

# The Revitalization of Brownfields for Shaping the Urban Identity and Fighting Climate Change



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This review article outlines the genesis of deindustrialisation and revitalisation processes and their correlation and impact on the environment.

Revitalisation as a process deals with neglected and disregarded components of the built environment. In the context of post-industrial cities, these are the brownfields – former production sites, which became functionally obsolete, often abandoned and disconnected from urban life. Their repurposing and reintegration proved crucial to the continuity and preservation of the urban texture and the process of re-shaping the identity of post-industrial cities. The rising concerns about climate change, in turn, are forcing authorities, planners, and architects to look for sustainable urban solutions. The introduction of the New European Bauhaus [1] is a definitive step in that direction.

## “The greenest building... is the one that is already built”[2]

The construction industry is one of the major contributors to global warming. Each building requires embodied energy – a sum of all energy used to construct it – materials, human power, fuel [3] and operational energy – heating, cooling, lighting, etc. In most cases, the embodied energy amounts to about 20 years of operational energy [2]. In a time of climate crisis, any reduction of further emissions is a sought-after solution. By only improving the energy efficiency of an already-existing building, the operational energy is reduced without losing embodied energy. Adaptive reuse, as part of the revitalisation process, is in a way the recycling of the built environment and leads to “less energy in demolition, less waste to landfill sites, and less energy needs to be devoted to bringing in new building materials”[3], hence higher energy conservation and lower CO2 emissions, or in other words – the more

reasonable and sustainable solution in the fight with climate change.

## Scope of research

To initiate a discussion on the importance of brownfield revitalisation, it is first important to understand the cause for the appearance of brownfields – deindustrialisation, and its impact on the urban texture, as well as the following revitalisation process and its correlation with the aforementioned deindustrialisation.

The Industrial Revolution re-shaped cities dramatically. The following technological advancements and rising socio-economic and environmental issues led to the relocation of the production process out of the urban areas, initiating a new process – deindustrialisation, which in turn brought up new challenges and the need to redefine post-industrial cities. Economists identified two deindustrialisation types:

- **Natural deindustrialisation** occurs when the industry reaches its peak – a mature form of industrialisation, and the demand for industrial goods is overloaded. Henceforth there is a shift in demand for services, which in turn faces obstacles due to low unemployment rates - no labour force to cover the service sector [4]. Additionally, natural deindustrialisation can occur when a particular type of industry becomes obsolete - nowadays observed in the energy sector [5].
- **Pathological deindustrialisation** is characterised by supply-side malfunctions – high costs, overvalued currency exchange rates, and lack of investments and innovations, which leads to a production decline and an unemployment

increase [4]. It is also known in the literature as premature non-industrialisation or early loss of industry [6].

The first type is usually observed in more developed countries, while the second is characteristic of countries, which are lagging in industrial development – such as the former Eastern Bloc in the 1990s. In both cases, the economy transitions from industry-oriented to service-oriented [7]. The main difference lies in the perception of the post-industrial sites and their potential repurposing. A reference could be made to the two approaches to revitalisation as defined in the literature [8]:

- **Natural revitalisation** – cities are perceived as living organisms, where the urban space goes through recurring changes - both creative and destructive, in form, function and usage. Revitalisation occurs naturally and provides a solution for curing the urban pathologies, resulting from the degradation processes. In that way, the city continues its natural development [8]. The main actors, in that case, would be the local inhabitants, and the approach is known as vernacular, as it happens spontaneously and is user-led [9];
- **Planned revitalisation** is part of the urban (re)development strategy. In this case, the local government consciously takes action and implements projects for the improvement of degraded urban areas, the socio-economic conditions, as well as the aesthetics of a place. The main focus is the creation of policies and strategies for integrated urban development and management [8].

Natural deindustrialisation leads to naturally occurring revitalisation processes,

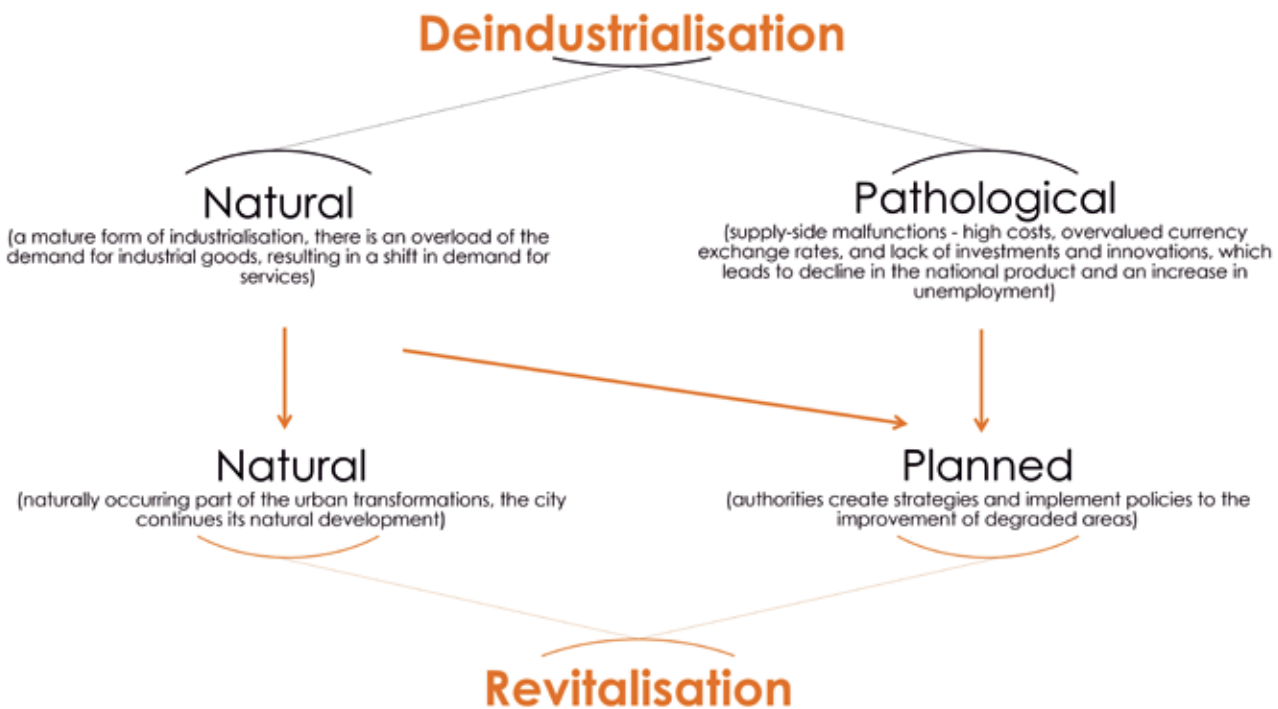


Fig. 1. Correlation between Deindustrialisation and Revitalisation; source: author

which could later be replaced by the planned ones. On the other hand, pathological deindustrialisation rarely evokes natural revitalisation but rather requires careful planning and strategizing in order to initiate such processes (fig. 1).

Deindustrialisation is multi-dimensional, transforming the industrial society into a post-industrial one. Savitch summarises post-industrialism as a phenomenon, which “encompasses a change in what we do to earn a livelihood (processing or services rather than manufacture) as well as how we do it (brains rather than hands) and where we do it (offices rather than factories)”[7]. These social transformations inevitably alter the built environment in both form and function – factories and warehouses are abandoned or dismantled, and working-class districts

disappear, replaced by high-rise offices and residential towers. Often the deserted properties of the former factories seal off whole urban areas [10].

### Discussion

The growing ecological concerns in the 1970s and the newly found appreciation for industrial architecture led to the reuse of such buildings being met with great enthusiasm and support by the public [11]. The notion of contextuality was rising and people were coming to an agreement that the former factories and warehouses should be preserved instead of demolished to make place for “new, high-rise construction that bore little relation to the area or the people around it”[11]. Around that time, the policy-making process for industrial preservation was initiated.

These concepts and processes resonated with the rest of the United States and Western European countries facing similar problems. The heritage value of industrial architecture was beginning to be recognised internationally in the 1970s. Many former industrial sites gained heritage status and some, especially pioneer ones, have since been transformed into museums, showcasing the industrial past. The dwellers of former industrial cities are more interested and involved in matters regarding such areas, as they are identifying themselves with their industrial past once again [13]. And there is a newly found appreciation for post-production sites, as they hold a large variety of possibilities for adaptation and redevelopment. This rediscovered potential is most likely rooted in the tendency for society to romanticise the past: “Only people who do not know



Fig. 2. Fenix Food Factory warehouse in Rotterdam; source: author, 2019





Fig. 3. Fondazione Prada in Milan – revitalisation of a former gin distillery by OMA; source: author, 2021

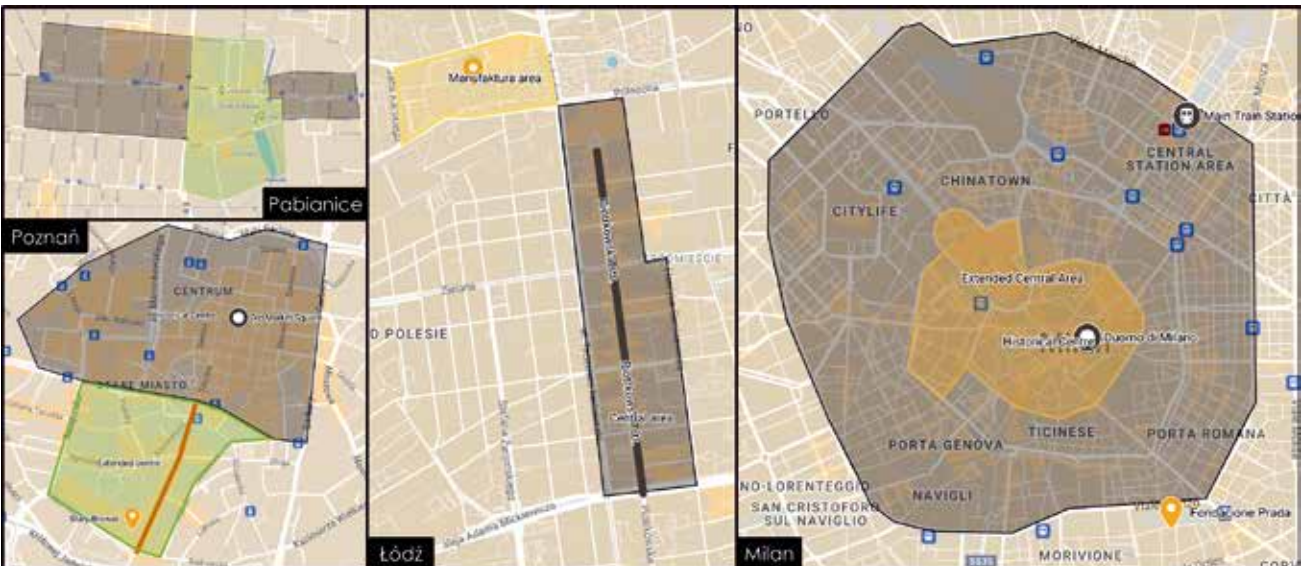


Fig. 4. Central areas of Milan, Łódź, Pabianice and Poznań with marked important brownfield revitalisation buildings/areas and the established connections; source: author



Fig. 5. “Manufaktura” in Łódź – a view towards the revitalised electric power plant (front) and production hall (back); source: author, 2014

the steam and sweat of a real factory can find industrial space romantic or interesting”[11]. Nowadays, the exposed brick walls, the high ceilings, and the vast spaces of the former factories evoke similar sentiments as ones held for Gothic cathedrals or Renaissance palazzos.

Brownfield revitalisation in most cases results in places, which quickly become popular with the locals, as well as attraction points for tourists. The revitalisation of former factory areas helps cities in more than one way – restores a previously inaccessible degraded area, making it available to the public, transforming it into a bustling and attractive space; reintegrates it into the urban texture, while at the same time preserving the contextuality and enhances the urban identity. Fenix Food Factory (fig. 2.) in Rotterdam is an exemplary case of waterfront revitalisation where a former warehouse is transformed into a culinary hub with local produce and a local craft brewery. The upper level – a vast open space, preserved in an as-was state, is rented by various local businesses, which have their offices and studios there in the form of portable ‘cubes’ – a low-cost, flexible, and sustainable solution.

Furthermore, brownfield revitalisation includes all the benefits of the revitalisation process in general. Considering the size of the buildings and areas, the quantity of embodied energy is higher than in any other case, which makes their reuse rate high on the sustainability scale [3]. Additionally, as being

green and sustainable is currently a global trend, international corporations are looking for ways to promote themselves as such. Various chain stores, hotels, restaurants, cafes, and offices become more interesting and exciting when located in former industrial buildings. One of the many such areas is the Prada Foundation in Milan (fig. 3.), located in the vicinity of the city centre. The former gin distillery has been revitalised into a multi-purpose area with a museum, exposition areas, cafe, library, cinema, and offices for Prada. The project by OMA manages to turn a peripheral and formerly neglected part of the urban texture into an attraction point for tourists and locals alike. Being right on its border, it is easily accessible for anyone visiting Milan’s historical centre, creating a natural expansion of the central area. (fig. 4.)

Function-wise, globalisation brought to Europe shopping malls, which usually require a huge area and infrastructure, hence they are often located in the outskirts, where plots of the necessary size are available. By repurposing former industrial sites, which are often located in the vicinity of the urban centres, the malls gain a more attractive location, easier access, and most importantly, revive a previously undesirable area. Poland provides a number of such successfully executed projects: “Manufaktura” in Łódź (fig. 5.), “Stary Browar” in Poznań (fig. 6.), and “Tkalnia” in Pabianice.

In fact, “Manufaktura” was the initiator of the ongoing revitalisation process in Łódź –

a city, which had been neglected for the major part of the 1990s. With “Manufaktura” Sud Architekt created an extension and a closure of Łódź’s pedestrian Piotrkowska street and introduced a public square – space much needed in the city as it lacked one due to its urban development history. Similar observations could be made for “Stary Browar” by Studio ADS – an extension of the historical centre and an extended pedestrian path leading from the Old Market Square to the new shopping mall “Stary Browar”. In turn, Pabianice’s “Tkalnia” by MAAI Architecture, as well as several other adaptive reuse projects in the vicinity create an attractive connection between the old market square and the new town centre. (fig. 4.)

In general, all of the aforementioned projects create attractive focal points in the (vicinity of) central areas and provide much-needed connections within/with the historical urban texture. The adaptive reuse of the former factory buildings preserves embodied energy as a part of the measures to build more sustainable in times of climate crisis.

## Conclusion

The revitalization is a process derived from the need to activate urban brownfields. A bottom-up approach at first, it quickly transformed into a planned process, included in local strategies for urban redevelopment. The review of implemented revitalization processes showed that they can be not only effective tools in solving social, economic





Fig. 6. Former Brewery in Poznan, currently a shopping centre; source: author, 2018

and spatial problems but also instruments supporting the redefinition of local identity. The recognition of the industrial past efficiently reconnects the inhabitants with the urban texture, an important factor for a strong urban identity. The reintegration of these formerly undesirable areas into the urban texture solves socio-economic and aesthetic urban issues and creates new alternative spaces for the public to enjoy. More recently a new paradigm for urban regeneration emerged – mitigation of the negative effects of climate change. In this respect, the properly executed brownfield revitalisation preserves the local character and enhances the urban identity by utilising sustainable tools (e.g., preserving embodied energy) for lower environmental impact.

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DOI: 10.5604/01.3001.0053.7585

### PRAWIDŁOWY SPOSÓB CYTOWANIA

Svetoslavova Mirela, Walczak Bartosz M., 2023, *The Revitalization of Brownfields for Shaping the Urban Identity and Fighting Climate Change*, „Builder” 8 (313). DOI: 10.5604/01.3001.0053.7585

**Abstract:** Climate change poses a great threat to humanity, and since the construction industry is one of the biggest contributors to global warming, it is essential to impose change on this particular sector. The revitalisation process, being in a way the recycling of the built environment, provides a sustainable solution. Additionally, the revitalisation of brownfields in particular is crucial to the continuity and preservation of the urban texture, which in turn are vital for reshaping the urban identity of post-industrial cities. This review article outlines the genesis of deindustrialisation and revitalisation processes and their correlation and impact on the environment. By providing examples of successfully executed projects, it aims to prove that brownfield revitalisation is an essential tool for the transformation of for-

mer industrial settlements into attractive and sustainable cities.

**Keywords:** revitalisation, deindustrialisation, urban identity, New European Bauhaus

**Streszczenie:** REWITALIZACJA TERENÓW POPRZEMYSŁOWYCH DLA KSZTAŁTOWANIA TOŻSAMOŚCI MIEJSKIEJ I WALKI ZE ZMIANAMI KLIMATYCZNYMI. Zmiany klimatu stanowią poważne zagrożenie dla ludzkości, a ponieważ budownictwo w znacznym stopniu przyczynia się do globalnego ocieplenia, konieczne jest narzucenie zmian w tej branży. Proces rewitalizacji, będący niejako recyklingiem środowiska zbudowanego, stanowi zrównoważone rozwiązanie. Dodatkowo szczególnie rewitalizacja terenów poprzemysłowych ma kluczowe znaczenie dla ciągłości i zachowania tkanki miejskiej, co z kolei jest niezbędne do ponownego kształtowania miejskiej tożsamości miast postindustrialnych.

W niniejszym artykule przeglądowym nakreślono genezę procesów deindustrializacji i rewitalizacji, przeanalizowano ich korelację oraz wpływ na środowisko. Poprzez przykłady zrealizowanych z sukcesem projektów artykuł ma na celu udowodnienie, że rewitalizacja terenów poprzemysłowych jest niezbędnym narzędziem przekształcania dawnych miast przemysłowych w atrakcyjne, zrównoważone miasta.

**Słowa kluczowe:** rewitalizacja, deindustrializacja, tożsamość miejska, New European Bauhaus