

TYOLOGICAL ANALYSIS OF UNUSED BREWERY GROUNDS IN TERMS OF ABILITY TO RE-USE

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Summary

This paper deals with specific group of industrial heritage – abandoned beer-brewing buildings. It describes typological scheme of these objects and the characteristics of its parts focused on opportunities for new use.

Keywords: Beer-brewing; brewery; malt house; industrial heritage; adaptive re-use

1 Introduction: Loss of function and potential for re-use

There are about 550 buildings and sites located in the Czech Republic, originally intended for beer and malt production. Only a small fraction of them serves the original purpose today (47 breweries and 6 Malt-houses). Centralization and termination of the production left behind only empty building shells without any utilization. This situation is unexceptional not only for industrial heritage and offers several possible solutions. On the one hand it is a radical demolition and free up space for new development. The less dramatic way presents the conversion – finding new use /content/ for an abandoned building. This allows the preservation of heritage buildings, including the restoration of their life. To implement the conversion is essential adaptability of the original structure – the ability to adopt a new function.

Apart from the wider urban context (location and attractively for investment [2]), we can say, that in general, "Brewery brownfields" do have relatively high potential for re-use due to several key features:

- easy grip size of brownfield areas attractive to potential investors.
- character of a compact complex with buildings in relatively good condition, which can be re-used as a whole, or in phases.
- localities especially in urban areas, in close connection to the infrastructure
- low risk of the contamination.

2 Structure of the typical brewery complex

The vast majority of recently abandoned brewery buildings and sites were built in the period of industrial production (from the 2nd half of the 19th century until World War II,) as a new building or as a reconstruction of an older plant with pre-industrial way of production.

Within each production plant, we can find the basic typological structure (composition and arrangement of typologically separate production units), corresponding to the process of malt and beer production. Within this structure, it is possible to distinguish three production units: malt-house, "hot" brewery plant, "cold" brewery plant. Besides the

brewery is supplemented by additional objects (administration, service apartments, workshops, warehouses). Each part has its very individual characteristics, predetermining also the possibilities for re-use.

3 Adaptability and “native” compatibility

There is a basic division of industrial buildings and spaces according to variability of use – single-purpose and universal [3]. Some spaces of the brewery can be evaluated as relatively well-prepared for re-use, but always with some limitations. Not every universal space can be used for any new purpose. When searching for a new use, the character of the original space and the original concept should be respected by new design.

In the structure of breweries several basic types of spaces can be defined.

3.1 Continual spaces (malt storage floors/granary, malting floor)

In terms of layout of these spaces are known as universal, is therefore expected widest range of possibilities for new applications. By contrast to the typical representatives of universal production facilities (textile factories, industrial warehouses), there are some restrictions that narrow the selection of new use or require significant architectural interventions. (wooden supporting structure inside the granary, a massive subterranean vaulted spaces of malting floor, the single-purpose space of malt-kiln in the free layout of the building, insufficient dimensions of vertical communication, ...)

These spaces can be naturally converted for cultural purposes (e.g. Český Krumlov – Egon Schiele Art Centre, Louny – Benedikt Rejt Gallery), education (e.g. Litomyšl – YMCA), open-space offices (e.g. Holešovice – multifunc. A7 Arena) – functions respecting the continual character of the target space. Malting floors can easily be used for gastronomy or sales areas (e.g. Dalešice, Dolní Počernice, Holešovice, etc.)

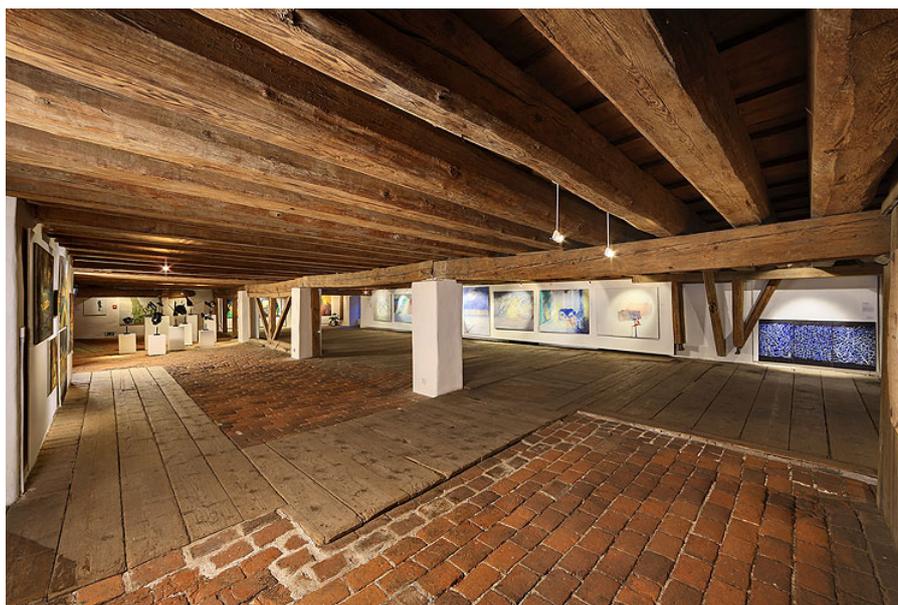


Fig. 1 Egon Schiele Art Center, conversion of brewery in Český Krumlov (granary)

3.2 Hall spaces (brew house, boiler room, engine room, cooler)

Although these spaces are defined as single-purpose, they offer a wide range of possibilities for new use. Character of the space enables the implementation of almost any built-in structure according to the original solution (built as replace the original production technology). Naturally compatible use works with originally free space, articulated by the elements embedded so as to maintain a consistent perception of space – typically the use for culture and exhibitions (e.g. Český Krumlov – Egon Schiele Art Centre), as well loft offices and loft apartments with a multi-level solution (e.g. Schneiderbrauerei Berlin, Löwenbrau Zürich, Holešovice).



Fig. 2 Loft offices in converted brewery Löwenbrau, Zürich (cooler)

3.3 Atypical spaces

- underground and fully closed (lager cellars, fermentation cellars)
- atypical proportions (malt kilns, ice cellars)

These spaces require special and individual approach to find a new use. In many cases, these spaces can be described as completely inadaptable (e.g. kilns of small breweries, underground cellars, fermenting and lager tank structures from reinforced concrete, ...) Conventional solutions usually cannot be applied. Architectural interventions to increase the adaptability of these spaces are very large and destructive (large openings, demolition of vaults or perimeter walls,...e.g. Lochkov, Škvorec, Holešovice – housing) Some possibilities are in new use for cultural purposes (e.g. Adambrau Innsbruck), gastronomy, and for special marginal interest (some kinds of sports – squash, climbing; e.g. Lanškroun) Large separate blocks of cellars usually use to be demolished and replaced with new development for its inadaptable, smaller objects (kilns) are used to be kept without any explicit purpose as vestiges of industry (e.g. Lobeč).

3.4 Other and utilitarian spaces

- outbuildings and sheds of utilitarian nature (warehouses, workshops, garages, and stables) are mostly old-fashioned and their maintenance, demolition and eventual replacement with new volumes is on individual assessment.
- spaces with clearly defined non-industrial function (apartments, offices, communications spaces, residual spaces) are placed individually on site and do not require a specific approach.

4 Other factors limiting the adaptability

4.1 Size of the production plant (capacity)

A major factor affecting the typological properties and adaptability of the spaces is the size of the plant, depending on its production capacity.

Capacity has influence on the composition of the plant. For small plants, the entire production is concentrated in one or two compact objects. Conversion then assumes polyfunctional new use keeping most of the existing structures, and therefore searching new use natively compatible with individual spaces. Composition and layout of the spaces usually don't allow inserting of communications and technical facilities and these elements are to be built as additions to the existing substance (e.g. Schönsee, Meersbuch). The size and construction of the universal spaces often creates significant limitations for possible new use (malting rooms, granary; e.g. Lobeč), while other times inadaptable spaces (lager and ice cellars) can have scale and size, that easily allows some new use (e.g. Dolní Počernice – gastronomy).



Fig. 3 Small brewery in Schönsee with radical interventions and additions of new volumes converted to a cultural centre.

Large plants do have individual production phases deployed in separate blocks, allowing conversion in parts and for multiple use. Typically the inadaptable production blocks use to be replaced with rational development and the density of the whole urban structure use to be increased by new volumes (e.g. Dobříš, Holešovice, Vinohrady – housing). Disposition layout of universal parts is designed rationally as a free continuous space and can be

reconfigured to almost any use. It allows easier architectural interventions – addition of interior elements or pulling out part of the structure to increase usability e.g. Union-Dortmund, Holešovice, Schönsee). Larger size of some spaces (e.g. kiln) allows finding their meaningful new use (e.g. Hallemans Bruxelles – loft co-housing), while a wide extent of especially cellars is difficult to grasp and usually results in a decision to demolish and replace it with rational structure (e.g. Děčín–Podmokly – shopping).



Fig. 4 Large brewery area in Děčín–Podmokly, designed to be rebuilt to shopping complex. The cold brewery should be replaced with rational new building.

4.2 Establishing of the plant

Great influence on the disposition has also the building character, dependent on the establishing time of the brewery. A completely different situation is in the brewery founded newly as an industrial plant and brewery, which was rebuilt from the originally pre-industrial production building.

Objects newly established as an industrial plant exhibit rational layout, clearly differentiated typological blocks, and use modern building materials. It is also usually a larger plant. Hall and continuous spaces have a truly universal character (brew house, boiler room, engine room, and granary, cooler; e.g. Žatec–Dreher). On the contrary, other spaces are reduced only to a dedicated structure of technological equipment and are not otherwise useful (lager and fermentation tanks, modern coolers, malt silos and modern vertical malt house equipment).

Plants, or their parts, generated by reconstruction of older buildings are not typical representatives of industrial architecture, is rather on the border between industrial and rural architecture. Its technical solutions and used types of structures correspond to the farm buildings. Typically the surviving objects are malt houses, often Renaissance or Baroque foundation, supplemented only in the 19th century with the industrial kiln and brew house. It is usually a small capacity facility (e.g. Lobeč). Conversion to industrial use very often required compromises, leading to complicated arrangement. Spaces do have inappropriate proportions, massive building construction and complicated and insufficient communication links. Thus require a completely different approach to architectural design of the conversion. Required architectural interventions to the structure are often too invasive, leading to the destruction of historical substance and are therefore unrealistic (e.g. Škvorec).



Fig. 5 Destructive interventions in Škvorec brewery, due to conversion for housing

5 Conclusions

General typological division of industrial spaces by usability to universal and single-purpose cannot be universally applied on breweries. Adaptability is significantly influenced by the size of the brewery and its architectural development and should be assessed individually. Naturally compatible combinations of target areas and new use can be found for case examples of plants, with no need of significant interventions into the existing architectural structures.

Acknowledgement

This research was supported by the Grant Agency of the Czech Technical University in Prague, grant No. SGS12/021/OHK1/1T/11: Typological Analysis of Unused Brewery Grounds in Terms of Ability to Re-use.

References

- [1] JIROUŠKOVÁ, Š.: *České a moravské pivovary: Stavební dědictví v kontextu historie*. Disertační práce. Prague, Faculty of Architecture CTU Prague, 2007., p. 2.
- [2] BREGATT JACKSON, J. a kol.: *Brownfields snadno a lehce: Příručka zejména pro pracovníky a zastupitele obcí*. Prague, Institut pro udržitelný rozvoj sídel, 2005., p. 19.
- [3] HLAVÁČEK, E.: *Architektura pohybu a proměn: (minulost a přítomnost průmyslové architektury)*. 1. ed., Prague: Odeon, 1985.