

# Industrial object – analysis of problems during adaptation processes on examples of Warsaw Vodka Factory ‘Koneser’

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The aim of this article is to analyze views on design process from a perspective of historical objects adaptation to new functions. Based on the example review - the Warsaw Vodka Factory ‘Koneser’ – highlighted were the problems and impediments of designing in the historical fabric. The paper focuses on the following issues: adaptation of monument, facing the problems of designing process in historical buildings.

**Keywords:** designing processes, design, adaptation, industrial architecture, transformation

## Introduction

The time of industrialization and the dynamic development of Polish cities has come at the turn of the nineteenth and twentieth century. Production on a large scale in Poland was developed in the annexation time and continued uninterrupted until Second World War [10]. The introduction of new, innovative solutions and rapid development of technology in the twentieth century led to increasingly limited man participation in the production process. Along with the processes of industrial restructuring and social changes, industrial areas have lost their meaning, and in the 90s of the twentieth century, most of them ended its activities.

The condition for protection cultural of values of historic buildings is his redevelopment. The proper revitalization should take into account social and economic needs, with contribute to the transformation of urban landscapes. The principles of the free market and sustainable development [15] of regions should be also considered in the adaptation processes. Viewed in this light, the proper re-use of industrial buildings should be the drive to local development, whilst promoting the cultural values and preservation the unique historical back drop.

The analysis of the adaptation and designing process of Warsaw Vodka Factory ‘Koneser’ complex, helped to recognize the problems.

## The designing processes

To understand the design process would also be useful to examine what is the designing.

Janusz Dietrych proposes the following definition: *‘The purpose of design is to solve the economic and technical problems of selection of technical, social and financial resources necessary to achieve the objectives of production and service, causing the desired effects of technical and economic’* [3].

The single word ‘design’ encompasses an awful lot, and that is why the understandable search for a single definition leads to lengthy debate to say the least. There are broad definitions and specific ones - both have drawbacks. Either they are too general to be meaningful or they exclude too much [18].

The term design comes from the Latin word ‘*designare*’, which means ‘*determinate*’, ‘*appoint*’. In Italian noun ‘*disegno*’ means ‘*drawing*’, ‘*equation*’; in French ‘*désigner*’ - ‘*indicate*’, ‘*determine*’. Later the term was covers by other languages, the use of modern popular in English as ‘*design*’ [Fig. 1].

The significance of basic meanings ideas ‘design’ is a [14] of something, what was drawn from the project with thinking further specimens, and the number of copies is not important – important is notify the intention of duplication.

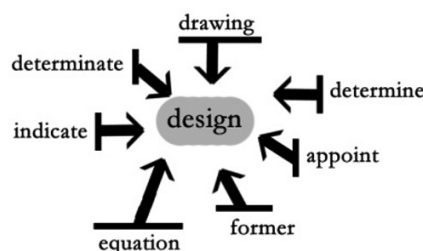


Fig. 1. The meaning of ‘design’

In this sense, design takes over the entire range of styles from visual arts, and so it may be a design classic, modern, futuristic, etc. In a wider meaning, to the appearance come characteristics such as functionality and ergonomics.

It might be worth quoting the example of the term: *'designing treated as a work by solving problems and creating new opportunities, always associated with a making changes, modifications. From that point of view, designing may be defined as any action, which includes the amendments in the environments and context. (...) Design product functioning through interaction with surrounding (background). Surrounding is an context, into which it is introduced the system with physical laws governing it and the restrictions imposed on him by the systems of higher order.'* [4]

Through the year, there was many definitions of the term 'design' [Fig.2]. Each of them has been criticized, and none is a full meaning of the expression. There is no single and clear definition of the term, a fortiori as a problem in defining the designing processes [Fig 3]. However, the specifics of each field may be define this process differently. For the purpose of this analysis, I will deal with only part of the architectural design process.

According to Edward V. Kricka, this process consists of the following stages:

- 1) *formulation of the problem (technical)*
- 2) *analysis of the problem,*
- 3) *the search for alternative solutions,*

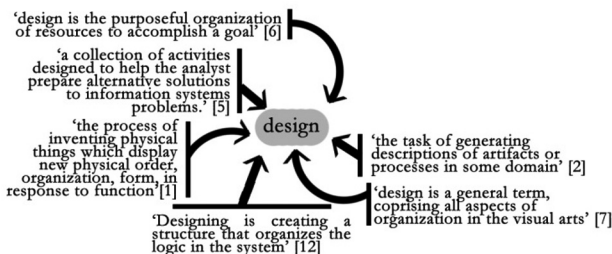


Fig. 2. The definition of 'design'

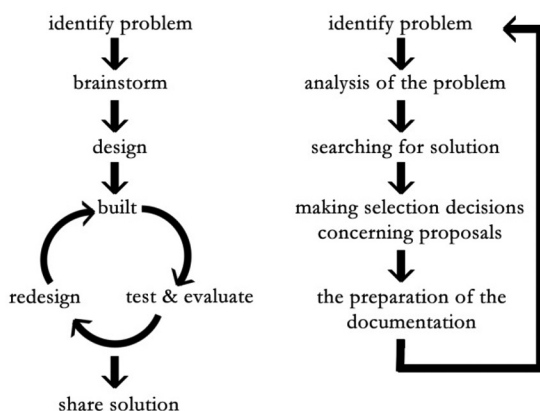


Fig. 3. Diagram illustrating the different process of designing

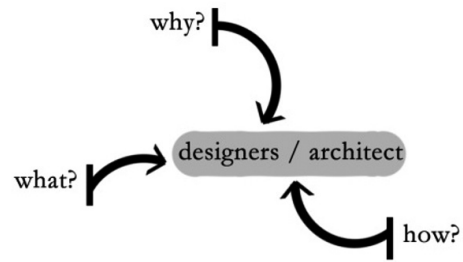


Fig. 4. Question which should be asked during the designing process

- 4) *decision on choosing the best design solution,*
- 5) *preparation of documentation'* [11]

Undoubtedly, Architectural designing could not be addressed without reference to the context, as highlighted by Jerzy Hryniewiecki. By his conclusions added: *'That is why it is so important to have a vision of the future. I do not know how to find the recipe for futurology. How to design a future for which you can take full responsibility. Unfortunately, it seems that no one has ever found such provision nor of the great economic planners or architects or designers from other forms of.'* [8].

Architectural and urban planning is a multi-threaded process, which cannot be left entirely to the designer intuition or technical knowledge. Furthermore, knowledge and understanding the man and the ability to cooperate with the future use is key to 'good' designing.

In projecting the object the architect must respond to the many questions. Designing is a process, accompanied by questions 'why' and 'how' to build the space product for human use [Fig. 4].

Today a heavy responsibility also falls on an architect, who is creating a space for living. Not all activities positively affect the environment. However, the design should be aware of shaping the space in such a way, that people easily in it find.

## Adaptation of Warsaw Vodka Factory 'Koneser'

### A brief historical overview

The study is essentially a postindustrial form called Warsaw Vodka Factory 'Koneser', which was placed on the list of vintage buildings under no. 1320 by decision of 31 March 1988, and the correction from the 12 January 1995 [19].

Several stages of creating this complex can be distinguished:

- A. Before production phase ca. 18th century – ca. 19th century
- B. phase between 1895-1898
- C. phase between 1904-1912
- D. phase between 1924 -1995 [20].

The complex is currently established the irregularly, polygonal plan. The quarter is mapped out by the following street: Ząbkowska, Białostocka, Markowska and Nieporęcka. The nowadays area, occupied by fabric, surrounded by a wall, consist of two main historical phases of development of a particular area of the factory. After this period, followed by long-term phase change of ownership relating to set aside part of the land and changing its user or owner.

The beginning of the factory began when lands were purchased by two companies engaged in the production of vodka and spirits rectification. These companies were the Society Purification and Sales of spirits and so-called Monopoly. Construction of the entire facility began quite soon after the purchase of land, so the greater part was ready in 1897.

As described the then press – ‘*complex was among the largest in the Empire.*’ [9] The main author of buildings, facilities and technologies was engineer Iwanowski. They were impressive buildings by the standards of that time. Not only manufacturing facilities but also warehouses, workshops and residential buildings, but also school stand on the former. The complex in the Ząbkowska Street had created a true ‘*city within a city*’. For the first time in Warsaw on-site industrial drilled artesian well, which supplied water in the production process. One of the first elevators was in Warsaw at the production site also.

During First World War was destroyed, have been rebuilt and prosperous until the Second World War - 1939. The factory engaged in the production of spirits, vodka and species, and denatured alcohol.

During the Second World War the label was destroyed again. After the reconstruction started in 1947, production was taken care of by the Warsaw Plant Spirits Industry ‘Polmos’.

The industrial label is a characteristic complex of industrial architecture in Warsaw. Red brick, the historical main entrance gate and detail represent the uniqueness of that place until today. Most of objects were still in a relatively good state, but repairs or maintenance were required.

In 2009 the complex was recast into the Cultural Centrum ‘Koneser’. The factory was taken over by a private investor BBI Development. Pre-war buildings of no value were demolished and in their place are planning new commercial-residential buildings and historical building will be reuse, adapted to new function.

### The current state

The area of factory was divided into two – functionally mixed parts: warehouse-production and offices – residential. The main building of the complex, the filtration and warehouses bottles, boilers building with chimney and four detached warehouse was raised as first. Two storey floors filtration building and adjacent lower one storey bottles store stood along the Ząbkowska Street, were preceded by entrances are. Bottles warehouse was located on the plan shape of horseshoes.

The main entrance was located on Ząbkowska Street. From this street led a hiking entrance to the filtration building, in the eastern corner of the hall was a passer-by. Two additional inputs from the Lubomirski shaft were a part of the administrative and residential.

Adaptation problem was based on the analysis of bottling storage building. Architectural body of this object consisted of two parts, one full basement – located nearby the Ząbkowska Street and the other one from on the side of the whole complex.

Part of this complex has been entered in the register of monuments, namely the southern part of the cellars and two original two-storey wings northern part.

Superstructure of historic basement, made in the 80’, has no real values, is herewith not taken on board conservation guidelines and is intended for demolition. In the 50’ between two historic buildings wings toilets inserted seal, which also does not represent the historical value.

Maximum exterior dimensions with elements of roofing counted above the ground is:

- length: 54,24 m
- height of each of the members from the north: 13.21 m
- width: 39.07m

The building was erected on the base of a square plan, which the longer centre line are oriented in the west- east direction. The north part of the structure of the building was the object is a two-storey warehouse with a purpose – office – gastronomical, while the southern portion is an open storage space.

A peripheral wall of object made by ‘*machine*’ brick in 24 x 12 x 6,5 dimensions. On all elevations from its very beginning were used full exposed the brick walls. In the brick cladding, the alternating arrangement is dominating, presenting mainly the so-called stitch rhythm, the method comprising arranging a layer ‘*stretchers*’ alternating with a layer of ‘*head*’. In the north part established party imitation the brick facade. The surface elevation was enriched in terms of architecture, only subtle decorations was added. Was emphasized the tectonic horizontal directions by such



Fig. 5. The current stage of bottle storage in Warsaw Vodka Factory ‘Koneser’. Before an adaptation

elements: pedestals, belts partition, the inter-window strips and multi-profile arcaded frieze. An additional decoration enriched the eastern and western facade, introducing decorative consoles waist crowning cornice.

All original window openings in northern elevation were composed of even-order, while in the eastern and western facades in order odd. All openings of both window and door of the first floor were crowned lintels in the form of segmental arches, while the openings of the second floor is finished in a full arc. In selected areas of architectural decorative motifs used individually tailored shapes of ceramic bricks, forming oblique surfaces pedestals and decorative profiles windowsills

Roof surfaces, designed as a four-side, were supported on wooden structure. Essential roofing was made of bituminous materials.

### The designed state and conservation recommendations

The proposed investment is currently designed to amend the use of land from the historical production- residential to the retail – commercial – residential – museum function. It should taken into account a number of recommendations and conservation requirements, resulting from the strict conservation protection of the industrial complex.

In the drafted guidelines, as a main postulate took maintaining maximum possible extent its historical buildings, shaping frontage Ząbkowska and Markowska Street, and the whole complex. As regards parallel to the new implementation, the primarily guideless is subordination them to the historical part, in both urban planning and architecture terms.

The main preliminary findings are set out below. It was provisionally concluded recommendations and calls, which:

- a) determine the possibility of adaptation and transformation of the area for the proposed functions and the introduction of new, complementary building,
- b) set all the conditions with which need to comply new buildings
- c) relevant for each historical buildings, the initial scope of their protection and the possibility of transformation.

It is recommended to preserve the original urban composition, typical for the forms from 1914, after the several other neighbouring parcels. At that time, it were two parts of factory, within the boundaries of a clear framework and readable functional separation. Moreover, it is desirable to retain preservation existing, historic domination, such as rectification building, chimney, filtration building and the administration part form the Markowska Street

In a view of large transformation of storage and filtration building [no. 22 and 24] it was possible to reconstruct the size of building and the facade decorations, with reference to original photographs saved.. It is crucial to remember about historical urban layout of complex, the implementation should not to destroy it.

The shape and the form of new part of objects should be with harmonious with the older part. Due to the nature of the existing brick factory buildings, clearly identifies in the urban landscape, proposed that the new architecture designed should alluded to the historic nature of the factory facilities. It is recommended for admission into the factory a small amount of green composed, low and medium-high, highlighting the historic values of the complex.

### The problems in adaptation processes

Adaptation of existing historical buildings is one of the primary forms of their protection. Each of the buildings is different, so different methods, and completely individual approach is needed. There are no guidelines for proper adaptation.

'*Primum non nocere*' should be the only principle used. Adaptation, often relates to redevelopment rooms, a reinforcement structure, equipped with modern installations, transforming functional surrounding of the object. Depending on the scale maintain the heritage features of buildings and expected final form, adaptation for new function should be entail the necessity of new volume of building or remodeling an existing one, sometimes reconstruction the original shape of objects. The fundamental adaptation of monuments - introduces a new feature - is mostly to enable to past form protection. However, sometimes it has to change the primary function and the complex or building have to transform. Obviously, not to modify is better, but it is not possible. For this reason, in almost an compulsory way, so, given the options must be chosen lesser evil, to pass on to future generations rescued from destroying the legacy of past centuries.

To illustrate some of the problems of monument objects adaptation was served the example of project Warsaw Vodka Factory '*Koneser*'.

### Before designing phase /preparation phase

The first stage of designing is to formulate the design problem. Design problem comes at a time when we can call it, at this point, we refer it to life, and then becomes the main task of the designer. This stage is the most important in the whole design process.

Adaptation of historical building is much more difficult than designing the object only with the environmental and surrounding context, meeting the requirements of investors, residents and cities. Those objects are demanding suitable for accurately establishing how they could be reused. It is of the utmost importance the way of transforming those objects.

The preliminary work should at least include: diagnosis and measurement and drawing inventories and comprehensive conservation – architectural survey. The documents gathered during the investigation should bring out to indicate the conclusion and develop guidelines. Consequently, the proposed should be just the works project, but also should contain the conservation part.

For the efficient and correct programming and performing the conservation and restoration processes of industrial buildings (historical part) is needed not only the adequate expertise, but also the adoption of a proper conduct. For the above reasons, is very important in the first part of designing stage.

The early phase of superstructure or development, or also adaptation this object should be accurately catalogue of the space, which were investments or accomplishment historical researches. Unfortunately, in this day and age, despite extremely perfect and sophisticated technology, because of the high costs, private investors does not benefiting from them. This was also in analyzed object.

Identification of the objects and historical researches have been correctly implemented (have been carried out properly), even ideal, however, the inventory leaves much to be desired. Only one cross section was made, constructional elements were not measured. Using highly sensitive analysis tools, such as three-dimensional scanner could be then done honestly, but the cost is usually more than such building owners can afford.

With this goal in mind, the next step should be to pursue an expert study to judge if it is possible to re-use the objects. Performing the state of the objects condition analysis is to assist in the evaluation of conclusions and conservation guidelines. Without technical expertise, is not possible to assess those in every single detail, the structure was very well suited to the change of building use. On the example of the bottle storage having been made ‘*in situ*’ researches. At this stage, they are made open pit, which helped to identify the problems with which the designer will have to face in designing process. We talk here, fort of all, about surface salt blooming in the brick walls and identification of structures, also ceiling structures.

Pre-conceptual design research are very important for conservators and architects in order to obtain the adaptation of historical buildings. It is also vital that all operations are coordinated between all participants of this process, and the work carried out to supplement and complement.

### Creation of concept, building and execution project

As a result those comprehensive study we should get scientific findings, and guidelines, which should be able to determine for future planning. It is important to remember that we are not only dealing with new objects, but the old ones, that deserve more detailed examination

Conceptual and construction phases are not much different from the typical design. Obviously, much more specific attention and respect for the historical substance – the existing state must be given.

The appropriate development of industrial building can often be hampered by its characteristic shapes and open-space interior. In the described example, during the Second World War the main form of production hall was destroyed.

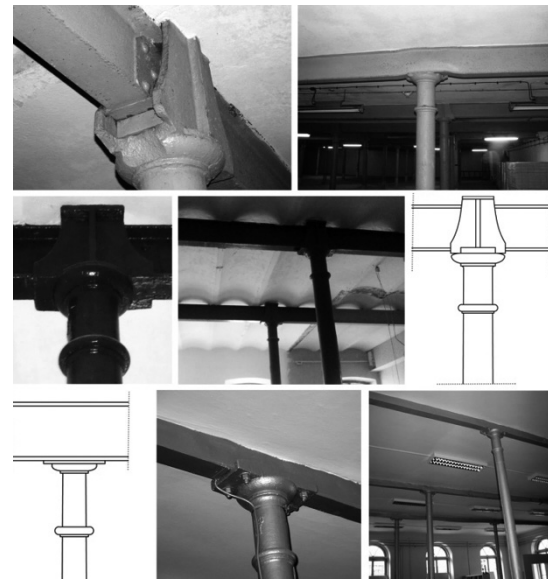


Fig. 6. Cast-iron columns and under hang steel. Historical structure

In architectural – conservation study and technical analysis of the preserved building are showing superstructure of the building, which is not reckless historical values. This part was built in 50' XX Century. In addition, existing structure, created by cast-iron posts have been fractured. It was therefore concluded that superstructure postwar dismantled, and the new development should be built upon new structure. The old stricter cannot be modified, as it is recommended by conservator.

It is also planned to dismantle the modern reconstruction stored bottles to the level of historical preserved cellars, located on the side Ząbkowska Street. Carrying out repair conservation basement walls and then the introduction of the newly designed building.

Among the structural steel, simultaneously representing the interior of the building preserved columns supporting the ceilings on both the first and second floor.

During the design process, it turned out that the strength of the cast iron is not enough to keep the 4th new floor. In accordance with the fire requirements the load-bearing structure of the building should be secured for two hours, while Institute of Building Technique do not have researches conducted on the fire protection made by cast iron.

The designer suggested preservation the structural basement of former storage hall and kept the ceiling over this storey of a building, and the newly designed superstructure will be based on a new reinforced concrete structure and partly changed cast-iron [Fig. 6] to steel columns. Cast-iron construction will be exposed, and part of this is intended to be the interesting interior industrial constituting the inside of the hotel lobby.

In light of the introduction in the north elevation ectypal fillings is assumed a demolition of that part and re-

The north elevation of bottling building

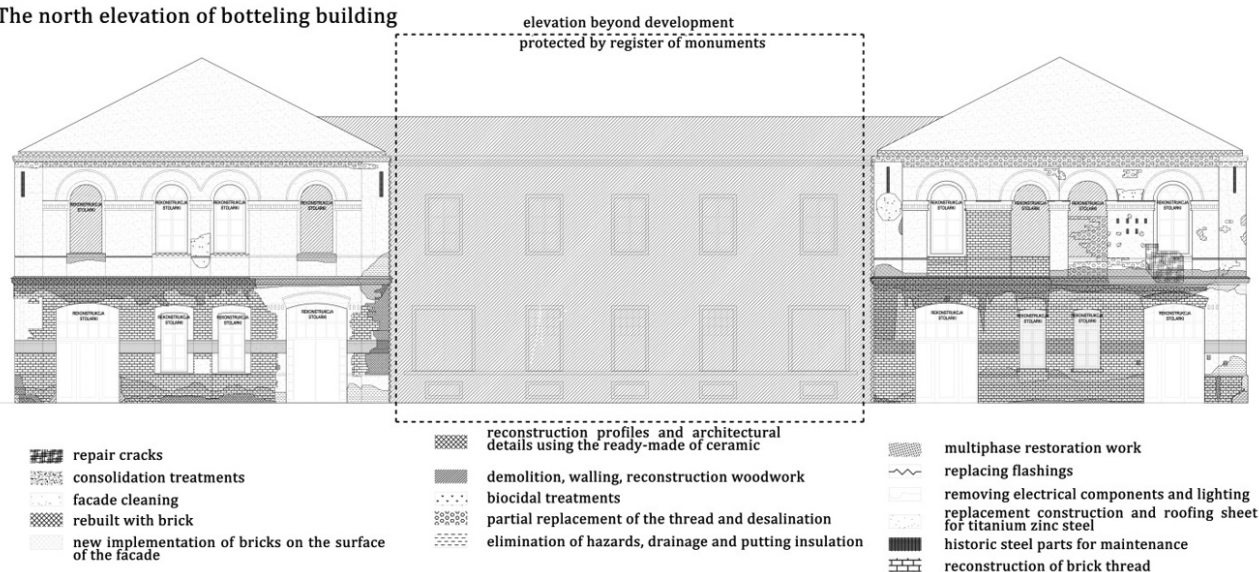


Fig. 7. Analysis of current stage of north elevation. Before adaptation

vealing original, primary external east and west brick walls of outbuildings and exposing them in new interiors.

Full exposure of brick thread of elevation, after the renovation comprehensive and consernation treatments will be implemented [Fig. 7].

In the building few copies of historic windows box-shaped tailgate curved-head by semicircular arches with elements divided them into to three and six section were preserved. Unfortunately, the level of usage woodwork does not qualify to his renovation. On the basis of the preserving original window frame, suggested is their construction.

On the ground floor window and door openings were closed segmental arch additionally accentuated by brick, convex archivolt.

Division between story underlines multi crowned cornice profiled. However, the space between second floor has been stressed cornice designed in box form – made by brick, ‘head’ and diagonal laid. The windows on the second storey are semi-circular archivolt, based on a full arc. Details are clearly displayed throughout protrusion beyond the line of the wall face. The whole closed the crowning cornice with a slipped frieze, supported on decorative brackets. Facade which is preserved from all the walls of the building and is a good model for the reconstruction of the remaining, is the west elevation.

What is the most important, the most original, odd system of articulation window openings elevation east and west, and even the system of articulation window and door openings on the north elevation were preserved. Sometimes the window openings had been re-bricked.

In the facade, there are numerous chases and loss of architectural details.

It has been decided, during the design work, to the comprehensive exchange of window and door frame, which shapes and manner of functioning was based on equivalent historical benchmark from other building from ‘Koneser’ complex and preserved relict [Fig. 8].

In the building on both the first and second floor it retained many of the original ceramic floor. For the most part these are tiles in size 10x10 cm in a diachronic - checkered, white - red, yellow – red [Fig. 9].

Walls from the interior side have been displayed by surface ‘Ecovario’ type and painted with permeable paint, or insulated with mineral wool and finished with a thin-layer plaster. These pretreatments are required in order to meet the regulations arising from thermal insulation values. This however makes, that brick walls, may no longer exist.

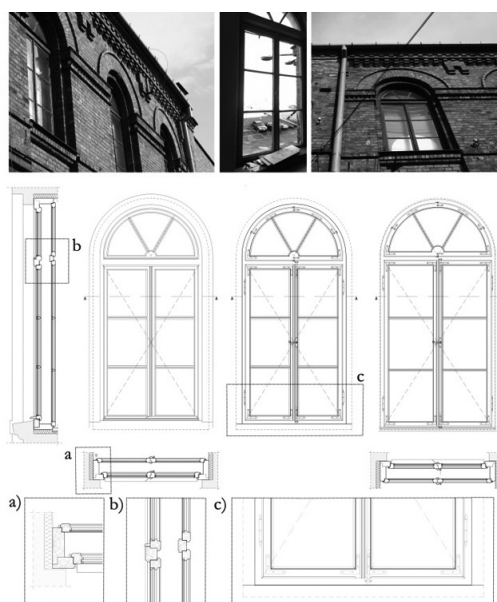


Fig. 8. The project of new window frame

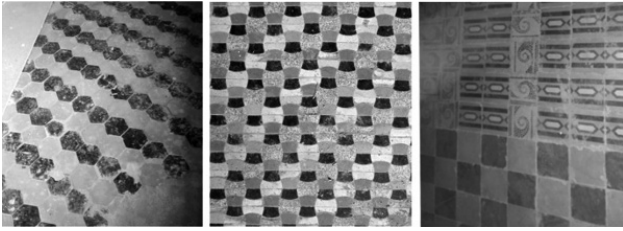


Fig. 9. Different types of preserved the original ceramic floor. Before adaptation

Wood rafters and built-up' roofing spanning (felt) has been replaced by new materials, corresponding with the historical exemplar carpentry/woodwork. Finishing layer will be replaced by titanium-zinc plate in the restoration process, combined traditional standing seam.

Adaptation to the current legislation requires a lot of changes that will confuse the value of such a historic building. We can cite the example of columnar iron and steel substrings that after securing 120 minutes will no longer look attractive for visitors. Unfortunately, historic buildings during the adaptation must meet requirements such as those newly created objects.

Adjusting historic monuments to nowadays legal regulations and standards destroyed lot of buildings and their elements. The question arises, how to qualify damage on historical buildings bringing on applying the necessary standards to be met with new buildings requirements?

## Discussion and Conclusion

Summing up, good preparation of works help architects to design the new implementation. Adaptation of industrial facilities must be based on knowledge of the history of the object primed analysis of its values and awareness of certain difficulties in the design of the new building on such premises. So as it was mention, the first steps of designing, is the most important in the designing process.

Respect the history and artists from the past was very important. As the Latin saying says *'veritas sumplex oratio est'* – it is a simple question of truth.

In the light of the foregoing, it can be concluded, that analysis of the example above, it should be stressed, that it is very important to made this first – pre-designing steps, to understand working with historical industrial buildings. All the knowledge collected and combined into one unity, which is a repository of knowledge for the designer, led to projected solve the often changing throughout the process. However, the full success of the work requires cooperation in all fields, speaking and occasionally concessions, or lack of them, which leads to the consistency of the whole project in aesthetic, historical and architectural terms.

In Warsaw Vodka Factory 'Koneser', in that case, the whole construction structure on all floors is preserved. This is without a doubt a good example, that both respects entire building and accentuate its advantages. A new function in

the historic layout of the building, without destroying its essential character, is even highlighting and exposing them.

Historical buildings, should be able to preserved them not only now, but for future generation, as it is required by Venice Charter [16]. Unfortunately, sometimes during restoration and conservation work, we are forced to replace the damaged material or supplement its shortcomings, but also to add completely new elements.

It is worth noting that on this topics is written on Rome Card from 1931. Quoting : *'In any case, added elements should be accurately and visibly marked, or by using a different material, by adding partitions borders, smooth and modest, or by posting signs and inscriptions, so that made maintenance could never mislead scientists as a forgery historic document'*. [13]

These above principles prompting different ways of making the new implementation clearer, whose purpose is to emphasizing authentic substance. Probably because Roman card does not highlight the integration of these activities, as this is done, among others Venice Charter in article 9: *'The restaurant aims to preserve and reveal the aesthetic and historic value of the monument and is based on respect for the former substance and the elements constituting the authentic documents of the past . It stops where begins the speculation beyond that limit all recognized as indispensable, complementary works have come from the architectural composition and will wear the mark of our times'*. [17].

This quotations give directions to treating monuments. A heavy responsibility also falls on architects, investors and cities. In particular, in order not to lose more historical buildings, it should be remembered during the designing on such objects, its expansion, superstructure and adaptation.

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