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## CHURCHES FROM FORMER FACTORIES – CONVERSIONS AND CONTROVERSIES

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## KOŚCIÓŁ W FABRYCE – KONWERSJE I KONTROWERSJE

### Abstract

This paper focuses on architectural transformations of some post-industrial objects into sacral functions. The discussed works mainly relate to churches, chapels and parish houses of various Christian denominations, mainly Protestant. Such transformations provoke questions about the limits of acceptance for adaptation works in the context of objects associated with a religious cult. The doubts that arise are connected primarily with the theological-liturgical dimension, that means the interpretation of the sacrum space. As far as conservation work is concerned, the analysed examples confirm the thesis of high architectural potential inherent in post-industrial objects. They also show a wide spectrum of possible interferences in a given structure during the conversion process.

**Keywords:** sacrum, profanum, conversion, post-industrial architecture

### Streszczenie

W artykule skupiono się na problematyce architektonicznych przekształceń wybranych przypadków obiektów poprzemysłowych na funkcje sakralne. Przykłady dotyczą adaptacji dawnych fabryk na funkcje religijne lub z nimi związane (kościół, kaplice, domy parafialne, itp.) dla różnych wyznań chrześcijańskich, głównie protestanckich. Takie konwersje rodzą pytania o granice akceptacji działań adaptacyjnych w kontekście obiektów związanych z kultem religijnym. Pojawiające się wątpliwości dotyczą przede wszystkim wymiaru teologiczno-liturgicznego, a mianowicie interpretacji przestrzeni sacrum. W ujęciu konserwatorskim analizowane przypadki potwierdzają tezę o dużym potencjale architektonicznym tkwiącym w obiektach poprzemysłowych i możliwościach ingerencji w ich strukturę w procesie konwersji.

**Słowa kluczowe:** sacrum, profanum, konwersja, architektura poprzemysłowa

## 1. Introduction

In 1999, the Korean Presbyterian church in New York was located within an area between Northern Boulevard and Sunnyside Gardens, Queens. It is considered to be one of the most authentic religious buildings of the newest generation. Four designers, including Doug Garafolo, Greg Lynn and Michael McIntruf, collaborated on this project using Alias – an online graphics software tool used in industrial design and film animation. This project, to which we will return later in this article, has received many awards, including the Engineering Awards of Excellence (2002). Nowadays, it is a well-known established facility. Not everyone realises that in the imposing building of a former laundry factory, which represents good-quality American art-deco architecture, one can find a unique church. The harmonious combination of the new form with the existing building was made possible due to the use of an integrated design. Thus, a specific hybrid was created. Also, according to the designers, its funerary tricolour of grey, black and violet-pink (*mauvre*) symbolically refers to the previous function of the existing building with one difference – washing dirty army uniforms was replaced with ‘cleaning’ the souls of the dead (Fig. 1).



Fig. 1. The Presbyterian Church (Queens, New York), established in 1999 as a result of the adaptation of the Knickboker industrial laundry (source: [24])

This surprising conversion of a post-industrial building into a sacred building is not the only example of a building which began to perform liturgical functions after adaptation and expansion. Such transformations can be found in both Europe and America. They relate to adaptations performed for various Christian denominations, especially the Protestant faith. The adapted buildings may take on religious functions (churches, chapels) or other related functions, such as parish houses. This phenomenon is puzzling, especially when comparing the number of buildings that previously performed religious function and are now being

abandoned or, at best, adapted for other purposes. It is also paradoxical, because in both cases (factories and churches) we are dealing with a process of disappearance – factories, in connection with entering the post-industrial phase of economic transformation, and churches, due to the ongoing secularisation of society.

Depending on the type of object, these transformations are implemented using various strategies related to different types of changes. Sometimes it is a significant transformation of the building's architecture which includes the total integration of the new construction with the existing structure (like the aforementioned laundry); in other cases, it is an addition which is completely independent of the existing facility, with its own autonomous spatial structures and no connection with the existing building (e.g., a former barn in Schwindkirchen, Germany – today a Protestant parish house of the Parish of the Assumption<sup>1</sup>). We also observe that conversions can involve minimal intervention in the structure of the building and implement a conservation program aimed at preserving the characteristic form of the historic building as much as possible (e.g. the former gas plant in Birmingham, England, rebuilt as an Anglican church<sup>2</sup>). Additionally, we can observe activities aimed at adapting specific elements, such as chimneys, cooling towers, pressure towers or mine towers of post-industrial complexes. This case is demonstrated by the church tower accompanying the Santo Volto church, built in the Parco Doro area of Turin. It is also worth mentioning conversion activities in which the building structure is left intact and the elements of the building from the demolition are used in the process of transformation. Such transformations bear all the features of material recycling in architecture (e.g., the Orthodox Church of St. Nicholas in Sprungdale, USA).

Let us explain here that the objective of architectural conversion is to reuse elements that have been abandoned or unable to fulfil their current tasks – in our case, post-industrial tasks – and give them a new function. The change of the object's purpose results in a large range of transformations to both the exterior and interior of the structure. The scope of adaptation depends on both the degree of suitability of the construction and its structure to its new function, as well as on how the strategy adopted may influence the integration between the existing and the new architecture. Apart from the cultural, economic and environmental dimensions, the modification of post-industrial buildings is often treated as an architectural and urban experiment. It is an important element in the process of merging the revitalised post-industrial areas within the city.

It is noteworthy that, although infrequent, the adaptation of objects that previously performed other functions for religious purposes is not a new phenomenon. One example is Michelangelo's adaptation of a large part of the former Diocletian bathing complex to the needs of the Basilica of Maria degli Angeli e dei Martiri<sup>3</sup>. Whilst this was clearly not

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<sup>1</sup> Or the former Municipal Tram Power Station in Warsaw, now the ecumenical chapel of the Warsaw Uprising Museum, designed by Archetus.

<sup>2</sup> Also the Denver-area Stapleton Fellowship Church, designed by Visioneering Studios of Irvine (2010), which was founded after an adaptation (mainly through the formation of a new interior) of the former airport hangar.

<sup>3</sup> More on this subject: [2, pp. 141–152].

a factory, it was definitely a multifunctional object. Other parts of this magnificent object were transformed into the church of *San Bernardo alle Terme*<sup>4</sup>.

Other examples we are aware of were factory buildings which were deliberately given the form of a temple, as in the case of a textile factory called Temple Works (or Temple Mill), erected in 1838-1840 in Leeds and designed by Joseph Bonomi (Younger)<sup>5</sup>. The stylisation of its facade into an Egyptian temple (Horus in Edfu) resulted from the Egyptological fascination of its owner, John Marshall, as well as from the fact that the place belonged to the great Empire.



Fig. 2. Entrance to the Basilica of Maria degli Angeli e dei Martiri, created on the site of the former Diocletian bathing complex and adapted for the sacred function following the design of Michelangelo, around 1598 (photo by R.A. Frantz, 2005; source: [25])

These two types of conversions (a former temple into a secular object and vice versa) raise the question of limits of acceptance for adaptations of objects related to religious worship. The doubts that arise concern both theological and liturgical aspects (the interpretation of a sacred space). Additionally, there is an architectural problem which should be taken into consideration; it is related to the context of conservation, especially in relation to post-industrial monuments.

<sup>4</sup> In 1598, one of the circular towers of the former Diocletian Term was converted into a church and handed over to the French Cistercian Order. [2, p. 142].

<sup>5</sup> The design of the roof over the factory was very interesting. It was equipped with skylights in the shape of cones, while the flat surface was covered with grass to maintain the moisture. The height of the grass was regulated by sheep grazing on the roof [3].

Regarding liturgical issues, it is clear that such transformations are easier to carry out in the case of Protestant denominations, in which the church is defined as a community of believers and does not have a sacred character, as is the case with Catholic and Orthodox churches. It is also important that in Protestantism, the form and its physical existence appears as a so-called adiaphoron and is indifferent from a theological point of view. Thus, the space of the church can be easily adopted and modified.

Architectural ground for converting various secular objects into religious places began to be prepared from the beginning of the twentieth century. Due to modernists, a significant change in the concept of the role of art and beauty in architecture appeared. This also applied to sacral architecture, although “the attempt to adapt art originating from sources contrary to Christian ideas [...] was burdened with great difficulties” [3, p.42]. In the first half of the twentieth century, these ‘difficulties’ led to the development of two contrasting currents in sacral design of modernist architecture that are still visible today<sup>6</sup>. Therefore, churches are maintained either in the traditional style (late historicism) or belong to avant-garde modernism [3, p.9]. In the latter case, new building materials and constructions, as well as innovative functional solutions, gained importance. This was in accordance with the principle of constant search, transformation and modernisation, which has been in force since the end of the nineteenth century. “In this way, a group of churches began to be built as almost only engineering buildings... Beauty... was not as crucial as material or construction factors. Most often it resulted from the beauty of perfectly manufactured steel and glass elements, as well as from the ideal form of various stones” [3, p.8]. Some church buildings have even become “similar to factory buildings, railway stations or pavilions of world exhibitions of current technological achievements” [3, p.9]. Lastly, the most prominent example will be the technologically advanced Pavilion (not a church or chapel) of Christ, erected at the Expo 2000 exhibition in Hanover. Within this structure, the existing traditional semantics and church symbolism have been replaced with “sublimity” [4, p.27; 5, p. 264].

What was equally important was the change of attitude towards the architectural post-industrial heritage – this paradigm shift occurred towards the end of the seventies [6, pp. 92–101]). Post-industrial objects “from the utilitarian perspective entered the world of architecture and art” [6]. Their functional interiors with characteristic forms and proportions met strict technological requirements. At the same time, these post-industrial objects were aesthetically raw and erected utilising original constructions and materials. They have become excellent reference points, inspiration and, moreover, places affected by ‘genius loci’ for various types of adaptation activities, [7, p. 6]<sup>7</sup>.

It is not only aesthetic considerations that have played a role in the protection of post-industrial objects – which has become the cultural norm in many countries. Preservation of the general image of cities and their panoramas filled with buildings of this type has also

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<sup>6</sup> The traditional trend has gained special importance, for example, in Poland, as evidenced by the shape of many churches erected after the Second World War, as well as a discussion on the competition for the Church of Divine Providence in Warsaw, which was won by Marek Budzyński.

<sup>7</sup> This interesting article is unfortunately not free from categorical statements of a character that is difficult to consider acceptable in the scientific discourse, e.g. that “Man is composed of spirit and body”.



been taken into account. Additionally, an important role has been played by economic and ecological factors. All these aspects have led to the conversion of nearly 40% of various buildings of this type in Europe [8, p. 9]<sup>8</sup>. Today, project activities based on existing materials impose necessary limitations on the designer. Activities of this type are considered to be some of the most creative and fascinating tasks in architecture. Moreover, the revitalisation and conversion of industrial heritage is seen as a key element of building in the urban strategies of many cities.

## 2. Examples of conversions

The Korean Presbyterian church mentioned at the beginning of this article, as we have already written, was based on an earlier building erected in 1930 in Queens, New York, designed by Irving Fenichel for the Knickerbocker industrial laundry factory<sup>9</sup>. The designers of the conversion were faced with the difficult task of preserving and transforming the existing complex of buildings into a new function and giving it a reutilised architectural expression reflecting its new purpose. The transformed object was to serve as a religious, social and educational centre for the Korean community living in New York and sharing the same religious identity. It was decided that the building should be built on the basis of the former laundry factory and should be able to accommodate a congregation of 2.5 thousand people in the main hall, a school (with eighty classrooms), a library, a café, a banquet hall (for 1000 people), a wedding chapel, a day-care centre and a medical clinic (Fig. 1). The main challenge was to design a new meeting room without columns. The problem was solved through the addition of an independent steel structure over the ceiling of the former laundrette. Its columns were reused, placed throughout the interior and exterior of the existing building and were erected on independent foundations. The new construction consists of trusses that are more than thirty-six metres long, providing a single-room layout for the main meeting room.

For the main part of the temple, the designers came up with a form that they called the 'Nestor'. It was constructed from trapezoidal elements nested inside each other like a stack of baskets arranged on their sides. This is similar to Jurassic fossils with a serrated surface. This element is only partially visible from the outside as a row of zinc-coated, overlapping elements. This cascade falls on the northern facade of the building, protecting the external, reinforced-concrete staircase<sup>10</sup>. The space of the sanctuary is asymmetrical, which makes it seem more 'flowing', and the size of the room is less overwhelming. The fragmented glass wall makes it possible for natural light to penetrate the interior of the sanctuary, reducing the feeling of being enclosed.

<sup>8</sup> Starting from the revitalization of the docks in London, to the Poblenou district in Barcelona, Parco Dora in Turin and Hafen City in Hamburg – we are dealing with transformations of old industrial areas carrying out three basic revitalisation goals: revive degraded areas economically, eliminate environmental threats and protect post-industrial heritage.

<sup>9</sup> Later transformed into a perfume plant.

<sup>10</sup> Similar to St. Patrick's Cathedral in New York.



Fig. 3. View of the main entrance to the Knickerbocker industrial laundry building (source: [26])

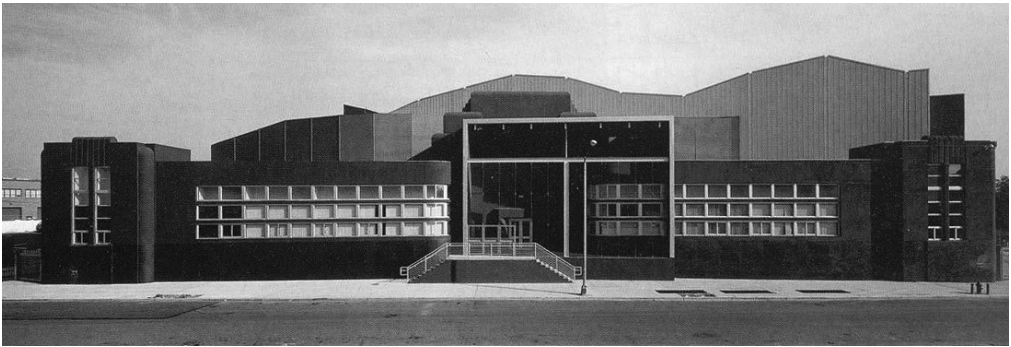


Fig. 4. Front elevation of the laundry building after its conversion into church (source: [27])

While implementing the project, the architects kept the facade of the original laundry. Only the entrance area was moved to a new position. The whole object was given a black colour and was called the ‘Shroud’.

The interior of the church represents the most interesting solutions that have recently been created in New York. The parametric interior shell has an acoustic function. ‘Architecture of folding’ was implemented; this is an experimental trend in modern architecture by which one bends planes and shapes various forms. It is inspired by, among others, the works of Peter Eisenman<sup>11</sup>.

<sup>11</sup> Leading representative of deconstructivism in architecture, author of, among others, the monument to the victims of the Holocaust in Berlin.

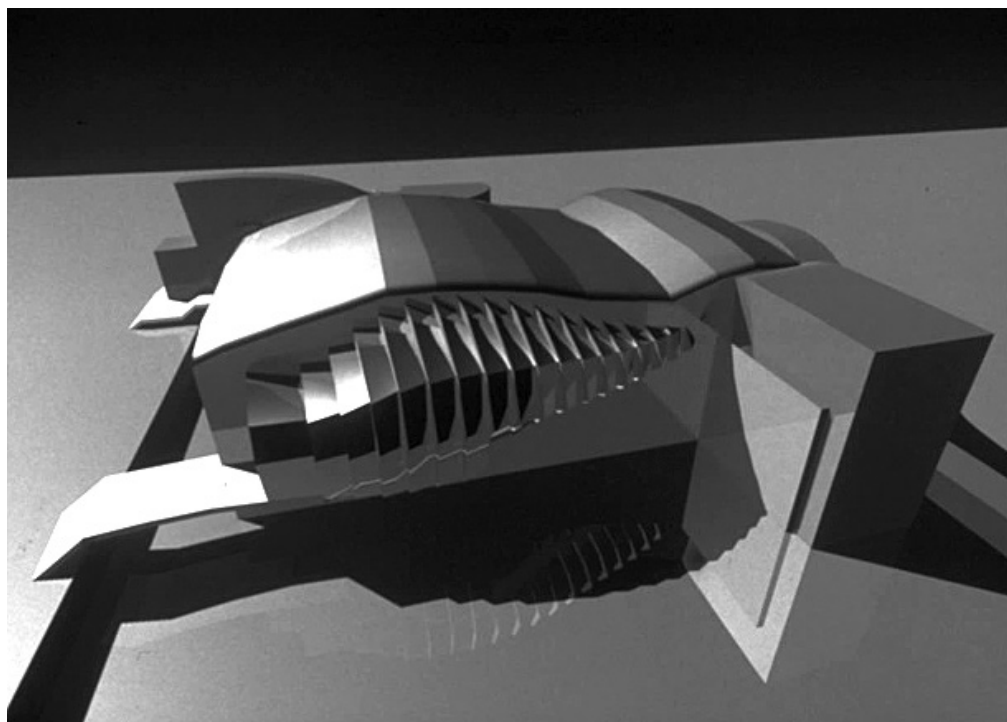


Fig. 5. Picture 3D model of the new church casing with a characteristic 'pleated' side entry cover for the main hall of the church (source: [27])

From the point of view of conservation methods used to adapt historical objects to new functions, the method of folding is an exceptional experiment. Folding is derived from topology – a science that deals with qualitative features of geometrical objects in n-dimensional space. The creators of topology were L. Euler and H. Poincaré<sup>12</sup>. As a result of the introduction of advanced CAD programs in the nineteen-nineties, it became possible to apply the theory of topology in architecture in both theoretical and practical contexts. The contemporary interpretation of folding is liquid 'organic' forms as well as angular forms originating from the art of origami. Behind the geometric interpretation of the folding of architecture is the philosophical interpretation of Gilles Deleuze concerning undulating entities, each of which is a complex multitude of further undulated parts (Fig. 9).

Folding in architecture has become a vocal point of inspiration for various spatial experiments in project design. In most cases, these experiments are based on the application of advanced computer programs for parametric and generative design<sup>13</sup>.

<sup>12</sup> *Analysis Situs*, an article published in 1895 in the Journal de l'École Polytechnique (2, pp. 1-123) by Henri Poincaré, defined topology as a science.

<sup>13</sup> Another name was used previously – BLOB. It was created by G. Lynn as an acronym of the module name in the software created by the Wavefront Technologies (specialising in software for the purposes of film animation): binary large objects. This is where the term 'blobarchitecture' appeared. Patrik Schumacher created a new term for software creating topological architecture - parametric architecture.



Deleuze compared the fold to a two-story building. On the ground floor, there is a well-lit room opened to the outside and ready to receive guests. The first floor is a dark area without any windows. These two spaces symbolise the two levels of our world – the material level and the spiritual level, connected to each other only by narrow crevices of the five senses. The two levels are separated by the fold.

In the Presbyterian church project in Queens, the allegory of the Deleuzian fold (a baroque house symbolising the model of the world at two levels<sup>14</sup>) can be found. The division of the building into two parts is clear. The lower level is occupied by the profane, while the upper level is reserved for the sacred function. These two levels are connected by a corrugated shell, constituting a Deleuzian fold. It defines the flowing boundary between the material and the spiritual, and between the visible and the invisible.

The existing structure was like a kind of ‘pupa’ for the designers. It was surrounded by a new body, which completely changed the sense of the existing space. The process of creating the new form itself also had to be changed due to the investor’s interference in the project, and dynamic modifications of the project were possible as a result of the advanced Meta-BLOB computer programs<sup>15</sup>.

This sophisticated design process has not prevented technical and technological problems (including those of a financial nature) related to its implementation. The differences are significant and it seems that in some areas, both the design and the implementation stages should be analysed and evaluated separately. After the erection, the building gives the impression of consisting of many, not entirely matching, elements. Attention is drawn to the lack of flow in the communication system of the interior, which devaluates the object in terms of the topological continuity of the space - important in the architecture of folding.

It seems that the most important remark should concern the doctrinal contradiction between the form of the neo-baroque curving of the space, ‘folding’, blobbing, or the currently very fashionable, parameterisation of the architectural form, and the idea of the Protestant congregation as a place of assembly, for which one of the basic principles is to preach the scripture (*sola scriptura*), and churches should be primarily designed for such activities.

A change in concept, specifically the introduction of an independent structure to an existing building, was performed in the town of Schwindkirchen (Bavaria). It was the conversion of a former barn into the Protestant Parish House of the Assumption. The architects responsible for this project had the task of protecting the cohesion of a compact historical complex, consisting of a church, an old parish house and a farm with a large unused barn, an administrator’s house and smaller outbuildings. The new parish house, suitable for the needs of the parish, was not to be too large but functional and corresponding to modern standards. After long discussions, it

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<sup>14</sup> “A world with only two floors, separated from each other by a fold, in different ways reflected on two sides - this is the unparalleled contribution of the Baroque” [9, p. 69].

<sup>15</sup> In 1995, the American architect Greg Lynn began his adventure with digital design and introduced the term “blob architecture”.

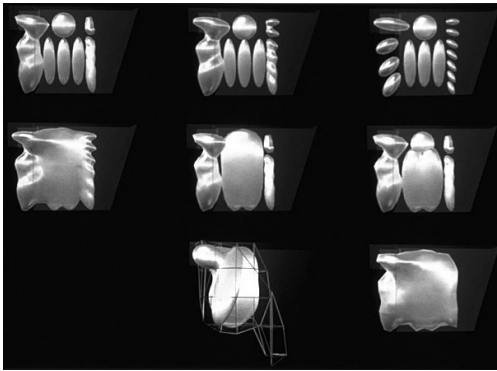


Fig. 6. The process of the computerised generation of a new form using the Meta-BLOB program for the Presbyterian church in New York (source: [27])

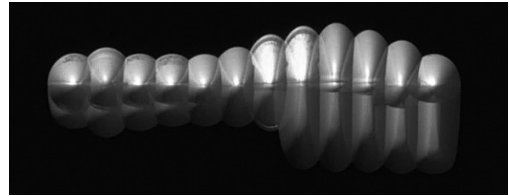


Fig. 7. The next phase of transforming the interior of the Presbyterian church in New York using the Meta-BLOB program (source: [27])

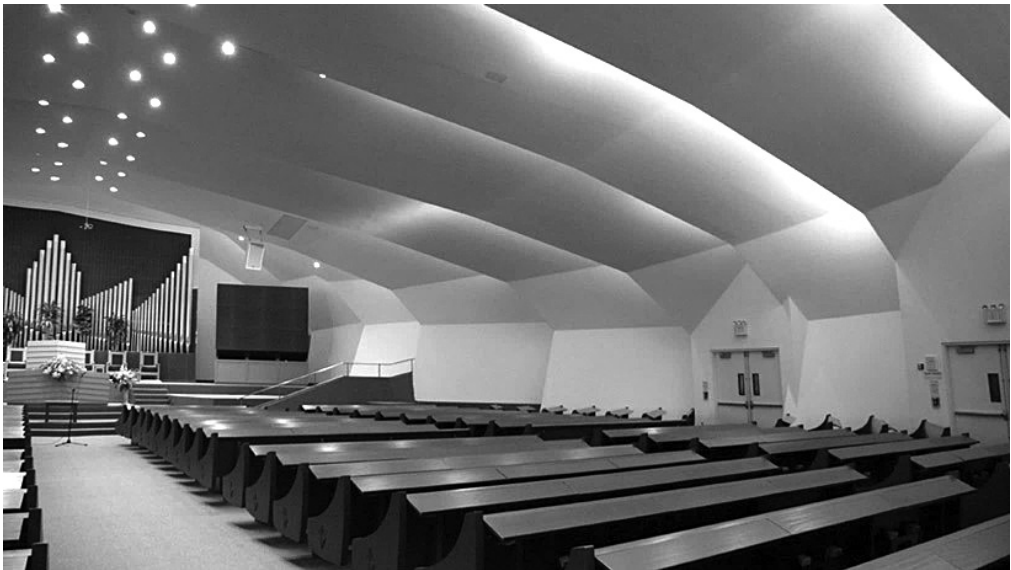


Fig. 8. The interior of the Presbyterian church in New York with the characteristic ‘folding’ of the ceiling (source: [28])

was decided that the best solution would be to construct the parish house inside the old barn; this was also a preferable option from an economic point of view.

The discussions mentioned above concerned not only functional problems (e.g. proper lighting) but, more importantly, doctrinal problems. It was debated whether the old barn was a proper, worthy ‘packaging’ for the building that was to serve as a parish house<sup>16</sup>. These

<sup>16</sup> These doubts troubled the parish people for some time after the construction of the building, which manifested itself in their refusal to clean it [10].



Fig. 9. View of the parish church complex in Schwindkirchen, the barn converted into a parish house on the left (source: [29])

doubts dissolved over time, mainly because of the intense work of the pastor. Additionally, all the advantages of the revitalised object were appreciated as the building, in addition to its basic function, began to be made available to parishioners for the organisation of various events, such as weddings<sup>17</sup>.

The concept of the design, ‘building within a building’, was devised by the Munich studio of Arc Architecten. The project included the renovation of the existing, stone-built barn by drying and repairing the walls, securing and reinforcing the existing, wooden lattice supporting the roof with steel elements, replacing the roof cover and installing a skylight running along the roof ridge. A completely independent pavilion of the new parish house with the area of 347 m<sup>2</sup> was introduced into the prepared barn with an area of 1,085 m<sup>2</sup>. The new pavilion has a rectangular form, is constructed from light prefabricated elements and is very ascetic and devoid of decoration. The new object is captivating due to its simplicity and indirect lighting (except for artificial light) resulting from the system of holes placed in the ceiling. Apart from the parish hall, there is also a kitchen, a common room, rooms for young people, a gallery and technical rooms (Fig. 10).

In addition to illumination, the skylight plays another important role in buildings such as the new pavilion. Specifically, skylights are important elements in air exchange systems. Natural ventilation supports mechanical ventilation while simultaneously helping to dry the damp external walls during the summer. The roof of the barn serves as a solar energy absorber; the energy is then transformed into heat and stored in heat pumps used to heat water and support the gas heating of the building in the winter.

<sup>17</sup> Particularly useful in such circumstances is the unbuilt space of the old barn.



Fig. 10. The parish house in the former barn (building within a building) of the parish complex in Schwindkirchen (source: [29])

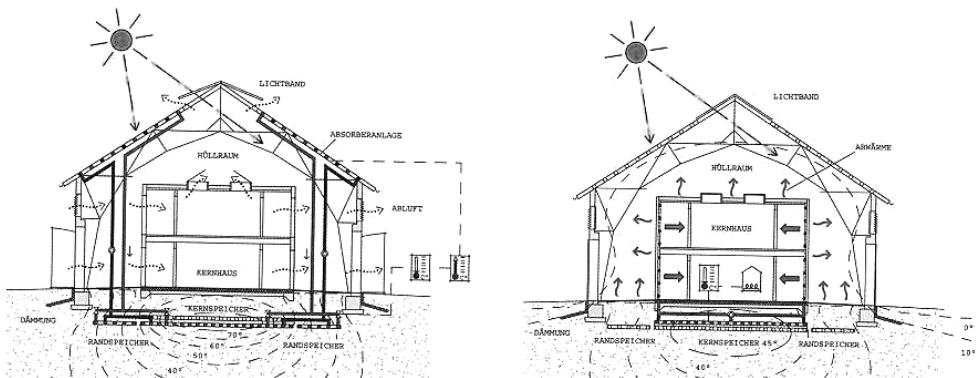


Fig. 11. Diagram of the heating and ventilation of the Protestant Parish House of the Assumption in Schwindkirchen (Bavaria): a) storage of heat in the summer, b) heating the building in winter (source: [30])

Another example of a limited interference in the structure of the historic building, but on a different basis (without incorporating a separate box structure) is the conversion of the former gas plant in the centre of Birmingham, England. It was transformed into the Anglican church, now known as St Luke's, Gas Street. For the purpose of this alteration, a former gas retort house was used – this is the last remaining building of Birmingham's first gasworks. In



Fig. 12. View of gas buildings with their characteristic chimney, after maintenance, with the main entrance to the present church (source: [31])

the past, it was the place where the town gas was produced by heating coal in the absence of air. The gas was used for street lighting and as fuel for factories. The building was designed by Alexander Smith and erected in 1822. It then underwent a period of expansion until the middle of the nineteenth century. A coal warehouse and an administrative unit were also used in the conversion. All these buildings were located on a plot of land between the modern-day Berkely Street and Gas Street. The gasworks buildings were subjected to modernisation works up until 1925 and were used for various industry-related purposes until the middle of the twentieth century; they were subsequently abandoned. They were ‘discovered’ again in 1993 when the city council of Birmingham decided to carry out a complex revalorisation of this area, while at the same time, putting the old gas plant on the list of monuments<sup>18</sup>. The then innovative construction solutions – specifically, the unusual roof design of cast iron arch trusses, which were reinforced with wrought iron rods resulting in a reduced load on the walls of the building – were considered to be the most important reasons for protecting the building, aside from its obvious historical value.

The legal protection of the old gas plant was included in the protection of the city’s industrial heritage and its most valuable elements. The complex was refurbished by Crosby Homes. The plan was to turn the old industrial buildings into a non-residential office, leisure facility or workshop space. A total renovation of the building of the former retort house was only performed as recently as 2000, at the request of the City Hall of Birmingham. In 2014, the building was handed over to the new owner – the Diocese of the Anglican Church. The diocese decided to transform it into a place of worship and a cultural centre mainly aimed at

<sup>18</sup> Giving it category II [11].





Fig. 13. The interior of a former coal warehouse built in the 1950s (source: [31])



Fig. 14. The interior of the workshop part of the former gas plant, with its characteristic construction of steel girders added at the end of the nineteenth century (source: [31])

students and young adults<sup>19</sup>. At the same time, it was decided to refer to the *genius loci* of this place and, using the gas-related aspect of lighting, make the new church emanate ‘light’ in the metaphorical sense of the word.

In order to prepare the adaptation of the building, the Birmingham-based company Apec Architect (Fig. 13) was employed. This company claims to adopt a ‘progressive’ approach to revalorisation issues, which means that they deal not only with the reconstruction and renovation of the building but also with the business plan of its operation and the management of its protection. This approach ensures the durability and functionality of a new object. In the case of the conversion of the former gasworks, intensive social consultations were also conducted. This led to the creation of a proper utility program and significantly increased the sense of identification of the parishioners with the adapted object as an important element of the city’s development history and its industrial heritage.

The project was divided into stages; it dealt with the maintenance and, where necessary, with the reconstruction of the original building structure. This was to be achieved by reinforcing defective areas of the walls and by replacing the old roof with a new roof over the meeting room<sup>20</sup>. The roof construction was preserved and exposed from the inside. The only significant change was the removal of the plasters covering the facade of the building and the return to the original facade of red brick, which further highlighted the different stages of the construction of the building. A hexagonal brick chimney with an onion-shaped end was also preserved. This became a dominant point over the entire complex.

A meeting room, with a capacity of 800 seats, was obtained from two connected retort rooms and the former coal warehouse (Fig. 13). It was lit up by the arcade openings, which were originally used for the ventilation system. The interference to the interior of the building

<sup>19</sup> Birmingham is one of the “youngest” cities of Great Britain.

<sup>20</sup> An old wooden lattice structure in a former coal warehouse, as well as cast-iron, triangle-arch in a former retort and a steel truss of a technological building.



Fig. 15. A visualisation of the design of the interior of St. Luke's, Gas Street (source: [31])

has been limited to the necessary minimum, preserving the single-space design of the assembly hall. The remaining rooms (cafeteria, kitchen, toilets, etc.) were separated from the existing structure (Fig. 14).

The interior of the nineteenth-century gasworks building is raw and limited in its detail. This aids the objective of meeting the liturgical and cultural-social needs of the congregation of the modern Anglican church. The Protestant religious community is based on the unity of faith and life organised within the church space. This unity is emphasised by the building's interior, which is flexible and easily adapted for a variety of events. It is also interesting that the religious symbolism here is reduced to a minimum – specifically, to a white cross painted on a brick wall.

Less common than the conversions discussed above are those performed for the Catholic Church; one such example can be found in Italy. The chimney of the former industrial building of the Fiat steelworks in Turin was transformed into the campanile of the church del Santo Volto in the Parco Doro area. This post-industrial area, comprising former Michelin, Valdocco, Mortana, Ingest and Vitali factories, has been transformed, into a new recreation, sports and culture centre based on the creative adaptation of the surviving elements of the former industrial area. The project was prepared by the German company Latz & Partner and assumed the use of post-industrial areas to create unique recreational spaces. The revitalisation program was implemented in 2004–2012<sup>21</sup>. Thus, one of the largest green spaces, with an area of over 45 ha, was created there.

The Santo Volto church (erected in 2004–2006), had the reputation of being “the most ‘non-sacred’- in the traditional sense of the word - architecture [of the previous - author] decade” (Fig. 15), also refers to the industrial forms. The decision about its construction was taken, in a way, with reference to the post-industrial area revitalisation program and at the same time, in response to the demand for a religious building in connection with the nearby construction of new housing estates. It is a central part of a compact complex. Other elements include parish buildings, the city curia office and a conference centre with a car park.

<sup>21</sup> The project was awarded in 2012, receiving The International Architecture Award and Premio Architettura Rivelate.



Fig. 16. The Church of Santo Volto is visible from the side of post-industrial areas revitalised for recreational purposes. On the right, there is a footbridge connecting the areas of former factories (photo by: M. Jagiello, 2013)



Fig. 17. The church and the chimney of the former Fiat factory transformed into a campanile (source: [32])

The church was built on the plan of a heptagon, similar to a cogwheel surrounded by seven<sup>22</sup> chapels symbolising fullness and perfection. They look like massive factory chimneys and serve as skylights that bring light to the chapels and to the main part of the church. The central part of the church was covered with a tent-shaped form<sup>23</sup>, and inside it, just behind the sacrificial table, there is a relief prepared in the ‘pixel’ convention, depicting the face of Christ modelled on the famous Turin Shroud. At the base of each of the 35-meter towers there is a chapel, which is additionally illuminated by lower skylights<sup>24</sup>, and under the central part of the church, there is a large, underground conference room (Fig. 17). The designer of the complex of objects is the Swiss architect Mario Botta<sup>25</sup>, known for many other projects of sacred places that are also controversial (Evry cathedral, the chapel in Monte Tamaro).

Accompanying the church, a 60-meter tall stainless-steel chimney spirals upwards – it is a remnant of the former steelworks. It symbolises the crown of thorns and climbs towards the cross at the top. The concept adopted here by the designer of this element is clear – the remains of a former industrial plant highlight the hard work of factory workers. Both elements (the church and the chimney), create a compositional feature of this part of the city. They are links between the post-industrial area and nearby residential districts, and at the same time create a new centre of social and religious life.

Let us add here, that the construction of the Turin temple was initially accompanied by great controversies connected with both the proposed form and with the huge costs of the

<sup>22</sup> The number seven is considered mystical and symbolic in many mythologies and religions of the world, including Christianity.

<sup>23</sup> It can also be associated with an inverted silo funnel or an hourglass.

<sup>24</sup> According to Botta, these are “nails whose spindles are skylights”. Two skylights were designed for each tower (there are 14 of them) [16].

<sup>25</sup> M. Botta is a representative of the trend called neo-modernist regionalism. His works also show influences of modernists, in particular Louis Kahn.



Fig. 18. The interior of the church with the characteristic 'pixel' image of Christ, modelled on the Shroud of Turin (photo by: M. Jagiello, 2013)

investment (30 million euros). Today, the cost of the use of the air conditioning equipment installed in it, which exceeds the budget of the parish, raises more emotions<sup>26</sup>.

Another conversion of a post-industrial facility into a church which is also a rare case as it is not connected with the Protestant faith is the Orthodox church of St. Nicholas (Saint Nicholas Eastern Orthodox Church). It was established in 2010 in the town of Springdale, Arkansas. The method employed here could be described as architectural recycling. The church was created as a result of the adaptation of a relatively small building (335 square meters), which used to serve as a metal goods warehouse and a welding facility. A sanctuary based on this object was constructed following a design by the American architect, Marlon Blackwell. In the adaptation of this building, the principle of preserving the building's construction was followed. A small tower with a cross marked on it was added to help identify the object as a place of worship. Furthermore, the front was slightly extended to create a vestibule. The whole object was then covered with a corrugated metal cladding – material from the original building was used to achieve this. This was performed at the special request of the parishioners and was also helpful due to the considerable financial constraints; this recycling of material, as the designer stated, proved to be particularly inspiring. For the same reason, other elements from the old building were also used, including an old satellite antenna that was used to construct a small, symbolic dome located above the main hall [20].

The functions of the building were designed in a manner that allows the correct orientation (east-west) of the main part of the church. In the new narrow vestibule (narthex), an oak table was set up for candles to be lit by worshippers. An important role is performed in this zone; because of the glazing that covers the tower, it illuminates the vestibule and at night, additional artificial red lighting is used to illuminate the building (Fig. 21).

The main part of the sanctuary, designed for around eighty people, was equipped with the basic elements defining this small space, specifically, the iconostasis – the screen wall separating the sanctuary from the nave. Two skylights were installed over this area in order

<sup>26</sup> The Turin clergy took part in the vote. As many as 48% percent of the respondents were against [18, p. 37].



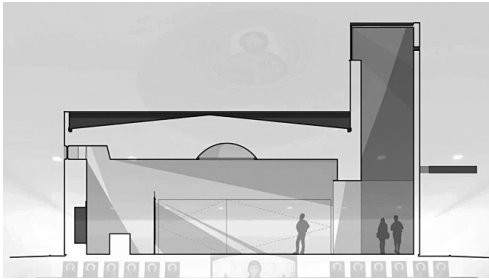


Fig. 19. A crosssection after the adaptation of the former metal warehouse into the church(source: [33])



Fig. 20. Interior of the Orthodox church after adaptation(source: [34])

to provide some natural light. In the dome, located above the central part of the sanctuary, an image of Christ Pantocrator was placed. In the adjacent rooms (community meeting room, kitchen, toilets, offices), the construction elements of the old building have been exposed as evidence of its original function (Fig. 22).

The adopted stylisation is typical American regionalism, which sees architecture as a kind of billboard. It is derived from the postmodern architecture of R. Venturi, whose fire service building from Columbus (1968) seems to be a clear inspiration for the Blackwell church.

The project and its realisation is an example of the perfect unity between the three criteria of modern architecture: the implementation of utility and formal needs; sustainable design by using existing resources<sup>27</sup>; minimisation of implementation costs. In this case, all three paradigms contributed to one sacred entity (Fig. 20). It is apparent that all this was appreciated, as this humble implementation was given a lot of awards in the field of architecture and interior design<sup>28</sup>.

### 3. Summary

<sup>27</sup> As far as conversions of existing objects into churches is concerned, it seems that only architects adapting old railway carriages into sanctuaries went further. We encounter examples of such unusual activities in many places in Russia [23].

<sup>28</sup> Among others: 2013: The American Institute of Architect (AIA Awards) – AIA National Awards – Honor Award; 2013: Faith and Form Awards – Honor Award; 2012: The American Institute of Architect (AIA Awards) – AIA National Awards –Small Projects Award; 2011: World Architecture Festival Award – Category: CIVIC AND COMMUNITY – Winner; 2011: Chicago Athenaeum Museum of Architecture and Design Awards – American Architecture Awards; 2011: AIA Gulf States Region Awards – Merit Award; 2010: Architect Magazine Awards – Citation; 2010: The American Institute of Architect (AIA Awards) – AIA Arkansas State Awards – Honor Award.





Fig. 21. American message (billboard) architecture: a) fire brigade building in Columbus, designed by R. Venturi, 1968 (photo by: MAS Studio CHICAGO), b) building of the church of Saint Nicholas in Springdale, designed by M. Blackwell, [n.a.] 2010 (source: [35; 36])

At the beginning of this article, it was written that the phenomenon of the conversion of post-industrial objects into places of worship is quite rare and arouses various controversies and diverse emotions. However, when one takes into account contemporary architectural and aesthetic trends and principles of sustainable (recirculation) design, post-industrial objects seem to respond well to the needs of religious buildings today. At the same time, they fulfil the requirements of flexibility and functionality of the space, energy efficiency and the use of ecological material solutions, as well as having high standards with regard to technical equipment. Particularly significant points are raised within this article in the context of conversions of post-industrial objects in the case of Protestant churches. Protestant places of worship play important religious and social roles in society. This approach requires an architectural response to complex and time-varying functional and spatial demands. It seems that the Catholic church, especially during post-conciliar liturgical changes, does not significantly differ from Protestant church in demand. Maybe instead of a building being a bizarre, 'immature', or monstrous example of sacred construction (such examples are much too frequent, particularly in Poland) it is worth considering converting existing post-industrial objects into sanctuaries. Especially when we consider that some of them, for instance power plants or gas plants, at least from the distance, resemble towering gothic cathedrals.

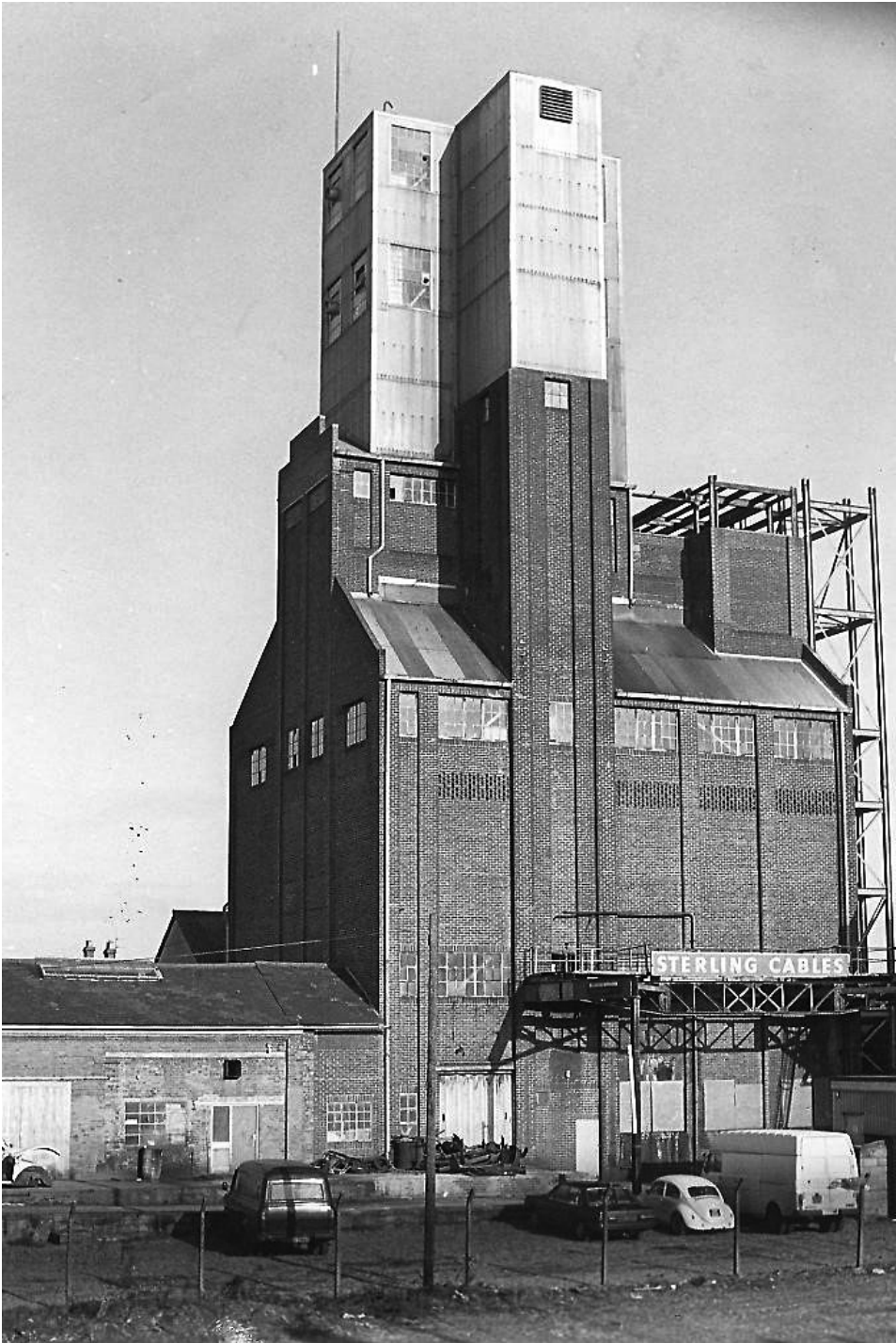


Fig. 22. Industrial architecture can be in its form close to sacred architecture: a gasworks repository in Newbury (Great Britain) from 1925 (source: [37])

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