

ON 'STICKY' INTERIOR: AGGLUTINATING AS AN INTERPLAY STRATEGY FOR BUILDING ADAPTATION

Verarisa Anastasia Ujung¹
Alya Amany²

¹Architecture Study Programme
Institut Teknologi Sumatera
Indonesia

²Department of Architecture
Universitas Indonesia
Indonesia

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Abstract

This paper is an exploration into the idea of agglutinating as a building adaptation strategy. This paper examines agglutinating as a potential operation to address the interplay and affective relations between spatial elements, creating a 'sticky' interior which merges or combines these elements. The study in this paper addresses agglutination as the process of re-reading the site in evocative and productive ways, rediscovering the underlying architectural logic which generates new ideas. The study is based on a fourth-year interior architecture design studio project at the Universitas Indonesia, which focuses on various experiments in regard to the theme of adaptive reuse. The experimentation allows for a deep understanding of the agglutination operations and the resulting sticky interior, discovering the interplay between different layers of contexts, substances, contaminants, and temporalities. Through the agglutinating process, a series of affective qualities of the sticky interior are figured as a variety of adaptive operations: as zones of contact and encounter, as a channelling of bodily and spatial experiences, and as the interplay of preserved connection between objects, functions, as well as values. The glutinous capacity of spatial composition nurtures the project's dynamic through which playful and provocative design experimentations are performed.

Keywords: agglutinating, sticky interior, adaptive reuse, interplay, affective relations

Correspondence Address: Verarisa Anastasia Ujung, Architecture Study Programme, Faculty of Infrastructure and Regional Technology, Institut Teknologi Sumatera. Jl. Terusan Ryacudu, Way Huwi, Jati Agung, South Lampung, Lampung, Indonesia. Email: verarisa.ujung@ar.itera.ac.id

Introduction

This paper considers agglutination as an interior adaptability strategy, responding towards situations, circumstances, and experimentation. The term adaptability refers to the process, capacity, and quality of being able to adjust to new situations and to be modified for a new use or purpose. The discourse of adaptability in the architectural realm has been well written about by scholars under the term *adaptive reuse* (Brooker & Stone, 2004). Such a term includes the process of altering a building which may consist of the act of remodelling, retrofitting, rehabilitation, and restoration (Scott, 2008). Adaptive reuse is a strategic approach to altering an existing building or a host place (Brooker & Stone, 2004), viewing the building "as a rich container of successive layers of materials, history, and narratives" (Plevoets & Cleempoel, 2019, p. 28). In doing so, the idea of adaptive reuse acknowledges the multiplicity of pasts, identities, and futures of the building (Berger, 2018).

Throughout the development of the adaptive reuse approach, the interplay between the existing contexts, objects, and narrative (Brooker & Stone, 2009) has remained crucial. Atmodiwirjo and Yatmo (2022) refer to this as a 'responsive interior' that "highlights the ability to respond appropriately to a particular context through various tactics to ensure its relevance and resilience for the present and future" (p. 134). Within the act of appropriation, the relationship between the old and the new is celebrated as a creative intervention that forces a critical interplay of 'recontextualisation' (Berger, 2018). By responding and negotiating the context, the adaptability process then addresses the interweaving of various layers of historical narratives that are unified. This study attempts to retrace the 'layers' of a context and rethinks how the dynamics of the layers can be explored as an interplay. This interplay resembles the layered surfaces, inviting the viewers to explore it as a journey, unraveling its different dimensionalities, and exploring both its entirety and its individual components, the part and whole relationships. This paper addresses the interplay of operations, instruments, and relations that occurred as the dialectics between old and new, in and out, activity and inactivity, and now and the future, not as opposition, but as an interplay to activate the interior.

The agglutination process refers to the reaction or situation in which particles and components firmly stick or are stuck together to form a mass. The agglutination reflects transactional moments to "preserve the connection between" site, interior, and experience (Ahmed, 2010, p. 29). Transactional moments between object, interior, and experience demonstrate the embodied situations, where the interior exists as the background and foreground in which humans are embodied (given body in, given life in) and in which they are embedded (given shape and space). This study explores the operation of agglutination and its components as important moderators in the process of spatial re-appropriation and the creation of such embodied situations. The act of re-building, reuse, and

re-conversion shifts from the existing building to the process of agglutinating that precedes it. This study further asks what role the agglutinating process can play in the future reuse of buildings; when the agglutinating operation becomes a tool through which the sticky interior is created.

The agglutinating process and the sticky interior

In biological terms, *agglutination* means the process in which two separate particles suspended in a liquid collect into clumps (Merriam-Webster, n.d.). Through the lens of spatial appropriation or adaptive reuse, agglutination can be defined as the process that takes place when new elements interact with and integrate into the existing structure of a building. As a form of adaptive design, agglutination is a process of adding or modifying new elements alongside the existing space.

The new elements in the process of agglutination demonstrate the existence of contamination, which was attributed to the remodelling process in which the history or narrative is 'contaminated' by a previous use that is disagreeable or objectionable (Brooker, 2006). The contamination is seemingly conflicted with the act of adaptability, as processes associated with disruption compromise the material matter of adaptive reuse. Yet, these operations of contamination provoke an alternative interplay or attachment, one that opposes the pursuits of intention but secures an embodiment of new material value and redirection of the past to the present. This paper explores further the potential reintroduction of contaminating material as the new elements that become the basis of adaptive reuse.

The agglutination of new elements implies the production of an 'affect' (Gregg & Seigworth, 2010; Kidd-Nakai, 2015; Massumi, 2002) which refers to the creation and maintenance of emotional and pre-emotional responses within interior spaces as Kidd and Smitheram (2016) stated that "in interior discourse the relationship between the physical and pre-emotive is indicated with various terms (such as affect) and the design process of achieving appropriateness in objects and affect can be termed stickiness" (p. 112). In this way, agglutination and stickiness have a similar meaning in interplay or attachment through which the sticky connections are being agglutinated or preserved between the old and new, the contamination and its container. These sticky connections provoke a zone of contact and encounter that reveals the layers of the past that are otherwise hidden or contaminated, representing temporal and affective relations.

This paper acknowledges the consideration of the affective relations in the agglutinating process as two potentials: as a concrete reality and as an atmospheric quality (Zumthor, 2006). As stated by McCarthy (2005), atmosphere refers to the sense of interior agency, an ambience, some kind of "sensuous emission of sound, light, heat, smell, and moisture; a swirling climate of intangible effects generated by a stationary object" (Wigley, 1998, as cited in McCarthy, 2005, p. 122) that "foster ephemeral and affective conditions" (Kidd & Smitheram, 2014, p. 84). These affective relations provide multiple and simultaneous

development and change, of becoming, from which certain recognisable patterns will be materialised. These patterns signify spatial consciousness and bodily occupation (Kidd & Smitheram, 2014). Through these patterns, the materialised reality such as emerging spatial elements and objects is in a constant process of redefining themselves and sticking to each other. By allowing sticky forms of attachment between bodies and spatial elements or objects, the agglutinating operations promote the production of affective relations amidst the reinforced patterns.

This paper traces the agglutinating operations as a continual process of creating and conditioning the ephemeral stickiness of spatial elements and objects driven by layers of contamination. Through the design studio project elaborated in the next section, this paper explores how this sticky process generates the conditions of habitability and shapes the inhabited environment, expanding the adaptive reuse design method.

Learning the agglutination process: A studio design project

This paper explores agglutination as an adaptive reuse strategy as part of the fourth-year interior architecture design studio at Universitas Indonesia. The design project discussed in this paper is part of the Interior Adaptability Design Unit conducted in 2021. *Interior adaptability* as the key theme dwells on interiority and interiors that are bound to the situations, circumstances, and experimentation, assuming specific design qualities to be transformable and adaptable.



A heritage structure from the Dutch colonial era, Roemah Langko has been restored. Originally constructed as a dancing hall in the 1920s.

The restoration process took place in 2011 and undertaken by Popo Danes Architects, entailed rebuilding the structure using materials and techniques from the early 20th century.

A portion of the windows and doors were able to be preserved, but the ceramic floor tiles were replicated exactly as they had been.

Situated on Jalan Raya Langko, Mataram City, Lombok, Roemah Langko has recently transformed into a restaurant, emphasising its iconic legacy as a well-known local landmark.

Figure 1. Short overview of Roemah Langko's past and current circumstances as the intervention location (Photographs by Popo Danes Architect)

The project discussed in this paper utilises Roemah Langko in Lombok, Indonesia as an existing context through which a process of agglutination can be playfully exercised in the design project. The building was a heritage building which was previously used as a dancing hall and then transformed by Popo Danes Architect into a restaurant in 2018 (Figure 1). The architect made sure to keep the existing building's doors and windows intact to pay homage to the building's inherent Art Deco appeal. This study aims to re-trace the layers of the Roemah Langko context, analysing the surface and materiality;

driving the inquiry and conception of interior architecture through the operation of agglutination.

This paper focuses on elaborating on a particular design project of Alya Amany, who developed and applied agglutinating operations through two crucial phases. The first phase explores the material experimental process that will become the basis of agglutinating operations as an interplay of appropriation strategy. As its contaminating elements, the project investigates and experiments with tempeh, a traditional fermented food that will be used as the basis of producing the contamination layer of agglutination. The intention was that the student would understand the nature of the agglutination process through interactions between components and how these interactions are capable of creating sticky relations in a spatial context.

The next phase attempts to use these sticky relations to create concrete reality and atmospheric quality based on the reimagination of the context. The use of such playful processes disrupts a priori understanding of the interior space, building upon the constituent relationships between objects, surfaces, subjects, and contexts to generate a series of spatial gestures, events, and situations. The agglutinating process is deployed to allow experimentation through the use of sticky operations, opening up new territories of spatial and material invention with rich and variegated detail.

Experimental process: Agglutinating operations and layers of stickiness

The creative intervention on this studio project began by exploring tempeh, a food ingredient made from fermented legumes, recontextualising and appropriating soybean using the *Rhizopus oligosporus* fungus which agglutinates the bean altogether, changing it into a more digestible form and enhancing nutritional value. The value of tempeh as a fermented dish aligns with Berger's (2018) narrative which highlights the creative interaction between the old and the new, emphasising 'recontextualisation.' The agglutinated soybeans develop into grains and then grow into a larger and more robust structure.

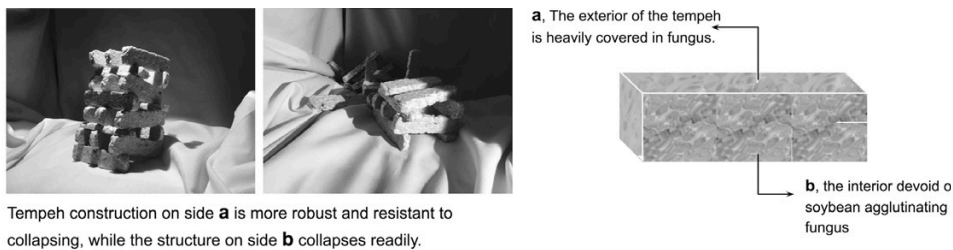
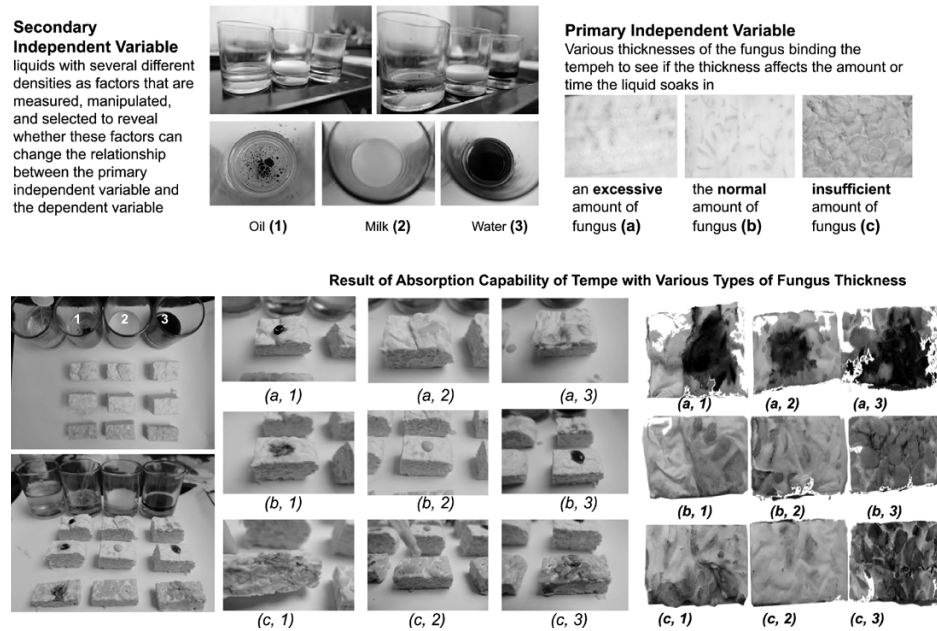


Figure 2. Initial experimentation on structural layers assembly from two distinct varieties of tempeh segments (Image by authors)

The initial experiments began by cutting tempeh and dividing it into two structures. Each consists of two distinct sections of tempeh, as depicted in the image below (Figure 2). Such acts of slicing demonstrated that the quantity of fungus agglutinating the soybeans in tempeh impacts the tempeh's strength. The weakening of the tempeh structure is caused by insufficient density in the binding space among the soybeans. The study

highlights how the insufficient density of tempeh is reflected in its interior, which is often devoid of the agglutinating fungus of the soybean.

The experiment was followed by assessing the absorption capacity of various tempeh surfaces. This experiment aimed to demonstrate the correlation between the density of fungus in tempeh and its absorption, which in turn drives the robustness of the tempeh structure. Figure 3 demonstrates a set of tempeh studies, which investigate how the thickness of the fungus impacts liquid absorption.



The experiment demonstrated that an excess of fungus does not enhance the tempeh's structure or make it resistant to absorption. On the contrary, excessive fungus can act as a medium for absorbing liquid which penetrates the gaps between soybeans and alters the tempeh's structure. In some cases (c, 1; c, 2; c, 3), water can penetrate the soybeans more easily due to the lack of fungi that bind the soybeans together (Figure 3). Only some tempeh with different binding sizes (b, 1; b, 2; b, 3) exhibit limited liquid absorption where the soybeans sufficiently agglutinate and fill the gaps, preventing liquid penetration.

The study explores how agglutinating operations within tempeh might be used as the basis of design methods for the adaptive reuse of existing buildings. The symbiotic bond found in the tempeh experiment suggests the significant value of balance between layers of stickiness. The study reflects how such layers of stickiness can be applied as spatial appropriation, creating a balanced interplay between the future and the past. Careful consideration is needed to avoid diminishing the historical significance of existing buildings or losing sight of future potential. The study further discusses the development of design through the agglutination process, which emerges as a tool to "preserve the connection between" the site, interior, and experience (Ahmed, 2010, p. 29).

Figure 3. Experimentation on tempeh to determine the impact of fungus quantity on its structural integrity (Image by authors)

Design process: Agglutinating operations as an interplay of materialities and affective relations

The design process commences by examining the current Roemah Langko to understand its interior characteristics and experience and to ensure the connection to the history of Roemah Langko is maintained. The current structure and all of its components hint at the past of Roemah Langko, indicating the need for its preservation. The study follows by exploring the interior shape generated from the process of agglutination. Figure 4 depicts the explored form comprising of pipe and cable, used as a metaphor to describe the agglutination of the interior to its context, creating a sticky effect. The arrangements of "pipes and cables" (Thrift, 2004, p. 58) aim to explore the connection between physicality, emotions, movement, and how specific things naturally draw in or push away these emotional states. In crafting a sticky interior for this project, pipes and cables will be reimagined as a means for spatial appropriation, involving the adaptation of agglutination to interior elements, specifically in the form of pipes with a certain curve level.

The interweave of pipes and cables manifests as the design language in the project, developing the interiority of Roemah Langko. Such an interior will be used programmatically as a restaurant, in continuation with its existing use, however, agglutination operations necessitate exploration of different placement points within the existing structures. A series of related objects on ceilings and walls, as well as interior elements that contribute to the functionality of Roemah Langko, are strategically placed to preserve the spatial integrity and historical significance of the structure.

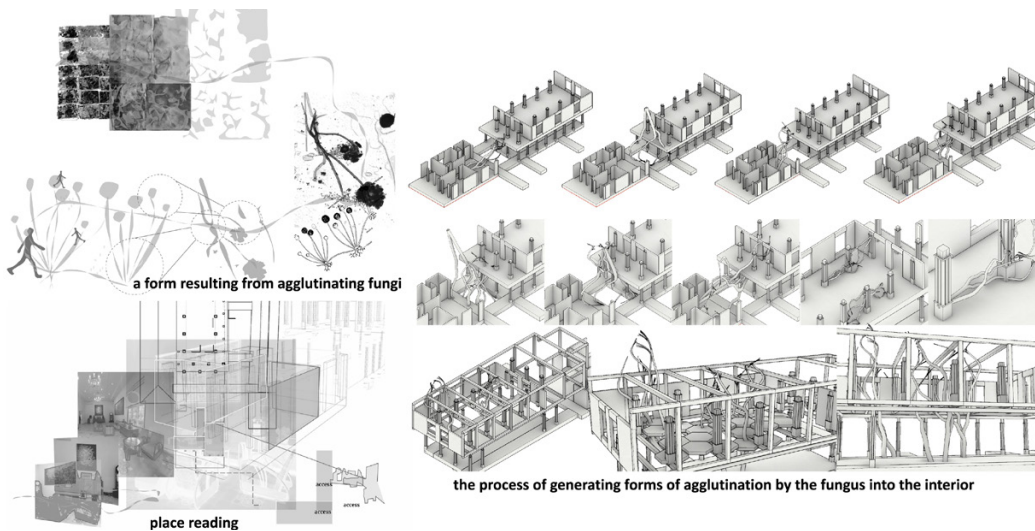


Figure 4. Exploration of sticky forms generated by fungi and integrated into interior settings (Image by authors)

The design process follows by establishing boundaries based on spatial needs. The suitable material is analysed to accurately accommodate user requirements. Various materials such as tubing and expanded metal are utilised in this project to bring the connection to the existing. The pipe reflects the process of combining elements, while expanded metal generates a variety

of gaps, leading to various atmospheric properties such as user comfort, closeness, and visual connection (Figure 5).

This project explores how materially and spatially the elements enable practical use and also connection with individual users. This connection gives rise to ephemeral, emotional states that question ambiguous distinctions between subjective and objective viewpoints (Böhme, 1993, as cited in Kidd & Smitheram, 2014). Figure 6 displays several exploration examinations on structures formed by pipes and cables designed to accommodate humans in space, focusing on materials and depicting atmospheric possibility. Contaminating containers by agglutinating various types of pipes and cables creates interaction between the old and the new.

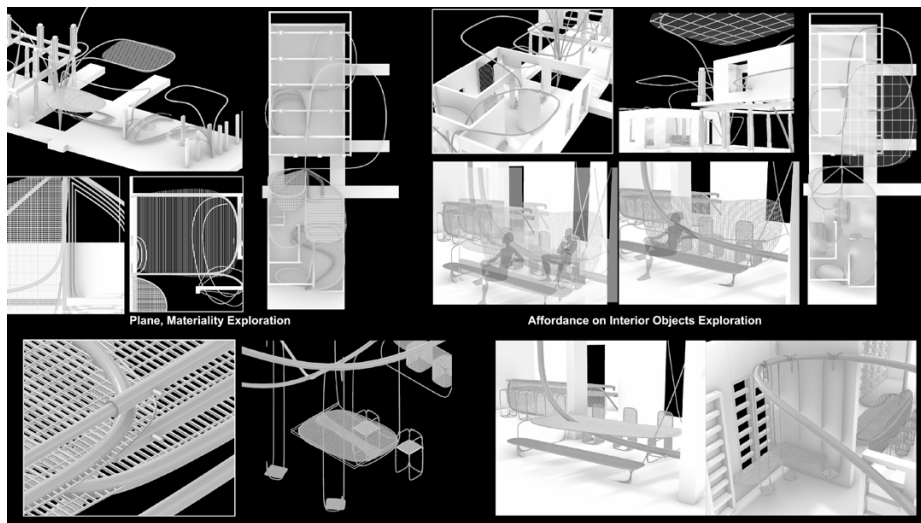


Figure 5. Exploration of pipe objects and materials as forms of the sticky interior (Image by authors)

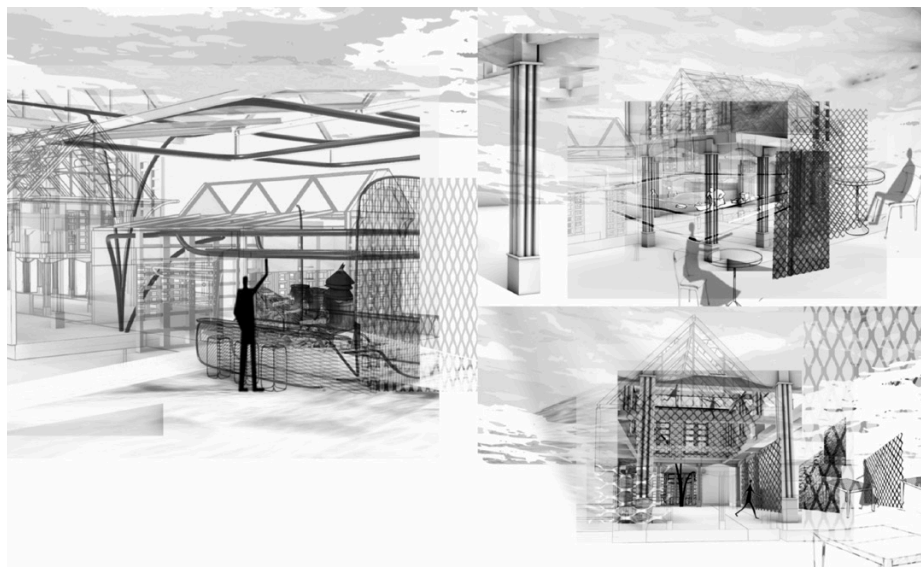


Figure 6. Illustration of the ambience resulting from the composition of elements, including texture, colour, and tectonics (Image by authors)

The interactions between objects and humans called affective responses are shaped by the synergy of materials that constitute the atmosphere (Figure 7). The repercussions of Roemah Langko's transformation are an interior area that holds a complex and layered history. The building's new usage integrates its past into a restored environment, providing a

distinctive experience not available in contemporary buildings. Once the structure is constructed, the design of the space must be further designed to improve the building's livability and ensure that the users can interact effectively within the space to realise the interplay between object and subject.

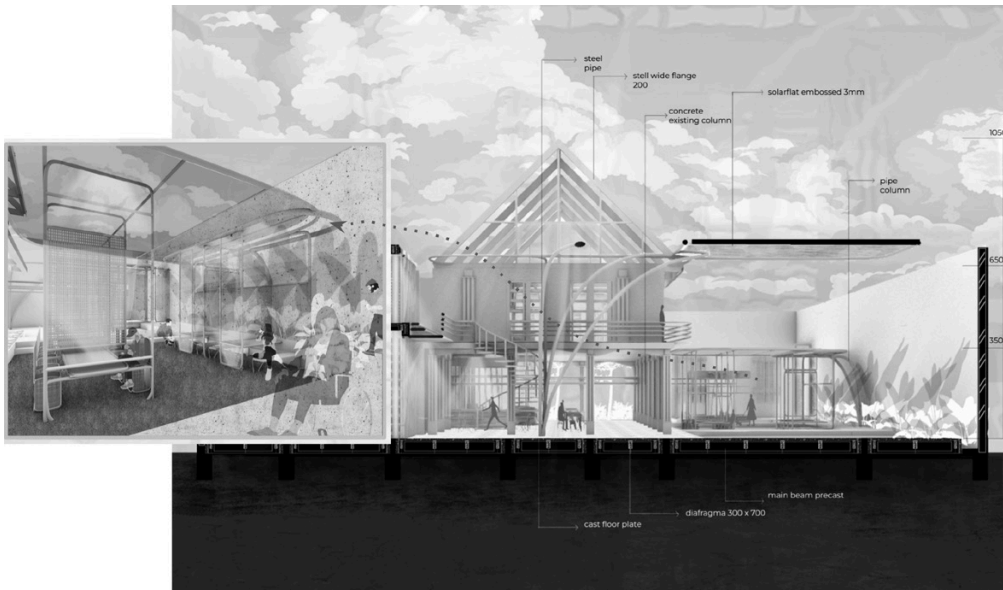


Figure 7. Affective interaction between human and interior spaces (Image by authors)

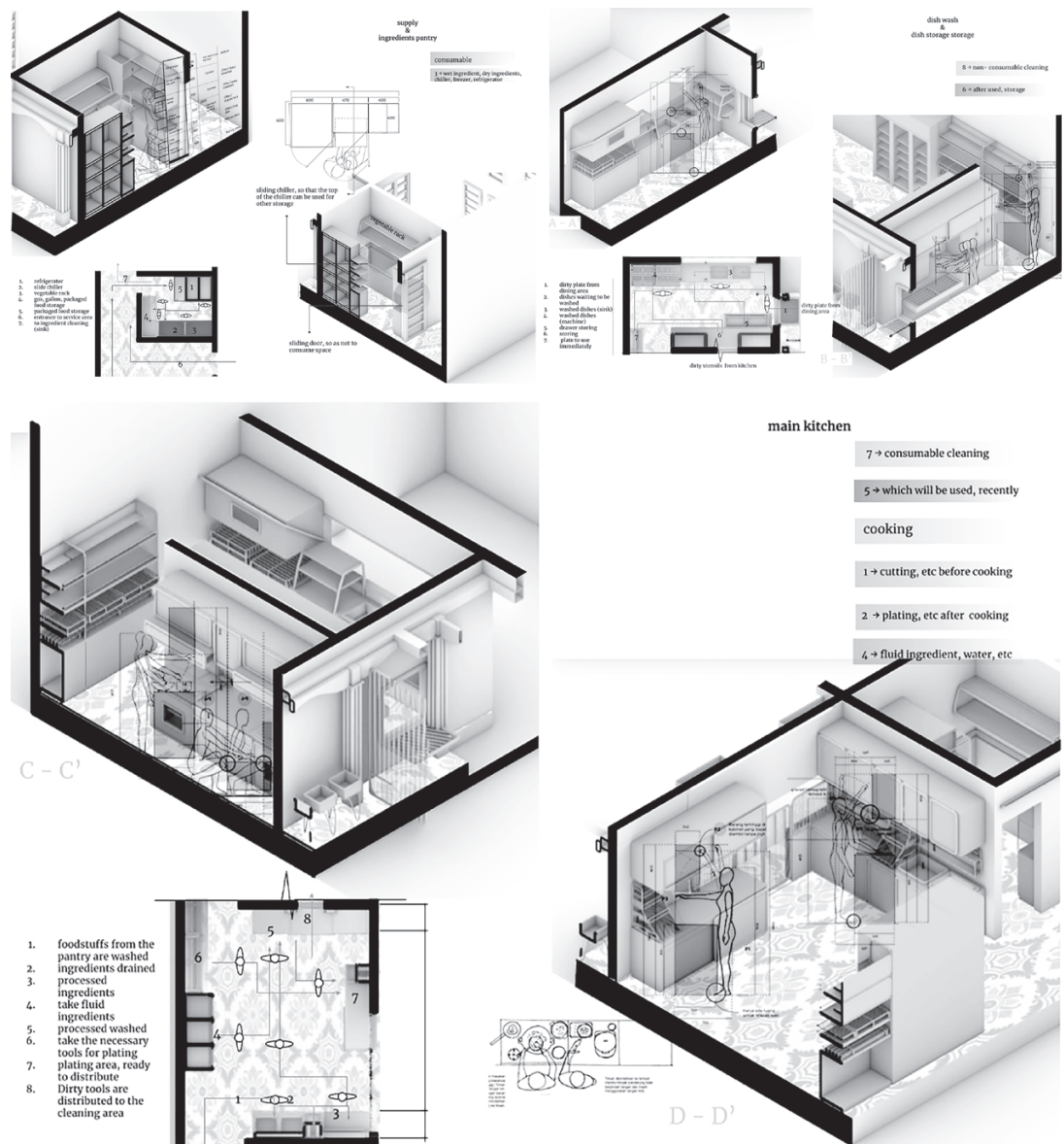
In her preface to Spinoza's philosophy, de Vega (2010) recognises the greater structural complexity of the body and conceives its potential beyond the purely mechanistic principles of motion. Massumi (2002) also stated that each transition of the body is "accompanied by a variation in capacity: a change in which powers to affect and be affected" (Massumi, 2002, p. 15). These conditions signify each object and the relation between objects, working in a whole system of practical needs and atmospherical values. Figure 8 demonstrates the habitability of bodies and relations between objects engaged by the anthropomorphic body in the adapted kitchen of Roemah Lengko

The relationship between the human body and the atmospheric value of spatial objects is crucial, signified by Baudrillard (1996) that

...the human body: the object in this view is essentially anthropomorphic, Man is thus bound to the objects around him by the same visceral intimacy, *mutatis mutandis*, that binds him to the organs of his own body, and 'ownership' of the object always tends virtually towards the appropriation of its substance by oral annexation and 'assimilation.' (p. 28)

The functional and technical development of spatial objects addresses such concerns on how these practical objects are experienced daily in dynamics, creating possibilities for the adjustments for table height, countertop depth, equipment placement, and mobility space. Such consideration demonstrates the stickiness of the object, materials, and spatial forms in shaping an adaptive design. This interplay suggests the body performs as an extension of the sticky interior and the sticky

interior as an extension of the body's action. The ergonomics of body movement and action are traced and celebrated as part and whole systems in the design to create conditions of habitability.



Conclusion

This study discusses the agglutinating operations as an interplay strategy for adaptive reuse of existing buildings. Through the idea of agglutination, this project reveals the different layers that create an explicit dialogue between past and present, now and the future, old and new, material and immaterial to activate the interior. This study theoretically explores the operation of agglutination and its application in design through the studio design work of fourth-year students in the Department of Architecture, Universitas Indonesia. Drawing upon the experimentation process of agglutination as a strategy to reveal the layers of stickiness, this paper acknowledges the coherent interplay in the process of building adaptation in generating spatial formations and explorations. The following

Figure 8. Consideration of the human body, objects, and relation of objects as a crucial aspect in the kitchen layout (Image by authors)

section offers some critical reflections that can be drawn out on the exploration of the sticky interior and the process of agglutination as an interplay strategy of building adaptation.

Firstly, the paper has attempted to develop an alternative process of re-reading the existing spatial and material context as an evocative and productive act, where a rediscovered understanding of an underlying architectural logic generates new ideas. The tempeh experimentation demonstrates an engagement between components and the contamination that establishes layers of stickiness. The agglutinating pattern, density, porosity, and integrity of soybean in tempeh reflect a deep understanding of the agglutination operations and the sticky interior it created, enabling the discovery of interplay between different layers of contexts, substances, contaminants, and temporalities. This study proposes that the agglutinating operations can further contribute to the exploration of affective relations within interior architectural discourse. The interplay of affective relations engages openly with the shape or form of agglutination, channelling the bodily experiences.

Secondly, throughout the project, the spatial form, objects, and materials are used as a medium for consolidating the notion of adaptability. Through the agglutinating process, a series of affective qualities of the sticky interior are figured in a variety of adaptive operations: as zones of contact and encounter, as a channelling of bodily and spatial experiences, as the interplay of connection between objects, functions, and values. The glutinous capacity of pipes and cables composition also nurtures the project to become a dynamic process through which playful and provocative design experimentations are performed, leading to an array of experiences and interplay of forces.

This paper contributes to extending the spectrum of adaptive reuse design methods in interior architecture; particularly in the methodological, pedagogical, and theoretical considerations of the agglutination process. The agglutination processes play a significant role in the in-depth study of interior architecture that celebrates the combination of the new and old elements, driving sticky entanglements of substances and experiences within the act of adapting to the existing environment.

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