

Social Dimensions in Regenerative Design: Exploring the Legacy of Care in Adaptive Reuse of Built Heritage

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Abstract

This paper examines the social dimensions of regenerative design, with a particular focus on the legacy of care in built heritage regeneration projects. The study employs the conceptual lens of care in architecture to investigate the ways in which the rehabilitation of the built environment gives rise to socially responsive architecture. The paper presents three case studies from Slovenia, each representing a unique example of renovated and revitalised heritage sites that illustrate varied approaches to care in architectural practice. These case studies are analysed in order to identify alignment with global sustainable development objectives, with particular attention paid to the prevalent aspects of care within these projects. The case studies demonstrate how regenerative design in heritage practices can create lasting social impact, contributing to social resilience and cultural continuity. The research underscores the significance of integrating the concept of care as a core principle in socially regenerative architecture, offering insights into how built heritage can serve as a catalyst for community-centred and sustainable urban development.

Keywords: Regenerative Design, Regenerative Architecture, Social Dimensions, Built Heritage, Adaptive Reuse, Rehabilitation, Renovation, Legacy of Care, Sustainable Development

1. Introduction

In recent decades, advancements in design methodologies have had a profound impact on efforts to achieve a sustainable built environment [1]. While sustainable design traditionally incorporates environmental, social, and economic dimensions, the primary focus has often been on mitigating the environmental challenges posed by climate change. This has been achieved through frameworks that reduce environmental impacts, improve resource efficiency, and aim for energy neutrality. Nevertheless, the efficacy of these endeavours has been called into question, particularly with regard to their ability to engender a comprehensive and integrative approach. Researchers have highlighted the necessity for a whole system thinking approach that considers the interconnectivity of human and natural systems [2].

This emphasises the limitations of generic sustainable design practices that fail to respond to specific environmental and socio-cultural contexts.

In response to these shortcomings, regenerative design represents a paradigm shift towards a more integrative and context-sensitive approach. Holistic systems thinking provides the foundation for regenerative architecture, which aims to position buildings as catalysts for positive change within their unique locations. This perspective broadens the concept of "location context" to encompass not only environmental and climatic elements but also the socio-cultural dimensions that shape communities and their built environments [3]. In this context, the concept of care emerges as a pivotal element in addressing the social dimension of regenerative design. Care represents an ethical and empathetic approach to design, prioritising the well-being of individuals and communities while fostering a sense of stewardship and interconnectedness between people and their environments [4].

The concept of care within the social dimension represents a significant aspect of regenerative design, as it prioritises human relationships, cultural identity and social resilience at the core of architectural practice. Unlike traditional approaches that often treat the social dimension as secondary to environmental and economic concerns, the approach of care ensures that regenerative practices are firmly embedded in the lived experiences and specific needs of the communities they serve. Embracing care allows regenerative architecture to extend beyond mere physical restoration, promoting social inclusion, enhancing community cohesion, and empowering local actors in shaping their environments [5]. It acknowledges that sustainable transformation must address the human aspects of regeneration, ensuring that architecture serves not only a functional purpose but also as a medium for fostering equity, cultural continuity, and collective well-being.

Building on this understanding, the current study explores the social dimensions of regenerative design through the lens of care, with particular emphasis on its application in built heritage interventions. The objective of this paper is to examine the potential of the concept of care to offer new insights into interactions with the historic environment, particularly in the context of the reuse of architectural heritage. The research aims to identify and critically assess innovative practices of care manifested in three case studies of the adaptive reuse of built heritage in Slovenia, with a particular focus on aspects such as social innovation, community cohesion, inclusiveness, and empowerment, and cooperative governance that emerge in these transformative processes.

2. Understanding the Concept of Care in Architecture

The concept of care has gained prominence in contemporary architectural discourse, overcoming its traditional neglect in history and theory [6]. Recent literature, exhibitions and activist actions have highlighted the potential of architecture as a medium of care [6, 7, 8]. Instead, care in architecture has emerged as a multidimensional, interdisciplinary approach involving a wide range of stakeholders, including architects, developers, municipalities, state agencies and community organisations. Care in architecture is not limited to specialised settings such as hospitals or nursing homes, but extends to broader societal contexts, reflecting a shift towards architecture as care [6]. As Tronto (2019) [4] suggests, this represents a transformative vision of the built environment that integrates nature, humanity and care in novel and meaningful ways. Projects that focus on care address diverse themes such as disaster relief, public space, legality, housing, and education [6, 7]. These initiatives shift the traditional architectural narrative by embedding interdisciplinary collaboration and inclusivity into their core practices. Architecture is being reimagined as a tool for promoting social well-being and solidarity, embracing principles such as reuse, sharing, and empowerment.

3. Concept of Care in Adaptive Reuse of Built Heritage: Case studies

In consideration of the concept of care in architecture, this research is primarily concerned with the issue of built heritage. To differentiate between various approaches to care in architecture, a selection of three case studies of built heritage adaptive reuse from Slovenia has been subjected to analysis. The selection of case studies was guided by specific criteria, focusing on public buildings whose renovated functions are closely tied to culture, art, and design. Among the numerous heritage renovation projects in Slovenia, these three were chosen for their exemplary representation of these themes and their distinguished recognition, having each won prestigious architectural awards in Slovenia. This approach ensures that the selected examples not only align with the study's thematic focus but also exemplify best practices in adaptive reuse within the local context.

The following text presents a brief overview of the selected case studies.

The Minorite Monastery, constructed in the 13th century, represents the sole surviving monastic complex from the medieval period in the town of Maribor, Slovenia. Following its dissolution in 1784, the complex was repurposed for military need until 1927. Subsequently, the monastery was used as a modest residential building and theatre's warehouses. Since 2004, the building remained uninhabited, resulting in a gradual decline in its condition. However, after a comprehensive renovation project commenced in 2007 and finished by 2010, the site was repurposed to house the Maribor Puppet Theatre [9]. The architectural project for the adaptive reuse of the Minorite complex, designed by Atelier arhitekti, was selected in an architectural competition held in 2004. Figure 1 illustrates the condition of the building prior to and following the renovation.



Figure 1: The Minorite complex prior to renovation in 2005 and after renovation (Source: photography by Igor Sapač)

The former Sugar Factory - Cukrarna, built in 1828 in Ljubljana, has undergone numerous transformations throughout its nearly 200-year history. After a fire in 1858 rendered it non-operational, the building was repurposed for various uses, including temporary housing, military barracks, a temporary children's shelter, and a textile factory. Over time, it also gained cultural significance by providing a shelter to Slovenian writers. By the 20th century, the building had deteriorated considerably [10]. In 2009, Scapelab architects won a competition to redesign it as a contemporary art venue. Construction began in 2018, and the building reopened in 2021, merging its historical legacy with a new cultural purpose of gallery and artistic event space. Figure 2 shows the condition of the building before and after the renovation.



Figure 2: The former Cukrarna Sugar Factory before and after transformation into cultural hub Cukrarna Gallery (source: photography by Igor Sapač)

The Rog Centre is the most significant piece of 20th century industrial heritage in the city of Ljubljana, Slovenia. The building was originally constructed for industrial purposes, with construction starting in 1871. Subsequently, the building underwent a series of extensions and alterations to its original industrial functions. From 1951 to 1991, the building served as the Factory Rog bicycle factory. Production at the site ceased in 1991. As a result, the building was vacated and subsequently occupied by squatters [11]. In 2008, the architectural project for the adaptive reuse of the Factory Rog into the Creative Centre Rog, designed by MX-SI Architectural Studio / BAX Studio, was selected in an architectural competition. Construction began in 2021, and the building was scheduled to reopen in 2023. Today, The Rog Centre offers a wide range of facilities, including production labs, offices and residences for emerging creatives, a library unit, an exhibition and event hall, a café and several shops with local products. In addition, drop-in spaces on each floor provide areas for working, resting or socialising, complemented by a public park for outdoor activities. Figure 3 shows the condition of the building before and after the refurbishment.



Figure 3: The ex-industrial complex prior to renovation (Source: photography by Igor Sapač) and the renovated state of Centre Rog (Source: author's own photo archive)

Based on the brief case descriptions, the empirical part of the study continues.

The objective of the present study is to identify the elements of care in the aforementioned case studies through a detailed observational analysis. The analysis is presented in Table 1, which is divided into two sections. The initial section, pertaining to built heritage, offers a comprehensive overview of the projects, delineating the nature of the built heritage intervention and the programme in place prior to and following the intervention. The subsequent section of the table, focusing on care, delves into the subject of care. The aim was to ascertain the overarching sustainable development goals underpinning the

selected projects dealing with built heritage interventions, as well as the crucial aspects of care within the subject under consideration.

Following the method of TAMassociati [7], the concerns and global ethical issues of the selected projects were considered within the strategic framework of the United Nations Agenda 2030, which lists 17 sustainable development goals: No poverty (SDG 1), Zero hunger (SDG 2), Good health and well-being (SDG 3), Quality education (SDG 4), Gender equality (SDG 5), Clean water and sanitation (SDG 6), Affordable and clean energy (SDG 7), Decent work and economic growth (SDG 8), Industry, innovation and infrastructure (SDG 9), Reduced inequalities (SDG 10), Sustainable cities and communities (SDG 11), Responsible consumption and production (SDG 12), Climate action (SDG 13), Life below water (SDG 14), Life on land (SDG 15), Peace, justice, and strong institutions (SDG 16), and Partnerships for the goals (SDG 17). For each of the projects analysed, we identified the key sustainable development goals (SDGs) to which they respond. This revealed which global strategic orientations are most prevalent in projects that exemplify the concept of care in the built environment [12].

Based on the study of the existing literature [6, 7, 8], we formalised the prevalent aspects of care related to the steps of the care concept (caring about and caring for) as follows: accessibility, affordability, arts & culture, common good, community cohesion, diversity, education & innovation, environmental responsibility, inclusiveness, liveability, playfulness, public health, public participation, resilience, safety, self-sufficiency and wellbeing. While there are many facets associated with the concept of care, for the purposes of this study we have chosen to focus on a selection of those that can be directly influenced by the actions of urban planning, architecture or artistic spatial interventions [12].

Table 1: Concept of care in adaptive reuse of built heritage

PROJECT	BUILT HERITAGE		CARE	
	Programme before intervention	Programme after intervention	Strategic level	Aspects of care
Puppet theatre Minorite	<u>original use:</u> monastery, <u>subsequent transformations:</u> military barracks, housing, warehouse	puppet theatre	SDG 4 SDG 9 SDG 11 SDG 16 SDG 17	accessibility, affordability, arts & culture, common good, community cohesion, education & innovation, playfulness,
Cukrama Gallery	<u>original use:</u> industrial building, <u>subsequent transformations:</u> military barracks, temporary children's shelter, temporary housing, shelter, workshops, warehouse, squatted shelter for homeless	gallery and event space	SDG 4 SDG 8 SDG 9 SDG 11 SDG 16 SDG 17	accessibility, affordability, arts & culture, common good, community cohesion, diversity, education & innovation, inclusiveness, playfulness,
Centre Rog	<u>original use:</u> industrial building, <u>subsequent transformations:</u> squatted residences	creative hub	SDG 3 SDG 4 SDG 8 SDG 9 SDG 10 SDG 11 SDG 12 SDG 16	accessibility, affordability, arts & culture, common good, community cohesion, diversity, education & innovation, inclusiveness,

			SDG 17	liveability, playfulness, public participation, safety, wellbeing
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4. Discussion

The analysis of the strategic orientations reveals that SDG 9 (Industry, innovation, and infrastructure), SDG 11 (Sustainable cities and communities), SDG 16 (Peace, justice, and strong institutions), and SDG 17 (Partnerships for the goals) are pervasive elements across all three projects, demonstrating a consistent commitment to fostering innovation, sustainability, and collaboration. This finding underscores that creating sustainable urban environments and building robust partnerships are central objectives within the strategic goals of the analyzed projects. Notably, SDG 4 (Quality education) also appears in all three cases, reflecting a strong emphasis on education as a foundation for sustainable development. The inclusion of SDG 8 (Decent work and economic growth) in only two projects indicates that economic equity aspects are addressed selectively. This may indicate that the thematic priorities are tailored to the specific contexts of each project, or alternatively, that there are gaps in addressing broader sustainability challenges. These results highlight the need for future projects to enhance their alignment with underrepresented SDGs, particularly given the interconnectedness of global challenges and the importance of addressing issues like climate action and social equity within the broader framework of sustainable development.

To identify the dominant elements of care, it is essential to analyze the frequency of occurrence of aspects of care across the analyzed projects. The most frequently represented aspects of care are accessibility, affordability, arts & culture, common good, community cohesion, education & innovation, playfulness, and wellbeing, each appearing in all three projects. These aspects reflect a collective emphasis on creating inclusive, accessible, and culturally enriched spaces that promote learning, creativity, and quality of life. Other aspects, such as diversity and inclusiveness, are present in two projects, indicating their significance in specific contexts. Meanwhile, liveability, public participation, and safety are represented in only one project each, suggesting a more tailored response to unique project needs. Notably, aspects such as environmental responsibility, public health, resilience, and self-sufficiency are absent across all three projects. This absence may reflect thematic priorities more focused on social and cultural dimensions of care rather than environmental or self-sufficiency-related goals. The results highlight the potential for future projects to incorporate a more comprehensive range of care aspects, particularly those currently underrepresented, in order to address interconnected challenges in a more holistic manner.

5. Conclusion

The objective of this paper was to explore the concept of care within the context of adaptive reuse of built heritage and to analyse the aspects of care observed in selected case studies. Additionally, the objective was to identify the alignment of these aspects with global strategic orientations, particularly the Sustainable Development Goals (SDGs), while highlighting their local specificities. Furthermore, the aim was to ascertain the frequency with which different aspects of care and SDGs were represented across the projects analysed.

The findings of this study emphasize how adaptive reuse of built heritage serves as a support framework for society, that extends beyond the scope of traditional sustainability. The embedding of a regenerative architectural paradigm in such projects serves to protect existing structures while simultaneously

enriching and contributing to society. Such projects demonstrate a commitment to enhancing social inclusion, cultural vibrancy, and collective well-being, while addressing critical challenges of urban resilience and collaboration. The study underscores the value of integrating consistent and context-specific elements of care into heritage regeneration projects to balance inclusiveness, sustainability, and cultural relevance. It would be beneficial for future endeavours to adopt a more comprehensive approach to underrepresented aspects and SDGs, thereby promoting a more holistic, equitable, and regenerative development of the built environment.

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