Users as Co-Designers: Participatory Design in Architecture to Empower Communities

Abstract

This paper contends that the true characteristics of Architectural design is a participatory one, and it is important to position Architecture as a social situation. Having said that, this paper explores how users can be seen as 'Co-Designers' rather than citizens and innovators rather than consumers. It talks about how people who are not usually involved in the design process can participate in important design decisions using participatory design methodology. This paper highlights the importance and use of participatory design using my personal experiences and case studies - (i) Vertical Urbanism (My undergraduate thesis research) and (ii) Lam Tin Estate Case Study.

Introduction

In this increasingly interconnected, fascinating new collaborative global network, Architecture as a field of study and practice is expanding more and more. While the tangible results of Architecture and UX design are quite different, I believe the most common thread between the two disciplines is the way we view the world and think about the end users. Just as in the UX design industry, as an Architect, I have always placed the user at the center of the design process and have taken into consideration their needs and wants, as they are the ones who will occupy the built spaces. In the past, the wealthy and powerful were considered while building formally designed buildings. Direct communication between the designer and the user made it simple to satisfy both sides. However, with the rise of a powerful, wealthy, and mobile middle class, the acceptance of democratic societies, the humanistic conviction that people have a right to use and occupy spaces that enhance their lives, and the industrialization of the construction industry, the direct interaction between designers and users have reduced. In our 'Foundations of HCI' class, we learned that design within a work context is never neutral and always affirms certain positions and ways of being over others (Dombrowski et al., 2017). The aim of this paper is to

propose 'Participatory Design' to promote 'empowerment, equality, and social justice for all' (Katoppo & Sudradjat, 2015) as a framework for an alternative design methodology in architecture.

Participatory Design in Architecture

Architecture as a profession has a comprehensive way of thinking and acting and integrates theory and practice into one activity deeply rooted in its "social context"(Katoppo & Sudradjat, 2015). Studying the context to fully understand the background of the project's location, users, and other stakeholders is an integral part of any architectural research. Contextual research helps designers go into the field and talk with people about their jobs and lives while observing them, revealing their unconscious and tacit components of life (Holtzblatt & Beyer, 2014). These past readings about 'Users' have made me reflect on new possibilities in Architectural design processes. One such methodology is the 'Participatory Design' methodology that has emerged over the past years. This design methodology focuses on including citizens(users) in developing Architectural Design solutions that address community needs. Its objective is to consciously shift away from citizens playing a minor passive role toward one in which they have the power to actively transform their local community. And as the author says, instead of concentrating on a clearly defined product to be designed, users' participation is essential to building a long-term partnership for sustainable collaborative services (Gooch et al., 2018). While I was working as an Architect at a commercial design firm, we would conduct workshops with various stakeholders involved in the project, such as business executives, structural consults, building services consultants, and so on, at all important stages of the design. These workshops helped us form a holistic view of the stakeholder's needs and would also allow them to play a part in the design process.

Role of the User: Co-designer

Taking forward the idea of participation in the architecture design, the role of the citizens changes to being co-designers and collaborators rather than users and innovators rather than consumers.
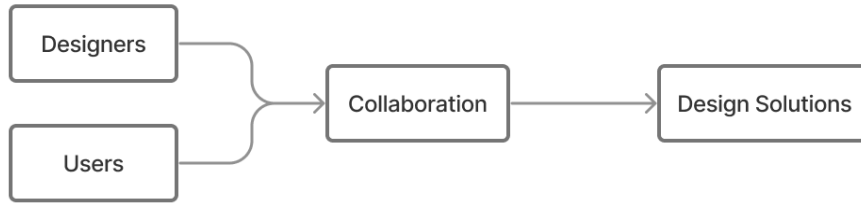
One may criticize that citizens(users) are not trained designers and do not have the professional skills required to design built structures. However, I believe in participation design, the final output of users is not important, rather, the knowledge illumination is what matters. User involvement can inform the design process by understanding how users and environments relate to each other (Wortham 2007, 46). Thus, the interaction between the architects and community stakeholders can open up a democratic space where citizens can play a significant role in design choices.

Participatory Design in "Vertical Urbanism" and the role of Technology

Fig 2: Visualisation, "Modular affordable housing envisioned for "abandoned" New York airspace",
Source: www.dezeen.com.

My undergraduate thesis research was on "Rethinking How We Live: Vertical Urbanism", wherein I identified that the construction of the skyscrapers in their current form would lead to a

disconnect with public life, resulting in loneliness and depression among its residents. To this end, I ideated a solution by applying urban design and biophilic concepts to the vertical form so the city could increase density without sacrificing elements of 'public life, well-being, and livability'. Apart from eliminating feelings of isolation and disconnect from the ground, another problem I was tackling at the time was - the limited variability in apartment configurations. In retrospect, an alternative design methodology for building high-rise buildings could be 'participatory design'. Involving the various stakeholders in workshops and engagement activities can provide great feedback to the design, and simultaneously, the residents can form relationships with their space and people. Co-designing with residents and other stakeholders can also aid in creating a socio-cultural attachment, or a sense of psychological ownership, to the neighborhood's heritage (Kee, 2015).
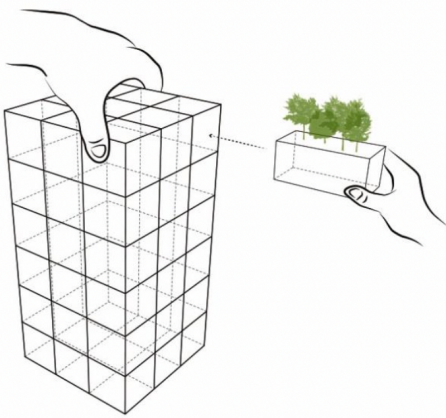

Fig 3: A modular system of structural framework and functional plug-ins to enable residents to design their own homes.
Source: Karissa Rosenfield. "penda to Build Modular, Customizable Housing Tower in India " 19 Aug 2015. ArchDaily. Accessed 25 Oct 2022. <https://www.archdaily.com/772181/penda-to-build-modular-customizable-housing-tower-in-india>
ISSN 0719-8884

The proposed solution can be achieved using the technology of prefabricated building modules and the open building concept (Hu et al., 2022). The concept of modular housing makes the design process dynamic that will undergo continuous adaption through participatory design. In recent times, various technologies have been developed, such as digital platforms for a mass-participatory design that allows users to configure their apartments to their liking. Considering that the users do not have 3D design experiences, the application can be gamified using commonly found design elements in home design games. This will enable the users to navigate and engage with the platform more intuitively (Katoppo & Sudradjat, 2015). Thus, by adopting this approach, we can envision a cutting-edge residential high-rise that permits ongoing

adaptability and participatory design. And thus, despite not being physical possession, residents can take pride that they contributed to the design of their homes, and this ownership can create a powerful sense of belonging to their communities.

Participatory Design to Empower Communities - Lam Tin Estate Case Study

To further cement the importance of Participatory Design Methodology in Architectural design processes, I will bring to light the case study of 'Lam Tin Estate', a 40-storey housing project in Hong Kong which was developed to accommodate its high-density urbanism. The project being a redevelopment of an existing old building, it had a close-knit community group consisting of residents, local shop owners, and retirees with strong ambitions about their neighborhood. The Architects used Participatory Design methodology and involved the community in the design process at an early stage through a series of engagement activities such as consultations, workshops, and forums to better understand the needs and wants of the participants. One of the needs that were identified through these engagement activities was the desire to have more public open areas. Using the "appreciative planning approach", an approach in urban design that emphasizes *"mutual respect, trust, and care-based action"* (Bushe and Pitman 1991, 3), the architects invited the community to help with designing the master plan of the project, consisting a design of an outdoor garden space, a multipurpose communal area.

Fig 4: **Community Engagement Workshop with Residents of the old Lam Tim Estate**
Source: Hong Kong Housing Authority, 2013a

Through the discourse that resulted from these engagement activities, residents could interact and produce two tangible outputs thanks to the integration of these workshops utilizing low-tech methods: a communal garden and a two-level pedestrian precinct intended to serve as residents'

"living areas". The final design proposal achieved a greening ratio of 26%, which includes rooftop greening, vertical greening, and a community farm to inspire inhabitants to seek a green living and foster social cohesion (Kee, 2015). This case study is an example of how Participatory Design methodology resulted in an open-ended architectural design that utilized local wisdom. Due to its ethnographic nature, this methodology serves as a proponent of the idea that *"lived space should not be the consequence of design but should, in fact, inform design decisions"* (Wortham 2007, 46).

Strengths: Builds an Inclusive Community

Building a house for any person is one of the most important decisions as it comes with enormous costs and is often linked to a loan. Looking at users as co-designers in the process of building their houses creates an inclusive environment for all. It creates an environment where the users are positioned in the first place. Creating an inclusive environment also means including various demographics to build a collaborative community.

Another way co-designing can create an inclusive environment is by amplifying the voices of people with disabilities. By including disabled people, they can communicate their needs to the designers and be part of design projects. For example, participatory design workshops could be conducted for the blind and visually impaired, where they focus on designing a better indoor navigation system that can be tested by them.

Lastly, this methodology can also help solve the problem of social isolation, using workshops, inter-generational people and migrants can get the opportunity to meet their neighbors and build long-lasting relationships with them.

Limitations

This methodology poses some challenges, for example, choosing who will participate in the design process can take many different shapes. All product users can participate in directly influencing the design of small-scale projects. However, dealing with a diverse urban population becomes difficult. The number of people involved in direct engagement would be unmanageably high. The issue then becomes how to select a useful group of participants.

Also, it is important to include the users as early in the project as possible. However, in large-scale projects, it may prove to be time inefficient and may result in an extension of the design process and therefore pose significant difficulties in the implementation of the project.

Conclusion

Seeing users as 'Co-designers' can have many advantages and disadvantages. However, the goal of designing a physical solution that implements the users' desires while also fulfilling the Businesses' and Architects' requirements is what ultimately matters. The participatory design methodology in Architecture can organically transform the designs as it adopts the importance of communal placemaking in fostering cooperation among community stakeholders by fusing diversity with vitality. Collaboration amongst important stakeholders can aid in instilling the value of local values and a sense of place in current design and planning methods.

The ideal way to use this alternative research tool is to use a mixed methods approach that enables the researcher to look at both the quantitative (experimental innovations) and qualitative (participatory design) aspects of architecture. Due to architecture's innovative design and responsiveness to its social context, this alternative research tool will offer a thorough comprehension of the subject and new perspectives on it.

References:

1. Elizabeth B.-N. Sanders & Pieter Jan Stappers (2008) Co-creation and the new landscapes of design, Co-Design, 4:1, 5-18, DOI: 10.1080/15710880701875068
   https://doi.org/10.1080/15710880701875068

2. Kee, T. (2015). Cultivating a Participatory Design Practice in Architecture – A Case Study of Hong Kong Housing Authority. *The International Journal of Architectonic, Spatial, and Environmental Design*, *8*(3–4), 13–25.
   https://doi.org/10.18848/2325-1662/cgp/v08i3-4/38339

3. Katoppo, M. L., & Sudradjat, I. (2015). Combining Participatory Action Research (PAR) and Design Thinking (DT) as an Alternative Research Method in Architecture. *Procedia - Social and Behavioral Sciences*, *184*, 118–125. https://doi.org/10.1016/j.sbspro.2015.05.069

4. Gooch, D., Barker, M., Hudson, L., Kelly, R., Kortuem, G., Linden, J. V. D., Petre, M., Brown, R., Klis-Davies, A., Forbes, H., Mackinnon, J., Macpherson, R., & Walton, C. (2018). Amplifying Quiet Voices. *ACM Transactions on Computer-Human Interaction*, *25*(1), 1–34. https://doi.org/10.1145/3139398

5. Hu, H., Bui, D. P. T., & Janssen, P. (2022). Continuous Adaptability: Web-Based Residential Participatory Design Using Modular Prefabricated Construction. *CAADRIA Proceedings*.
   https://doi.org/10.52842/conf.caadria.2022.2.495

6. Dombrowski, L., Alvarado Garcia, A., & Despard, J. (2017). Low-Wage Precarious Workers' Sociotechnical Practices Working Towards Addressing Wage Theft. *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*.
   https://doi.org/10.1145/3025453.3025633

7. Holtzblatt, K., & Beyer, H. (2014). Contextual Design: Evolved. *Synthesis Lectures on Human-Centered Informatics*, *7*(4), 1–91.
   https://doi.org/10.2200/s00597ed1v01y201409hci024