

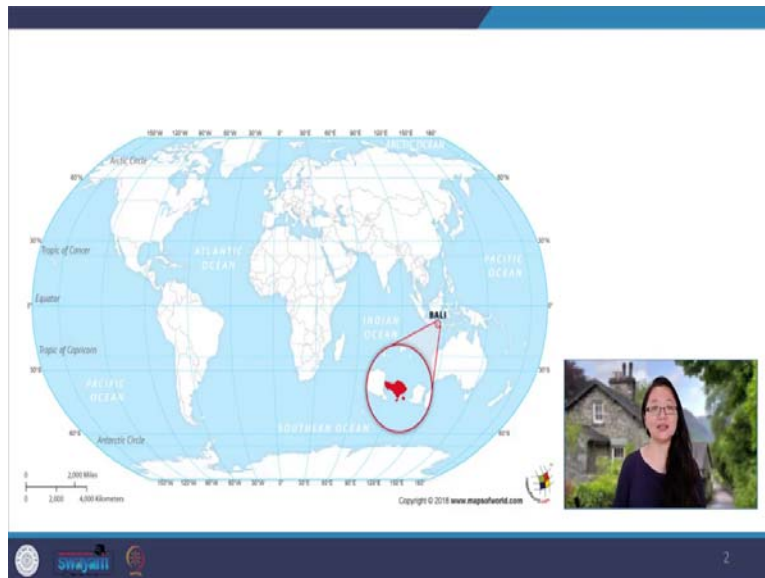
International Studies in Vernacular Architecture
Associate Professor Yenny Gunawan
Center for Adaptation and Resilience Environmental Design Studies
Universitas Katolik Parahyangan
Bandung, West Java, Indonesia

Lecture 02

Space and Meaning in Balinese Vernacular Architecture

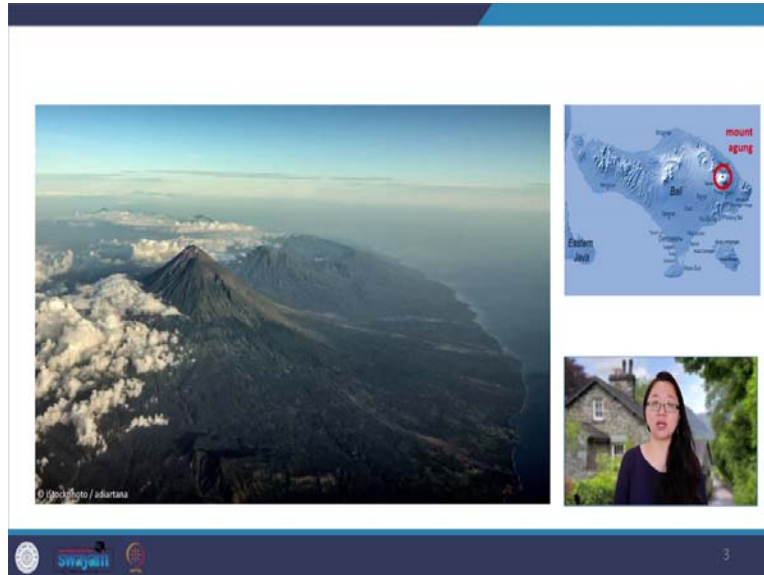
Hi, everyone. Welcome to International Studies on Vernacular Architecture course. My name is Yenny Gunawan, and today we are going to talk about Space and Meaning in Balinese Vernacular Architecture, and how it can be applied in the contemporary world today.

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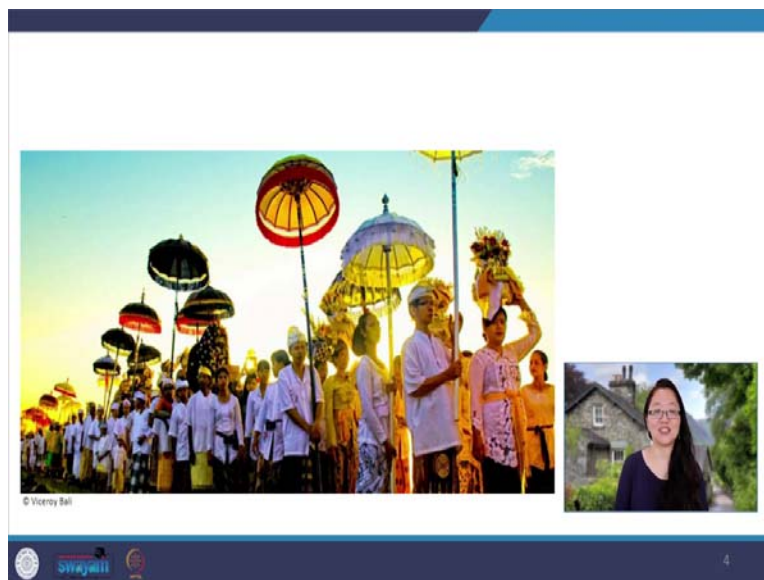
Bali is an island located in the Indonesian archipelago towards the east of Java Island. It is believed that since 2,000 BC the island was already occupied by the Austronesian. Ancient historical relics showed influence from India, China, Taiwan, Southeast Asia and Oceania.

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Most of Bali is mountainous, its highest peak is Mount Agung, an active volcano with 10,300 feet above sea level in height. And this Mount Agung is also known locally as the naval of the world. The mountainous area is hilly tropical rainforest, and the forest, at the forest there grows giant banyan trees that are held sacred by the Balinese. The main lowland is mostly towards the south with beautiful beach.

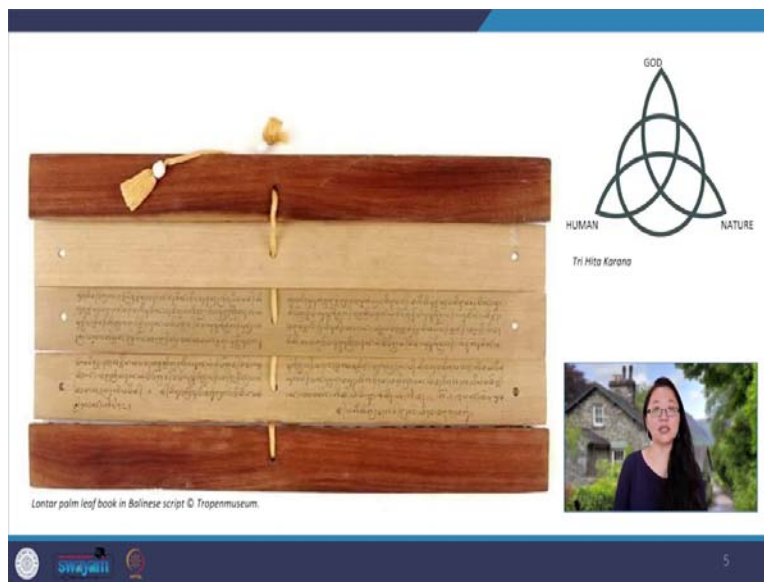
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The Balinese have embraced Hinduism by the 7th century. When Mahendradatta, the mother of Airlangga, who ruled Java around 11th century married Udayana, the Balinese king, many Japanese Hindus immigrated to Bali. And when Islam triumphed over Hinduism in Java around 16th century, Bali became a refugee for many Hindu nobles, priests and intellectuals.

Today, in Indonesia, the Balinese is the only remaining community that holds Hinduism as their beliefs. Though their Hindu, Hinduism is blended with Buddhism, Animism and magical beliefs and practice. The Balinese create their architecture based on these beliefs.

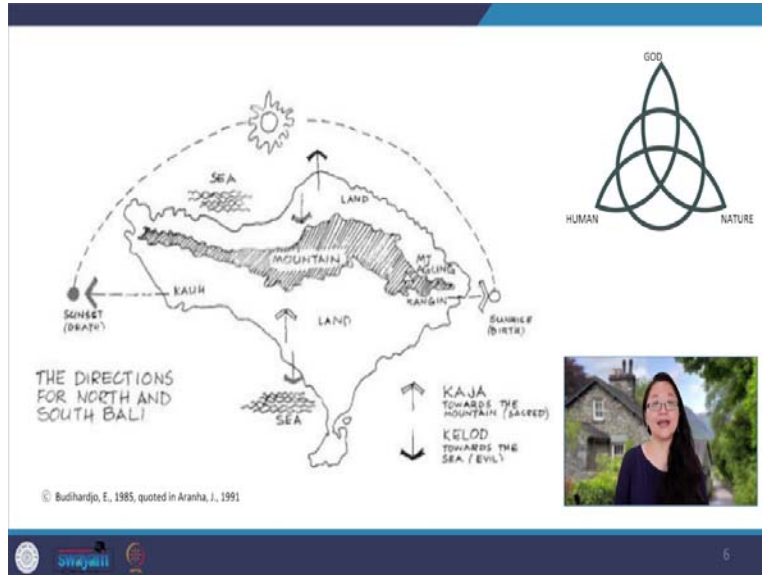
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Studies on Balinese architecture mention a traditional architect known as Undagi, who follows a palm leaf manuscript of architectural rules which takes into consideration the principal templates of Balinese Hinduism.

These Balinese architecture rules are known as Asta Kosala Kosali. According to Popodanes, Ramsayer, Paul Oliver and Ali, the main principle of Asta Kosala Kosali is the acknowledgement of human entity, the microcosm or in local language bhuana alit as part of the universe at large, the macrocosm or Guana Agung.

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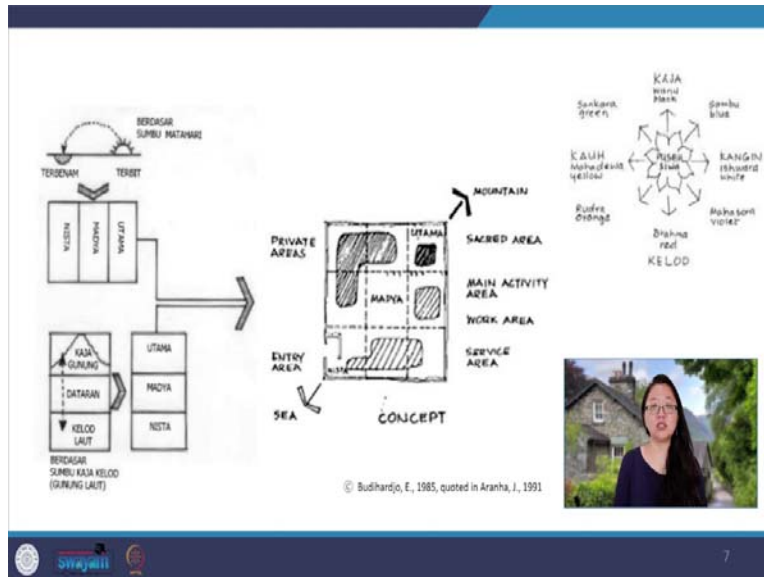


In recognizing microcosm and macrocosm Asta Kosala Kosali seeks to achieve balance amongst the three elements of life, God, human beings and nature, popularly known as the three cause of happiness or Tri Hita Karana. The Balinese believe that true happiness might be obtained when one establishes harmony with God, other human beings and the natural environment. And thus it is the task of an Undagi to keep the architecture in the state of balance between God, human beings and environment to achieve happiness.

Therefore, based on beliefs Balinese vernacular architecture always consider aspects of climate, natural condition and social life in the arrangement of spatial pattern, construction structures and the selection of building materials by utilizing available materials in Bali in accordance with the condition of the existing infrastructure.

The spatial pattern follows natural environment orientation vertically towards Mount Agung and sea, and horizontally according to sunrise and sunset direction. Mount Agung or Kaja in their language is perceived as Ulu which means top, front natural, spiritual and closer to God, while the ocean or Kelod is perceived as Taban which means downstream, bottom, back and death, spirits.

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As can be seen in the picture, it is interesting to note that the orientation is based on the mountain not north south. So if you are in north Bali, then the sacred space, the mountain, is at the south, and the ocean towards the north, and vice versa.

And then the Balinese interpret these directions and orientations into Sangha Mandala or the nine zone concept in architecture. As can be seen in the picture Utama for the most sacred space should be directed towards Mount Agung as the holiest mountain and Nista, the opposite should be directed towards the ocean.

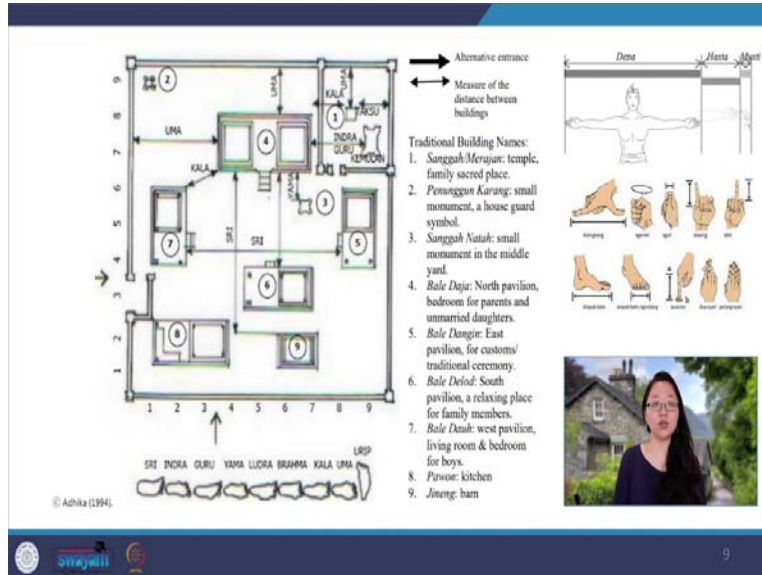
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Here is a typical Balinese dwelling compound, usually occupied by an extended family. The compound consists of several buildings with different functions, and the hierarchical arrangement follows the orientation of the direction as described above. Family shrine, most sacred space, Utama, the highest hierarchy placed in the orientation towards the mountain Kajyakanin position, living quarter for sleeping, working, eating receiving guests.

The human area is Madya, surrounding the courtyard. The buildings for living quarters are called Uma Meten, Bale Sikepat, Bale Tiang Sanga and Bale Sekenam. And granaries, kitchen and gates considered to have the lowest hierarchy Nista, were placed farthest from the shrine towards the ocean in the kalotkaw position or in the taban area.

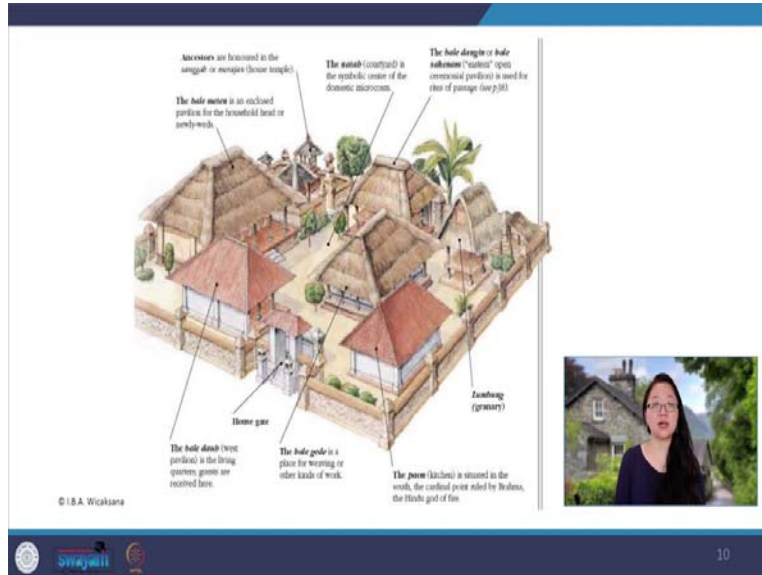
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Other than Nava Sangha zone concept, traditional Balinese architect Undagi also follows rules to measure spaces and compound using human body. For example one hasta is the length from elbow to tip of the middle finger ranging 45 to 56 centimeters, while one depa is the length measured from the tip of the finger to the tip of the other finger of two arms outstretched.

And there were standard rules to measure the distance between each building within the scope of a Balinese vernacular house plan as shown in the picture. For example distance between Bale Dangin and Bale Dauh is sri. And there is a specific way of measuring sri using foot, starting left and right and so on as can be seen in the picture.

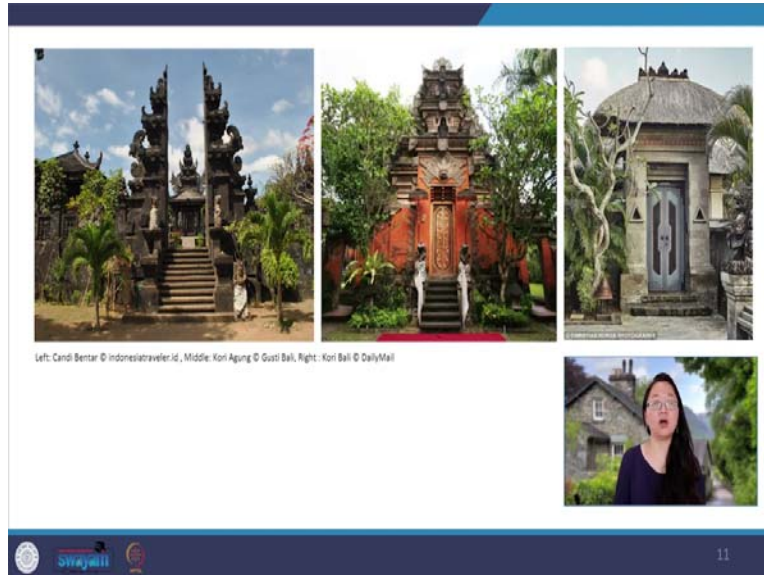
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An important feature to note in Balinese compound is the courtyard and the gate. The courtyard is the communal outdoor space right in the middle of the compound where dwellers activities centered around this courtyard is called natab.

The arrangement was truly communicative where indoor and outdoor activities were proportionally met the courtyard, then served as the center of orientation. This concept of natab as the center of orientation was derived from a swastika pattern in Balinese culture whose central axis is emptiness.

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The compound is enclosed by a brick wall with openings as gate. According to Professor Oaker, the gate is called pamasuan or pamadalan. The term means exit. Pamesuan or palmadalan is the only gate which means exit, not referred to as an entrance. Pamasuan can be either house gate or yak gate or temple gate or gate for a village.

This gives a sense that the pamasuan or pamadalan is the means by which the occupants of the house or temple or shrine or village goes out. Balinese architecture recognizes two types of gate. Candi Bentar split gate for shrines and palaces and paduaraksa or kori roof gate for residential.

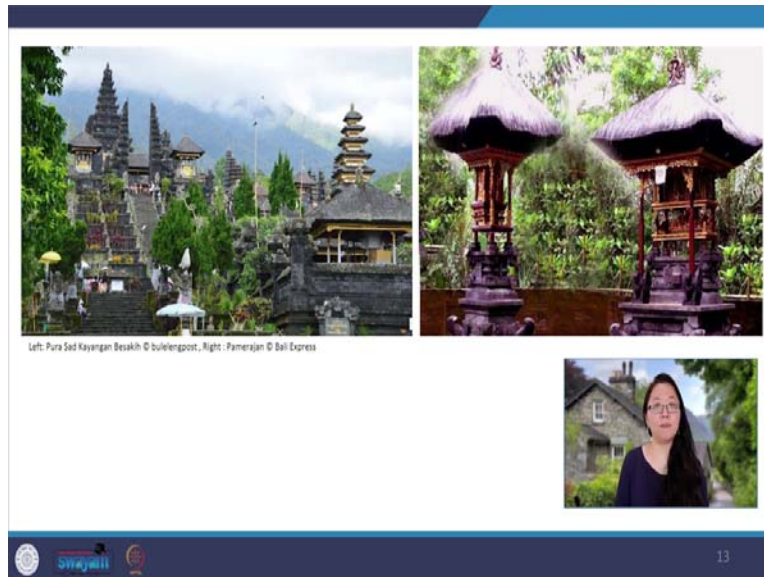
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The shape of traditional Balinese buildings is basically determined by the number of supporting poles. The smallest type for residential building is sakapat or a four pillar building. The enlarged types are six pillars called sakanam, eight pillars called sakatus, nine pillars called tian sansa and twelve pillars called sakaroras.

Usually, buildings for working, eating ceremonial purposes or receiving guests use but not limited to four pillars or bale sakapat and six pillars or bale sakanam without walls. While the one for living quarters are starting from six pillars up to twelve pillars building which have walls to create room for sleepings. The walls are made of clay. All, all Balinese buildings, traditional buildings roofs are of thatch or palm leaves or tile roofs.

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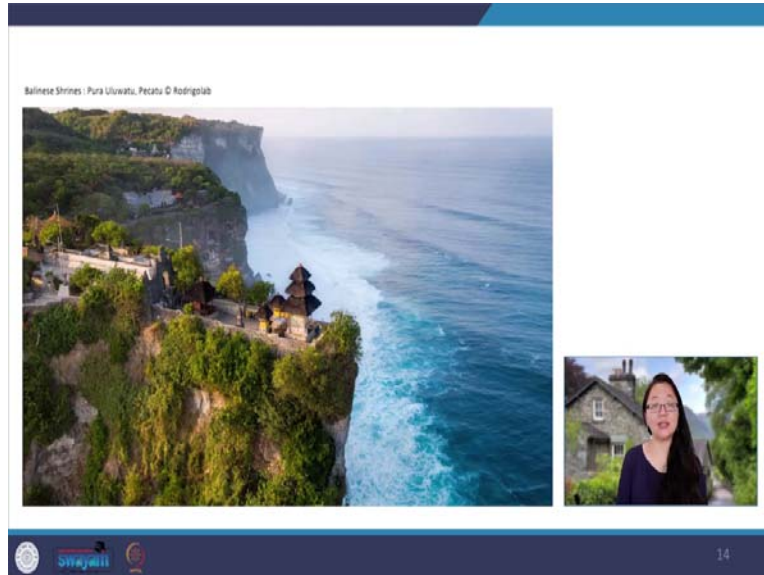


Other than orientation, tri hita karana also point out that the environment microcosm are made of five basic elements, water, liquid, air, wind fire, light, earth, solid and aether, space. The five basic elements come in the form of two complementary opposites. The material, sakala and the immaterial niskala as stated in Ramseyr book.

So the Balinese has many shrines to honor natural elements. The shrines vary in shapes and scale which denotes the different level of niskala, the immaterial. For example, the most sacred is sakayangan shrines which are believed to be the primary shrines in Bali. And there are only six sakayangan shrines in Bali.

And then there is pura desa or village shrines or pura for the keeper of the village, and there is also palingi for the keeper of the environment, for example the keeper of river, spring lake and etc. And there is also Pamerajan or sangha for the house or known as family shrines.

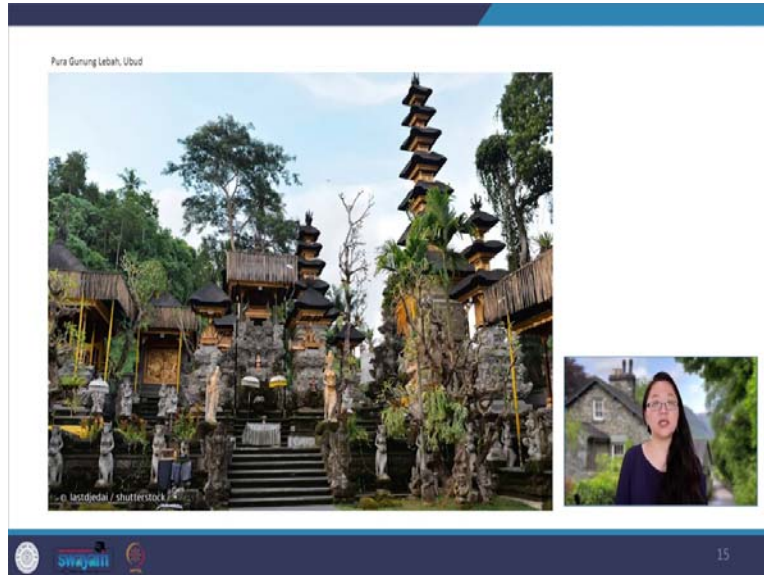
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One of the most notable sakayangan shrine is Pura Uluwatu, located at an altitude of 97 meters above sea level on the southwest tip of the island of Bali on a steep and high rock platform that juts into the sea in the Peccatu traditional village. The primary shrine is believed by Hindus to be the pillars of the nine compass.

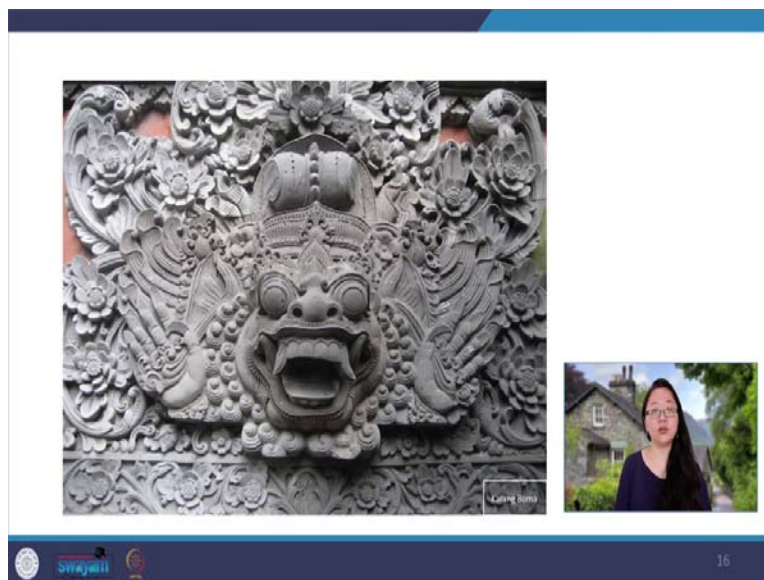
In the front of the temple, there is a small forest called awaska karan which functions as a buffer for the sanctity of the temple. And this is an example of a main village shrine or Pura Desa in Ubud Bali called Pura Gunung Laba. It is located in the river valley and dedicated as a place of worship for Sang Hyang Dedari Danurim Mount Batur, the Goddess of Mount Batur, and is said to be the pioneer of the existence of Ubud village. So each shrine has its own purpose.

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Aside from the shrines, Balinese are well known for their stone carvings, still related to macrocosm. The Balinese believes that every stone has its own characters and hence each stone should be treated differently. Some should be located above the human head and some close to the lower part of the human feet, and each stone carvings has its own meaning.

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Thus the architectural rules written in the lontar also include the materials used for carvings, the design and placement of the carvings and as well as their meanings. Here we will look at two stone carvings karang boma and karang asti, as an example, but there are more than two stone carvings type in Balinese vernacular architecture.

Karang boma is carvings in the form of a face resembling giant with long fangs and bulging eyes. Karang boma philosophy is for neutralizing those who comes into the complex or compound, and a symbol to eliminate the bad characteristics of giant. So when entering, one only carry divine attributes.

Karang boma is also believed as a spirit ornament, keeping sacred areas and sacred buildings from negative energies coming from outside. So Karang boma as a sacred carvings only allowed to be carved above the entrance of the building or the main gate for sacred shrine, or in the gate of the priest residents or the residents of a noble family.

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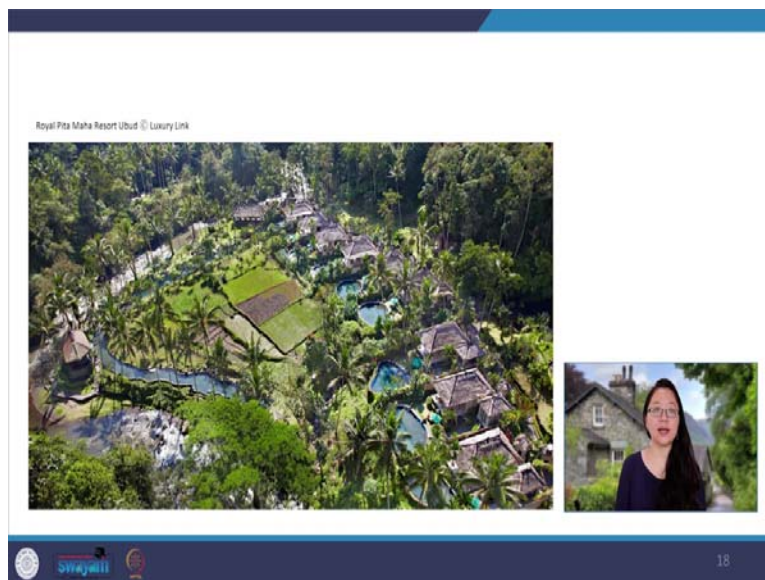


The second carvings that we discussed is karang asti which are placed in the lower part of the building or nista anga in Balinese. Karang asti shapes takes the form of an elephant, elephant head with a trunk and ivory tusk with big round eyes. It symbolizes a strong animals that have clairvoyant abilities because they are able to hear carefully using both big ears.

It is also an ornament that symbolizes the mountains which is the habitat of elephants and other four-legged animals that exist in the world. So karang asti's placement in the lower part signifies a strong foothold for the gate or the compound or the building.

Thus while considering tri hita karana in designing of a building complex along with special layout, and in choosing of the construction structures and building materials, an Undagi must carefully take into consideration not only climatic and environmental condition, but also social and cultural and spiritual conditions.

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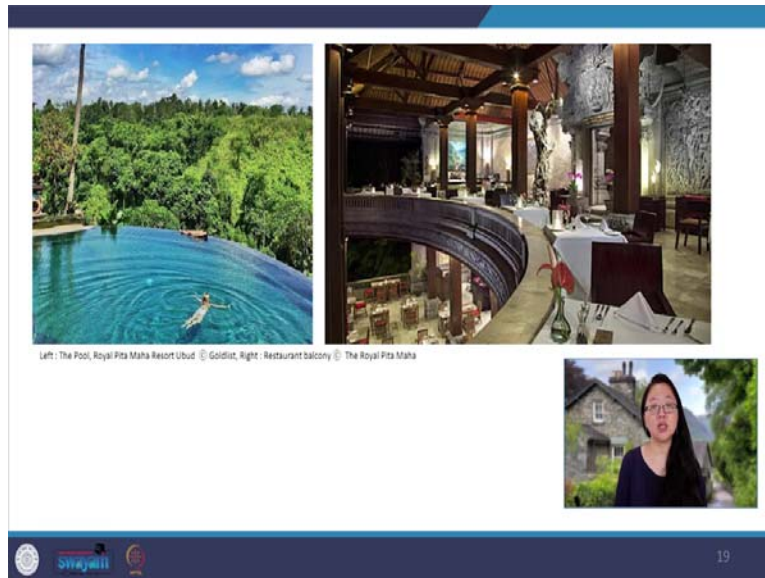
Now, we have arrived at the second part of the lecture. If now, we know the meaning behind Balinese vernacular architecture, then what can we do in the context of contemporary world today. Let us take a look at an example of what the traditional architect, the Undagi do for Bali's contemporary context.

This example is drawn from a field research done in 2012. The Undagi discussed here has received the Balinese master builder title in, since 1990s, and also has a master degree in business administration. He applied those Balinese architectural rules in the design of Royal Pita Maha resort in Ubud.

The resort is located in Kedewatan village, Ubud Gianyar region in a huge site. The site starts from the street and ends at the river called Ion river. Down the slope, approximately

80 meters height difference. There is also a natural waterfall and few rice fields in the north and tropical rainforest in the east side.

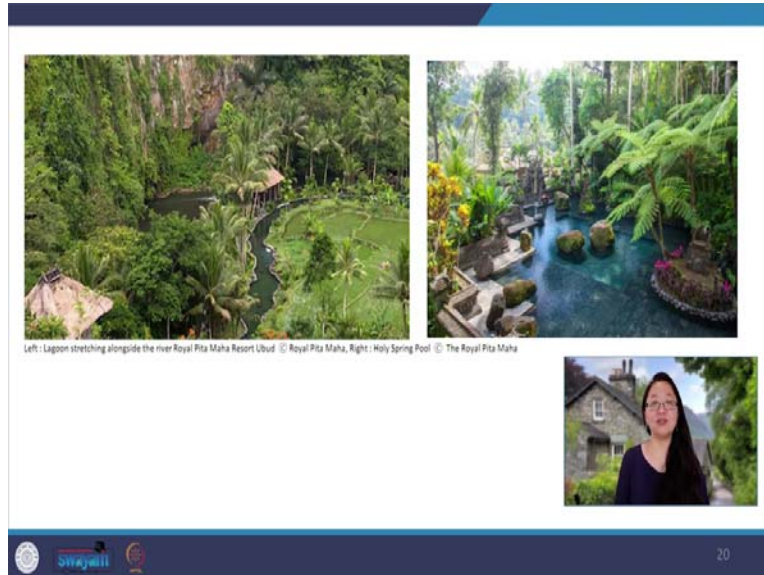
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In designing the layout of the resort, the Undagi respects the existing environment, the microcosm. He keeps the river and the natural waterfall as it were, as well as the trees and plants as many as possible, especially the huge trees and plants. The buildings are placed in relation with the contours of the slope, the trees and the river and the rice fields.

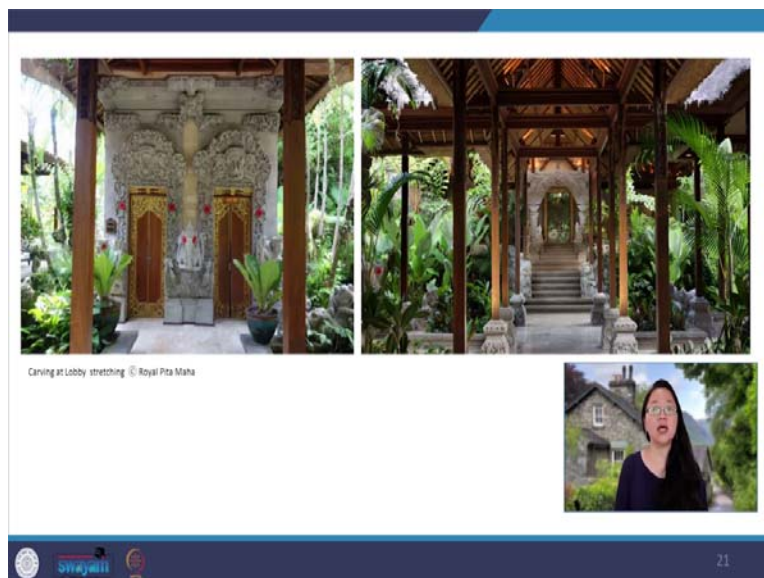
The river and rice field became the main view of the buildings. Connection to the river 80 meters down the slope is achieved by large swimming pool in the middle, an organic linear lagoon stretching alongside river, alongside the river at the bottom, and the balcony which directly captures the curve of the river.

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In addition, the Undagi uses the potential of the environment to enhance the resource atmosphere and activity. For example the water from waterfalls is used for holy spring water pool, and the river is also used for rafting. The working rice fields acting as fuels from bungalows and so on. As the result, the connecting, connection of the resort and the environment of the site are strong.

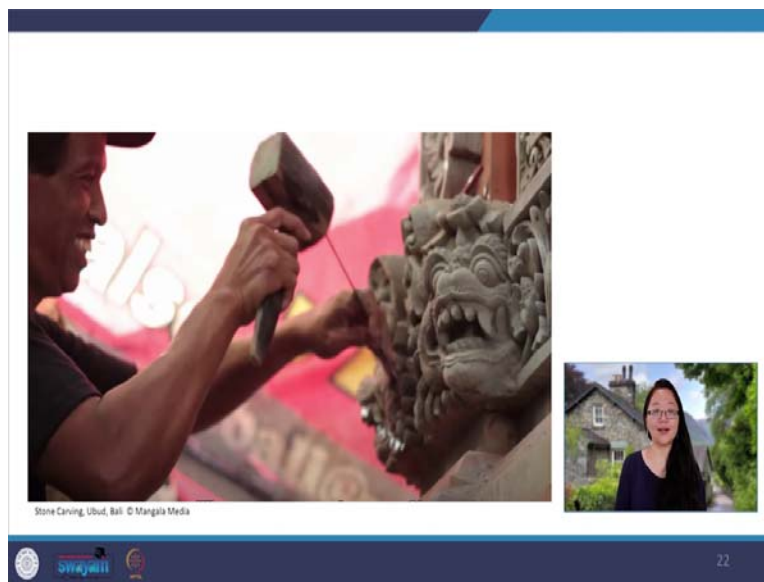
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Moreover, most of the materials chosen are Balinese vernacular architecture materials. The Undagi used Balinese stone bamboo wood and thatch roofs. And most of these materials are from the surrounding Gianyar village. In this way, the Undagi managed to lower the energy used for transporting building materials, and the four Balinese stones batu parastaru, salakarang, clutting and sarvogenap are carefully chosen because of its characteristics textures and motives.

The stones are carved excessively in the resort gates and walls. As mentioned before, in asta kosala kosali, there are certain rules on the placement of the stone that suited their characters. Therefore, in this Royal Pita Maha resort, some stone or karang are crafted and placed to suits the motives textures and symbols of the stone.

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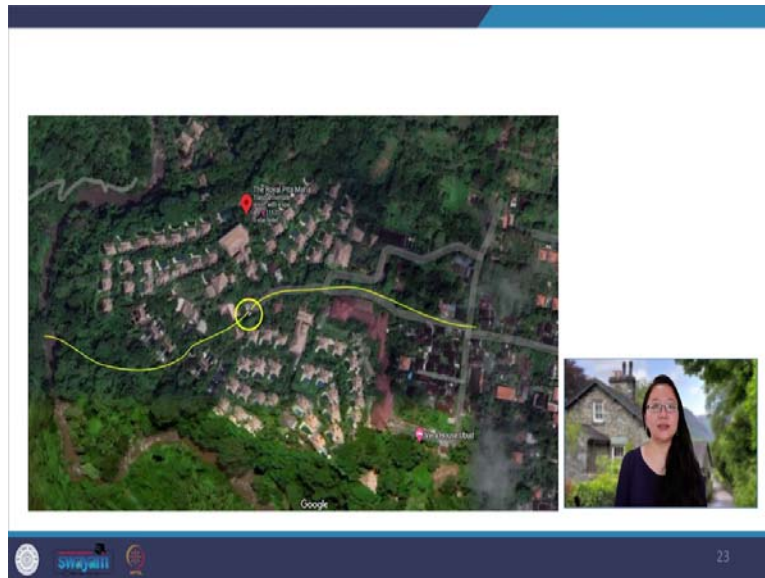


Most of the construction workers are Balinese from surrounding villages, except the workers for the thatch roof which require greater skills. The thatchers are from neighboring village. Because the construction workers are the Balinese, are also Balinese, they know the motives of the stone and also know how to weave the bamboo.

In this way, the Undagi has successfully sustained a local craftsmanship which closely related to Balinese culture as well as environment. The Undagi also still follows the

mountain sea and nava sangha spatial orientation for Balinese architecture rules mentioned before.

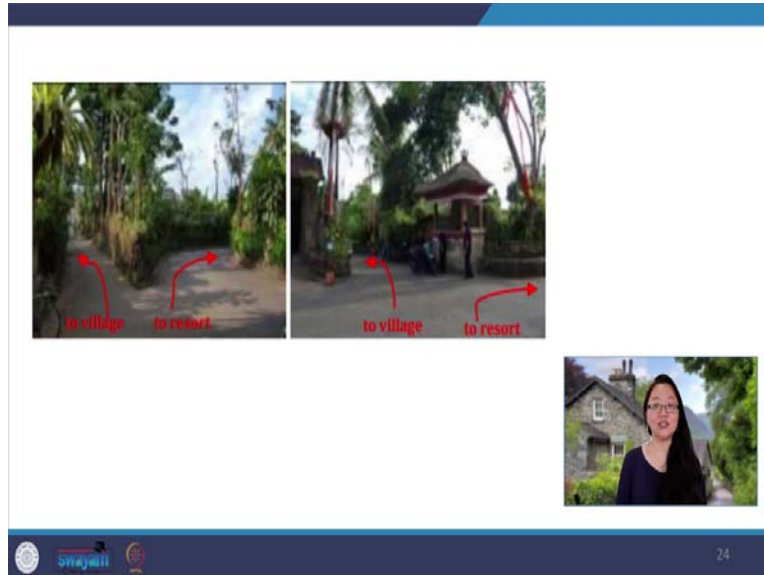
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The design of the main circulation of Royal Pita Maha resort divides the Kaja, mountain villas and Kelod, sea villas, and ends in the natab placed in the middle of the site, acting as entrance, public space and communal space. The Undagi also placed the main shrines in the kaja kangin direction towards the mountain, near the river.

There are also several smaller shrines place more dispersed to honor the huge trees and the stones, the macrocosm. Also, there are smaller signs or palingi to worship the keeper of the water near the waterfalls and the river. In this way, the Undagi skillfully combined the identity of the site, the slope of the river and the spring as well as the unique atmosphere of the tourists that stayed at the resort, as well as still connected to the immaterial aspect of the environment and spatial orientation.

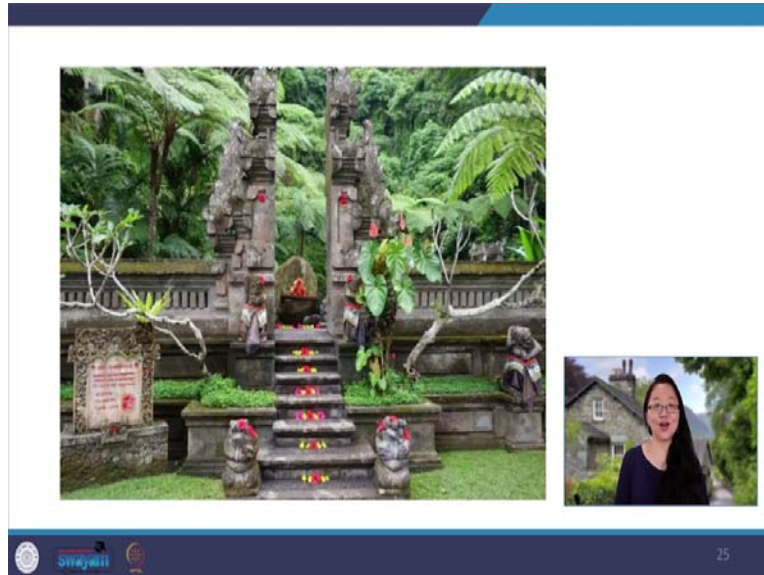
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Another aspect that is considered by the Undagi is by enhancing villagers' lives. He creates connection with the surrounding villages by designing three street junctions between the main decoration of the resort and the roads to Balinese villages.

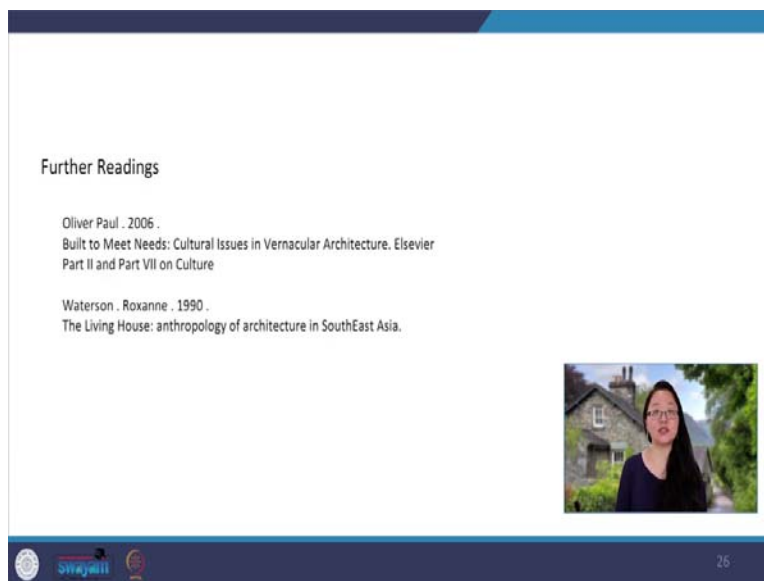
By creating this infrastructure, the Undagi allows easier access to the village, and eventually, it will affect the development of the villagers' economy. In this way, the Undagi participates in the creation of sustainable architecture, not only environment, but also socio-culturally, and it is in parallel with tourism.

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Now, we have arrived at the end of the lecture. Throughout the lecture, we have discussed how tri hita karana acknowledgement of immaterial aspects of environment contributes to the creation of meaning in Balinese vernacular architecture. We also learned how an Undagi creates a balanced relationship between the buildings and their environment in contemporary world today, and how it can be a way to sustain not only environment but also culture.

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And here are some references that you might be interested to look further. Thank you.
See you in the next lecture.