TRANSFORMATION OF POST- INDUSTRIAL BUILDING VOLUMES

PRZEKSZTAŁCENIE BRYL ARCHITECTURY POPRSZEMYSLOWEJ

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STRESZCZENIE

Zmiana priorytetów i stylu życia w XX wieku spowodowala przeniesinie przemysłu z centrów miast, ktory pozostawili po sobie zaniedbane poprszemyslowe pustki. W tym czasie, rekonstrukcja starych budynków przemysłowych stają się niezwykle istotne i popularna. Artykuł bada możliwości przekształcania istniejących budynków dawnego przemysłu w celu dostosowania ich do aktualnych potrzeb miasta.

Słowa kluczowe: transformacja przestrzenna terenow poprzemysłowych, zmiana funkcionalna, stare budynki przemysłowe.

ABSTRACT

Change of society priorities and lifestyles in the XX century displaced the industry from metropolitan urban centers, leaving behind swaths of abandoned sites. Thus, the theme of old industrial building transformation becomes incredibly relevant and widespread. The article investigates transformation options for existing building volumes of the former industrial use according to current needs of the city.

Key words: Brownfield spatial transformation, building reorganisation, former industrial buildings.

Industrial architecture during its history was assumed as a city center as much as an uninhabitable derelict place. The approach which considered industry as integral part of the city was formulated as the "city for manufacturing." With the expansion of urban fabric, once built on the outskirts manufacturing facilities were found surrounded by residential buildings. Thus industrial areas started to interact with living neighborhoods on the visual level[1]. However deindustrialization, evolution from “the city for manufacturing” to “the city for people”, ecological aspects and many accompanying factors forced industry to leave metropolitan centers of America and Europe in search of cheaper or more efficient places to produce goods.

Therefore, postindustrial sites soon turned into abandoned brownfields in the middle of the city, assigned for total demolishing and reorganization. These processes could be observed until recently in many cities of post-soviet countries, especially in Ukraine or Russia. Entire complexes of manufacturing facilities were replaced by living neighborhoods, business districts and public spaces.

Removal of industrial facilities from the cityscape deprives urban space from one of the most interesting and unique types of architecture. Specific volumes of manufacturing buildings which stand out sharply from surrounding environment thanks to its scale significantly enrich urban areas without hiding their genuine purpose. Visual and scale diversity brought by industrial architecture is favorable both for city and its citizens. That is why there is no need of demolishing former industrial buildings and making room for a new purpose, but to adapt them as much as possible, preserving the spirit of a place and its breathtaking look.

Ways of industrial transformation

Functional adaptation and reuse of industrial buildings was introduced worldwide at the 1950s. Numerous publications pay significant attention to the problem of former industry reurbanisation since it is tightly connected to sustainable development movement. While in certain countries (Sweden, Finland) restoring degraded sites is used as a method of increasing urban density and a way of space usage intensification, other ones (USA, Canada) widely use it rather for “cleaning” the cities from the unpleasant areas then for solving a lack-of-space problem[2]. During current investigation of post-industrial buildings transformation its methods were divided into two groups according to their spatial structure:

– Redeveloping of the outer shell
– Inner space reorganisation

Each of the groups above implies different scope of work. Either facades are improved by giving the architecture a new start and a chance to be noticed and appreciated sufficiently, or interior transformations take place due to change of uses. The method may lead to even more significant change of authentic structure following by creation of the new links between old facilities. Transformation of the post-industrial heritage is intended to strengthen its exclusivity without masking its history.

Redeveloping of the outer shell

When the issue of use change rises during its reconstruction, the exterior appearance of former factories, mills, barns and warehouses usually becomes the priority. From well-known methods of building reconstruction on the restructured areas there are distinguished four basic approaches:

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[1] Vahitov T.R., Problema rebylytacyy promyshlennykh predpryyatyy v strukture h. Ekaterynburha, *Architekton: izvestia vuzov,* No10, 2005,

[2] Hanets S., Petryshyn H., Luchko L., Suchasni Tendenciyi Sanaciyi Postpromyslovyh Terytoriy. Obraz Zhytlovogo Seredovyshcha, *Problemy teoriyi i istoriyi architektury Ukrayiny*, No 11, 2011, Odessa, str. 179

– *Conservation* – consists of maximum preservation of the historical facade with no additional elements on it (fig. 1-2, 15-16). It shows to the public a true story of the building, with all traces and changes it survived during its life span;
– *Aplication* – this approach can enrich the superficiality of facades by using separate inserts or linings such as balconies, windows, decks, sunshades, etc. (fig. 3–6);
– *Integration* – adding extra elements and structures to existing building volume. This method allows to create on the basis of an old building quite different three-dimensional composition. The appearance of new or strengthening existing accents, various kinds of remote structures and additional volumes may enhance the composition of the facade and link it to the context (fig. 9-14);
– *Redesidn* – risk of the approach lies in the fact that redesign may lead to a substanial change in appearance, even the loss of its morphological features. However, as mentioned, features of industrial architecture and its recognition is an undeniable advantage that is hard and unnecessary to hide. Industrial architecture brings diversify and interest to the city, even after facade restyling was required (fig. 7-8).

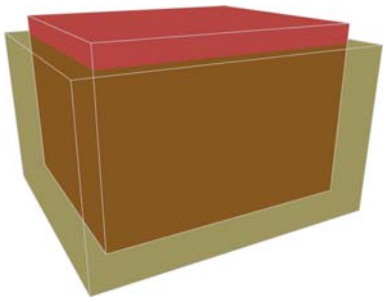

Fig. 1. Conservation of authentic facade of the building and change of its interior structure. Source: ill. S. Hanets

Fig. 2. Former Jam Factory in Lviv now serves as a place for artistic worksops and Urban Exploration Festivals Source: http://tvoemisto.tv/news/na_terytorii_zakynutoi_fabryky_povydla_u_lvovi_provedut_urbanfest_64920.html

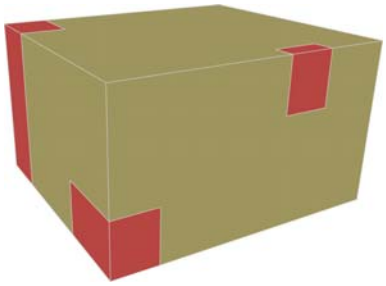

Fig. 3. Replacement of separate façade units. Source: ill. S. Hanets

Fig. 4. Telegraph equipment factory now serves as an office building with some caffeterias on the first floor Source: Photo by S. Hanets, 2014

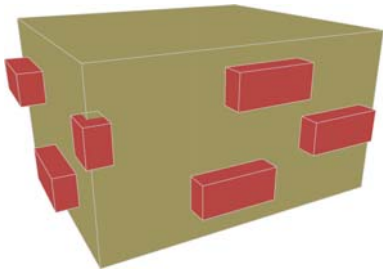

Fig. 5. Installation of new elements on the façade plane. Source: ill. S. Hanets

Fig. 6. Former flour-mill transformed into lofts, Roubaix,59, France, 2008 Source: http://www.archdaily.com/39730/la-minoterie-tank-architectes/rbx_minoterie-02/

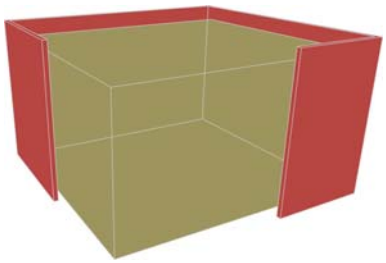

Fig. 7. Structural change of the shell (curtain wall). Source: ill. S. Hanets

Fig. 8. Bailiffs' Service Lviv City Administration of Justice placed in the building of an old fashion atelier, 2013 Source: Photo by S. Hanets, 2014

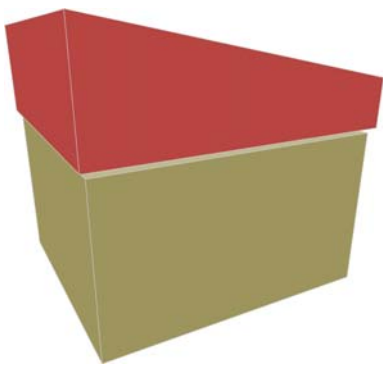

Fig. 9. Volume extention by new elements of the facade. Source: ill. S. Hanets

Fig. 10. Former millitary baracs transformed into apartment building Source: Photo by S. Hanets 2014

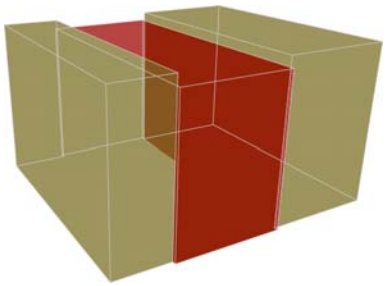

Fig. 11. Creating various types of space. Source: ill. S. Hanets

Fig. 12. „Matrix" Business center grown from the tool shop of KINESKOP factory, by adding two hulls and a few floors above one part of a building 2007-2014 Source: http://novobudovy.com/biznes-tsentry/biznes-centr-m-lviv-vul-sadova#.U8aJo_l_uqg

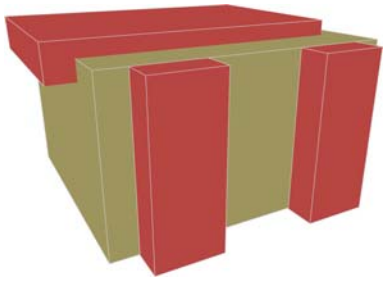

Fig. 13. Extentions and adds on the facade . Source: ill. S. Hanets

Fig. 14. Office building „Emerald in Lviv, 2008-2009 Source: http://alex-shutyuk.livejournal.com/36750.html

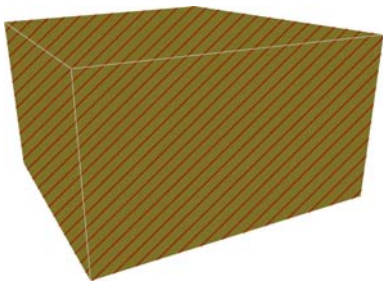

Fig. 15. Total reconstruction of the facade. Source: ill. S. Hanets

Fig. 16. Another one of the buildings of an old telegraph equipment factory transformed into „Technopark" business and wellness center in Lviv, 2014 Source: Photo by S. Hanets, 2014

Therefore, it is possible to assert that chosen retrofit method while designing facades of former industrial buildings can have significant impact on its appearance as much as on its context. Thus, the preliminary design stage is necessary to consider the most appropriate method from the above to achive good design solution.

Interior space reorganization

The industrial heritage interior could give a lot of opportunities to our imagination. Open, commodious framed structure makes possible to fit allmost any possible use. Art, science, trade, bussiness or living space placed inside industrial facilities might conform to the old shell. Integral volume could be kept as entire space or to be divided into parts by separate levels, mezzanines and walls. It is sutable even for fitting another volume inside and creating independent rooms. Structural scheme designed to withstand heavy loads of production equipment allows to transform the interior without additional strengthening of bearing structures. As main ways of the interior transformation reviewed during current research ones concerning most relevant space organization would be pertinent to name the following:

– *Merging* the majority of inner volumes (fig. 17-18)
– *Horisontal partition*: total (separate storeys) or partial (mezzanines) (fig. 19-22)
– *Vertical partition*: installation of walls and barriers (fig. 25-26)
– *Setting independent objects* within inner space (fig. 23-24)

Whatever takes place in the building does not nrccessarily related to its former use, although architecture often extols it. Frequently created as economic development projects rahter than historic ones, these places have a spotty record of reviving their towns[3].

However unfolding such places requires to attract a lot of visitors there. As well the simplest and the easiest way to do it is through the arts. Raw industrial space and contemporary art seem to be made for each other. The high cellings, exposed systems, and unfinished surfaces complement the experimental nature of the art being exibited[4] (fig. 17-18, 23-26). That is why old warehouses and factories as a starter for their further development usually are arranged as an non-for-profit art space, called to open it for wide range of potential users.

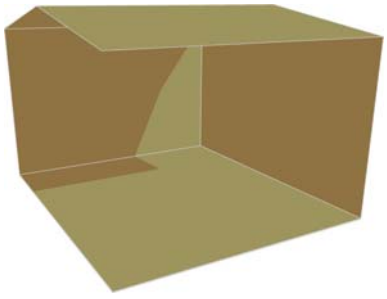

Fig. 17. Creation of a common space within the building. Source: ill. S. Hanets

Fig. 18. Art project "IZOLYATSIYA" located on the territory of factory on manufacture of insulating materials in Donetsk in 2010, Until 2014 it used to be a place for artistic performances, workshops and exibitions. Source: http://life.pravda.com.ua/culture/2014/06/26/173242/

[3] Berens Carol, *Redeveloping Industrial Sites,* JohnWiley & Sons Inc., Hoboken, New Jersey, 2011, P. 168.
[4] Berens Carol, *Redeveloping* …, P.172

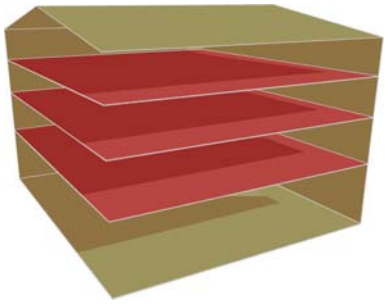

Fig. 19. Dividing the volume on separate levels. Source: ill. S. Hanets

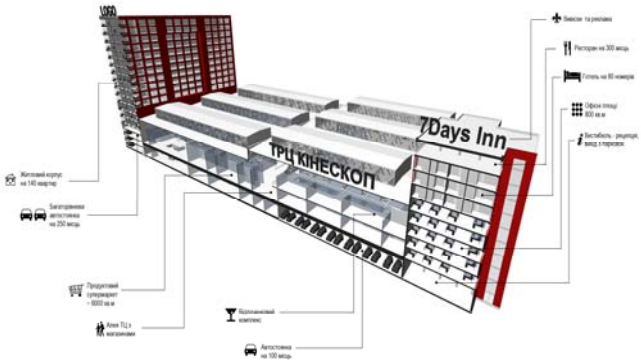

Fig. 20. Concept project of the Lviv Kinescope factory reconstruction by E. Voronych and S. Hanets. Middle part of the KINESKOPE factory complex divided into three levels to fit parking lot on the first level and a shopping space above it, 2013
Source: Ill. by S.Hanets, 2013

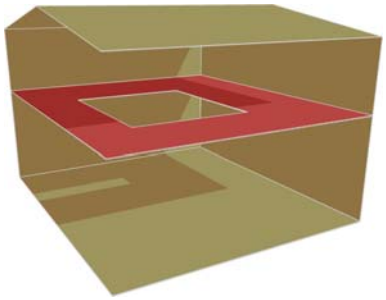

Fig. 21. Installation of mezzanines on the perimeter. Source: ill. S. Hanets

Fig. 22. Transformation project of Mitsubishi Main Assembly Building into Sustainable Industries Education Centre (SIEC), Adelaide, SA, Australia, 2013 Source: http://www.archdaily.com/517253/siec-mph-architects/

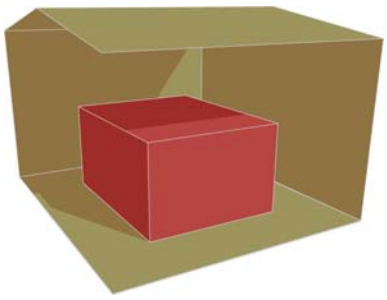

Fig. 23. Establishment of a separate volume inside the building. Source: ill. S. Hanets

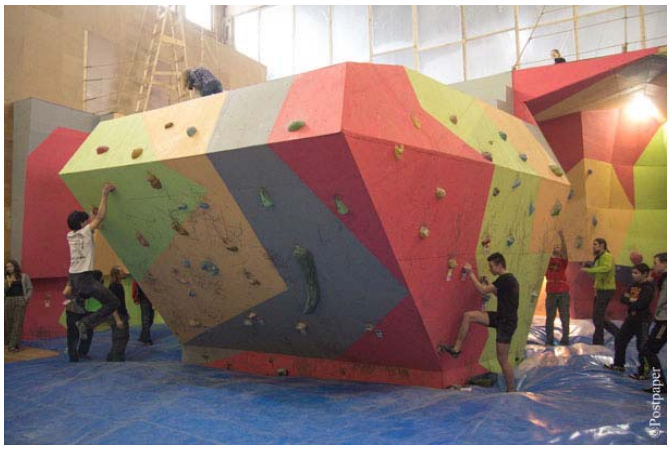

Fig. 24. Boldering and climbing center „Buhta" inside of an old ceramic factory in Lviv, 2014, Source: http://postpaper.com.ua/city/skalodrom_bukhta.html#.U8qZ5_l_uqg

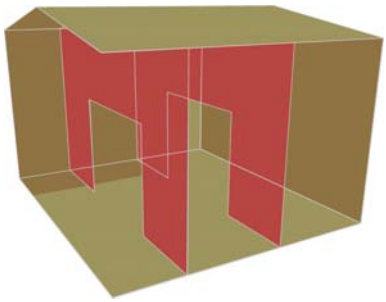

Fig. 25. Vertical dividing of the inner space. Source: ill. S. Hanets

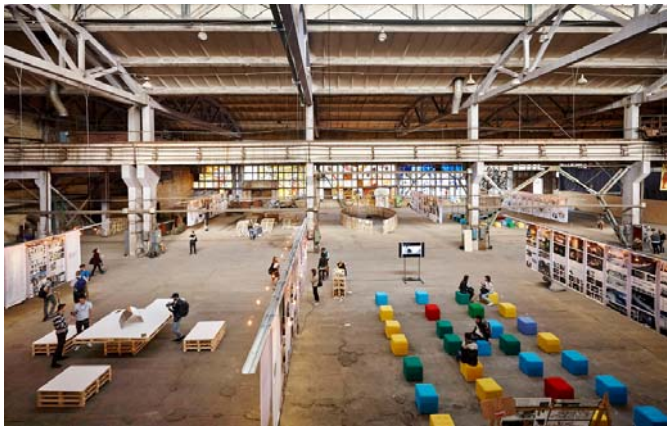

Fig. 26. Architectural workshop in former Experimental and Mechanical Factory in Telychka, Kiev, 2014 Source: http://pb.platfor.ma/telichka/

SUMMARY

Transformation of post-industrial volumes, no mater weather it is from the outside or from the inside, can equally emphasize or destroy its authentic character. In this article are shown few samples of building volume redevelopment, based on the decades of hard work, numerous attempts and strategies passed through rises and falls to gain success. The experience obtained by them allows us to take a fresh look at the old abandoned building and by using various methods renovate it without demolishing. Each case is unique, but preservation of what we already have and what we still can use should be primary in the further environmental design.

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O AUTORZE

Solomiya Hanets - Asystentka na Wydziale Planowania Miast Politechniki Lwowskiej, architekt. Główne zainteresowania: transformacja terenów zdegradowanych, reurbanisacia, przebudowa terenow postindustrialnych.

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