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GOING MINIMAL: AN EXPLORATION OF REDUCTION AS A DESIGN METHOD

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Abstract

The purpose of this paper is to reflectively explore minimalist architecture as an architecture that is driven by the reduction-based design method. The discussion aims to reframe the design processes and methods of minimalist architecture as informed by field observation. The phenomenon of applying a minimalist architectural approach has become a trend in small-scale housing in Indonesia lately. In the country, the small-scale residential design processes take place in different contexts and are faced with various limitations, from resources, budgets, land size, materials, and so on. The study will frame this discussion around exploring the reductive design method as a way of responding to these limitations. Informed by design strategies from the modern architecture movement, the study was conducted by observing reduction strategies in eight small-scale domestic design which was published and well-narrated in various media. The study findings demonstrate that the reduction does not only exist in the visual aspect of the design and construction process. It also exist in numerous other design elements, such as materials, forms, spaces, and ornamentation, as a strategic response towards the limitations of various resources.

Keywords: *reductive, minimalist, design approach, housing design, Indonesian architecture*

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Introduction

Modernity in architecture significantly influences the development of design across contexts. The modern movement covers a broad spectrum, including design knowledge and cycles related to the evolving social, cultural, and economic aspects (Ali, 2018). Modern architecture must display an honest, original quality of itself, where the ornaments will never be forced or feel contrived, not pursuing appearance and more pursuing functionality (Lescaze, 1937; Mallgrave, 2005). In modern architecture, honesty is not only an effort to achieve beauty, but it also refer to the effective and efficient design and construction process as a response to industrialisation and economic conditions (Larson, 1993). The application of this method to buildings within the society often focuses on pursuing simplicity and affordability while leaving the rest remains to be seen (Jordy, 1965). The culmination of the modern movement was the search for a universal language of architectural design with the idea of minimalism, which is the climax of modern art and architecture before moving on to postmodern architecture (Foster, 1996; Krauss, 1985).

The minimalist architectural trend has started in Indonesia in the early 2000s (Lukito & Handoko, 2018). Minimalist architecture is translated as a building with simple geometry, dominant white colour, minimal spatial arrangement of partitions, basic/raw materials, and the dominance of elements such as steel, concrete, and glass (Lukito & Handoko, 2018). The application of the above strategy in residential design is growing quite rapidly in small-medium scale residential homes in Indonesia (Wahjutami, 2017). In the context of small and medium-sized houses, the design strategy brings the discourse on the application of modern and minimalist architecture to various design inquiries. Is the application of these design approaches and methods just for the sake of appearance? Do minimal and reductive paradigms in design contribute to broader things, such as understanding space, strategy for managing resource constraints, and so on? The significance of the discussion developed from this article seeks to explore the thoughts and methods of reductionism as the basis of architectural design, especially in residential design in Indonesia. Observation of an evolving habituation pattern can present a new idea, beauty, and life system (Reisner, 2019), thus further expanding the understanding on how modernity translates in Indonesian architecture.

Modernity and reduction as design method

Minimal architecture cannot be separated from the modern architectural movement. Since 1960, minimalism has become commonplace in art, architecture, and lifestyle (Elangovan & Madhumathi, 2021). Visual arts and architecture categorise modernism as object-based art (Macarthur, 2002). The modern architectural movement was influenced by many things, including the De Stijl school of art from the Bauhaus school of art (Elangovan & Madhumathi, 2021). The modern movement in design aimed to make architecture something

universal. Ornament, which had been 'detached' from the 'base' of purely geometric structures by classical eclecticism, was reduced in the name of simplicity, industrialised building coverings, and economic effectiveness (Graafland, 1996). For design rationalisation, many people see modern architecture as something pure, free from excessive ornamentation, with emphasis on function and buildability, and focus on the accuracy of economic solutions that represent practical values in design (Gropius, 1965). The development of this discourse is that architecture emerges as more than just based on its economic function and strategy, but as a focus of thought on spatial vision and mastery of spatial design (Gropius, 1965).

The idea of modern architecture, and among them the international style developed rapidly since World War II, driven by the destruction and the need for rebuilding (Frampton, 1980). This condition is also supported by the industry's growth, which enabled production of materials on a large scale and in a systematic way, which architects then use as the basis for designing buildings. The transformation of the production cycle and material distribution brought changes to modern industry (Lescaze, 1937). The development of industrial materials brought new meaning to architectural design, new structural ideas, open free space, and freedom of walls as the main load-bearing. Architecture became free and flexible (Lescaze, 1937). Modern architects at that time had the motto of simplicity, economic efficiency of time, and quality; with all efforts to reduce ornaments, decorations, sloping roofs, and other additional elements (Lescaze, 1937).

Rationality, standardisation, and functionality are the most common characteristics of modern architecture (Ali, 2018). Fabricated materials are superior to natural materials because of their accuracy and modularity (Frampton, 1980; Gropius, 1965). Standardisation is the impact of manual and mechanical collaborative work processes related to industrialisation, making designs very systematic and having implications for cost savings (Gropius, 1965). The connection between rationalisation and standardisation increases the efficiency and effectiveness of financing and resource management and improves the quality of the function of a dwelling (Ali, 2018).

We may identify how minimal building design resulting from the above simplification leads to reduction efforts based on several characteristics (Jordy, 1965; Yossef, 2014). The physical object of architecture is simplified due to the reduction of ornamentation to achieve its essential value (Ruby & Ursprung, 2003). Neutral colours and exposed materials emphasise the industrial processes behind them (Pawson, 2005). Opening to outdoor space and lighting become dominant (Bertoni, 2002). Simple geometric shapes are used as neutral shapes. The mixture of boundaries and separators in space becomes a feature that shows the effect of regulating the inner space (Obendorf, 2009; Vasilski, 2012). In general, the characteristics of this reductive architecture focus on simple forms without ornamentation, open interior spaces, and the use of industrial materials that are

widely exposed (Hitchcock, 1932). The compilation of reduction aspects can be seen in Figure 1.

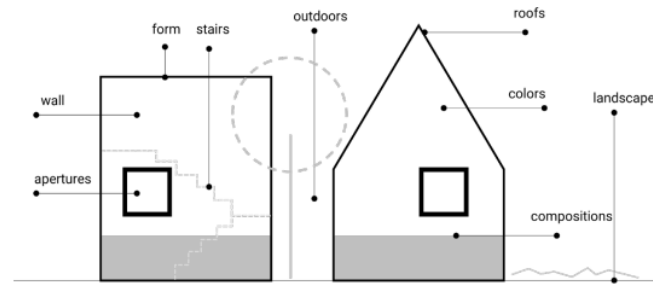


Figure 1. Visual typology of minimalist architecture

Minimal architecture glorifies simplification and reduction of design elements to their most essential values (Cuito, 2002). As part of the modern movement, minimalist architecture perceives architecture as something universal, can be implemented globally anywhere (Ibelings, 1998). However, the role of culture and locality can define the unique character of each region (Dragana, 2012; Elangovan & Madhumathi, 2021; Nikolic & Vasilski, 2017; VanEenoo, 2011). Cities in Indonesia have a particular character of user, material industry, resources, location, and climate. Understanding the principles of modernity and reduction in design, of course, will bring significance to a more in-depth discussion contextually. The discourse in this article explores the possibility of developing insight and knowledge from implementing the reduction paradigm in modern Indonesian architecture. The reflection of design documentation can develop a close relationship between the designer and his circumstances or environment so that the future creations can be better (Schön, 1983).

Observation: Reductive strategy of recent Indonesian small houses

The article explores case studies of Indonesia's small-scale dwelling projects that were documented in the media with good narratives. The project should have been designed and built for around five years. I interviewed the architect directly, and further observations were made employing the literature study approach, ensuring the relevance of the chosen works towards the exploration of reductionism.

Reductions related to design and construction processes and management

The first strategy can be seen in the project designed by SPOA. SPOA is an architectural bureau owned by Rahmat Indrani that particularly focuses on reduction as part of its design strategy. Redu House is a manifestation of the bureau's reduction thinking. The project seeks to implement the reduction of architectural elements holistically, by covering the dimensions of space, material variations to design and construction management. Indrani revealed during the interview that the material's

simplicity speeds up the overall design process (Redyantanu, 2021). Because there are not many layers of material in the design drawing software, managing drawing documents becomes easier. The building process is scalable and easily organised through construction worker management. Such simplicity creates time reduction which then had a knock-on effect on cost savings, resulting in meagre construction costs (Agustriana, 2019). An illustration of the process of reduction strategy in terms of design and construction management can be seen in the diagram in Figure 2.



Within this reduction strategy limitation of unnecessary wall partitions, excessive ornamental decorations, and material schemes as much as possible generates simpler construction drawings as well as a more straightforward design process. With a precise and planned working process due to the simplicity of the design drawings, the organisation of construction workers for the construction phase tends to be more manageable, reducing the overall complexities of design and construction.

Figure 2. Reduction in design and construction (Source: Modification of SPOA's images)

Reduction of activity space and building form

A second strategy is an approach demonstrated by DFORM, which is an architectural bureau owned by Mande Austriono. The architect's private residence, named MO House, was designed with the principle of simplicity ("MO House," 2018). The architect created the programming and the building form of the design with simplicity in mind. With basic shapes, this structure aims to capture the essence of space: materials, details, lighting, and user conditions. The absence of a partition to provide privacy is represented in the essential space, only achieved by utilising the building elevation. Simplicity represents the married couple's lifestyle as inhabitants, as well as their everyday existence. The structure prepares the existing land in the back area for future growth if the home has to be enlarged without causing harm to the central system. In the interview session, Austriono said that placing the house on the front side and the remaining land

on the backside would make it easier when one day the house needs to be further developed, supported by the simplicity of the circulation that occurs in it (Redyantanu, 2020). The house he dreams of is a house with a simple roof that blends with the facade of the building. Diagram in Figure 3 summarises the form and space reduction strategy.

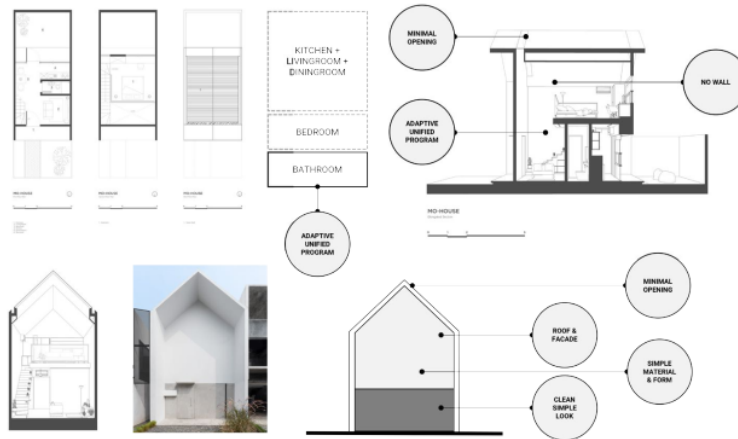


Figure 3. Reduction in form and space (Source: Modification of DFORM's images)

Another case of reduction of form and space can be seen from the work DUA STUDIO, an architecture bureau run by Dimas Satria dan Andy Hartono, in their work entitled 4x6x6 House. The project is a residence designed with the simplicity of the program and the shape of the house (4x6x6 House, n.d.). The concept is similar to the previous MO House, although this house demonstrates more flexibility with variations in room elevation. The activities are separated into three levels, each defined on a non-standard basis. As a method for achieving adaptable, flexible, and cost-effective spaces, space is arranged with the elimination of partition walls, in addition to the execution of the simplicity of construction materials and shapes. The diagram in Figure 4 shows how the form and space reduction method is implemented.

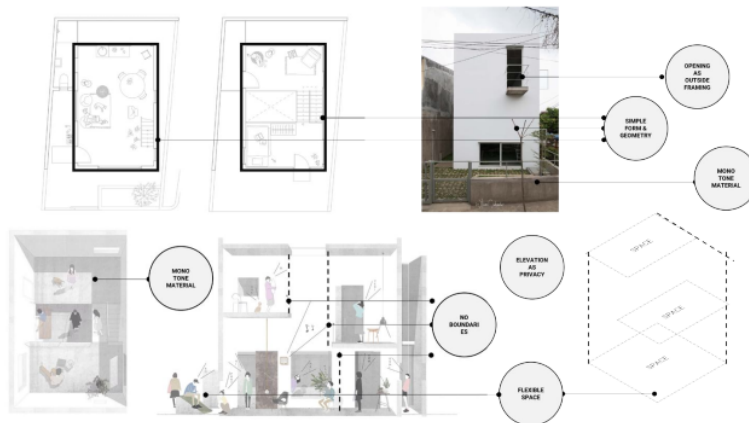


Figure 4. Reduction in form and space (Source: Modification of DUASTUDIO's images)

Another unique case study can be seen in C- House, which is the work by ARA STUDIO. C- House demonstrates an exploration of the shape of the space by reducing the partition of the roof and the building facades ("C- House," 2018). Buildings are generally designed with a composition that differentiates between the roof, the facade, and the body of the building. However, the reduction effort in the design of this house can be seen in the roof shape that drives the space configuration in the upper room, as well as its material that determines the overall facade. This strategy is done to save the development cost. The roof is connected to the second floor, allowing natural light and ventilation to pass through the gaps between the roof planes. The strategy of form and space reduction technique in C- House is depicted in the diagram in Figure 5.



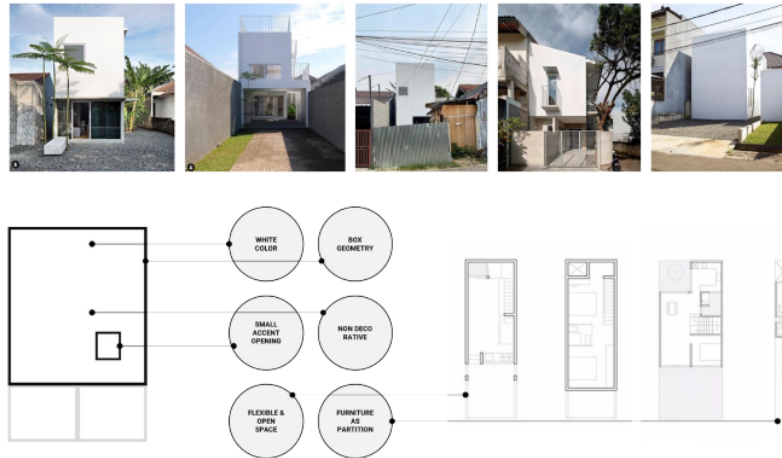
Figure 5. Reduction in form and space
(Source: Modification of ARASTUDIO's images)

In this strategy, the amount of space needed is reduced by combining multiple activity programs with similar characteristics. The common spaces of the living room, kitchen, living area, and dining room are all integrated into a single area. The main goals of this unification are spatial flexibility and adaptability. With unified space and minimum partition, the limited land area does not appear to be a small space but instead creates a more spacious experience. Elimination of roof shape that is joined to the facade plane and the overall building mass create a basic geometry that demonstrates the simplicity of the shape that is intertwined with the simplicity of the spatial organisation inside it.

Reduction of colour and material variations, as well as decorative elements

This reduction strategy is present in Sontang Siregar's work, H House. Siregar is an Indonesian architect who specialises in small-to-medium-scale residential projects. His work is continuously formed from plain white square geometry, with limited materials like exposed paint and cement. This design is done to conserve budgets as well as create the illusion of more space on land that is often tiny and narrow ("Dinding sekaligus

lemari," 2017)). Creating unified spaces, employing furniture as room separators, and establishing a relatively low height according to the multiples of modular materials are some of the methods he employs. His work appears identical because of the limited resource, yet the diversity of context is reflected in the layout arrangement, which accommodates varied constrained circumstances on site. The diagram in Figure 6 shows examples of material reduction methods and ornamental details within Sontang's work.



FFFAARRR's work is another example of reduction strategy by eliminating material differences and decreasing ornamental features, as can be seen in their shared residential house project titled Bauen Haus. This boarding house is designed with not too many material variations, dominated mainly by exposed brick and cement on the inside. The dominance of the bricks aims to create light and air conditioning with each brick arrangement placed apart from one another (Bauen Haus, n.d.). The use of raw materials orients toward simplicity of maintenance, which is highly relevant to the boarding house building's purpose. Minimalist architecture does not have to be dominated by simple white materials. The utilisation of different materials may be sufficient as long as their material differences are minimised and superfluous ornamentation is eliminated. The diagram in Figure 7 shows examples of material reduction methods and ornamental details in the Bauen Haus project.

The facade and building enclosure produced in the project is a pure expression of what is needed inside the building as part of its function. Restriction of materials variation and the dominant use of materials with sufficient character avoid the need for an excessive finishing process. The goal of this reduction strategy is to save costs on construction and building maintenance. Consistent use of materials and colours, in addition, ensuring displayed items are functional features such as window apertures, doors, and façade pores further reduce unnecessary costs and ensure optimum utilisations of the building elements.

Figure 6. Reduction in material, ornament, color and space
(Source: Modification of SONTANGMSIREGAR's images)

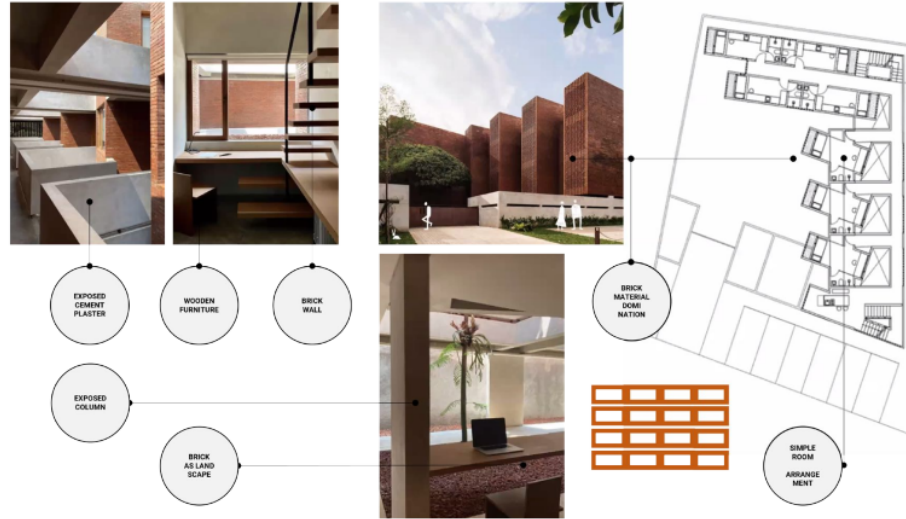


Figure 7. Reduction in material, ornament, color, and space
(Source: Modification of FFFAARRR's images)

Reduction of energy consumption & maintenance

The cost of power for artificial lighting and ventilation is one of the factors that drives up a dwelling's operating costs the most. The space reduction method used in the following house projects demonstrates that shrinking the interior space while keeping the outer area balanced may support the need of saving electrical energy. For example, Byrayboedi's House of Light Void employs the idea of balance between the exterior and the interior ("House of Light Voids," 2021). The division of exterior and interior space as continuous voids on each floor ensure each room obtain a good flow of ventilation and natural lighting ("Natural light floods," 2021). An illustration of how the interior space reduction strategy in House of Light Void may enable electrical energy savings can be seen in the diagram in Figure 8.

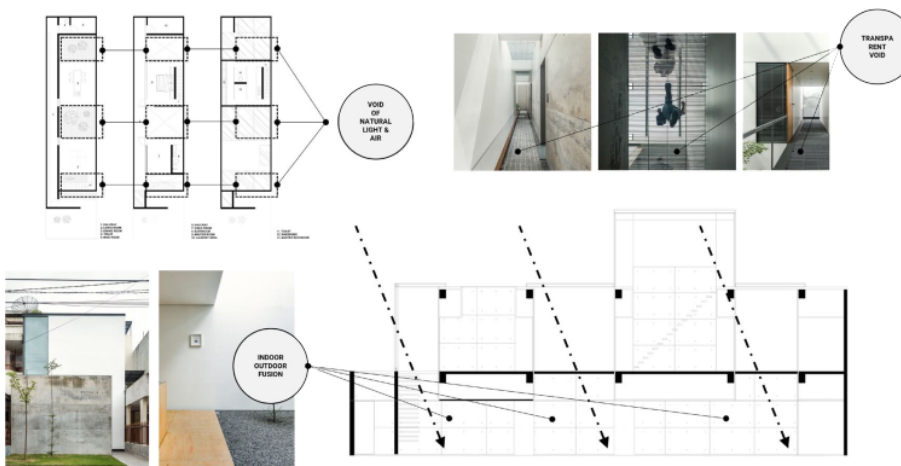
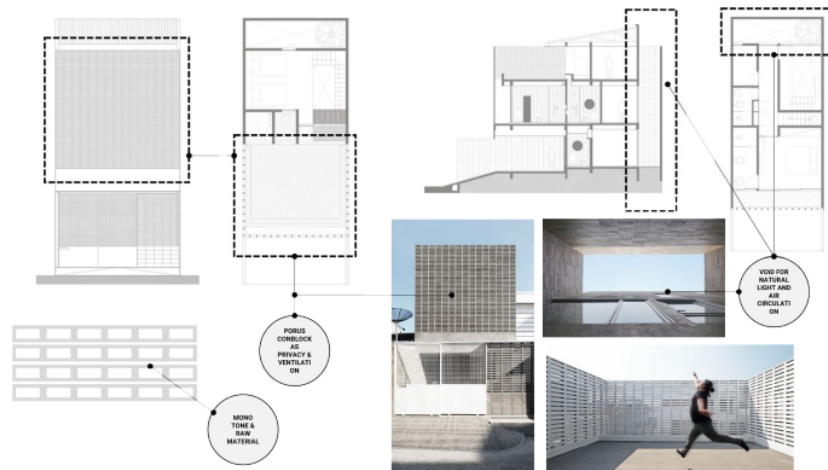


Figure 8. Reduction in energy usage (Source: Modification of BYRAYBOEDI's images)

Rumah 12 by studiokita is the second home that emphasises natural ventilation and lighting ("Rumah 12 House," 2019). In residential houses, privacy is compromised by openness. The concept of openness while preserving privacy is implemented by dominating the building's front with porous cement blocks, resulting in perforations while maintaining privacy. Furthermore, to obtain maximum natural ventilation and lighting, the architect created voids of light air wells on the side of the house, creating active space cooling to reduce the use of electrical energy. Figure 9 shows an example of a closed space reduction method for achieving electrical energy savings in the house.



The majority of the works listed above are well-suited to natural lighting and ventilation. Openings in walls, roofing, pore sheathing techniques, and other approaches like voids are some of the tactics employed regarding the site's current conditions. A narrow footprint is appropriate for void-type openings, whereas windows or pores are appropriate for the front of the building, which obtains more flexibility in the overall configuration of surface and building shape.

Discussions

The case examples shown above demonstrate efforts to reduce various things for various purposes. The primary goal of design is to overcome the limitations of multiple things. Limited budgets, limited land, and limited craftsmanship resources are just a few of the factors that make minimalist architecture in Indonesia challenging. The comparison diagram of the overall case study strategies in responding to these limitations can be seen in Figure 10.

Based on the case study examples above, the reduction efforts demonstrate some positive and unique responses to the current Indonesian urban situation. Reductive spatial programming provides the potential for gradual development in

Figure 9. Reduction in energy usage (Source: Modification of STUDIOKITA's images)

the future, which is beneficial with the lack of dwellers' resources and limitation of land. Furthermore, in Indonesia, the rise of residential property prices limits the availability of housing stock as some buyers only buy houses for investment purposes instead of occupying them. This limited availability of housing stock resulted in smaller utilisation of land and therefore the emergence of tiny houses. The unified and flexible arrangement of activities allows the tiny house to feel more spacious and encourage interaction between activities among the occupants.

	REDUHOUSE	MO HOUSE	4x6x6 HOUSE	C-HOUSE	HET HUIS	BAUEN HAUS	LIGHTVOID	RUMAH 12
Design & Construction Reduction	<ul style="list-style-type: none"> • Modular Design • Modular Construction • Simple drawing document 	<ul style="list-style-type: none"> • Growth house • Phased construction 	<ul style="list-style-type: none"> • Modular system • Open system • Simple construction 	<ul style="list-style-type: none"> • Modular system • Loft system • Roof space construction 	<ul style="list-style-type: none"> • Modular system • Furniture as partition system • Simple drawing document 	<ul style="list-style-type: none"> • Social house • Modular construction • Modular facade 	<ul style="list-style-type: none"> • Open system • Void system • Grating flooring 	<ul style="list-style-type: none"> • Open system • Void system • Modular facade
Space & Form	<ul style="list-style-type: none"> • Simple geometry • Roof as space • Modular space • Open plan 	<ul style="list-style-type: none"> • Open plan • Mezzanine open floor • Simple form 	<ul style="list-style-type: none"> • Unified space • Multi open elevation space • No wall system • Cubism 	<ul style="list-style-type: none"> • Roof space • Unified space • Roof geometry 	<ul style="list-style-type: none"> • Simple geometry • Modular system • Cubism 	<ul style="list-style-type: none"> • Cubism • Multi mass modular system 	<ul style="list-style-type: none"> • Cubism • Open void system • Modular space 	<ul style="list-style-type: none"> • Cubism • Chimney system • Open plan
Color & Material	<ul style="list-style-type: none"> • Raw material • Brick, Cement, Steel, Wood 	<ul style="list-style-type: none"> • Raw material • White paint 	<ul style="list-style-type: none"> • Raw material • White paint 	<ul style="list-style-type: none"> • Roof material as facade • Raw material • White paint 	<ul style="list-style-type: none"> • Raw material • White paint 	<ul style="list-style-type: none"> • Raw material • Brick domination with stack configuration 	<ul style="list-style-type: none"> • Raw material • White paint • Exposed concrete 	<ul style="list-style-type: none"> • Raw material • White paint • Exposed concrete • Block system
Energy Consumption & Maintenance	<ul style="list-style-type: none"> • Unfinished material • Natural lighting & ventilation 	<ul style="list-style-type: none"> • Natural skylight • Natural ventilation 	<ul style="list-style-type: none"> • Combined material raw + finished • Natural lighting and ventilation 	<ul style="list-style-type: none"> • Combined material raw + finished • Natural skylight & ventilation 	<ul style="list-style-type: none"> • Combined material raw + finished • Natural lighting and ventilation 	<ul style="list-style-type: none"> • Unfinished material • Natural lighting & ventilation 	<ul style="list-style-type: none"> • Natural skylight • Natural ventilation 	<ul style="list-style-type: none"> • Natural skylight • Natural ventilation

Some reduction strategy creates spatial elements with multiple uses. The roof may function as more than just as a covering for the upper side of the house, it also generates the overall space and determines the façade, source of light, as well as performing as the heat barrier. In other examples, the void can be used either as part of an outdoor area, as the basis of the circulation system, and as a source of air and light. Wall material (brick) may double as landscaping material.

Because of the reduction of form variation and emphasis on simplicity, no specialised people are required to carry out the construction process, allowing the development process to run more quickly and at a lower cost. The design's simplicity impacts the workflow's efficiency and effectiveness, resulting in speed and cost savings even throughout the building phase. Simplification of material variations and the use of raw materials within the project also lead to fewer construction costs and easier maintenance and operations in the long term. The room dimension and other aspects of design are arranged based on the consideration of the module size of the material. For example, the architect will use the length of the steel beam to calculate the dimensions of the length and width of the room to reduce excess material. Similarly, the multiplex, gypsum, and partition materials are divided into units based on the room's height to reduce waste disposal. The brick and roster measurements serve as a reference point in establishing the facade configuration.

Figure 10. Comparison of case study

Conclusions

According to the literature review at the beginning of the study, the reduction approach in minimalist architecture is significantly influenced by the progression of modern architecture. The study finds that the reductive endeavour, which began as a means of reducing certain elements due to boredom and exposing the original value of the building elements, turned out to have a greater significance and value. The reduction technique includes a variety of cost-cutting implications as well as solutions to existing limitations (resources, land, costs), which are common constraints in the Indonesian context, particularly for small-to-medium-scale residential buildings. In addition, this finding suggests that the reduction approach is not simply a philosophical strategy but one that is influenced by the current economic context and development of technology provided by the industry. Understanding the reductive approach as a response strategy is significant since the design process is often being carried out without consideration of what may happen after the building has been constructed.

This study has several limitations, including the inability to conduct direct field exploration due to time and cost limitations, as well as privacy reasons. As the case studies all consist of private domestic spaces, direct visits in the form of observations to residential dwellings become unfeasible. Another restriction is that this study only considers works that have already been widely published in the media to ensure the availability of data as well as prominent application of the strategy. In reality, there are still many works that are not documented or published but may have some significance in the reductive thinking discussion as part of architectural knowledge. Future studies may expand the scope of the study to include a wider range of building in different scales to discover a variety of other factors at operation behind this minimal reduction approach.

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References

- Agustriana, S. (2019, February 21). Redu House, konsep baru membangun rumah yang bisa hemat hingga 40%. IDEA. <https://idea.grid.id/read/091643645/redu-house-konsep-baru-membangun-rumah-yang-bisa-hemat-hingga-40?page=all> doi.org/10.25034/ijcua.2017.3651
- Bauen Haus. (n.d.). Retrieved October 8, 2021, from <https://www.instagram.com/bauen.haus/>
- Bertoni, F. (2002). *Minimalist architecture*. Birkhäuser.
- Ali, F. A. (2018). The influence of Le Corbusier on the emergence of the aesthetic values in the modern architecture of Cyprus. *Journal of Contemporary Urban Affairs*, 2(1), 1-12. <https://>
- C- House / ARA Studio. (2018, April 13). Archdaily. Retrieved October 8, 2021, from <https://www.archdaily.com/892436/c-house-ara-studio>

- Cuito, A. (2002). *Minimalist lofts*. Loft & HBI.
- Dinding sekaligus lemari. Hemat tempat, hemat biaya! (2017, April 18). IDEA. Retrieved October 8, 2021, from <https://idea.grid.id/read/09700062/dinding-sekaligus-lemari-hemat-tempat-hemat-biaya?page=all>
- Dragana, V. (2012). Minimalism in architecture: Architecture as a language of its identity. *Arhitektura i Urbanizam*, 2012, 42–65. <https://doi.org/10.5937/arhurb1234042V>
- Elangovan, S., & Madhumathi, A. (2021). Interpretation of minimalism in architecture according to various culture. *International Journal of Engineering Research and Technology*, 10(7), 517–525.
- Foster, H. (1996). The crux of minimalism. In *The return of the real: The avant-garde at the end of the century* (pp. 37–68).
- Frampton, K. (1980). *Modern architecture: A critical history*. Thames and Hudson.
- Graafland, A. (1996). *Architectural bodies*. 010 Publishers.
- Gropius, W. (1965). *The new architecture and the Bauhaus*. Faber and Faber.
- Hitchcock. (1932). *The international style*. W.W. Norton.
- House of Light Voids / byrayboedi. (2021, May 21). Archdaily. Retrieved October 8, 2021, from <https://www.archdaily.com/962034/house-of-light-voids-byrayboedi>
- Ibelings, H. (1998). *Supermodernism: Architecture in the age of globalization*. NAI.
- Jordy, W. H. (1965). The international style in the 1930s. *Journal of the Society of Architectural Historians*, 24(1), 10–14. <http://www.jstor.org/stable/988273>
- Krauss, R. (1985). *The originality of the avant-garde and other modernist myths*. MIT Press.
- Larson, M. (1993). *Behind the postmodern facade: Architectural change in late twentieth-century America*. University of California Press.
- Lescaze, W. (1937). The meaning of modern architecture. *The North American Review*, 244(1), 110–120. <http://www.jstor.org/stable/25114911>
- Lukito, Y. N., & Handoko, B. P. (2018). The crux of minimalist architecture: A local strategy of housing design in Jakarta or a break free from traditions? *IOP Conference Series: Materials Science and Engineering*, 316(1), 0–8. <https://doi.org/10.1088/1757-899X/316/1/012006>
- Macarthur, J. (2002). The look of the object: Minimalism in art and architecture, then and now. *Architectural Theory Review*, 7(1), 137–148. <https://doi.org/10.1080/13264820209478450>
- Mallgrave, H. F. (2005). *Modern architectural theory: A historical survey, 1673–1968*. Cambridge University Press.
- MO House / DFORM. (2018, December 3). Archdaily. Retrieved October 8, 2021, from <https://www.archdaily.com/906895/mo-house-dform>
- Natural light flood this renovated house full of voids in Indonesia. (2021, May 20). Designboom. Retrieved October 8, 2021, from <https://www.designboom.com/architecture/ramond-boedi-renovated-house-natural-light-voids-indonesia-05-20-2021/>
- Nikolic, M., & Vasilski, D. (2017). Minimalism in contemporary architecture as one of the most usable aesthetically-functional patterns. *Facta Universitatis - Series: Architecture and Civil Engineering*, 15(3), 333–345. <https://doi.org/10.2298/fuace160814029n>
- Obendorf, H. (2009). *Minimalism: Designing simplicity*. Springer.
- Pawson, J. (2005). *Minimum*. Phaidon.
- Redyantanu, B. P. (Executive Producer). (2020, June). *Arsitektur dan instagram* (No. 16). In coRELASI. <https://open.spotify.com/episode/5d5ZEBWfQruj4JnFlIEgPP>

- Redyantanu, B. P. (Executive Producer). (2021, March 25). *Arsitektur dan reduksi* (No. 49). In *coRELASI*. <https://open.spotify.com/episode/7HshCPEhllCpmA6blzlxkN>
- Reisner, Y. (2019). Abstraction and informality generate a new aesthetic: An Interview with Kazuyo Sejima. *Architectural Design*, 89(5), 30–37. <https://doi.org/10.1002/ad.2476>
- Ruby, A., Sachs, A., & Ursprung, P. (2003). *Minimal architecture* (I. Ruby, Ed.). Prestel.
- Rumah 12 House / Studio Kita. (2019, September 23). Archdaily. Retrieved October 8, 2021, from <https://www.archdaily.com/925070/rumah-12-house-studio-kita>
- Schön. (1983). *The reflective practitioner: How professionals think in action*. Basic Books.
- VanEenoo, C. (2011). Minimalism in art and design. *Journal of Fine and Studio Art*, 2(1), 7–12.
- Vasilski, D. (2012). Minimalism in architecture: Architecture as a language of its identity. *Arhitektura i Urbanizam*, 34, 42–65. <https://doi.org/10.5937/arhurb1234042v>
- Voids of Natural Lights. (n.d.). Retrieved October 8, 2021, from <https://www.designboom.com/architecture/raymond-boedi-renovated-house-natural-light-voids-indonesia-05-20-2021/>
- Wahjutami, E. L. (2017). Kesenjangan konsep dan penerapan gaya modern minimalis pada bangunan rumah tinggal. *Mintakat: Jurnal Arsitektur*, 18(1), 21–29. <https://doi.org/10.26905/mintakat.v18i1.1416>
- Yosief, M. N. A. (2014). Language of minimalism in architecture. *Journal of Engineering and Applied Science*, 61(5), 413–435.

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