

Rethinking Coworking Space Design as a Self-Supporting and COVID-19 Resilient Community Center in Indonesia

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Abstract—The growing popularity of coworking space has been embraced by creative sector actors and the younger generation in urban environments as a place to work and collaborate in the contemporary creative economy current. This perception at the same time limits, that the coworking space typology only applies to the creative millennials of the middle-class segment, therefore eliminates the application of coworking space for socio-cultural and community activities by local-traditional actors. This paper describes the design process in which a neighborhood park called Kampung Hejo SAE was designed as a collaborative space for community creativity and productivity which is essentially a coworking space. Driven by Wallagri, a non-governmental organization engaged in nature and cultural preservation, with a vast spectrum of programs, Kampung Hejo SAE reflects an independent and resilient local household-scale socio-economic ecosystem with its intricately interlaced activities. As a community node, the design process method of Kampung Hejo SAE resulted in the facility programming that accommodates various activities such as urban farming, organic waste composting, inorganic waste recycling, rainwater harvesting, and public open spaces. Zoning and time-based use flexibility are the main tools in the production of these shared spaces. The result of this design process is the creation of a neighborhood unit collaborative place that served as a community center and strongly portrays the local cultural identity of Ujungberung residents. Then the socio-economic ecosystem in Kampung Hejo SAE is utilized to create a self-sustained and resilient neighborhood that could help COVID-19 pandemic impacts.

Keywords—*coworking space, sense of community, public space, neighborhood unit, COVID-19*

I. INTRODUCTION

Co-working space is a contemporary phenomenon in a work environment as a result of technological advancement and globalization where people from different professions or companies can work alongside each other and strengthen their networking and social support provided by the presence of a

diverse community [1]. Co-working space is an innovation from the traditional workspace where workers gathered as a company with the same purpose. In the co-working space, people can work individually on a task and don't necessarily work on the same purpose but shared the same workspace [1].

The environment of co-working space is performed by the digital native generation with relatively high education and predominantly working on creative industries [2,3]. This phenomenon also occurred in Bandung city where co-working spaces are shown to arise in West Bandung area where it has proximity with higher education area and leisure activities as hypothesized in creative class theory [3]. Despite the space's purpose to strengthen the network of creative communities, access to ideas, and new work stimuli, study shows that knowledge exchange is not necessarily happened in co-working spaces because of the lack of time in a vibrant and lively, and busy atmosphere of the members [2]. These findings shows that unless these spaces created as social innovation purposes, co-working space are just another office space [1,2].

Bandung city has been trying to utilize the co-working space role in building communities and developing social and cultural ties [4] to mitigate the COVID-19 pandemic impact. As mental health problems arise in community members that experienced social isolation and uncertainty during a pandemic [5–7], a strong sense of community and organized community organization has been proven to help the psychological well-being of community members [7,8]. Bandung city municipal launch a program to help building a community center in several locations as a co-working space in some sense of collaboration of community's elements. This has been supported by the Draft of Mayors Act on the Implementation of the Acceleration of Development and Activation of Co-Working Spaces in 2020 stated that a "co-working space" is a workspace where users can work with other people from various companies, organizations, communities, governments, and/or different individuals in one place to produce works together or individually, both digital and/or non-digital which

can be assessed economically or non-economically. Co-Working Space was initiated as an effort to build and develop a strong community in Bandung city. This collaborative space is included in the Priority Program for the Regional Head of Bandung City as a center for economic empowerment and community creativity with the objectives: (1) to become a forum for developing the independence and resilience of local communities; (2) support the activation and strengthening of creative economy networks, including SMEs and creative communities in carrying out their activities related to the creative economy, food security, and community empowerment; (3) shared spaces that are responsive to health disaster, notably the COVID-19 pandemic.

The study area is one of the community co-working spaces in the Bandung city, located the Pasanggrahan village, Ujungberung District. The Bandung city Detailed Spatial Plans and Zoning Regulation stated that Ujungberung and Cibiru Sub-District is designated as The Sundapolis Area. Sundapolis is a spatial model based on the development of the Sundanese community and cultural arts to prevent natural and cultural devastation in East Bandung's development [9]. The presence of the community non-governmental organization Wallagri (nature and Sundanese culture preservation community) has become an activator and incubator for this co-working space. The purpose of this study is to design a community co-working space named Kampung Hejo SAE, to be optimized as a means for neighborhood resilience-based COVID-19 pandemic mitigation programs [10]. The design of the co-working space is expected to be a shared space that strengthens community cohesion and a sense of cooperation (enhancing the sense of community), revealing local identity, a healthy space, nurturing growth, and promoting connectivity. Furthermore, this space is expected to be able to provide a platform for various communities, develop human resources, promote healthy lifestyles and be responsive to the COVID-19 pandemic.

II. METHODOLOGY

A. Design Method Framework

The design process method is based on the synoptic method [11]. The synoptic method is used to structuring the design process and avoiding an internalization of the decision-making process. the process of the synoptic method is creating feedback to the previous steps and creating a loop until the optimum solutions are achieved. The first step is collecting field data from observation on tangible and intangible aspects such as natural and built features, socioeconomic, cultural, etc. This includes the community value and aspirations towards the co-working space design to be.

The second step is data analysis. Site analysis was conducted to examine mostly natural and built features on and around the site. Site analysis is used to determines which part of the area is best to built and how the design should respond to the unique context of the site. Site analysis as a contextual approach could avoid more tailored solutions and avoid generic and meaningless design. On intangible aspects of the Pasanggrahan community, content analysis is conducted to the FGD's interview transcript. The interview elaborates is the meaning of Kampung Hejo SAE as a public space for the community, what aspired them to optimize the space, and what could be done to improve the space as a collaboration space. The results of the analysis are formulated into design goals and objectives.

Architectural and landscape design of Kampung Hejo SAE are developed according to the normative goals and objectives resulted from the analysis. A set of design principles are generated based on the eight elements of the green city: (1) green planning and design; (2) green community; (3) green open space; (4) green building; (5) green waste; (6) green transportation; (7) green water; and (8) green energy. These green elements are translated into the design features of Kampung Hejo SAE.

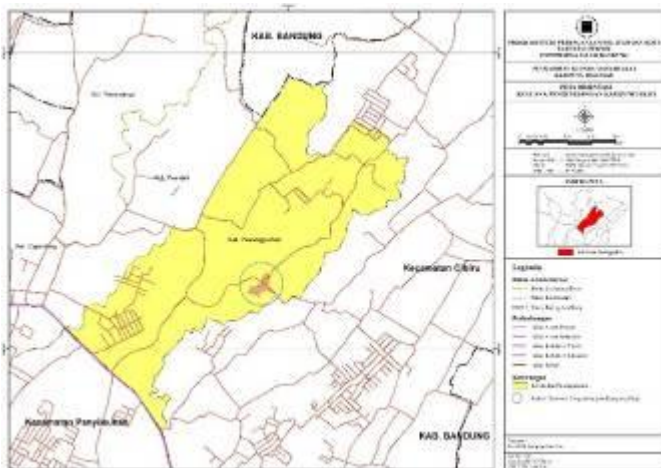


Fig. 1. Orientation map of Pasanggrahan village.

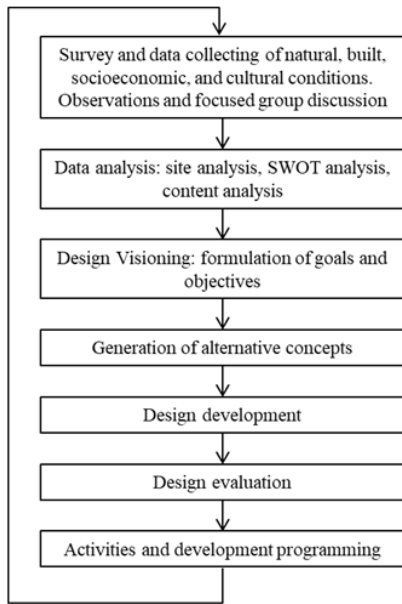


Fig. 2. Synoptic design method.

B. Visioning

Participatory methods through a design charette or workshop program are one way to avoid generalist proposals and rejection that threatened the sustainability of the project. Community participation could be in the form of data gathering, design collaboration, and technical collaboration [12]. The role of a competent architect, urban designer, and urban planner is essential on design charette or workshop as a visioning process [13]. To capture the aspirations of the Pasangrahan community, a focused group discussion (FGD) was conducted which invited key stakeholders. The FGD used the semi-structured interview to elaborate community value and space requirements of the co-working space. This aspiration capturing process is important to ensure that the goals and objectives of co-working space are acceptable to the community, therefore guaranteed the sustainability of the development.

The FGD resulting in a conclusion that the vision of Kampung Hejo SAE is a “co-working space for the self-sustaining neighborhood”. The objectives of this vision are divided into three aspects: (1) resilience and self-sustaining community; (2) COVID-19 pandemic response; and (3) creative economy. These objectives are capturing the community assets that need to be optimized to counter the current challenge related to the COVID-19 pandemic.

C. Design Simulations

To simulate the design results, 3D modeling of the building and environment were conducted with rendering process resulted in still images and animation video. The 3D modeling helped to communicate the expected results of the design to all

stakeholders. 3D simulation also acts as an evaluation method to examine whether the design has conformed with the consensus of goals and objectives.

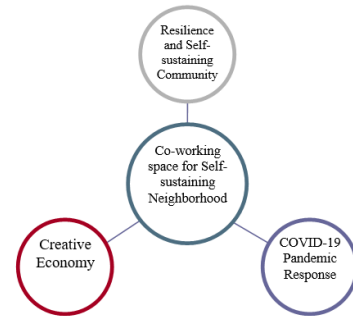


Fig. 3. Design objectives of Kampung Hejo SAE Co-working Space.

III. RESULTS

A. Zoning

In general, there are two main zones of Kampung Hejo SAE programs, outdoor collaborative space, and indoor collaborative space. The outdoor space is dedicated to facilitating urban farming and park-related activities while the indoor space is dedicated to programs that need closed rooms such as a workshop, education, and health facilities.



Fig. 4. Zoning of Kampung Hejo SAE.

B. Green Planning and Design

To amplify the spirit of collaboration of the community, Kampung Hejo SAE should provide space as a community forum. This forum is manifest in a building called *Bale Ruang Riung Warga*. The bale will be a place for the community to discuss programs and planning their collaboration activities. This could also be the place to serve as an educational space with the provision of facilities such as a screen and projector.

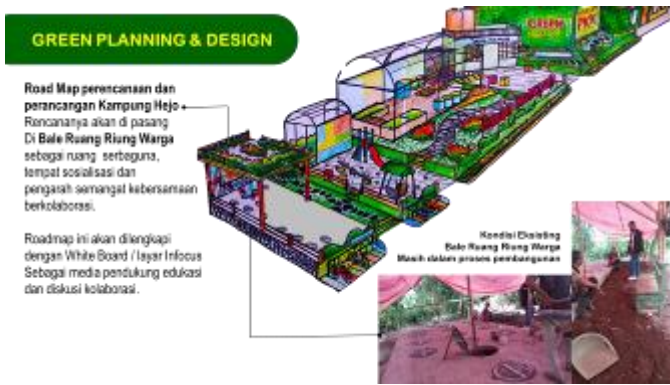


Fig. 5. Green planning and design aspects of Kampung Hejo SAE.

C. Green Open Space

Kampung Hejo SAE outdoor space is used for urban farming activities by various community groups and programs. The district empowerment group use this space to plant daily consumption plantation such as herbs and vegetables. A selected variety of herbs and vegetables was also planted to support the local government program of stunting prevention. The methods of planting in Kampung Hejo SAE are conventional farming, hydroponic, aquaponic, vertical culture, and greenhouse. A composter also provided two kinds of methods, fermentation, and maggot.



Fig. 6. Green open space aspects of Kampung Hejo SAE.

D. Green Building

The implementation of green building in Kampung Hejo SAE is aimed to utilize building structural elements as urban farming space. One of the urban farming designs is in the form of the *suhunan sae* program. This program is the utilization of roof gardens as urban farming. There is also a vertical garden installed as an urban green space that utilizes limited space. The selected plant varieties are the herbal plant that will produce an herbal supplement for an immune booster for COVID-19 prevention. The community groups targeted for urban farming programs are the Wallagri Asri Urban Farming and Community Empowerment Institute of Pasanggrahan District. Collaboration of community groups that use this urban

farming space could be tapped into various municipal programs such as *buruan sae*, *Bandung tangginas*, and *sangu bancakan urang Bandung*. These programs aim to improve food security and nutrition improvement on the community level.



Fig. 7. Green building aspects of Kampung Hejo SAE.

E. Green Waste

Waste processing facilitates in Kampung Hejo SAE includes sorting inorganic waste and composting for organic waste. For the sorting facilities, Kampung Hejo SAE will provide a garbage bank. A space for a waste recycling workshop will be provided, collaboration with the Alink Craft community to produce craft from recycled materials. A similar program was held in 2018 when Wallagri collaborate with high school students to create a selfie park from recycled materials.

Composting organic waste program currently has been running organized by Pasanggrahan community with equipment granted from the municipal government. The design of Kampung Hejo SAE will increase its capacity with the application of new methods such as fermentation and maggot. The compost resulted from this program will be used as fertilizer for urban farming.



Fig. 8. Green waste aspects of Kampung Hejo SAE on garbage processing.

In 2020, Pasanggrahan village received municipal's aid for the construction of a wastewater treatment plant (WTP) as part of the Citarum Harum program. On Kampung Hejo SAE design, the WTP will be located on a waste recycling workshop and children's playground area. This aim is to create an

educational space to introduce an environmentally conscious lifestyle to the younger generation. The WTP itself will serve as a household waste processor for the community before entering the city's drainage network.



Fig. 9. Green waste aspects of Kampung Hejo SAE on wastewater processing.

F. Green Transportation

To promote the use of non-motorized transportation, Kampung Hejo SAE will provide bicycle parking connected to planned bike lanes along Terusan Wallagri Mulya street. The bicycle park will also become a rest area for weekend cycling in the Ujungberung area.



Fig. 10. Green transportation aspects of Kampung Hejo SAE.

G. Short-term Programs

The development of the Wallagri Center, a community center of Pasanggrahan village initiated by the Wallagri community, will be a short-term program for the design implementation of Kampung Hejo SAE Wallagri Center has been developed for several years, taking place in one of the community pillars' house. The community center facilitates several programs organized by Wallagri such as an art studio, music studio, local radio station, pre-school and daycare, a marketplace for creative industries products, Qur'an school, and quarantine room for COVID-19 patients. Wallagri center also acts as the pioneer of collaboration spirit on community co-working space. The short-term development will include refurbishment of the marketplace room, addition of roof garden

and vertical garden for the expansion of the urban farming program, and construction of green parking using grass block as pavement material to ensure rainwater infiltration.



Fig. 11. Development of Wallagri Center as short-term program of Kampung Hejo SAE.

H. Mid-term Programs

Two programs are targeted as mid-term development of Kampung Hejo SAE, those are the development of Buruan SAE Stunting Care and Sawah Kiwari. Buruan SAE is the utilization of vacant space as an herbal and medicinal plant as part of the government's stunting eradication program. This thematic garden also responds to the current pandemic situation to promote a healthy lifestyle. Buruan SAE targets several community groups to collaborate such as women empowerment groups, youth organizations, local farmers associations, and the Wallagri itself.



Fig. 12. Development of Buruan SAE as mid-term program of Kampung Hejo SAE.

The second program is the development of Sawah Kiwari. This program is a design improvement from the existing rice field across the street of Kampung Hejo SAE. This development aims to give the traditional rice processing experience, especially to school-age children. Sawah Kiwari will also provide space for traditional children's plays and local farming products displays. Sawah Kiwari targets collaboration from Tepas and Bening community who which engages in the field of natural environment protection and local farmers

association along with Wallagri as group’s coordinator. Some elementary schools had visited this location to give their students field trips on the rice planting process.



Fig. 13. Development of Sawah Kiwari as mid-term program of Kampung Hejo SAE.

I. Long-term Programs

For the long-term program, Wallagri expects to manage an empty plot across the street of Wallagri Center to be developed as a cultural center. The design of Kampung Hejo SAE capturing this aspiration by proposing Puser Motekar, an open-air exhibition space in the form of an amphitheater. This space will be showcasing numerous art hermitages (padepokan seni) with more than 40 kinds of art that have been practiced in the Ujungberung area. However, this proposal needs to convince the landowner first who currently planned to develop this land for landed housing.



Fig. 14. Development of Puser Motekar as long-term program of Kampung Hejo SAE.

IV. DISCUSSIONS AND CONCLUSION

The concept of Kampung Hejo SAE as a community co-working space has adopted the core spirit of collaboration, interaction, and value exchange from nowadays commercial co-working space. Kampung Hejo SAE has successfully invited various community groups to engage in the same space

and programs for the community. This could happen under the strong leadership of the Wallagri community as pillars of Pasanggrahan village residence.

From direct observations on current running programs on Kampung Hejo SAE, a model of community co-working space seems to have more community members’ engagement, exchanging value, and economic benefit that could strengthen the sense of community. Early findings suggest that an already strong social cohesion between community members is helpful to optimize coworking space as the spatial glue. This also helps to develop resiliency on encountering modern-day challenges such as the COVID-19 pandemic. This is proven by the adaptability of the spaces in Kampung Hejo SAE to be altered into COVID-19 mitigation needs such as quarantine rooms and healthy food provision. However, more studies are needed to prove whether the community co-working space such as Kampung Hejo SAE has more community cohesion and a sense of cooperation than the commercial co-working space despite their similar vision.

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