



Malaysia Architectural Journal

Journal homepage:
<https://majournal.my/index.php/maj>
e-ISSN : 2716-6139



Sustainable Rebuilding: From Local Methodologies to Global Strategies

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ARTICLE INFO

Article history:

Received: 30 April 2024
Received in revised form
Accepted: 15 October 2024
Available online: 23 June 2025

Keywords:

Architecture; Sustainability; Rebuilding;
Collaboration; Vernacular

ABSTRACT

This paper will trace various traditions of rebuilding practices within architecture. From vernacular rebuilding methods to contemporary repairing architecture culture, the paper will be probing the context, conditions, and culture within these practices. As the world is becoming an increasingly vulnerable and volatile place, with looming threats of war, climate crisis and general unrest, the need for sustainable rebuilding is apparent all over the world. In this paper we will investigate how local rebuilding challenges can benefit from international collaboration and knowledge exchange. Some answers on how to repair and rebuild sustainably might be found in the vernacular building traditions. These traditions are not only ecologically sensitive but are also rooted in the idea of local community building and are deeply connected to our common planetary boundaries. However, through the technological advancements of the 20th century, and the need to build fast for a growing population, the vernacular building cultures are becoming increasingly replaced by a global modernist architecture. An often context-stripped architecture, which is proving neither good for the planet, nor for the people. This paper will analyze and explore the methods used within sustainable rebuilding and will discuss how they can contribute to a more locally anchored vernacular framework, where building cultures and knowledge is exchanged internationally. It will investigate how local methodologies have the potential to generate global strategies through international collaborations. It will do so through a carefully selected number of case studies representing different rebuilding challenges throughout the international community. The research presented in this paper will strive to be a contribution to the understanding of sustainable rebuilding and international collaboration. It will exemplify how local rebuilding methodologies, through care, compassion, and collaborations, can become global crises tackling strategies.

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1. Introduction

In a time where the world is becoming increasingly more vulnerable and volatile, and threats of war, climate crisis, and a changing demographic, it is becoming prevalent that methods in sustainable rebuilding is needed. But what does it mean to rebuild and how do we do so sustainably? We are constantly reminded that our physical resources are a scarcity, which is also visualized by ‘The Planetary Boundaries’ [1], founded by the Stockholm Resilience Centre. Therefore, sustainable rebuilding must be done without using unnecessary resources, while strengthening social sustainability i.e. communities. This ethos is simultaneously grounded in the UN Sustainable Development Goals [2], where we continuously must balance the ‘physical’ and ‘social’ sustainability, which are inevitable interlocked. In the summer of 2023, the UIA World Congress of Architects was held in Copenhagen, Denmark.[3] As a final chapter of congress the ‘Copenhagen Lessons – 10 Principles to build on’ [4] was presented by the President of Congress Natalie Mossin.

In many ways the definition of rebuilding presented in this paper is encompassed in the 10 principles as well.

01 Dignity and agency for all people is fundamental in architecture, there is no beauty in exclusion.’

03 Existing built structures must always be reused first.’

08 When sourcing materials for construction, local renewable materials come first.’

These three principles show the three defining layers of ‘rebuilding’ that will be explored in this article. The rebuilding to strengthen of communities, spaces, and material consumption.

To rebuild implies the acknowledgement of what is already there, may that be a building, a space or community, and using that as a starting point.[5] To rebuild is to build upon and with locally anchored knowledge, materials, culture, and communities. This paper will unravel societal, spatial, and material-based projects from around the world, that work with the local agency of rebuilding.

Methodology

This paper will be analysing three key methodologies of rebuilding. In the following paragraph three selected projects with a linked ‘snapshot’ will be unfolded, and be reflected upon from different parameters of ‘sustainable rebuilding.’ The projects have been chosen in regard to methodologies used and from the intend of covering different communities, contexts and cultures around the world. The main goal of the analysis is to synthesize a local methodology that has the potential of becoming a global strategy for a more sustainable future. The three methodologies found are, ‘Adaptive Reuse’ – ‘Revitalizing Materials and Aesthetics’ – ‘Vernacular Techniques and Practices.’

Extending Building Lives Through Adaptive Reuse

Buildings are constructed to fulfil particular functions in time and space. While some continue to remain relevant and become timeless in their use and purpose - administrative, ceremonial and religious - others outgrow the reasons they were built for and become redundant. The building construction boom that took over the world post the second world war, at the behest of modern technological advancements that made the construction process easier and faster, left cities with an excess of building stock which were deemed useless due to a variety of socio-political and economic reasons. This period also saw an obsession with razing of vernacular building stock being replaced with modern buildings. Though the practice started in the West, it soon spread to the developing and also newly independent nations of the Global South which were eager to embrace modernity - as dictated and defined by the Global North - and rid themselves of their own vernacular building traditions. A new architectural praxis emerged in the 1970s which came to be known as ‘adaptive reuse’ [6]. This field of practice and policy focussed on reusing instead of replacing, in response to the

conservation and environmental discourse that was taking place in the 1970s (Lanz & Pendlebury, 2022).

As environmental and conservation concerns have become increasingly urgent, adaptive reuse has gained popularity around the world. It is also being used as a tool to solve for societal change, as seen in a project in Johannesburg where a shopping centre built in the 1980s was converted into a social housing block of 50 homes. Adaptive reuse has contributed successfully to the conservation and preservation of buildings, but it has also led to gentrification of low-income neighbourhoods which have pushed the marginalised communities out of the city centres. The regeneration of council housing estates in London which saw demolition of 161 social housing blocks had turned out disastrous for poorer communities - black and other ethnic groups - who were pushed out of London. In Mumbai, mill owners turned factories which were working class heritage into upmarket shopping malls and corporate offices. This is why the social housing project by Savage + Dodd is an important one to push and fuse the conversation about adaptive reuse with working class struggles. The project was commissioned by 'property investor Leroy Slava and supported by TUHF, a banking institution that provides commercial financing for affordable housing in urbanised South Africa' [7].

In a different continent, far from South Africa in Palestine, a group of architects and urbanists are trying to keep their cities alive by continuing to rebuild them when they are constantly being attacked and destroyed by war which has not stopped in 75 years. Adaptive reuse has become more a way of life and survival mechanism for the Yalla Project based in Nablus. The project started with the regeneration of the old town of Nablus and has since used its backdrop to continue to create opportunities for urban revitalisation in cities which are perpetually experiencing wartime conditions. The Yalla Project use a variety of approaches that 'incorporates grassroots efforts, urban acupuncture, iterative design methods, continuous social engagement all collectively aimed at enhancing the quality of life, liveability, and safety of urban areas experiencing active conflict' [8].

Revitalizing materials and aesthetics

In the outskirts of Copenhagen, Denmark, in the area of Nordvest, an extensive experimental rebuilding project is taking place [9]. The area of Nordvest, formerly known for its car mechanic industry, storage facilities and office buildings are slowly being transformed into a new vibrant housing district.[10] The building Thoravej 29, which formerly was housing offices for the Danish fur industries [11], is being rebuilt to have new functions. The formerly 'house of fur' will soon be transformed into a community building for artistic exploration. The project will be open in 2025 and has great ambition for what it will become. On Thoravej 23's webpage their ethos is stated as,

"We live in a society with many good intentions, yet not enough substantial change. We can do better. We have to do better. That is why everything at Thoravej 29 centres around transforming society and mobilising those willing and able." [12]

The concept of transformative projects that both affect society and buildings through the understanding of agency is not new. But the methodology used in Thoravej 29 by only using existing materials found on site in the retrofitting is a different methodology to what we usually see in the Global North. The project led by the Danish architect Søren Pihlmann and the rest of Pihlmann's team at Pihlmann Architects has the ethos of "recycling, reworking and reusing" [13] the buildings context before looking outward. It encompasses another more local way of understanding the term 'sustainability'. In this hyper context-based and material focused way of reusing western modernist concrete building, often not appreciated by the general public, we find new ways of aesthetically reusing space.

Likewise in Paris, France the usage of salvaged building materials has revitalized aesthetics and functions. [14] The landscape architecture firm Agence TER has reused buildings materials and scaffolding in the design of lampposts in the new Olympic Village that will open in 2024. Much like the ethos of Søren Pihlmann these lampposts represent a new much needed future aesthetic, where material awareness, consumption and understanding are at the forefront.

Rebuilding Lives through Vernacular Techniques and Practices

Yasmeen Lari, the world-renowned Pakistani architect has made it her mission to decolonise and democratise architecture in her country and take the message to the world. [15] After spending decades as a 'starchitect' who designed some of the most famous structures in Pakistan, Yasmeen Lari has now devoted her architectural practice to building homes for the poor in Pakistan, but Lari is not doing it alone. The women of Yasmeen Lari's country are at the forefront of this mission. Lari, through her organisation, the Heritage Foundation has championed what Lari calls "barefoot social architecture", which improved the lives of thousands of disadvantaged communities by training them to build their own homes, which are low-carbon, and uses vernacular technologies which minimises waste and are culturally appropriate. These homes are not just means of providing shelter but also restoring dignity and a sense of pride, which is important when communities have suffered in either immediate acts of disasters or long periods of deprivation. When Yasmeen Lari talks about decolonising, Lari stresses on rebuilding as a process which is not based in charity but of one where the people are given a chance to participate and have agency and control of their lives.

When disasters happen, loss of agency and control is felt deeply by those who are affected by it. This sense of loss of agency is worse in people who come out of wartime or conflict situations because it is compounded and coupled with fear and threat to their everyday safety. To rebuild a structure is an easy task but to rebuild the lost sense of safety and agency is difficult. However, the community spaces built and designed by a team of three young architects - Rizvi Hassan, Khwaja Fatmi, Saad Ben Mostafa [16] - serves as a masterclass in rebuilding processes that put people and their needs firmly at the centre. The team designed and built six structures in the world's largest Rohingya refugee camp in Bangladesh and involved the community at every step of the way. The structures incorporated the local building techniques but also infused the building practices of the Rohingya community to enhance their sense of ownership to these structures. The project not only gave a safe space to the community to express themselves but was also able to highlight their craft, culture and identity. Just like Yasmeen Lari, the architect trio worked closely with women and young girls who were particularly vulnerable but had a massive role in rebuilding their community which had suffered devastating loss at the hands of the Myanmar military which persecuted them. One of the structures now serves as a creative and enterprising space for women who use it to showcase their talent and sell handmade products.

Both Yasmeen Lari's work in Pakistan and the Aga Khan Award winning work of Rizvi Hassan, Khwaja Fatmi, Saad Ben Mostafa with the Rohingya refugees are hopeful reminders of how thoughtfully and compassionately architecture - local and vernacular - is being used to rebuild lives of the most vulnerable and marginalised people.

Conclusions

The paper has explored three local methodologies that has the potential to become global strategies. Across the globe we are facing a multitude of different challenges when having to sustainably rebuild communities, neighbourhoods, and buildings. Through these three cases, and their linked 'snapshot' cases, we believe we can extract methods that can be used in a global scale when having to sustainably rebuild.

Adaptive Reuse and Sense of Agency

As seen in the case of Savage + Dodd and the Yalla Project, adaptive reuse is a way to sustainably use the ‘already built’ through architectural interventions. Reusing what is already there can create opportunities for urban revitalisation, but only through a local and global sense of agency. We need to understand the challenges ahead, so we know how to reuse in the best way possible.

Sustainable Material Production and Consumption

In the case of Pihlmann Architects project ‘Thoravej 29’ in Copenhagen, Denmark, the local methodology of only using materials found on site and not adding any other materials can be utilized globally as well. We must focus on our material consumption, and look to all the material found on site, before looking out. The lampposts in the Paris Olympic Village are another great example of how material production and consumption can become new sustainable aesthetics through exciting narratives.

Vernacular Techniques and Community Building

As seen in the case of Yasmien Lari’s Barefoot Social -project which emphasizes co-creation through local biogenic materials. In the same way Rizvi Hassan, Khwaja Fatmi, Saad Ben Mostafa Rohingya refugee project also utilizes community and skill -building. These methodologies of skill-building and the ethos of ‘Zero-Charity’, equips inhabitants of the given community to take ownership of their home and land. In the same way the global strategy of ‘skill-building’ can be utilized as a means of departure for sustainable rebuilding.

References

- [1] Stockholm Resilience Center, Planetary Boundaries (2023) Visited on the 13th of December 2023 <https://www.stockholmresilience.org/research/planetary-boundaries.html>.
- [2] United Nations, Department of Economic and Social Affairs Visited on the 30th of April 2024 <https://sdgs.un.org/goals>
- [3] UIA, UIA World Congress of Architects (2023) Visited on the 30th of April 2024 <https://uia2023cph.org/>
- [4] UIA, Copenhagen Lessons (2023) Visited on the 30th of April 2024 <https://www.uia-architectes.org/en/news/copenhagen-lessons/>
- [5] Cambridge Dictionary, Rebuild (2024) Visited on the 30th of April 2024 <https://dictionary.cambridge.org/dictionary/english/rebuild>
- [6] Liliane Wong states that the term was first noted as being used by the Marriam-Webster Dictionary in 1973. See Liliane Wong, Adaptive Reuse: Extending the Lives of Buildings (Basel: Birkhauser, 2017), p. 30.
- [7] De Zeen, Savage + Dodd aimed to “set the preconditions for change” with South Africa housing project (2024) Visited on the 30th of April 2024 <https://www.dezeen.com/2024/04/03/slava-village-savage-dodd-south-africa-social-housing-revival/>
- [8] The Yalla Project, Architectural and Urban Regeneration (2024) Visited on the 30th of April https://theyallaproject.com/?page_id=567
- [9] Bikubefonden, Thoravej 29 (2024) Visited on the 30th of April <https://www.bikubefonden.dk/thoravej-29>
- [10] Rundt I Danmark, Bispebjerg/Københavns Nordligste bydel (2023) Visited on the 30th of April <https://www.rundtidanmark.dk/bispebjerg/#:~:text=Bydelen%20er%20den%20nordligste%20del%20af%20K%C3%B8benhavn%20Kommune%2C,et%20betydningsfuldt%20arkitektonisk%20landem%20A6rke%20t%C3%A6t%20p%C3%A5%20Bispebjerg%20Kirkeg%C3%A5rd.>
- [11] Danish Architecture Center, Podcast: How to transform buildings with no waste (2024) Visited on the 25th of April <https://dac.dk/en/knowledgebase/articles/podcast-how-to-transform-buildings-with-no-waste/>
- [12] Thoravej 29, About Thoravej 29 (2024) Visited on the 30th of April <https://www.thoravej29.dk/en/about>
- [13] ArchDaily, “Building Simply” with Søren Pihlmann: Exploring the Values and Fascinations of Architecture (2023) Visited on the 30th of April. <https://www.archdaily.com/1002824/building-simply-with-soren-pihlmann-exploring-the-values-and-fascinations-of-architecture>

- [14] De Zeen, Paris 2024 Olympic Village features street lamps made from salvaged building materials (2024) Visited on the 30th of April. <https://www.dezeen.com/2024/04/25/paris-2024-olympic-village-streetlights-concepto-55/>
- [15] ArchDaily, Barefoot Social Architecture: 10 Projects by Yasmeen Lari, the 2023 RIBA Royal Gold Medal Winner (2023) Visited on the 30th of April. <https://www.archdaily.com/1000417/barefoot-social-architecture-10-projects-by-yasmeen-lari-the-2023-riba-royal-gold-medal-winner>
- [16] Aga Khan Development Network, Community Spaces in Rohingya Refugee Response (2022) Visited on the 30th of April.
<https://the.akdn/en/how-we-work/our-agencies/aga-khan-trust-culture/akaa/community-spaces-rohingya-refugee-response>