



Dharma ning Asta Kosala Kosali Layout of the Balinese Traditional Home

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ABSTRACT

This study is aimed to examine thoroughly lontar Asta Kosala Kosali and Asta Bumi in regard to ashta or eight sectors of geometric pattern as devoted to Dewata Nawa Sangha. Several Balinese homes are studied especially during ritual ceremony yadnya as empirical field work, in order to combine with textual lontar content. Lontar asta kosala kosali describe that the four sides of the proposed home yard required to be divided by nine in the same size section. This technic will draw one square in the center and eight surrounding squares and provide the most practical way to draw eight surrounding sectors in a circle. Any space or point in any eight sectors in the space pattern will be located easily by constructing longitude and latitude across the center. This study revealed that this technic may establish various number of lay-out, resulting in space thrifty that promote psychological well-being thrive happy, calm, no angry in designing Balinese home in pursuing Dewata Nawa Sangha and the teaching of dharma ning asta kosala kosali and asta bumi.

Keywords: asta bumi, asta kosala kosali, bali traditional home, dharma ning asta kosala kosali.

1. INTRODUCTION

The Balinese traditional home should be able to be functioning well during offering ceremony called yadnya. Yadnya is a ceremony carry out at home since birth to elderly even to an after death based on dharma teaching. The layout of Balinese home usually based on lontar asta kosala kosali and asta bumi. It is clear mention that the four sides of the yard have to be divided by equal nine section and this step required to be studied in order to have rigorous guide line. Therefore, this study is aimed to examine thoroughly the lontar in regard to asta bumi or eight sectors of geometric pattern as devoted to Dewata Nawa Sangha.

2. THEORY AND METHODS

2.1 Theory

Hindu teaching mention about tatwa, Susila and upacara. Tatwa could be explained as philosophical or consciousness of Hinduism consist of panca srada. Panca srada which is virtue way of live consist of widhi tatwa or almighty God, atma tatwa or soul, karmaphala or cause-effect, punarbhawa or reincarnation and moksa or never-ending happiness. On the other hands, Susila is teaching of ethics and conduct and upacara is offering or thanks giving ceremony.

Gayatri mantram mention of three world which is bhur or our world, buwah or soul world and swah or the world of deva, devi and almighty God. Dewata Nawa Sangha devoted to devas where 9 are in the first eight sectors which are 4 devas guarded in cardinal direction and 4 devas in every ordinal point and 1 deva in the center as shown in Figure 1. The most well-

known are Brahma of creation in the south, Vishnu of preserver in the north and Shiva of transformer in the center.

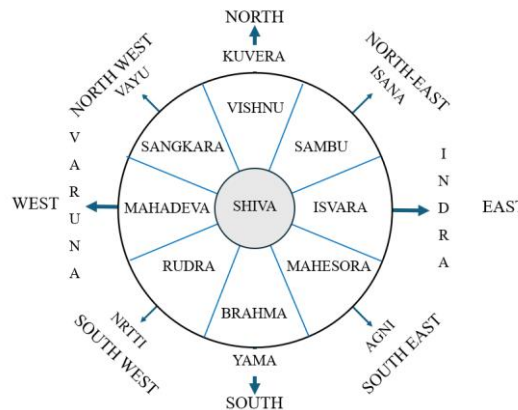


Figure 1. Dewata Nawa Sangha.

2.2 Methods

This study consisted of literatures study by examining lontar asta kosala kosali and asta bumi as given in references, examining case study in several Balinese home, and case study during ritual ceremony yadnya performed in Balinese home. More than twenty places with various of layout variant were studied from Lenganan village and Serampingan village, Bajera, Selemadeg, Tabanan and Renon village, Denpasar, Bali. The first variant encountered is the place of temple in Tabanan usually in front of home compare to the north-east in Denpasar. Others variant is the place of bale upacara (bale gede) in the middle or in between bale daja (north) and kitchen in south yard compare to bale upacara is placed in the east or in the south yard. Fortunately, Lontar Asta Patali L.06.T [1], Nang Raun was found in Lenganan village, Tabanan. This Lenganan Lontar briefly mention to build latitude and longitude lines in the center of the yard in order to find other coordinate of other building or temple in eight sectors as dedicated to Dewata Nawa Sangha. Lontar Asta Kosali L.13.T [2], Grie Lodrurung, Riangan Gede, Tabanan also mention the lines but it is not as clear as the previous lontar Lenganan. This ancient traditional Balinese asta kosala kosali is believed has been originated since first century, while ancient Indian Vastu Shastra is believed originated 1500 BCE (before common era), and ancient Chinese Feng Sui dating back to 4000 BCE. These household and temple science of architecture in pursuing dharma teaching have been spread world-wide, therefore required to be studied further and to be easily built for better living.

3. RESULTS AND DISCUSSION

3.1. Size of land for home yard

Figure 2. shows anthropometry that has been used as measurement of Balinese home which is depa, hasta, musti. This anthropometry is measured from the owner of the home. However, this study takes the average measure and convert into metric as given in the Figure 2. Depa is taken to be 170 cm, hasta is 45 cm, musti is 14 cm, foot step is 25 cm, transverse foot step 10 cm. Depa is called Sukatan, hasta and musti is called pengurip (*enlighten*). Civil engineers safely incorporate human standard deviation by utilizing probabilistic risk or statistical deviation variables and treated mathematically as a factor of safety. In line to asta kosala kosali, traditional pengurip (enlightenment) is usually added to sukatan. This pengurip or enlightenment could be functioning as factor of safety in modern civil engineering.

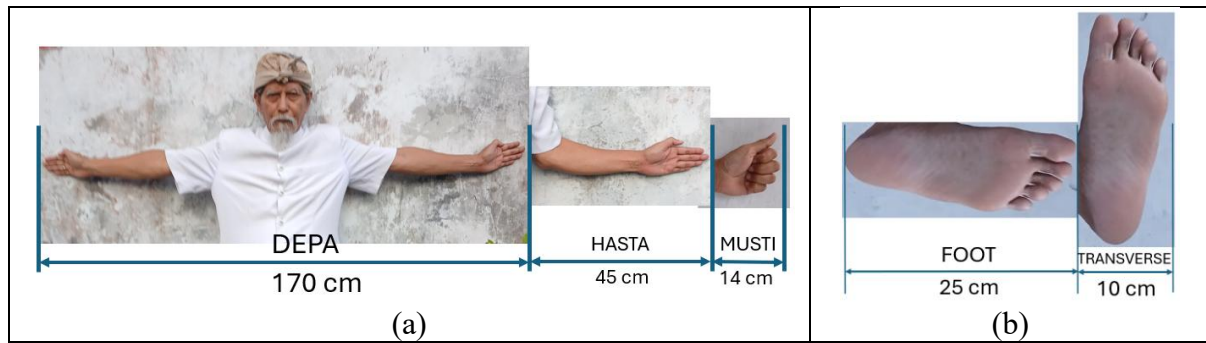


Figure 2. (a) Depa, Hasta, Musti and (b) Foot, and Transverse foot step.

The name and size of the Balinese home yard mention in all lontar [1,2,3,4,5,6,7,8,9,10,11,12,13] in references give similar information as given in Table 1. The size of the home yard is not a square but a rectangular from north to south. The name is in a sequential order as Gajah (Elephant), Dwaja, Singa (Lion), and Wreksa.

Table 1. Name and size of the Balinese home yard

No	Length to north		Width to east		Area (are or x100m ²)	Size Name
	Depa	meter	Depa	meter		
1	15	25.5	14	23.8	6	Gajah
2	14	23.8	13	22.1	5.25	Dwaja
3	13	22.1	12	20.4	4.5	Singa
4	12	20.4	11	18.7	3.8	Wreksa
5	11	18.7	10	17	3.2	Gajah alit
6	10	17	9	15.3	2.6	Dwaja alit
7	9	15.3	8	13.6	2	Singa alit
8	8	13.6	7	11.9	1.6	Wreksa alit
9	7	11.9	6	10.2	1.2	
10	6	10.2	5	8.5	1	

1 Depa = 1.7 meter

Sesa is excess of the measurement and calculated as sum of depa, asta, musti on length and width of the yard minus 10 sequentially, the rest is called sesa as in Lontar L.07.T [3]. Table 2 shows sase and the size name of sesa.

Table 2. Name of sesa/ excess

Sesa	Name sesa	Size Name	Sesa	Name sesa	Size Name
1	Eka Dwaja	King	6	Sad gadarba/gana	Seller, craft
2	Dwi Sona	Teacher, Pandith	7	Sapta singa	Bala Pandita
3	Trigoh	Petani, Buyut	8	Asta Yaksa	Batari Shri
4	Catur Wasaya/sana	Bendesa	9	Nawa Dewata	Temple
5	Panca asti	Dalang			

Lontar asta kosali L.13.T [2] described another way to applied sesa of the home yard by using foot step where from east to west should take 20 foots step added by one foot step and transverse as enlightenment and sesa is given in Tabel 3, further from north to south should take 21 foots step added by one foot step and transverse as enlightenment and sesa is given in Tabel 4. This technic should be multiplied by 1,2,3,4,5, to fit the available yard and probably need to consider excess yard as explain in section 3.6 in order to get good sesa.

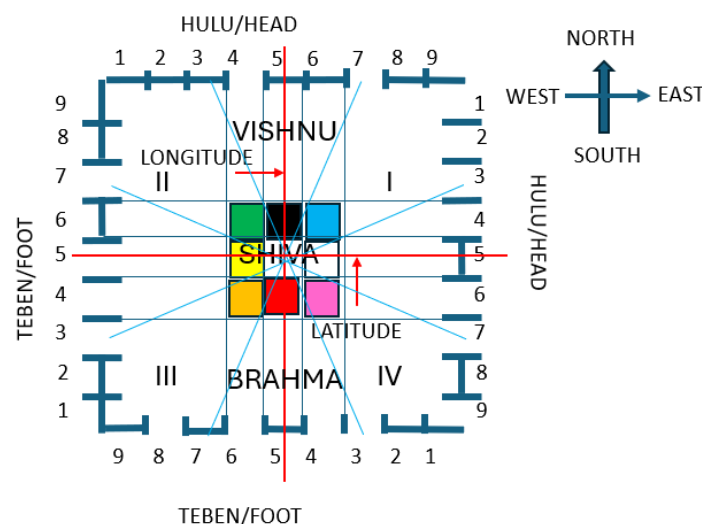
Table 3. Foot step sesa from east to west of the yard according to traditional textual criteria

Sesa	Effect	Sesa	Efect	Sesa	effect
1	Major/main	8	very social	15	useful
2	Intermediate	9	overheated	16	Social
3	Desired / Wanted	10	Evil wife	17	fire
4	Much respect	11	wife denies	18	Much respect
5	useful	12	dangerous	19	lots of debt
6	lots of silver	13	lots of enemy	20	Illness, dangerous
7	overheated	14	Rich of gold		

Table 4. Foot step sesa from north to south of the yard according to traditional textual criteria

Sesa	Effect	Sesa	Efect	Sesa	effect
1	suffering illness	8	Lots of guests	15	fire
2	childless	9	Sick and die	16	Very happy
3	Lots of love	10	ilness	17	Misery
4	Rich of gold	11	childless	18	sick
5	Ultimate reality	12	misbehave	19	Always in pain
6	Very social	13	unsafe	20	childless
7	Rich ilness	14	spender	21	Very happy

The guide line in all lontar asta kosala kosali [1,2,3,4,5,6,7,8,9,10,11,12,13] required the four sides of the home yard to be divided by nine in the same size section. This will draw a pattern one square in the center surrounded by eight outer squares. This is the most practical way in geometric pattern to draw eight surrounding sectors in a circle by utilizing the outer eight squares and treating the central, the ninth square as a pivot or center point as illustrated in Figure 3. The guiding color of each sector are also given in Figure 3. This eight sectors and space in the center devoted to Dewata Nawa Sangha as shown in Figure 1.

**Figure 3.** section of land.

The coordinate of the point or space in any eight sectors will be easily located by constructing longitude from north to south and latitude from east to west originally across the center as in L.06.T [1]. This technic gives a precisely scaled even quadrant I,II,III,IV to be able to design the size of the bale/building to be built (see Figure 3). These longitude and latitude lines will be utilized in this study.

3.2. Temple

The most sacred and holy place in the home of Balinese is the temple where dharma teaching is practicing as bhakti yoga in everyday live. The position of the healthy sleeping is usually head in the east from where the sun shine in the morning or in the north whiles the feet in the west or south accordingly. The north and the east is called hulu/head and the south and west is called teben/foot. Temple should be placed in hulu (head) either north or east. It is found in Renon village, Denpasar, temple is almost always placed in the north-east. However, in Lenganan or Serampingan, Tabanan, Temple is placed in front of home. If the home facing west, the temple is placed in the north west, for home facing south, temple is placed in south-east. Hence, the temple in the Balinese home could alternatively be built in north-west, north-east and south-east as shown in Figure 4.

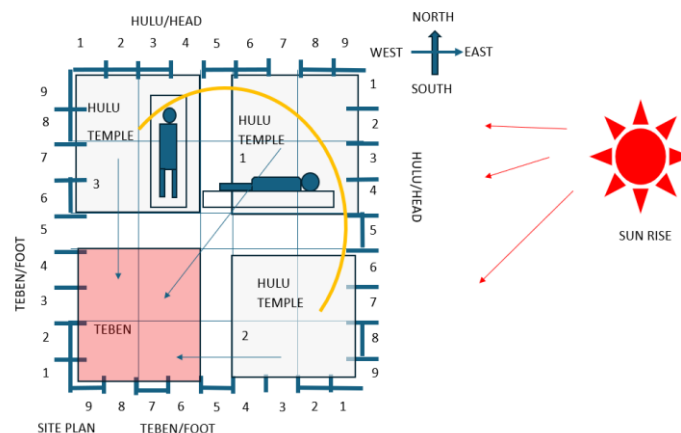


Figure 4. Place of temple in the Balinese home.

Table 5 and 6 show the effect of position of gate of the home based on nine sections along the four side of the home yard [1,2,3,4,5,6,7,8,9,10,11,12,13]. The good position of the gate is drawn as open line, while the bad position of the gate is drawn as solid line wall in Figure 3 and 4. Figure 4 showed that the position of the good gate when the zone of the temple, kitchen, jineng, livestock shed, bale daja, bale dangin, bale dauh and bale upacara is plotted. This plotted zone will give a clear view as why in the nine sections of the yard, the gate is good or allowed and why is bad or prohibited. Temple in any three zones available is provided for a choice to build a gate to the road if required. The corner of north west is strictly walled or prohibited to build gate since provided for tugu karang dedicated to Devi Uma, see explanation of Figure 6. Also, the corner of south west is walled where gate is prohibited since provided for livestock as blessing by Deva Rudra. Hence, the division of 9 as a guide of asta kosala kosali lontar in drawing layout of Balinese home, especially the position of the gate needs to consider thoroughly the aspect of Dewata Nawa Sangha and zone of hulu Temple and the building to be built in the section in pursuing Sanatana dharma teaching in the Balinese home.

The size of the temple area is given in Table 7 as in Lontar No.243 [4]. Figure 5 shows inside temple which consist of Kemulan, Taksu, Penglurah and bale Piasan. Following asta wara in Table 11, Kemulan is placed center to latitude usually 3 foots steps from longitude devoted to deva Guru (G), or take one round or more of asta wara Shri, Indra, Guru, Yama, Rudra, Brahma, Kala, Uma, Shri, Indra, Guru, fall to Guru and added transverse step as enlightenment. Similar step is given to Taksu of knowledge and learning devoted to Devi Saraswati (S) measure from latitude and adjusting to kemulan. Penglurah of justice devoted to Deva Yama (Y) and Piasan as a place of worship (P) measure from longitude see Figure 5.

Table 5. The effect of gate position according to traditional textual criteria

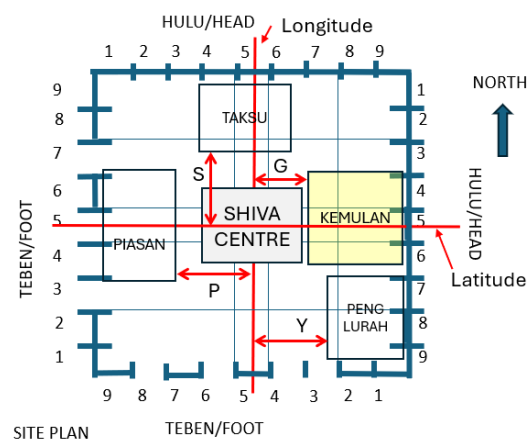
Home facing to the east start Counting from north to south		Home facing south Start counting from east to west	
section	Effect	Section	Effect
1	Loving by community	1	Great danger
2	Honorable	2	Childless
3	Highly beneficial	3	Very happy
4	Prosperous	4	Rich in gold
5	Poor	5	Difficult
6	very sociable	6	Very sociable
7	Misfortune	7	Misfortune
8	Evil wife	8	High fatality
9	Long live	9	Misfortune/sickness

Table 6. The effect of gate position according to traditional textual criteria

Home facing west Start counting from south to north		Home facing north Start counting from west to east	
Section	Effect	Section	Effect
1	Great danger	1	Great danger
2	numerous enemies	2	Childless
3	Rich in gold	3	Full of joy
4	Highly beneficial	4	Rich in gold
5	very sociable	5	numerous enemies
6	Difficult live	6	very sociable
7	Honorable	7	Misfortune
8	A lot of debt	8	High fatality
9	Being hurt	9	Misfortune/sickness

Table 7. Size of Temple/Parahyangan

No	Name	Size Depa	Size Meter	No	Name	Size Depa	Size Meter
1	Dupalit	33x32	56.1x54.4	10	Gajah	18x16	30.6x27.2
2	Panglari	27x20	45.9x34	11	Singa	16x14	27.2x23.8
3	Agung	21x22	35.7x37.4	12	Menteri	14x12	23.8x20.4
4	Agung	19x18	32.3x30.6	13	Redung	12x10	20.4x17
5	Tengah	11x10	18.7x17	14	Lembu	10x8	17x13.6
6	Panglari	14x13	23.8x22.1	15	Singa	8x6	13.6x10.2
7	Utama	10x7	17x11.9	16	Menteri	6x4	10.2x6.8
8	Tengah	6x5	10.2x8.5	17	Gajah	4x2	6.8x3.4
9	Lembu	20x18	34x30.6	18	Redung	2x1	3.4x1.7

**Figure 5.** Layout of Temple.

3.3. Kitchen, Jineng (Storage), and Livestock.

The home of the Balinese generally complete with kitchen, jineng and livestock shed for chicken, pig, dog, or cattle which is in the designing following asta wara for where spark the prosperous living. Kitchen, Jineng (storage), livestock shed is considered as sacred place. Different from bed room, these places are counted by using asta wara which consisting of character of Deva and Devi as shown in Table 11 as in Lontar L.04.T [5]. The measurement begins from longitude. Foundation of Jineng should be counted fall in Shri (S), Kitchen fall in Brahma (B), and livestock fall in Rudra (R), Kala area in north-west adjacent to tugu karang fall in Kala (K), tugu karang fall in Uma (U) as shown in Figure 6. Similarly, take a count from latitude if required. Choose the location of kitchen, lumbung and livestock shed in south west. Count from longitude to west Shri for foundation of Jineng or multiply the counting Shri, Indra, Guru, Yama, Rudra, Brahma, Kala, Uma, Shri. The location of foundation of kitchen count in the same way as foundation of Jineng but fall to Brahma. Similar to livestock, count until fall to Rudra could be multiply by 1, 2, 3, round or more as long as the yard is available. The Deva and Devi and their characters as member of asta wara is given in Table 11.

Table 8. Location of Kitchen according to traditional textual criteria

No	Location	Effect	No	Location	Effect
1	East	Overwhelmed	5	West	Sickness, but abundant food
2	South-east	Sickness, abundant food	6	North-west	abundant food, but in danger
3	South	Rich in gold and crop	7	North	Sickness, death
4	South-west	Rich in gold and crop	8	North-east	Bad tempered, illness

Table 9. Location of Jineng according to traditional textual criteria

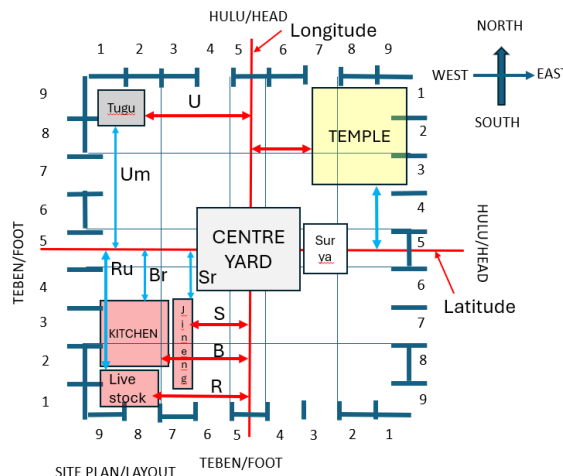
No	Location Jineng	Effect
1	East	Bad and often quarrel
2	South-east	Wasteful and sickness
3	South	Very good
4	South-west	Good and rich in gold and silver
5	West	Plenty of food, but ill
6	North-west	often quarrel and in danger
7	North	Suffering from sickness and death
8	North-east	Lack of food and sick

Table 10. Position of Door of Jineng according to traditional textual criteria

No	Jineng Door facing to	Effect
1	East	fighting and sadness
2	South-east	Sulky and illness
3	South	Good and Sufficient income
4	South-west	Rich abundant rice, cattle breeding well and healthy
5	West	Rich of rice, but suffering from illness
6	North-west, North, North-east	prodigal, ill and dead

Table 11. Asta wara, and see position of Deva in Figure 1

Name	Character	Number of foot step	Place of
Shri	Devi of wealth, fertility & righteous sovereignty	1	Jineng/storage
Indra	Deva of War, Rain & Thunder	2	Temple
Guru	Deva manifestation of Shiva who leads the devas	3	Temple/kemulan
Yama	Deva of justice	4	Temple/Lurah
Rudra	Deva of storms, medicine, poison, cattle, and battle	5	Livestock/cattle
Brahma	Deva of creation	6	Kitchen
Kala	Deva of time and death	7	Kala area N-W
Uma	Devi of gentle nurturing, devotion & immense strength	8	Temple/Tugu
Number of foot step is counted either or both from longitude or latitude			

**Figure 6.** Longitude and Latitude coordinate of Temple, Kitchen, Jineng, Livestock and Tugu.

3.4. Bale Daja/North, Bale Dangin/East, Bale Dauh/West and Bale Upacara/Ritual

Bale Daja/North, Bale Dangin/East, Bale Dauh/West and Bale Upacara/Ritual are usually used for sleeping, although Bale upacara/ritual is especially used during yadnya ceremony. Various type of bale is given in Table 15. The first to be measure is the position of foundation (bebaturan) of Bale Daja/North from latitude to the north (N-B) in the way that use foot step and chose one step fall in bale bangun, two step fall in sanggar waringin or three step represent gedong penyimpanan as given in Table 12. All of this 1, 2, or 3 steps are good place for the foundation of bale daja/north or take one round for more space. The fourth, fifth, six and seven step are considered as not good see Table 12.

Table 12. Position of foundation Bale daja/North according to traditional textual criteria

No	Name	Step from Latitude	Description
1	Bale bangun/bale bandung	1	Ample of guest
2	Sanggar waringin	2	Harmonious family
3	Gedong penyimpanan	3	Good job and rich
4	Macan pancuran	4	Healthy but scandalous
5	Gajah palesungan	5	breed, sickness, lost
6	Warak kahuran	6	Fighting betray by evil buta kala
7	Gedongunggul	7	die

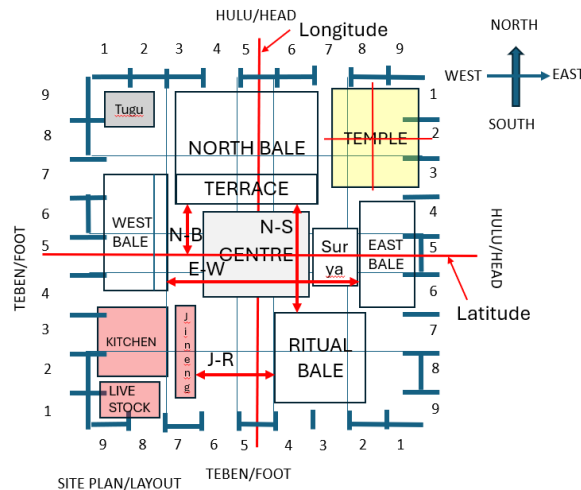


Figure 7. Site plan and distance of North Bale and between bale.

The size of the center yard is controlled by the area available and size of the bale upacara to be built whether to choose 6, 9, or 12 pillar (see Table 15). The counting is start from 15 step as in lontar L-05T [6] of foot from foundation of bale daja in north to foundation of bale upacara in south added by sesa as given in Table 13 and added by transverse foot as enlightenment (see N-S in Figure 7). Similarly, 15 step from foundation bale dangin to foundation bale dauh and added by sesa as given in Table 14 and added by transverse foot as enlightenment (E-W in Figure 7). Bale dangin is not always built, then the counting start from the foundation of the east wall. Distance from Jineng to bale upacara at least 15 foots step added by sesa and transverse, sesa 6 or more is considered sufficient (J-R in Figure 7). The basic measure of 15 steps is possibly provided for roof over hanging between bale (building) with sufficient space or any other reason which is not explained.

Table 13. Sesa from north bale foundation to south bale foundation (traditional textual criteria)

Sesa	Meaning	Sesa	Meaning
3	Rich in gold	23	A lot of happiness
4	A lot of happiness	24	Rich in silver and gold
8	A lot of stay guest	26	A lot of happiness
16	A lot of happiness	27	Rich in silver and gold
20	A lot of happiness	40	A lot of happiness

Table 14. Sesa from east bale foundation to west bale foundation (traditional textual criteria)

Sesa	Meaning	Sesa	Meaning
2	A lot of love	22	A lot of love
3	excellent	23	A lot of happiness
4	Rich in gold	24	Rich in silver and gold
5	Supreme Consciousness trouble	25	A lot of love
6	useful	26	Substantial funding
12	Rich in gold	32	Rich in gold
13	Substantial funding	33	useful
14	charitable	34	charitable
16	A Lot of Earnings	40	A lot of stay guest
21	A lot of merit		

Table 15. Various bale in Balinese home as given in Lontar L.07.T [3]

No	Name	Pillar	Description
1	Sakapat	4	Without bale (bale=bed)
2	Pancarangkang Resi	5	With bale in the corner
3	Jajar sakanem	6	Without bale
4	Sakanem	6	With bale
5	Bale bunder	8	Without bale
6	Saka ulu	8	Without bale
7	Bale mundak	8	With 1 bale
8	Sri dandan	8	With bale in corner, center vacant
9	Sianganti	9	Without tugeh singa (Lion)
10	Singasari	9	With tugeh singa (Lion)
11	Bale bunder	10	Without bale
12	Bale kembar	10	2 bale beside
13	Bale jahit	12	Without tadapaksi (Bird)
14	Bale Gajah (Bale Gede)	12	With tadapaksi (Bird)
15	Sumanggen pamlayangan	12	With bale in 4 corners
16	Gunung rata (Prabu ketangkil)	12	With bale 1 in side

The size of the home yard shown in Table 1 as Gajah, Dwaja, Singa and Wreksa will define the size of bale being built as in Table 15. Figure 7 shows Balinese home yard of about 600 m² which is called Gajah or Elephant size complete with temple, kitchen, jineng, livestock shed, bale daja, bale dangin, bale dauh and bale upacara called bale gede 12 pillars. Bale dangin will not available for Dwaja size and any smaller size. Bale upacara will be smaller like singasari with 9 pillars for Singa size yard. Jineng will not available for the yard smaller than Singa size. Bale upacara will be smaller like 6 pillars for Wreksa size yard. Smaller size home yard will available only for temple, kitchen, bale 4 pillars, bale daja as bed room.

3.5. Ceremony Yadnya at Home

Ceremony yadnya take place at home including Dewa yadnya as odalan in merajan, Rsi yadnya as diksa, Manusa yadnya as tigang sasih and wedding, Pitra yadnya as ngaben, memukur, entas-entas, Butha yadnya as caru and others. These ceremonies may need Wayang sudamala or sapuleger, topeng, joged accompanied by music, gender, gamelan, or rindik. Balinese home layout following asta kosala kosali greatly ready to support the ceremony mention above. Pandith who lead the ceremony will be in bale upacara/ritual, wayang will be in the terrace bale dauh or in jineng and invited guest and family members will be in terrace bale daja, topeng and jogged perform in any space yard available, see Figure 7. Hence, the Balinese home significantly support dharma teaching as dharma ning asta kosala kosali and importantly support good, healthy and high spirit in everyday living.

3.6. Excess Yard

Excess yard is explained in lontar asta kosala kosali as Bencingah, although it is not named well in Lontar No.243 [4], L-05T [6]. Future development is also crucial for the family. The land should be better provided for the new family in the future. Bale daja/north and kitchen in south west is trying to be connected, for those who like it, by utilizing excess yard as shown in Figure 8. The home facing west need to have excess yard in the west and south side. However, the home facing north only need excess yard in the north, facing east need excess yard in the east and facing south need excess yard in the south only.

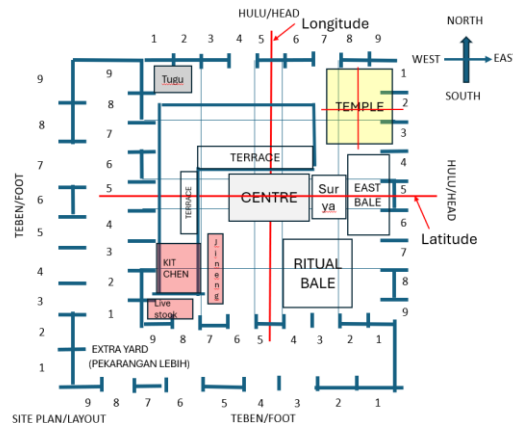


Figure 8. Extra yard for the home.

3.7. Small Size home

Small size of home could be designed utilizing excess yard, front yard or back yard. The pattern is given in Figure 9 for small 1 are (100 m²) approximately 6 meter wide and 16 meter long.

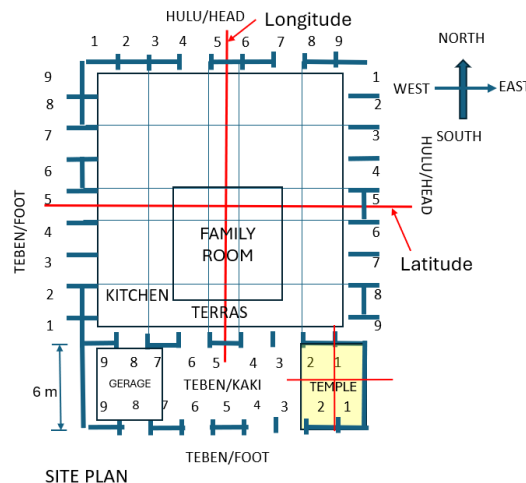


Figure 9. Small size home.

3.8. Sewage, Sewerage and ditch

Sewage is liquid or solid waste should be managed well in the home. Two septic tanks need to be built one for Sewage or blackwater (toilet waste) and one for greywater (sink, shower, and washing machine water). Sewerage system should be built into two septic tank mention above. Sewage solid waste need to be sort plastic, organic and inorganic to be proses separately. Sewage and sewerage should be built in teben (foot) area with care by not affected sacred places in the home yard. The matter of the waste is mention in lontar as tri hita karana. Ditch is only provided for rain water to prevent flooding also need to be provided surrounding the home and connected to road side ditch or road side drainage channel.

3.9. Padu Raksa

Padu raksa is also called pada wreksa in the corner, wall is the stretching hands as padu raksa. If the layout of any home is good prepared, adharma (bad evil-kala) will be replaced into dharma virtue [1,2,3,4,5,6,7,8,9,10,11,12,13].

1. North east-evil Sang Sari Raksa will be replaced by Devi Shri
2. South east-evil Sang Aji Raksa will be replaced by Deva Guru

3. South west-evil Sang Rudra Raksa will be replaced by Deva Rudra

4. North west-evil Sang Kala Raksa will be replaced by Devi Uma

Please see the character of Devi Shri, Deva Guru, Deva Rudra and Devi Uma in Table 11. Build the wall, after construction of the home, as stretch of hands of Deva and Devi with easy reward, plenty of food and drink, happiness will not be reduced, flourish plant and healthy livestock.

4. CONCLUSIONS

This study may conclude that longitude and latitude should be drawn in the center of the propose yard of the traditional Balinese propose home. This latitude and longitude line across the center of the propose yard may be able to establish various number of lay-out, resulting in space thrifty that promote psychological well-being thrive happy, calm, and no angry in designing Balinese home in pursuing Dewata Nawa Sangha in teaching of dharma ning asta kosala kosali and asta bumi.

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