THE SECOND LIFE OF INDUSTRIAL BUILDINGS

Lepel, Adrienn PhD

The second life of industrial buildings

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- Development of cities, change of situation of industrial buildings in the city structure
- Development of industrial technologies, thus changes in the requirement concerning industrial buildings
- Changes in economical structure

These caused a significant part of American and Western European plants and factories to close in the last third of the 20\textsuperscript{th} century, in Central and Eastern Europe, and thus in Hungary as well parallel with the political change.

The reutilisation and the change of function in former factories and warehouses has become accepted.

The decision between destruction and reuse is affected by economical and technical aspects as well as the question of preservation of built heritage.

To achieve a good result it is necessary to examine reuse projects the conditions and the connections of the reuse and the relevant areas, such as:
- urban conditions;
- brownfield issues;
- buildings, their structures, materials;
- the technologies of refurbishment, strengthening structures and other interventions.
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Life-cycle of buildings

Preparation - planning
Implementation
Operation
Demolition

Refurbishment
Preparation - planning
Implementation

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Original industrial use
Loss of function
Abandonment (unofficial use)
Temporary utilisation
Demolition, ruin
Long-term utilisation
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Project preparation I.

Plot

Zoning of brownfield plot
Change of regulation
no
Is zoning appropriate?
yes

City Structure Plan
Conception of City Development
Zoning plans
Building regulations
Identity and character of the district/city

Project preparation II.

Plot

Examination of soil and groundwater
Does contamination exceed limit values?
yes
Decontamination technologies
no
Decontamination without demolition

Examinations of the building

Decontamination and demolition
Examinations of the condition of the buildings
Architectural survey
Value assessment
Monument protection

Demolition

Decision about reutilisation

Is the preservation possible?

yes

no
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The location of the building – three zones in the city structure
• Internal zone;
• Interim zone;
• External zone.

Brownfield definition:
• abandoned, under-utilised industrial, commercial and vehicular areas, where the probable contamination raises difficulties in the rehabilitation.

The process of decontamination and its consequences
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Examinations of the building (surveys)
- Research of written sources and other documentation — plans, building journal, bills, photographs, paintings and the recollection of the late users;
- Architectural survey;
- Inspection (building element method, or by list of rooms);
- Non-destructive tests;
- Removing the coverings;
- Sampling (destructive tests).

The building constructions and their condition depends on
- The original construction technologies, building materials and constructions
- The former use, maintenance and refurbishments

Surveys shall fit the structure’s significance and the expected result!
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Examples

- The layout structure of the building – defines the available room

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The layout structure of the building

Building constructions

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Building constructions

Holzzement deckung

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Building constructions
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- The new function of the building can be:
  - Dwelling function;
  - Offices;
  - Commerce, services;
  - Industry, warehousing;
  - Cultural
    - exhibition,
    - presentation,
    - education;
  - Leisure, sports;
  - Miscellaneous;
  - Other.

- Aspects:
  - the location of the building
  - the historical and architectural value of the building
  - the layout structure of the building
  - the person of investor (owner).

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Dwelling function

- location: all
- historical and architectural value: positive – protection may be negative
- layout structure: high demand on natural light and ventilation
- investor: public or private
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**Offices**
- Location: internal / interim zone
- Historical and architectural value: may be positive
- Layout structure: high demand on natural light
- Investor: public or private

**Commerce, services**
- Location: depends on the profile
- Historical and architectural value: neutral
- Layout structure: depends on the profile
- Investor: private
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- **Industry, warehousing**
  - location: interim / external zone
  - historical and architectural value: may be positive
  - layout structure: depends on the technology
  - investor: private

- **Cultural - exhibition**
  - Museums or art exhibitions
  - location: internal zone or local center
  - historical and architectural value: positive
  - layout structure: dependingh on the pieces of art
  - investor: public, private or PPP
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- Cultural - presentation,
  - Theatre, cinema or concert hall;
  - location: internal zone or local center
  - historical and architectural value: positive
  - layout structure: single-floor, monoaxial
  - investor: public, private or PPP

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- Cultural - education;
  - location: all
  - historical and architectural value: neutral
  - layout structure: high demand on natural light
  - investor: public
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Leisure, sports;
- Clubs, sport centers;
- location: near to residential areas
- historical and architectural value: neutral
- layout structure: depends on the function
- investor: public, private or PPP

Miscellaneous;
- Several different functions in one building (or group)
- location: all
- historical and architectural value: neutral
- layout structure: usually composed
- Investor: mixed
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- **Other**
  - E.g.: hospital, studio, parking facility...
  - location: depends on the function
  - historical and architectural value: depends on the function
  - layout structure: depends on the function
  - Investor: may be temporarily utilisation

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- **Requirements of the authorities concerning the interventions, the function and the building:**
  - Town planning (regulations);
  - Dimensioning (static), technical aspects;
  - Fire prevention;
  - Building energetics;
  - Health;
  - Planning, functional.
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The structural/technical interventions may be:

- Reinforcement due to static reasons;
- Partial demolition due to contamination, static or architectural reasons;
- Rebuilding due to static, mechanical or architectural reasons;
- Building in new constructions;
- Compliance with various regulations;
- Architectural or aesthetic interventions.
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Residential and commercial functions (2001), Coburg-Creidlitz – former porcelain factory (1906)

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„Family house“ (1997), Bad Segeberg – former water tower (1910)
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- School (1986-88), Bamberg
  - former electricity works (1901-2)

- MetaHaus (office building 2002), Berlin
  - former transformer station (1929)
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- Residential, industrial and commercial functions (1996-), Hamburg Altona – former gasworks (1892-95)
- Art college and other, Überseehafen, Bremen – former warehouse (1910-12)
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- ZKM HfG Karlsruhe: Centre for art and media-technology (1992) – former armory (1915-18)

- Residential and commercial building (1994), Hamburg – former chocolate factory (1908)
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- Eisenhütte (assembly hall 1828-30), Sayn – former iron forge (1976)

- Récsey Center (shopping mall 2004), Budapest – former bus garage (1930)
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- The Cannery (shopping centre), San Francisco – former cannery

- Landschaftspark Duisburg-Nord

Duisburg-Meiderich (D), Leisure center (1992)
Former Thyssen iron works (1902-)
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- Torpedo Factory Art Center

Alexandria (USA) Art center (1974)
Former torpedo factory (1918-)

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- Parc de Wesserling

Husseren-Wesserling (F) Textilmuseum (1996)
Former printing factory (1819)
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- Derby Silk Mill
  Derby (UK) Industrial and history museum (1974, 2013)
  Former Silk mill (1717-21)

- Elsterlofts
  Leipzig, Plagwitz (D) Residential house (1999-)
  Former yarn factory (1888-97)
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- Supermarket

Frankfurt am Main, Bornheim (D) Supermarket (2008)
Former tram shed (1902)