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DOES ARCHITECTURAL CONCRETE NEED A DEFINITION?

CZY BETON ARCHITEKTONICZNY POTRZEBUJE DEFINICJI?

Abstract

Nowadays, concrete appears as a material that gives the freedom to shape elements and objects. These words may sound like the obviousness, but there has appeared something new in architecture since modernism – *Architectural Concrete*. This more and more popular name can become a pretext for further reflections on this common material. Most importantly, *Architectural Concrete* presents itself as an object of interest not only to professionals. Recognizing this common material as unique is not a new discovery. The novelty consists in discovering its beauty and emancipation from the structural material to the ornament. Contemporary creators accustom us to the new perception of this material. The variety of forms and the impossibility of unambiguous systematization predispose to formulate the thesis of the emergence of a new, difficult to name, trend – *Concrete Architecture*. It must be stressed that it is detached from all styles of building and creates its own artistic language.

Keywords: variety of forms, architecture, avant-garde, concrete

Streszczenie:

Beton jawi się współcześnie jako tworzywo dające swobodę kształtowania elementów i obiektów. Słowa te mogą brzmieć jak oczywistość, jednak pojawia się w architekturze od modernizmu jeszcze coś nowego – *beton architektoniczny*. Ta coraz popularniejsza nazwa może stać się pretekstem do kolejnych rozważań o tym zwykłym materiale. Co najważniejsze *beton architektoniczny* jawi się współcześnie jako obiekt zainteresowania nie tylko profesjonalistów. Uznanie tego pospolitego materiału za wyjątkowy nie jest nowym odkryciem. Nowością staje się odkrywanie jego piękna i emancypacja z materiału konstrukcyjnego na rzecz ozdoby. Współcześni twórcy przyzwyczajają nas do nowego spojrzenia na ten materiał. Różnorodność form i niemożliwość jednoznacznego usystematyzowania predestynuje do wysnucia tezy o pojawieniu się trudnego do nazwania nowego trendu – *Architektury Betonowej*. Trzeba podkreślić, że jest ona oderwana od wszelkich stylów budowania i tworzy swój własny język artystyczny.

Słowa kluczowe: różnorodność form, architektura, awangarda, beton

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1. An attempt at definition

Nowadays, concrete appears as a material that gives the freedom to shape elements and objects. These words may sound like the obviousness, but there has appeared something new in architecture since modernism – *Architectural Concrete*. This more and more popular name can become a pretext for further reflections on this common material. At the very first attempt, a researcher is immediately faced with the difficulty with a precise definition of the phenomenon. We can borrow a short definition from the engineer Krzysztof Kuniczuk's lecture: *Architectural Concrete – design, production, repair and evaluation*. It presents Polish and international standards and specifications for architectural concrete. The author creates an ambiguous and rebuttable definition (which I do not intend to do) that *Architectural Concrete* is specifically designed at the stage of documentation production and that the requirements for its surface are defined as well as the impact on the visual character of the object. The problem with this formulation is that we can give a definition of a racing car as one designed for racing, or a brick architecture as one made of bricks. The author gives appropriate conditions to determine the correctness of the workmanship and to be able to perceive thus created material as “architectural” one. There are a number of important observations: observation distance, the distance from which most users of the structure will view architectural concrete is at the same time the distance of the visual assessment of concrete workmanship during construction commissioning, colour and comparison with a reference sample or air bubble quantity. The very name of *Architectural Concrete* does not, however, fit in with a simple definition, which the study of modern literature on architecture may confirm. There is a series of names for thus made and properly tested material: *Architectural Concrete*, *Fair-faced Concrete*, *Exposed Concrete*, *Structural Concrete*. Such phrases are not clear, and an inquiring observer is left only with intuition or previously acquired education. After all, it may seem to us that we know what architectural concrete is, but it probably has not been possible to create a simple straightforward definition understood by all. An example here may be the phrase found in the descriptions of building designs – “pillar of the bridge to be made in architectural concrete” – which is not fully understandable for architects.

And it is there that a conviction about the detachment of the creation of *Architectural Concrete* from its predecessor appears – concrete “aggregate”. This “old” ordinary material was usually praised as useful material in construction. The durability and ease of shaping and the low price predisposed it to the construction of foundations, cellars and invisible fragments of buildings – useful things. However, as early as 1834 Teofil Gautier doubted the power of utility. “There are two sorts of utility, and the meaning of the vocable is always a relative one. What is useful for one is not useful for another. You are a cobbler, I am a poet. It is useful to me to have my first verse rhyme with my second”¹. Two thousand years ago Vitruvius conferred three attributes on architecture: *Firmitas*, *Utilitas*, *Venustas* (durability, utility, beauty). Today's world prompts us to forget or misappropriate the words. After all, the construction disappears under the layers of plasterboard and is no longer the main interest of architects. What designers used to be so interested in – the “beauty” of the construction loses its literal meaning. After all, one can build everything or almost everything. It must be remembered that even in 1849 John Ruskin wrote in the work *Seven Lamps of Architecture*:

¹ T. Gautier, *Panna de Maupin*, Preface, Warszawa 1958, p. 50.

“It is necessary to take into account the difference between the words Construction, Building and Architecture, without excluding their relation to the extent that it is impossible to have good architecture without a good construction”². Here material such as concrete is so obvious that there is probably nothing to write about. Also today, concrete underestimates *prepon – aptum – decorum*, Aristotle’s principle concerning compatibility of content and form, which no longer applies in modern architecture. “This category required masters of space shaping to use different structures and forms depending on the type of structure, so that they would become more beautiful, more magnificent and more attractive”³. This is where concrete appears. The plain material, suitable for creating unusual constructions. Constructions no longer in the sense of structural elements, but freely shaped elements of buildings or even whole buildings.

2. Variety of forms

It is precisely from such shaping of the elements of the buildings and their whole that one can begin to consider what we may call *Concrete Architecture*. “Stone concrete”. And so we can start, from an architectural detail, an entrance gate to Istituto Universitario di Architettura di Venezia, the posthumous work of Carlo Scarpa (1906–1978), the entrance to the main building of the Venetian University designed in the seventies, can be found in Tolentino district. The old portico with arches above the entrance was demolished, arranged horizontally and turned into a border of a shallow pond. The entrance to the university is closed with a steel gate embedded in a concrete structure. Concrete with the relief typical of Scarpa becomes a complement to the stone, and, as Dariusz Kozłowski calls it, it becomes a *new stone*. A non-aggressive addition to the existing historical parts of the building.

Sublime concrete. It is Dariusz Kozłowski who, together with Waclaw Stefański and Maria Misiągiewicz, create the Polish monument to concrete between 1984 and 1988 in Kraków – *The Way of Four Gates*. It is a postmodern decomposition, building – Higher Seminary of the Congregation of the Resurrection. The idea is based on the idea of the *Way of Four Gates*, which was recorded. The metaphorical idea of the Way of the Spirit, leading from the City-Civilization to the Nature-Park-God, with four Gates was based on the archetypal “quaternity”. They way is divided by the Gates; the Way leads through the “Walls”, “Courts”, “Structures”, “Squares”, and the paths leading to nowhere divert attention from the right direction. The Way of the Spirit, however, is not a real space, it is the proposal of the participation of the resident and the traveller in the experience of conquering the gates and stages with thought. Decomposition, or more precisely “disintegration”, as defined in the commentary to the design, plays an essential role in the implementation of the idea. Ruin, here usually of reinforced concrete, also creates that unrealistic atmosphere and mood of the artificial world of the architecture of the *Way of Four Gates*. First, it is a monastery wall: demonstrating through its thickness and height the mass of the real reinforcement, hiding and showing something at the same time through the crevices in the partition. The rough cast,

² J. Ruskin, *Siedem lamp architektury*, Architekt No. 11., 1903.

³ B. M. Pawlicki, *Transformacja i eskalacja przekształceń zabytkowych miast (Tożsamość – degradacja – przyszłość)*, Megaron, Kraków – Zamość, 2011, p. 109–110.



demonstrating careless traces of the formwork, at the same time shows the remarkable nobility of the fragmented remains of the missing “fragmented” support, showing a gilded (it was supposed to be gilded) breach alluring with the artificial nature of the material.

Then the gate to the residential building: fragments of raw concrete protrude from the colours of the noble plaster of the fissure-passage; small reinforced concrete residues allow to guess the great construction of a multi-storey wall, in fact, the construction does not exist.

The crowning of the church, the proper spatial predominant feature of the monastery, simple, cubic body of the temple, are massive concrete forms that could be a real roof, but are only the confinement of a certain space.

One of the cloisters of the courtyard, and at the same time permanent stage design complementing the amphitheatre, is a “ruin” – a reinforced concrete wall protecting professors’ apartments. Above, the terrace buildings, “false temples” – the *Temple of the East* and the *Temple of the West*, a cast of the front of the ancient tomb with overly extended acroteria, and the elevation of the baroque chapel, not without irony either. The façade of the church received a concrete relief repeating the drawing of a “chapel with a dome” with the illusionistic outlines of the cornices and rustication pretending to shorten the perspective.

The interiors of the building exploit the motif of the vault form, as “there should be vaults in the monastery”. These are shapes cast from reinforced concrete, suggesting associations that are more or less distant from the image of real constructions, but signifying nothing here, on the contrary, being suspended themselves from the ceiling, they demonstrate their fictitiousness. Such “vaults” appear in corridors and halls, in the auditorium, in chapels. In the library of the Sisters’ House, the vault turned into a decomposed negative reminiscent of the roof of the baroque chapel, and in the interior of the home chapel of this building, it was replaced by a heavy reinforced concrete block, named by a simple association – a “cloud”. Reading out the meaning of these deformed reinforced concrete elements is blurred by displaying flat casts, ordinary ceilings exposed from under the plaster, confronted in the entire building with simple white plaster and geometric arrangements of floors of black, polished, artificial stone.⁴

Minimalist concrete. The opposite of the cast in raw wooden concrete formwork is its form – smooth. One can call it *béton glacé*. Tadao Ando creates such an architecture in *Meditation Space* in Paris in 1995. It is not a temple, rather a place to ponder, perhaps over the name of *Concrete Architecture*. We can call Tadao Ando’s rationalistic approach to designing architecture minimalism. Mies Van Der Rohe’s slogan – *Less is more* – may be the motto of the building. The original simplicity of the form results from an intellectual approach to design. Any decorations here are not recommended; the creator as befits an orthodox, deprives the body of the building of all unnecessary ornamentation. However, something is left; after all, the building is considered one of the architectural icons not without reason. There remains a raw concrete surface with the rigorous simplicity of the geometric formwork composition as a finish. The whole is a small building with a surface of only 33 m² and located on the equally small plot of 350 m². The structure has a shape of 6.5 m high cylinder. The light falls through the cut ceiling mounted to the crossed beams. We do not know

⁴ D. Kozłowski, *Beton magiczny – Droga czterech bram*, Polski Cement 1998 No. 4, p. 10–11.



whether it is a chapel or some technical room, such as power connection. With the absence of any additions or symbols, the author does not make it easy for us to guess the purpose.

Military concrete. In Lublin, there is a house hidden under the name: *Casa Olajossy ossia Villa in fortezza* (D. Kozłowski, T. Kozłowski). It is located on a parcel formed by the parcelling of gardens and orchards on the outskirts of the city and intended for single-family development. Away from the city, with ordinary houses in the neighbourhood. The trapezoidal shape, resulting from the alignment of former fields cut diagonally with a road, inclined to arrange the rectangular blocks of the houses in line with the directions of the boundaries of the parcels rather than with the direction of the street. This fact, painful for the architect, resulted in the decision to build a house in the form of a waltz, which removes aside considerations – whether the elevations of the house are to be assigned to the boundary of the land, or whether they belong to the street.

The house utility programme, spread over three floors, includes a set of standard rooms. “Only a very small part of architecture belongs to art: the tomb and the monument. Everything else that fulfils a function is to be excluded from the domain of art”, said Adolf Loos (“Architektur” 1910). Accordingly, the search for the shape of a suburban house began within the space contained somewhere between the “tomb and the monument”, so as to satisfy Loos and remain in the realm of architecture. The beginning of the chain of the properties of the space of architecture was found in the statement of the great architect; here, it is the architecture of the residential house, which forms a set of opposites. “First, a “fortress” was found there, an architectural thing intended for habitation and shelter – at the same time, “fortress” as an antithesis – of a “palace”, rejecting the lavishness and splendour associated with the latter. For this reason, a “house” and not a “residence” was also chosen, and because of the location in the area of the city, a “villa” – and not a “palace” was favoured. A very personal choice pointed to an “altar” rather than a “bunker”, and a “bunker” rather than a “shelter”. Thus appeared the image of a “castle” and “fortress”.⁵

So much about the quandaries with meanings; as for the construction of the architectural form, an “elevation” and not “façade”, while simultaneously remaining under the perpetual charm of the “mask” and not – the “face”. The concept of the elevation perceived as a thin, delicate layer with the form independent of the shape of utility (as much as possible) was favoured and it one longed to see that independence. At the same time, the principle of the essence of both the façade and the elevation was negated, so that the form of an architectural thing can be seen as a unity, without separation into “front”, “back” or “sides” or views marked with cardinal directions. The opposites: “attic” and “cellars”, “roofs” and “foundations”... were hidden.

An “open form” was chosen. However, “tectonics” was not confronted with – an “open” form; instead, a game of “open-closed” opposites was suggested, as well as the “outside-inside” game and “unveiling and covering” game. Other games, which can be found by a passer-by and a resident, were also proposed.

By design, rather than as a consequence of previous choices, a “maze” as a denial of “transparency”, was favoured, and so was – “closed” more than – “open”. This is not at variance with the choice of “unveiling” as the opposite of – “covering”. The choice regarding

⁵ D. Kozłowski, [in:] E. Zamorska-Przyłuska, *Koloratura kola*, Architektura i Biznes 1999 No. 11.



the house surrounding pointed to the “garden” rather than the “park”. Dwelling, in the Heideggerian sense, in such an accepted architectural thing, consequently, appears more as a “journey” than a “walk” or “stroll”.

And decomposition? The idea of the house is based on the game of opposites. On the floor plan, one can see “ideal shapes” within the space – the cylinder and inside the cylinder – the cube. The cut through the concrete shell of the light cylinder reveals fragments of its interior with a dark navy blue cube. Both bodies are coaxially arranged around the central support. The cylinder gives space, also a functional, to the expanding dark body. Decomposition was conducted not without the inspiration with constructivist forms; it is radical, but the primary forms remain legible.

Mystical concrete. Creators have always been interested in concrete due to its durability. Between 1924 and 1928, Rudolf Steiner erects a structure in Dornach near Basel called *Goetheanum II*, headquarters of the Anthroposophical Society, cultural centre, theatre. It was built after the fire of the previous building. It has become an icon of architecture not only because of the pioneering use of concrete for shaping elevation. The use of concrete is sometimes seen as an expression of the author’s fear of another fire in the building.⁶ The argument that draws attention to this matter, which allows the elevation to be freely shaped according to the architect’s concept, is more convincing. This is not the architecture of tranquillity; these are expressive forms, soft and strong at the same time, total antithesis of the geometric architecture. The elevations, difficult to find in orthogonal views, appear to be carved out of a single boulder. The structure of the mystic and philosopher, the founder of anthroposophy, carries the influences of many styles. Its severity is to be an expression of the desire to explore the spiritual world and fight against materialism. The building was created as an expression of anthroposophical architecture⁷, grand, standing out from the surroundings, but also harmonized with them, it bears a lot of traits, not only of the contemporary expressionism. Designs of the building started with clay models. The modern, for its time, shape of the building, and Steiner’s pursuit of the ideal form, were influenced by Goethe’s theories. “The theory... comes from the concept of the general type and of the »ideal« plant. Metamorphosis, according to Goethe, is a transformation of the general type into individual variants, and not a result of peculiarities of development. According to Goethe, metamorphosis comes from the idealistic notions about the “general type” and its variants achieved by way of metamorphosis”⁸. Metamorphoses of this architecture express themselves in the departure from the smooth and delicate, wavy lines associated with Art Nouveau to almost brutal, dynamic forms. The stylish unity of the building is not a decoration here, but rather an expression of the desire to combine architecture with the landscape.

Sacred concrete. Fritz Wotruba is an Austrian creator, considered one of the most outstanding sculptors of the 20th century. His most famous work, however, is not a sculpture, or

⁶ The first Goetheanum was set on fire by Steiner’s enemies, A. Bancroft, *Współcześni mistycy i mędrcy*, Warszawa 1987, p. 180.

⁷ Cf. W. Dudzik, *Goetheanum, steinerowski impuls w architekturze*, Autoportret 2006, J. Kurek, *Goetheanum. Architektura tajemna*, Archivolta 1/2010.

⁸ J. Mowszowicz, *Zbliżające się 200-lecie teorii metamorfozy Goethego*, Wiadomości Botaniczne, Vol XXII – Issue 3, 1978.



perhaps exactly a sculpture that turned into a built architectural work. With its modest dimensions, *Wotrubakirche*, as this is how the thing is called, implies an association with another known building, which influenced the perception of works of art belonging to the aesthetic category of the monument.

In the residential district of Vienna, on the edge of the housing development, a small hill can be found. Here, raising his eyes, the viewer is fascinated with the thing that as if had come into being for the stage design of theatrical performance. Mysterious boulders (perhaps menhirs) like Stonehenge awaken one's interest with their dramatic arrangement, emerging from the sky. The architecture is raw, expressive, yet it provides a slightly shapeless form of the building plan with an impression of order. Typically, monumental buildings form the monumental space of the city. Here the scale of the city is determined by the small villas. And that is perhaps the reason why the "new monument" does not have to dazzle with a great scale, it abandons the dreams of creating something standing out from the landscape. Vienna in recent years is full of buildings aspiring to the name of the "icon", but it is usually architecture unusually "lavish" in its scale, large, obliterating everything that surrounds it. Here, the opposite is true; the expressionist form aspires to the status of one of the major structures in the city, without attacking us with its scale.

The design of the church had to be developed in collaboration with the architect Fritz Gerhard Mayr. It was built between 1974 and 1976 and was finished only after Wotruba's death. The body of the church is a combination of 152 concrete blocks, constituting a disordered but harmonized sculptural concept. Such a concept appears in Wotruba's works of from different years. We can see the shape of the Viennese building by looking at models, sculptures from 1967. We will also see here small elements, which over time would turn into concrete "boulders" constituting contrast for the area surrounding the church. Green grass and trees that are the backdrop for the architecture are the opposite of wall elements and the structure of the work. The hill is as if designed together with the building to create a more monumental perspective together. The building is of such small size that it is a chapel rather than a church for Polish conditions. The author admits to having been inspired by Chartres Cathedral, but the scale is not the same; after all, we look at a "single-family house" here, and at a 115 metre-high church tower there. The French cathedral is a monument of unbelievable size; here the author probably thought about creating a sculpture. The Viennese church is only 30 metres long, 22 metres wide and 15.5 metres high. According to the author, the simplicity of the body of the building devoid of any adornment is to make us feel happy. In fact, the interior of the building is modest, ascetic like a Protestant temple. The walls just like the "elevations" demonstrate the severity of the finish. Critics often interpret the use of materials such as concrete with insufficient financial resources from investors. Here, concrete was used deliberately as a means of artistic expression, due to its sculptural character. It must be remembered that there are 4,000 tons of concrete. The heaviest element occupies 64 cubic metres and weighs 141 tons, the largest measured 13 metres in length. Glass panes are placed between the blocks, which allow the light to flow into the interior; they do not break the blocks from which the building is made into parts. Figures show that concrete became a purpose, rather than a means here.

Personal concrete. Günther Domenig designed and began to build for himself *Steinhaus* – *Stone House* in Steindorf in the Carinthian Mountains in Austria around 1980. The date is very important here, the author himself also gives the years from 1986 to 2008 as the time of

the creation of the work. This is not an ordinary design; it is a manifesto of a certain approach to architecture and art. The architect was discovering new grounds for expressionism at the time, using the dramatic nature of the decomposed form, recalling the memories of the art from the early twentieth century.

The house consists of four levels, which are not literal floors. In the centre, there is a spiral space, which constitutes a kind of the axis of rotation of the whole complex. And here again, we have to bring up the sketches of the author drawing the elements of rockets or cannon barrels, coming out of the centre of the composition. The forms constituting component parts of the building are broken, but remain in some incomprehensible unity with each other. The viewer can think that together they represent an image resembling one after a construction disaster, that they are not the result of the emergence of something new. The parts of the building are sometimes compared to sharp and unfriendly rocks, but they are meant to protect the residents from the outside world and may, therefore, look as if they were to deter intruders from taking photos from behind a fence. Looking at the building, we can assume that the author cannot decide whether it is a shelter or a regular residential building.

The project is revolutionary in every way. "I am [...] on the threshold, I will show here what I will be ever able to afford in architecture," the author says. The first sketches from 1980 are earlier than the leading project of Zaha Hadid, considered to be the beginning of modern expressionism. We are still two years before *Peak Leisure Club* in Hong Kong, and that which Hadid would be prophesying has not happened yet.

The house called "own" ultimately fulfils another function. It was completed as a cultural centre, meeting place for architects and artists. State authorities had to support the construction, which proved to be too much of a burden for one user. Workshops, symposia, exhibitions, concerts, readings are to be held here. Such a function is much more suitable for a building of this class than if it were merely to be a refuge for one creator. It would be selfish if such a monument of new architecture could not be visited and admired by millions.

3. The present

Leonardo da Vinci looked for proportions of the perfect human body, striving for a mathematical description of beauty and creating its ruthless description. Around 1490 he creates one of his most famous drawings of the *Vitruvian Man*. This was to be an illustration for the beginning of *Book III* of the Vitruvius' tractate *The Ten Books on Architecture*. Vitruvius dedicates this part to the influence of the proportions of the human body on the architectural form, writing: "The design of a temple depends on symmetry, the principles of which must be most carefully observed by the architect. They are due to proportion, in Greek *ἀναλογία* (analogy). Proportion is a correspondence among the measures of the members of an entire work, and of the whole to a certain part selected as standard. From this, result the principles of symmetry. Without symmetry and proportion there can be no principles in the design of any temple; that is, if there is no precise relation between its members, as in the case of those of a well-shaped man"⁹. Leonardo slightly "improved" the proportions of the body resulting from the classic description. The square and the circle diverge, giving the man a little more

⁹ Marcus Vitruvius Pollio, *O architekturze ksiąg dziesięć*, Warszawa 1956, p. 43.

normal proportions. The drawing, which is more interesting for architects, also called the *Vitruvian Man*, was made much later in 1521 by Cesare Cesariano, an Italian architect, and architectural theorist, publisher of the first Italian translation of Vitruvius' work. The world of *Concrete Architecture* is full of coexistent diverse forms that cannot be unequivocally called and literally describe, it changes the *Vitruvian Man*. Nowadays, concrete is becoming a determinant of the creators' dreams of geometric instability and of abandoning the vertical direction predominant in the historical tradition. Contemporary architecture becomes the embodiment of the desire to break down the form. This state is no longer an absolute novelty in the 21st century. It was already postulated in the sixties of the twentieth century. Juliusz Goryński, an architect and art historian, anticipated such a new approach to the aesthetic reception of instability in future architecture. He emphasized that: "Awareness of the material nature and functional purpose of a building arouses a feeling of anxiety in man if the architectural composition does not confirm the physical stability of the building and the safety of its use. Experience seems to confirm that it simultaneously influences the aesthetic evaluation. This means that buildings whose composition causes anxiety for their safety are not regarded as beautiful or aesthetically satisfactory. (...) Such buildings are considered ugly until the new technique is introduced into common use and affects the new shape of the building's sense of security"¹⁰. Concrete is thus the material that helps to relieve anxiety. It gives the user the ability to accept aesthetic values of architecture with its instability and departure from historical rules. Today it is necessary to create works of art. "Concrete architecture" comes into being. Its most important attribute is that it is detached from any specific style of building. One can even say that this is what enables it to become a "style" in itself. Contemporary architecture dissociates itself from national traditions (in modernism) and refers to the international ones (in postmodernism). Creating a "new" art, contemporariness no longer aims at imitating the existing canons but great masters of architecture from all over the world. Canons are no longer (apparently) important in design, but we cannot deny some continuity in the construction of concrete. We notice sometimes indescribable, apart from the applied material, similarity of such works. The slow death of deconstructivism creates modern aesthetics which refer to the works of the past. No artists' words will change the impression that we have already seen it somewhere. A certain canon of memories, which is recorded in our thinking, will probably never disappear. Something new appears these days, perhaps a style or only a current often called *Concrete Architecture*. The name that compliments this ordinary material has a chance to emerge in the history of contemporary art and become as important as the name derived from another material of *brick expressionism*. The emergence of such a name is the greatest compliment that can probably be given to concrete.

¹⁰ J. Goryński, *Urbanizacja, urbanistyka i architektura*, Warszawa 1966, p. 133–135.