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CONTINUITY IN CITIES. THE NEXT GENERATION OF POST-INDUSTRIAL HISTORY. A CASE STUDY OF AN OLD GASWORKS WORKSHOP IN POZNAN

This text presents the outcomes of the Continuity in Cities workshop, which took place at Poznań University of Technology, with a primary focus on the sustainable adaptive reuse of the Old Gasworks in 2023. The workshop aimed to generate innovative ideas and strategies for transforming this closed industrial heritage site into a vibrant public space. With a strong emphasis on collaboration and excellence in design, the workshop presented an opportunity to explore the immense potential of the site. One of the key aspects of the project was the development of strategies to address the challenges posed by the site's closure. The students proposed solutions such as increasing greenery, implementing sustainable technologies, demolishing barriers, and fostering connectivity with the university campus. These strategies aimed to create a revitalized and inclusive space that would benefit the city and its residents. The Continuity in Cities workshop showcased exceptional design, demonstrating our ability to maximize the potential of the Old Gasworks. This successful event highlighted the significance of historical contexts in sustainable architecture and fostered a collaborative pursuit of excellence.

Keywords: Continuity, City of Poznan, New Architecture

1. INTRODUCTION

The industrial revolution of the 18th and 19th centuries marked a profound transformation in Europe, reshaping societies, economies, and landscapes. During this era, technological advancements and innovations led to the rapid growth of industries, factories, and urban centers, giving birth to a new era of production and

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urbanization. The remnants of this transformative period, often referred to as industrial heritage, are scattered across European cities and serve as a tangible link to the past. These remnants include factories, warehouses, machinery, canals, and other structures that played pivotal roles in shaping Europe's modern identity [Kodym-Kozaczko 2005].

The importance of industrial heritage in European cities cannot be overstated. It serves as a poignant reminder of the remarkable progress and challenges that defined the industrial age. Beyond being mere relics of the past, these remnants provide insights into the social, economic, and cultural aspects of bygone eras. As cities continue to evolve and modernize, the preservation and interpretation of industrial heritage becomes crucial not only for historical understanding but also for urban planning, tourism, and fostering a sense of identity and continuity, see Fig. 1.



Fig. 1. The air view of an old gasworks in Poznań, first half of the 21st century.
[Source: <https://cyryl.poznan.pl>]

The significance of industrial heritage in European cities goes together with exploring the reasons why these remnants are cherished and preserved. From the economic impacts of industrialization to the narratives of labour struggles and technological breakthroughs, we will examine how industrial heritage enriches our understanding of the past and informs our approach to the future [Hayden 1988]. By recognizing the value of these often overlooked sites, we can better appreciate

the complexity of Europe's urban history and the enduring influence of its industrial roots, see Fig. 2.



Fig 2. Workshops' site location together with the context. [Source: prepared by the authors]

2. THE ROLE OF THE WORKSHOP IN ARCHITECTURAL EDUCATION

Architectural education is a dynamic blend of theoretical learning and practical application¹, where students acquire the skills and knowledge needed to design and shape the built environment. While lectures, studio sessions and research play pivotal roles, the workshop experience stands out as a hands-on and experiential component that bridges the gap between theory and practice. Workshops in architectural education provide students with a unique platform to engage with materials, tools, and real-world challenges, fostering creativity, critical thinking, and a deeper understanding of the complexities of architectural design.

¹ Design Studio Workshop, 17th–20th of April 2023 entitled “Continuity in Cities”. Tutors: Prof. John Lee, Guest Professor, Manchester School of Architecture, Manchester Metropolitan University, UK, Atelier Continuity in Architecture, Prof. Adam Nadolny, PUT Architecture, Prof. Tatsuyoshi Saijo, Kochi University of Technology, Japan, Future Design Laboratory. Teaching Assistants: Arch. Mohammad Mahdi Mohammadi, PUT Architecture, PUT Doctoral School. Arch. Sahar Movafagh, PUT Architecture, PUT Doctoral School, Arch. Farzaneh Gharaati, Erasmus K-107, visiting PhD scholar, Tarbiat Mo-dares University.

One of the primary roles of workshops is to offer students a space for experimentation and innovation. In a workshop environment, students can test their design ideas in a tangible and immediate manner. This hands-on engagement allows them to explore the materiality of architecture, understand structural systems, and grasp the nuances of construction techniques. Whether it's crafting physical models, prototyping with various materials, or even participating in collaborative build projects, workshops provide an avenue for students to translate their theoretical concepts into tangible forms. Fig. 3.



Fig. 3. Prof John Lee and arch. Farzaneh Gharaati during students' projects consultations.
[Source: photo authors]

Workshops also emphasize practical skills that are often overlooked in traditional classroom settings. Learning to work with tools, understanding the properties of different materials, and gaining insights into construction processes are essential aspects of architectural practice that workshops can effectively address. These practical skills not only enhance students' competence in design but also prepare them to communicate effectively with contractors, engineers, and other stakeholders during the implementation of their designs, see Fig. 3.

Furthermore, workshops encourage interdisciplinary collaboration and holistic thinking. Architectural projects are rarely standalone endeavors; they involve interactions with various disciplines such as engineering, environmental science, and urban planning. Workshops that bring together students from different backgrounds encourage a diversity of perspectives and solutions, reflecting the collaborative nature of real-world architectural projects. This interdisciplinary exposure fosters an adaptable mindset, helping students become well-rounded architects who can address complex and multifaceted challenges.



Fig. 4. Student visit at the Poznań Gasworks site. [Source: photo authors]

Site visits play a crucial role in architectural workshops for students. These visits offer several benefits and are an integral part of the architectural education process. Here's an overview of the role of site visits in student architectural workshops: contextual understanding of site visits provides students with an opportunity to understand the physical context in which their future architectural projects will be situated. They can observe the site's topography, climate, surroundings, and existing structures. This firsthand experience helps them design in harmony with the environment and community. Inspiration and creativity being on-site can be highly inspiring for students. They can draw inspiration from the site's unique features,

history and culture [Rodriguez, Hudson, Niblock 2018]. This inspiration often leads to more creative and contextually relevant design solutions. Site visits bridge the gap between theoretical knowledge and practical application. Students can apply what they've learned in the classroom to a real-world context. This hands-on experience is invaluable in understanding how architectural principles translate into actual construction, see Fig. 4.

Students learn how to conduct a thorough site analysis, which includes assessing site conditions, climate, sun path, wind patterns, and any constraints or opportunities the site presents. This analysis informs their design decisions. Site visits often involve group discussions and collaborative activities. Students can work together to analyze the site and develop initial design ideas. This promotes teamwork and enhances their ability to communicate and share ideas effectively. Analyzing a site in person encourages critical thinking and problem-solving skills. Students learn to identify challenges and opportunities as well as develop creative solutions [Smith, Hein 2018].

To sum up, site visits are a crucial component of architectural workshops for students. They offer a holistic learning experience, combining theory with practice, and help students develop the skills and knowledge needed to become well-rounded architects who can design in harmony with both the environment and community. The workshop environment also promotes a culture of iteration and resilience. Designing and building prototypes often involve failures and setbacks, which are invaluable learning experiences. Students learn to adapt, refine their ideas, and overcome obstacles – all skills that are crucial in the architectural profession where design solutions are refined through multiple iterations and feedback loops.

In conclusion, workshops in architectural education play [Taneri, Dogan, 2021] a pivotal role in bridging the gap between theoretical knowledge and practical application. By offering students opportunities for hands-on experimentation, skill development, interdisciplinary collaboration, and iterative problem-solving, workshops enrich their educational journey and prepare them for the multifaceted challenges of the architectural profession. As architecture continues to evolve in response to societal and environmental needs. Therefore, the role of workshops remains indispensable in nurturing the next generation of innovative and capable architects.

3. THE OLD GASWORKS IN POZNAŃ. A CASE STUDY

The City Council of Poznań decided to build a gasworks facility in 1853 [Ostrowska-Kęłowska 1982]. The site was chosen not only because it was close to the city centre, but also because it had access to water from Warta River and the ability to import raw materials from England. To carry out this project, the council enlisted

the help of an industrial architecture specialist, an English engineer named John Moor, who had previously worked in Berlin. Moor oversaw the preparation of the engineering plans and supervision of the construction of the Poznań Municipal Gasworks, see Fig. 5.

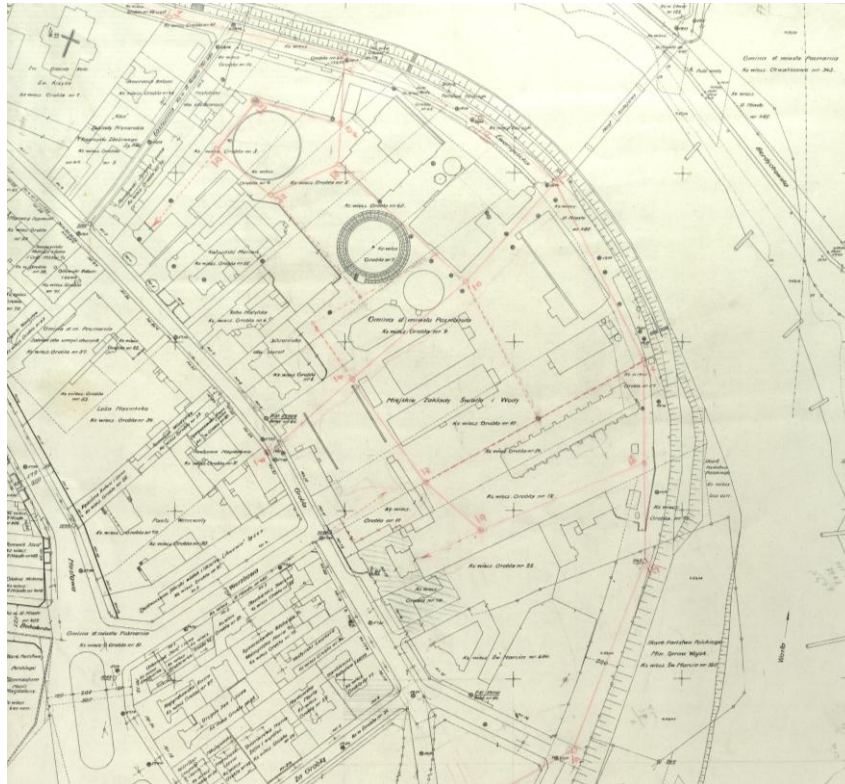


Fig. 5. The historical plan of an old gasworks site in Poznań, first half of the 20th century.
[Source: <https://cyryl.poznan.pl>]

The main structures included a furnace room, an apparatus house and two gas tanks. The Tacony railway station cut the river. There were railway tracks along the river's bank, and one section of the railway has been preserved. Finally, on November 14, 1856, Poznań residents were treated to the most spectacular results. A steel petrol tank was built in 1917, exploded in 1926 [Skuratowicz 1991], and was replaced by a concrete tank, the foundation of which is still in place today. Grobla Street's gas production ceased in 1973, and some of the structures, including the furnace room and gas holders, were demolished. Poznań Gasworks eventually was shut down in 1986. As a result, after 130 years, the Poznań Gasworks was no longer a gas production plant, but rather a centre for natural gas distribution and sale.

The most distinctive architectural features of the buildings are decorative ceiling on wooden beams with plaster infill, red brick chimneys and terracotta decorative elements. The roof structures are made of flat trusses. Most of the window openings are finished with a full semi-circular arch with ceramic bricks (terracotta), giving the overall façade appearance of a distinctive “Rundbogenstil” (Romanesque) style. Some buildings have already been subject to renovation.

4. THE OLD GASWORKS, A CASE STUDY

4.1. Project evaluation

In connection with the very rich design and didactic material, which was obtained during the workshops, we elected to show just one of the projects in more detail – one which in our opinion engaged in particularly interesting discussions with the existing historical spatial context, see Fig. 6.



Fig. 6. Master plan of the final project. [Source: prepared by the authors]

The Old Gasworks site was built in the 1850s as a town gas supply and storage station and served as such for many years with the buildings’ distinctive architecture with magnificent details on it. Today, the Gasworks is no longer in use as part

of the utilities infrastructure and is under consideration for repurposing into a public museum or revitalised urban space. While the buildings face challenges such as an irregular plan and lack of greenery, it also has immense potential due to its prime location in the city center and its unique architectural features, see Fig. 7.

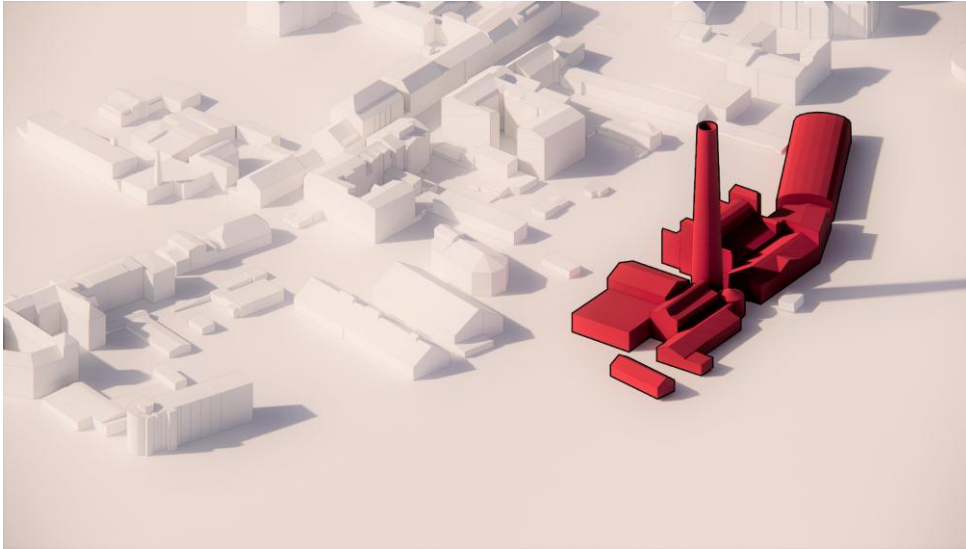


Fig. 7. An axonometric view on the existing building complex.
[Source: prepared by the authors]

Amidst the urban landscape of Poznań, the old gasworks site emerges as a fascinating confluence of historical significance and untapped potential. Its magnificent architectural heritage, its strategic position between the river and the city center, along with its latent possibilities as a museum, render it an invaluable urban asset. Nevertheless, a host of formidable challenges loom large over this previously industrial cornerstone. An irregular layout, a dearth of green spaces, an urban grid characterized by chaos, an industrial enclave encroaching upon the city's heart and limited accommodation options form the intricate context against which we sought to unravel a transformative scientific narrative.

In this scientific endeavor, we embarked on a comprehensive exploration of the site's latent prospects. Central to our strategy was the augmentation of green spaces, the integration of sustainable technologies, the removal of pre-industrial urban morphology isolating the site from its surroundings, and in its place the establishment of improved connectivity between the university campus and the industrial heritage. These meticulously designed interventions aimed to unlock the site's dormant potential, enhancing its functionality while preserving its historical essence.

Notably, the site once thrived as a hub for concerts and communal events. However, the outbreak of the conflict in Ukraine and the subsequent shift in the nation's energy policy precipitated its closure. Now, our mission unfolds – to envision a future where this hallowed ground is accessible to the public, fostering a sense of community and shared purpose.

As we navigate the intricacies of redevelopment, it became evident that the old gasworks in Poznań stands as an emblematic case study, exemplary of historical sites which are rich in promise. Realizing this potential necessitates a judicious orchestration of strategies and a meticulous execution plan. In the nexus of history, urban dynamics, and scientific innovation, we endeavor to breathe new life into Poznań's old gasworks, forging a sustainable, vibrant future for both the city and its inhabitants.

4.2. The initial concept

The Initial Concept was a blend of artistry, sustainability, and functionality to reinvigorate the old gas station in Poznan. It was a dynamic exploration where innovation met tradition, resulting in a vision that aimed to honor the site's history while embracing a promising future.

In our design philosophy, architectural forms played a pivotal role as both aesthetic marvels and functional elements with a deeper collective purpose. We understood that these forms could transcend mere structures; they could become catalysts for engagement, guideposts for exploration, and vessels for storytelling. The next element was guiding the visitors. Architectural forms were strategically positioned to act as guides within the site. Just as lighthouses steer ships through turbulent waters, our forms directed visitors to key attractions and points of interest. The entrance, conceived as a grand gate, not only welcomed visitors but also marked the commencement of their immersive journey. As visitors traversed the site, these forms ensured that their exploration was intuitive and rewarding, offering a sense of discovery and wonder. Furthermore, our architectural forms served a fundamental role in spatial organization. By introducing pavilions, we extended the existing site grid, creating well-defined zones for various activities.

These pavilions doubled as hubs for exhibitions and events, fostering community engagement and interaction. The central triangular green space, another architectural element, functioned as a natural gathering point, intuitively directing people towards specific buildings and creating a dynamic flow within the site. It was a design choice that encouraged both serendipitous encounters and structured events. The next point of considerations was reflecting history and culture. Each architectural form was a canvas upon which history and culture were artfully etched. These forms paid homage to the site's rich heritage, serving as living tributes to the past. For instance, the arch-like structures were a nod to the arches and curves present on

several nearby buildings, establishing a visual connection with the surrounding district and harmonizing with its historical rhythm. These architectural echoes resonated with visitors, fostering a sense of timelessness and continuity within the space. In essence, our architectural forms were not static monuments but active participants in the site's transformation. They functioned as storytellers, guiding lights, and cultural ambassadors, enriching the visitor experience and connecting the past, present, and future in a harmonious architectural tapestry. Through their purposeful design, they breathed new life into the old gas station in Poznan, infusing it with vitality, character, and a profound sense of place, see Fig. 8.

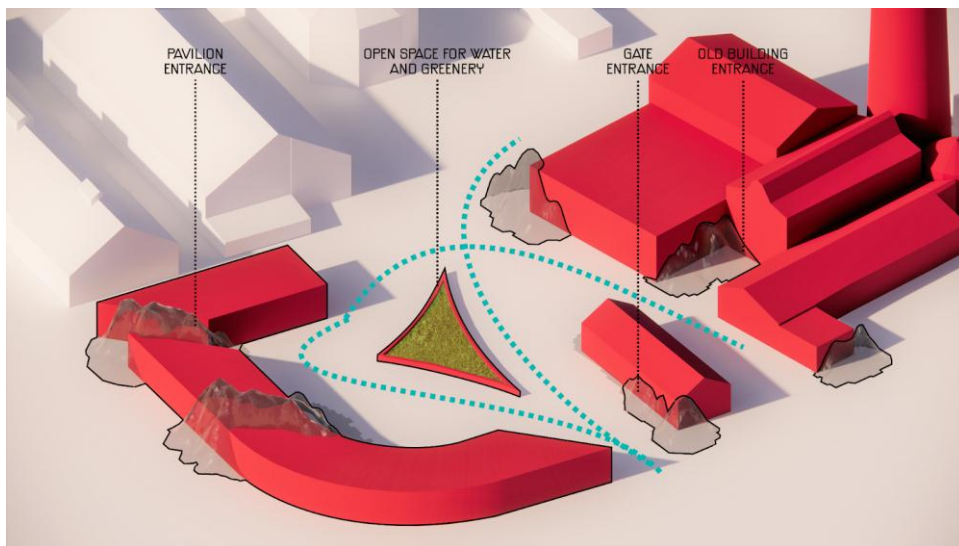


Fig. 8. An axonometric illustration of the initial concept. [Source: prepared by the authors]

Sustainability was not just an aspect of our design; it was the very essence around which our project revolved. We were resolute in our commitment to pushing the boundaries of material innovation to create a space that seamlessly intertwined the past with a sustainable future. That is why the foundation of our material innovation lay in the deliberate choice of recycled iron and glass. These materials were not selected by chance but were meticulously curated for their exceptional qualities. The incorporation of recycled iron paid homage to the site's rich industrial history. It was a way of honoring the sweat and toil of those who had once worked tirelessly at the gas station, ensuring that their legacy lived on in the very fabric of the revitalized space.

Glass, with its transparency and ability to let natural light flood in, provided a symbolic bridge between the site's historic past and its sustainable future. Its timeless appeal was not just aesthetic but a metaphorical representation of our design philo-

sophy – that sustainability should be enduring and always relevant. Transparent Solar Panels: The inclusion of transparent solar panels within the glass surfaces marked a groundbreaking leap in our design innovation. These panels not only enhanced the aesthetic value of our architectural forms by introducing a dynamic interplay of light and energy but also symbolized our unwavering commitment to a brighter, greener future. Harnessing the power of the sun to illuminate our designs was a tangible representation of our sustainable ethos. With this material innovation, we were not merely designing structures; we were crafting a narrative. Our use of recycled iron and glass, paired with transparent solar panels, transformed these materials into storytellers. They whispered tales of history and progress, of heritage and sustainability, creating a living testament to the power of design to inspire change. In every reflection off the glass and every glint of sunlight, the site's past and its future converged, beautifully and sustainably.

4.3. The contrasts and sustainability

The use of contrasts was a recurring theme in our design process. Contrasting forms, materials, and textures created visual intrigue and brought a dynamic quality to the space. Sustainability was not an afterthought but an integral part of our design. Transparent solar panels integrated into the glass surfaces, combined with the use of recycled materials, ensured that our project not only stood as a work of art but also contributed to the preservation of our planet.

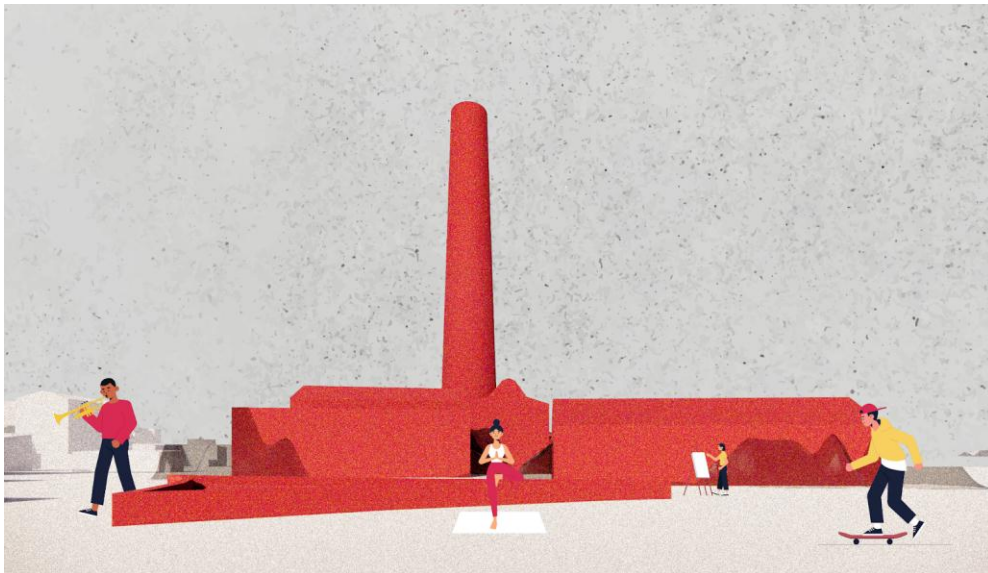


Fig. 9. Initial design visualization. [Source: prepared by the authors]

In conclusion, our creative design process was an intricate dance between artistry and sustainability. It was about crafting a narrative that honored the past while embracing the future, creating a space that would resonate with the public and inspire future generations. As we move forward with this project, we are excited to witness these creative concepts materialize into a living, breathing testament to the power of design and innovation, see Fig. 9.

4.4. The Final Design

After a site visit, insightful analysis, workshops and initial concept, we have decided to develop the project by getting the most out of the magnificent urban complex. The survey based on assigning the project's potential categories was based on the boo of Muck Petzet *Reduce, Reuse, Recycle* which directed us to enlisting necessary new strategies [Petzet, Heilmeyer 2012]. Developing the initial concept demanded from us the implementation of the mentioned strategies such as prominent indicators, creative ideas and existing solutions. We had to take into account preserving heritage values of the site, provide renewable resources, use recycled materials and digital technology, which were crucial to meet the stopping the climate changes needs, as well as to ensure that the construction will not be harmful to the environment.

Other aspects we had to take into consideration were political and financial indicators, which are the project basis for functioning, but also educational aspects of the site, to make sure that the architecture will have a positive cultural impact on the city. Proper financing, general political agreement and faultless education will make the project useful for future generations. Creative ideas that were taken into account during first design attempts were focused on contrasting, but welcoming forms that are supposed to pull attention and invite the public inside. The use of renewable resources and recycled materials such as flexible transparent solar panels, 3D printing, recycling iron and other materials from the site which did not stand the test of time, was the idea based on previously mentioned strategies intended for environmental issues. Fig. 10.

All of those solutions were taken into account and implemented during the design process for the final project. The last interpretation of the new view on the site assumes massive implementation of greenery and pavilions that came out of the new, orderly urban grid. The new urban grid was based on extending the existing, chaotic lines defining the site, and made great use of the seemingly hopeless situation.

Extended lines provided new paths and greenery areas, but also dictated the location of the pavilions. Apart from the obvious ones, the most important point is the curved and rounded pavilion, which soothes the urban feeling in the area, but also welcomes the flow of people coming from the opposite side of the river. Apart from the existing location of the site, the aspect that was taken into the account,

was the upcoming construction of the Kładka Berdychowska Bridge placed in the close neighborhood of our project, designed by Bartosz Gurawski and Błażej Szurkowski, which will turn up the circulation of citizens in the area and ease the transition of people from the other side of Warta River, see Fig. 11 and 12.



Fig. 10. An axonometric illustration of the final project. Source: prepared by the authors



Fig. 11. Visualization of the internal courtyard of the old gasworks area. [Source: prepared by the authors]



Fig. 12. Visualization of the internal courtyard of the old gasworks area. [Source: prepared by the authors]

To balance the urban composition, it was decided to create a lawn area divided by a sidewalk in the middle. The curved area is situated by the city center closure and opposite the rounded and curved pavilion. It is finished with a round stage and creates a space for concerts and other open-space cultural events. Empty spaces were filled with food trucks and trading stands that brought life into the site.

The final adjustment to the project is the roof extension of the building located in the middle which exists today without any roof. The reused place will be repurposed as the cultural center of the complex. Other pavilions are going to serve as the exhibition spaces or conference halls (the rounded pavilion).

They were all covered in black steel vertical beams, which is a universal material and perfectly matches the existing brick facades. Thanks to that, the space makes it feel orderly and in contrast to the existing, chaotic urban grid. After many attempts, our approach led us to the final design, which consists of a massive amount of greenery, culturally useful new pavilions and reused existing buildings.

5. THE OLD GASWORKS, SUMMARY

'The name of a city's streets and squares, the gaps in its very plan and physical form, its local monuments and celebrations, remain as traces and ruins of their former selves. They are tokens or hieroglyphs from the past to be literally re-read,

re-analysed, and re-worked over time.' [Boyer 1994]. The intention of this workshop was to explore the notion of continuity in all its forms through interventions in one of Poznań's prominent industrial artefacts. Whilst functionally redundant its totemic forms retain considerable mimetic power, through the medium of a 'collective memory' [Rossi 1982]. The city's structures carry this meaning because of the traces of past lives that they continue to preserve – traces which are in some measure still commemorated by its citizens.

Architecture and design can facilitate the exploration of identity through the examination of the specificity of the context in which it is embedded. Charged with narrative, perhaps even theatrical content [Boyer 1994] the constructed environment presents certain elements to the fore; others may recede, though they are no less important, no less carefully considered. The background context acts as a theatrical backdrop to the city's figural urban fragments enabling them to tell stories, engage the imagination, and eventually, through the construction of space, time and sequence, enable the development of new forms and places.

To do this, the city we observe that the must become our classroom. Colin Rowe and Fred Koetter introduced the notion of '*the city as a didactic instrument*' [Rowe, Koetter 1984] – that is, a place in which learning can be formulated – and it is through discourse that the evidence for the argument of interpretation is collected. A reading and understanding of the message of the city or of the individual building provides the basis for contextual discussions.

So, by framing the Continuity in Cities Workshop as an act of 'research-by-design' students were given the tools to encounter, evaluate, engage, explain and extrapolate from their experiences. This methodology offers some basis of hope in recovering memories and reviving spaces in our cherished industrial heritage.

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NASTĘPNA GENERACJA POSTPRZEMYSŁOWEJ HISTORII. WARSZTATY PROJEKTOWE W STAREJ GAZOWNI W POZNANIU

Streszczenie

W niniejszym tekście przedstawiono wyniki prac w ramach warsztatów pt. „Continuity in Cities”, które odbyły się na Wydziale Architektury Politechniki Poznańskiej w marcu 2023 r., z naciskiem na zrównoważone, adaptacyjne wykorzystanie Starej Gazowni. Celem warsztatów było stworzenie innowacyjnych pomysłów i strategii transformacji dziedzictwa przemysłowego w tętniącą życiem przestrzeń publiczną. Położono nacisk na współpracę i w projektowaniu. Warsztaty stały się okazją do zbadania ogromnego potencjału analizowanego terenu. Jednym z kluczowych aspektów projektu było opracowanie strategii rozwiązywania wyzwań wynikających z zamknięcia obiektu dla społeczności miasta. Studenci zaproponowali rozwiązania, takie jak zwiększenie ilości zieleni, wdrożenie zrównoważonych technologii, usunięcie barier przestrzennych oraz wspieranie łączności z kampusem uniwersyteckim. Warsztaty „Continuity in Cities” zaprezentowały wyjątkową formę demonstrującą zdolność studentów do zwrócenia uwagi na maksymalizację potencjału Starej Gazowni w Poznaniu. To udane wydarzenie dydaktyczno-badawcze podkreśliło znaczenie kontekstów historycznych w zrównoważonej architekturze oraz wsparło wspólne dążenie do doskonałości.

Słowa kluczowe: kontynuacja, miasto Poznań, nowa architektura

