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ARCHITECTURE, FASHION, RATIONALISM?
CONCRETE SHELLS AND ARCHITECTURAL
CONCEPTS IN PARISIAN HAUTE COUTURE
BY CRISTÓBAL BALENCIAGA

ARCHITEKTURA, MODA, RACJONALIZM?
BETONOWE KONSTRUKCJE ŁUPINOWE
I ARCHITEKTONICZNE KONCEPCJE W PARYSKIM
HAUTE COUTURE CRISTÓBALA BALENCIAGI

Abstract

One of the innate characteristics of fashion, which is often referred to as capitalism's favourite child, is its variability. Architecture seems to be at the other end of the spectrum, according to classic rules, buildings should convey values such as durability. On the other hand, these two worlds have the same objective and yardstick – human. It's the body that inspires both fields in terms of proportion and sense of movement. These issues were vital for the last of the *grands couturiers*, Cristóbal Balenciaga. His designs are full of ovoid, modernist forms and show the designer's profound understanding of the material he used. Often, he used invisible constructions that share a resemblance with reinforcements common in concrete architecture. Both form and construction make the fashionable ideas of Balenciaga similar to concrete shells, such as those designed at the same time by Eduardo Torroja.

Keywords: modernism, concrete shells, fashion, architecture and fashion relations, Balenciaga, Torroja

Streszczenie

Jedną z immanentnych cech mody, nazywanej „ulubionym dzieckiem kapitalizmu”, jest zmienność. Architektura wydaje się być na przeciwnym biegunie tego spektrum, według klasycznych reguł budynki odnoszą się do wartości takich jak trwałość. Z drugiej strony, te dwa światy wiąże wspólny cel oraz miara – człowiek. To z niego obie dziedziny czerpią proporcje i ideę ruchu. Powyższe kwestie były kluczowe dla ostatniego z *grands couturiers* Cristóbal Balenciagi. Projekty kreatora operują obłymi, modernistycznymi formami oraz są świadectwem dogłębnego zrozumienia materiału, nie- rzadko pojawiają się w nich niewidoczne elementy konstrukcyjne, które można porównać do stosowanych w architekturze żelbetowej zbrojeń. Zarówno forma, jak i konstrukcja sprawiają, że modowe pomysły Balenciagi przypominają powstające w tym samym czasie betonowe konstrukcje łupinowe, których przykładem mogą być budynki projektowane przez Eduardo Torroja.

Słowa kluczowe: modernizm, konstrukcje łupinowe, moda, związki architektury i mody, Balenciaga, Torroja

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For centuries, architecture and fashion have placed human among their key interests. One of the most essential functions of both buildings and clothes is providing the human body with shelter and a sense of security. It's the body that is used as a yardstick during the design process. Both architects and fashion designers create forms that are three-dimensional, incorporate space and, importantly, are inseparably connected with art. Not only are these forms a method of protection, but they're also a vital part of shaping collective and individual identity. Architecture and fashion are also those fields that boast an immanent focus on helping people in everyday life. No wonder that since the very beginnings of mankind the products of those fields were used as an efficient means of communication, making political, cultural and even religious issues, visible in society. What is interesting is that both described areas make use of similar mechanisms, i.e. a tendency to look back to past art styles for inspiration. In the field of architecture, this is best shown in the emergence of Neo-Historism and revivalism; in fashion one can observe it in drawing inspiration from historical garments and the constant expansion of the vintage clothing market. On the other hand both fashion and architecture share a fascination for state-of-the-art technology: materials, treatment processes, and most of all – the forms that such innovations can induce.

Despite all the parallels that make said fields function comparably, they are divided by some significant differences. Among them is the fact, that one of fashion's innate characteristics is a drive for constant change, while architecture refers to values such as durability and eternity. The fashion world is known for its affinity to commercialism and consumer lifestyle. New collections are introduced twice a year and the development of cheap, low-quality ready-to-wear fashion, make fashion capitalism's favourite child¹. Such products often turn out to be disposable. Architecture seems to be on the other end of this spectrum. Among a building's main characteristics are its construction and durability, which are a warranty of user safety. Such difference in dynamics is not only the outcome of addressing quality and stability. One should focus on the psychology of the fields researched in this paper. In fashion's case, dynamic changes make wearing things that were very fashionable 2–3 years ago a major aesthetic faux pas, while when it comes to architecture the ageing process is far less rapid. Due to the cultural and social meaning of heritage and viewing remarkable buildings as monuments, many architectural forms gain significance after a lapse of time². One shall remember that, although buildings that are a part of architectural heritage often change their function, societies are still able to use them. In terms of fashion such redefinition is not possible, without losing the functional aspects of the garment. While an 18th-century palace can be turned into an efficient museum, or even a hotel, a dress that was once worn by its owner cannot revive its primal purpose. This situation is not only determined by its fragility and age, but more importantly an inability to find a suitable occasion to use it (maybe with the exception of masquerades or historical reconstructions). At the most, stripped of its innate connection with human body, it can become a still museum artefact³.

¹ V. Steele, *Fashion*, [in:] *Fashion and Art*, Berg, London, New York, p. 13.

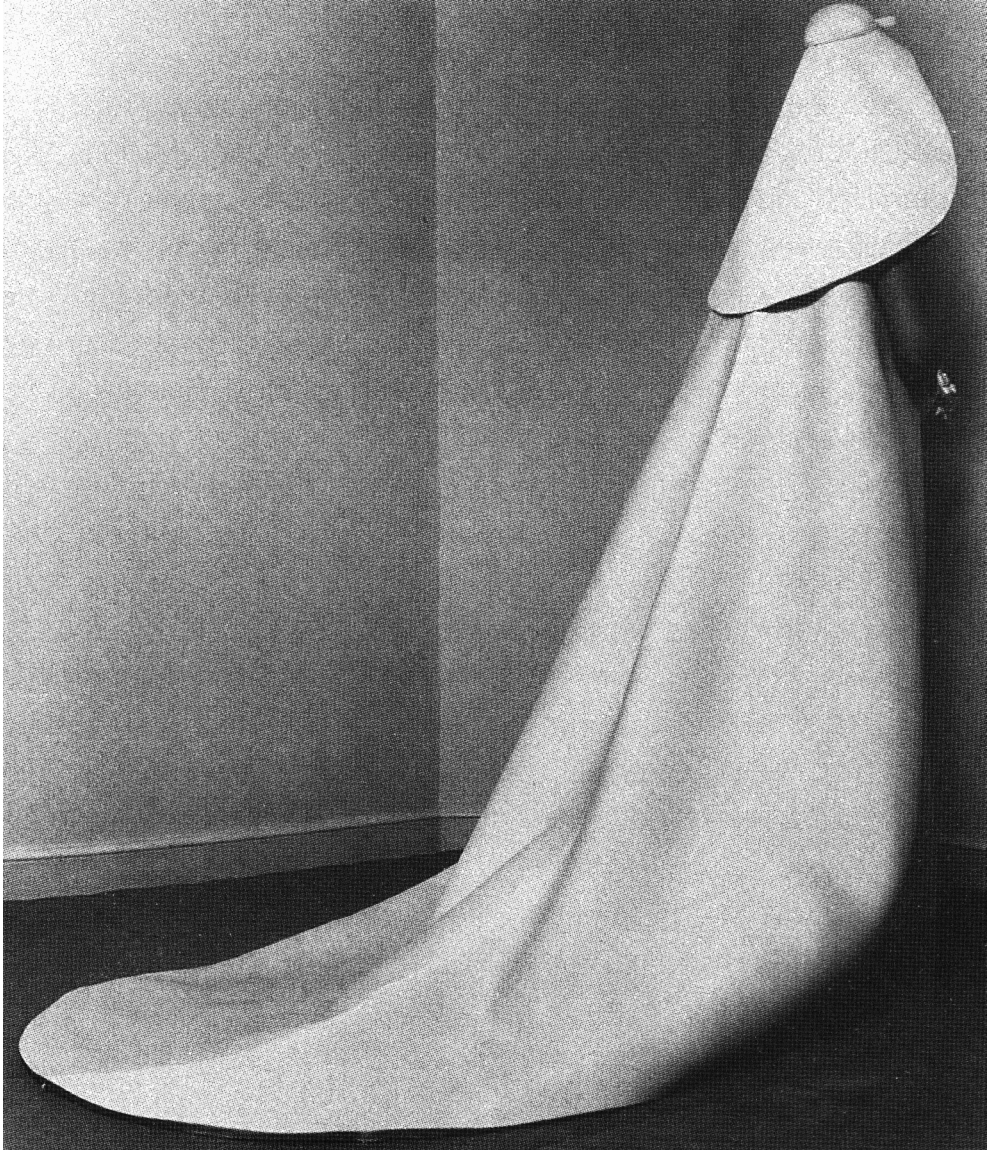
² Alois Riegl, *Georg Dehio i kult zabytków*, transl. R. Kasperowicz, Muzeum Pałac w Wilanowie, Warsaw 2006.

³ We should remember, that costume even if deprived of its basic function, as a museum artefact conveys classical values, represented by all kinds of artefacts. In these terms it is a sign of the times and culture it was produced in. Anna Sieradzka (SIERADZKA 2001) in her article *Costume as a monument*, writes more on the history of treating costume as museum artefacts.

Scholars such as Gottfried Semper have noted that since the beginnings of mankind, people have shown a similar approach towards architecture and fashion. For ages people have been using textiles and other materials not only to cover their body but also to fence off the space that made them feel safe. During the course of history, fashion design has rarely been recognised as a field of art, while architecture has always been a respected and sanctified part of culture. The key moment in the history of these relations happened when issues of functionality and rationality were brought to the discussion. In his writings, Adolf Loos noted that these notions had been fundamental in architecture since antiquity. He also stressed that both fields should reject redundant decorations, which often obscured the construction, but also had no significant function. What is interesting in his theoretic writings, the architect compared Neo-Historical architecture to women's fashion, full of frills, lace and a plethora of other trimmings. He also set men's fashion as an example for architecture, due to its austere elegance, and its focus on the quality and durability of the materials used. Loos' articles concerned social issues, too. In his *Men's Fashion*, the architect noticed that the 20th century witnessed the abundance of dress codes, and now every citizen could dress up like a king⁴. He suggests then that we should use the extent to which citizens decide to use their newly-acquired rights as a yardstick for assessing the cultural advancement of said nation. In the spirit of such an understanding of modernity, Loos expressed his aversion towards overuse of decoration, which still was a vital part of class society. Magnificent buildings, plastered with ornaments and a wife adorned with silk and lavish jewellery were the best showcase for a rich man and his business ventures.

It may seem that in the first decades of the 20th century, Loos' ideas were triumphant. Especially in the 1930s, when culture turned once again towards ideals drawn from antiquity, both architecture and fashion were inspired by nature and its harmonious proportions. This return, particularly in architecture, was supposed to be a warrant of rationality. One of the significant aspects of modernism, which operated with minimal and austere aesthetics, was leftist social ideas. Among the architectural designs an increasing number of ideas for districts and shared-living buildings were introduced, with Le Corbusier's Cité de Refuge and Immeuble Clarté among them. Function soon became the key issue of modernist architecture. A similar process can be observed in the field of women's fashion, which after the First World War incorporated more comfortable solutions, the skirts were shortened and soon women got rid of rigid corsets and layers of petticoats hidden under their dresses. Although movies and newspapers were filled with pictures of comfortably attired people, strutting down modern streets, built with care for rules of rationality and functionality, the reality was quite different. Societies still lived in a world of rigid propriety. This situation particularly concerned the members of the elites, who could have become patrons for developing modernism. Despite of the interest in everything modern, that soon became a vital part of fashionable lifestyle, the richest were not eager to let go of some relics of which seemed to be a bygone era. Villa Cavrois, designed by Robert Mallet-Stevens and built in 1932 for a rich textile manufacturer, is a good example of this discrepancy. Its shape captivates with its simplicity, modernity and use of harmonious, geometric forms. It lacks redundant ornaments, the decorative aspect of the building is based on the use of luxurious materials and the relations between them.

⁴ A. Loos, *Men's Fashion*, [in:] *Why a man should be well-dressed*, przekł. M. E. Troy, Metroverlag, Vienna 2011, p. 28.



III. 1. Wedding dress, Cristóbal Balenciaga, 1967

This seemingly modern realisation was in fact designed for a pre-war lifestyle. The building boasts music rooms, parent's dining rooms, etc. Its interiors were filled with luxurious materials such as Swedish marble and exotic wood.

In some circles, this situation would not change even after the social revolution brought by the Second World War. In the new reality, the world was still strongly divided. On one side of the Iron Curtain, there were the western countries which cultivated capitalism and a consumer lifestyle. On the other, in the communist countries, personal wealth was pushed aside in favour of the common weal, and art and culture became a significant part of propaganda. This division, however, did not induce a drastic diversification on the formal level, in the architecture of the countries that tried to rebuild themselves after the war. Both western and eastern architects still developed ideas that had been introduced by modernism, among which was the need for social change. This, however, did not impact fashion, which in communist countries was not able to function in the same way it did in the West. Even at the dawn of the 20th century, theorists such as Veblen had noted that fashion was a realm only created for and open to the members of the elite. We might risk the assertion that in terms of fashion, which was still dictated by Paris, the communist countries did not accept the new style of dressing as willingly as they did with architecture. The reason behind such reluctance may have been the fear of transforming the socialist citizen into a western gentleman, induced by wearing new, fashionable outfits. These also posed a threat for centrally-planned production, the main (and often only) advantage of which was its availability. In terms of architecture, countries such as Poland managed to develop a high standard of theory and construction methods, which makes the buildings of that time a valuable part of the cultural heritage.

Architecture played a very different role from fashion. Modern buildings financed by the State were supposed to indicate its wealth and power, but also care for its citizens. The boldness of solutions and forms was an important component of communist propaganda, which painted a picture of the state as a centre of modernity and development in every area of life. Modernist aesthetics, with rationality as an innate characteristic, perfectly matched the ideals preached by the communist state. Subsequent realisations did little harm to the already weak economies, due to the architect's ability to design bold forms while using inexpensive materials. In the first half of the 20th century it became clear that architects had mastered the technology of concrete and steel to such an extent that it enabled them to achieve new aesthetic objectives – even now recognised as the beginning of the next tradition. One of the characteristic solutions of the times were shell structures, which fit perfectly in these aforementioned categories. Furthermore, the constructions developed a language of forms that enabled a new meaning to be given to them. There were no lavish decorations, which corresponded with class divisions. These state-of-the-art constructions, due to their architectural advancement and artistic significance, were able to serve the society on a practical level and shape the national taste. More importantly, the progress did not convey a sentiment for the past, and reinforced concrete, whose popularity was at first a sign of negation of the old tradition, quickly became the key material for innovation and the new tradition itself⁵.

Architecture in the western countries still played a vital role and developed thanks to both private and public funding. In countries such as France and Great Britain, architecture was still a signifier of social position. Despite the social changes, appearances were still essential

⁵ M. Charciarek, *Związki idei i materii betonowej*, Wyd. Politechniki Krakowskiej, Cracow 2015, p. 56.

for the aristocracy and the bourgeoisie. The first still lived in historic family seats (or buildings that were supposed to pass as such). The second, if they were not trying to imitate nobility, built modern but still lavishly realised villas. Fashion was an important part of this lifestyle. Learning from the previous generation's experiences, elites were aware that image is the key for both their economic survival and maintaining social distinctiveness. Adolf Loos comments on this situation in one of his articles, stating that now the aristocracy is not protected by sumptuary laws and the vision of being copied by members of other classes is unbearable for them⁶. No wonder post-war Paris was still full of iconic, exclusive fashion houses (during the 2nd world war they stayed afloat thanks to commissions and purchases made by American heiresses), but new ones were opened, too. Both groups paid immense attention to keeping a limited list of highly selected patrons. One of the designers, working in post-war Paris was the Spanish-born couturier Cristóbal Balenciaga.

Balenciaga was born in a small Basque, fishing-village – Getaria. Since he was a little child he had been fascinated with fashion, but not because it sold the sense of a dream, materialized by elegantly dressed models. His mother was a skilled dressmaker, which turned his attention towards questions of construction. With the help of influential friends, in 1919 Balenciaga opened his boutique in San Sebastian, and then in 1937 his own fashion house on Avenue George V in Paris. By then, the couturier had managed to amaze the fashion world with his unique views on design. He was one of the few masters that were able to design, construct, cut and sew together the garments that he sold⁷. This is why in the history of fashion Balenciaga is referred to as the *Master of us all*, but also the last *grand couturier*. This last name was given to him by Madeleine Vionnet, who in the 1930s drew inspiration from classical philosophy. In her designs she used the rules of architectural *sectio aurea*, an accurate tension of textile (i.e. bias cut) and references to geometry and mathematics that can be seen in her design for a scarf based on a Möbius strip. This is especially important since just like modernist architects, Vionnet prized antique architecture for its focus on exposing construction. Her heritage was to be significant for the designs of the young Cristóbal, who simultaneously with the best architects of the time will draw on simplicity to achieve surprising results.

Balenciaga's career reached its peak in the 1960s. In this decade he created designs that, thanks to his unique view on construction and form, gave birth to a distinctive style that in the history of fashion is often referred to as architectural. The master of construction created outfits that enraptured audiences with their modernity and ease. In the same time Europe saw the rise in the popularity of concrete-shells, which in terms of form and construction corresponded with the couturier's technically advanced ideas. Architecture was always an important source of inspiration for the designer; no wonder that in the 1950s and 1960s his shapely, lobed outfits resembled the bent, shell-like rooftops which were a popular solution for public buildings across Europe⁸. This visual likeness may have been induced by the same intellectual and aesthetic movement that they were both an outcome of.

⁶ A. Loos, *Men's Fashion*, [in:] *Why a man should be well-dressed*, przekł. M. E. Troy, Metroverlag, Vienna 2011, p. 32.

⁷ C. Nicolay-Mazery, *Cristóbal Balenciaga, Philippe Venet, Hubert de Givenchy: Grand Traditions of French Couture*, Flammarion, Paris 2010, p. 15.

⁸ Although first concrete shell constructions were designed in the 1930s, but they became more popular after the Second World War.

Modernity made using lavish, derivative details meaningless. Creators searched for new ways that would enable them to create shapes that would be both minimal and intriguing in terms of form. In the 1960s, the world was overwhelmed with visions of space exploration, an everyday lifestyle was heavily influenced by teens and young people, who soon brought forth the sexual revolution. Culture focused on the future, which meant that its every field looked for modern solutions. Architecture and fashion set for a fresh start. Designers began to search for new shapes, far different from those popular before. A wide variety was introduced, which in the field of fashion meant that at the same time among the most popular designers were Pacco Rabbane, known for his revealing dresses made of metal elements and Balenciaga – whose designs were still the epitome of harmonious elegance. Architecture saw the emergence of a new style – postmodernism – which was a response to the classical structures central to modernism. Such pluralism made the ties between architecture and fashion even tighter. Theoretical and aesthetic issues became key to the creative process. It was easier to divide subsequent designs into categories not based on the field (fashion or architecture) but on the base of which theoretical or aesthetical trend they were a part of. For example, an outfit embracing the Space Age aesthetics popular in the 1960s would be more similar to the design for a spaceship, not an object conveying any other trend of that time.

Concrete shells, designed in the 1960s by Eduardo Torroja, and dresses by Balenciaga shared a mutual approach towards the issue of form and how it could be created. This resemblance is the outcome of a shared conviction that the beauty of an object depends on creating in the observer's mind an image of strengths, that its structure is opposing⁹. Both Balenciaga's outfits and concrete shells were designed so that their beauty is based on the construction. That can be easily seen in a wedding dress made with only one seam that Balenciaga designed in 1967. The outfit fascinates with its original and modern form, which has been achieved by the perfect construction, pattern and cut. The bride would also wear a kerchief-like, matching veil that gave her a more futuristic look.

At this point, it's worth asking the question of whether the dress could be called a rational design? On the one hand it clearly responded to its function – it was unique and boasted great aesthetic value. Moreover it was designed for a bride whose wedding would be an important, widely talked-about social event. This is why the dress is so grand and the snow-white textile has been shaped into a cathedral train. The focus on the design's function and rationality is highlighted by the veil and covered shoulders, which seem to respond to the conservative beliefs of the 1960s aristocracy. On a personal level, such a perfectly constructed outfit would transform the wearer's silhouette so that she wouldn't need to worry about some possible flaws in her figure. On the other hand, trying to meet all the requirements of the outfit's function, Balenciaga did not forget the aesthetic issues of the design. The garment was in a way the result of trying to marry the Catholic tradition and the fresh, new form typical of the times. The final assessment of whether the dress was rational or not can be influenced not only by Balenciaga's knowledge of the said requirements for such an outfit, but more importantly his willingness to meet them. The design can be called rational if one decides to not take its extravagant price into consideration. A similar method of creating aesthetic aspects of the building while using its construction, was used by Eduardo Torroja. In his designs, the

⁹ W. Niebrzydowski, *Logika konstrukcji a piękno*, Czasopismo Techniczne. Architektura, r. 104, z. 6-A, Wydawnictwo Politechniki Krakowskiej, Cracow 2007, p. 361.

architect showed a strong interest in concrete shells, which eventually he developed into creating IASS (International Association of Shell Structures). The material's lightness and fluidity of form were Torroja's main inspiration when in 1955, joined by Fruto Vivas, he worked on a design for the Club Táchira in Caracas, Venezuela. The young architect asked Torroja to create a roof that would resemble a falling kerchief which froze just as its corners touched the ground¹⁰. The building was to accommodate a variety of recreational functions. Torroja liked the visual concept that implied surrounding the club with vast gardens and adorning it with enormous windows that would let visitors admire the view of Caracas. At first the construction resembled a bird, but soon it was transformed to look more like curvy, female silhouette.

The Club Táchira is a good example of the vital role that form and aesthetic issues played in the design process of architects working in the 1960s. We should remember, however, that for most of them rationality was still the key problem. For example when Arseniusz Romanowicz and Piotr Szymaniak were working on several designs for stations for the Warsaw Cross-City Line, deep research was conducted that would help to determine the requirements. The final realisations were a result of concern for such practical issues as traffic, but the architects were willing to create a bold, original form, too. Among the stations, one design stands-out. The Warszawa Powiśle station consists of two pavilions – upper and lower, with the latter topped with a roof resembling a shallow bowl. The upper pavilion was covered with a shell construction made of two conoids adjacent at the straight sides, one of which was bent upwards and the other downwards. Hubert Trammer, refers to this variety of shapes as an architectural etude which consists of different forms incorporated into the landscape of the Vistula embankment¹¹. Warszawa Powiśle's design was also created according to one of the modernist characteristics, popularized by Le Corbusier and Mies van der Rohe¹². Just like the masters, the Polish architects believed that nature sets an important context for architecture, and while perfectly planned it can even strengthen the building's functional aspect. In such a manner, with a lot of care for the surroundings and function, Félix Candela designed a roof for the Los Manantiales restaurant in Xochimilco, Mexico. The building was a part of a large garden setting, and it could be reached by canals on *embarcaderos* (long, colourful gondolas). Today, although the building has lost its original purpose and the waterways have dried-out, the dynamic shape of the roof is still an interesting sight for viewers. Similarly to Balenciaga's, the design could have been even simpler, but both the fashion designer and the architect knew that form was a vital factor in the artwork's reception.

Apart from the design process issues, Balenciaga's work and concrete shells share another resemblance – their seeming lightness – which can only be achieved thanks to systems of reinforcements that remain invisible. Often, such mastery was the outcome of the great sense of understanding of the material that the artist chose, but also his practice and experience. For example Candela's shells were not constructed based on highly advanced calculations¹³, and

¹⁰ F. Escrig, J. Sánchez, *La bóveda de hormignón del Club Táchira en Caracas*, Informes de la Construcción vol. 57, nr 499–500, Instituto Técnico de la Construcción y del Cemento 2005, p. 134.

¹¹ H. Trammer, *Architektura dworców warszawskiej linii średnicowej*, [in:] *AR/PS: architektura Arsuniesza Romanowicza i Piotra Szymaniaka*, Centrum Architektury, Warsaw 2012, p. 40.

¹² A. Monestiroli, *Formy i czas: przykład Miesa*, [in:] *Tryglif i metopa: dziewięć wykładów o architekturze*, transl. U. Pytlowany, A. Porębska, Wyd. Politechniki Krakowskiej, Cracow 2009, p. 44.

¹³ N. Burger, D. P. Billington, *Felix Candela, Elegance and Endurance: An Examination of the Xochimilco Shell*, Journal of the International Association for Shell Structures, vol. 47, nr 3, p. 272.

Balenciaga worked the same way. Both artists could work in this manner, because they were not only the designers. Candela realised his own projects himself and Balenciaga, although a skilled craftsman, relied on the work of a highly specialised atelier. This system had let them supervise the work and spot and solve any emerging problems. Both, thanks to their experience in practical work with the materials, were able to predict their behaviour.

Concrete shells and the round, fluid forms that can be seen in Balenciaga's designs from the 1960s, are evidence of the strong relationship between architecture, fashion and art. Although, at first glance, buildings designed for the common weal and outfits that were supposed to indicate the wearer's social position had nothing in common, they were the outcome of similar ideas. The creative process shows a resemblance, too. Both architects and fashion designers are highly aware of the fact that a human being is always dependent on his surroundings, the way they look and sound. The fashion designer also pays attention to the relationships between the way his customer looks in an outfit and the way it impacts (similarly to architecture) his psychological wellbeing.

Although subsequent decades saw these two fields develop independently, we can remember their common objectives, but also the strategies they use to meet them. Apart from their mission to serve mankind, architecture and fashion have much more in common, especially an approach towards the construction and functionality of the object created. Nowadays it is far more visible than in the times of Balenciaga and the triumph of concrete shells. Today, choosing new materials, architects draw on techniques characteristic of a fashion atelier, like pleating or draping. Since the 1960s there has been a change in fashion design, for which methods popular in postmodernist architecture, became a vital point of evolution. One of them was certainly deconstruction, which changed fashion forever and was introduced among other inspirations by Japanese designers like Junya Watanabe or Rei Kawakubo in the 1980s. However, such connections between architecture and fashion can be found even in the 19th century when crinolines were compared to the paned, metal domes of department stores or London's Crystal Palace, which fuelled the garment's popularity and already enormous size.

Relationships between architecture and fashion can be traced on many different levels. They are visible in a similar affection for state-of-the-art materials and solutions; a similar approach to the creative process (like Balenciaga and Candela); or at least a shared interest in a cultural movement, like modernist architects and Madeleine Vionnet in the 1930s. Thanks to common basic objectives, which one can trace back to the beginnings of mankind, fashion and architecture remain inseparable. We can risk the observation that these links will become stronger, because both of the fields will have to adapt to a new lifestyle. The early modern experience, from the beginnings of the 20th century, set up rationality as one of the most important issues in design and it will still have an impact on architecture and fashion. This situation is dictated by the times we live in, when the value of virtually everything is based on its economic potential. Furthermore, the constant evolution of technology and growth of society's environmental awareness make architecture and fashion respond to new needs that were not among the essentially understood functions of both fields. In architecture, one sign of this tendency is the popularity of low impact architecture, and in fashion we can see this, while more care is being placed upon the issues of rational production and providing the workers with decent working conditions. It seems that nowadays the key issue for both fields is respect towards material, although in architecture this question has been visible for much longer than in fashion. In these terms, the world of fashion had to wait until the beginning of the 21st century, when an increasing number of designers oppose the thoughtless

consumerism and the irrational pace of work induced by the market. A sign of rational concern may be seen in lowering the number of collections presented each year and renouncing morally-dubious materials like natural fur. In the effort of creating the new rules, architects and fashion designers will be aided by state-of-the-art technology and materials which will make the boundaries between the two fields less and less visible.

References

- [1] Alois Riegl, *Georg Dehio i kult zabytków*, transl. R. Kasperowicz, Muzeum Pałac w Wilanowie, Warszawa 2006.
- [2] Burger N., Billington D.P., *Felix Candela, Elegance and Endurance: An Examination of the Xochimilco Shell*, *Journal of the International Association for Shell Structures*, vol. 47, nr 3, p. 271–278.
- [3] Charciarek M., *Związki idei i materii betonowej*, Wyd. Politechniki Krakowskiej, Kraków 2015.
- [4] Escrig F., Sánchez J., *La bóveda de hormignón del Club Táchira en Caracas*, *Informes de la Construcción* vol. 57, nr 499–500, Instituto Técnico de la Construcción y del Cemento 2005, p. 133–144.
- [5] Loos A., *Men's Fashion*, [in:] *Why a man should be well-dressed*, przekł. M. E. Troy, Metroverlag, Vienna 2011.
- [6] Monestiroli A., *Formy i czas: przykład Miesa*, [in:] *Tryglifi metopa: dziewięć wykładów o architekturze*, transl. U. Pytlowany, A. Porębska, Wyd. Politechniki Krakowskiej, Kraków 2009, p. 41–60.
- [7] Nicolay-Mazery C., *Cristóbal Balenciaga, Philippe Venet, Hubert de Givenchy: Grand Traditions of French Couture*, Flammarion, Paris 2010.
- [8] Niebrzydowski W., *Logika konstrukcji a piękno*, *Czasopismo Techniczne. Architektura*, r. 104, z. 6-A, Wydawnictwo Politechniki Krakowskiej, Cracow 2007, p. 358–363.
- [9] Trammer H., *Architektura dworców warszawskiej linii średnicowej* [in:] *AR/PS: architektura Arsuniesza Romanowicza i Piotra Szymaniaka*, Centrum Architektury, Warszawa 2012, p. 28–45.
- [10] Sieradzka A., *Ubiór jako zabytek*, [in:] *Spotkania w willi Struwego 1998–2001*, red. K. Kwiecińska, Towarzystwo Opieki nad Zabytkami, Warszawa 2001.
- [11] Steele V., *Fashion*, [in:] *Fashion and Art*, Berg, London, New York, p. 13–27.