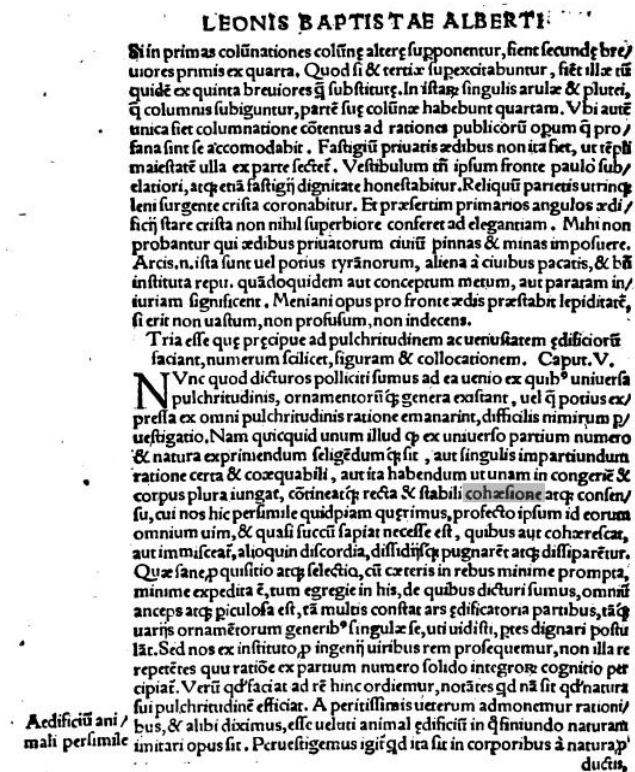


Fig. 2. "cohaesione" [Alberti 1452] – Digitalized by Google, Public Domain

Query of architectural literature made by the author of this article demonstrates that almost 3.5 centuries have passed from the treatise *De Re Aedificatoria Libri Decem* by Leonis Baptistae Alberti to the next mention of spatial aspects of coherence. In *The Antiquities of Athens, vol. 3* published in Great Britain in 1794, James Stuart and Nicholas Revett, referring to study trips to Greece, note that descriptions of ancient architecture cannot substitute a visit on site. Otherwise, "crude and incoherent attempts at execution would then bring the art itself into contempt" [Stuart, Revett 1794]. From among the pre-war works, however, Geoffrey Scott devotes the most attention to coherence in architecture in his work *The Architecture of Humanism. A Study in the History of Taste* issued in 1914. The author notes a strong association between order and coherence. By his own admission, "order in

architecture means the presence of fixed relations in the position, the character and the magnitude of its parts. It enables us to interpret what we see with greater readiness; it renders form intelligible by making it coherent" [Scott 1914]. For him, the language of architecture is mass, space, line, and coherence, (Fig. 3) whereby coherence connects space, line and mass. The most coherent architecture, on the other hand, was created in antiquity and the Renaissance, "when thought itself was simple, human and consistent" [Scott 1914]. Curiously, he also calls for the rulers to supervise art "to impose upon it a distinctively courtly character, and the coherency" [Scott 1914].

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axial planning must result. Symmetry and Balance are forms of Order; but they are beautiful, not because they are orderly, but because they carry with them a movement and stability which are our natural delight. Then, since architecture is a monumental art, surrounding us with an influence never relaxed and not to be escaped, calm and unthwarted movement will here most often be desired. Thus Order, though it cannot ensure beauty, may follow in its wake.

Yet Coherence in architecture, distinct though it is from beauty, has a function of its own. Humanised mass, space, and line are the basis of beauty, but coherence is the basis of style. Mass, space, and line afford the material of individual æsthetic pleasures, of beauty isolated and detached. But architecture aims at more than isolated pleasures. It is above all else an art of synthesis. It controls and disciplines the beauty of painting, sculpture, and the minor arts; it austere orders even the beauty which is its own. It seeks, through style, to give it clarity and scope, and that coherence which the beauty of Nature lacks. Nature, it is true, is for science an intelligible system. But the groups which the eye, at any one glance, discovers in Nature are not intelligible. They are understood only by successive acts of attention and elimination; and, even then, we have to supplement what our vision gives us by

Fig. 3. "coherence", [Scott 1914] – Public Domain

Considering literature published in the interwar period, one cannot ignore Le Corbusier's *Vers une architecture*<sup>5</sup>, which was first published in 1923. Here, co-

<sup>5</sup> The English title is: 'Towards a New Architecture'.

herence is<sup>6</sup> an important component of the form, which influences the quality of an architectural work. “If masses are of a formal kind and have not been spoilt by unseemly variations, if the disposition of their grouping expresses a clean rhythm and not an incoherent agglomeration, if the relationship of mass to space is in just proportion, the eye transmits to the brain coordinated sensations and the mind derives from these satisfactions of a high order : this is architecture” [Le Corbusier 1986] (Fig. 4). Furthermore, an architectural work is harmonious if it “it is not in any way the effect of caprice, but is of a logical construction and congruous with the world around it” [Le Corbusier 1986]. The role of coherence in shaping spatial order is also confirmed by other words of Le Corbusier that “without plan there can be neither grandeur of aim and expression, nor rhythm, nor mass, nor coherence. Without plan we have the sensation, so insupportable to man, of shapelessness, of poverty, of disorder, of willfulness” [Le Corbusier 1986].

## THREE REMINDERS TO ARCHITECTS

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**A**RCHITECTURE has nothing to do with the “styles.” It brings into play the highest faculties by its very abstraction. Architectural abstraction has this about it which is magnificently peculiar to itself, that while it is rooted in hard fact, it spiritualizes it. The naked fact is a medium for an idea only by reason of the “order” that is applied to it.

Mass and surface are the elements by which architecture manifests itself. Mass and surface are determined by the plan. The plan is the generator. So much the worse for those who lack imagination !

## THIRD REMINDER : THE PLAN

The plan is the generator.

The eye of the spectator finds itself looking at a site composed of streets and houses. It receives the impact of the masses which rise up around it. If these masses are of a formal kind and have not been spoilt by unseemly variations, if the disposition of their grouping expresses a clean rhythm and not an **incoherent** agglomeration, if the relationship of mass to space is in just proportion, the eye transmits to the brain co-ordinated sensations and the mind derives from these satisfactions of a high order : this is architecture.

The eye observes, in a large interior, the multiple surfaces of walls and vaults ; the cupolas determine the large spaces ;

Fig. 4. “incoherent” [Le Corbusier 1986] – Public Domain

<sup>6</sup> Apart from composition, rhythm, size and proportions.

A big role of coherence in developing spatial order and counteracting chaos can be attributed to his observations on the manufacturing quarters of towns, which should represent their noblest areas. Sadly, “dirt infects their surroundings, and incoherence ran riot when the rule and square dictated the placing of the buildings, spreading them about in a crazy, costly and dangerous way” [Le Corbusier 1986].

Exploring the use of the term coherence in literature on architecture, it can be the impression that its occurrence intensified after World War II. In his book *Experiencing Architecture*, first published in 1959, Steen Eiler Rasmussen compares architecture to music. Although it does not contain visual harmony or disharmony, the scale and proportions are equally important, and just like in architecture, sometimes “the sound produced is incoherent and often directly unpleasant” [Rasmussen 1964]. In his book, the term coherence is similar to that used by Le Corbusier. This is an unambiguously positive element to which we should strive in order to achieve a pleasant and harmonious architecture. In the following years, a similar view was also expressed by Kevin Lynch, who noted in 1960: “We have the opportunity of forming out new city world into an imageable landscape: visible, coherent, and clear. It will require a new attitude on the part of the city dweller, and a physical reshaping of his domain into forms which entrance the eye, which organize themselves from level to level in time and space, which can stand as symbols for urban life” [Lynch 1960]. Already in the first chapter, he drew attention to the peculiar, transspatial role of coherence, in which he “pointed out the special nature of city perception and concluded that the art of urban design must therefore be essentially different from the other arts. The vividness and coherence of the environmental image was singled out as being a crucial condition for the enjoyment and use of the city” [Lynch 1960]. He believes that important elements of cities are nodes, which are “more remarkable if provided with one or two objects which are foci of attention. But if it can have coherent spatial form, it will be irresistible” [Lynch 1960].

However, the approach to coherence as an unambiguously positive component of spatial order began to gradually change. In 1965, Walter Gropius, fascinated by the idea of standardization, somewhat idealistically expressed the view “that repetition of the same things for the same purposes exercises a settling and civilizing influence on men's minds” [Gropius 1965]. At the same time, he also observed a danger in the complete repetition of the same bodies of buildings, which can be alleviated by applying a certain degree of heterogeneity. “As the basic cellular unit of that larger unit the street, the dwelling-house represents a typical group-organism. The uniformity of the cells whose multiplication by streets forms the still larger unit of the city therefore calls for formal expression. Diversity in their sizes provides the necessary modicum of variation, which in turn promotes natural competition between dissimilar types developing side by side. The most admired cities of the past are conclusive proof that the reiteration of 'typical' (i.e., typified) buildings notably enhances civic dignity and coherence” [Gropius 1965]. In his view, coherence is therefore a beneficial phenomenon, but it cannot be based on uncritical and complete repetition. A similar opinion was expressed by Christopher Alex-



ander and the co-authors of *A Pattern Language*, first published in 1977. Describing the clusters that constitute a group of buildings, Alexander noticed the need to maintain “the balance between the informality and coherence of the group” [Alexander 1977]. Just as in the work of Walter Gropius, here the problem of excessive coherence was signaled, which can be counteracted by maintaining a balance with a certain level of informality, understood in this case as freedom of the designed architectural forms. Despite the authors’ calls for coherence also elsewhere in the city, such as in markets, or even in the vicinity of bus stops, from this perspective, full coherence is no longer merely an unambiguously positive value, but requires a certain variety to become positive.

Describing the patterns contained in the book, Alexander also noted that “no pattern is an isolated entity. [...] This is a fundamental view of the world. It says that when you build a thing you cannot merely build that thing in isolation, but must also repair the world around it, and within it, so that the larger world at that one place becomes more coherent, and more whole; and the thing which you make takes its place in the web of nature, as you make it” [Alexander 1977]. Just like in the book by Kevin Lynch, the authors point to the broad context of architectural works and coherence not only with other works, but with the entire human environment and the natural system. Coherence is also required between the structure of the building and the social space. Their “mismatch is perceived and felt not merely as a mismatch, but as a fundamental and disturbing incoherence in the fabric of the building, which makes people feel uneasy and unsure of themselves and their relation to the world” [Alexander 1977].

Years later, Nikos Salingaros, a longtime associate of Christopher Alexander, noticed that “In writing the *Pattern Language*, Alexander wanted above all a method for generating coherence in the built environment. As clearly articulated by Alexander himself, buildings and urban regions designed according to the *Pattern Language*, although far more accommodating of human movement and interaction than equivalent structures that violate it, have not always added up to a coherent whole” [Salingaros 2000]. Nonetheless, Alexander's ideas portray a shift in the approach to architecture and urban planning, which should focus more and more on the needs of the user of the space.

However, the psychological approach to the theory of architecture and research on how it affects people was started in the second half of the 20<sup>th</sup> by Rudolf Arnheim<sup>7</sup>. Arnheim believed that the space must “reconcile the independence of the parts with the coherent sweep of the whole” [1977]. His works also drew attention to the coherence of architectural interiors from the perspective of painting but also sculpture oeuvre [Arnheim 1982].

In the 1980s, Rachel and Steven Kaplan expressed the already known view that the mere coherence, mere repetition of the elements that make up the building is

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<sup>7</sup> A similar view on architecture and urban planning was introduced 6 years later by Juliusz Żórawski in his book ‘On the construction of an architectural form’ [1962].

not sufficient for creating a space of good aesthetic quality. To do this, there is a need for a certain architectural thought, a certain degree of individualization. They indicated that coherence must be complemented by complexity, because scenes with low complexity and high coherence are “boring”, while “high complexity urban areas must also be highly coherent” [Kaplan, Kaplan 1989]. Coherence does not mean thoughtless repetition or insipidity, but rather the continuity of design and thematic orderliness. At the same time, too extreme complexity also does not encourage positive space [Kaplan, Kaplan 1989; Herzog, Kaplan, Kaplan 1982].

The 21<sup>st</sup> century is seeing a continuation of the previously described view of spatial coherence [Radford 2009; Opdam, Verboom, Pouwels 2003], though there are other voices as well [Botton 2008], which often stem from nostalgia for the lost coherence of space. This is best seen on the example of Leon Krier, who “laments the loss of his home city and by extension of so many other cities ‘renewed’ in the last fifty years [...] and desires [...] to return home to the more coherent urban order of the past” [Stern 2009]. Krier believes that one of the biggest culprits behind the rampant inconsistencies in cities is Article 12 of *The Charter of Venice*<sup>8</sup>. According to Krier, “The declared effort to significantly contrast restored parts with original elements considerably reduces the coherence and hence affects negatively the harmony and structural integrity of restored buildings” [Krier 2009].

Krier’s call for greater spatial coherence and his nostalgia for the bygone coherence of the cities of his youth show that, however we judge this phenomenon, whether unequivocally positive or positive only on certain conditions, spatial cohesion is necessary, and perhaps now more urgent than ever. This observation is confirmed by an increasing number of books and academic articles that raise the issue of spatial cohesion.

#### 4. CONCLUSIONS

The literature review concerning spatial coherence presented in the previous chapter demonstrated not only the evolution of the discussed phenomenon over time, but also the transformation of architecture and a shift in the approach to design. Over time, the first mention on the cohesion of materials began to evolve into a more spatial presentation of coherence. However, studies in which it was omitted dominated until the end of the 18<sup>th</sup> century. From this we can conclude that spaces, in view of a limited number of building functions, as well as a relatively small number of architectural forms, were interpreted as coherent and the issue thereof was not evi-

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<sup>8</sup> It reads as follows: “Replacements of missing parts must integrate harmoniously with the whole, but at the same time must be distinguishable from the original so that restoration does not falsify the artistic or historic evidence”. [*The Venice Charter* 1964].

dent or did not exist on a greater scale. Spaces were dominated by a group of architectural styles, as well as buildings with a repetitive or similar functional outline.

The first mentions of incoherence since Leon Battista Alberti emerged at the turn of the 18th and 19th centuries and concerned the inept use of forms of ancient architecture that were rediscovered after many centuries, which led to a new classicist style. It might be the case that some architects at that time designed the forms of buildings in an incompetent way, inadequately juxtaposing architectural details, which resulted in incoherence not only of the objects themselves, but also with respect to the environment. The move towards ancient architecture, as well as the industrial revolution and its aftermath, led not only to a new aesthetic but also functional and structural standards. In this period, Teresa Bardzińska-Bonenberg points to “two-track aesthetics: there was a domination of traditional construction camouflaged with historical forms, and new types of buildings explicitly used the potential of technology. The avant-garde buildings of the 19th century emerged against the backdrop of historicizing, eclectic urban buildings” [Bardzińska-Bonenberg 2011]. This can be an explanation of why publications presenting the issue of coherence initially appeared mainly in the most industrialized Great Britain in that period. It would also seem that at that time, structural decorations became cheaper and therefore more accessible<sup>9</sup>.

Subsequent, more dynamic social and economic transformations, as well as the emergence of new materials, such as steel and reinforced concrete, made possible further changes in the aesthetics of buildings, and, it seems, the increasingly rapid loss of coherence across many spaces. This process was particularly evident after the Second World War, where it was necessary to quickly replenish housing shortages. New buildings were designed especially in modernist style, which began to dominate the spaces of some towns and villages, and definitely had various features that would distinguish it stylistically from the earlier development. The inconsistencies that appeared at that time began to absorb more and more attention and became the subject of more extensive work by scientists, architects, town planners and architecture critics, which is reflected in the literature review from that period included in the this article.

Surprisingly, the very concept of coherence began to evolve, and it no longer concerned only physical connections in building materials, or even ordinary relations between buildings. In the present time, we can distinguish three approaches to spatial cohesion. In the first approach, it is considered as unequivocally positive and uncritically desirable. In the second approach, the authors point to the ambiguity in the concept of coherence. They assume that there are occasions when full coherence is not desirable and the correct solution is to use a balance between coherence and diversity. There is also a third approach in which the problem of spa-

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<sup>9</sup> Until then, these were expensive solutions available to the social elite or public buildings.

tial cohesion is omitted<sup>10</sup>. Whichever approach we choose, spatial coherence, and with it also the creation of new spaces in architecture and urban planning, increasingly applies to meeting the needs of people, and to a much broader context, e.g., of a landscape or social context.

Clearly visible in the undertaken literature review is the lack of a definition of spatial coherence in most of the mentioned studies. Perhaps this is because space simply feels coherent or incoherent. Based on a review of the literature, one can attempt to define it as a certain repeatability<sup>11</sup> in space that affects its identity. However, this repeatability should also be characterized by some degree of diversity if it is supposed to be perceived in a positive way. There is little doubt, however, that spatial coherence is a big part of design arts, and its character is constantly changing, which will certainly be reflected in further publications.

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<sup>10</sup> Since the scope of this study centered around literature which deals with spatial coherence, important books in the field of architecture and town planning that do not raise this issue have not been previously cited. They usually concentrate on general architectural considerations or presenting the architecture of specific localities. Unsurprisingly, the term coherence was not used in the book *Learning from Las Vegas*, published in 1972, which concerns one of the least spatially coherent cities in the world [Venturi, Scott Brown, Izenour 1977]. If this concept appears in these books, it either refers to the coherence of materials, or coherence not in spatial terms, but in social, economic, and historical ones [Koolhaas 1994], or even a coherent way of thinking [Zumthor 1999], or a coherent existential experience [Pallasmaa 2005].

<sup>11</sup> e.g., architectural, urban, landscape forms, or social attitudes.

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## HISTORIA SPÓJNOŚCI PRZESTRZENNEJ

### Streszczenie

Spójność przestrzenna jest pojęciem często używanym w artykułach naukowych z dziedziny architektura i urbanistyka, a także w literaturze branżowej. W ujęciu przestrzennym

ten termin ma zresztą bardzo szerokie znaczenie, wychodzące daleko poza wymienione dziedziny sztuki. Jest stosowany m.in. w pracach dotyczących architektury wnętrz, wystawiennictwa i designu. Używanie w publikacjach pojęcia koherencji jest często związane z odczuwaniem wysokiej jakości przestrzeni czy wręcz ładu przestrzennego i wtedy opisuje się ją zwykle jako jedną z cech wyróżniających ten fenomen. Mimo to brakuje publikacji, które poświęcałyby większą uwagę temu zjawisku. Niniejszy artykuł bada historię pojęcia spójności przestrzennej, począwszy od dzieł starożytnych, a skończywszy na współczesnych książkach i artykułach. Jego głównym celem jest odpowiedź na pytania, jak postrzegana była spójność w traktatach architektonicznych i artykułach naukowych związanych z tą tematyką na przestrzeni wieków, a także jak jest pojmowana współcześnie. Autor stawia także pytanie, czy pojęcie spójności było niezmiennie w czasie, czy ewoluowało, podążając za zmianami mód, preferencji projektantów i odbiorców albo jako konsekwencja rozwoju technologicznego dającego nowe możliwości projektowe? Dzięki temu artykuł pokazuje z nowej perspektywy fascynujący proces, jakim jest rozwój sztuk projektowych, a w szczególności architektury i urbanistyki.

**Słowa kluczowe:** architektura, projektowanie budynków, historia projektowania, spójność przestrzenna, ład przestrzenny

