URBAN CO-CREATION AS DESIGN EDUCATION: BALANCING DYNAMICS BETWEEN VOLUNTEERING AND IMMATERIAL LABOURING

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ABSTRACT

In architecture education, engaging communities through co-creation is increasingly used as an experiential learning approach. By immersing students in real-world challenges and ethical dilemmas, it prepares future design professionals to navigate complex urban issues with integrity and creativity. However, as this approach invites students to work on real world scenarios and projects, challenges present themselves in navigating the delicate balance between learning innovation and teaching ethics. This study delves into the role of immaterial labour and student volunteers in shaping co-creation processes, while addressing ethical considerations and proposing actionable insights to mitigate exploitation. Through a series of semi-structured interviews, the study triangulates perspectives of co-creation organisers, facilitators, and student volunteers. The outcomes raise new questions on the role of volunteers, both as a service provider and as a beneficiary of public services, and highlights the importance of interest alignment to create a conducive environment for experiential learning, while upholding principles of social alignment for all individuals involved in the collaborative process.

Keywords: Architecture education, Experiential learning, Unpaid work, Information labour, Community engagement

1   INTRODUCTION

In recent years, Hong Kong has witnessed a surge in social enterprises and organisations utilising design thinking and co-creative approaches to engage citizens in urban processes (Chen et al., 2025). Within this context, student volunteers, particularly from architecture schools, are frequently involved in projects outside their formal studies to acquire practical experience—a form of experiential learning (Jian et al., 2025). Their participation, however, can be theorised through the lens of "immaterial labour," which involves the production of cognitive commodities that takes two primary forms: informational and affective labour (Lazzarato, 1996). The former entails the generation of knowledge and data, often facilitated by technology like computer-aided design (CAD); the latter emphasises the emotional and relational elements of work, such as human interaction and care (Amorim, 2014). In a co-creative process, student volunteers contribute to both aspects, effectively establishing an immaterial employer-labour relationship. This framing reveals a central tension in architectural education, where the cultivation of skills through studio-based and community-engaged pedagogy blurs the line between learning and productive labour, creating a grey area ripe for investigation.

The investigation of student immaterial labour contributes significantly to the principles and ethics of public participation in urban development. While students possess the design expertise, they are guided by the wisdom of Kaifongs (i.e., community members), a dynamic that, while rich with learning potential, challenges the distinction between volunteering and unpaid work (Griffiths, 2007). This ambiguity creates a pressing social dilemma: a latent willingness among students to contribute can be misconstrued and lead to potential exploitation. The situation is compounded by a regulatory gap, as Hong Kong lacks specific legislation for student volunteers.

By understanding this delicate balance between learning innovation and teaching ethics, this study seeks to uncover appropriate boundaries to support the social efforts of co-creation initiatives in a more sustainable manner: what principles can be implemented to mitigate potential exploitation? The

contributions are two-folded. First, scientific relevance, theorising student participation as immaterial labour. Second, social relevance, navigating the ethical terrain of volunteering and exploitation.

1.1 Paradox I: Immaterial Labour in Architecture and its Education

Immaterial labour, as defined by Maurizio Lazzarato (1996), produces a commodity's informational and cultural content. In architecture, this encompasses the creative, intellectual, and social activities of the design process, where architects ideate, visualise, and communicate concepts to add cultural value and enhance user experience (Dreamer, 2015).

Architecture schools are key sites for cultivating these skills through studio-based pedagogy. In these active learning environments, students undertake research, conceptualization, and project management, often under instructors from professional practice who enrich the curriculum with real-world cases (Pasin, 2004). This practice-based setting blurs the distinction between learning and labouring with the cognitive and communicative tasks students perform; this alignment is reinforced by pedagogical shifts towards community engagement, which fosters empathy and social awareness in line with frameworks like the UN SDGs (Millican & Bourner, 2014). Student immaterial labour here includes conducting surveys, mapping, and workshops, making the teaching of ethics essential.

Such engagement mirrors the broader trend of urban co-creation, which integrates design thinking and community collaboration to develop user-centric solutions. For instance, Chen et al's (2025) project invites designers and residents to co-create regeneration-based solutions through shared governance. Contemporary scholarship suggests that for co-creation to be truly inclusive, it must be multi-level and multi-phased, though it often faces challenges like distrust and consultation fatigue (Bradley & Mahmoud, 2024). For students, participation demands significant time and can be counter-productive, but with careful design, it can bridge theory and practice, providing an invaluable educational experience that is simultaneously a form of productive labour (Figure 1).
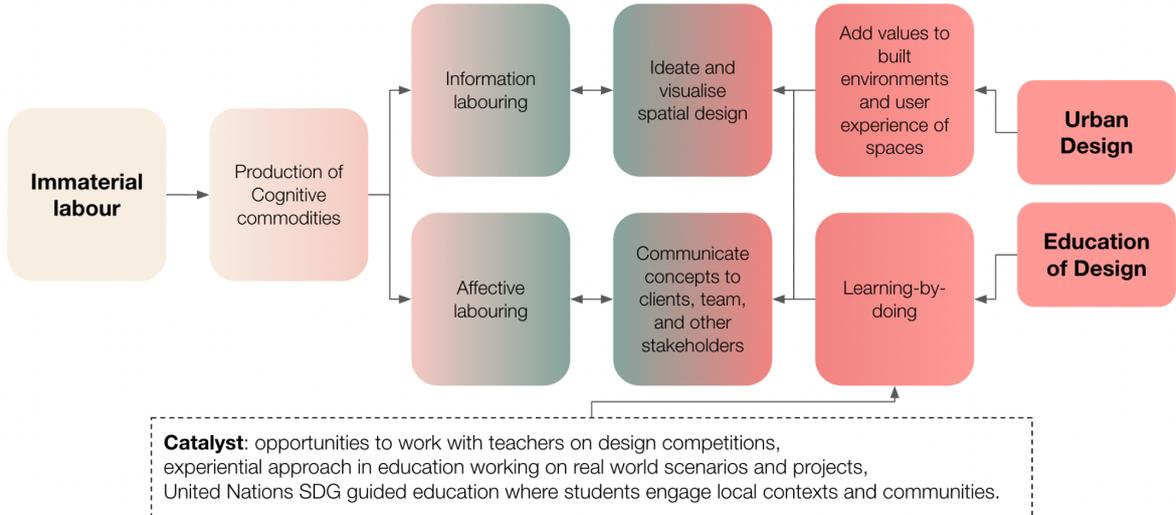

Figure 1. Theoretical Paradox: Immaterial work vs volunteering design work.

1.2 Paradox II: Distinguishing Volunteering and Unpaid Design Work

A latent willingness among students to contribute creates a grey area where their involvement can be misconstrued as exploitative. The distinction between unpaid work and volunteering hinges on motivation and context, a challenge noted in the growing literature on the "gig economy" and precarious creative work (Gill & Pratt, 2008).

Unpaid internships, for instance, are legally defined by criteria such as providing educational training, close supervision, integration with academic curriculum, and that the intern does not displace paid staff or provide immediate advantage to the employer (U.S.D.O.L. Fair Labor Standards Act). Conversely, volunteering is characterized by civic or charitable purpose, without expectation of compensation, and volunteers must not replace regular employees.

In Hong Kong, no specific legislation protects student volunteers, who are instead covered by general labour laws like the Hong Kong Employment Ordinance. Legal recourse may exist for issues like unjust remuneration if a prior payment agreement was violated, or for copyright infringement (Cap. 528) over

design ideas, though the latter is often difficult to prove (Seo, 2022). This regulatory ambiguity places the burden of navigating rights and responsibilities heavily on the individual student.

However, many scenarios transcend a purely legal framing, residing in an ethical grey area, particularly in student-teacher relationships where power dynamics are inherent. Situations may not be illegal but are ethically concerning, such as unmanageable workloads impacting wellbeing or blurry project timelines that lead to excessive, unpaid hours. Ultimately, navigating these situations relies on students' own awareness of their rights and their ability to collect evidence—skills related to "ethos" and professional identity that are rarely formally taught in the design classroom yet are critical for sustainable practice.

2   METHODS

This qualitative research aims to understand the dynamics between experiential learning and immaterial labour in co-creative urban design. A case study triangulated stakeholder perspectives, investigating a three-month pilot co-creation workshop in Hong Kong. The case represents a common model in the region where student volunteering is framed as extra curricular experiential learning. Six semi-structured interviews gathered first-hand accounts of participants' experiences:

- Organisers (n=1): Overseeing the workshops, they were selected for their strategic role in designing the project, securing resources, and defining its educational and social objectives.
- Facilitators (n=2): Employees with professional backgrounds in design / social work, selected for their operational role, mediating organisers, students, and community members.
- Student Volunteers (n=3): Unpaid students at bachelor / master / PhD levels, recruited from disciplines including architecture, public health, and urban studies.

This sample, while small, provides a crucial triangulation of perspectives from the top-down (organisers), middle-out (facilitators), and bottom-up (student volunteers) of the project hierarchy. Interviews were conducted in Cantonese / Mandarin, audio-recorded, transcribed and translated into English. The data was analysed using a thematic analysis approach (Braun and Clarke, 2006):

1. **Familiarisation**: Repeated reading of the transcripts to gain deep familiarity with the data.
2. **Coding**: Generating initial codes to capture key concepts and ideas across the entire dataset.
3. **Theming**: Collating codes into themes, reviewed and refined in relation to the coded extracts.
4. **Reviewing**: Ensuring accurate representation of dataset and addressing research objectives.

The analysis was guided by three overarching questions, which served as an analytical framework:

- How were the co-creation processes carried out, and to what extent did the experience align or diverge between stakeholder groups?
- What was the volume and nature of work demanded from participants, both as planned and as perceived, and how did this relate to student volunteers' existing academic pressures?
- What was the perceived quality of the participatory experience, and what were its positive and negative impacts on participants?

Stakeholders' viewpoints were systematically compared; their backgrounds were considered as contextual factors shaping their responses; deviating or contradictory ideas that challenged the emergent themes were noted. Informed consent was obtained during baseline survey, guaranteeing anonymity and confidentiality, with ethical approval from the affiliated institution.

3   INTERVIEW RESULTS

3.1 The Synthesis of Tensions in Co-creation Process

According to facilitators, the co-creation process was carried out through a series of pre-determined, structured steps aimed at engaging stakeholders, particularly older adults, in public space design:

1. **Identifying Target Groups**: to understand the purpose of targeting these individuals, including educating them about their right to design and spend time in public spaces.
2. **Understanding User Needs**: to understand how the target group uses public spaces, their daily routines, and the needs specific to their age group.
3. **Engagement of Stakeholders**: including residents, students, professionals, and NGOs to gather insights and foster a sense of ownership and sustainability within the community.
4. **Professional Insights**: architects provided practical / legal insights, fostering interdisciplinary collaboration for more holistic, implementable, and inclusive design solutions.

5. **Collecting Input & Ideas**: engage the target group in discussions to gather their input on needs, preferences, and ideas for improving the public spaces.
6. **Consolidating Ideas**: After gathering individual input, the organisers and facilitators consolidated and derived a set of design goals.
7. **Brainstorming & Prototyping**: A few co-creation workshops were conducted to brainstorm ideas. Then, student volunteers were responsible for creating digital models, presentation panels, designing and fabricating physical prototypes for tests, such as furniture and signages.
8. **Evaluation & Feasibility**: This involves assessing the proposed ideas through community review of the generated prototypes, where community members voted and commented.

The findings reveal a complex interplay between the educational value of co-creation and the risks of unpaid labour, crystallizing around the two central paradoxes of this study, synthesizing these tensions in Table 1, which maps the conflicting perspectives and outcomes experienced by stakeholders.

Table 1. Synthesis of Tensions in Student Co-Creation.

Stakeholder	Paradox I: Immaterial Labour vs. Learning	Paradox II: Volunteering vs. Unpaid Work
Organisers	**Pro**: Framed involvement as pedagogical empowerment, aiming to move students beyond academic theory through "social realisation." **Con**: The pedagogical design limited student autonomy in community interaction, potentially constraining the learning experience.	**Pro**: Viewed student commitment as a voluntary exchange where engagement level correlated with learning gains. **Con**: Considered pivoting to high school students to circumvent the workload constraints of university volunteers.
Facilitators	**Pro**: Recognised the latent potential of students to contribute beyond observational roles. **Con**: Identified a lack of organisational capacity to train students for more active roles, leaving their skills underutilised.	**Pro**: (Implied) Understood the value of student contribution. **Con**: Observed that academic pressures caused uneven participation, unfairly distributing work among remaining volunteers.
Student Volunteers	**Pro**: Expressed high value for the practical experience and community interaction; those from non-design backgrounds found it particularly enlightening. **Con**: Reported a lack of project context (budget, origins) and autonomy, leading to doubts about output feasibility and intellectual rigour.	**Pro**: Demonstrated strong altruistic motivation, often overlooking personal inconvenience for social impact. **Con**: Explicitly stated that a heavier workload would have been a participation barrier; raised concerns over unclear authorship and data rights.

3.2 The Contested Terrain of Immaterial Labour and Learning

An analysis of the project reveals a clear tension between its educational objectives and its practical execution. On one hand, the initiative was designed to offer students an alternative to traditional academic learning through direct, practical engagement. The organiser intended for students to become active agents, with their empowerment being "directly dependent on their active participation."

On the other hand, structural and logistical constraints significantly limited the realization of this goal. A facilitator reported that students were initially relegated to observers, and the organization lacked the resources to train them for more substantive roles like co-facilitation. Furthermore, academic workloads led to student disengagement, increasing the burden on remaining participants and creating internal inefficiencies.

Student feedback further underscores this paradox, highlighting a divergence in experience based on background. Students without design expertise reported highly positive outcomes, with one volunteer noting the activity "revealed the underestimated significance of building age-friendly communities." In contrast, a postgraduate student with an architecture background questioned the output's quality, given the short timeframe and high team attrition. A critical contradiction emerged in student needs: while

many requested more time for design review and longer, unmediated engagement with residents, they simultaneously stated that a greater workload would have deterred their initial participation.

3.3 The Quality of Participatory Experience and Its Impact

The participatory experience and outcome (Figure 2) yielded strongly positive engagement but also raised significant questions about its methodological depth and sustainability.

The project successfully generated enthusiasm among participants. Post-project discussions indicated that residents responded very positively, and both they and the professionals desired a longer engagement. The organiser confirmed the project's value despite its labour-intensive nature and is considering extending it to high school students to secure higher commitment. From a student perspective, many found the process rewarding. One volunteer described the collective process as a profoundly positive experience, stating that "a diverse group generates a wealth of information and myriad possibilities." The drive for social impact was also a powerful motivator, with one student's altruism "overshadowing personal inconvenience," and another expressing a strong desire to see their design prototype implemented.

Despite this positive reception, several critical limitations were identified. The small organization did not conduct formal evaluations, relying instead on informal discussions, which may have overlooked deeper issues. Students directly pointed to methodological weaknesses, with one volunteer expressing insecurity in the decision-making process, worrying that the short timeframe led to outcomes based on "biased or limited experiences." Another student observed a potential lack of diverse perspectives in the student-led design phase, suggesting that common terminology led to "confirmation bias and spatial stereotypes" and potentially generic, repetitive solutions across workshops. Finally, the project failed to clarify intellectual property, leaving a mature student to question authorship and whether they could use the process data for their own work—a significant oversight for an educational initiative.

Figure 2. Showcasing the type of co-creation output generated by volunteers.
(a) Student volunteers in co-creation;
(b) wood working for physical prototyping;
(c) a sample of their idea submission (including digital design, 3D modelling, posters);
(d) engaging local residents with their prototype.
Photographs post-processed with AI (midjourney) to protect informants' identity.

4 DISCUSSION

4.1 Aligning Stakeholder Perspectives for Ethical Participation

Ethical alignment is critical for sustainable co-creation. A successful process must ensure that students' pursuit of experiential learning does not lead to immaterial exploitation. This requires effort to harmonise the perspectives and expectations of stakeholders from the project's inception (Table 2).

Table 2. Aligning stakeholder perspectives.

Stakeholder	Perspective	Challenges
Organiser	→ Aims for transformative social change through active stakeholder engagement. → Seeks to empower students with practical, non-traditional learning. → Views students as active agents in design and community building. → Values ethical participation and respecting resident contributions. → Post-project evaluation shows positive outcomes: a desire to engage longer.	→ Faces significant time and resource constraints. → Struggles with balancing diverse stakeholder needs and sustaining initiatives. → Difficulties in providing longer-term support for social innovation.
Facilitator	→ Aims to bridge gaps between users, students, and architects. → Believes community-derived design goals ("cookies") are more critical than final prototypes. → Acknowledges that satisfying basic community needs can be more valuable than pure innovation. → Sees a need to continuously improve the co-creation process.	→ Student involvement is underutilized; they could be co-facilitators. → Lacks time for formal evaluation and reflection between projects. → Reports are often not publicly available, depending on the funder. → Similar outcomes (e.g., requests for green space) are common.
Student	→ Non-design students often find the experience highly rewarding. → Motivated by altruism and a desire to assist others.	→ Often underestimates the required effort and time commitment. → Academic workload and deadlines create overwhelming pressure. → Hierarchy creates pressure to participate, not voicing concerns. → Cultural backgrounds (e.g., mainland students) influence engagement style. → Many disengage quietly, leading to potential sampling bias in feedback.

4.2 Principles for Balancing Innovation and Ethics

To safeguard student volunteers while promoting innovative learning, co-creation programs should be built on a foundation of clear ethical principles for designing responsible educational experiences.

Interest alignment - individual interests in harmony with broader organisational objectives:
- Human-centric design - avoid assumptions and gaps in information by understanding students' expectations and needs before project inauguration to ensure the engagement design aligns with their interests and timetable, with reasonable workload. This can be done through co-creation, interview, or questionnaire.
- Prioritising educational objectives - Student volunteer experiences should mirror educational objectives akin to those in an academic setting:
- Volunteering as learning - it can be in the form of a summer internship experience with responsibilities, work hours, and rights clearly outlined.

- Integrated learning - Integrating engagement into the curriculum and making connections between concepts and experiences prevent students from doubling their time investment.
- Direct exchanges and student-led processes - While facilitators play a pivotal role in mediating communication, they should not hinder direct interaction between students and residents. Allowing students to lead and speak their mind at will fosters effective collaboration.

Social alignment - sharing a current reality based on common understanding of experiences:
- Equal distribution of responsibility and tasks between stakeholders. Genuine co-creation necessitates involving residents in the co-design and co-production process, rather than assigning these tasks solely to students, avoiding the exploitation of unpaid design labour.
- Mitigating hierarchical dynamics - creating means for student voices to be heard is vital, extending beyond optional questionnaires that generally result in low response rate or superficial feedback; while face-to-face discussions may reinforce hierarchy.
- Leveraging digital platforms where students can discuss anonymously may provide a more interactive and assuring means for expression.
- Including student representatives who can advocate and negotiate with teachers and organisers.
- Allowing ample time for reflection between projects is essential. It helps to prevent mechanical implementation of design activities and cookie-cutter adaptation of design thinking sprints with associated negative practices.
- Benchmarking and third-party consultation can help students to understand their rights and responsibility. Particularly in providing sufficient training, with knowledge and skills sharing to ensure they have something to take away from the process.

This is important also for nurturing a new generation of architects with awareness of ethical practices and safeguarding the welfare of their future students and interns (Figure 3).
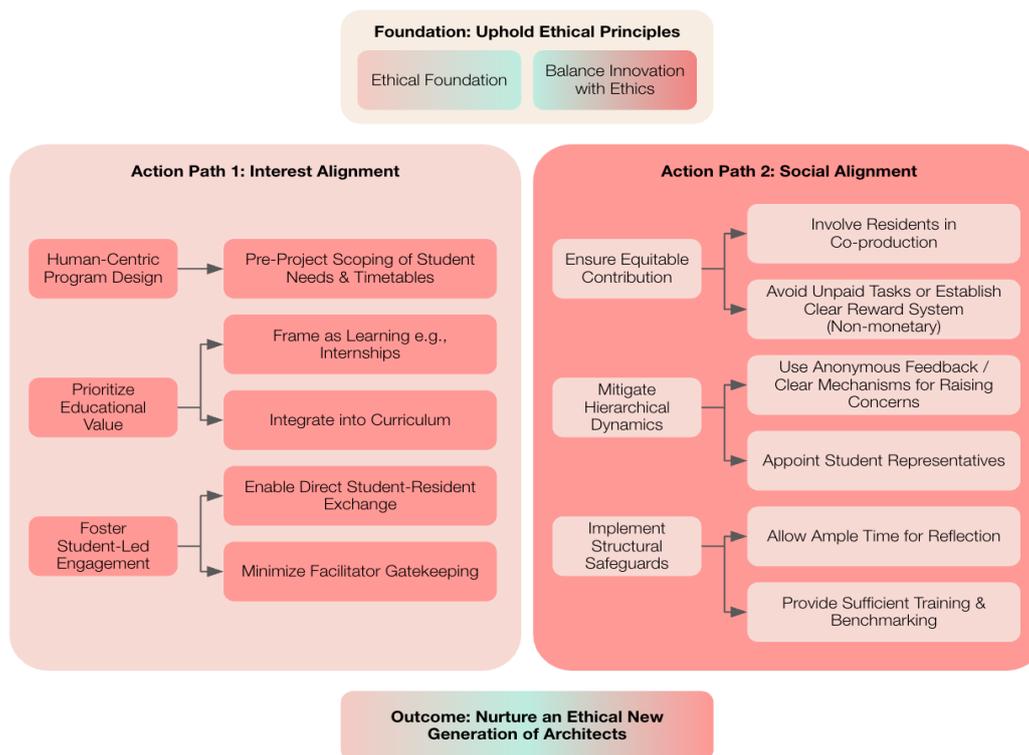

Figure 3. Ethical Action Path for Volunteer Design Work

5   CONCLUSION

This study preliminarily concludes that the integration of co-creation within architectural education presents a fundamental paradox, where the pedagogical value of experiential learning is intrinsically enmeshed with the dynamics of immaterial labour. The framing of student participation through the lens of informational and affective labour reveals a contentious grey area between skill acquisition and exploitative unpaid work. This tension is exacerbated by a regulatory vacuum and inherent power

imbalances, which collectively place the onus on the individual student to navigate ethical ambiguities, often without adequate formal guidance or protection.

The investigation thus underscores the necessity of recognising this dual character of student involvement to properly address its ethical complexities. This can be challenging under various hierarchical, cultural, and educational structures and traditions, where individuals are not used to speaking their minds in public. This highlights the importance of designing social measures, with the role of student volunteers being considered both as a service provider and a beneficiary:

- Establishing clear protocols on intangible objectives (learning theories, group dynamics, and collaborative intelligence) and voice-out mechanisms (both authorship and workload).
- Evaluation with periodic sampling and reflections. E.g. Combining interviews (formal / subjective) and behavioural mapping (informal / objective) to avoid confirmation bias.
- Multi objective analysis: Define beneficiary objectives for all participating stakeholder groups, ensuring that students and other volunteers' experiences are not overlooked.

Ultimately, navigating this paradox requires a deliberate and structured alignment of stakeholder interests. The research demonstrates that the sustainability of such initiatives depends on moving beyond aspirational goals to implement concrete principles that safeguard ethical participation. This entails both interest and social alignment. Future pathways must therefore formalise ethical training so volunteers understand their rights and where to draw the line, thereby ensuring the cultivation of future architects is conducted with integrity and a respect for the immaterial labour involved.

ACKNOWLEDGMENTS

REFERENCES

[1] Amorim, H. Theories of immaterial labour: a critical reflection based on Marx. *Work Organisation, Labour and Globalisation*, 2014, 8(1), 88–103.

[2] Bradley, S. and Mahmoud, I. H. Strategies for co-creation and co-governance in urban contexts: building trust in local communities with limited social structures. *Urban Science*, 2024, 8(1), 9.

[3] Braun, V. and Clarke, V. Using thematic analysis in psychology. *Qualitative Research in Psychology*, 2006, 3(2), 77–101.

[4] Chen, W., et al. Collaborative governance in pre-regeneration of public rental housing in Hong Kong from the boundary-work perspective. *Land Use Policy*, 2025, 159, 107819.

[5] Deamer, P. *Architect as Worker: Immaterial Labor, the Creative Class, and the Politics of Design*. Bloomsbury, 2015.

[6] Gill, R. and Pratt, A. In the social factory? Immaterial labour, precariousness and cultural work. *Theory, Culture & Society*, 2008, 25(7–8), 1–30.

[7] Griffiths, R. Knowledge production and the research–teaching nexus: the case of the built environment disciplines. *Studies in Higher Education*, 2004, 29(6), 709–726.

[8] Jian, I. Y., et al. Age-friendly spatial design for residential neighbourhoods in a compact city: participatory planning with older adults. *Habitat International*, 2025, 161, 103428.

[9] Lazzarato, M. Immaterial labor. In Virno, P. and Hardt, M. (eds.), *Radical Thought in Italy: A Potential Politics*, University of Minnesota Press, 1996, pp. 133–147.

[10] Millican, J. and Bourner, T. *Learning to Make a Difference: Student–Community Engagement and the Higher Education Curriculum*. National Institute of Adult Continuing Education, 2014.

[11] Pasin, B. Rethinking the design studio-centered architectural education: a case study at schools of architecture in Turkey. *The Design Journal*, 2017, 20(Sup1), S1270–S1284.

[12] Seo, B. K. Co-creation of knowledge in the urban planning context: the case of participatory planning for transitional social housing in Hong Kong. *Cities*, 2022, 122, 103518.