

Temporal Scaling of Streamflow Elasticity to Precipitation: A Global Analysis

*Original*

Temporal Scaling of Streamflow Elasticity to Precipitation: A Global Analysis / Zhang, Y., Viglione, A., Bloschl, G.. - In: WATER RESOURCES RESEARCH. - ISSN 0043-1397. - 58:1(2022). [10.1029/2021WR030601]

*Availability:*

This version is available at: 11583/2972428 since: 2022-10-19T08:02:11Z

*Publisher:*

John Wiley and Sons Inc

*Published*

DOI:10.1029/2021WR030601

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11-14 NOV 2020



THE ARCHITECT AND THE CITY

VOLUME 1



UNIVERSITAT  
POLITÀCNICA  
DE VALÈNCIA



ESCOLA TÈCNICA  
SUPERIOR  
D'ARQUITECTURA

**Publisher:**

Editorial Universitat Politècnica de València, 2020  
<http://www.lalibreria.upv.es>  
ISBN 978-84-9048-842-3 (Set of two volumes)  
978-84-9048-981-9 (Volume 1)  
978-84-9048-982-6 (Volume 2)

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## FROM DISMISSAL TO DEVELOPMENT: THE CHALLENGE OF ARCHITECTURE

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### ABSTRACT

The re-use of dismissed buildings has been discussed on an international level. Model interventions, such as the successful re-design of the Tate Modern (which is housed in a former power station, Herzog & de Meuron, 2016) or the iconic High Line (Diller Scofidio + Renfro & James Corner Field Operations and planting designer Piet Oudolf, 2009, 2011, 2014, 2018), have revealed the approach of re-using abandoned buildings to the broader public. Starting from the state of the art, this paper will highlight the efficacy of the urban regeneration approach and its implications on a socio-economic level. What kind of projects can architects carry out, but more importantly, is it possible to classify the different projects based on the tangible results of the transformations? This paper will discuss the results of case studies based on research conducted in two post-industrial U.S. cities over the past few years. These case studies identify specific design strategies as tools for selecting and classifying project output. When it comes to the abandonment and decay of industrialized cities, Detroit is the poster city and it represents an exceptional site for experimentation and reflection, both in its present state, but also for imagining future transformation scenarios and identifying intermediate paths between conservation and demolition. Is adaptive re-use the only approach or are there different declinations of re-use which are influencing international research in architecture? The urban renewal project can be a resource for identifying new uses of different buildings or building complexes, even recent ones

with uncertain or even non-existent restraint systems, in order to reinsert the buildings into today's urban metabolism, while preparing them for possible future transformations, which is to be kept in mind given how rapidly intended uses change in this day and age.

### KEYWORDS

Dismissal; development; re-use; urban metabolism.



Figure 1. Urban image at the Tate Modern, Herzog & de Meuron, 2016. Source: (Ingaramo R. 2019)

### INTRODUCTION

Dismissal is a topic which is becoming more and more relevant considering the rate at which changes take place; it leads to transversal reflections and requires multiple disciplinary intersections. If the architect is responsible for the project, trying to make up for a progressive loss of what Françoise

Choay once called *compétence d'édifier*<sup>1</sup>, then architectural research is responsible for identifying and clarifying approaches and processes supported by scientific value. Sometimes, construction is not the only possible effect/result of project research; the project can also result in the negation of formal action, considering the "ruins" as carriers of symbolic values. Is "dismissed" architecture something that can be reshaped and reinserted in the urban landscape or should it be "disposed of", like outdated residue? Significant research has been conducted on an international level in an attempt to give an answer to one of the most frequently-asked questions posed by those involved in these kinds of projects. The Roman arenas used as pits from which to gather construction materials remind us that the entity of renewal and transformation are intrinsically correlated to the size of the project. *"To project" – i.e. project designing – as defined in the Treccani dictionary means making the project design of something, that is to conceive something and study the possibilities and ways to perform it, or more in general to conceive something, to have the intention to do something.* This term originates from the late Latin word *proiectare*, which mean to cast forward, and highlights the sense of foreshadowing that characterizes its use as a tool to construct scenarios of transformation. It is within the intrinsic etymological meaning of the word "project" that the architect positions himself, as he strives to cast forward towards a transformation which takes shape through the project, which in turn is the tool used to identify possible uses of the space available. However, some examples of infrastructure and building re-appropriation over the past few years, such as the Palais de Tokyo in Paris, site of contemporary creation as defined by the architects (Lacaton & Vassal, 2014), have reignited the discussion on the role of the architect as a guide who

can navigate through complex processes which have less to do with substantial structural modification and are increasingly affected by politics, society and economics.

## 1. THE LEGACY OF INDUSTRIAL ASSETS

### 1.1. A Case Study of Two American Cities

Detroit, known for its once bustling car industry, is the poster city for abandonment. It is universally recognized as an empty nest where more than 85% of the remaining inhabitants are Afro-American (McDonald 2014). Sprawl began to change the physical structure of the city in the mid-50s, leading to the displacement of a large, predominantly white, part of the population. The other city chosen for this research is Pittsburgh, the city of steel, which after a sharp decline, has begun to experience regrowth in the Eds and Meds industry, with the financial support of its native Foundations and the cooperation of private and public sectors. These two American cities have been selected as representatives of a larger phenomenon which also exists in far-away countries, and they present the opportunity for us to reflect on the "rebirth" of cities which have been heavily hit by abandonment and dismissal. The two cities share a common destiny: they are in a phase of partial post-industrialisation, or better, they are in a moment where the outdated industrial paradigm is shifting. This paradigm, however, transformed the actual layout of the cities, leaving behind significant industrial infrastructure in a state of disrepair; in the specific case of Detroit, its condition is comparable to that of post-war debris. Some of the so-called American "Rust Belt" cities (Thomas 2013), where abandoned buildings and *brownfields* bear witness to the recent past, are attempting to re-ignite interest and re-inject appeal into their cities. This has been partially achieved

<sup>1</sup> Choay, F. 2009. *Le patrimoine en question: anthologie pour un combat*. Paris: Édition Du Seuil.

in Pittsburgh over the past few years, so much so that new innovative production lines have chosen to open their offices here (for example, Google, the East Coast film industry and Uber - the latter first tested self-driven cars here in 2016), while in Detroit, the first steps towards recovery began in 2014. Overall, Detroit is still in a state of disrepair and the empty plots attest to the astronomical number of people who fled the city; however, there has been some positive change over the past few years. In 2014, Maurice Cox became Director of City Planning, bringing skills and knowledge also steeped in Italian urban design and architecture. In both Detroit and Pittsburgh, industrial infrastructure is a fundamental structural element of their industrial legacy. Compared to Detroit, Pittsburgh is lightyears ahead in its transformation process and its quest for and creation of a new identity, as Don Carter highlighted several times in his book published in 2016<sup>2</sup>. This is visible in the increasing demand for corporate spaces – mainly light manufacturing – and new types of housing in the city, most of which is requested by young workers, mostly graduates and postgraduates. The market evolution and the demand for housing reflect the desire on behalf of the new American generations to re-appropriate this city: they wish to live near where they work and find leisure opportunities. This is a widespread counter-trend in the U.S. which is leading to the need to differentiate the uses of the new properties being built, but also those of existing ones which can be converted, transformed, and renewed today, but also again in the future. In Detroit, significant new urban interventions, such as Brush Park, mark a break from the residential trend which was based on the widespread front garden-family house-back garden-car space suburban model. The model in Brush Park<sup>3</sup> is the result of a long process negotiated between public administration, developers and local inhabitants. Its aim is

to shift the focus from the individual to the shared, the singular to the plural, the isolated to the included, in the attempt to create a new city blueprint. This project, which saw the completion of 39 town homes and carriage houses south of Alfred Street in December 2019, foresees only one car space per house (slightly more space for larger houses), thus giving far more importance to public or semi-public spaces. Even the desire to distinguish the architectural models transforms this project into something new. This project also involved non-local architects; to an extent, it imported a successful European model - the German IBA - and updated it by adhering to the principles of the *20-minute neighbourhood* and the new urbanism *form based code*. Thus, the city is renewed and focuses on re-using individual buildings, but also empty spaces such as Brush Park – an early 20th century Victorian upper-class neighbourhood – or real brownfields which attest to this city's heavy industrial legacy.

## 1.2. Re-use as an Architectural Tool

After an initial period where the attitude was mainly to demolish industrial sites and huge brownfields predominantly located on the riverside, a shift occurred in Pittsburgh, whereby the industrial legacy of the city was acknowledged as material value (Lubove 1996). Projects such as the Perkins Eastman's



Figure 2. Foxway Commons, Pittsburgh. Town houses and apartments re-using an old warehouse. Source: (Ingaramo R. 2017)

<sup>2</sup> Carter, D.K., editor, 2016. *Remaking Post-industrial cities. Lessons from North America and Europe*. New York: Routledge.

<sup>3</sup> <https://www.citymoderndetroit.com>

Foxway Commons in the city's South Side contributed to reversing the trend, offering housing solutions which re-used even anonymous-looking buildings such as local warehouses disseminated in many production neighbourhoods of the city, thus creating opportunities to intensify the connection with the industrial identity to which mainly negative connotations are normally attributed. The new integration uses recognisable materials, such as lacquered metallic sheets which perfectly match the solid brick walls of the warehouses. Re-use in many cases is a tool used to highlight the local identity of places and cities and is universally recognized as a sustainable action to save embodied energies; it is a response to the need "to reconstruct" a disjointed and strongly-diluted urbanized area – as evident in the case of Detroit – and this becomes an opportunity to radically re-think abandoned buildings, brownfields and spaces awaiting transformation. Already in the 1970s, the practice of re-use in the U.S. was considered an operational tool for recycling a property estate (often post-industrial, abandoned, underused, XL or L) of significant impact in the urban or peri-urban structure. For example, Lee Harris Pomeroy won the Progressive Architecture Award in 1963 for the reconversion of a former candy factory – Peaks Mason Mints – into apartments and studios for artists in Brook-lyn Heights (N.Y.). The term re-use takes on many different meanings which aren't fully synonymous. These include *recuperation, modernization, transformation, conversion and rehabilitation*<sup>4</sup>. Corboz used the term "recycling" which, in international literature finds little traction, given that the term is used to describe the re-use of materials rather than the re-use of buildings and spaces; however, it has been adopted to tag one of the most important research projects carried out by the Italian

public university system in the last few years, through ministerial funding, called ReCycle Italy (Ciorra and Marini 2011). This research uses the term recycle as different from re-use, recovery, requalification and regeneration, extending the meaning to an action which is carried out through an architectural city and landscape project that takes on a decisive role in re-moulding the existing infrastructure so as to reinsert the buildings, spaces and urban fabrics into the city's ecosystem. In 2017, Robiglio offered a definition in line with the international literature, and specifically with the approach suggested in 2011 by Bullen and Love<sup>5</sup>, highlighting the complex system of implications which adaptive re-use carries and indicating a toolkit of actions and strategies to adopt in the process connected to the adaptive re-use of a space/building. The size of the problem on an urban scale, in the remake framework, is analysed in a book published by Routledge and edited by Don Carter, former Director of the Remaking Cities Institute at the Carnegie Mellon University di Pittsburgh (Carter D.K., editor, 2016), which compares the U.S. and Europe. The policies and actions undertaken to restore cities which have been strongly affected by industrialisation rather than push for a real post-industrialisation, as highlighted in the above-mentioned literature, offer scenarios of experimentation for architectural and urban projects whose restoration and re-insertion in renewed urban metabolisms, constitute an important field. But wich project are we talking about? Are there actually operational tools that can guide this transformation? What is clear is that projects that focus on ordinary heritage today - which do not correspond to industrial heritage - often are not subject to any restrictions (tutela in Italy) or do not belong to any local or state list, and need to take into account extreme variability

<sup>4</sup> As previously highlighted at the end of the 70s by André Corboz in the article Old Buildings and Modern Functions, published in Lotus on 13th December 1976

<sup>5</sup> Bullen, P.A., Love, P.E. 2011, Factors influencing the adaptive re-use of buildings, in: Journal of Engineering, Design and Technology, Vol. 9, n. 1, pp. 32-46.

of uses over time; this includes a condition of temporariness which will unlikely adapt to the permanent nature of architecture. Moneo, in his famous piece on the durability of construction (Moneo 2004) in the collection *La solitudine degli edifici e altri scritti*, highlighted the importance of the duration of a construction in relation to the durability of the construction materials; the construction tends to outlive and break away from the architect; its durability today seems to be re-configured, especially in specific environments such as workspaces and service spaces which, more so than housing spaces, suffer the effects of the ever-changing conditions of “uses and customs”. Already back in 1988, Moneo opposes this (The Idea of Lasting, A Conversation with R. Moneo, *Perspecta* no.24 1988, then published in: *La solitudine degli edifici e altri scritti*), highlighting the importance of lasting, stable materiality in opposition to the trend which was already evident at the time, that is the dematerialisation of architecture, which tends to become “fleeting art”, because it is ever-changing<sup>6</sup>. Taking into account the fact that architecture needs to face different needs that are in continuous evolution, re-use presents itself as an operational tool which reconciles the need to not disperse the embodied energy and to attributed value in terms of durability, sustainability and adaptability to what is underused, dismissed or abandoned: a value – a legacy – becomes an opportunity for development and innovation, even with scarce financial resources. So, on the one hand, there’s the idea of re-use and the durability of the construction materials; on the other, there is the acceptance of the fact that simple structures or disused areas have a life cycle that comes to an end; these reflections allows for the creation of new founding principles with design outcomes which will enable the identification of new forms and spatial features. From this perspective, the re-use of what already exists could become endemic. It

could be the architect who may combine competences on new constructions, preservation and potentially restoration, without limiting his practice to specific realities but spreading the use even in countries undergoing significant development and ones which are constantly evolving, where new constructions become obsolete in shorter and shorter amounts of time. Catherine Slessor<sup>7</sup> made a provocative comment in relation to this: she said “the responsible architect might never build a new building” on the occasion of the AR New into Old Awards shortlist, which celebrates the most interesting adaptive re-use projects all over the world and where re-use is an “innovative topic”, despite the fact that it has long been a construction technique. Today, re-use is identified as a highly sustainable intervention, a practice which can cross borders and obtain consensus. But the project which falls within this framework cannot be defined univocally; it is clear that we are lacking a classification system and a definition which can convey the variability of the approaches and founding principles.

## 2. THE RESEARCH

My research was carried out in different stages: the first stage was field research which lasted several months and took me to the cities of Pittsburgh and Detroit. There I conducted interviews, site visits, and photographic enquiries which allowed me to identify the cases to study. As a matter of fact, my research uses case studies as a research tool. 22 projects were selected in the two cities. These fell under three different design approaches: preservationist, additive, and brownfield remix. Each one applies a different definition of reuse and has specific and identifiable design features. As often occurs in field research, case studies tend

<sup>6</sup> Moneo, R. 1999. L'idea di Durata e i materiali della costruzione. In: Moneo, R. *La solitudine degli edifici e altri scritti*. Vol. I. Torino: Allemandi. p.203.

<sup>7</sup> In: AR New into Old Awards 2019 shortlist revealed.

<https://www.architectural-review.com/awards/new-into-old/ar-new-into-old-awards-2019-shortlist-revealed/10045244.article>

to generate highly relevant international literature, where the project and its analysis, decomposition and interpretation play a relevant role, offering a significant iconography which new generation research can also refer to. This was the case of the book *City as a Loft* by Baum and Christiaanse (2012), where the many examples selected and compared to one another provided access to real knowledge that *must* be highly relevant and significant *simply* because it exists in the world and was built. Case study as a research tool is not simply a theoretical construct; it is the result of a specific selection deemed important based on a series of parameters which represent the foundations of the research itself. A second stage of the research allowed me to collect the results in publications which constituted the scientific basis supporting the project experimentation carried out in a thesis seminar I tutored and which dozens of students took part in. These students conducted their specialist thesis (for a Masters' degree) on the topic of re-using buildings of ordinary industrial heritage, mainly warehouses. Further experiments on industrial buildings which are no longer used have been carried out by a group of professors of the Polytechnic Universities of Turin and Milan and interdisciplinary teams of students (Architecture, Engineering, Landscape Design, Urban Design, Planning, and Management Engineering). The projects selected in the first step of the research allowed to establish gradients of transformation which are distinguishable based on the intensity of the transformation of the given site/building. The context is always re-use, but the approaches to re-use differ; these approaches, which have different operational impacts, have been distinguished and analysed. Most of these case studies are usually defined as adaptive re-use interventions, extending the meaning of the term to



Figure 3. The Brew House. Pittsburgh. Source: (Ingaramo R. 2016)

cases of consistent transformation of original buildings. But the classification proposed in this research tries to base the distinction of the project outputs<sup>8</sup>. The *Preservationist* approach (Ingaramo 2017) is known as the antagonist to the conservative approach, which is based on the complete conservation of the building with only minimal reversible interventions. This approach could be applied to *Listed* buildings such as the Brew House in Pittsburgh, now an Art Gallery with artists' workshops and apartments, or the ongoing transformation of Michigan Station in Detroit, today a Ford Motors hub. Modifications are mostly made through blueprint changes, which do not drastically transform the original layout of the building. Volumes and façades are preserved and, for the most part, are only subject to ordinary maintenance. In some cases, the intervention is adaptive in the strictest sense: almost nothing is changed but the space is occupied for other uses with adaptations

<sup>8</sup> Ingaramo, R. 2017. Rust Remix. Siracusa: LetteraVentidue.

and safety structures put in place. It is only in rare cases that the spaces are used for new purposes without appropriate adaptation to the regulations which, in a short time, leads to the building being abandoned once again; this was the case of the Russell Plant in Detroit. The building kept all its structural and spatial features, enhancing the original design by exploiting its potential, such as open spaces, modular articulations, great heights and big glass surfaces. The *Additive* approach (Ingaramo 2017) foresees significant changes through a process that creates stratifications, reinventing roles and forms to reinsert the building into the urban system. This approach manifests itself on different levels: from the simple addition of small functional parts (distribution systems, covering and insulation systems, openings...) which allow for new uses, to a significant formal redefinition which reinterprets the compositional roles of individual elements or portions of a building; a basement, the thickness of a wall, the wall texture, the size of the apertures. And this is how a simple warehouse becomes a reference model for extensive urban regeneration like in the above-mentioned case of the Keystone residential block in Pittsburgh or the Ascend climbing gym, created in a section of a production warehouse devoid of any architectural value. On an urban scale, the *Brownfield Remix* approach (Ingaramo 2017) can be carried out both in permeable spaces such as parks, pedestrian walkways, bike trails or semi-public squares, such as Dequindre Cut in Detroit or in areas where obsolete buildings have been demolished and which can be rebuilt with buildings capable of reconstructing a new identity and amalgamating a past industrial legacy and modern vocations. After providing an analytical and interpretative grid, the case studies and the acknowledgement of the different gradients of intervention become an operational tool.

### 3. DESIGN AS A TOOL TO TRANSFORM WHAT ALREADY EXISTS

The cases of the two American cities highlight the intrinsic potential of spaces which have suffered severe abandonment. The deep crisis which affected Pittsburgh and which is still affecting Detroit in its urban fabric and local economy have led to structural synergies between not-for-profit organisations (e.g. the Mellon Foundation, the Kresge Foundation) and public and private administrations supported by the world of scientific research (in Pittsburgh, Carnegie Mellon University has created start-ups and has entered agreements with businesses to incentivise development). This synergy has allowed to carry out regeneration projects, which vary in size and relevance, with important repercussions on the perception of cities on behalf of the local inhabitants and the people who frequent them either for work or leisure.



Figure 4. Hazelwood Green, Mill 19, Pittsburgh. Source: (Turner construction services. 2019)

In 2019, Pittsburgh was named one of the most liveable cities in the US (the 4th) and the 34th in the world according to an annual report published by the Economist Intelligence Unit. From the City of Steel to the City of Eds and Meds, Pittsburgh has undergone a transformation

which is reflected in the city itself, specifically in the vitality of the Strip District and the new neighbourhoods being built on the banks of the Monongahela and on the brownfield of Mill 19, the only building of the imposing LTV Steel Company complex<sup>9</sup> to have been preserved. It is not just the big projects of the *Brownfield Remix* such as Hazelwood Green (which includes the transformation of Mill 19) that are undergoing a transformation, but even small projects such as 7800 Susquehanna Street, where a small-sized abandoned factory today represents a beacon of opportunity for the Homewood neighbourhood with 24 tenants and over 100 people employees, offering business accelerator services which involve people from the neighbourhood. This building counted on scarce financial resources; the *additive* approach allowed for the introduction of vertical connecting elements which highlighted the fantastic lighting of the establishment.



Figure 5. 7800 Susquehanna Street. Pittsburgh. Source: (Ingaramo R. 2018)

This project is a resource which aims to support the transformation of dismissed architecture and enable its insertion in the urban metabolism. In broader terms, architectural design aims to identify ways of remodelling space and buildings with different gradients of intervention on what already exists, while *infilling* what is new. This is the opportunity for detail-oriented architecture which gleans from innovative technology, interprets industrial legacy, guide transformation processes, and offers visions that can project us into a dimension of semi-permanent transformation, where architecture is the interpretative key of a variable reality, which seeks solid references capable of adapting to its uncertainty.



Figure 6. Industrial plant re-use. Vision. Source: (Negrello M. Ingaramo R. 2018)

<sup>9</sup> formerly J&L, Jones and Laughlin Steel Company.

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