The Virtual Tour as a Tool for the Preservation of the Traditional Knowledge at Kasepuhan Palace

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Abstract

Kasepuhan palace is the oldest palace in Cirebon and has been designated a cultural heritage building. As a place of the ruler or king, Kasepuhan palace embodies knowledge about the activities and culture of the local community, and the elements and layout of the palace buildings have both aesthetic and symbolic functions. Libraries can play a major role in knowledge preservation in heritage buildings by utilizing information technology. Using a qualitative research method, this paper describes the efforts made by the National Library of the Republic of Indonesia to preserve the traditional knowledge in the Kasepuhan palace by developing a virtual tour. It was concluded that virtual tours can be valuable cultural heritage building preservation tools if supported by appropriate knowledge selection and identification and adequate photo shooting techniques and image recording technology. The addition of maps, sounds, images, and other information features can enrich virtual tours, better disseminate the knowledge, and achieve the preservation goal.

Keywords—Kasepuhan palace; knowledge preservation; virtual tour

1. Introduction

Knowledge can be created and learned, but can also be forgotten. Agrifolio (2015) claimed that when knowledge is lost, it is very expensive to create new knowledge or acquire such knowledge from other parties; therefore, preserving knowledge is a very important part of knowledge management.

Indonesia is rich in both tacit and explicit traditional knowledge, with the tacit knowledge being the knowledge made up of cognitive elements such as beliefs, values, and paradigms, and technical elements such as the practical skills to complete a particular job, and explicit knowledge being the valuable knowledge encoded and communicated through symbolic and natural language (Nonaka, 1994), which includes ancient manuscripts and heritage structures.

Keraton Pasepuhan or Kasepuhan palace, which was founded around the 17th century, is the oldest palace structure in Cirebon, north- West Java, Indonesia, and is actually part of the Pakungwati Palace that was divided into two after the Panembahan Girilaya (1649-1667) passed away (Marwoto, 1981). Pakungwati palace was built by Prince Cakrabuwana in the 16th century, the remains of which can still be seen in Kasepuhan palace in the Sitinggil building in the first courtyard. Utaminingsih (1996) reported that Sitinggil had similar characteristics to the Hindu-Buddhist era buildings in Cirebon. From the quality of the texture, variety, carving type, color, and composition, the carvings and decorative motifs on the poles, pillars, and the doors of the Kasepuhan palace have both aesthetic and symbolic functions, as the more important a building’s function the higher the quality of the carvings (Wahjudin, 1996).

The word Keraton comes from “Ka-ratu-an,” which means a place of dwelling for a ruler or a king. Marwoto (1981) noted that archeologically, the palace embodies important information about the past community system and culture. Kasepuhan palace was designated as cultural heritage through the Ministerial Decree of Education and Culture No. 238/ M/1999. The Cultural Heritage Act defines a Cultural Heritage Building as “a constructed arrangement made of natural or man-made objects to meet the needs of walled and/or no walled, and roofed rooms.” As a cultural heritage building,
the palace expresses the cultural richness of human life and thought, and is important for understanding the development of history, science and culture; therefore, it needs to be carefully conserved and protected through proper management to advance Indonesian national culture.

Preservation efforts are generally necessary because cultural heritage buildings are often more vulnerable to damage, often because of their low appreciation by society (Karongkong, 2011; Subakti, Pratomo, and Wiastuti, 2017). Cultural heritage buildings are also often ignored in spatial planning that prioritizes political and economic interests (Purnomo, 2016).

In 2017, the National Library of the Republic of Indonesia sought to preserve the traditional knowledge in the Kasepuhan palace by utilizing information technology, and therefore, now, users can take a virtual tour of the Kasepuhan palace on the website Keraton Nusantara. This paper discusses the results of the knowledge preservation effort, with the aim of contributing to the preservation of the traditional knowledge inherent in heritage buildings.

2. Literature Review

Libraries have often been involved in the preservation of traditional knowledge. Traditional knowledge is the knowledge that is developed or owned by a particular community, and: (1) is taught and implemented from generation to generation; (2) includes the environment and its relationships; (3) is holistic and cannot be separated from the communities that built it; and (4) is a way of life shared by the community as it contains/represents the values of that society (Lutviansori, 2010).

Libraries play an important role in the preservation of traditional knowledge, as pointed out by Roy (2015). First, the library collects and stores the cultural heritage in various formats, after which it creates and manages the cultural heritage through cataloging and classification. Then, the library provides access to these recordings through digitization to ensure document collective memory and then shares this digital knowledge and provides space for study and reflection on the meanings of the cultural heritage, and finally, the library provides education, equipment and training to inform the wider community about their cultural heritage. The IFLA’s Statement on Indigenous Traditional Knowledge also stated that libraries and archival institutions “implement programs to collect, preserve and disseminate indigenous and local traditional knowledge resources” (IFLA, 2002).

Traditional knowledge is a very important part of knowledge management. Agrifolio (2015) defined the preservation of knowledge as the selection and storage of knowledge so that it can be reused effectively. The International Atomic Energy Agency (2011) defined the preservation of knowledge as “a process of maintaining an organizational system of knowledge and capabilities that preserves and stores perceptions, actions and experiences over time and secures the possibility of recall for the future.” In other words, knowledge preservation captures, understands, archives, retrieves, and protects explicit and tacit knowledge and ensures accessibility using technological developments so that the knowledge can be used in the future.

There are three main knowledge management processes for the preservation of knowledge: (1) selecting only those worth preserving from a large number of organizational events, people, experts or processes; (2) storing the experiences in a suitable form; and (3) ensuring the establishment and operation of organizational memory (IAEA, 2011: 5).

Developments in information technology have allowed knowledge to be preserved and stored in a variety of new formats and has allowed for a significantly broader dissemination. Anderson (2005: 21) claimed that “libraries and archives have capabilities, preservation, better scope for the circulation of public domain material, and sometimes more streamlined processes of ordering and classifying material.” However, there are challenges in the utilization of information technology as a long-term information storage medium as noted by Lehmann (1996: 311,312) such as the physical deterioration of digital storage media that can result in the loss of digital information, changes in coding and formats, changes in software, operating systems and hardware, system problems, and the radical delocalization of processing and data base decentralization. However, as libraries can no longer rely on paper technology, the development of information technology such as online databases is a viable alternative for the knowledge preservation (Lehmann, 1996).

Wulur, Sentinuwo and Sugiarso (2015) defined the virtual tour as a location simulation consisting of sequences that when combined produce 360° panoramic images. Virtual tours can give the viewer the sensation of being somewhere through a monitor and in addition to images, virtual tours can also be presented in three dimensions (3D).

3. Materials and Methods

This research used a qualitative method with a descriptive approach. Data were obtained from the observation of the primary data and a literature study for the secondary data. The research was in several stages; data collection, data processing, and data interpretation.
4. Results and Discussion

Kasepuhan palace is one of the four palaces in Cirebon and is located in Mandalangan Village, Kasepuhan Village, Lemah Wungkuk District, Cirebon City, Indonesia between Grobogan Road in the east, Krian in the west, and the square to the north (Wahjudin, 1996).

Based on the Kasepuhan palace layout from 1935, the palace area is divided into an outer and the inner part. The inner part has three courtyards. The outermost courtyard of the Kasepuhan palace area includes Sitinggil, Pangada, Pintu Jam, and Pangada. The second courtyard includes Kemandungan, Langgar Agung, and Bedug, and in the third courtyard, the deepest part, there are several important buildings; the Bunderan Dewandaru, Jinem Pangrawit, Bangsal Pringgondani, Bangsal Prabayasa, and Bangsal Panembahan (Marwoto, 1981; Utaminingsih, 1996).

The courtyards are bounded by gate-shaped entrances, the first of which is called Gapura Adi and the second of which is called Gapura Banteng, which gets its name from the bull relief on the southern stairway, the candrasangkala, which signifies that the Sitinggil was established in 1451 Saka or in 1529. Although experts are still arguing about the dates, the bull relief is evidence that the Sitinggil area was once part of the Pakungwati palace (Marwoto, 1981).

Because of the diversity of gates, poles, pillars, roofs, and ornamental carvings, the buildings within the Kasepuhan palace area had different forms and functions. The gate of the Kasepuhan palace included two forms; a bentar temple (Gapura Adi) and a paduraksa (Gapura Banteng). There are also paduraksa-shaped Gapura that are closed with a lepa and there are some that are not. This gate shape is associated with the time of Indonesia-Hindu, which is also found in other areas in Java (Marwoto, 1981).

There are two types of Kasepuhan palace pillars; wooden pillars that are traditionally shaped and European styled pillars made from concrete. The most commonly found pillar is the saka kendit, which is rectangular at the bottom and ornamented with a demek kliangan. Generally, this pillar stands on an umpak, which symbolizes the lingga and the yoni. Cirebonese people see the umpak as a symbol of the act symbolized by the pillar; in other words, if people have goals or want action, they must have a very strong foundation (Marwoto, 1981).

There are five Kasepuhan palace roof shapes: (1) one-roofed buildings without a memolo at its peak, such as the Semar Tinandu and the Malang Semirang; (2) one-roofed buildings with a memolo, such as Pandawa Lima; (3) two-tiered buildings without a memolo such as the Mande Gamelan; (4) two-tiered buildings with a memolo such as the Mande Pengiring; and (5) a three-story building without a memolo such as the Sang Ciptarasa great mosque. There are also three types of roofing materials: (1) wood shingle roofs, such as the Semar Tinandu, the Malang Semirang, the Pandawa Lima, the Mande Pengiring, and the Mande Gamelan; (2) tiled roofs, such as on the Pangada building, the Langgar Agung, the Jinem Pangrawit, the Gajah Nguling, the Pringgondani, the Prabayasa and the Panembahan; and (3) metal roofs such as on Kuncung (Marwoto, 1981).

There are also several types of Kasepuhan palace decorations: (1) motifs of geometry that resembles crosses, such as the tumpal, and simbar; (2) motifs of plants that are shaped like tendrils of flowers and leaves, with some being shaped like a leaf-shaped heart and a kawung motif on irik; (3) motifs that depict animals in relief such as Kakatua birds, relief birds in black and gold, elephant reliefs, and bull reliefs; (4) webbing motifs; and (5) motifs of wadasan, which are motifs unique to Cirebon, the shape of which depicts mountains. This motif could represent the Mount Meru cosmic mountain with the Indrakila peak being the center of the universe, and is only found in places reserved for the Sultan; (6) porcelain dishware, which is a dominant decoration in Cirebon; and (7) blue-white and brown-white porcelain tiles, which were a gift from the Netherlands in 1745 (Marwoto, 1981).

The making of the virtual tour application for the Kasepuhan palace was part of the Nusantara website, which can be accessed at http://keraton.perpusnas.go.id. This website was launched at the closing ceremony of the Kraton Nusantara XI Festival in Cirebon by President Jokowi in September 2017. The development of this website was closely related to one of the functions of National Library of the Republic of Indonesia as a conservation library as mandated by the Library Act. In addition to the virtual tour applications, the site pages also contain articles, photos, and videos that record and explain the buildings in the palace area.

Prior to the documentation process, the National Library of the Republic of Indonesia requested permission from the Kasepuhan palace, which was granted except for certain locations such as the Keputren area. The development of the virtual tour application was done by a conservation and knowledge management service company under the supervision of the Sub Division of Automation, the National Library of the Republic of Indonesia. The virtual tour application was developed from eighteen 360° panoramic photos of the Kasepuhan palace area, after which the photos were incorporated using Panotour Pro v2.0.0 64 bits and displayed in HTML5 format so they could be integrated into the parent website pages.
The Kasepuhan palace virtual tour application features 360° navigation, auto rotation, zoom-in-zoom-out, panorama switching, and a help menu. There is also a blue arrow icon for the next panorama entry point, and if the top right corner is clicked, the user can access a selection of the panoramic images of the Kasepuhan palace area. This feature can be used for navigation to virtually explore the Kasepuhan palace area as it displays the shape and layout of the buildings.

However, there is no feature that gives users information about the name, history, function, ornaments or meanings behind the symbols on the Kasepuhan palace buildings, which means that they need to access such information from other Keraton Nusantara website documents such as articles, photographs or videos.

The traditional knowledge of the Kasepuhan palace buildings is preserved through the virtual tour, which begins with a panorama of the outer areas of the Kasepuhan palace, moves into the first courtyard through the Gapura Adi and then through the second courtyard through the Gapura Banteng. After that, users enter the third courtyard to view the Bunderan Dewandaru, Jinem Pangrawit, Bangsal Pringgandani, and finally arrive at the Bangsal Prabayasa. Not all parts of the Kasepuhan palace are shown in the virtual tour; for example, users cannot view the exterior of the palace such as the alun-alun or the Great Mosque, or the interior of such buildings as the Bangsal Panemahan. In addition to the access limitations specified by Kasepuhan palace, there was also limited documentation time in the field.

When starting the tour, users are given the option of entering the area through the Gapura Adi or through the western side through the Kemandungan door. In the outer areas, users can see the palace wall porcelain decorations from China and Europe; however, unfortunately, the detail is not clearly visible.

On entering the Gapura Adi, users experience the ambience in the first courtyard or the Sitinggil area. In the northern area, there are three buildings; the Semar Tinandu, the Malang Semirang, and the Pandawa Lima. The Semar Tinandu is a rectangular building that was used by the cleric of the palace to view the war exercises held in the alun-alun. However, Marwoto (1981, 35) claimed that this building was usually used by the Sultan to sit and shake hands with relatives at events such as after Eid prayer. In the middle is the Malang Semirang, which is a large square-shaped building that had a similar function to the Semar Tinandu as the seat of the Sultan when he was in Sitinggil for a large ceremony such as giving Islamic religious instruction to relatives, deciding on the death penalty, or watching Sodor games on a Saturday. The Pandawa Lima is a square-shaped building that served as a place for pathi at official ceremonies held by the palace. The Malang Semirang is flanked by the Semar Tinandu on the right and the Pandawa Lima on the left, which symbolize that in the teachings of Islam, the position of science is considered important for human life (Marwoto, 1981).

Although they had important functions and meanings, the details of these three buildings in the virtual tour were not clearly visible. For example, the Semar Tinandu details are not visible because they are somewhat obscured by shadow of a tree. The roof of this building is supported by two pillars and has an irik with a unique ornament of the Kasepuhan palace. As these two pillars symbolize the two sentences of Shahada, the name Semar Tinandu means “the thing that is carried by Semar is the knowledge of Allah” (Marwoto, 1981:34-35). The shadow of the tree also obscures details of the Malang Semirang. This occurred because the picture was taken at midday. To avoid this, the picture should have been taken in the morning or evening.

In addition to the three previously mentioned buildings, there are two other buildings in the Sitinggil area; the Mande Pengiring and the Mande Gamelan. The Mande Pengiring served as the seat of the royal family, consorts, and their servants for certain events, and the Mande Gamelan, or the Mande Karesmen, was a place for Sekat gamelan at Sekaten ceremonies (Marwoto, 1981). On the virtual tour, users can view the saka kendit shaped decorations on the red brick base of the Mande Pengiring on the outer pillars and the roof. However, the virtual tour does not clearly show the saka guru or the irik on the ceiling. This information can be displayed by using additional features such as the snapshots of the pillars and irik details as well as information about their function and meaning. Sections of the snapshots also provide information about the Mande Karesmen that is visible from a distance and somewhat obscured by the Mande Pengiring.

Behind the Mande Pengiring, there are separate buildings for the lingga and yoni, even though generally, the lingga and yoni are depicted in unity. The Lingga Yoni can be found in several Javanese and Balinese communities. At the temple site in Java, the lingga yoni is a marker of the Javanese civilization in the Hindu period. The lingga yoni in Hindu beliefs is an embodiment of the union of Shiva and Parvati (Sunoto, 2017). The existence of the lingga yoni in this area indicates the influence of the Hindu culture on the Sitinggil area in the Kasepuhan palace. Unfortunately, this building is not visible on the virtual tour because it is obscured by a yellow dustbin, which indicates that when this was produced, there was a lack of attention to the knowledge preservation in the area.

Users leave the Sitinggil area through the Gapura Banteng gate in the south, which has a pair of wings and a pair of corner tower ladder-cheeks (Utaminingsih, 1996). The image of the bull that was the origin of the gate’s name is, however, not visible on the virtual tour. This image is located on the outer side of each staircase. This information can be added by inserting an image snippet and description linked to the virtual tour.
After leaving the Sitinggil area, users can see the Pangada, which functioned as a “kemitan” or guard room where clerics and relatives at the palace waited to visit with the Sultan. To the south of the Pangada is the redbrick building, the Pintu Jam, which used to have bell to warn palace residents of threats from outside the palace on the door and was protected by palace guardians (Marwoto, 1981). The building was designed so that the bell was loud; however, currently, there is no longer a bell on the building as it is in the Kasepuhan palace museum. On the virtual tour, this building is only visible in part because it is obscured by the Pangada.

After passing the Pangada, users can enter the Kemandungan door and go directly into the third courtyard to the Bunderan Dewandaru. Between the Kemandungan door and the Gledegan door, there is a second courtyard area that is also part of the Kasepuhan palace; however, this area is not part of the virtual tour.

The Bunderan Dewandaru, a name that originated from Bunderan (total agreement), Dewa (the God), and Daru (light), and means that someone has to be the one who enlightens others in the darkness, is an oval shaped garden. There are two white tiger statues that symbolize that Cirebon was the successor of the Pajajaran kingdom (Marwoto, 1981). On the virtual tour, the details and ambience of Bunderan Dewandaru are clearly recorded because there are no big trees in the area so there are no shadows covering the building as in the previous courtyard.

Behind the Bunderan Dewandaru is the Gapura Kuta Gara Wadasan, which is the gate to the main hall. However, as not everyone can enter the hall through this gate, visitors to the Kasepuhan palace area usually enter the hall through the gate next to it called the Buk Bacem. On the virtual tour, users are given the option of entering the hall through the Gapura of Kuta Gara Wadasan or the Buk Bacem.

On entering the Gapura Gara Wadasan gate, the users see a Kuncung which served as a parking space. The Kuncung connects the Kuta Gara Wadasan with the Jinem Pangrawit, which is where the Sultan received guests of honor (Marwoto, 1981).

From the Jinem Pangrawit, users can enter the Gajah Nguling as a connector building to the Bangsal Pringgondani. This building is called the Gajah Nguling because its location is to the northwest rather than to the north; therefore, it resembles an elephant’s trunk when it is lifted (Marwoto, 1981). The entrance to the Jinem Pangrawit is not upright to the palace hall to prevent incoming enemies directly attacking the throne. The virtual tour shows six concrete European influenced pillars, three of which line each side of the building.

Meanwhile, virtual tour users who opt to enter via the Buk Bacem gate pass the Langgar Alit and then enter the Bangsal Pringgondani through the west door; the east door is not used by the public. Users can see clearly the decorations on the gate as well as the porcelain dish patches on the wall in front of the Sitinggil area and the Bangsal Pringgondani wall.

Bangsal Pringgondani was used to receive regents who were meeting the Sultan and for the court of the Royal family (Marwoto, 1981). The tile, pillar, and decorative details and the irik detail on the ceiling are clearly visible on the virtual tour. However, the details of the Dutch porcelains that adorn the entire wall of the hall are unclear.

The subsequent building is the Bangsal Prabayasa, which is a closed building to the south of the Bangsal Pringgondani that served as a meeting place for royal ministers (Wahjudin, 1996). The virtual tour shows twenty wooden pillars consisting of eight saka guru and twelve pillars. The panorama is able to show the motifs of the upside-down rucung bung and stripan on the saka guru body pillar. However, the details of carved plant motifs found at the top of the east and west doors of the hall are not clearly documented because of the sunlight from outside the building (backlight).

5. Conclusion

Kasepuhan palace is the oldest palace in Cirebon and has been designated as a cultural heritage building by the government. As a cultural heritage building, the Kasepuhan palace needs to be preserved to understand the development of history, science and culture in the life of the society, nation, and state. The Kasepuhan palace buildings encompass traditional knowledge in its decorative, architectural elements and layout that had both aesthetic and symbolic functions. This type of knowledge needs to be conserved to promote national culture and maintain national identity. The preservation of knowledge includes the selection and identification of particular knowledge to enable the storing, regulation and operation of organizational memory.

One of the Kasepuhan palace knowledge preservation efforts was a virtual tour developed by the National Library of the Republic of Indonesia. Through the virtual tour, users can view and interact with the Kasepuhan palace environment in a 360° panorama and also access buildings that they cannot visit on actual tours.

However, the selection and identification process involved in the virtual tour shown on the Keraton Nusantara website does not fully capture the entire Kasepuhan palace area, with elements missing such as outer buildings (e.g., Pancaniti
and Pancaratna) and inner buildings (e.g., keputren and the second courtyard buildings). This was due to limitations by the palace and the limited time available in the field. In addition, some buildings and important details have not been clearly captured, which indicates that the knowledge identification was not fully identified during the shooting. Ideally, information about the location, building functions, decoration types, and the symbols on the buildings need to be provided before proceeding to the next stage, which would assist in understanding the knowledge that needs to be preserved in the virtual tour.

In the storage process, virtual tours can be used as cultural heritage preservation tools if supported by decent photography and adequate image recording technology. This is very important because the detail of each building had unique aesthetic and symbolic functions. Therefore, to clearly capture these elements, shooting should be conducted in the morning or in the late afternoon and high-resolution cameras used to fully capture the building details accurately.

When establishing and operationalizing organizational memory, the virtual tour features are limited to only navigation and zoom features; therefore, the addition of other navigational features such as maps and snippet images as well as additional information on the building details such as the function and meaning of symbols could add value to the virtual tour experience. Even though the lack of such information is compensated for through the provision of other articles, photos and videos on the same website, these should be added to the virtual tour to fully facilitate the dissemination of knowledge to users and achieve the goal of preserving and sharing as much of the knowledge as possible.

References


