THE INOVATIVE DESIGN OF HOMESTAY TO ADDRESS COVID-PROTOCOL

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ABSTRACT

Homestay in a traditional Balinese house is one crucial accommodation model in Bali that has been an exciting model for travelers. However, since the increase of pavilions in the traditional house for a homestay, the house's traditional component related to the natural air ventilation has already gone from the house.

This component related to sustainability in terms of energy is also an excellent component to face the covid-19 pandemic in which the cross circulation of fresh air into the room is an excellent condition to keep the room healthy. This paper explores the cross ventilation of fresh air and the innovation to maintain this cross ventilation in the new pavilions. This paper then field works, interviews, and architectural examinations were carried out in some tourism villages.

The settings of homestays and the possibility of design innovations were investigated and analyzed to produce a suitable innovation model to address covid-19 protocol as a prelemary reseach.

Keywords: innovation, homestay, tourism village, design, Covid-19

INTRODUCTION

A homestay in a Balinese house is a fascinating model for travelers to stay in Bali. The pavilions' setting and design are important traditional components linked to natural fresh air ventilation into the pavilions. This energy-related aspect is also a good component to facing the covid 19 pandemic in which the fresh cross air circulates in the room in order to keep the room healthy [4].

Nowadays, the world, including Bali, was shocked by the emergence of a virus known as Corona Virus Disease 2019 (Co vid-19). This condition causes all human activities, especially the activities in public spaces, to be limited to reduce Covid-19 transmission. This transmission indirectly requires an ideal and conducive home atmosphere and conditions to carry out all people's activities. Architecture is the study of building design in a built environ ment. As a shelter for people, the house should be healthy and responsive to viruses around us. Implementation of the ideal residential design principle which is expected to be able to make the house, including the traditional Balinese house transformed for a homestay, a place to live that is healthy clean comfortable, safe & meets the minimum requirements for the amount of space that can be responsive Covid-19.

Traditional Balinese houses in the tourism area are undergoing a transformation, where people try to maintain the identity their traditional houses to attract tourists. On the other hand, they transform their ho use to get economic benefits from tourism. This transformation is a paradoxical phenomenon. The lack of a proper trans-

formation model, which can be used as a guideline for the community in utilizing the house in tourism economic activities, has resulted in the infiltration of tourism functions into traditional spatial and cultural spaces. This infiltration has influenced the traditional component related to na tural air ventilation in which the component has already gone from the house.

This transformation is a paradoxical phenomenon. The lack of a proper transformation model, which can be used as a guideline for the community in utilizing the house in tourism economic activities, has resulted in the infiltration of tourism functions into traditional spatial and cultural spaces. Therefore, this paper explores the innovative ways and designs as an effort to maintain the potential of traditional houses as cultural tourist attractions gain economic benefits, and at the same time, to address the covid-19 protocol in the house design.

METHOD

This paper develops a tiered method, starting from extracting baseline data that inventory the texture and character of traditional house changes. More in-depth exploration is related to traditional house cha nges using a sample based on stratified random sampling and interviews to reveal and create innovations in traditional house changes. This stage is followed by creating technological innovations in the traditional house transformation model as tourist facilities without leaving the meaning and values of a traditional house.

RESEARCH FINDING

Covid-19 and the Traditional Balinese House as Homestay.

Coronaviruses are a large family of vi ruses that cause disease in humans and animals. In humans, it usually causes respiratory infections, from the common cold to severe illnesses such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) [2]. A new type of Coronavirus that was discovered in humans since the outbreak occurred in Wuhan China, in December 2019, was then named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV2) and caused Coronavirus Disease 2019 (Covid-19) [7]. Common symptoms are fever ≥ 38.3 C, dry cough, and shortness of breath (Tian et al., 2020; Wang et al., 2020). If there are people who within 14 days before the symptoms appear, have traveled to an infected country, or have cared for/had close contact with a person with COVID-19, then that person will be subjected to further laboratory tests to con firm the diagnosis [10]. It is essential to an ticipate and prevent transmission of Covid-19 under WHO, including washing hands regularly, maintaining a distance, avoiding touching eyes, nose and mouth, covering mouth and nose, coughing and sneezing, and staying at home [21].

The instruction to stay at home causes the house is a crucial part of facing the virus. Based on Indonesia Act No.1, 2011 about Housing and Settlements, a house is a building that functions as a place to live that is suitable for habitation, a means of fostering a family, a reflection of the dignity of its residents, as well as assets for its owner Meanwhile, a healthy house is a house that allows its residents to develop and develop their physical, mental and social family [4]. House is a core area that often dominates in a rural area where traditional houses dominate traditional rural Bali villages. The existence of tourism activities in rural areas influences changes in village spatial planning and traditional houses. Concerning the development of tourism activities in rural areas, there have been constructions of tourist facilities such as accommodation and restaurant facilities, especially around village areas and in traditional houses.

A traditional Balinese house in an area is a cultural heritage, which is a tourist attraction. Inside these traditional houses,

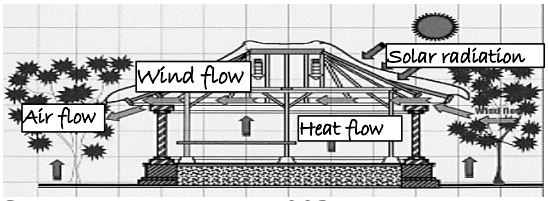
tourists can see the beauty of traditional settlements, the configuration of traditional houses, and cultural activities that have been a tradition of the community from ge neration to generation. The use of traditional houses as tourist facilities provides many economic benefits to the owners. However, the absence of a contextual & in novative model of traditional house transformation that can be applied is one of the causes of the blurring of cultural spaces in traditional houses so far in traditional houses that are used as tourist facilities [12] [13]. In this case, the main problem in developing traditional houses as tourist facilities is a conflict of interest between main taining traditional values and the entry of new functions of tourism in traditional houses. This conflict of interest is a challenge in architecture, where people are faced with paradoxical conditions in transforming traditional houses without leaving traditions.

A traditional Balinese house based on the teachings of Balinese Hinduism is a house designed to accommodate various necessary activities and socio-cultural acti vities. The first is the house's essential fun ction related to the occupants' need for security, shelter, as a starting point for traveling and an endpoint after returning from activities, a place where residents get their autonomous rights as individuals and carry out other daily routines [20]. Meanwhile, the second function is related to residents' activities to maintain a harmonious relationship with God, other living things, and the environment. These activities are contained in various ritual activities and their supporters. The rituals carried out in traditional houses are closely related to the implementation of the *panca yadnya*, the five holy sacrifices which are carried out based on the teachings of the Balinese Hindu Religion dedicated to God and the gods (*Dewa Yadnya*), offerings and homage to the sulinggih or priests (*resi yadnya*), rituals rituals offered to the ancestors (*pitra yadnya*), rituals related to the human life cycle (*manusa yadnya*) and rituals dedicated to other creatures in nature *(butha yadnya*) [1]. Meanwhile, supporting activities are carried out through traditional dance, music and song performances. All the rituals and supporting activities are carried out in various parts of the house, including the *merajan* or *sanggah* (family temple), kitchen, *teba* (backyard), *natah* (courtyard) and other existing pavilions.

A typical house is generally built and based on the environment [5]. Traditional Balinese House's architecture responds to the humid environment by cross air ventilation and shading to provide residents with thermal comfort [16]. Such building has pasive environmental properties which optimize the local potential to protect against high temperature, high humidity and high solar radiation and to react to them.

In order to provide the occupants with thermal comfort [18], proper ventilation and air circulation are the necessity of the house environment. In hot and humid sum mer weather, the houses are regarded as a typical pasive refrigerator where the wind is used as a natural refreshing source [6]. Kusuma (1999) also suggested that the set produces the air circulation, which moves easily around and enters a building [6]. With computer simulation. The wind in the natah flows from the space in the pavilions' southern side and into the other part of the structure. A potentially high-temperature , humidity and solar radiation air movement is present. This movement also plays a role in the building's air movement, through a ventilation between the wall and the pavilions' roof (Figure 1).

Figure 1. Air circulation



Source: Trimarianto 2003

The air is cooling down into the space where a single room is traditionally situated and the heat transfer from the room to the outside. This circular flow increases the thermal comfort in the room provided by the trees, which reduce the exterior tem perature. Traditionally, the pavilions have cross-ventilation throughout the wall-to-each section. The thermal comfort provided by the cooling air movement, therefore, removes the need for artificial equipment. Naturally, the house is convenient for the inhabitants.

Design Inovation for Homestay

A house as part of a residential area must meet various requirements to be suitable for occupants to live in and is also suitable for use as a homestay in a healthy, safe, harmonious, productive and sustainable residential environment. In this case, the house, especially the traditional one, can also function as a place of business by adapting the space in some parts of the house, which was initially only a function of [9]. Marcus further explained that the house is defined as a symbol of the personalization of the occupants, or in this case, it is called a symbol of "the personalization of space" [9]. The house is also an expression of the residents' culture and traditions and communities where the house is located [14]. The design of a house is strongly influenced by cultural activities and traditions in the house itself, so that culture is the starting point for forming the design and shape of a house. Furthermore, a right house in a healthy, safe, sustainable and sustainable environment is defined as a minimum condition in terms of health, socio-culture, economy, and technical quality, which is appropriately managed and continuously, paying attention to existing natural resources, paying attention to water management patterns and efforts to conserve natural resources, manage and utilize them. Therefore, based on the decree of the Minister of Public Works No 493/KPTS/M/2002, a house must not only be physically fit but also: 1) it meets the minimum needs for outside and appearance; 2) the need for health and comfort; and 3) the minimum need for security and safety [12].

In relation to the cultural activities the traditional houses' functions and ceremonies are maintained to allow the owner to carry out ceremonial activities as usual. The arrangement/layout (Figure 2 and 3) is based on the sacred and profane values and the customs or rules that apply in Bali nese Traditional Architecture. Spaces and building transformation for additional tour ism activities are directed at spaces or buil dings that are not directly related to community ceremonial activities such as *bale dauh* or empty spaces around buildings and the backyard. The building's orientation is not towards holy places or places that are considered holy to avoid religious activities, becoming spectacle objects. Tourists can watch religious activities considered like family, neighbors, friends, or friends who are invited to watch the ceremony so that if they want to witness the ceremony's activity, they occupy a place like the other guests.

The composition of a healthy residence consists of several parts, both private and public spaces. Sunlight can enter directly into each room so that the room can get hot air & remove moisture. The room in the house is not damp because humidity tends to cause mold quickly. The material used are safe for residents/are not easily damaged and porous, do not con tain toxins or are quickly moldy. Building materials that are dangerous or break easily have the risk of injuring or injuring the house occupants and materials that are toxic and easily moldy can cause disease for residents, even though the symptoms appear years later. The presence of trees/plants around the house (as a buffer) functions as a source of oxygen windbreak & sunshine.

The typical Balinese pavilion was con structed concerning thermal comfort as a

small space of six to nine m^2. It was split between the roof and the wall to satisfy the criteria for fresh air. This arrangement allowed free movement and coverage of all parts of the room from one side to another (Figure 4). The distance created the two gaps, in which one element of supply blowing air into and another element of exhaust pushing air out [8].

Figure 2. The space setting in a traditional house

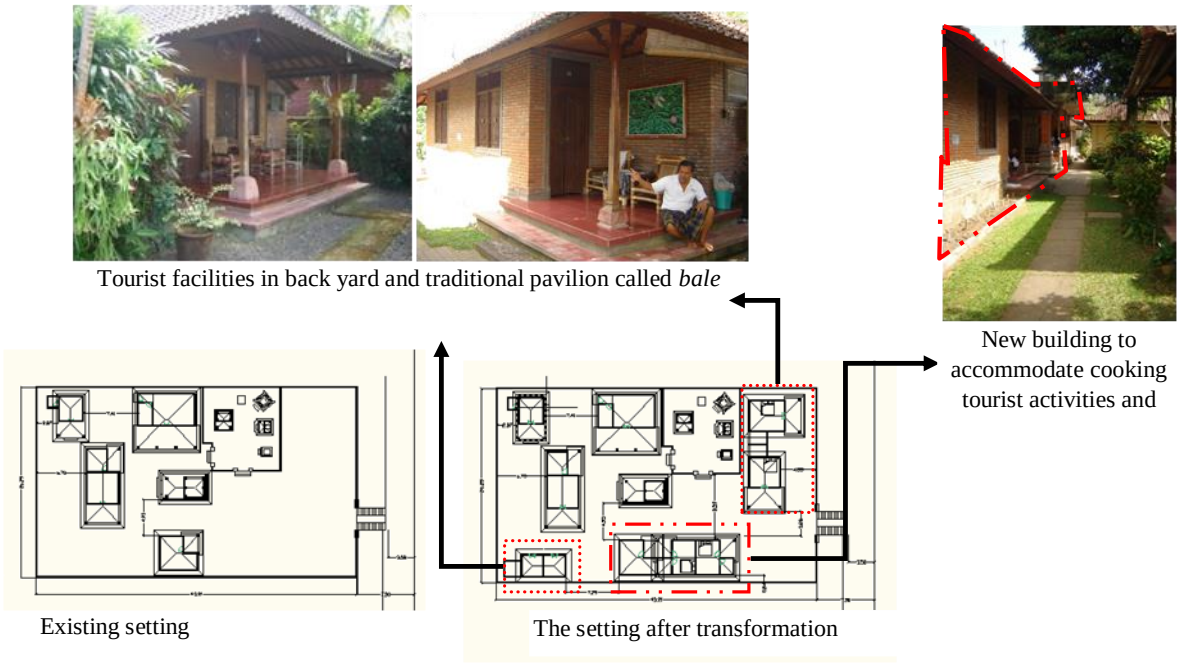


Figure 3. The space setting in a house

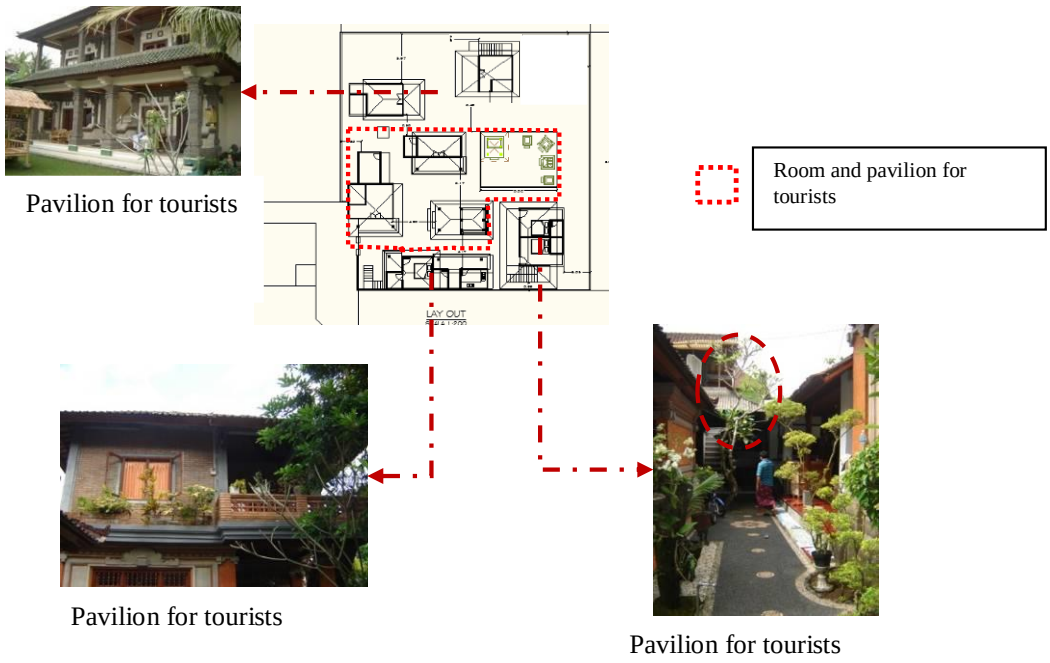
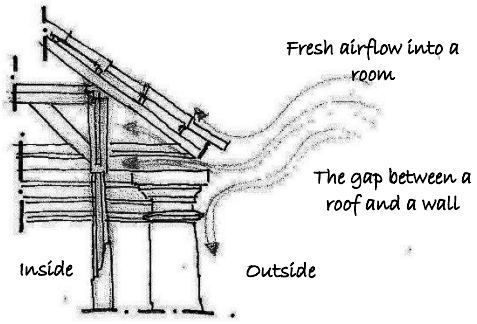
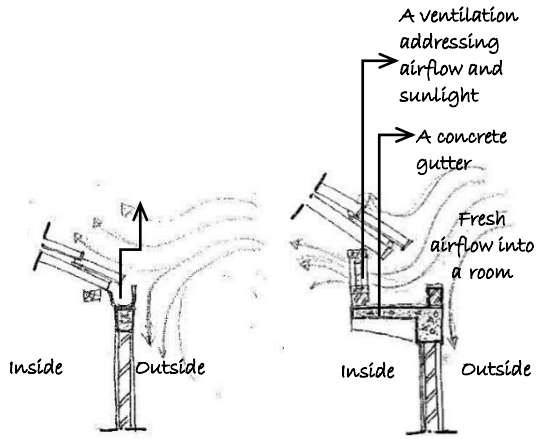


Figure 4. Fresh air flows



However, some new buildings have been built to cope with the need for natural air movement and sunlight in which a concrete gutter between the roof and the wall was installed (Figure 5). From the owner's point of view, technology is an alternative way of accommodating more spa ce and coping with the natural flow of air and the sun through the within. In order to provide the inhabitants with thermal comfort, structures do not require artificial lighting in everyday life and an air conditioning unit.

Figure 5. Design innovations air circulation



The energy use was affected by new constructions combined with modernization & designed to accommodate occupants' new lifestyle and tourist activities. The house no longer uses conventional construction elements and natural resources to provide occupants with thermal comfort but relies on advanced technology to provide cooling and a social status indicator. Hygiene concerns are the other element to convey the status of citizens.

CONCLUSIONS

Homestay in a traditional Balinese house is an important accommodation model in Bali that has become an exciting model for travelers. However, the traditional home's pavilion growth has already gone from the house to the traditional portion of the house related to the natural air ventilation. This energy-related component is also useful in the covid-19 pandemic face because the transmission of fresh air into the room helps preserve the room health.

The house design is highly influenced by cultural activities and customs of the house itself and culture is, therefore, the starting point for influencing the house's design and shape. In addition, a good house is to be identified as a minimum condition for health, socio-culture, economy and technical quality in a stable, clean, secure and sustainable setting.

Several innovative designs have been built to resolve the need for natural air movement and sunlight in which people installed a concrete gutter in between a roof and a wall. From the owner's point of view, this strategy is an alternative way to get more space to accommodate their operations and resolve natural air circulation and sunshine into the interior.

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