

# A COMPARISON OF TRADITIONAL SETTLEMENTS IN NEPAL AND BALI

J O S E P H L . A R A N H A

THE PROCESSES OF COLONIZATION AND MODERNIZATION HAVE CHANGED THE FORMS OF TRADITIONAL settlements in much of South and Southeast Asia. Fortunately, a few places remain where patterns of living and physical forms of settlement have remained relatively untouched by the forces of change. Places like these provide the opportunity to study architectural environments that are determined by factors other than functionalism and profit. These are environments where the physical forms of dwellings and settlements are entwined with religious, cultural, and social systems. The rich meanings of these environments may not always be obvious to the casual observer. But to the initiated townsman, villager, or priest, the environments have a profound influence on religious, social, mental, and even physical well-being. Environments like these still exist in Nepal and Bali. This paper is a comparative study of traditional dwellings and settlements in these two places.

Nestled among the foothills of the Himalayas, shut off from Western influence until the 1950s, is the Kingdom of Nepal. Here, in the towns of the Kathmandu Valley, a unique medieval urban culture that is more than 500 years old still survives. This culture, changed little since classical Hindu times, once affected the physical form of settlements throughout India and other parts of Asia.<sup>1</sup>

Several thousand miles to the southeast lies the island of Bali. Here, a combination of classical Hindu mythology and pre-Hindu local belief<sup>2</sup> has served as the basis for a particular form of built environment that had its beginning in the sixteenth century.<sup>3</sup> This environment, and the lifestyle that accompanies it, have also managed to survive into the twentieth century. Even today, life on Bali is similar in many ways to

JOSEPH L. ARANHA *received his architectural education in India and the U.S. and has been on the architecture faculty of Texas Tech University since 1981.*

that described by artists, anthropologists and scholars like Covarrubias, Mead, Belo, McPhee and others who, in the early part of this century, were among the first to promote Balinese art and culture in the West.<sup>4</sup> On Bali, the growth of tourism since the 1920s and the Indonesian government's desire for economic development have caused changes in the physical environment. The local political structure, once based on petty kingdoms and religion, has also been changed. But the life of the Balinese, like that of the Nepalese, continues to be regulated by detailed schedules of religious rites and obligations, elaborate rituals, and a complex social order based on caste and guild systems.<sup>5</sup>

The majority of Nepalese, as well as Balinese, are today agriculturists who practice variations of Hinduism.<sup>6</sup> While the physical form of their dwellings and settlements may seem very different on the surface, the two traditions prove remarkably similar when compared on the level of the religious and social orders that influence them. These religious beliefs and social organizations are very complex and have many variations and manifestations, and it is beyond the scope of this paper to discuss all their intricacies. But the paper will attempt to compare a few particularly important aspects of the two cultures as they relate to traditional architecture and settlement patterns.

## ARCHITECTURAL MANUALS

The location, orientation, and layout of towns, villages, temples, and dwellings in Nepal and Bali have traditionally been determined by ancient architectural manuals. These manuals contain instructions for a wide spectrum of architectural issues. The manuals also contain magic formulas and detailed procedures for laying out and constructing settlements, dwellings, temples, shrines, and other buildings.

In Nepal, the *vastu-sastras* (canons for the design of buildings) are part of the *vastuvidhya* (knowledge or science of building), a system of design once widely acknowledged throughout India. The *vastuvidhya* provides rules for building the dwelling places of "gods and men."<sup>7</sup> It is made up of numerous treatises, the most comprehensive of which are the *Manasara* and the *Mayamata*.<sup>8</sup> These were said to have been written by sages inspired by Visvakarman, one of the four divine architects manifested in the faces of Brahma. The *vastu-sastras* dictate detailed instructions for laying out towns and villages as mystic diagrams in which everything pertaining to the community, from markets to cremation grounds, has an assigned place in harmony with the universe. Evidence that early Nepalese builders knew of the *vastu-sastras* and used them in design is provided by the many versions of the manuals that

can be found in Nepal today and by inscriptions in buildings in the Kathmandu Valley that date to the sixteenth century.<sup>9</sup>

The Balinese equivalent of the *vastu-sastras* are the *Hasta Bumi*, or *Hasta Kosala Kosali*. These were recorded on palm leaves, as were all of the *Lontars* (ancient texts). The *Hasta Kosala Kosali* were written by the Javanese priest Empu Kuturan in the eleventh century. They were initially used by the Balinese in building temples, after the rulers of the Majapahit Dynasty<sup>10</sup> fled Java in the sixteenth century under the sword of Islam and set up their empire on the neighboring island. On Bali, the ancient design canons for towns, villages, and buildings have been strictly enforced. Like the *vastu-sastras*, the *Hasta Kosala Kosali* prescribes systems of measurement, proportion, ceremony, orientation, siting and spatial order used in architectural design.

## DIVINE COSMOLOGY AS ARCHITECTURAL ORDER

Awareness of the divine cosmic models that are part of Nepalese and Balinese belief is important to understanding how the ancient building manuals are used. To the Nepalese Hindu, the entire universe is a huge organism made up of earth, heavens, and hells. All these components were created by the universal spirit, the creator-god Brahma. Brahma controls the universe and maintains it in a state of perpetual motion and change. The universe passes through cycles, being reborn over and over again continuously.<sup>11</sup> The central theme in the religious life of the Newari is overcoming this cyclical pattern and achieving *moksha*, oneness with Brahma.<sup>12</sup>

As the creator, Brahma is the pivotal figure among the various deities in the Nepalese model of the universe. The position of each of the deities with respect to Brahma is often represented in *mandalas* (mystic diagrams). *Mandalas* are graphic representations or models of the universe often used as vehicles of meditation by *yogis*. While *mandalas* in Nepal are usually painted as diagrams on sacred scrolls or tapestries (*thankas*), any object with some spiritual connotation can be designed as a *mandala*.<sup>13</sup> As the largest artifacts of man — and thus part of the cosmos — cities, temples, and even dwellings can become *mandalas* and have "the same cosmic-magic effect on the initiated town dweller as the mandala had on the yogi."<sup>14</sup>

The *vastu-sastras* contain many kinds of *mandala* arrangements. The most common, however, is the *mandala* based on 81 squares (FIG. 1). In accordance with the cosmic model, Brahma occupies the central square or group of squares in this arrangement. Other deities are located in the squares surrounding him. The *vastupurusa* (the spirit of the place or

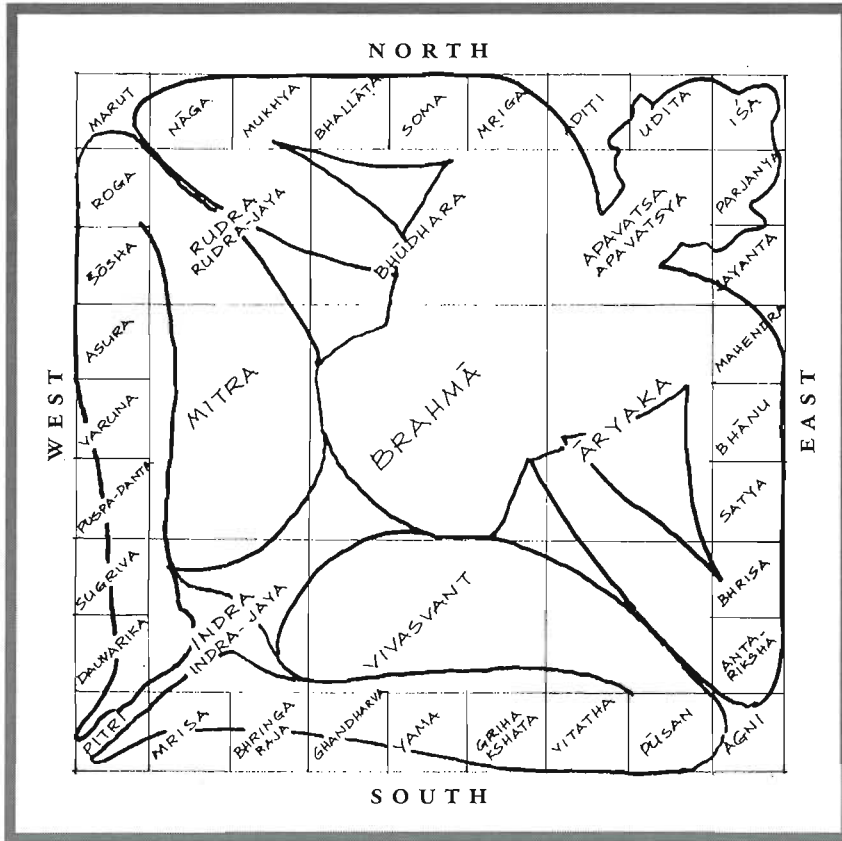


FIG. 1. The eighty-one square vastupurusa mandala.

building) is represented as the cosmic man superimposed on the *mandala*. The cosmic man lies in *yogic* pose, face down, with his head in the northeast (most auspicious) corner. The various parts of his anatomy — head, body, and limbs — represent the divinities with which they share squares. For example, all the cosmic man's vital organs, including his heart, are placed on the square of Brahma. Brahma is thought to be in every dwelling, responsible for the good and bad fortune of the owner. Brahma's heart, limbs, and head are the heart, limbs, and head of the house, and must be treated well during construction.

In contrast to the Nepalese belief, the Balinese macrocosm is made up of three worlds. The world that we see is the middle world, that between the upper world of the gods and the lower world of demons.<sup>15</sup> The middle world of humans is a microcosm (*Bhuwana Alit*) reflecting the larger macrocosm (*Bhuwana Agung*). As such, everything in the middle world is subject to the same tripartite division as the macrocosm. Harmony between the *Bhuwana Agung* and *Bhuwana Alit* must be maintained at all times, in all places, and for all objects. The Balinese refer to this reconciliation as *desa-kala-patra*. It is through *desa-kala-patra* that Balinese may escape the cycles of rebirth and obtain *moksha* with Siwa (Balinese for Sanskrit "Shiva"), the central divinity in the Balinese concept

of *nawa sanga*, or nine directions. The Balinese *sanga mandala* is based on the *nawa sanga*, and is a diagram like the Nepalese *vastupurusa mandala*. However, unlike the *vastupurusa mandala*, the *sanga mandala* is made of nine squares: four for the intermediate points, four for the cardinal points, and one for the center.<sup>16</sup> The *Hasta Kosala Kosali* uses the *sanga mandala* as the basis for the orientation and siting of villages and dwellings. According to the *Hasta Kosala Kosali*, villages, dwellings, shrines, and all artifacts of man belong to the middle world and represent the human being. As such, they are divided into head, body, and feet. The division corresponds to the tripartite order of the worlds of the *Bhuwana Agung*: *utama* (upper and sacred), *madya* (middle and human), and *nista* (lower and profane).

### THE MANDALA

The *mandala* forms the basis for the orientation and location of dwellings and settlements in both Nepal and Bali. In Nepal the *vastupurusa mandala* is oriented according to the four cardinal points. North, east, and west are thought to be auspicious directions, while south is thought to be inauspicious because it is the region of Yama, the god of death (the center, of course, is for Brahma, and is the most sacred space). During

construction, the *vastupurusa mandala* is laid out on the site and offerings are made to the protective deities according to the instructions of the *vastu-sastras*. Care must be taken to ensure that the limbs of the *vastupurusa* are not hurt. The limbs of the *vastupurusa* represent the limbs of the building, and if these are hurt, misfortune will come to the occupant/owner.

The orientation of the Balinese diagram, the *sanga mandala*, by contrast, is dominated from top to bottom by the mountain-sea axis, and from right to left by the sunrise-sunset axis (FIG. 2). These directions are symbolized by specific colors and deities according to Balinese mythology.<sup>17</sup> The direction toward the mountain is known as *kaja*, and that toward the sea is known as *kelod*. The Balinese believe that Bali is the navel of the world and that the abode of the gods is located in the clouds above the summit of Mt. Agung, the island's highest volcano. The sea is the realm of demons and evil spirits. The *sawahs* (rice fields) and forests in-between are the abode of humans — once again the tripartite division corresponding to head, body, and feet. Order and harmony between the built environment and the universe is achieved by spatial hierarchy and orientation made possible by following the *sanga mandala*.

### HIERARCHY AND SPATIAL ORDER

Since position and rank are so important to both the Nepalese and Balinese views of the cosmos, the traditional architectural manuals contain elaborate instructions for creating a hierarchy of space in dwellings and settlements. In Nepal, spaces that are sited in the center of the *mandala* are the most important, most sacred, or most private. Less important, less sacred, or less private spaces are located concentrically on the outer squares of the *mandala*. The *vastu-sastras* outline how cities are to be laid out according to a *mandala* that reflects a concentric hierarchy of deities, with Brahma and the highest of the divinities occupying the central squares and the less favorable deities arranged around the outside. Urban zones, therefore, are thought to increase in sanctity toward a city's center. The countryside is the natural boundary of this settled zone, and beyond it, in the mountains or forests, is the abode of demons and evil spirits and the realm of the dead. Individual parts of dwellings are also assigned locations on the *mandala* relative to their importance and degree of sanctity. This further aspect of the spatial hierarchy will be discussed later.

To the Balinese, spatial hierarchy is achieved by dividing all things into three parts in harmony with the tripartite division of the cosmos. Spatial hierarchy is represented by *utama*, *madya*, and *nista* (high, middle, and low), a concept known as *triloka* when applied to architectural space and *triangga* when applied to human anatomy. The *triloka* and *triangga* divisions

are manifested in all kinds of things and environments, from regional planning, to village layout, design of dwellings, details of structure, columns, and even furniture.<sup>18</sup> According to the *sanga mandala*, the most important, sacred, or private part of a village or dwelling is located as close to *kaja* as possible. Spaces that are used for day-to-day life are located in the center of the *sanga mandala*. The most impure or potentially profane areas are located in the direction of *kelod*. Spatial order in Balinese architecture is also achieved by orientation toward sunrise (most auspicious) or sunset (least auspicious). The procedure for constructing a building also follows a determined order expressing the relative importance or sanctity of space. The Balinese are very conscious of the relative position of every object, and everything included in the layout of villages, dwellings, and temples has its proper place.

### THE ARCHITECT-PRIEST

According to the *vastu-sastras* and the *Hasta Kosala Kosali*, the person responsible for interpreting and executing the prescribed design canons is the master builder. This person is regarded as both architect and priest. As architect, he is expected to be well educated, have a knowledge of science and mathematics, and be skilled in all aspects of building crafts (painting, sculpture, carpentry, etc.). As priest, he is expected to perform all the religious rites associated with the construction of the building. The qualifications of the architect-priest are clearly described in the traditional manuals. In the *vastu-sastras* the master builder is called, in Sanskrit, *sthapati*<sup>19</sup> and is regarded as a son or disciple of Visvakarman. Many artisans involved in the building trades are known in Nepali as *sthapit*.<sup>20</sup> In the *Hasta Kosala Kosali*, the architect-priest is known as *undagi* and is described as a disciple of Bhagwan Wiswa Karna (the Balinese name for Visvakarman). He is a much respected member of society, on the same level as the master puppeteer or medicine man.

The *mandala*, hierarchy and orientation, and the architect-priest are important features behind both Nepalese and Balinese traditional architecture. The following comparative study of the dwellings and settlements of these two cultures reveals how ancient architectural manuals have been used to create environments that are strikingly different, yet amazingly similar.

### THE NEPALESE TOWN

The settlements of the Kathmandu Valley are tight clusters of densely packed, multi-story houses (FIG. 3). They have a strikingly urban character despite the fact that their inhab-

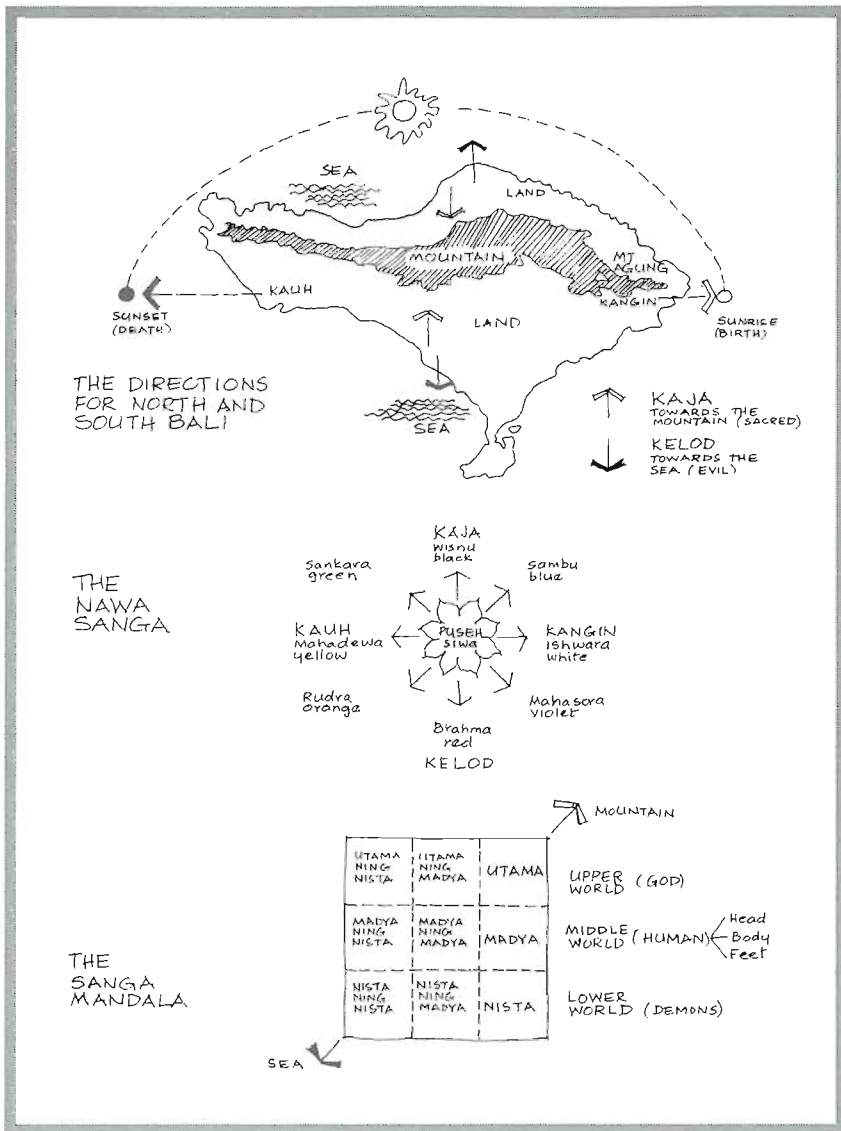


FIG. 2. The Balinese sanga mandala. Based on: Eko Budihardjo, Architectural Conservation in Bali (Yogyakarta: Gajah Mada University Press, 1985).

itants are primarily farmers and the local economy is based on agriculture. This condition is due to the fact that the settlements were once centers of kingdoms, with all the attendant material and social infrastructure.<sup>21</sup> Even though the plans of the three main towns of the valley (Kathmandu, Patan, and Bhaktapur) generally seem to reflect haphazard growth (as individual hamlets fused into towns), there is some indication their layout may have been altered or added to in order to bring them into conformance with the *vastu-sastras*.<sup>22</sup> While it is possible to alter an existing town to make it meet the dictums of the *vastu-sastras*,<sup>23</sup> none of the Nepalese towns possesses the ideal symmetry of the *mandala* because care was taken not to disturb their existing order while they were adjusted to the mystic diagrams. For example, old Kathmandu consists of a somewhat regular north-south grid of streets that intersects, rather than parallels, the ancient India-Tiber trade route

running through the city in a northeast-southwest direction. This suggests an attempt was made at some time in history to bring the old town into compliance with the *vastu-sastras*, which prescribed north-south orientation for streets.<sup>21</sup>

Both Kathmandu and Bhaktapur, primarily Hindu settlements (Patan is more Buddhist), may once have been walled cities. (The *vastu-sastras* define a city as a sacred place fortified from the realm of demons and evil spirits in the surrounding countryside.) But whether or not Kathmandu and Bhaktapur were once surrounded by walls, the *pradaksina-pathas* (paths of circumambulation) between shrines of the eight *matrikas*<sup>25</sup> (mother goddesses) now symbolically fulfill this requirement. The *pithas* (shrines) of the *matrikas* are laid out in roughly concentric rings around the town, and once a year the ritual of *pithapuja* is performed, during which processions of devotees

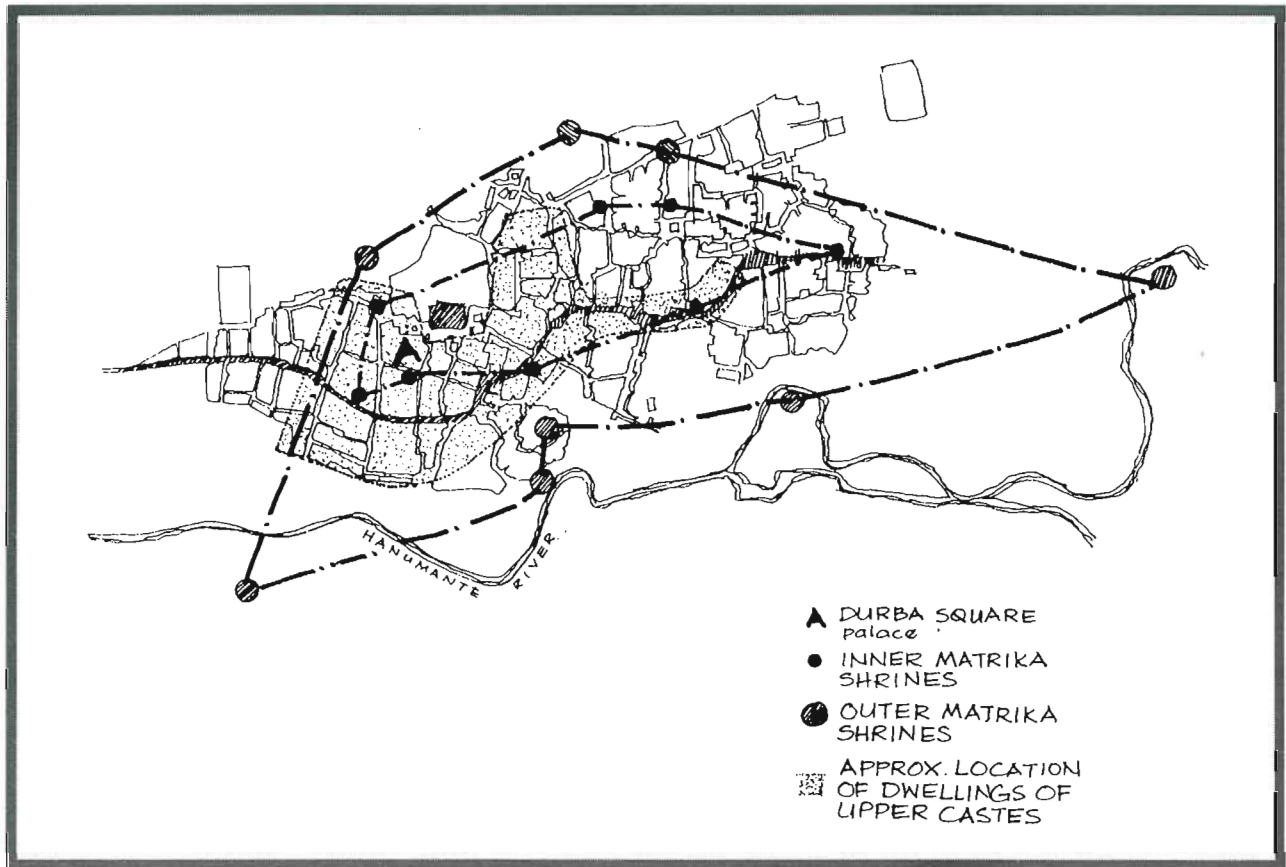


FIG. 3. (ABOVE) A Kathmandu Valley village from the air.

FIG. 4. (BELOW) Plan of Bhaktapur, Nepal, showing the locations of the inner and outer matrika shrines. The dotted line indicates how these shrines serve as a symbolic wall around the town. The actual pradaksina-pathas follow an ordained route along the streets. Based on: Jan Pieper, "Three Cities of Nepal," in P. Oliver, ed., *Sign, Shelter, Symbol* (London: Barrie and Jenkins, 1975); and Gutschow and Kolver, *Ordered Space: Concepts and Functions in a Town of Nepal* (Wiesbaden: Verlag Franz Steiner, 1975).

follow the ordained *pradaksina-pathas* in a clockwise direction. This action symbolically surrounds the sacred realm of the city, acting as "an abstract device for the sanctification of space"<sup>26</sup> and providing a magical wall in the place of a physical wall (FIG. 4).

The towns of Nepal reflect the *vastu-sastras* in their social structure as well as their physical layout. Hierarchy of space, and thus order with the universe, is achieved by locating the palace, with its numerous temples and shrines, in a large central area. Clustered around this sacred center are the dwellings of the *Brahmins* (the highest caste and the people closest to Brahma). The dwellings of the other castes progressively surround them, with the dwellings of the lowest caste, the *sudra*, located farthest away. *Sudras* make up as much as 60 percent of the population of Newar towns, and yet their dwellings are located only on their boundaries and fringes, and many are situated in the realm of the dead among the cremation grounds and graveyards. Symbolically, the dwellings of this social group, who are the least privileged in the eyes of the gods, are part of the disorder that surrounds the sacred realm of the city. The physical arrangement thus reflects the *mandala*, which has been described as having



“specific philosophical connotations, a center of spiritual energy, a sacred place protected from the alien world by barriers and flames and often the symbol of paradise itself.”<sup>27</sup> In Nepal, the city is a *mandala*, and those who live, work, and walk in it are protected by its mystic powers.<sup>28</sup>

**THE BALINESE VILLAGE**

Although variations do exist because of topography or existing conditions, the villages of the Balinese usually conform to the *sanga mandala* with respect to the location and orientation of their major elements. The three worlds, or levels, of the Balinese Hindu cosmos are represented in the typical or ideal *desa* (village) by a cluster of three temples which locate a particular section of the middle world in regard to the upper and lower worlds.<sup>29</sup> The temples are associated with the three great divinities: the creative power of Brahma is represented by the *pura puseh* (temple of origins or ancestors); the *pura bale agung* (great council hall temple) represents Wisnu who preserves and maintains life; and Siwa, the lord of the underworld and destruction, is represented by the *pura dalem* (temple of the dead). In the ideal village (FIG. 5), these three temples are located in accordance with the spatial hierarchy of the *sanga mandala*. Thus, the *pura puseh* is located on the side of the mountain in the direction of *kaja*; the *pura bale agung* occupies a middle position; and the *pura dalem*, along with the graveyard, is located toward the sea (*kelod*).

There are numerous other temples in Balinese villages,<sup>30</sup> but these three are the most important in understanding village layout and connection to the order of the universe. In particular, the *pura bale agung*, often referred to as the village temple, defines the location of humans in the middle world. This middle world is marked by the village square, in and around which are located all important community structures. The *pura bale agung* is located in the *kaja* corner of the square; other community structures that occupy spaces around it are the *pura* (palace or house of the headman), the *wantilan* (pavilion for meetings and cock fights), the *pasar* (market), the *waringin* (sacred banyan tree), and the *kul kul* tower (the *kul kul* is the drum used to warn residents of danger, or to summon men to meetings).

Around this central area, or along its main axis if the village has a linear form, are located the dwelling compounds of the villagers. Since hierarchy and order are so important, these buildings are also placed in compliance with the concept of *utama-madya-nista* (high-middle-low). Clear distinctions are made with regard to places associated with clean and unclean activities. For example, while the Balinese love to bathe, communal bathing areas are usually located in the *kelod* end

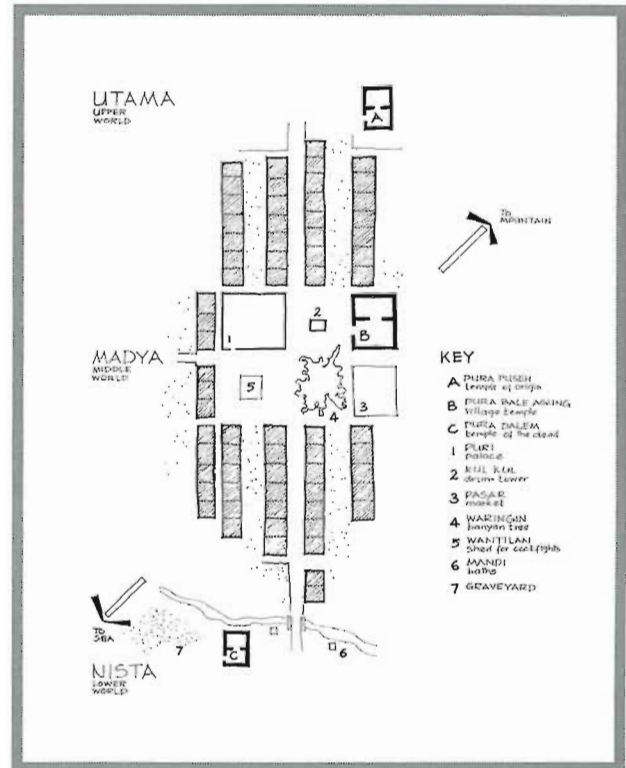


FIG. 5. A typical Balinese village. Based on: Eko Budibardjo, Architectural Conservation in Bali (Yogyakarta: Gajah Mada University Press, 1985).

of the village because the act of bathing is considered unclean. Similarly, in her study of Balinese customs, Jane Belo<sup>31</sup> wrote that the unlucky parents of twins are banished from the village and made to live near the *pura dalem* until they are ritually cleansed of evil influence. The parents cannot remain in the realm of humans, but must be relocated to the realm of the underworld until they are deemed free of its influence.

Unlike Nepalese settlements, Balinese villages are far from dense and compact; in fact, they hardly seem to infringe on the natural landscape at all. This is not to say that Nepalese towns are set in contrast with the landscape. Rather, they appear as obviously man-made objects of brown to rose-red brick, clay tile, thatch, and unpainted wood, blending perfectly with their natural setting. In Bali, the tree-lined village lanes, the single-storied thatched pavilions surrounded by mud walls, and the open courtyards of the dwellings appear to be more a part of nature than of the man-made environment. Perhaps this is a reflection of the beliefs of the two cultures. The Nepalese view the city as a sacred artifact built by men that must be protected from the evil lurking in the countryside around it. The Balinese, by comparison, place the utmost importance on harmony with nature. To disturb the natural order is to tamper with universal order, and since man is part of the natural order, his settlement, the village, should be in harmony with it.

As man-made environments, Nepalese towns, with their narrow, often crooked lanes (some lined with small shops) and frequent open squares containing elaborate sculpted temples and shrines, provide a delightful sense of mass and void, light and shadow, sight and sound — all components of a very urban experience. The Balinese village is equally stimulating to the senses, but in a quieter, calmer, more peaceful way. Nevertheless, during the annual temple festivals, Balinese village streets and lanes do become rivers of activity, as processions of brightly clad villagers carry elaborate offerings to and from the temples.

Ritual strongly influences social life as well as movement in both Bali and Nepal. Religious ceremonies are repeated in daily and yearly rhythms, and the since dwelling is often the center for these rituals, it also needs to reflect divine order. There are, as may be expected, many layers of meaning and complexity in the layout and form of Nepalese and Balinese houses. To describe all of these in great detail is beyond the scope of this paper, but the next section will discuss a few of their main features.

## THE NEPALESE DWELLING

In theory, the floor plan of the Newar house is laid out according to the models of the Tantric priests.<sup>32</sup> These models are the

various *vastupurusa mandalas*, described in the *vastu-sastras*, which indicate the location and orientation of courtyards and built-up spaces. It is the responsibility of the *sthapit* to ensure that the design of the building complies with the divine models and that all ceremonies, from the laying of the foundation to the actual moving in, are held on auspicious days.

Since the dwelling is laid out according to the *vastupurusa mandala*, each part of it is associated with a divine being. This is made clear by the various offerings and images that are placed in niches beside doorways and at other strategic places. The four sides of the house ideally face the cardinal points (FIG. 6), and in the center is usually a square courtyard, sometimes reduced to little more than a light shaft. Often several houses belonging to members of an extended family will be grouped around a common courtyard, in the center of which, in the place corresponding to the square of Brahma, will be placed the family shrine, dedicated to the principal deity of the household.<sup>33</sup>

The typical Newar house is three to four stories high and maintains a vertical as well as horizontal hierarchy. The intricacy of its facade is an indicator of the social status of its occupants.<sup>34</sup> The lowest floor (*cheri*) normally serves as a storage place for agricultural implements and goods, and sometimes may contain a small shop. The second floor (*matan*) is the private sleeping room. The next level (*chota*) contains the room for public entertaining as well as housework, and usually opens to the street through large, exquisitely carved windows. The top-most floor (*bhaigah*) serves as the kitchen. This is the most private and most sacred part of the house, and it is off limits to those who might pollute it by being of unclean caste or by behaving improperly. On this level may also be located other family shrines that are used for religious ceremonies.<sup>35</sup> This ascending vertical order, from the profane to the sacred, is similar to the concentric order built into the layout of towns.

Generally, the Newar house is constructed of brick, and its form is compact, with very few openings except the windows on the upper levels (FIG. 7). The walls of the lower levels are massive and may become progressively narrower higher up. The house may contain many rooms, most of which are small and poorly lit. On the front door are painted the “eyes of wisdom” and a *tika* (small dot). An image of a *naga* (snake) may be printed on a piece of paper and attached to the lintel above the entrance. These devices are intended to keep the interior safe from evil spirits. If such spirits still happen to enter, small holes beside the doors provide for unimpeded exit.<sup>36</sup> The house, by being an abode for gods and men, is, like the city, a sacred place. It must guard its occupants from evil



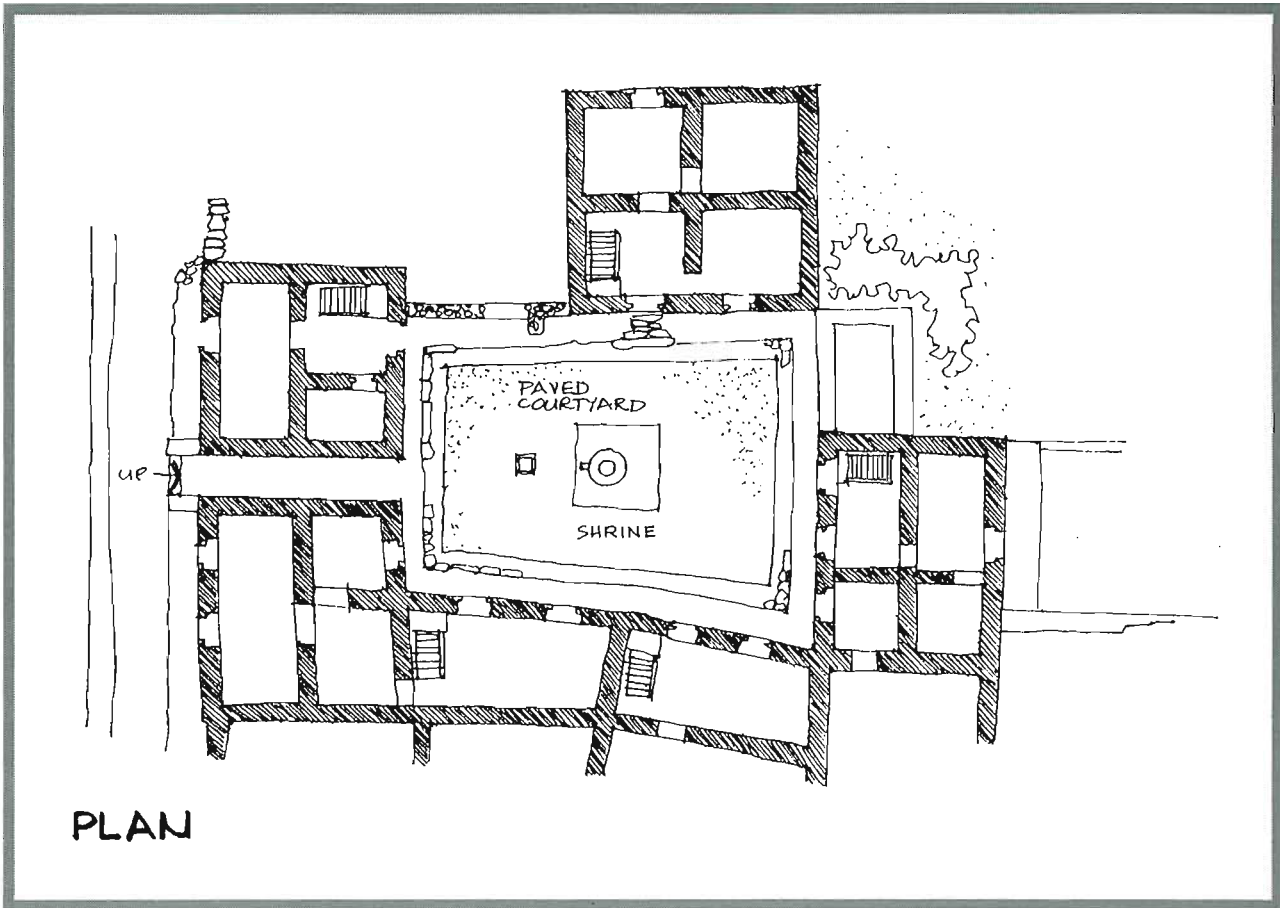
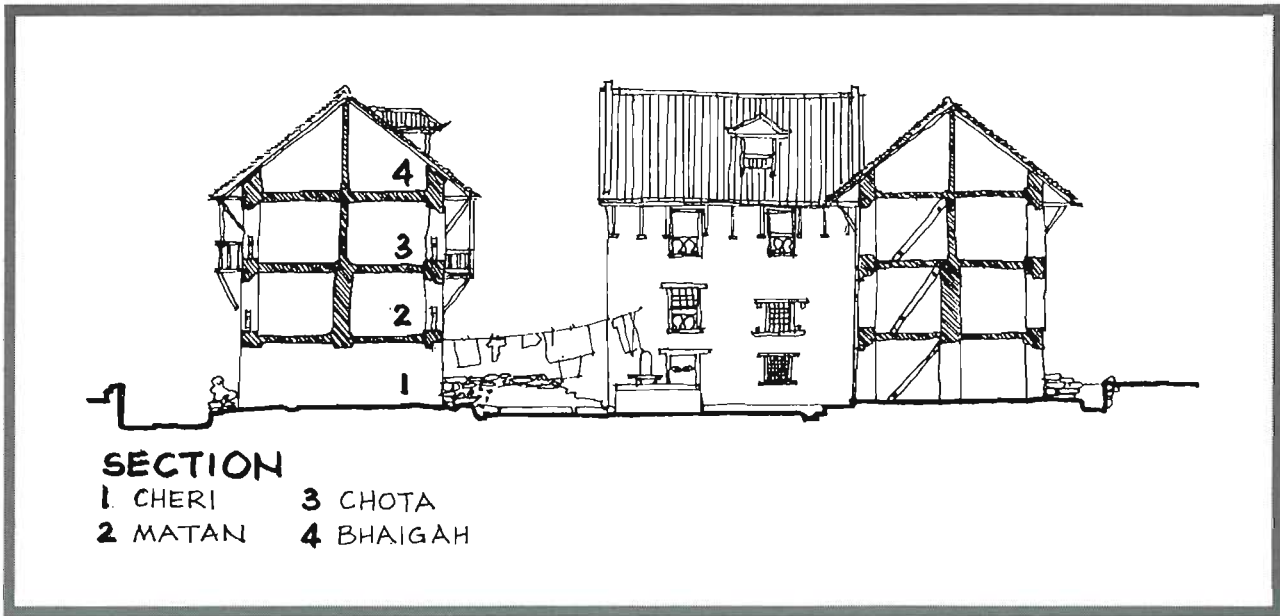


FIG. 6. Typical Nepalese houses grouped around a common courtyard. Based on: drawings by Danish architects group in, F.P. Hosken, *The Kathmandu Valley Towns: a record of life and change in Nepal* (New York: Weatherhill, 1974).



FIG. 7. (TOP) Traditional Newari farmhouses in Kirtipur, near Kathmandu.



FIG. 8. (BOTTOM) Interior of a Balinese house showing the courtyard and one of the pavilions for sleeping.

FIG. 9. (OPPOSITE PAGE) A typical Balinese house. Based on: Eko Budihardjo, *Architectural Conservation in Bali* (Yogyakarta: Gajah Mada University Press, 1985); and R. Sularto Sasrowardoyo, *Traditional Architecture in Bali: Some Basic Norms* (Bali: ARCASIA, 1987).

FIG. 10. (BELOW) Pamerajan of a Balinese household in Ubud. The pamerajan area contains several altars and shrines which are decorated during household temple ceremonies.



forces by adhering to the sacred design canons and being a place where rituals are properly observed.

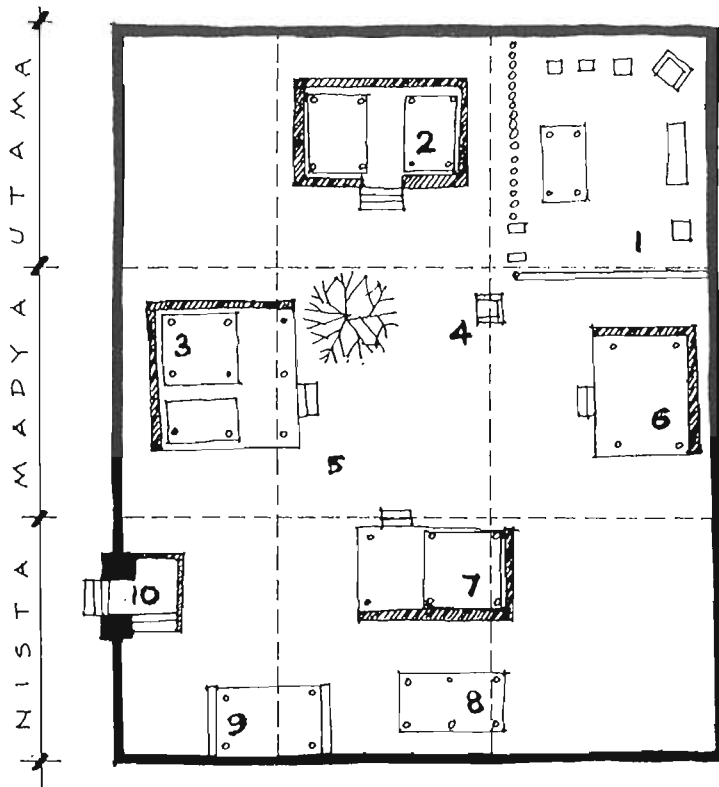
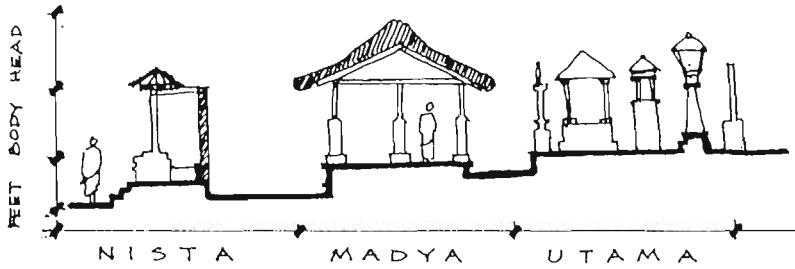
## THE BALINESE DWELLING

Covarrubias once described the typical Balinese house as follows:

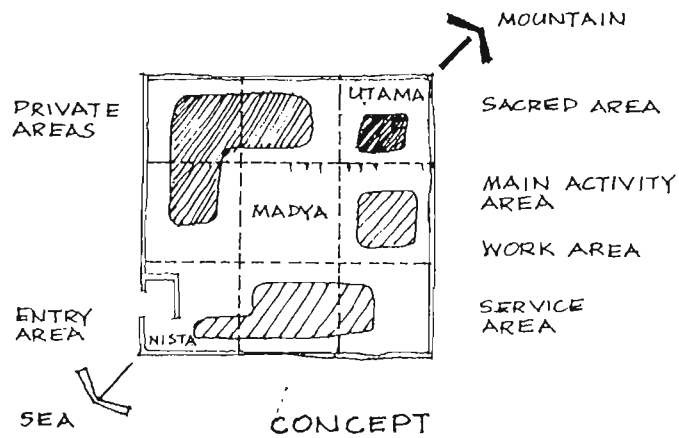
*As an organic unit, the structure, significance, and function of the home is dictated by the same fundamental principles of belief that rule the village: blood-relation through the worship of the ancestors; rank, indicated by higher and lower levels; and orientation by the cardinal directions, the mountain and the sea, right and left. The Balinese say that a house, like a human being, has a head — the family shrine; arms — the sleeping-quarters and the social parlour; a naval — the courtyard; sexual organs — the gate; legs and feet — the kitchen and the granary; and anus — the pit in the backyard where the refuse is disposed of.*

*Magic rules control not only the structure but also the building and occupation of the house; only on an auspicious day specified in the religious calendar can they begin to build or occupy a house.<sup>37</sup>*

This description clearly indicates that the Balinese house is similar to the Newari house in terms of its need for orientation, symbolism, and meaning. In contrast to the Newari house, the Balinese house is a collection of open to partly closed pavilions set in a walled yard (FIG. 8). To the casual observer the location of the various pavilions and structures within this yard may seem haphazard. However, the placement and orientation of each *bale* (pavilion) or group of pavilions is determined with respect to function (FIG. 9). The *pamerajan* (family shrines) (FIG. 10) are located in the most auspicious and sacred place, toward the mountain (*kaja*). The *natar* (open courtyard) — really the main activity area — is in the center (the place of humans). The entry, kitchen, and refuse yard, all of which are seen as unclean and potentially vulnerable to evil forces, are located in the direction of the sea (*kelod*). In the *natar* there may be a few plants and a fragrant frangipani tree to provide fresh flowers for daily offerings at the shrines of household gods and ancestors. The only enclosed part of the house is the *uma meten*, the pavilion for the master of the house. This pavilion is also used by unmarried daughters or newly married couples, and is also where heirlooms and valuables are stored. Because of its importance, the *uma meten* is located next to the *pamerajan*. All other pavilions are either partly or fully open. The kitchen is located near the entrance, and is the first place one enters. The area for household shrines is farthest from the entrance, and is the most private and



- 1 PAMERAJAN  
family shrines
- 2 UMA METEN  
pavilion for unmarried girls
- 3 BALE TIANG SANGA  
pavilion for parents
- 4 PENGIJENG  
small shrine
- 5 NATAR  
courtyard and main work area
- 6 BALE SIKEPAT  
work area, sleeping area for boys
- 7 BALE SEKENAM  
work area, sleeping area for other family members
- 8 LUMBUNG  
granary
- 9 PAON  
kitchen
- 10 ALING ALING  
wall and gate



CONCEPT

sacred. Within this overall configuration, the Balinese house varies in size and complexity depending on the caste of its owner.

Unlike the Newari house, the Balinese house is never of more than one story. If it had two levels, the gods moving through the upper levels would have to pass over the heads of the people on the level below, upsetting the cosmological order. In the Balinese house everything has its place. For example, books, as the property of Dewi Saraswati, the goddess of knowledge, must be stored above the head, in the realm of the gods.<sup>38</sup> Orientation is very important to Balinese people, and whenever they lose their sense of position, they become distraught.<sup>39</sup> Preoccupation with place and orientation is therefore important to the design of the house.

In terms of physical form, the Balinese house is in many ways the opposite of the Nepalese house. While the Balinese house is open and represents space (it is almost entirely devoted to open-air living), the Nepalese house is enclosed and represents mass. While the Balinese house allows the winds (and the gods) to blow freely through, the Nepalese house has very few openings. But as in the Nepalese house, the entrance to the Balinese house is guarded against evil spirits. The only entrance to the house is a high *kori* (gateway) which punctuates the surrounding wall. A wall, called *aling-aling*, also screens the interior court from the gateway. Its function is to deflect evil influences that may try to enter the courtyard (the Balinese believe evil spirits can only travel in straight lines). Often there are also niches or bamboo platforms on either side of the *kori*, or under the eaves of its thatched roof, for offerings to wandering evil spirits.

### THE BIRTH OF A HOUSE

It would be inappropriate here to omit the very significant concept of birth, which relates to architecture seen as a living organism. Elaborate and complex rituals are described in the *vastu-shastras* and are performed in Nepal to bring the spirit of a house into the world.<sup>40</sup> Other rites are also performed to propitiate the earth, which is wounded by the process of construction, and to seek forgiveness from spirits that dwell beneath the ground. All through construction, offerings and *pujas* (religious rituals) are performed, and only when the last roof tile has been laid is the house officially “born.”<sup>41</sup> Even then, more *pujas* are necessary until the auspicious day when the house is finally occupied.

In Bali the process of turning a house into a living thing has been referred to as “cosmization.”<sup>42</sup> On Bali, religious ceremony and adherence to the *sanga mandala* not only put the house in harmony with the cosmos, but also turn it into a

living entity with head, body, and feet. Individual parts of each pavilion correspond to different parts of the human anatomy: the head (thatched roof), the body (brick walls or columns), and the feet (platform or base). The construction of a house also follows a predetermined chronology which conveys the concept and process of growth. Construction begins with the most sacred area, the *pamerajan*, and ends with the most unclean and most public areas like the kitchen, the *aling-aling*, and the granary. The process of entering a house during religious rituals follows the reverse order.<sup>43</sup>

The *sthapit* and the *undagi* are responsible for the correct observance of these birth rituals in Nepal and Bali, and are held to blame if anything should go wrong and cause misfortune to the occupant.

### THE CREATION OF MEANINGFUL FORMS

This paper has merely presented a few of the most important aspects of Nepalese and Balinese architecture, which serve to illustrate some of the similarities and differences between two complex and fascinating traditional environments.

The forces of change are currently eroding and altering these traditional environments and lifestyles. Population pressures, land values, and other factors are making it more and more difficult, costly, and impractical to follow the ancient canons. Monetary compensation is no longer sufficient to provide a living for the traditional architect-priest, and the profession is dying out. The growing need to incorporate the automobile has also meant changes that often contradict traditional patterns. Yet, the influence of religion and its obligations are a major preoccupation of the people in both Nepal and Bali, and even today ceremonies and rituals connected with building construction are still observed. In Nepal the traditional rituals are still practiced during annual festivals. And on Bali houses are built in a modern or Western style so that owners may be released from their obligations to form and order contained in the *nawa sanga*.

Fortunately, the process of change has been relatively slow. Traditional dwellings and settlements in Nepal and Bali, though now somewhat modified, have survived into the twentieth century, providing living examples of design determined by more than function and profit. Studies of environments such as these emphasize the societal and human aspects of architecture. They support suggestions like that of a prominent Balinese architect that architecture should be viewed as a *dharma* (social obligation) rather than an economic commission.<sup>44</sup> If more architects followed this advice, they might realize that meaningful architecture is born, not made.

REFERENCE NOTES

Many of the observations in this paper are based on visits by the author to Nepal in 1988 and Bali in 1986 and 1988.

1. J. Pieper, "Three Cities of Nepal," in P. Oliver, ed., *Shelter, Sign and Symbol* (London: Barrie and Jenkins, 1975), p. 52.
2. For more on Balinese Hinduism, see H. and C. Geertz, *Kinship in Bali* (Chicago: Chicago University Press, 1975), pp. 9–12.
3. The Majapahit kings of Java who introduced Indo-Javanese Hinduism to Bali established their Balinese empire between the early 1500s and 1600s. The island had already been influenced by ancient Javanese Hinduism, Buddhism, and the Tantric practices of these two religions.
4. Earlier Dutch writers and scholars had written about Bali, but it was mostly the American scholars and writers named here who, beginning in the 1920s, publicized and promoted Balinese art and culture in the West. Their efforts not only triggered more studies of Balinese life, but also began the tourist invasion of the island.
5. The various social organizations and systems of the Balinese are described in J. Belo, ed., *Traditional Balinese Culture* (New York: Columbia University Press, 1970). Also see Geertz, *Kinship in Bali*, p. 12–31.
6. Nepalese Hinduism has been explained well by M.S. Slusser in *Nepal Mandala*, Vol. I (Princeton: Princeton University Press, 1982), pp. 213–269. The four castes in Hindu social organization are *Brahmin* (those of Brahms, also referred to as the priestly caste), *Ksatriya* (warriors and princes), *Vaisya* (merchants and some tradesmen), *Sudra* (the lowest caste, made up mostly of peasants and those who perform jobs considered unclean). For community organization of the Nepalese, see Slusser, *Nepal Mandala*, Vol. I, pp. 11–12.
7. B.B. Dutt, *Town Planning in Ancient India* (New Delhi: New Asian Publishers, 1984 rpt. of 1925 original), p. 1.
8. The first English translation of the *Manasara* was P.K. Archarya, trans., *Indian Architecture According to Manasara Silpasashtra* (London: Oxford University Press, 1928). Also in English, see B. Dagens, trans., *Mayamata* (New Delhi: Sitaram Bharti Institute of Scientific Research, 1985).
9. See Slusser, *Nepal Mandala*, Vol. I, pp. 129–130; Vol. II, plates 89, 108–110.
10. M. Wijaya, *Balinese Architecture, Towards an Encyclopedia*, Vol. I (Sanur, 1984), p. 9A.
11. Pieper, "Three Cities in Nepal."
12. The name Newar (adjective, Newari) is used to classify the indigenous people of the Kathmandu Valley. It is generally assumed to be interchangeable with, and is derived from, the word Nepal. The Newars are profoundly influenced by the caste-oriented values of Hinduism and are a close-knit society that is pervasively communal in nature. See Slusser, *Nepal Mandala*, Vol. I, pp. 9–12.
13. G. Tucci, *The Theory and Practice of the Mandala* (London, 1961), as referred to in Pieper, "Three Cities of Nepal."
14. Pieper, "Three Cities of Nepal."
15. J.S. Lansing, *The Three Worlds of Bali* (New York: Praeger, 1983), p. 52. Also see E. Budihardjo, *Architectural Conservation in Bali* (Yogyakarta: Gaja Mada University Press, 1985), p. 33.
16. Budihardjo, *Architectural Conservation in Bali*, p. 41.
17. *Ibid.*, p. 41.
18. *Ibid.*, p. 40.
19. For an explanation of the qualifications and duties of the *stbapati*, see P.K. Archarya, *A Dictionary of Hindu Architecture* (London: Oxford University Press, 1927), pp. 709–730.
20. Slusser, *Nepal Mandala*, Vol. I, p. 130.
21. G. Auer and N. Gutschow, "Domestic Architecture of Nepal," *Art and Archeology Research Papers* (AARP) Vol. 12 (Dec. 1977), p. 64–69.
22. N. Gutschow and B. Kolver, *Ordered Space, Concepts and Functions in a Town of Nepal* (Wiesbaden: Verlag Franz Steiner, 1975); and N. Gutschow and M. Bajracharya, "Ritual as Mediator of Space in Kathmandu," in *Journal of the Nepal Research Centre* No. 1 (Wiesbaden, 1977), pp. 1–10.
23. B.B. Dutt, *Town Planning in Ancient India*, p. 67. Dutt is also quoted in Gutschow and Kolver, *Ordered Space, Concepts and Functions*, p. 43, and referred to in Slusser, *Nepal Mandala*, p. 94.
24. Gutschow and Bajracharya, "Ritual as Mediator of Space in Kathmandu," as referred to in Pieper, "Three Cities of Nepal," and in Slusser, *Nepal Mandala*, p. 94, n. 6.
25. The *matrikas* are the protectors of the Newar community. They are eight in number and ideally their shrines are located at the eight compass points around the city. Worship of the *Matrikas* is an important aspect of Newar religious practice, and therefore the *pradaksinapathas* of the *matrikas* are significant in the understanding of the Newar town. See Gutschow and Kolver, *Ordered Space, Concepts and Functions*, and Gutschow and Bajracharya, "Ritual as Mediator of Space in Kathmandu." Also see Slusser, *Nepal Mandala*, pp. 93, 102–105.
26. Gutschow and Kolver, *Ordered Space, Concepts and Functions*, p. 21.
27. J. Marion, *The Townscape: A Nepalese Interpretation in Architecture* Vol. 13, Part 2 (Munich: Kundsverlag, 1983), pp. 169–183.
28. J.T. MacFadyen and J.W. Vogt, "The City is a Mandala: Bhaktapur," *Ekistics* 265 (Dec. 1977), pp. 307–309.
29. Lansing, *The Three Worlds of Bali*, p. 98.
30. *Ibid.*, p. 99.
31. J. Belo, "A Study of the Customs Pertaining to Twins in Bali," in Belo, ed., *Traditional Balinese Culture*, pp. 3–56.
32. Auer and Gutschow, "Domestic Architecture of Nepal." The *vastu-sastras* also prescribe the type, size, location, and proportions of houses with respect to the caste of the owner. See Dagens, trans., *Mayamata*, ch. 27.
33. If the family is Hindu, then the shrine in the courtyard is dedicated to Shiva and is in the form of a Shiva *lingam* set on its female counterpart, the *Yoni*. In Buddhist houses, the courtyard shrine is in the form of a *stupa*. See Slusser, *Nepal Mandala*, pp. 133–134.
34. Auer and Gutschow, "Domestic Architecture of Nepal."
35. Slusser, *Nepal Mandala*, p. 133.
36. R.M. Bernier, *The Nepalese Pagoda — Origins and Style* (New Delhi: S. Chand and Company, 1979), p. 11.
37. M. Covarrubias, *Island of Bali* (Singapore: Oxford Paperbacks, 1987; first printed 1937), p. 88. It is interesting to note that life in Bali today is similar in many ways to that described by Covarrubias in 1937.
38. M. Wijaya, *Balinese Architecture, Towards an Encyclopedia*, p. 5.
39. J. Belo, "The Balinese Temper," in Belo, ed., *Traditional Balinese Culture*, pp. 90–93.
40. See Bernier, *The Nepalese Pagoda — Origins and Style*, pp. 24–26.
41. Slusser, *Nepal Mandala* Vol. I, pp. 133–134.
42. See J. Salija, "Spatial Concept in Balinese Traditional Architecture" (M. Arch. thesis: University of Hawaii, 1975).
43. *Ibid.*, p. 44.
44. R.S. Sastrowardjo, "Architecture as Dharma is Born not Made," in *Eko Budihardjo, Menuju Arsitektur Indonesia* (Bandung: Penerbit Alumni, 1983), pp. 39–42.

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