

TYOLOGY OF ANGKUL – ANGKUL FORMS AT BALINESE ETHNIC HOUSES IN DENPASAR

I KadekMerta Wijaya¹

¹Department of Architecture, Warmadewa University, Jl. Terompong No. 24, Denpasar, Indonesia
amritavijaya@gmail.com¹

ABSTRACT

The form of Balinese Ethnic House generally is marked by the entry door which is often called by *angkul-angkul*. The *angkul-angkul* form as a building that has a roof, the exit door and entry for the occupants of the house equipped with steps (stairs), and also with the forms of ornaments and natural materials. Initially, *angkul-angkul* was an entering access for people into the house yard therefore the width of the entrance is only enabled for human circulation. Further developments illustrate that the form of *angkul-angkul* architecture changed in both the aspect of function, the dimensions of the entrance gate, and the form or appearance. This phenomenon can be found in the Denpasar city whose population is increasingly modern. There are many emerges of *angkul-angkul* architecture forms in Denpasar with many variants, especially the form and dimensions that are not like *angkul-angkul* previously. This study aimed to study the typology of *angkul-angkul* architecture forms in Denpasar whose development is influenced by modernization. The method used in this research is qualitative rationalistic through the concept of *angkul-angkul* architectural approach, the concept of change of form, concept of form in architecture and lifestyle trend of society.

Keywords: *typology, function, form, angkul-angkul*

A. INTRODUCTION

Angkul-angkul (the entry doors for houses) is interpreted as the main gate into the yard of traditional Balinese residence and also has a spiritual meaning. Meaning as the main entrance access, *angkul-angkul* has the form of roof, entry doors hole and stairs as access circulation and width of the door hole only intended as access for one person. The complementary elements of this building are *aling-aling* (half-bodied wall) located inside of *angkul-angkul* position. The position of *angkul-angkul* toward *penyengker* wall generally is not in line with the *penyengker* wall or it means that its position goes into the yard compared with the *penyengker* wall. In the front of the *angkul-angkul* is *alebuh* area (the zone of the house that has a *nista* or low value) and as a place to offer a *sesajen*. Another spiritual meaning is characterized by the presence of *aling-aling* as a barrier of negative spirit.

The function of *angkul-angkul* as an access for people to house yard has changed. *Angkul-angkulis* not only passed by humans but also by motor vehicles. This absolutely affects the function and form of the *angkul-angkul* in previous. This

phenomenon can be found in Denpasar which is the largest city in Bali and has more modern society life. The higher economic levels of society and the demand for a modern vehicles cause Denpasar citizen in average has two-wheeled and four-wheeled vehicles. This undoubtedly requires an access room for the circulation of the vehicle into the yard of the house. The *angkul-angkul* access was initially only intended for in and out circulations for people, lately turned for people and vehicles circulation.

The analysis of the problems above causes a relevant conclusion to the discipline of architecture and its benefits to society and government. Therefore, the approach used in analyzing the problems are (1) the concept of *angkul-angkul* architecture; (2) changes of forms in architecture; (3) forms in architecture; and (4) people's lifestyles.

This study examines the function change of *angkul-angkul* which affect the dimensions and form of the *angkul-angkul*, and also the *angkul-angkul* facade. This study is important because: (1) gives a new understanding to the community about the concept of *angkul-angkul* originally as the circulation of entry and exit to the house yard; (2)

as a consideration in designing Balinese ethnic concept buildings in the academic and practitioner range; and (3) this study ultimately produces the *angkul-angkul* typology on aspects of function, dimension and form in Denpasar City.

The research method used in this research is qualitative rationalistic. This method will examine the functional changes to the dimensions of the width of the door holes and the form of the *angkul-angkul* with the limitations of the problem on: (1) a yard with one type of entry doors; and (2) a home yard with two types of entry doors; (3) all of the *angkul-angkul* that have the upper element of the *limasan* roof. While the location of the study was in Denpasar.

B. LITERATURE STUDY

1. The Architectural Concept of Angkul-angkul

Angkul-angkul is the entry door to the home of ethnic Balinese monastery that has a variety of forms, dimensions and structures. The form of *angkul-angkul* is an entrance which the main elements consist of the head (roof), body (entrance hole) and legs in the form of *undag* (ladder), and functioned for the people circulation.

The form, dimensions and structure of *angkul-angkul* are as follows (Dwijendra, 2007).

- a) Forms of *angkul-angkul*: (1) which only has front yard (*lebuh*); (2) has *lebuhin* the form of frog's mouth (frog's *cangkem*); (3) the front of the *angkul-angkul* is *jabasisi*; and (4) *angkul-angkul* equipped with *anjaksaji* (transition area on the front of the *angkul-angkul*).
- b) Dimension of *Angkul-angkul*: (1) the horizontal dimension of the entrance hole as wide as the human holds their waist (50-80 cm); and (2) the vertical dimension of the entrance height is 2.5 x the width of the *angkul-angkul* hole door or as high as the person standing with his hands up.
- c) Structure of *Angkul-angkul*: (1) the structure of the temples in which this building has a massive structure from bottom to top; and (2) massive structures from *bataran* to *pengawak* (bodies) and roof parts of roof truss.

2. Typology in Architecture

Typology in architecture is used to find the characteristics of an architectural work in both physical and non physical aspects. An understanding of typology in architecture can be described in terms of typology below.

- a) According to Rafael Moneo (1979), typology is a concept in classifying objects (architecture) based on their basic properties through three approaches: (1) historical approach; (2) the approach of function, and (3) the approach of form and nature.
- b) According to Budi A. Sukada in Budihardjo (1991), typology is a study in classifying, and classifying an object based on the origin of the object, which is the basic form, the nature and development of the basic form until now

So it can be concluded that typology in architecture is a concept in the grouping of architectural objects through a certain approaches to find a characteristic of the architecture. On this research, the grouping of *angkul-angkul* forms in Denpasar houses based on the aspect of function and form.

3. The Forms in Architecture

- a) According to Ching (2000), the form is the outward appearance of a recognizable architectural object to explore special or specific features. In architectural design, there are elements that form a building, distinguish the interior space with the outer one through the limitations of the columns, roofs, walls and floors.
- b) According to Hendraningsih (1982), the expression of an architecture object is the combination of elements of the line, layer, volume, texture and color.
- c) According to Habraken (1988), the forms can be grouped based on 3 aspects:
 - 1) Spatial system, the forms of floor plan, space organization, orientation and hierarchy of space.
 - 2) Physical system, namely the use of building materials such as roofs, walls, floors and also the physical forming column of the building.
 - 3) Display system, which is related to the front view and the elements that forms the display.

4. Change of Forms in Architecture

According to Habraken (1988), the change of form in architecture because:

- a) Addition, addition of form elements in a space or on other elements causes physical changes to the space or form.

- b) Elimination, which removes an element on the architecture object so that change the physical appearance of the architecture object.
- c) Movement, shifting of the elements in a space will change the configuration of the composition or mass composition in that space.

Habraken (1988) also mentions that changes of form in architecture are caused by two factors: (1) internal factors, factors that come from within man, e.g addition of family members, development needs, and lifestyle changes; and (2) external factors are factors that affect the human personality that is culture and education.

C. METHODOLOGY

1. Approach

- a) The architectural concept of *angkul-angkul*
 This approach provides an overview of entrance layout of the house yard as well as the dimensions of the hoist-hole door based on the traditional Balinese architectural approach. This study will reveal the extent to which the concept of *angkul-angkul* architecture is still used in its application.
- b) The change of form theory in architecture
 The change of form theory is used in analyzing the change of dimension and form of the *angkul-angkul* and the factors behind the change. This does not mean a thorough change that ultimately eliminates the distinctive features of the architecture.
- c) Theory of forms in architecture
 The approach used in form theory in architecture is in the aspect of dimension and form of *angkul-angkul*. The form of *angkul-angkul* architecture in Denpasar has many variants based on the aspect of circulation function that is embedded by the *angkul-angkul* itself.
- d) Community lifestyle
 The lifestyle of the people in Denpasar became one of the approaches in analyzing the *angkul-angkul* in Denpasar. Ownership trend of vehicles has a correlation with the form of *angkul-angkul* architecture in Denpasar.

2. Process Analysis

- a) The initial process is done by reduction of information or data about relevant houses' *angkul-angkul* in Denpasar.
- b) Identify the aspects of functions and form elements in Denpasar houses' *angkul-angkul*.

- c) Identify the typology of houses' *angkul-angkul* form in Denpasar.
- d) Identify the factors behind the typology of houses' *angkul-angkul* form in Denpasar.

D. RESULTS AND DISCUSSION

1. *Angkul-angkul* Forms in North Denpasar Sub-District

a) Case 1 (Nangka Utara Street No. 224)



Figure 1. *Angkul-angkul* Nangka Utara Street No. 224
 (Source: survey, 2017)

1) Form and Dimension

The form of *angkul-angkul* in Nangka Utara Street has a simple form, there is no ornament carvings or forms of *cecawian* on each part of *angkul-angkul* form. *Angkul-angkul* in other areas of Denpasar, the left and right elements are larger than the *angkul-angkul* in this area. The upper form of the roof is simple without the presence of elements *ikutceleduand karangbentala*. The lower part of the *angkul-angkul* is equipped with brake for access or circulation path of two-wheeled vehicles.

The width of the entry door of the *angkul-angkul* is about 100 cm. This dimensional width is the development of previous dimensions of approximately 75 Cm. This change uses the consideration that besides functioned as a human circulation path and also the path of circulation of two-wheeled vehicles.

2) Structure and Material

The structure used for the *angkul-angkul* is brick structure and the finishing material is *acian* which covered by paint. The brick construction is a construction that was used on the ancient royal castle buildings which used bricks. The

construction is really strong by the thick bricks, so generally the *angkul – angkul* has the thickness that goes inside. The structure and construction used for the roof are woods and the roof cover is tiles.

3) Ornament

Ornament is the form of the *angkul – angkul* building, in this case is formed like a simple ornament and really minimum. Ornament that is more accented is on the roof part which equipped with *ikutceledu* and *karangbentala* ornament. On the top part of the *angku-angkul* entry door there is a really simple facial mask ornament. Ornaments on this *angkul-angkul* tend to be located in the corner and the edge of the building and on the top part of the entry door opening.

b) Case 2 (Antasura Street No. 66x)



Figure 2. *Angkul-angkul* Antasura Street No. 66x
 (Source: survey, 2017)

1) Form and Dimension

The form of this *angkul-angkul* has a more modern form compared with the Nangka Utara street No. 224 case. The modern form seen in the elements of ornament with the modern form and techniques. In addition, the door plate are used made of iron that is different from the traditional *angkul-angkul*. There is an addition on left side of the *angkul-angkul*, the door as access in and out of cars. This form of the door influenced by the lifestyle. Dimensions of the *angkul-angkul* entrance hole width of approximately 100 Cm. This dimension adjusts to the function of the *angkul-angkul* as a two-wheeled vehicle access.

2) Structure and Material

The form of these *angkul-angkul* influenced by modernization and also affect the structure of the building, using reinforced concrete as its main structure. Between the structure of the body and the roof is an unstable or not massive structure, on the roof using a timber frame with roof covering material is tiled and equipped with ornaments

IkutCeledu and *KarangBentala* on the tip of the roof. While the finishing material in the body of the building is plastered painted with color resembling red brick and smokey grey. By using this finishing material adopts a local genius, that became a trend in Denpasar.

3) Ornaments

Using ornaments in *angkul-angkul* is a contemporary way. As it seen from his form as patches on the body and roof of these *angkul - angkul*. The structure itself using elements of *Cecawian* and *Cili* decorative elements patched on its body part. The upper part of this structure are covered by ornaments *IkutCeledu* and *KarangBentala*. The applications of this modern ornament are influenced by developing trend in Denpasar.

2. *Angkul-angkul* Forms in South Denpasar Sub-District

a) Case 1 (HayamWuruk Street No. 11)



Figure 3. *Angkul-angkul* HayamWuruk Street No. 11
 (Source: survey, 2017)

1) Form and Dimension

Time and change is an unavoidable condition, but identity and character becomes something that have to be maintained. This can be seen from the form of *angkul-angkul* in JalanHayamWuruk No. 11, that maintain the traditional form as a characteristic and keep up with the time by changing the material and put a new function as pedestrian path as well as two-wheeled vehicles. This change of function does not change the shape of the *angkul - angkul* significantly, just replacing the steps into a ramp so that can be accessed by a two-wheeled vehicle easily. For four-wheeled vehicles access, the entrance can be modified into a simple form. This simple form intended as an accent to the old *angkul-angkul*. The dimensions of *angkul-angkul* do not change and using the original measurements.

2) Structure and Material

The structure of these *angkul – angkul* using brick and covered with painted plaster. The brick construction is similar into Ancient Balinese Puri that using brick as the main structure. This construction method is quite strong through thick layer of brick, so generally *The angkul – angkul* have a thickness to the inside. Roof structure itself using timber frame and covered by roof shingles.

3) Ornaments

The ornament of *angkul – angkul* in this case is quite simple and minimalism. The more complex form are placed in upper part of the *angkul – angkul*, equipped with *Ikutceledu* and *karangbentala*. On the upper part of the entrance, placed kind of face or mask ornament, but in a simple shape. Ornaments on the *angkul-angkul* tend to be on the corners or ends of the building and the top of the entrance.

b) Case 2 (DanauBuyan Street)



Figure 4. *Angkul-angkul*at DanauBuyan Street
 (Source: survey, 2017)

1) Form and Dimension

The form of this *angkul – angkul* is the modern form of the dimensions or the wide of the entry door opening and also the function. The roof of the *angkul – angkul* use the Balinese style *limasan* which has 2 corners of the roof slope that equipped with *ikutceledu* ornament and *karangbentala*. The height of the building is similar to the height of the building inside the yard, so the form of the *angkul – angkul* becomes the accent of the exterior of the house. The wide of the opening access is about 200 Cm which used not only by pedestrian but also by two-wheeled vehicles. The owner of the house designed *the angkul – angkul* based on the humans and two-wheeled vehicle needs.

2) Structure and Material

The structure used for the *angkul – angkul* is the reinforced concrete with finishing material from *acian* that is painted looks like red brick color and grey sandstone. The roof part used the wooden roof truss and the roof cover is tiles. The structure and material usage is a Balinese traditionally modern concept with considering the development and local identity aspects.

3) Ornament

The usage of the ornament on the body part of the *angkul - angkul* building is really simple with the sculptures or the formations from the cement mixture and fine sand (*bias melela*). This simple concept is adapting and following with current trend of using ornament style in Denpasar. The roof part used the *ikutceledu* and *karangbentala* ornament in the edge part of outside row and top part from the roof. The usage of this ornament becomes the identity of Balinese ethnic building roof.

3. Angkul – Angkul Form in West Denpasar Sub-District

a) Case 1 (Bukit Tunggul Street No. 13)



Figure 5. *Angkul-angkul*at Bukit Tunggul Street No. 13
 (Source: survey, 2017)

1) Form and Dimension

The form of this building has 2 opening entry doors which are the main *angkul – angkul* and entry door for two and four wheeled vehicles. The form of the main *angkul – angkul* adopted the Denpasar local form which is the usage of red bricks, Balinese roof style, and stairs material. The *angkul – angkul*'s right side entry door has a simple form which used as the in-out access of two and four wheeled vehicles and pedestrians. This means that the most used access is the left side entry door of the main *angkul – angkul*. The wide of the main *angkul – angkul* entry door is about 80 Cm and the

left side door of the main *angkul – angkul* has a width for four wheeled vehicles which is 250 Cm.

2) Structure and Material

The *angkul – angkul* building structure which is used in this case is reinforced concrete. The use of the reinforced concrete adapts with the form and the development of modern *angkul – angkul* structure system. This structure can save the initial cost and the maintenance cost compared to red bricks structure system. Structure on the roof part use wooden truss roof system structure. So between the roof and the body of the *angkul – angkul* is not a massive structure system. Finishing material is adopted from local material which is laminated red bricks. Meanwhile, the roof part used the tiles roof cover and ornaments from the mold of cement and fine sand mixtures.

3) Ornament

The usage of ornament for the form of *angkul – angkul* building is simple which point out on the edge or the building’s corner. The look of this ornament is more visible on the top part of the building which is the roof. The roof part is equipped with the *ikutceledu* and *karangbentala* ornament which carved with more detail than the ornaments on the body part of the *angkul – angkul*

b) **Case 2 (Raya Pemogan Street No. 137)**



Figure 6. *Angkul-angkul* at Raya Pemogan Street No. 137
 (Source: survey, 2017)

1) Form and Dimension

The modernization of local form can be seen very clear on the look of this *angkul – angkul* building. The form between the body and the roof has different structures in a sense of not massively merged. The form is elongated with the entry door opening dimension is about 250 Cm which

functioned for the two and four wheeled and pedestrians access. The form of the roof use the Balinese *limasan* which equipped with *ikutceladu* and *karangbentala* ornament. The front part of the *angkul – angkul* is equipped with strong *wayang* character statues. The left and right side of the *angkul – angkul* there is a hole to put *banten* (offerings) as the typology of the ritual activities of Balinese society in general.

2) Structure and Material

The structure used for this *angkul – angkul* is on the body part of the building use the reinforced concrete and on the roof part use wooden truss roof. The finishing material on the body part of the roof is painted *acianhat* look like the color of red brick and grey sandstone. The material for the the roof cover is tiles and the material for the *ikutceledu* and *karangbentala* is from molded concrete.

3) Ornament

The implementation of the ornament on this *angkul – angkul* is minimum on the body part of the building, but on the top or the roof part of the building is still can be seen the appearance of *ikutceledu* and *karangbentala* form. The ornament form in this case, that is clearly seen on the roof part of the building is a part of the building which treated specially that any other parts.

4. *Angkul – Angkul* Form in East Denpasar Sub-District

a) **Case 1 (Anyelir Street No. 14)**



Figure 7. *Angkul-angkul* at Anyelir Street No. 14
 (Source: survey, 2017)

1) Form and Dimension

The entry door in this first case consists of two types, wide and narrow or small form and dimension. The *angkul – angkul* with narrow dimension (\pm 80 Cm) and slim tall form is pedestrians’ access. This can be seen in the bottom

part there are stairs with a massive door. However, this *angkul – angkul* is not routinely used, it is only used when there is a traditional ceremony. *Angkul – angkul* for the daily usage is the one the left side from the *angkul – angkul* that has narrow size. *Angkul – angkul* that elongated to the side and the wide of the door opening is about 250 cm is functioned as four wheeled vehicle in and out access. In that wide, surely the two-wheeled vehicles are also able to get through that door. The *angkul – angkul* door is also functioned as the house residents' access door either by vehicles or on foot.

2) Structure and Material

Structure that is used on the *angkul – angkul* of the Case 1 is a massive reinforced concrete which finished with brick as the Denpasar material identity. This type of structure is a modern structure with a consideration of big form, construction acceleration, and building endurance. The use of brick and grey sandstone is to maintain local identity in this modern time. The local identity is not only seen from the material usage, but also ornaments that decorate the form of the *angkul – angkul*.

3) Ornament

Ornament used in this case is simple, which is the basic carving or simple carving with considering the usage of materials that is easy to break and fragile if they are carved in details and adapted to the form of the house. The application of the ornaments' proportions on the top, body, and bottom part of the *angkul – angkul* building is balanced in the usage of material, ornament style and the compatibility of the colors.

b) Case 2 (Sokasati Street No.12)



Figure 7. *Angkul-angkul* at Sokasati Street No. 12
 (Source: survey, 2017)

1) Form and Dimension

Angkul – angkul case 2 has a big form and dimensions about 300 Cm. The form of this *angkul – angkul* is adapted with the use of *angkul – angkul* function as vehicles' in and out access. With a wide dimension it surely affects the form which is a big one. The roof part use the massive *limasan* roof form that equipped with simple Balinese ornaments. This part goes to the bottom, in the means from top to bottom this building is massive. This wide form and dimension, is not only used for vehicles' access but also the access for the resident without using the vehicles. So, to save the accessing space, the *angkul – angkul* is built to accommodate all the activities circulation with a modern form and dimension.

2) Structure and Material

A big form and dimension affects the used structure and material in the *angkul – angkul*. Massive reinforced concrete is a good choice that used in this structure and this is a material that can be easily applied and shows the local identity which is red bricks. The form on the top part of the massive *angkul – angkul* surely needs a strong structure and construction that accommodate the form and function of this *angkul – angkul*.

3) Ornament

Ornament used on the roof part of the building is *ikutceledu* and *karangbentala*. The use of this ornament is as the identity of Balinese ethnic building as the part of the yard's entry door. Material used on this ornament is molded sandstone (artificial sandstone) so it is easy to be formed (carved). The body and bottom part of the building used simple ornaments without any detailed carvings which using forward and backward installation method of the position of the brick that usually called *bebadungan* (Denpasar City characteristic). The house residents are trying to present the local identity on the form of *angkul – angkul* in the form that experiencing function development through the local ornaments choices.

E. CONCLUSION

1) The form of *angkul – angkul* in all four sub-districts in Denpasar seems have no differences. This is because the current development in modern traditional architecture or Balinese contemporary architecture that is more preferred by some Denpasar citizens.

- 2) The form and dimension of the *angkul* – *angkul* adapted to the needs of the owner of the house and the economic factor. There are three types of the *angkul* – *angkul*, such as: (a) *angkul* – *angkul* that is functioned as the pedestrians and vehicles access; (b) *angkul* – *angkul* that is functioned as the pedestrians, two wheeled and four wheeled vehicles circulation; and (c) *angkul* – *angkul* that has been added a door for vehicles, which mean between the pedestrians and vehicles circulation is separated or has its own access.
- 3) Structure system that is used is reinforced concrete the finishing material that depends on the liking of the owner of the house. This structure system is chosen because stronger and easier when constructed.
- 4) The form of the ornaments tend to the general Balinese ornaments with a form and material which are modern. Part of the *angkul* – *angkul* building which has a special attention in regards to the placement of the ornaments is the roof part of the *angkul* – *angkul*.

- Habraken, N. John. (1988). *Type as Social Agreement*. Asian Congress of Architect. Korea: Seoul
- Hendraningsih. (1982). *Peran, kesandanpesan bentuk-bentuk arsitektur: laporan Seminar Tata Lingkungan Mahasiswa Arsitektur Fakultas Teknik, Universitas Indonesia*. Jakarta: Djambatan
- Rafael Moneo. (1979). *On Typology dalam Journal Oppositions 13*. Macashusette: The MIT Press.
- Sukada, B. (1997). *Memahami Arsitektur Tradisional dengan Pendekatan Tipologi*. Bandung: PT. Alumni.

ACKNOWLEDGMENT

Acknowledgments present to:

1. Direktorat Riset dan Pengabdian kepada Masyarakat (DRPM) Kemenristek Dikti as a provider of Penelitian Dosen Pemula (PDP) for the implementation in 2017.
2. Lembaga Penelitian Universitas Warmadewa that has facilitated the activities of Penelitian Dosen Pemula for the year of 2017
3. Kopertis Region VIII as an institution that oversees Warmadewa University which is one of universities in Bali.
4. Students of class 2015 Architecture Engineering program that has assisted in collecting field data.

REFERENCES

- Budihardjo, Eko. (1991). *Jati Diri Arsitektur Indonesia*. Bandung: Alumni
- Ching, Francis D. K. (2000). *Arsitektur, Bentuk, Ruang dan Susunannya*. edisi ke-2. Jakarta: Erlangga
- Dwijendra, N. K. Acwin, (2007). *Arsitektur Rumah Tradisional Bali*. Denpasar: Udayana University Press.