

## Chapter 5

### SPATIAL FORMATION AND TRANSFORMATION OF HTGHs IN THE CITADEL AREA

From the previous chapters, we know that HTGHs in the citadel were formed in the early 19<sup>th</sup> century and they were originally used as the places where the princes came to study and for recreation. Then, they were transformed into the dwelling houses of high-ranking mandarins and members of royal families. Later, ordinary people were allowed to build HTGHs of their own for living if their financial abilities were permitted.

This chapter will discuss the spatial formation and transformation of HTGHs in the citadel area in various aspects from the elements and designs on front façade of HTGHs, the interaction of basic elements in layout, to the spatial organization of those HTGHs.

#### 5.1 Spatial Arrangement of HTGHs

Before studying different aspects of HTGHs in the citadel area, we would like to mention the definitions of basic elements of a HTGH and their arrangement. This basic knowledge will give a better understanding about the research in the further analysis of transformation of HTGHs in the citadel area.

##### 5.1.1 Layout

Most previous study works such as Thuy (1999) claim that the layout of a HTGH is usually composed of gate, hedge, small alley, *Binh Phong* (Screen), *Be Can* (Basin), symbols of White Tiger and Green Dragon, *Nha Chinh* (Main house), *Nha Phu* (Out house), and garden (Fig. 5-1). Normally, the gate has a pitched roof for protecting dwellers and guests from rain and sun. The small alley is served as the connecting path from the gate to *Binh Phong* and *Be Can*. *Binh Phong* and *Be Can* are laid in the middle of the front yard in front of *Nha Chinh*. They serve as the

masonry screen of the house, preventing evil spirits from getting into the house and also stopping guests going straight into *Nha Chinh*. *Nha Phu*, in general, is arranged with *Nha Chinh* following Chinese characters of Dinh (8), Cong (⊗), Nhat (!) and Khau (⊥). The symbols of White Tiger and Green Dragon serve as two guardians of *Nha Chinh*. They can be located on two sides of *Binh Phong* or in front of two *Chais*.

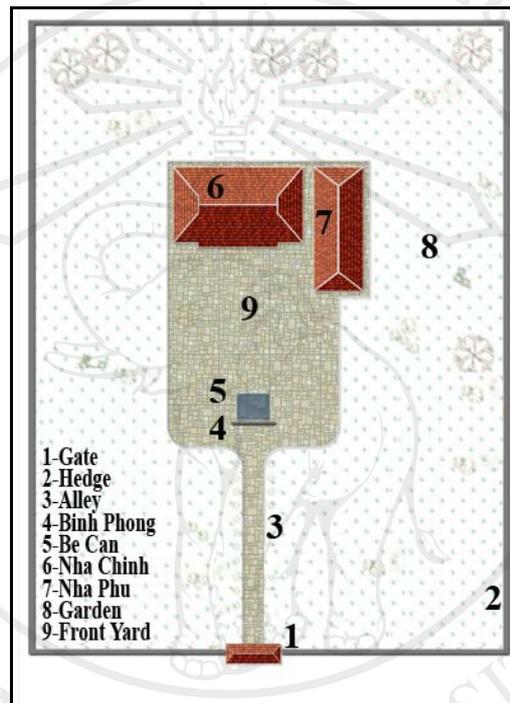


Figure 5-1: Site plan of a HTGH

### 5.1.2 Spatial Organization

The spatial organization of a HTGH is composed of different basic spatial units as follows (Fig. 5-2):

*Phong Khach / Phong Sinh Hoat Chung* (Guest room / Living room): **G / L**

*Phong Tho* (Worship space): **W**

*Phong Ngu* (Bedroom): **B**

*Phong Bep* (Kitchen): **K**

*Phong An* (Dining room): **D**

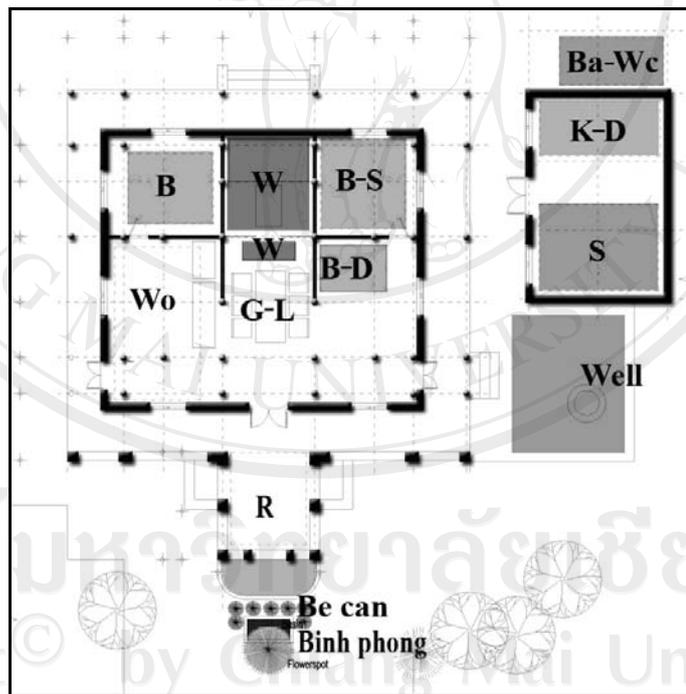
*Phong Tam / Phong Ve Sinh* (Bathroom / Toilet): **Ba / Wc**

*Phong Thu Gian* (Recreation space): **R**

*Phong Lam Viec* (Working or Study room): **Wo**

*Kho* (Storage): **S**

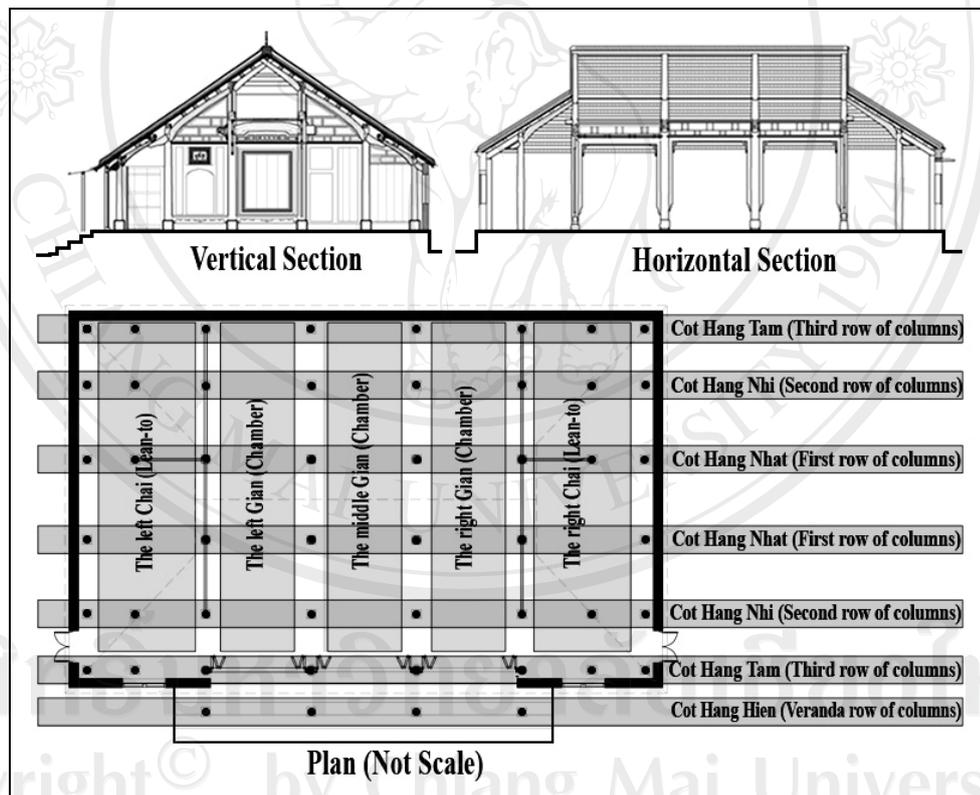
*Hien* (Terrace or Veranda): **T**



**Figure 5-2:** Spatial organization of a HTGH

The plan of *Nha Chinh* in a HTGH could be divided into two parts: *Gians* (Chambers) and *Chais* (Lean-tos). *Gians* consist of left *Gian*, right *Gian*, and middle *Gian*, while *Chais* can be divided into left *Chai* and right *Chai* as shown in Fig. 5-3. That figure also provides the specific names of different columns in *Nha Chinh*.

The spatial patterns in a HTGH are flexible. A space can have multi functions. *Phong Ngu*, for example, can be a space for *Phong Khach* or *Phong Sinh Hoat Chung*. Normally, *Phong Khach* is laid in the front part of *Nha Chinh* around the middle *gians* facing the main access. This *Phong Khach* is a flexible multifunctional space that can serve as *Phong Sinh Hoat Chung*, *Phong An*, and even *Phong Ngu* for taking a nap. The space for *Phong Tho*, which is the most solemn space in *Nha Chinh* and which exists in all HTGHs is placed in the rear part of the middle *gians*. *Phong Ngu* is normally laid in two *chais*. The left *chai* near *Nha Phu* is very often the females' *Phong Ngu* and also serves as *Kho*, while the right *chai* is the *Phong Ngu*, *Phong Lam Viec*, and/or *Phong Thu Gian* for males (Fig. 5-3).



**Figure 5-3:** Plan and section of a HTGH

In *Nha Chinh*, *Phong Ngu* is not necessarily a spatial unit, which is enclosed by solid walls. However, *Phong Ngu* for women can be partitioned by plywood walls when it is also used as *Kho*. The large household with limited space always converts *Phong Ngu* into open bedroom. The open bedroom is laid in *gians* of *Nha Chinh* for

males and guests, while open bedroom for females can be laid in *Nha Phu*. *Phong An* is usually shared space with *Phong Sinh Hoat Chung* in front of *Phong Tho* in the middle *gians*. *Phong Bep*, *Phong An* and *Kho* are usually laid in *Nha Phu*. *Nha Phu* abuts on *Phong Ngu* for female in *Nha Chinh*. *Phong Tam*, *Ve Sinh*, and space for washing are normally placed outside at the rear of the buildings.

In *Nha Chinh*, *Hien* is usually placed in front of *Phong Khach*. With a large terrace, it can serve as *Phong Thu Gian* (R space in fig. 5-2) or *Phong Khach*.

## 5.2 Basic Classification of HTGHs and Their Distribution

As mentioned in the chapter 3, the field survey rechecked the data of 101 traditional houses, which were collected in 1998, by An, H. H (Appendix 3). However, some houses in them could not be found by author's recheck survey. The address numbers of some buildings were also changed in several streets. Some houses were converted into new house types. Other houses are not really traditional houses even though the elements and designs on the façade are similar to those of traditional houses. In addition, several houses in An, H. H's survey list are of the other types of traditional houses such as ancient French type. Be rechecking An, H. H's data and preliminary survey by the author, 91 houses are selected to be the object of study in this research. Among all 91 HTGHs, 39 of them are the data from survey (Table 5-1). All 91 HTGHs were surveyed by taking photographs but the HTGHs, which are represented in bold in that table, were also done through an interview with the dwellers.

**Table 5-1:** Basic classification of 91 surveyed HTGHs and their information

No	An No	Type	Name of owner	Address (Street)
1	3	A01	Nguyen Cong Thanh	260 Nguyen Trai
2	95	A02	Nguyen Kien	113 Thai Phien
3	32	A03	Bui Thi Kim Phung	30/1 Le Thanh Ton
4	23	A04	Hoang Cong Anh Su	35 Nhat Le
5	19	A05	Dang Van An	81 Nhat Le
6		A06	Vu Thi Due	72 Xuan 68
7	80	A07	Nguyen Thi Huong	17/71 Nhat Le
8	43	A08	Tran Thi So	37 Thach Han
9	18	A09	Ton Nu Thi Hoa	42/71 Nhat Le
10		A10	Phan Canh Hien	47 Dinh Cong Trang
11	78	A11	Ton Nu To Tam	143 Xuan 68
12	2	A12	Nguyen Thi Ga	83 Ong Ich Khiem
13	4	A13	Truong Thang	34 Nguyen Trai
14	9	A14	Mr. Thanh	9/1 Le Huan
15		A15	Nguyen Quang Trung	5/4 Dang Thai Than
16	82	A16	Tran Thi Tram	177 Xuan 68
17		A17	Thuan Loc Committee	19 Le Van Huu
18		A18	Ton That Quynh Bang	8 Yet Kieu
19		A19	Luong Thi Tung	3 Luong Y
20	87	A20	Phan Thi Bich Dao	83 Ngo Duc Ke
21		A21	Nguyen Dai Cuong	18 Luong Y
22	12	A22	Ton That Thien An	117 Le Huan
23		A23	Vong vang Cafe	24 Le Thanh Ton
24	76	A24	Nguyen Manh Thuong	390/3 Dinh Tien Hoang
25	72	A25	Le Van Loi	364/3 Dinh Tien Hoang
26	77	A26	Nguyen Thi Ngoc An	390/14 Dinh Tien Hoang
27		A27	Ai Ky	1 Luong Y
28	84	A28	Nguyen Duc Pho	8 Luong Y
29	83	A29	Hoang Duc Ty	18 Luong Y
30	85	A30	Nguyen Minh	42 Luong Y
31		A31	N.A	106 Nhat Le
32	101	A32	Tran Cong Cu	5 Nguyen Xuan On
33	35	B01	Pham Huu Hiep	44 Le Thanh Ton
34	14	B02	Vo Van Vinh	110 Nhat Le
35		B03	Nguyen Thi Kim Mai	110 Nhat Le
36	71	B04	Thuan Loc Committee	124 Le Thanh Ton
37	96	B05	Nguyen Huu Thu Ba	159 Thai Phien
38	34	B06	Phan Tu Luan	30/5 Le Thanh Ton
39	5	B07	Bui Thi Phuong Xuan	38 Ngo Thi Nham
40	6	B08	Pham Quang Hong	3/2 Tran Binh Trong
41	41	B09	Ton Nu Thi Oanh	156 Le Thanh Ton
42	64	B10	Hoang Nang Tram	27 Tong Duy Tan

**Table 5-1:** Basic Classification of 91 Surveyed HTGHs and Their Information

(Continued)

No	An No	Type	Name of owner	Address (Street)
43		B11	Nguyen Van Dinh	61 Ngo Duc Ke
44		B12	Tran Thi Hoe	43 Tran Nguyen Dan
45	38	B13	Bui Huu Luan	Le Thanh Ton
46	33	B14	Pham Thi Bach Yen	30/3 Le Thanh Ton
47	1	B15	Tran Sy Chau	81 Ong Ich Khiem
48	56	B16	Ton That Quynh Nam	1 Ngo Duc Ke
49	61	B17	Le Thi Bich Tuy	21 Dang Dung
50	48	B18	Ngo Thi Duong	66 Doan Thi Diem
51	24	B19	Hoang Cong Sam	120 Mai Thuc Loan
52	60	B20	Tran Van Hong	60 Han Thuyen
53	11	B21	Doan Dinh Trung	3/63 Le Huan
54		B22	Mr. Truyen	49 Tran Nguyen Dan
55		B23	N.A	41 Dinh Cong Trang
56		B24	Ngo Kim Que	9/24 Le Thanh Ton
57		B25	Ton That Dong	9 Quoc Su Quan
58	70	B26	Nha Di San	117 Le Thanh Ton
59		B27	N.A	6 Ngo Duc Ke
60		C01	Bui Thi Dai	17 Tran Nguyen Han
61		C02	Le Thuc Thai	26 Tran Quy Cap
62	88	C03	Tran Viet Phuong	113 Ngo Duc Ke
63	29	C04	Tran Sau	2 Le Thanh Ton
64		C05	Tran Trong	37 Doan Thi Diem
65		C06	Pham Thi Thu Oanh	185 Xuan 68
66		C07	Pham Thi Mao	64 Doan Thi Diem
67	50	C08	Ly Truong Tap	39 Doan Thi Diem
68		C09	Pham Thi Nhan	8/24 Phung Hung
69		C10	Nguyen Nhu Danh	Le Huan
70	22	C11	Le Thi Bon	172 Nhat Le
71	21	C12	Nguyen Chanh Thuong	170 Nhat Le
72	74	C13	Nguyen Thi Thu Cuc	380 Dinh Tien Hoang
73		C14	Nguyen Thi Kim Quy	378 Dinh Tien Hoang
74	46	C15	Nguyen Van Diep	11 Doan Thi Diem
75		C16	Thuan Thanh Committee	112 Mai Thuc Loan
76		C17	N.A	22/71 Nhat Le
77	94	C18	Vo Van Cuong	105 Thai Phien
78		C19	Nguyen Huu Loi	278/3 Dinh Tien Hoang
79	73	C20	Le Thanh Son	378/23 Dinh Tien Hoang
80		C21	Do Son	390/1 Dinh Tien Hoang
81		C22	N.A	119 Le Huan
82		C23	Tran Dinh Huong	2 Luong Y
83		C24	Tran Thi Huong	27 Luong Y

**Table 5-1:** Basic Classification of 91 Surveyed HTGHs and Their Information

(Continued)

No	An No	Type	Name of owner	Address (Street)
84		C25	<i>N.A</i>	<i>112 Mai Thuc Loan</i>
85		C26	<i>Dinh Van Quy</i>	<i>114 Mai Thuc Loan</i>
86		C27	<i>N.A</i>	<i>13 Ong Ich Khiem</i>
87	89	C28	<i>Hoang Ngoc Minh</i>	<i>102 Ngo Duc Ke</i>
88		C29	<i>Noi Thanh Cafe</i>	<i>6 Quoc Su Quan</i>
89	44	C30	<i>Cao Quang Muu</i>	<i>37 Thach Han</i>
90		C31	<i>N.A</i>	<i>47 Tran Van Ky</i>
91		C32	<i>N.A</i>	<i>33 Tran Van Ky</i>

**Notes:** An No-Number of HTGHs in the list of An, H. H. (Appendix 3); Type-Types classified by the criteria of the number of *gians* and *chais* in *Nha Chinh*; *Italic words*-HTGHs surveyed by taking photographs; **Bold words**-HTGHs surveyed by taking photographs and interviewing with dwellers; N.A-Not Available

Various approaches have been used to classify house types of HTGHs. According to Tinh (2005), HTGHs could be generally divided into four types by the criterion of the number of *gians* in *Nha Chinh*: one *gian*, two *gians*, three *gians*, and five *gians*. Among these types, only one *gian* and three *gians* are found in the surveyed HTGHs and houses with three *gians* can be distinguished based on the position of *chais*. Therefore, HTGHs in the citadel area could be classified based on the criteria of number of *gians* and *chais* in *Nha Chinh*. There are one *gian* – two *chais* (Type A), three *gians* – two *chais* (Type B), and three *gians* (Type C) (Table 5-1). From the survey, it is very interesting that most original owners of HTGHs of type B (three *gians* – two *chais*) are high-ranking mandarins and royal families of Nguyen dynasty except five HTGHs (B04, B08, B12, B11, and B19). Among the above five HTGHs, HTGHs B11 and B19 are used for purpose of clan worship while the others are not clear about their origin. Among HTGHs of type A (one *gian* – two *chais*) and type C (three *gians*), the present owners of four HTGHs (A03, A08, A09, and A11) are descendants of princesses of Nguyen, while the rest are ordinary people. This demonstrates that the number of *gians* in *Nha Chinh* implies the social status of the owners in the past.

Table 5-1 shows that the numbers of HTGHs of type A and type C are the same, which together account for 70.3%, while type B is much less, only 29.7%. They scatter in the citadel area around the Imperial City as shown in Fig. 5-4, 5-5, 5-6, and 5-7. Most HTGHs concentrate on the left side of the Imperial City with nearly two-thirds of the 91 HTGHs, especially along Le Thanh Ton St (Fig. 5-5). In contrast, the rear part behind the Imperial City and Ngu Ha River is the place where only seven HTGHs exist (Fig. 5-7). This could be explained by the fact that the left side area was the place of many royal office buildings of Nguyen dynasty in the past where mandarins worked during the day and many dwelling houses of mandarins (HTGHs) were built around this area for the convenience of their activities.

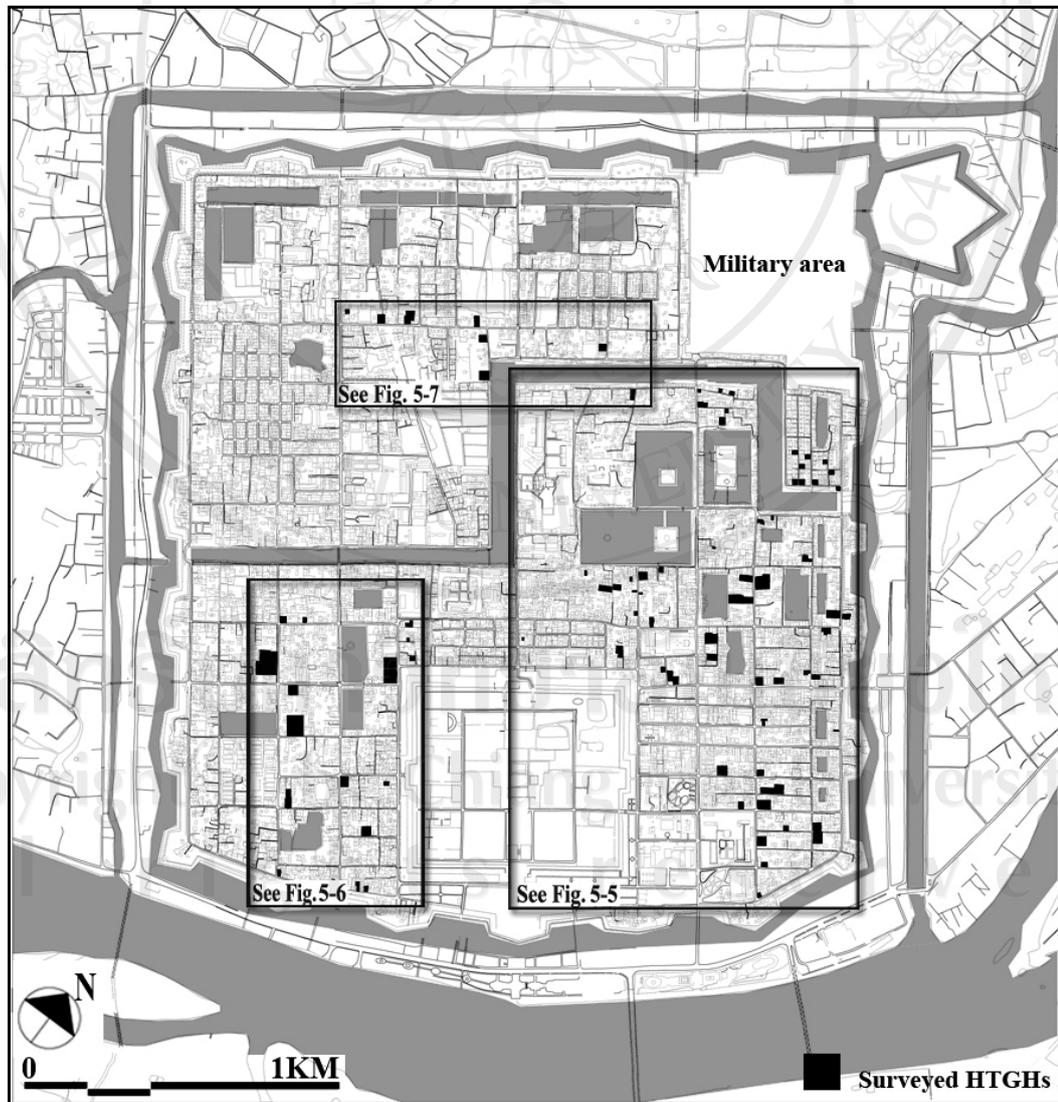


Figure 5-4: Distribution of 91 surveyed HTGHs in the citadel area

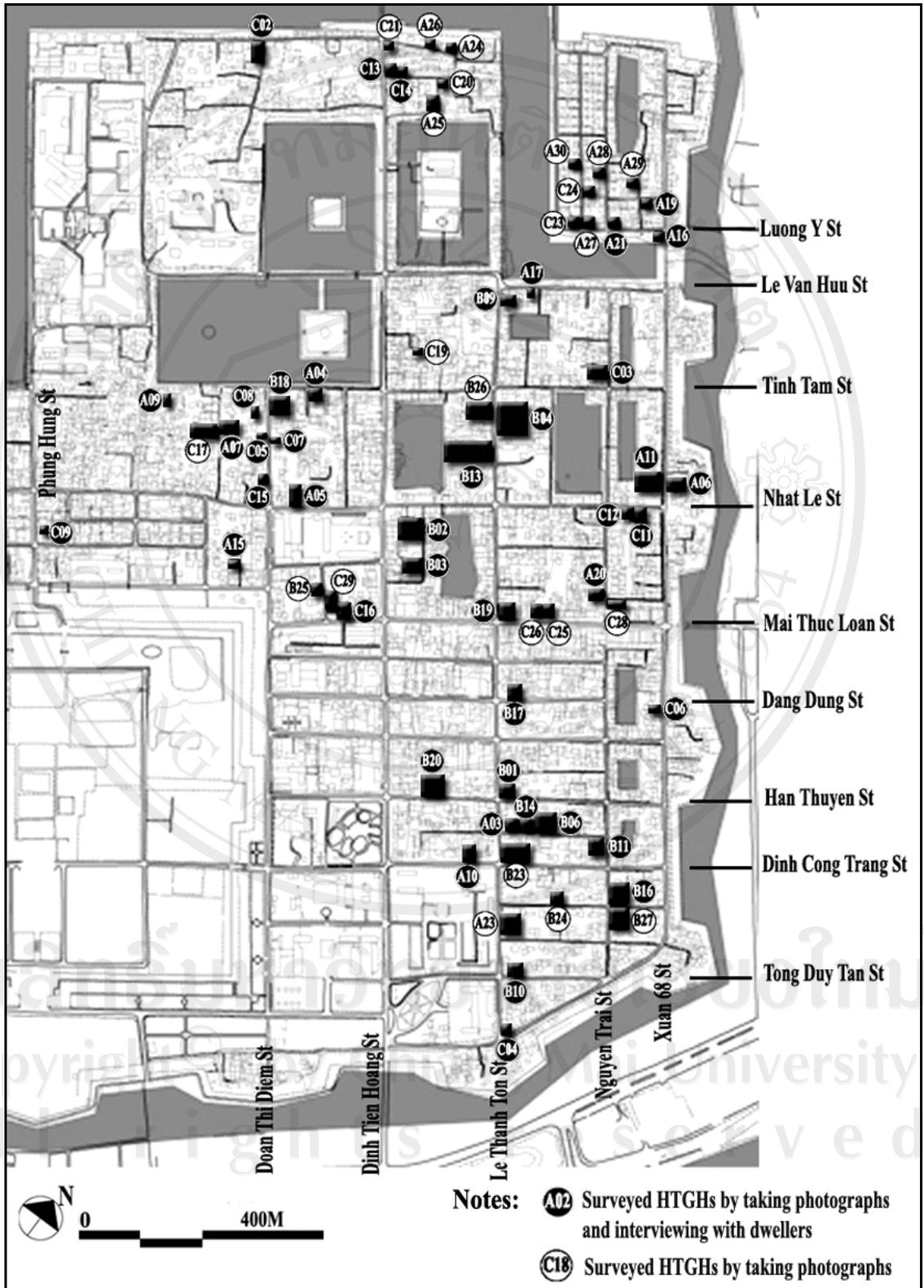


Figure 5-5: Distribution of HTGHs in the first area of Fig. 5-4

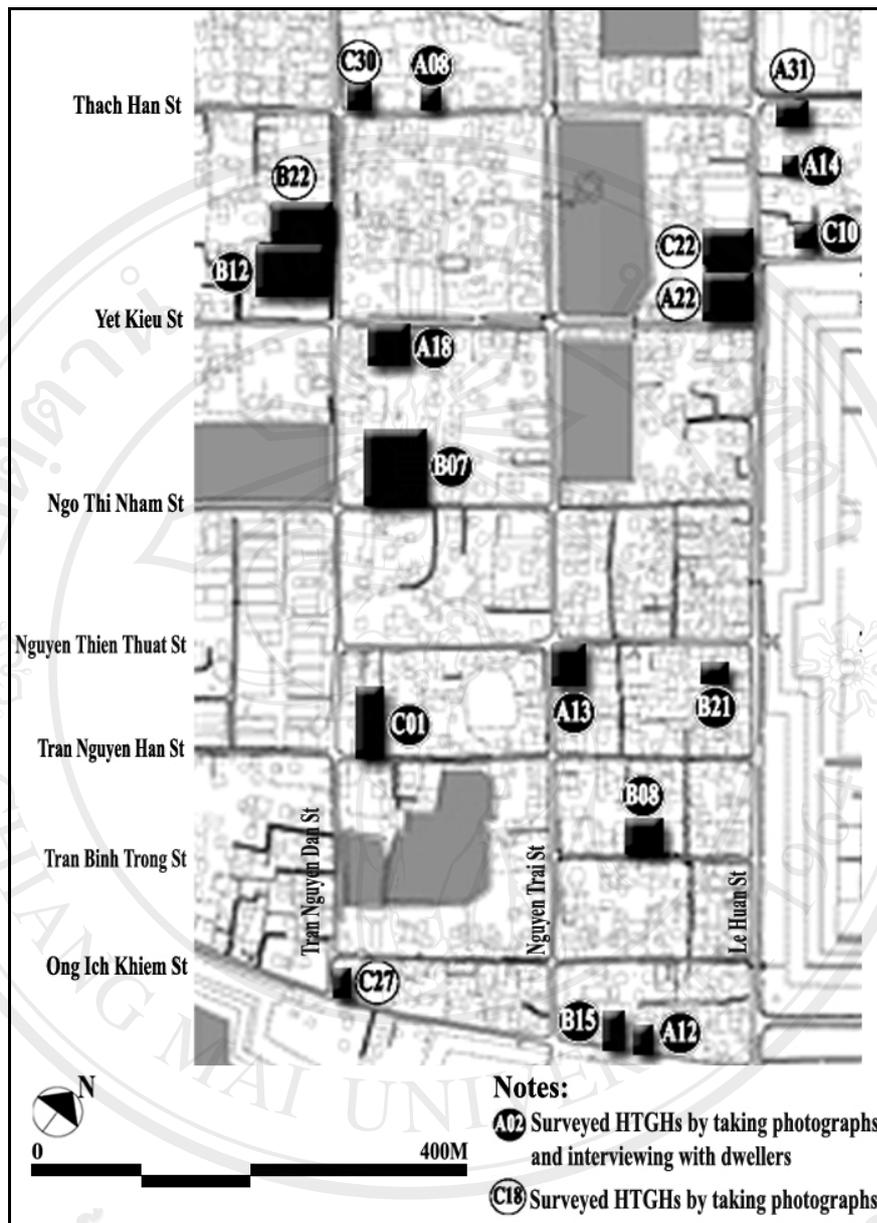


Figure 5-6: Distribution of HTGHs in the second area of Fig. 5-4

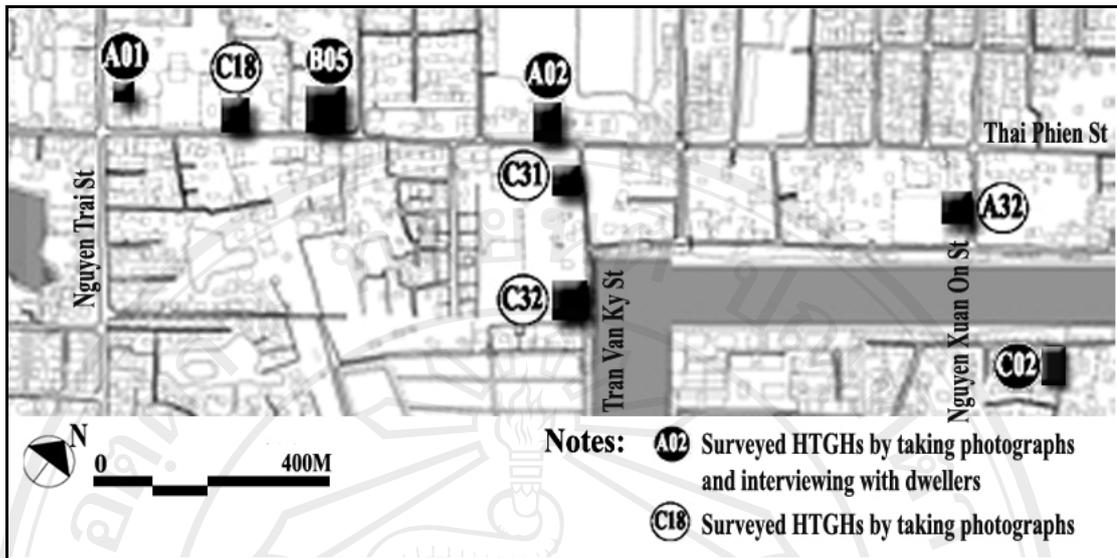


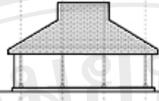
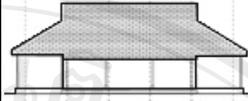
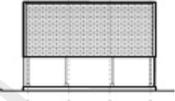
Figure 5-7: Distribution of HTGHs in the third area of Fig. 5-4

### 5.3 Classification of HTGHs Based on Façade Elements and Designs

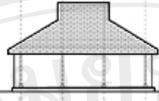
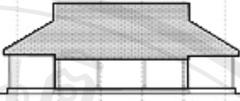
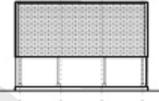
According to the facade elements of *Nha Chinh* and its designs, the classification of HTGHs in the citadel area could also be divided into seven types (Table 5-2). The criteria for classification are based on the different materials of front wall of *Nha Chinh* (brick or wood), the appearance of columns in *Hien* of *Nha Chinh*, and the different numbers of roofs covering *Nha Chinh* and *Hien*. From the seven types of 91 HTGHs, the research discovers that type 5 is the typical type of HTGHs in the citadel area, accounting for 51.6%. In contrast, there is only one type 3 HTGH (C16). The distribution of the all seven types of HTGHs are also illustrated in Fig. 5-

8.

**Table 5-2:** Classification of HTGHs in the citadel area based on the facade elements of *Nha Chinh* and its designs

Type	A	B	C	Total
 <p>1: House with wooden wall/ veranda/ one roof</p>	 <p>A01, A03, A10, A14</p>	 <p>B14, B15, B17, B19, B20</p>	 <p>C13, C26</p>	11
 <p>2: House with wooden wall/ veranda/ canopy</p>	A15, A27	B07, B10, B12, B13, B21	C05, C17	9
 <p>3: House with wooden wall/ no veranda/ one roof</p>			C16	1
 <p>4: House with brick walls/ veranda/ one roof</p>	A08, A17	B27	C03, C10, C15, C25	7

**Table 5-2:** Classification of HTGHs in the Citadel Area Based on the Facade Elements of *Nha Chinh* and Its Designs (Continued)

Type	A	B	C	Total
 <b>5:</b> House with brick walls/ veranda/ canopy	 A02, A04, A05, A06, A07, A12, A13, A18, A20, A21, A22, A24, A26, A29, A31	 B04, B05, B06, B08, B09, B11, B16, B18, B22, B23, B24, B25	 C01, C02, C04, C07, C08, C09, C11, C12, C14, C18, C19, C20, C21, C22, C23, C27, C28, C29, C31, C33	47
 <b>6:</b> House with brick walls/ no veranda/ one roof	A09, A19, A23, A25, A28, A30, A32	B26	C06, C24, C30	11
 <b>7:</b> House with brick walls/ no veranda/ canopy	A11, A16	B01, B02, B03		5
<b>Total</b>	32	27	32	91

**Notes:** A22 – HTGHs surveyed by taking photographs;  – HTGHs surveyed by taking photographs and interviewing dwellers

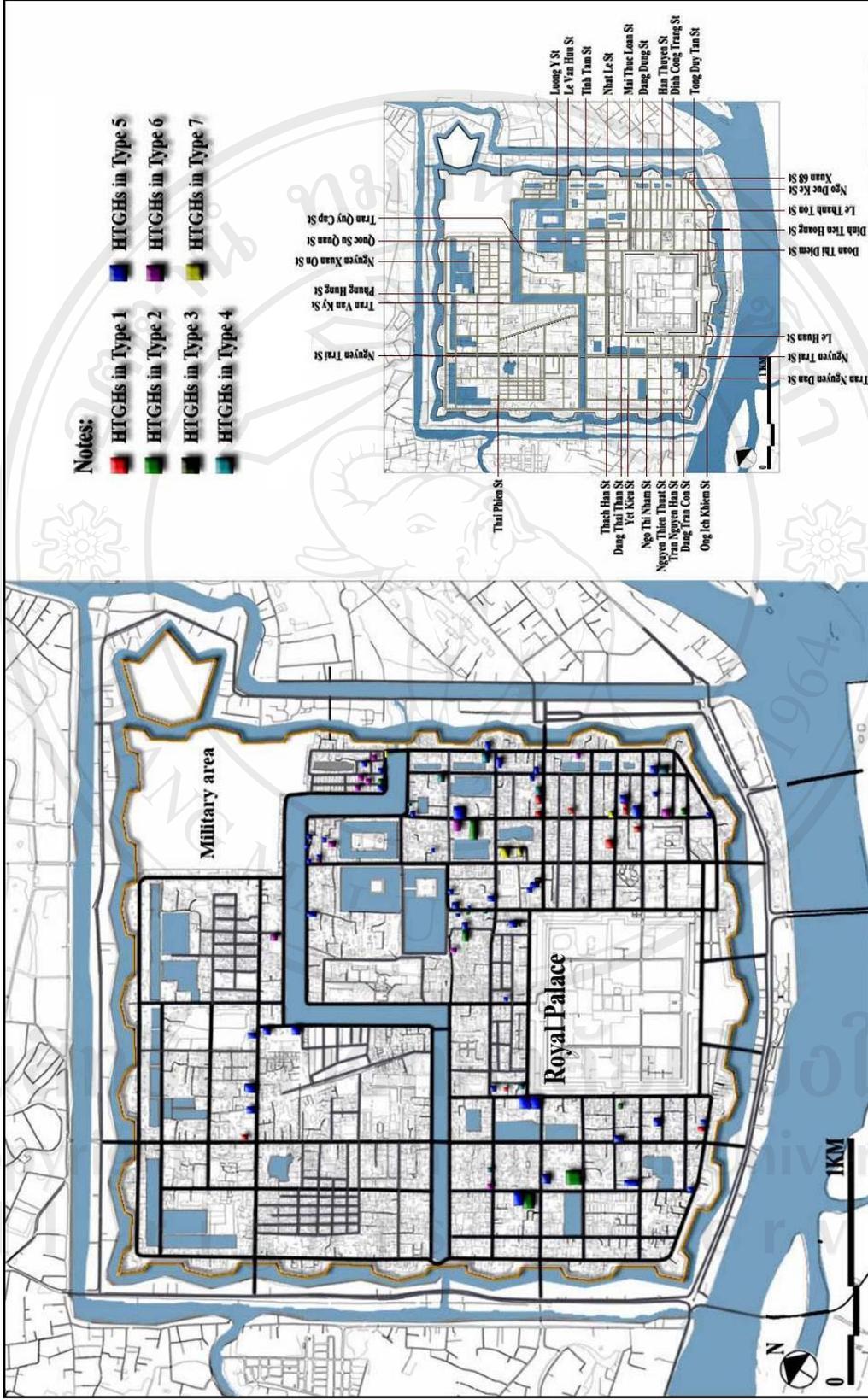
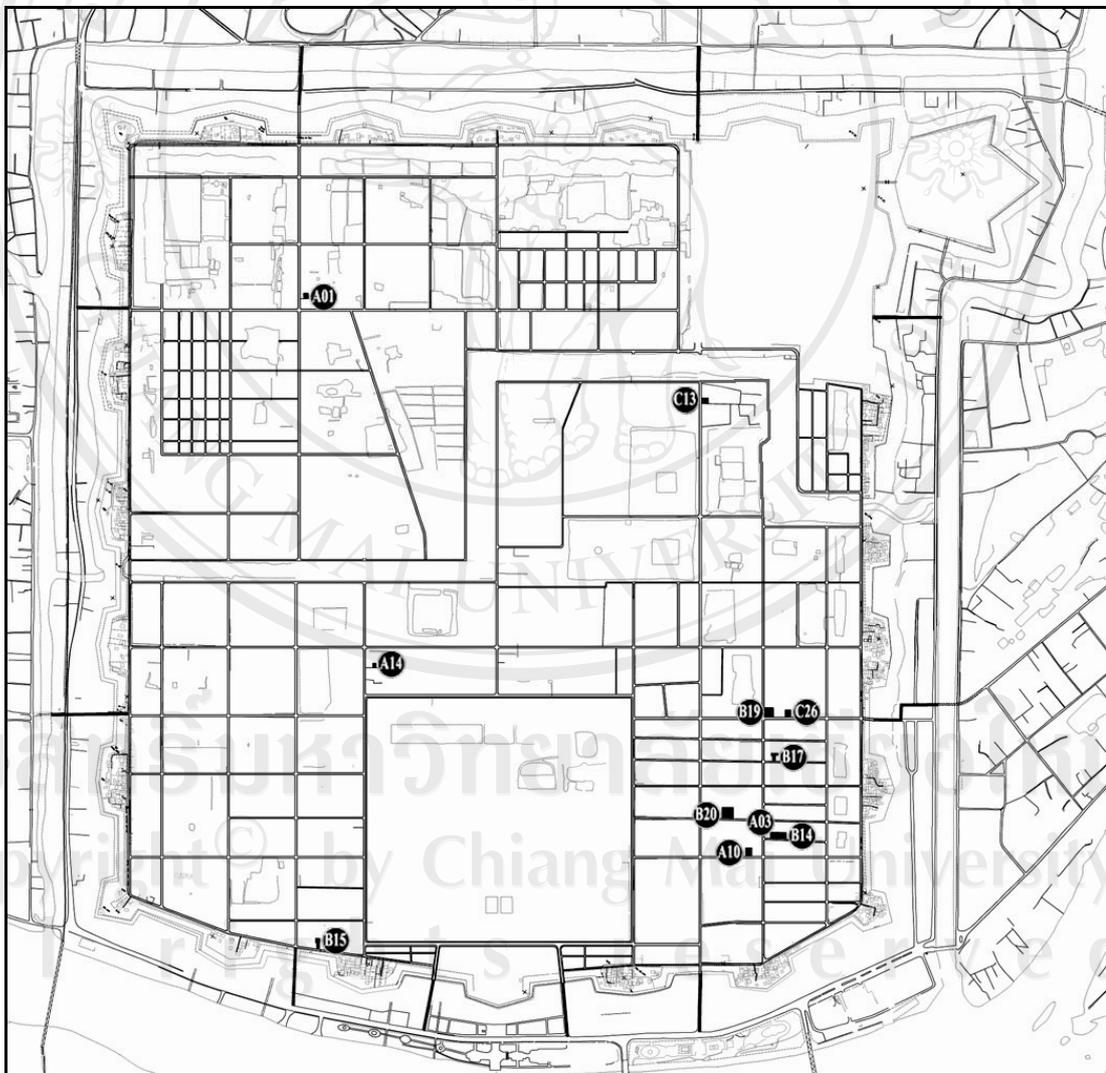


Figure 58: Distribution of seven Types of HTGHs in the citadel area

### 5.3.1 Type 1 - House with wooden walls/ veranda/ one roof

In this type, most of 11 HTGHs are located in the left part of the Imperial City, only three are found in the right part and the rear part of the Imperial City (A01, A14, and B15) (Fig. 5-9 and 5-10). The typical features of HTGHs of this type can be described as follows. Wooden doors are placed in the *gian* and *chais* of HTGHs in type A (one *Gian* – two *Chais*) and are placed only in the *gians* of HTGHs in type B (three *Gians* – two *Chais*) and type C (three *Gians*). All of 11 HTGHs have symmetrical façade and only one roof covers *Nha Chinh* and *Hien*.



**Figure 5-9:** Distribution of HTGHs in Type 1

The veranda columns of these HTGHs stand on the perron and sustain the roof, while the front protruding roof protects the *Hien* from sun and rain. Normally, the width of *Hien* ranges from 0.6 to 1.2 meters and the roof is tiled with *Liet* (Vietnamese local tile). There are eight HTGHs that veranda columns are made of concrete (HTGHs A01, A03, A10, A14, B15, C13, and C26), while the others are made of wood. Both wood and concrete are used in the veranda columns of HTGH C13 because some of the original wooden columns were decayed and the owner replaced them by concrete columns. The owner of HTGH A14 also replaced wooden columns with concrete columns but he made them look like wooden columns. This implies the appearance of alteration of veranda columns from original temporary material (wood) to permanent material (concrete).



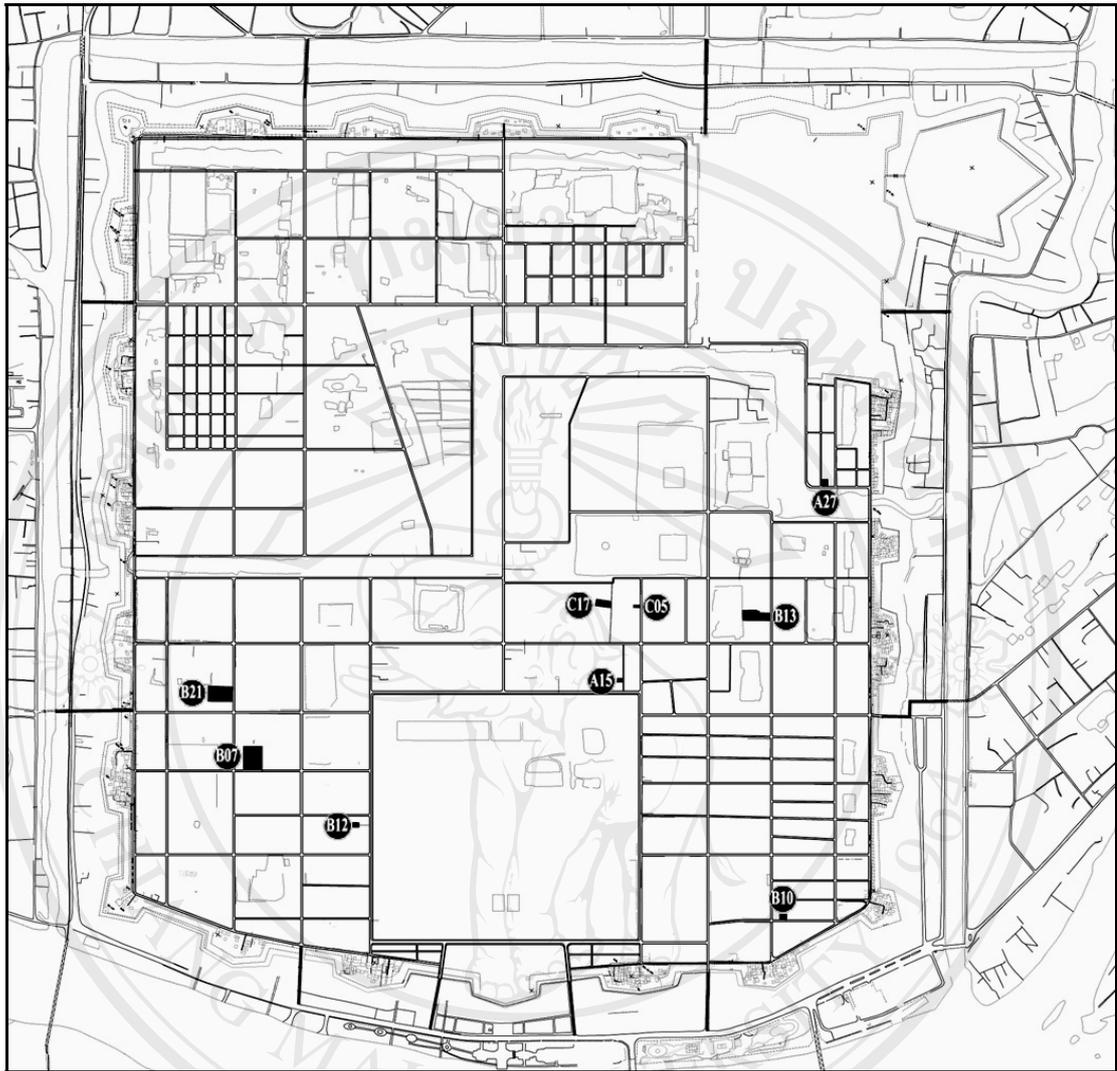


**Figure 5-10: HTGHs in Type 1**

### 5.3.2 Type 2 - House with wooden walls/ veranda/ canopy

Nine HTGHs of this type are scattered in the right part (HTGHs B07, B12, and B21) and the left part (HTGHs A15, A27, B10, B12, B13, C05, and C17) of the Imperial City as shown in Fig. 5-11. Except the roof covering *Nha Chinh*, there is another roof named canopy covering.

According to Tinh (2005), most veranda roofs originally had *Vo Cua* shape (Crap-shell shape or pitched shape). However, today only two HTGHs of this type (HTGHs B07 and B10) still have *Vo Cua* shape while the others have flat veranda of iron or concrete materials. The main roofs of *Nha Chinh* are normally tiled with *Liet* tile, *Moc* tile (Another name of Vietnamese local tile), and corrugated iron. All veranda roofs are lower than the main roofs. With the width ranging from 1.2 to 3 meters, *Hiens* in this type are larger than those of type 1. All veranda roofs are supported by a row of veranda columns made of concrete or brick. However, in some HTGHs, the original wooden veranda columns still exist (HTGHs B10 and B13 in Fig. 5-12).



**Figure 5-11: Distribution of HTGHs in Type 2**



**A15-5/4 Dang Thai Than St**

**A27-1 Luong Y St**

**B07-38 Ngo Thi Nham St**



**Figure 5-12: HTGHs in Type 2**

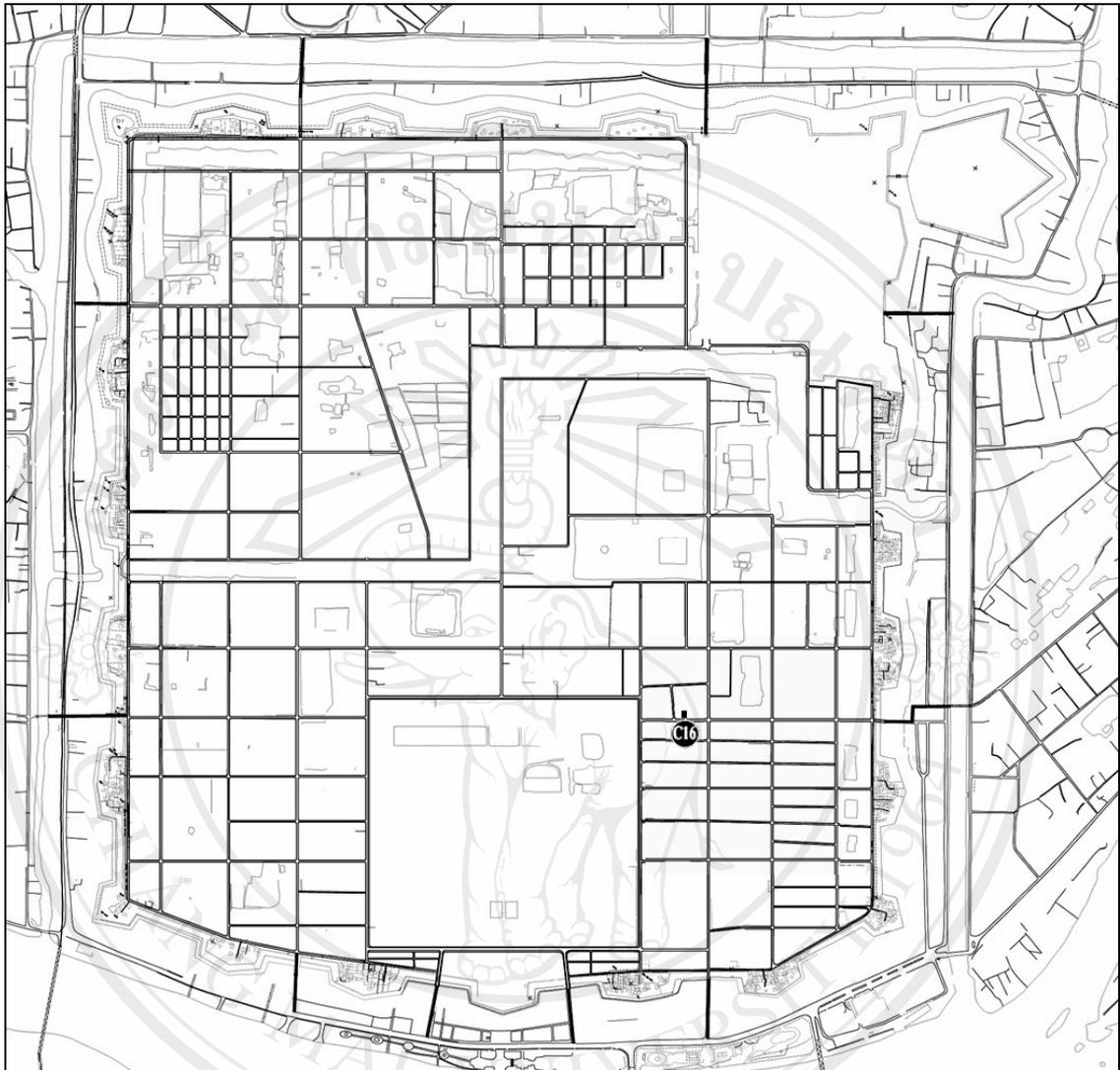
### 5.3.3 Type 3 - House with wooden walls/ no veranda/ one roof

There is only one HTGH of this type. However, the purpose for building this house is to commemorate the late president of Vietnam, Ho Chi Minh. This is probably the reason why the façade features of this house are different from other HTGHs in the citadel (Fig. 5-13 and Fig. 5-14).



**C16- Mai Thus Loan St**

**Figure 5-13: HTGH in Type 3**



**Figure 5-14:** Distribution of HTGH in Type 3

#### **5.3.4 Type 4 - House with brick walls/ veranda/ one roof**

There are seven HTGHs in this type (Fig. 5-15) and they mainly distribute on the left part of the Imperial City (HTGHs A17, B27, C03, C15, and C25 in Fig. 5-16).

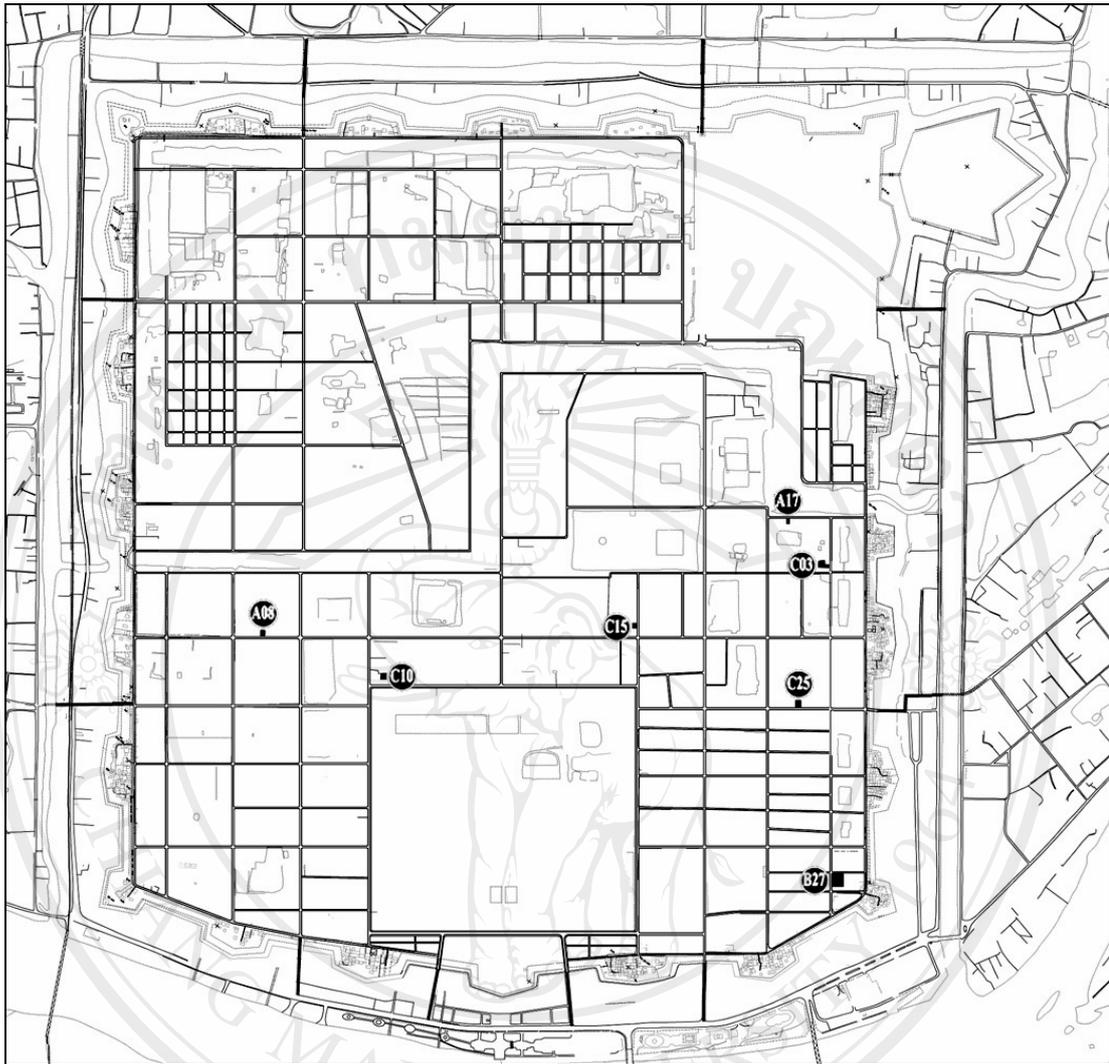
The facade elements of *Nha Chinh* and its designs of these HTGHs are similar to those HTGHs in type 1 except the difference in material of the front wall of *Nha Chinh*. The front walls of HTGHs in this type are made of brick (HTGHs A08, A17, B27, C03, C10, and C15) and metal (HTGH C25). However, the original plywood front wall of *Nha Chinh* in this type can be observed in some HTGHs (A08, B27, C03, and C15). This implies that several HTGHs in this type were altered from

HTGHs in type 1. Almost all roofs of HTGHs in this type still have *Liet* tile except HTGHs A08 and C10, whose roofs are tiled with *Moc*. All the veranda columns of these HTGHs are made of concrete. The façade of all HTGHs in this type are also symmetry.



Figure 5-15: HTGHs in Type 4

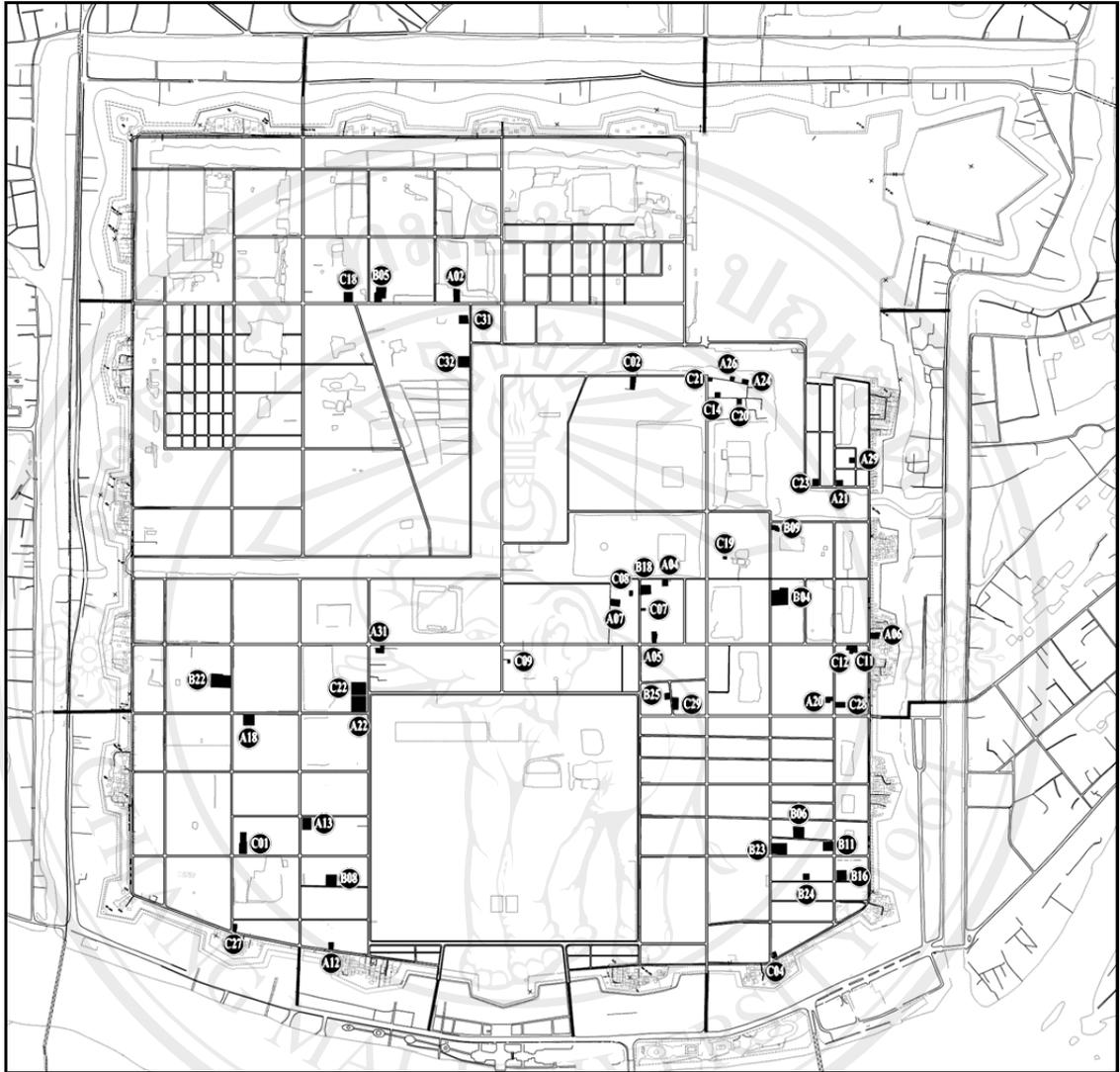
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**Figure 5-16:** Distribution of HTGHs in Type 4

### **5.3.5 Type 5 - House with brick wall/ veranda/ canopy**

Among 91 surveyed HTGHs, 47 houses are in type 5 and they are scattered in the citadel area around the Imperial City (Fig. 5-17 and Fig. 5-18). The facade elements and its designs of these HTGHs are also similar to those HTGHs in type 2 except the front walls, which are made of brick instead of the wood as found in Type 2. The shape of veranda roofs could be divided into two types while four types of those roofs could be observed as shown in table 5-3.



**Figure 5-17: Distribution of HTGHs in Type 5**



**A02-113 Thai Phien St**

**A04-81 Nhat Le St**

**A05-25 Nhat Le St**



**A06-72 Xuan 68 St**



**A07-17/71 Nhat Le St**



**A12-83 Ong Ich Khiem St**



**A13-34 Nguyen Trai St**



**A18-8 Yet Kieu St**



**A20-83 Ngo Duc Ke St**



**A21-18 Luong Y St**



**A22-117 Le Huan St**



**A24-390/3 Dinh Tien Hoang St**



**A26-390/14 Dinh Tien Hoang St**



**A29-18 Luong Y St**



**A31-106 Nhat Le St**



**B04-124 Le Thanh Ton St**



**B05-159 Thai Phien St**



**B06-30/5 Le Thanh Ton St**



**B08-3/2** Tran Binh Trong St



**B09-156** Le Thanh Ton St



**B11-61** Ngo Duc Ke St



**B16-1** Ngo Duc Ke St



**B18-66** Doan Thi Diem St



**B22-49** Tran Nguyen Dan St



**B23-41** Dinh Cong Trang St



**B24-9/24** Le Thanh Ton St



**B25-9** Quoc Su Quan St



**C01-93** Tran Nguyen Dan St



**C02-26** Tran Quy Cap Street



**C04-2** Le Thanh Ton St



**C07-64** Doan Thi Diem St



**C08 39** Doan Thi Diem St



**C09-8/24** Phung Hung St



**Figure 5-18: HTGHs in Type 5**

**Table 5-3:** Types of veranda roof of HTGHs in Type 5

Types of roof	Flat roof	<i>Vo Cua</i> shape
<b>Iron roof</b>	<b>14</b> (A02, A20, A24, B06, B16, B22, C07, C11, C12, C14, C20, C23, C27, and C31)	<b>1</b> (B09)
<b>Concrete roof</b>	<b>24</b> (A04, A05, A06, A07, A12, A13, A21, A22, A26, A31, B11, B24, B25, C01, C02, C04, C08, C09, C18, C19, C21, C29, and C32)	
<b>Roof with <i>Moc</i> tile</b>		<b>1</b> (A18)
<b>Roof with <i>Liet</i> tile</b>		<b>7</b> (A29, B04, B05, B08, B18, B23, and C22)
<b>Total</b>	<b>38</b>	<b>9</b>

In table 5-3, most veranda roofs are flat shape (38 HTGHs) while only nine HTGHs have *Vo Cua* shape of veranda roofs. Flat veranda roofs are made of concrete (24 HTGHs) and iron (14 HTGHs), while most veranda roofs with *Vo Cua* shape are tiled with *Liet*. Only two veranda roofs with *Vo Cua* shape are tiled with iron (HTGH B09) and *Moc* (HTGH A18), but they originally were tiled with *Liet*. The veranda roofs of HTGH B06 and HTGH C04 were converted from *Vo Cua* shape with *Liet* roof. According to the dwellers, most HTGHs that have flat shape of veranda roof tiled with iron (HTGHs A02, A24, B16, B22, C07, C11, C12, C14, C20, C23, and C31) originally were of type 4, as they did not have veranda roof at the first stage of construction. Moreover, most of these verandas were equipped for protecting the houses from sun and rain except those of two HTGHs (A20 and C12) were used for the purpose of commercial activities. The alteration for that purposes in these two HTGHs is due to their location in the business area (Fig. 4-9 and Fig. 5-17).

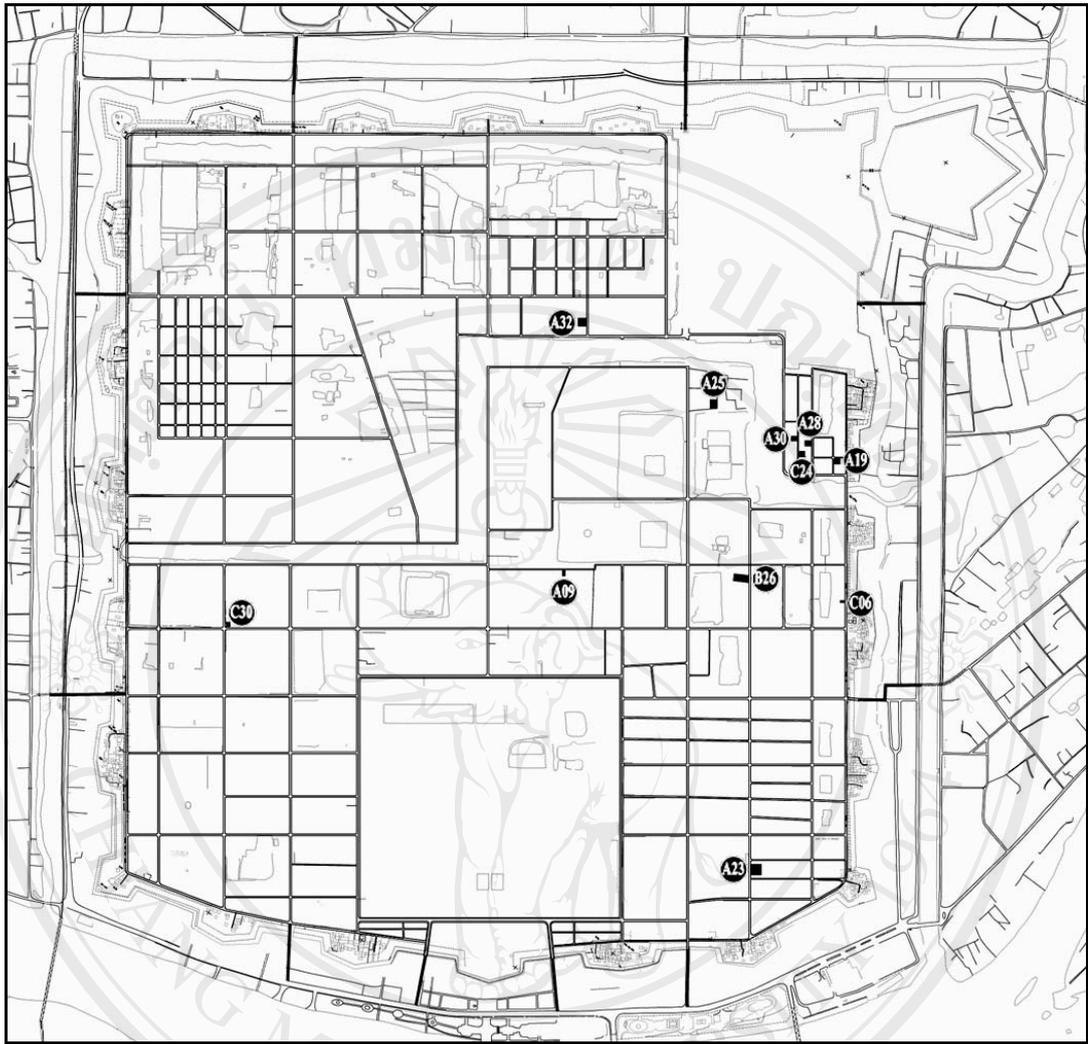
There are 29 HTGHs in this type where main roofs covering *Nha Chinh* are tiled with *Liet*, 16 main roofs are tiled with *Moc*, while only one main roof (HTGH C14) is tiled with iron and another one of HTGH is tiled with both iron and *Moc* (HTGH C04). The veranda columns made of brick could be observed in most of HTGHs in this type except eight HTGHs (A20, A24, B06, B22, C07, C12, C14, and C23) which have metal columns supporting the veranda roofs.

Information of transformation in some HTGHs in this type by interviewing with dwellers was inadequate because of different reasons. Most of the case, inhabitants are the newcomers who did not know about the transformation process of the house before they moved in. Also some original owners could not remember the alteration of their houses in the past. However, at least three HTGHs (A20, B16, and B18) were transformed from type 2 due to the urban development by altering elements of these houses from temporary materials (wood) to permanent materials (Brick).

### **5.3.6 Type 6 - House with brick walls/ no veranda/ one roof**

Among 11 HTGHs collected in this type, most of them are scattered on the left side and the rear part of the Imperial City (Fig. 5-19 and 5-20). Only one HTGH (C30) is located on the right part. This house is one of the three HTGHs (The other HTGHs are A25 and A32) that have the unique composition; *Ruong* structure was put on the second floor of *Nha Chinh*.

Fig. 5-20 shows that the facade elements and its designs of these HTGHs are similar to those in type 4 except the absence of veranda. The elements and designs of the front façade such as door and windows are arranged symmetrically with the protruding roof in front of the wall about 0.6 meters. This roof is tiled with *Liet* (HTGHs A09, A28, B26, and C24), *Moc* (HTGHs A19, A23, A25, A32, C06, and C30), or corrugated iron (HTGH A30). At least three HTGHs (A19, A25, and C30) have the roofs that were tiled with *Liet* from the beginning. All front walls of brick made HTGHs in this type look heavy and somewhat reduce their elegance.



**Figure 5-19: Distribution of HTGHs in Type 6**



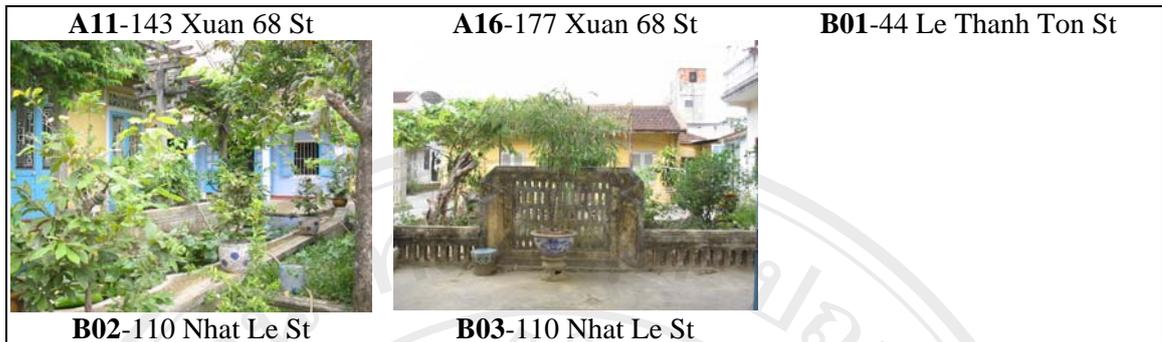


**Figure 5-20: HTGHs in type 6**

### 5.3.7 Type 7 - House with brick walls/ no veranda/ canopy

Only five HTGHs of this type were collected (Fig. 5-21). All of them are situated on the left part of the Imperial City (Fig. 5-22). The unique characteristic of these HTGHs is expressed in a new addition of three *gians* in front of *Nha Chinh*. Normally, the height of the new parts named *Tien Phong* (Front *gians*) is lower than those of *Nha Chinh* except HTGH B01 where the *Tien Phong* is two-storied structure. Most roofs of HTGHs in this type are tiled with *Liet* except HTGH A16 where the main roof is tiled with iron while the roof of *Tien Phong* is tiled with *Liet*. However, according to the owner of HTGH A16, the main roof was originally tiled with *Liet*. Among HTGHs in this type, HTGH B03 formerly was of type 1, while *Tien Phongs* of the other HTGHs in this type were included in the original designs.





**Figure 5-21:** HTGHs of type 7



**Figure 5-22:** Distribution of HTGHs in Type 7

To sum up, the characteristics of façades elements and designs of 91 surveyed HTGHs in the citadel area can be summarized as follows.

- All HTGHs have the symmetrical façade. Among them, only HTGH C16 is in type 3 (wooden walls/no veranda/one roof) while HTGHs in type 5 (brick walls/veranda/canopy) are the most typical group.

- The classification of HTGHs shows that the transformation of the elements and designs of the façades of HTGHs could be found. The material of veranda columns of *Nha Chinh* is converted from wood to brick (HTGHs B10 and B13). The wooden material of front wall of *Nha Chinh* is replaced by brick (HTGHs A08, B27, C05, and C15), while roof tiled with *Liet* is replaced by other tiles such as *Moc* (HTGHs A16, A19, A25, and C24). In addition, the transformation of seven types of HTGHs can be found. For example, some HTGHs in type 4 (brick walls/veranda/one roof) were transformed from type 1 (wooden walls/veranda/one roof) where their front walls of *Nha Chinh* made of brick were replaced from the original wooden material. Some HTGHs of type 4 (brick walls/veranda/one roof) were converted into HTGHs of type 5 (brick walls/veranda/canopy) where new roof-covering veranda is added into the front of *Nha Chinh* (HTGHs A02, A24, B22, C07, C11, C12, C14, C20, C23, and C31). In addition, HTGHs in type 5 (brick walls/veranda/canopy) transformed from HTGHs in type 2 (wooden walls/veranda/canopy) can also be found in HTGH A20, HTGH B16, and HTGH B18 where original front wall made of wood were replaced by brick. In type 7 (brick walls/no veranda/canopy), HTGH B03 formerly was the HTGH in type 1 with wooden walls/veranda/one roof but later on, the owner added a new gian in front of *Nha Chinh*. From the interview with dwellers, most of alterations of façade elements and designs are for protecting the houses from strong sun, heavy rain, and harsh climate except several HTGHs where the flat iron verandas were added for building commercial spaces (A20 and C12), which implies that distribution of facilities have influences on the transformation of HTGHs

- The transformation of the facade elements and designs of HTGHs among seven types implies the difference of built time of each type. The firstly built group of HTGHs can be type 1 and type 2, while HTGHs of type 5 and type 4 could, seemingly, be were constructed prior to those of type 6 (Table 5-4).

**Table 5-4:** Construction period of seven types of HTGHs

Type	Average built time	Period of built time
Type 1	1912	1852 – 1945
Type 2	1926	1836 – 1968
Type 3	1935	--
Type 4	1943	1935 – 1957
Type 5	1934	1900 – 1963
Type 6	1970	1936 – 1997
Type 7	1915	1900 - 1945

- From the table 5-4, the oldest HTGH was built in 1836 (HTGH B21) while the newest was constructed in 1997 (HTGH C06). HTGHs in type 1 are the oldest group with the average built time of 1912 ranging from 1852 (HTGH A01) to 1945 (HTGH B15), while, the newest group is belonging to HTGHs in type 6 with the average built time of 1970, ranging from 1936 (HTGH A09) to 1997 (HTGH C06).

#### 5. 4 Lay Out of HTGHs

According to Thuy (1999), the elements in lay out of a HTGH consist of gate and hedge, alley, *Binh Phong*, *Be Can*, symbols of White Tiger and Green Dragon, *Nha Chinh*, and *Nha Phu*. Moreover, Thong (2001) claims that the arrangement between *Nha Chinh* and *Nha Phu* of a HTGH follows the Chinese characters. From the field survey, information of 91 surveyed HTGHs, the characteristics of the arrangement between *Nha Chinh* and *Nha Phu*, the elements in lay out, and the orientation of *Nha Chinh*, are tabulated in table 5-5. Besides, the size of land plot and the number of family members in 59 HTGHs are also recorded in the table. This section aims to clarify the relationship of these characteristics.

**Table 5-5:** The parameters statistics in HTGHs

No.	Arrangement between NC & NP				Element in lay out of HTGHs					OR	Area (Sq.m)	FM
	⌌	⌋	⌍	⌎	Gate	Alley	BP	Becan	T-H			
A01		•				•	•	•		SE	655	4
A02		•			•		•			SE	357	4
A03		•			•		•	•	•	SE	532	3
A04		•			•			•	•	SW	223	7
A05				•	•					SE	425	8
A06		•			•					SW	430	10
A07		•			•					SE	659	7
A08	•						•	•	•	SE	425	10
A09				•	•	•				NW	235	3
A10	•				•		•	•	•	SE	382	4
A11		•			•					NE	1200	2
A12				•	•		•	•		SE	211	
A13		•			•		•	•	•	SW	600	4
A14		•			•	•		•		SE	312	4
A15				•	•		•	•		NE	146	4

**Table 5-5: The parameters statistics in HTGHs (Continued)**

No.	Arrangement between NC & NP				Element in lay out of HTGHs					OR	Area (Sq.m)	FM
	H	┌	└	—	Gate	Alley	BP	Becan	T-H			
A16		•								NE	312	4
A17*				•						NW	146	
A18		•			•	•				NE	1000	3
A19		•			•		•	•	•	SW	297	9
A20			•							NE	265	6
A21		•			•		•			SE	300	2
A22				•	•					NE		
A23					•					SW		
A24		•			•					SE		
A25		•			•		•	•		SE		
A26		•			•		•			SE		
A27				•	•		•	•	•	SW		
A28		•			•		•	•		NE		
A29		•			•		•	•	•	NE		
A30		•					•			NE		
A31	•				•		•	•		NE		
A32		•			•		•			NE		
B01		•			•	•	•	•	•	SE	600	2
B02		•			•	•	•	•	•	NE	996	7
B03		•			•		•	•	•	NE	1000	6
B04*				•	•					SE	3042	
B05		•			•	•	•	•	•	SE	1572	2
B06		•			•	•	•	•	•	SE	892	2
B07		•			•	•	•	•	•	SE	2400	6
B08		•			•	•	•	•	•	SE	968	6
B09				•			•	•		SW	285	11
B10		•			•		•	•		SE	440	6
B11		•			•					NE	563	5
B12		•			•	•				NE	2883	8
B13		•					•			NE	1957	16

**Table 5-5: The parameters statistics in HTGHs (Continued)**

No.	Arrangement between NC & NP				Element in lay out of HTGHs					OR	Area (Sq.m)	FM
	H	┌	└	—	Gate	Alley	BP	Becan	T-H			
B14	•				•		•	•		SE	550	7
B15		•								SE	321	5
B16		•			•					SE	750	1
B17			•		•		•			SE	220	2
B18		•			•	•	•	•		SE	600	6
B19		•			•		•	•		SE	538	6
B20		•			•		•	•		SE	692	2
B21				•	•					NE	190	5
B22		•			•	•	•	•		NE	550	
B24	•				•		•	•		SE		
B25		•			•		•	•	•	SE		
B26		•			•	•	•	•	•	NE		
B27				•	•	•	•	•		NE		
C01		•			•		•	•		SE	1113	6
C02		•			•		•			NE	315	4
C03		•				•	•			NE	431	5
C04		•			•					SW	315	4
C05			•		•	•	•	•	•	SE	181	2
C06		•								NW	85	5
C07		•			•					SE	182	5
C08	•						•			NE	310	10
C09			•		•		•	•	•	NW	193	2
C10				•	•		•			SW	195	7
C11		•			•					NW	289	11
C12		•			•					NW	110	6
C13		•			•					SW	240	4
C14				•	•					SE	120	6
C15				•			•			NE	123	4
C16*		•			•		•	•		SE	459	
C17		•			•		•	•		NE		

**Table 5-5:** The Parameters Statistics in HTGHs (Continued)

No.	Arrangement between NC & NP				Element in lay out of HTGHs					OR	Area (Sq.m)	FM
	H	←	└	—	Gate	Alley	BP	Becan	T-H			
C18		•			•		•	•		SE		
C19		•			•		•			NW		
C20		•			•			•	•	SW		
C21		•			•		•	•		NW		
C22				•	•	•	•	•	•	SE		
C23				•	•		•			NE		
C24		•					•			SW		
C25				•						NE		
C26				•						NE		
C27		•			•		•	•		SE		
C28		•								NW		
C29	•				•					NW		
C30				•	•					SE		
C31		•			•		•	•		NE		
C32				•	•					SE		

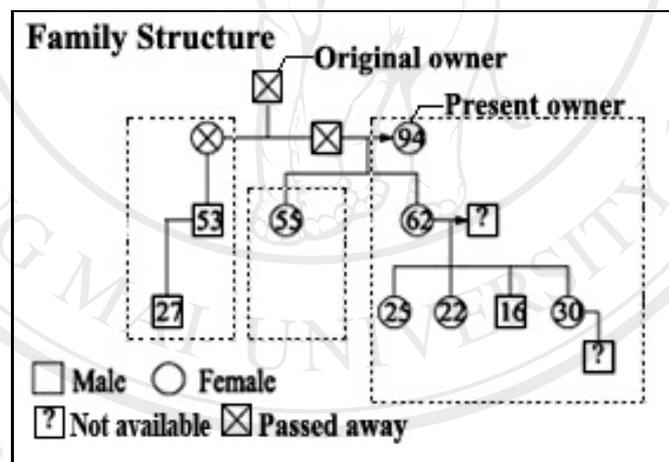
**Notes:** No-Type of HTGH; NC-Nha Chinh; NP-Nha Phu; BP-Masonry screen; BC-Basin; TH-Green Dragon and White Tiger; OR: Orientation of NC; FM-Number of family members; SE-Southeast; NE-Northeast; NW-Northwest; SW-Southwest; \*: Public HTGHs; A01: Surveyed HTGHs by taking photographs; : Surveyed houses by taking photographs and interviewing dwellers.

#### 5.4.1 Land Subdivision of HTGHs

From the previous chapter, the citadel area was divided into 95 checkerboard quarters. Each quarter was used for one or two royal buildings, temples or HTGHs of high-ranking mandarins. That condition indicates the system of land subdivision in the citadel area.

Firstly, the research will raise HTGH B09 as a representative for discussion about land subdivision of HTGHs in the citadel area.

HTGH B09 is located in 92 Le Thanh Ton St. The present owner named Ton Nu Thi Oanh is the daughter-in-law of the original owner, who was a high-ranking mandarin under the period of Nguyen Dynasty. In the beginning, the original owner bought the land with the area around 900sq.m, and then he used *Ruong* structure from his farmland to reconstruct a HTGH for living purpose at the present site. He had four sons, so he divided the garden into four parts, and offered to each sons in 1940 when they had their own families. At that time, the old house was used as a dwelling house for the original owner and the other members in his family. After he passed away in 1997, his sons gradually sold their land and they moved to live in other places. Then, the old house was used for living by the daughter-in-law and other relatives of the original owner. At present, the area of the house is reduced to 285sq.m and it is used as a dwelling house for three households as shown in Fig. 5-23. The land subdivision process of the house is shown in right below picture of Fig. 5-24.



**Figure 5-23:** Family structure of HTGH B09

Due to the shortage of records, change of family members and owners of HTGHs, the rise of land speculation, and clarification of land subdivision process of HTGHs are difficult.

#### 5. 4 Lay Out of HTGHs

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	⌌	⌋	⌍	⌎	Gate	Alley	BP	Becan	T-H			
A01		•				•	•	•		SE	655	4
A02		•			•		•			SE	357	4
A03		•			•		•	•	•	SE	532	3
A04		•			•			•	•	SW	223	7
A05				•	•					SE	425	8
A06		•			•					SW	430	10
A07		•			•					SE	659	7
A08	•						•	•	•	SE	425	10
A09				•	•	•				NW	235	3
A10	•				•		•	•	•	SE	382	4
A11		•			•					NE	1200	2
A12				•	•		•	•		SE	211	
A13		•			•		•	•	•	SW	600	4
A14		•			•	•		•		SE	312	4
A15				•	•		•	•		NE	146	4

**Table 5-5: The parameters statistics in HTGHs (Continued)**

No.	Arrangement between NC & NP				Element in lay out of HTGHs					OR	Area (Sq.m)	FM
	H	┌	└	—	Gate	Alley	BP	Becan	T-H			
A16		•								NE	312	4
A17*				•						NW	146	
A18		•			•	•				NE	1000	3
A19		•			•		•	•		SW	297	9
A20			•							NE	265	6
A21		•			•		•			SE	300	2
A22				•	•					NE		
A23					•					SW		
A24		•			•					SE		
A25		•			•		•			SE		
A26		•			•		•			SE		
A27				•	•		•	•		SW		
A28		•			•		•	•		NE		
A29		•			•		•	•		NE		
A30		•					•			NE		
A31	•				•		•	•		NE		
A32		•			•		•			NE		
B01		•			•	•	•	•	•	SE	600	2
B02		•			•	•	•	•	•	NE	996	7
B03		•			•		•	•	•	NE	1000	6
B04*				•	•					SE	3042	
B05		•			•	•	•	•	•	SE	1572	2
B06		•			•	•	•	•	•	SE	892	2
B07		•			•	•	•	•	•	SE	2400	6
B08		•			•	•	•	•	•	SE	968	6
B09				•			•	•		SW	285	11
B10		•			•		•	•		SE	440	6
B11		•			•					NE	563	5
B12		•			•	•				NE	2883	8
B13		•					•			NE	1957	16

**Table 5-5: The parameters statistics in HTGHs (Continued)**

No.	Arrangement between NC & NP				Element in lay out of HTGHs					OR	Area (Sq.m)	FM
	H	┌	└	—	Gate	Alley	BP	Becan	T-H			
B14	•				•		•	•		SE	550	7
B15		•								SE	321	5
B16		•			•					SE	750	1
B17			•		•		•			SE	220	2
B18		•			•	•	•	•		SE	600	6
B19		•			•		•	•		SE	538	6
B20		•			•		•	•		SE	692	2
B21				•	•					NE	190	5
B22		•			•	•	•	•		NE	550	
B24	•				•		•	•		SE		
B25		•			•		•	•	•	SE		
B26		•			•	•	•	•	•	NE		
B27				•	•	•	•	•		NE		
C01		•			•		•	•		SE	1113	6
C02		•			•		•			NE	315	4
C03		•				•	•			NE	431	5
C04		•			•					SW	315	4
C05			•		•	•	•	•	•	SE	181	2
C06		•								NW	85	5
C07		•			•					SE	182	5
C08	•						•			NE	310	10
C09			•		•		•	•	•	NW	193	2
C10				•	•		•			SW	195	7
C11		•			•					NW	289	11
C12		•			•					NW	110	6
C13		•			•					SW	240	4
C14				•	•					SE	120	6
C15				•			•			NE	123	4
C16*		•			•		•	•		SE	459	
C17		•			•		•	•		NE		

**Table 5-5:** The Parameters Statistics in HTGHs (Continued)

No.	Arrangement between NC & NP				Element in lay out of HTGHs					OR	Area (Sq.m)	FM
	H	←	┌	—	Gate	Alley	BP	Becan	T-H			
C18		•			•		•	•		SE		
C19		•			•		•			NW		
C20		•			•			•	•	SW		
C21		•			•		•	•		NW		
C22				•	•	•	•	•	•	SE		
C23				•	•		•			NE		
C24		•					•			SW		
C25				•						NE		
C26				•						NE		
C27		•			•		•	•		SE		
C28		•								NW		
C29	•				•					NW		
C30				•	•					SE		
C31		•			•		•	•		NE		
C32				•	•					SE		

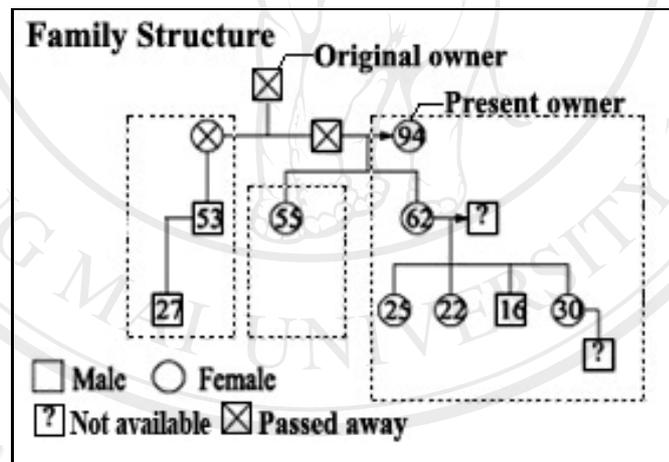
**Notes:** No-Type of HTGH; NC-Nha Chinh; NP-Nha Phu; BP-Masonry screen; BC-Basin; TH-Green Dragon and White Tiger; OR: Orientation of NC; FM-Number of family members; SE-Southeast; NE-Northeast; NW-Northwest; SW-Southwest; \*: Public HTGHs; A01: Surveyed HTGHs by taking photographs; : Surveyed houses by taking photographs and interviewing dwellers.

#### 5.4.1 Land Subdivision of HTGHs

From the previous chapter, the citadel area was divided into 95 checkerboard quarters. Each quarter was used for one or two royal buildings, temples or HTGHs of high-ranking mandarins. That condition indicates the system of land subdivision in the citadel area.

Firstly, the research will raise HTGH B09 as a representative for discussion about land subdivision of HTGHs in the citadel area.

HTGH B09 is located in 92 Le Thanh Ton St. The present owner named Ton Nu Thi Oanh is the daughter-in-law of the original owner, who was a high-ranking mandarin under the period of Nguyen Dynasty. In the beginning, the original owner bought the land with the area around 900sq.m, and then he used *Ruong* structure from his farmland to reconstruct a HTGH for living purpose at the present site. He had four sons, so he divided the garden into four parts, and offered to each sons in 1940 when they had their own families. At that time, the old house was used as a dwelling house for the original owner and the other members in his family. After he passed away in 1997, his sons gradually sold their land and they moved to live in other places. Then, the old house was used for living by the daughter-in-law and other relatives of the original owner. At present, the area of the house is reduced to 285sq.m and it is used as a dwelling house for three households as shown in Fig. 5-23. The land subdivision process of the house is shown in right below picture of Fig. 5-24.



**Figure 5-23:** Family structure of HTGH B09

Due to the shortage of records, change of family members and owners of HTGHs, the rise of land speculation, and clarification of land subdivision process of HTGHs are difficult.

#### 5. 4 Lay Out of HTGHs

According to Thuy (1999), the elements in lay out of a HTGH consist of gate and hedge, alley, *Binh Phong*, *Be Can*, symbols of White Tiger and Green Dragon, *Nha Chinh*, and *Nha Phu*. Moreover, Thong (2001) claims that the arrangement between *Nha Chinh* and *Nha Phu* of a HTGH follows the Chinese characters. From the field survey, information of 91 surveyed HTGHs, the characteristics of the arrangement between *Nha Chinh* and *Nha Phu*, the elements in lay out, and the orientation of *Nha Chinh*, are tabulated in table 5-5. Besides, the size of land plot and the number of family members in 59 HTGHs are also recorded in the table. This section aims to clarify the relationship of these characteristics.

**Table 5-5:** The parameters statistics in HTGHs

No.	Arrangement between NC & NP				Element in lay out of HTGHs					OR	Area (Sq.m)	FM
	⌌	⌋	⌍	⌎	Gate	Alley	BP	Becan	T-H			
A01		•				•	•	•		SE	655	4
A02		•			•		•			SE	357	4
A03		•			•		•	•	•	SE	532	3
A04		•			•			•	•	SW	223	7
A05				•	•					SE	425	8
A06		•			•					SW	430	10
A07		•			•					SE	659	7
A08	•						•	•	•	SE	425	10
A09				•	•	•				NW	235	3
A10	•				•		•	•	•	SE	382	4
A11		•			•					NE	1200	2
A12				•	•		•	•		SE	211	
A13		•			•		•	•	•	SW	600	4
A14		•			•	•		•		SE	312	4
A15				•	•		•	•		NE	146	4

**Table 5-5: The parameters statistics in HTGHs (Continued)**

No.	Arrangement between NC & NP				Element in lay out of HTGHs					OR	Area (Sq.m)	FM
	H	┌	└	—	Gate	Alley	BP	Becan	T-H			
A16		•								NE	312	4
A17*				•						NW	146	
A18		•			•	•				NE	1000	3
A19		•			•		•	•	•	SW	297	9
A20			•							NE	265	6
A21		•			•		•			SE	300	2
A22				•	•					NE		
A23					•					SW		
A24		•			•					SE		
A25		•			•		•	•		SE		
A26		•			•		•			SE		
A27				•	•		•	•	•	SW		
A28		•			•		•	•		NE		
A29		•			•		•	•	•	NE		
A30		•					•			NE		
A31	•				•		•	•		NE		
A32		•			•		•			NE		
B01		•			•	•	•	•	•	SE	600	2
B02		•			•	•	•	•	•	NE	996	7
B03		•			•		•	•	•	NE	1000	6
B04*				•	•					SE	3042	
B05		•			•	•	•	•	•	SE	1572	2
B06		•			•	•	•	•	•	SE	892	2
B07		•			•	•	•	•	•	SE	2400	6
B08		•			•	•	•	•	•	SE	968	6
B09				•			•	•		SW	285	11
B10		•			•		•	•		SE	440	6
B11		•			•					NE	563	5
B12		•			•	•				NE	2883	8
B13		•					•			NE	1957	16

**Table 5-5: The parameters statistics in HTGHs (Continued)**

No.	Arrangement between NC & NP				Element in lay out of HTGHs					OR	Area (Sq.m)	FM
	H	┌	└	—	Gate	Alley	BP	Becan	T-H			
B14	•				•		•	•		SE	550	7
B15		•								SE	321	5
B16		•			•					SE	750	1
B17			•		•		•			SE	220	2
B18		•			•	•	•	•		SE	600	6
B19		•			•		•	•		SE	538	6
B20		•			•		•	•		SE	692	2
B21				•	•					NE	190	5
B22		•			•	•	•	•		NE	550	
B24	•				•		•	•		SE		
B25		•			•		•	•	•	SE		
B26		•			•	•	•	•	•	NE		
B27				•	•	•	•	•		NE		
C01		•			•		•	•		SE	1113	6
C02		•			•		•			NE	315	4
C03		•				•	•			NE	431	5
C04		•			•					SW	315	4
C05			•		•	•	•	•	•	SE	181	2
C06		•								NW	85	5
C07		•			•					SE	182	5
C08	•						•			NE	310	10
C09			•		•		•	•	•	NW	193	2
C10				•	•		•			SW	195	7
C11		•			•					NW	289	11
C12		•			•					NW	110	6
C13		•			•					SW	240	4
C14				•	•					SE	120	6
C15				•			•			NE	123	4
C16*		•			•		•	•		SE	459	
C17		•			•		•	•		NE		

**Table 5-5:** The Parameters Statistics in HTGHs (Continued)

No.	Arrangement between NC & NP				Element in lay out of HTGHs					OR	Area (Sq.m)	FM
	H	←	└	—	Gate	Alley	BP	Becan	T-H			
C18		•			•		•	•		SE		
C19		•			•		•			NW		
C20		•			•			•	•	SW		
C21		•			•		•	•		NW		
C22				•	•	•	•	•	•	SE		
C23				•	•		•			NE		
C24		•					•			SW		
C25				•						NE		
C26				•						NE		
C27		•			•		•	•		SE		
C28		•								NW		
C29	•				•					NW		
C30				•	•					SE		
C31		•			•		•	•		NE		
C32				•	•					SE		

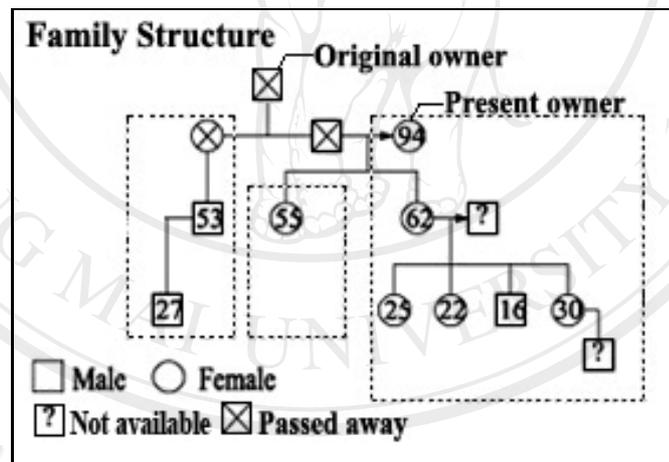
**Notes:** No-Type of HTGH; NC-Nha Chinh; NP-Nha Phu; BP-Masonry screen; BC-Basin; TH-Green Dragon and White Tiger; OR: Orientation of NC; FM-Number of family members; SE-Southeast; NE-Northeast; NW-Northwest; SW-Southwest; \*: Public HTGHs; A01: Surveyed HTGHs by taking photographs; : Surveyed houses by taking photographs and interviewing dwellers.

#### 5.4.1 Land Subdivision of HTGHs

From the previous chapter, the citadel area was divided into 95 checkerboard quarters. Each quarter was used for one or two royal buildings, temples or HTGHs of high-ranking mandarins. That condition indicates the system of land subdivision in the citadel area.

Firstly, the research will raise HTGH B09 as a representative for discussion about land subdivision of HTGHs in the citadel area.

HTGH B09 is located in 92 Le Thanh Ton St. The present owner named Ton Nu Thi Oanh is the daughter-in-law of the original owner, who was a high-ranking mandarin under the period of Nguyen Dynasty. In the beginning, the original owner bought the land with the area around 900sq.m, and then he used *Ruong* structure from his farmland to reconstruct a HTGH for living purpose at the present site. He had four sons, so he divided the garden into four parts, and offered to each sons in 1940 when they had their own families. At that time, the old house was used as a dwelling house for the original owner and the other members in his family. After he passed away in 1997, his sons gradually sold their land and they moved to live in other places. Then, the old house was used for living by the daughter-in-law and other relatives of the original owner. At present, the area of the house is reduced to 285sq.m and it is used as a dwelling house for three households as shown in Fig. 5-23. The land subdivision process of the house is shown in right below picture of Fig. 5-24.



**Figure 5-23:** Family structure of HTGH B09

Due to the shortage of records, change of family members and owners of HTGHs, the rise of land speculation, and clarification of land subdivision process of HTGHs are difficult.

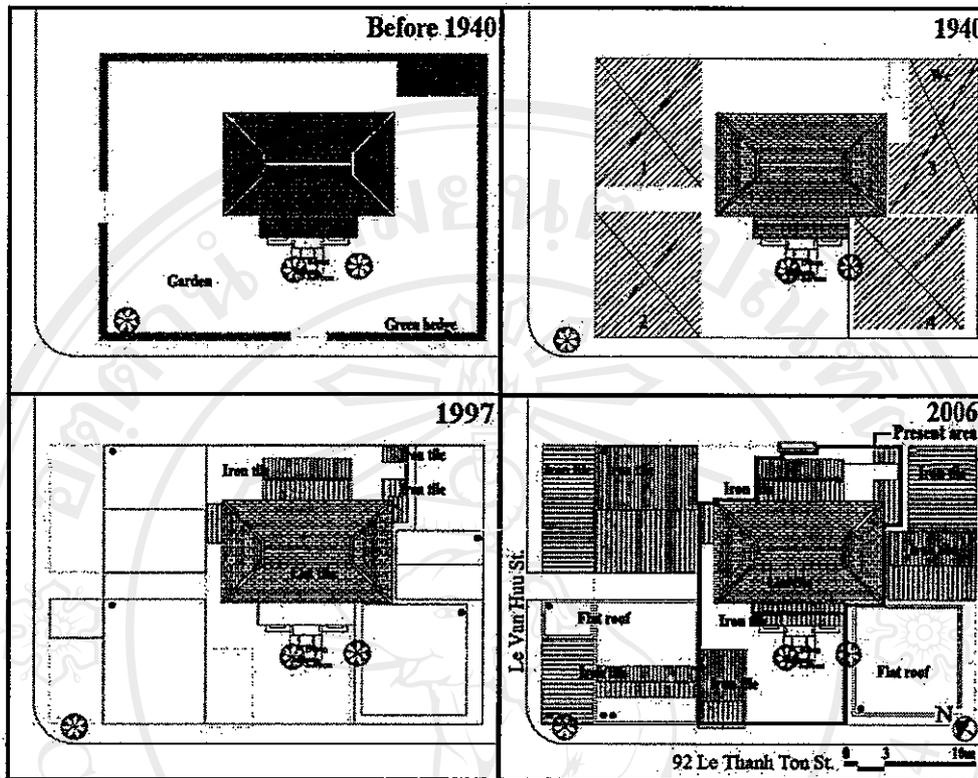


Figure 5-24: The subdivision of land plot in HTGH B09

From the survey, at least 24 HTGHs have undergone land subdivision. It can be divided into two patterns. The first pattern is the process that the owner directly sold a part or several parts of the land to the others (11 HTGHs: A01, A09, A12, A13, A14, A17, B01, B05, B13, C01, and C08). The second pattern is the process that the owner divided the land into several parts for his relatives or children, which then, the new owners sold the land to the others (13 HTGHs: A08, A16, A20, B02, B03, B07, B09, B15, B17, B21, C03, C11, and C12).

The land subdivision patterns of all 24 HTGHs are illustrated in Fig. 5-25. The figure demonstrates that both the right part and the left part of the land are usually subdivided. Only HTGH B09 that the land subdivision is made in all the right, the left, and the rear part.

																					
<b>No. of HTGHs</b>	A09, A13, B01, B13, C03, C08		A17, C11, C12		B09		A16, B07, C01		A08, A12, A14, A20, B05, B15, B17, B21		A01, B02, B03										
<b>Total</b>	6 (25%)		3 (12.5%)		1 (4.2%)		3 (12.5%)		8 (33.3%)		3 (12.5%)										

Figure 5-25: Category of the land subdivision

#### 5.4.2 Arrangement between *Nha Chinh* and *Nha Phu*

Normally, Vietnamese traditional houses are arranged following the Chinese characters such as Dinh (丁), Cong (工), Nhat (一) and Khau (口), and HTGHs are no exception. From the surveys, the arrangement between *Nha Chinh* and *Nha Phu* of HTGHs in the citadel area could be classified into four types as shown in Fig. 5-26. In type I (Dinh shape), *Nha Phu* is laid perpendicularly on the left side of *Nha Chinh*. This is the typical type with 60 HTGHs from the total 91 samples (65.9%), while type III is the rarest type with only four HTGHs (A20, B17, C05, and C09). Their *Nha Phus* is also laid perpendicularly to *Nha Chinh* but on the right side. Type II (Cong shape) with seven HTGHs has two *Nha Phu* laid perpendicularly on both sides of *Nha Chinh*. Type IV, which consists of 20 samples (22%), has *Nha Phu* laid parallel with *Nha Chinh* in the rear part.

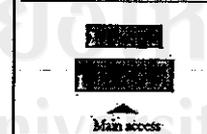
Arrangement between <i>Nha Chinh</i> (1) and <i>Nha Phu</i> (2)	Type I	Type II	Type III	Type IV
				
<b>Number (percent)</b>	60 (65.9%)	7 (7.7%)	4 (4.4%)	20 (22%)

Figure 5-26: Arrangement between *Nha Chinh* and *Nha Phu* of HTGHs

Among four samples of HTGHs in type III, the owners of HTGHs C05 and C09 arranged *Nha Chinh* and *Nha Phu* in the first stage of the construction due to the limitation of land plot. The sample of HTGH B17 is transformed from type II to type III because a relative of the former owner came to occupy the left *Nha Phu*, which

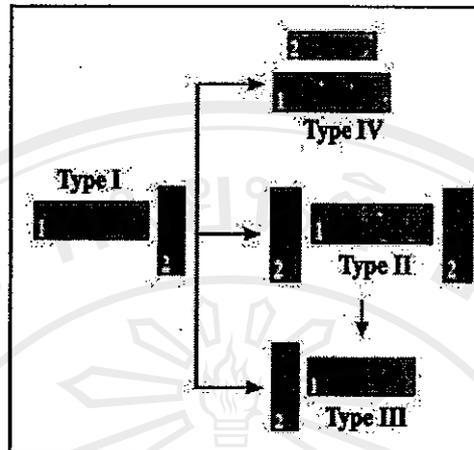
was later sold to another person. HTGH A20 also faced the same pattern of transformation as in HTGH B17 but it is transformed from type I.

Seven HTGHs of type II (A08, A10, A31, B14, B23, C08, and C29), three of them (HTGHs A10, A31, and B23) maintain the original condition; four are converted from type I because of the growth of family members and change of usage pattern for commercial activities (HTGHs A08, B14, C08, C29).

At least three samples of HTGHs in type IV were type I at the first stage of construction (HTGHs A09, A17, and B15). Then, they were transformed because of the limitation of land plot. However, some HTGHs in type IV remain the original arrangement between *Nha Chinh* and *Nha Phu* (HTGHs A15, C10, C14, and C15). No case of HTGHs in type I was transformed from the other types of the arrangement between *Nha Chinh* and *Nha Phu*.

From the above analysis, the transformation of the arrangement between *Nha Chinh* and *Nha Phu* could be concluded as in Fig. 5-27. Most of the original arrangements between *Nha Chinh* and *Nha Phu* of HTGHs in the citadel are of type I, while type III is formed because of the limitation of land plot and/or conversion from type I and type II. Type IV can be constructed due to the purpose for doing commercial activities (HTGHs C14 and C15) or the land limitation also (HTGHs A15 and C10). Type IV can be converted from type I when the owner sold parts of the land (HTGHs A09, A17, and B15). Type II can be originally constructed as such or be converted from type I because of the growth of family or the purpose for doing commercial activities.

The above analysis demonstrates that Hue people still believe in arranging *Nha Chinh* and *Nha Phu* following Chinese characters, which Dinh shape (*Nha Phu* is laid perpendicularly on the left side of *Nha Phu*) is the most popular. Considering daily activities, this type of arrangement provides convenient living space for dwellers, for example, the left side of *Nha Chinh* adjoining *Nha Phu* could be used as female *Phong Ngu*.



Notes: 1-Nha Chinh; 2-Nha Phu

Figure 5-27: The transformation of arrangement between *Nha Chinh* and *Nha Phu*

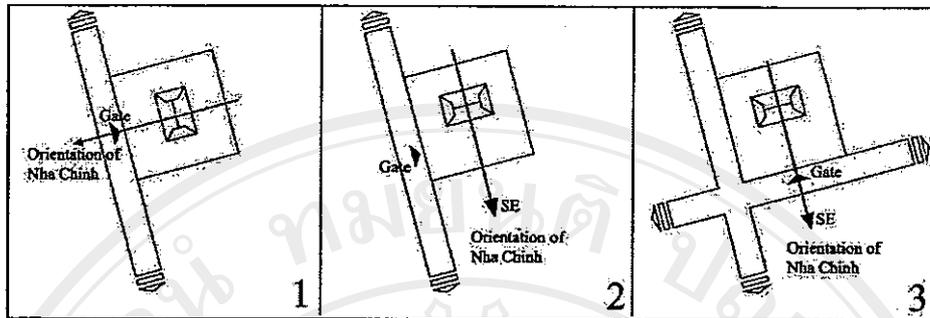
#### 5.4.3 Orientation of *Nha Chinh*

According to the checkerboard planning of the citadel, it could be concluded that *Nha Chinh* of HTGHs can face four orientations: Southeast (SE), Northeast (NE), Northwest (NW), and Southwest (SW). Among 91 surveyed HTGHs, *Nha Chinh*s of 40 cases face the Southeast (44%) while eight cases face the Northwest (Table 5-6).

Table 5-6: The facing orientation of *Nha Chinh* in surveyed HTGHs

Orientation	SE	SW	NW	NE
91 HTGHs	40 (44%)	15 (16.5%)	8 (8.8%)	28 (30.7%)

Normally, the orientation of *Nha Chinh* faces the entrance gate (The roof is laid parallel with the street as shown in picture 1 in Fig. 5-28). However, among the above 40 HTGHs, there are seven could that have two possible orientation choices because their compounds face two streets (The picture 3 in Fig. 5-28) while there are six cases that have the entrance in the direction different from the facing orientation of basic *Nha Chinh* orientation (The picture 2 in Fig. 5-28). Therefore, it can be observed that the Southeast is the typical orientation of *Nha Chinh* of HTGHs in the citadel area while the Northwest is the rarest case. If *Nha Chinh* has two possible orientations and the Southeast is one of them, it will be chosen, or in other cases where the Northwest is one of the possible orientations of *Nha Chinh*, it will not be chosen.



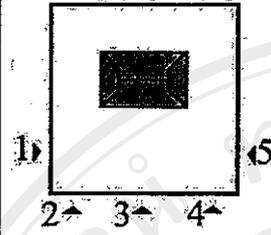
**Figure 5-28:** The pattern of facing orientation of HTGHs

The above analysis implies that the choice of orientation of *Nha Chinh* in the citadel area relates to the facing orientation of the citadel because the citadel also faces the Southeast, which is known as the best orientation that can bring back prosperity for the Kings. This orientation concept can be explained based on the religious belief in Hue people. In the past, the owners of HTGHs always wanted to express their faithfulness to the Kings so a way to express that is by making *Nha Chinh* faces to the same orientation as the citadel.

#### 5.4.4 Gate and Fence

Among 91 surveyed HTGHs, there are 77 houses with gate and fence, and two houses (HTGHs C08 and C24) with fence only. The other HTGHs do not have either gate or fence. Among the above 77 HTGHs, eight of them have the roof covering the gate. Normally, the gate roofs are tiled (A13, A23, A32, B20, and C13) or have a metal frame for creepers (B02, C13, and C27). From the interview with inhabitants; seemingly, most of HTGHs without gates used to have gates and fences in the beginning but they were destroyed by the owners or for the street extension.

From the survey, location of the gates of HTGHs in the citadel area could be divided into five positions as shown in Fig. 5-29. The figure shows that the gates of HTGHs are usually placed in position 3 (34 HTGHs) and position 2 (21 HTGHs) while location 5 is the rarest case with only two HTGHs (A18 and C15).



Position of gate	Number (Percent)
1	11 (14.3%)
2	21 (27.3%)
3	34 (44.1%)
4	9 (11.7%)
5	2 (2.6%)

Figure 5-29: Positions of 77 gates of HTGHs in the citadel area

Most HTGHs with the gates in position 3 have *Binh Phong* located in the middle behind the gate except in seven HTGHs (A11, A21, B16, C03, C11, C12, and C32), which do not have *Binh Phong* because they were destroyed by the owners or the streets extension. According to the religious belief of Hue people, the owners of those HTGHs, normally, do not want guests to enter their houses straight from the gate, so they use *Binh Phongs*, the masonry screen of the house, to protect direct access evil spirits. They also believe that *Binh Phong* will bring good fortune and wealth to the family.

According to the survey, there are 20 HTGHs (A03, A06, A07, A10, A11, A23, B01, B02, B06, B08, B10, B14, B16, B20, B27, C01, C02, C04, C05, and C16), which have green hedges of various plants such as *Che Tau* (Vietnamese local name of a tree), hibiscus, and brushwood (Fig. 5-30). The other 57 HTGHs have fences made of permanent materials such as brick, grille, and metal. However, at least 13 HTGHs (A01, A09, B05, B07, B12, B17, B18, B19, B27, C01, C11, C12, and C16) among the above 57 HTGHs originally had green hedges. It indicates that the green hedges have been gradually replaced by other types of permanent materials.

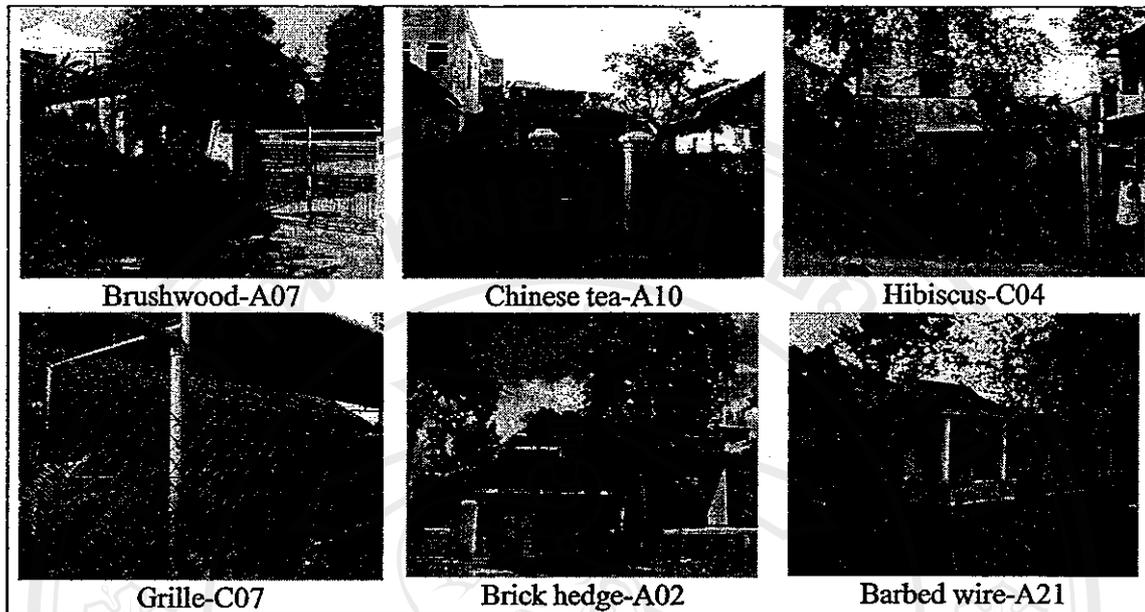


Figure 5-30: Examples of hedges and fences of HTGHs in the citadel area

#### 5.4.5 Alley

At present, most HTGHs in the citadel area do not have an alley. Among 91 surveyed HTGHs, there are only 17 houses (HTGHs A01, A09, A14, A18, B01, B02, B05, B06, B07, B08, B12, B18, B22, B26, B27, C03, C05 and C22), which have the alley, and most of them are type B of *Nha Chinh* (three *gians* – two *chais*). Normally, the width of the alley is small about 0.9-1.5 meters and it is used for leading guest from the gate to *Binh Phong* and turn into *Phong Khach* in *Nha Chinh*. Land subdivision may be the main reason for the gradual disappearance of the alleys.

It is significant to note that almost all the original owners of the above-mentioned 17 HTGHs are the mandarins or royal families of Nguyen Dynasty. In addition, the average area of these houses (1007sq.m) is approximately twice bigger than the average area of all 91 HTGHs in the citadel area (607sq.m).

#### 5.4.6 Symbols of Feng Shui: *Binh Phong*, *Be Can*, White Tiger and Green Dragon

It is known that elements in a HTGH are arranged based on Feng Shui principle (Thong, 1999). *Binh Phong* and *Be Can* represent the masonry screen of

HTGHs, while the symbols of White Tiger and Green Dragon represent two guardians of the houses. The table 5-5 shows that among 91 surveyed HTGHs, 55 houses have *Binh Phong* (60.4%), 46 houses have *Be Can* (50.5%), while the symbols of White Tiger and Green Dragon appear in 20 houses of them (22%). Normally, *Binh Phong* could be a brick screen (41 HTGHs) or green screen (14 HTGHs) of tree and/or brushwood. *Be Can* could be a small basin or rock garden (Fig. 5-30). The symbols of White Tiger and Green Dragon, normally, are flowerpot or bonsai (Fig. 5-31).

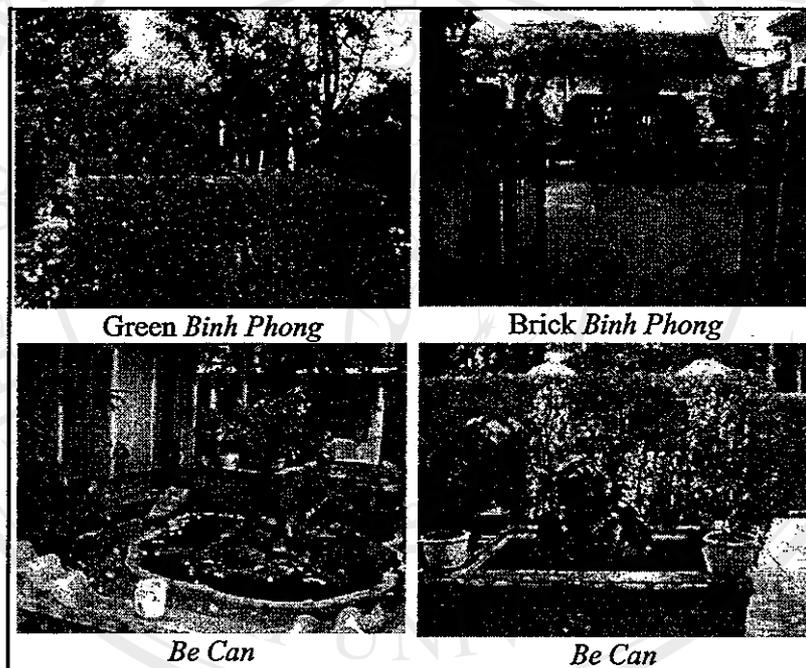


Figure 5-31: Examples of *Binh Phong* and *Be Can* in HTGHs

As mentioned in the previous chapter, *Ngu Binh* Mountain and *Huong* River represents the masonry screen of the citadel while *Hen* sandbank and *Da Vien* sandbank serve as its two guardians. In HTGHs, *Binh Phong* and *Be Can* are like *Ngu Binh* Mountain and *Huong* River of the citadel respectively, while the symbols of White Tiger and Green Dragon of HTGHs are like *Hen* sandbank and *Da Vien* sandbank of the citadel.

From 91 HTGHs as shown in table 5-5, only eight HTGHs (B01, B02, B05, B07, B08, B26, C05, and C22) have all the elements (Gate, alley, *Binh Phong*, *Be Can*, White Tiger and Green Dragon), while 17 HTGHs (the above eight HTGHs and

A03, A10, A13, A19, A27, A29, B03, B25, C09) have Gate, *Binh Phong*, *Be Can*, White Tiger, and Green Dragon. The elements of *Binh Phong*, *Be Can*, White Tiger and Green Dragon can be observed in 18 HTGHs (the above 17 HTGHs and A08), while 42 HTGHs have only *Binh Phong* and *Be Can*. It is obvious that the symbols of *Binh Phong* and *Be Can* still exist in most HTGHs, while the symbols of White Tiger and Green Dragon tend to disappear in the modern arrangement.

Although the information about the original elements of several HTGHs were inadequate due to no records, it seems logical to claim that the original elements in lay out of those HTGHs have been gradually disappeared in the modern arrangement. With the urbanization, the gate, hedge, *Binh Phong*, and *Be Can* were destroyed by the extension of the streets (HTGHs A02, C11, and C12). The land speculation and the use for doing commercial activities are also the main causes of their gradual disappearance. For example, the owners of some HTGHs (A08, A20, C28, and B15) destroyed the gate, hedge, and/or *Binh Phong* and *Be Can* in front of *Nha Chinh* for gaining space for doing commercial activities. The growth of family member is also another main reason. For example, in HTGH A07, the son of the owner got married and the land in front of *Nha Chinh* was used as the site for building a new house for the son's family. *Binh Phong* and *Be Can* were pulled out for the construction.

#### 5.4.7 Size of the Land

According to the survey, 59 HTGHs in the citadel area were selected for measuring the size of the lands (Table 5-5). The land size of HTGHs ranges from 85sq.m (HTGH C06) to 3043sq.m (HTGH B04) with the average size is 607sq.m (Fig. 5-32)<sup>1</sup>. Most of the houses have the size of land less than 1000sq.m (52 HTGHs), while 35 HTGHs have the land size less than 500sq.m.

<sup>1</sup> The average area of HTGHs is 574sq.m if excluding three HTGHs, which are public houses (A17, B04, and C16).

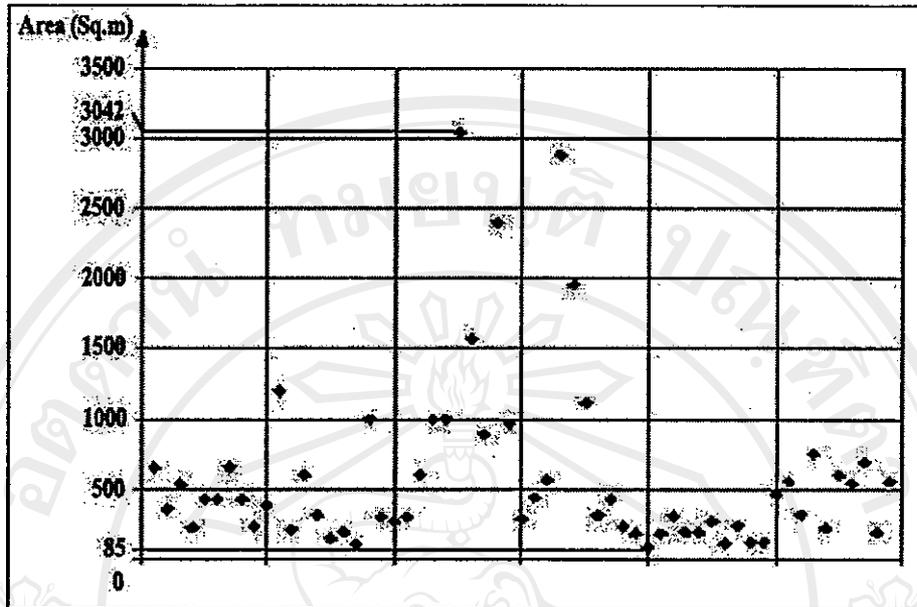


Figure 5-32: Size of the land of 59 surveyed HTGHs

It can be observed that the average land size of the six HTGHs (B01, B02, B05, B07, B08, and C05), which have all elements in lay out as mentioned above (Gate, hedge, alley, *Binh Phong*, *Be Can*, White Tiger and Green Dragon) is 1195sq.m ranging from 181 (HTGH C05) to 2400sq.m (HTGH B07). The average land size of the 12 HTGHs (the above six HTGHs and A03, A10, A13, A19, B03, C09), which have gate, *Be Can*, *Binh Phong*, White Tiger, and Green Dragon, is 810sq.m. Moreover, the average land size of 21 HTGHs (the above 12 HTGHs and A12, A15, B06, B10, B14, B19, B20, C01, C16), which have the alley, hedge, *Binh Phong*, and *Be Can*, is 699sq.m. This shows that the size of the land of a HTGH determines elements in the layout. For example, a HTGH should have the size of land not less than 699sq.m if that HTGH has the gate, hedge, *Binh Phong*, and *Be Can*.

#### 5.4.8 Family Members

Among 59 surveyed HTGHs, three HTGHs are the public office buildings; nursery school (HTGH A17), Thuan Loc precinct People's Committee (HTGH B04), and the Monument of late president Ho Chi Minh (HTGH C16). Except, the family member of HTGH A12 and HTGH B22, which could not be collected, the number of family members of HTGHs is varies. The smallest family member belongs to HTGH

B16 with only one member, while the number of family members in HTGH B13 is the highest with 16 members (Fig. 5-33). In addition, the generations of family members of those HTGHs ranges from one to four. HTGHs with four generations can be found in HTGHs B09 and B13, while three generations are the most typical group, which can be observed in 23 HTGHs.

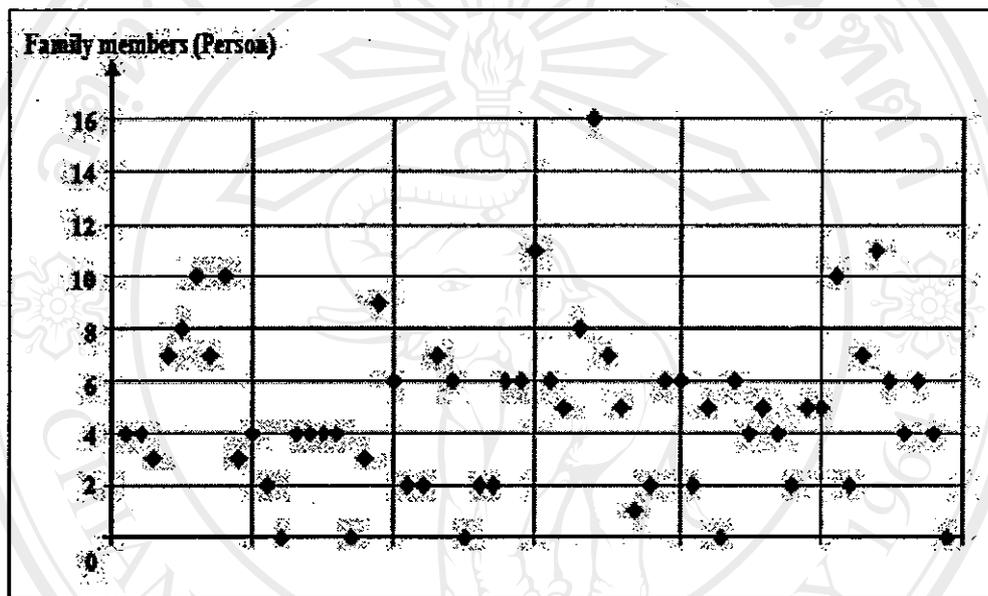


Figure 5-33: The family members of 59 surveyed HTGHs

To conclude, at least 24 HTGHs in the citadel area have undergone land subdivision. Normally, the garden on the two sides is the first part of land to be sold to other persons or divided for relatives. In the lay out of those HTGHs, the arrangement between *Nha Chinh* and *Nha Phu* could be divided into four types (I II III-IV) as shown in Fig. 5-25. Among these types, the most popular group is type I (Dinh shape) where *Nha Phu* is laid perpendicularly on the left side of *Nha Chinh*. In addition, the arrangement between *Nha Chinh* and *Nha Phu* of HTGHs in type II (*Nha Chins* are laid perpendicularly on both sides of *Nha Chinh*), type III (*Nha Phu* is laid on perpendicularly on the right side of *Nha Chinh*), and type IV (*Nha Phu* is laid parallel on the rear side of *Nha Chinh*) can be transformed from type I as shown in Fig. 5-26.

By observing the layout of HTGHs, we can observe that the arrangement of elements in the compound of HTGHs is modeled after the spatial arrangement of Hue citadel. The symbols of *Binh Phong* and *Be Can* are *Ngu Binh* Mountain and *Huong* River of the citadel respectively representing the masonry screen, while the symbols of White Tiger and Green Dragon are *Hen* and *Da Vien* sandbanks respectively representing two guardians. Most HTGHs in the citadel area have *Nha Chinh*s facing the same orientation to the citadel (Southeast). The above mentioned characteristics show that HTGHs and the citadel have close relationship and also manifest Hue people's faithfulness to the Kings according to their religious belief. Moreover, the elements in the compound of HTGHs are arranged following the Feng Shui principle.

Currently, some elements in layout of HTGHs such as the alley and the symbols of White Tiger and Green Dragon have been gradually disappeared by the influence of urbanization, the convenience of commercial purposes, and the growth of family members. According to the religious belief of Hue people, when a guest visits, *Binh Phong* can prevent the guest from going directly into the house. According to Feng Shui principle also, *Binh Phong* and *Be Can* represent the masonry screen of HTGHs, which can bring good fortune and wealth for the owners and protect the house from evil influence. That why there is a large number of *Binh Phong* and *Be Can* remaining in 42 HTGHs.

HTGH should have the land size bigger than 699sq.m if it has the gate, the hedge, *Binh Phong* and *Be Can*. By interviewing with the dwellers, three generations of family members living together in a HTGH are the most typical family structure.

## 5.5 Spatial Transformation

Fifty-nine HTGHs in the citadel area are selected for the classification of the transformation of their spatial organization. The present spatial patterns of these 59 surveyed HTGHs as demonstrated in Fig. 5-34 were not built in a same time at the first stage of construction but they were altered or extended along the time until the present to serve new functions and requirements. Even though all HTGHs were composed of similar basic spatial elements, the difference of lay out, location, family structure, value, and the mode of life of the inhabitants create differences in their spatial organization. In addition, the space in HTGHs is very flexible and the spatial function always changes from time to time depending on the necessities of each household.

From interviewing with the dwellers, we come to know that the causes of the differences in spatial functions of HTGHs are due to need of space for business venture, clan worship, and the growth of family members. In addition, the physical transformation of HTGHs also can be observed in their directions. The above considerations are the main reason that it is possible to identify three directions of transformation of 59 surveyed HTGHs in the citadel area; horizontal plane (A type), vertical plane (B type), and combined plane (C type). Each type could be further divided into four sub-groups according to the causes of transformation such as business ventures (requirement of space for commercial activity), family growth, requirement of space for clan worship, flood protection, living purpose, and the combination of various causes (Table 5-7).

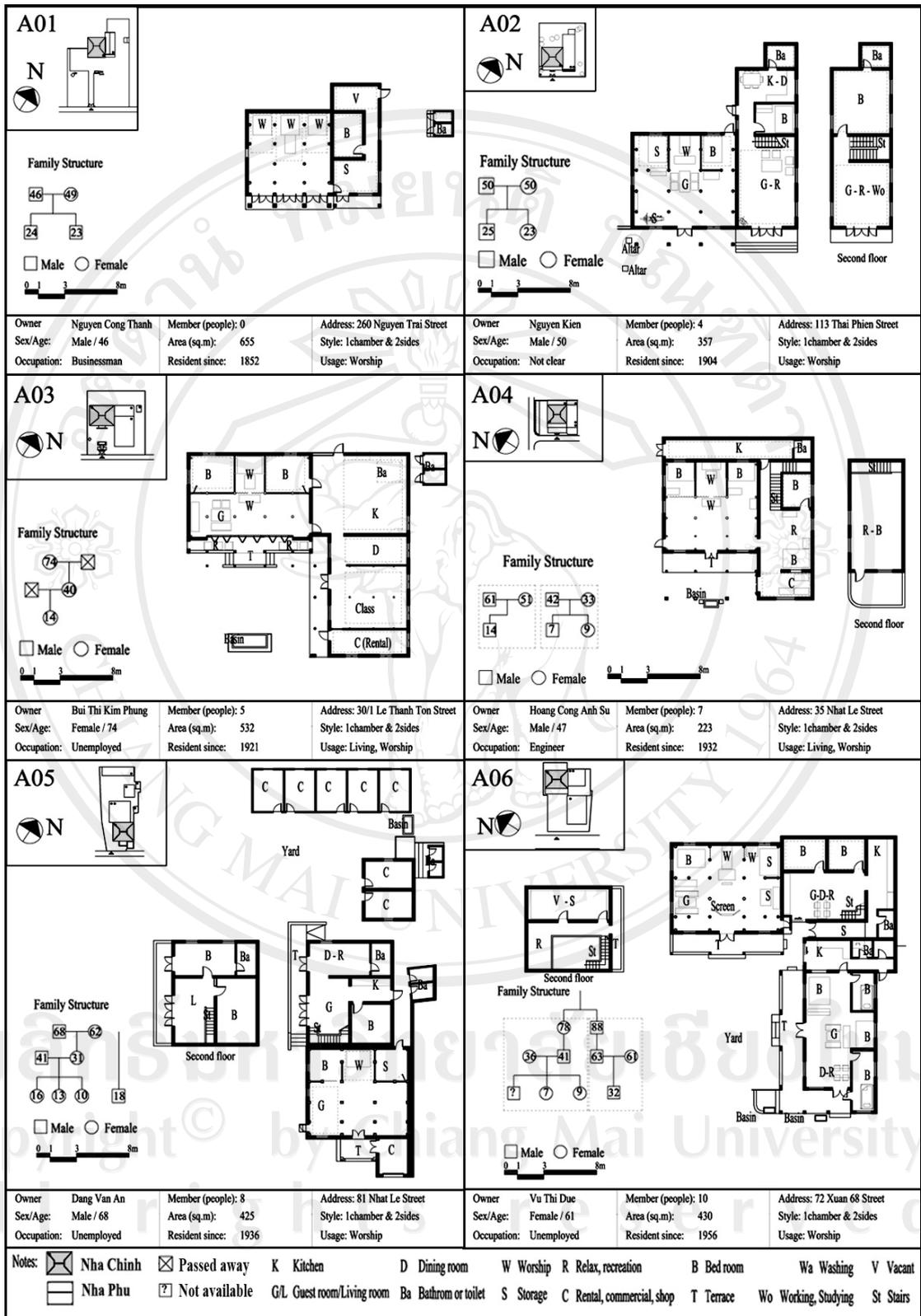


Figure 5-34: 59 surveyed HTGHs in the citadel area



Figure 5-34: 59 surveyed HTGHs in the citadel area (Continued)

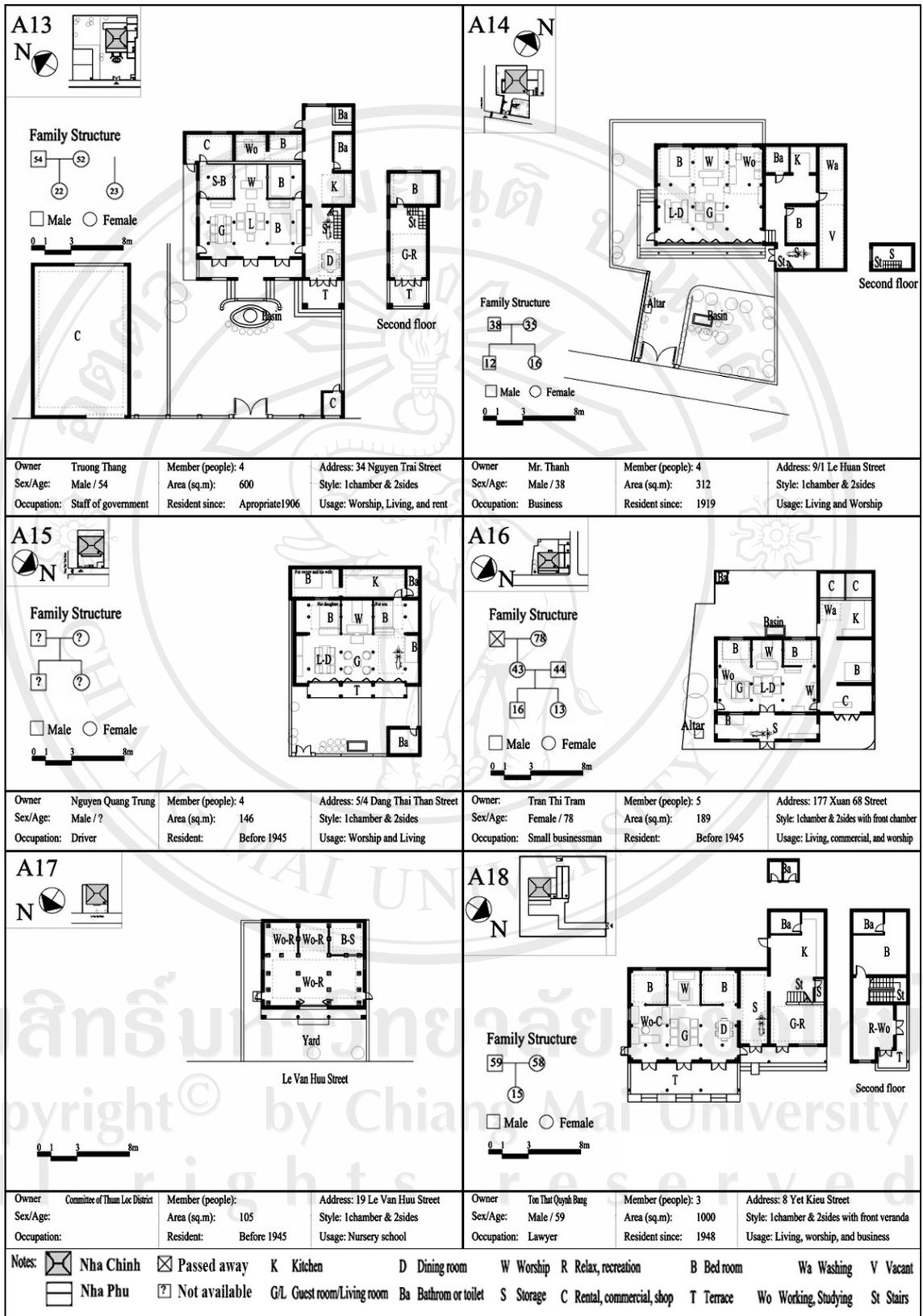


Figure 5-34: 59 surveyed HTGHs in the citadel area (Continued)

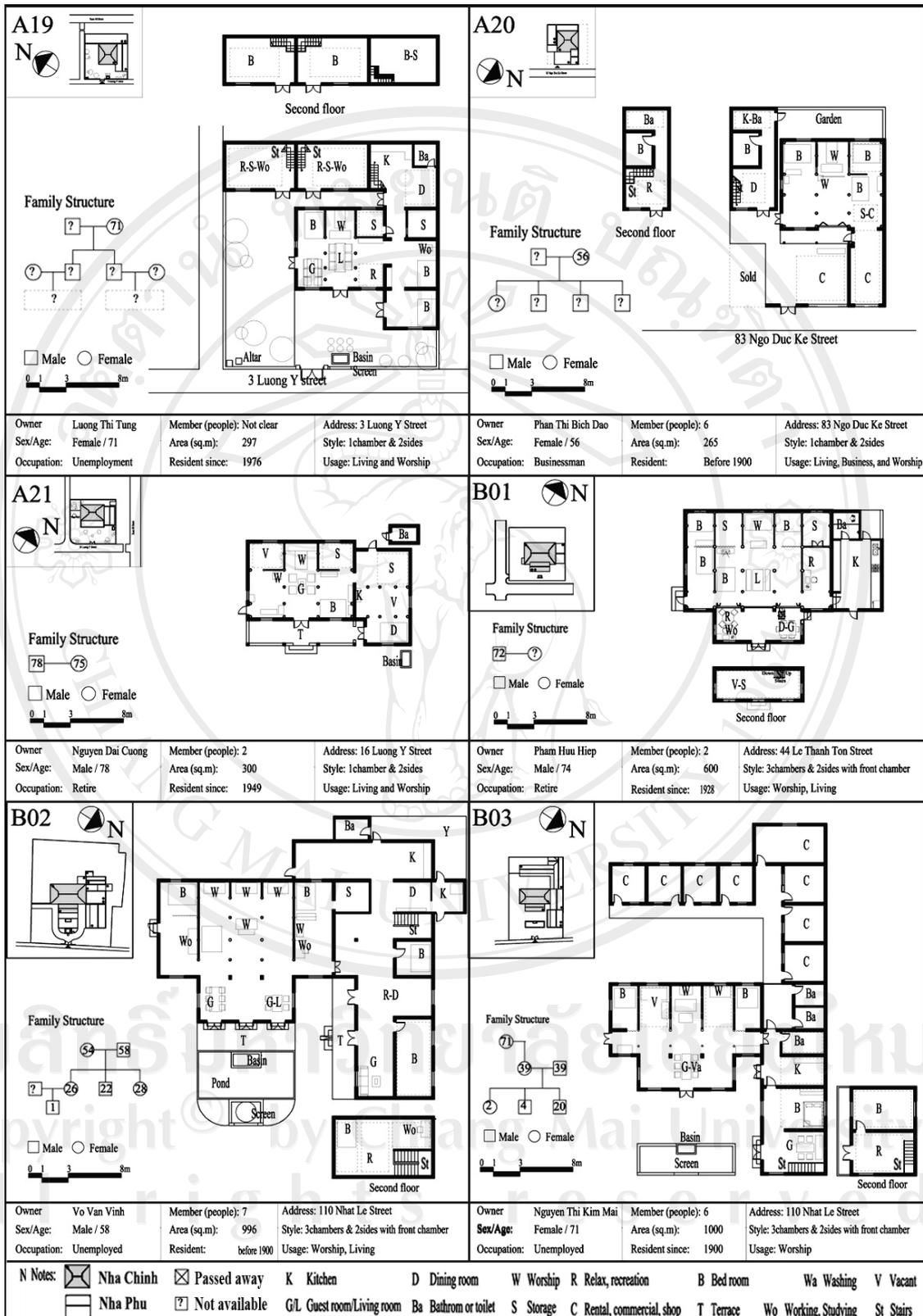


Figure 5-34: 59 surveyed HTGHs in the citadel area (Continued)

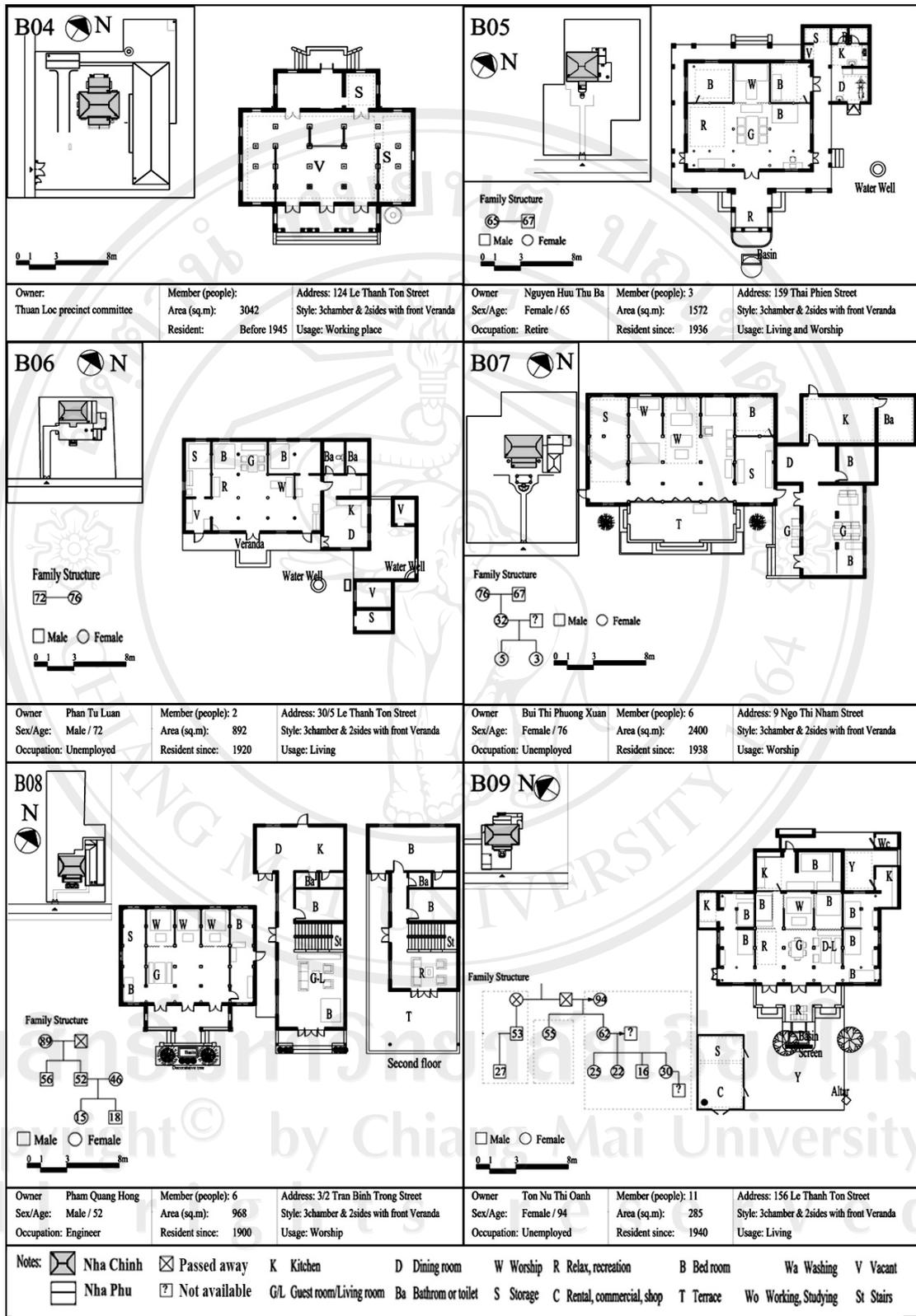


Figure 5-34: 59 surveyed HTGHs in the citadel area (Continued)



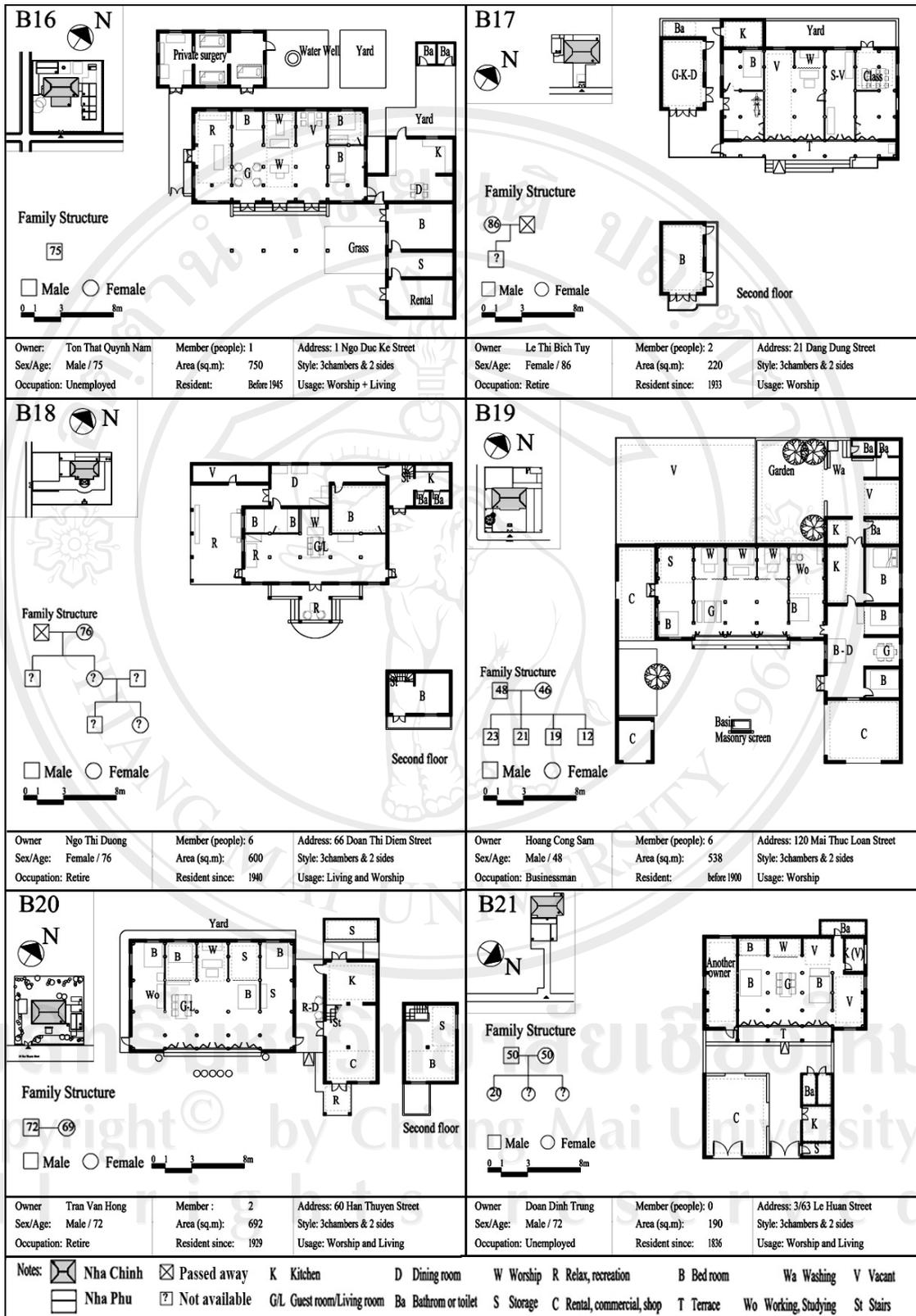


Figure 5-34: 59 surveyed HTGHs in the citadel area (Continued)

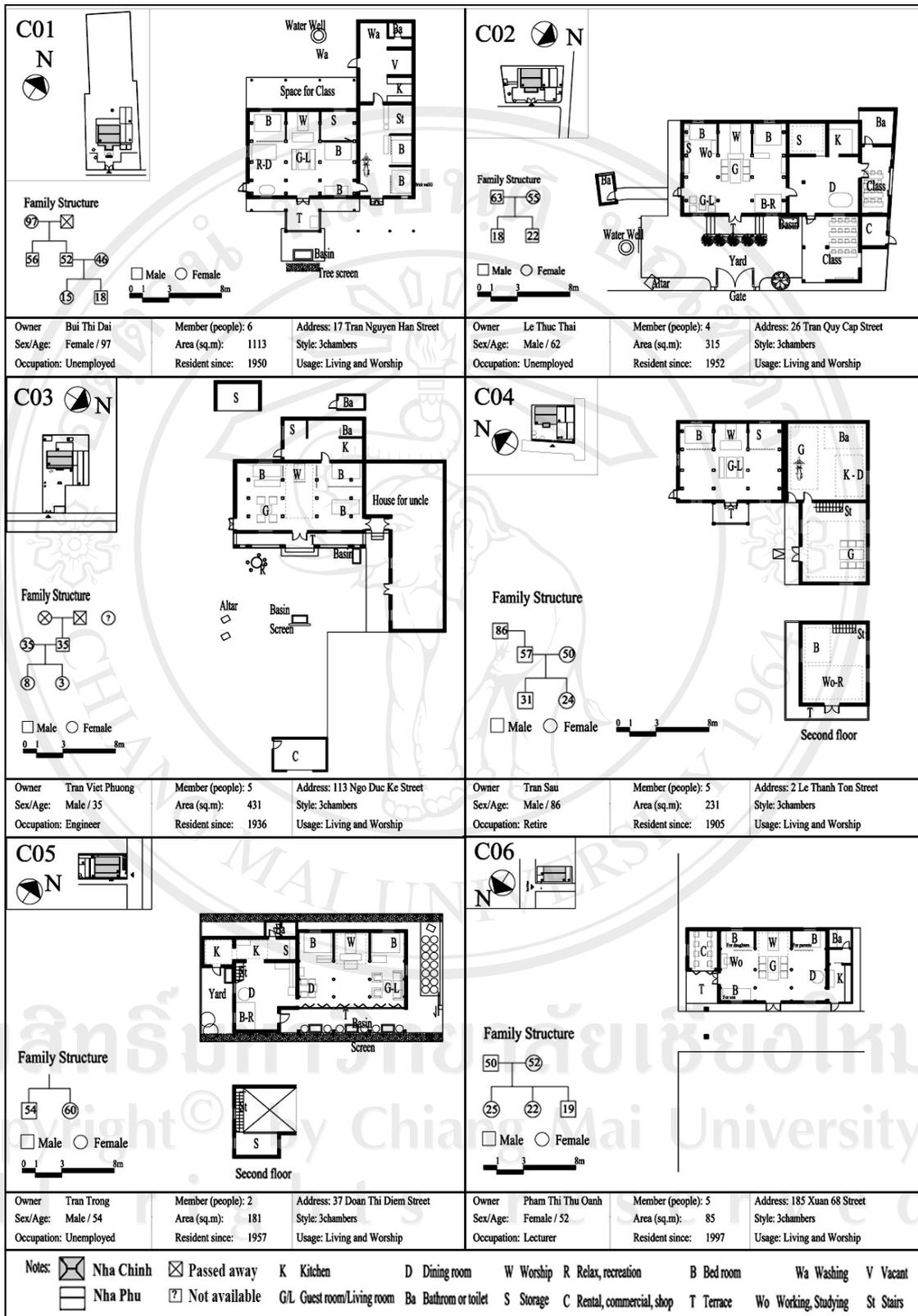


Figure 5-34: 59 surveyed HTGHs in the citadel area (Continued)

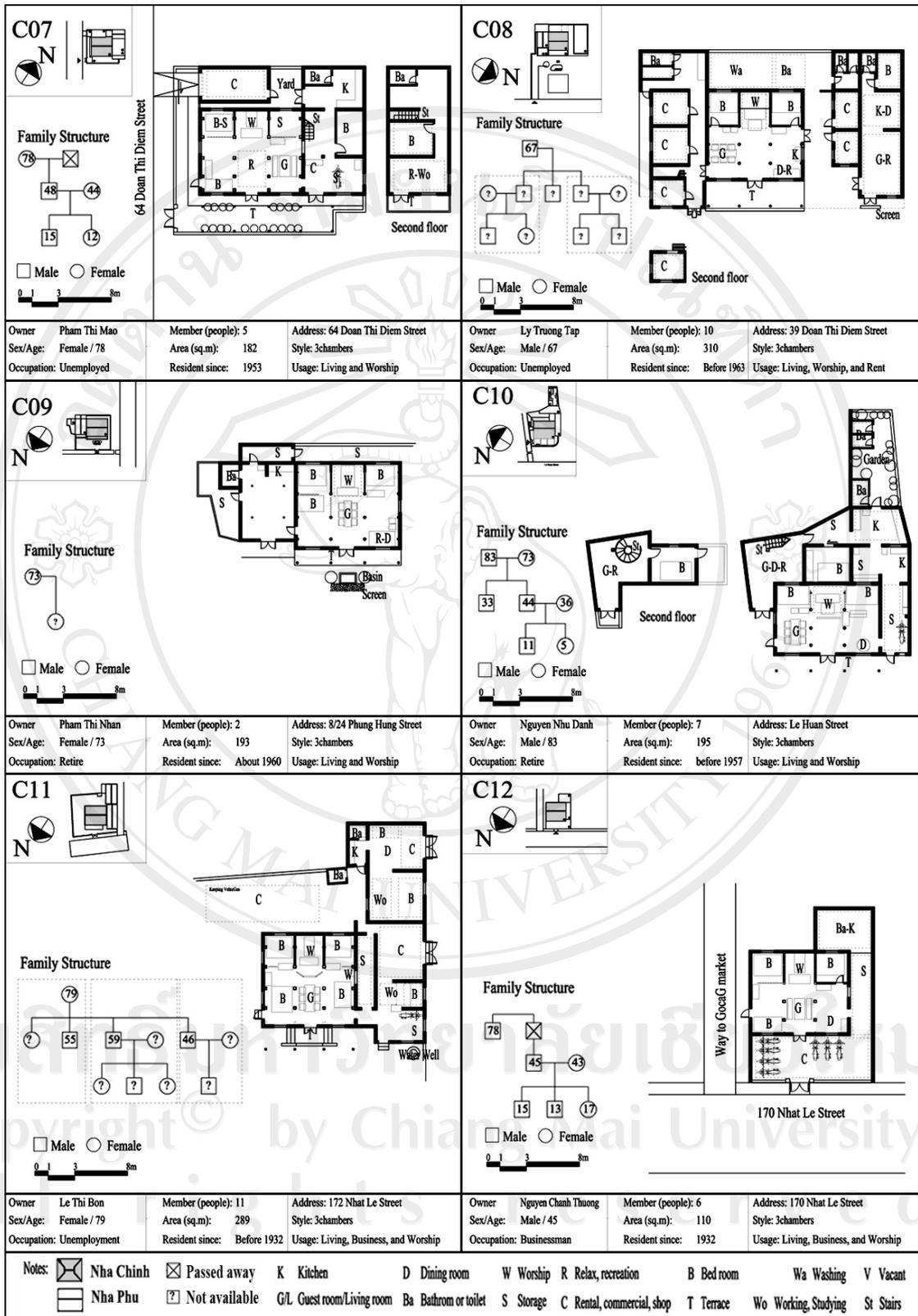


Figure 5-34: 59 surveyed HTGHs in the citadel area (Continued)

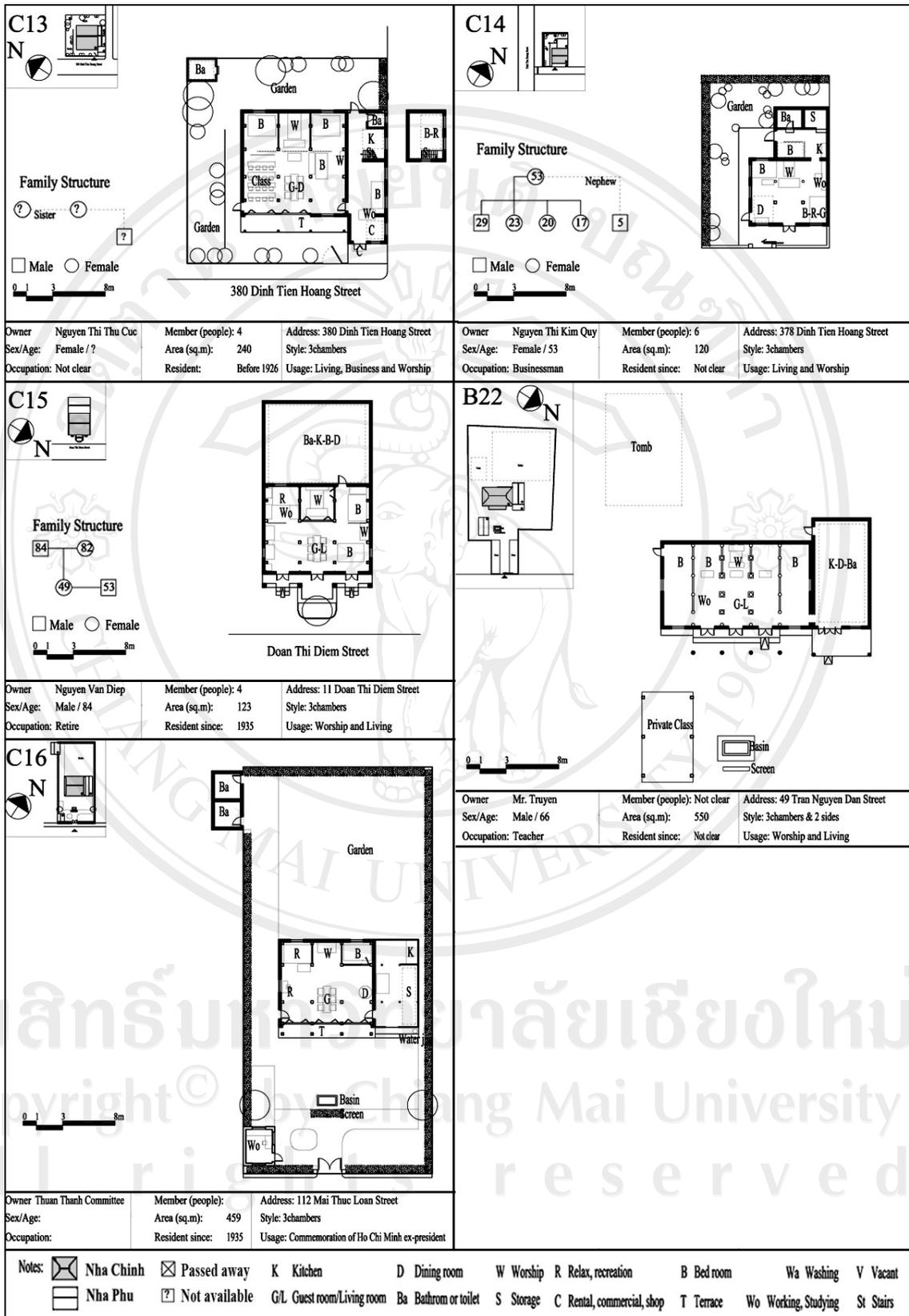


Figure 5-34: 59 surveyed HTGHs in the citadel area (Continued)

**Table 5-7:** Classification of HTGHs based on the directions and the causes of transformation

Planes/Purposes	Business ventures (1)	Family growth (2)	W/F/P/L (3) <sup>1</sup>	Combination (4)
<b>Horizontal plane (A)</b>	11 (18.6%)	2 (3.4%)	11 (18.6%)	9 (15.3%)
<b>Vertical plane (B)</b>	0 (0%)	1 (1.7%)	7 (11.9%)	3 (5.1%)
<b>Combined plane (C)</b>	0 (0%)	2 (3.4%)	0 (0%)	13 (22%)

**Notes:** W/F/P/L: Clan Worship/Flood protection/Public use/Living purpose; \_( \_ %): Number of HTGHs (Percent)

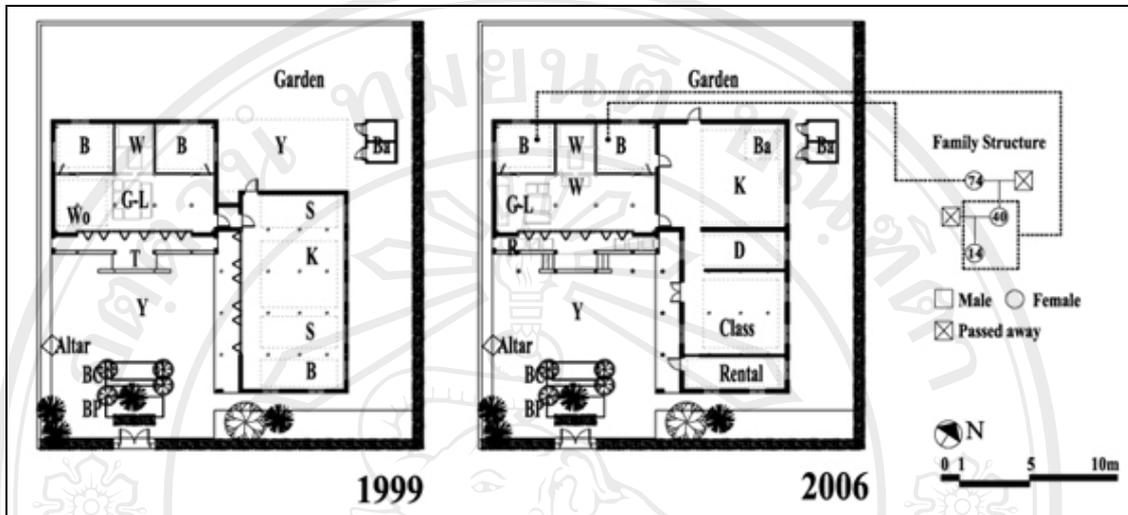
The transformation process of HTGHs will be analyzed by selecting the representative HTGHs from each type in table 5-7. Information about spatial arrangement of HTGHs in the past is obtained by interviewing with dwellers, records, and other related documents.

#### **5.5.1 House Type A-1** (HTGHs A03, A09, A16, B01, B15, B16, B22, C01, C02, C06, and C12)

A mandarin in Nguyen dynasty built the HTGH A03 in 1921 and then he sold the house to the present owner in 1954. According to the interview with the present owner, the spatial organization of the house in the past could be illustrated as in the left picture of Fig. 5-35. Until 1999, the spatial organization of the house was not much different from the original pattern except the floor of *Nha Chinh*, which was elevated. At that time, *Nha Chinh* had two *Phong Ngus* located in two *Chais*, *Phong Khach* which also functioned as *Phong Sinh Hoat Chung*, *Phong Lam Viec*, and *Phong Tho*. *Phong Bep*, *Kho*, and *Phong Ngu* for female were in *Nha Phu*. After 1999, *Nha Phu* was rebuilt and extended about 5 meters to the back for *Phong Bep* and *Phong Ve Sinh*, while the previous *Phong Bep* and *Phong Ngu* for female were converted to *Phong An*, rental room and private classroom for the daughter. In *Nha Chinh*, the original *Phong Lam Viec* was altered into *Phong Khach* incorporating with *Phong Sinh Hoat Chung*, while the previous *Phong Tho* was extended to the original

<sup>1</sup> The transformation of HTGHs in type A-3 is caused by one of following factors: clan worship, flood protection, need of space for living purpose, and need of space for public use.

*Phong Khach* and *Phong Sinh Hoat Chung*. The old *Phong Ve Sinh*, which is located in the garden around the rear part of *Nha Phu*, becomes the rental *Phong Ve Sinh*.



**Notes:** B-*Phong Ngu*; W-*Phong Tho*; G-*Phong Khach*; L-*Phong Sinh Hoat Chung*; Wo-*Phong Lam Viec*; S-*Kho*; K-*Phong Bep*; D- *Phong An*; Ba-*Phong Ve Sinh*; T-*Hien*; Y-*Yard*; BC-*Be Can*; BP-*Binh Phong*.

**Figure 5-35:** Transformation of spatial organization in HTGH A03

The transformation of the spatial organization in this house is similar to those of HTGH A16 and HTGH C06. However, the front space of *Nha Phu* in HTGH A16 is used for a stall, while that of *Nha Phu* in HTGH C06 is for an internet shop. In addition, the condition of HTGH C06 can also represent the transformation of HTGHs C01, C02, and C12 except the different locations of business ventures. The owners of the above three HTGHs created new space adjoining *Nha Phu* or *Nha Chinh*, which is used as the space for business ventures such as a private classroom (HTGH C01), small shop and private classroom (HTGH C02), and parking space (HTGH C11).

The transformation process of other four HTGHs (A09, B15, B16, and B22) in type A-1 could be illustrated by the transformation process of HTGH A09 (Fig. 5-36).

The owner of HTGH A09 is a descendant of one princess of Nguyen dynasty. Before 1990, *Nha Phu* was laid perpendicularly to *Nha Chinh* on the left side and served as *Phong Ngu* for female, *Phong An*, and *Kho* in front part, while the space in

the rear part was used as *Phong Bep*, *Kho*, *Phong Ve Sinh*, and pigsty. The spatial organization in *Nha Chinh* was similar to the original patterns of HTGH A03 in that when it had *Phong Khach* which also functioned as *Phong An*, *Phong Ngu*, and *Phong Tho* (Left picture of Fig. 5-36).



**Notes:** B-*Phong Ngu*; W-*Phong Tho*; G-*Phong Khach*; D-*Phong An*; R-*Phong Thu Gian*; C-*Pigsty*; S-*Kho*; K-*Phong Bep*; Ba-*Phong Ve Sinh*; V-Vacant space; Y-Yard; BC-*Be Can*; BP-*Binh Phong*.

**Figure 5-36:** Transformation of spatial organization in HTGH A09

In 1990, the owner sold the land of *Nha Phu* to the owner of the neighboring house. Then, he built a new *Nha Phu* for *Phong Bep* in the rear part of *Nha Chinh*. At that time, *Binh Phong*, *Be Can*, and the hedge were cleaned away, while the spatial arrangement of *Nha Chinh* had not changed except two new added *Phong Ngus* (The middle picture of Fig. 5-36).

In 2002, the owner built new a row of rooms for rent in front of *Nha Chinh*, while a new rental *Phong Ve Sinh* was added in the rear corner around the right side of *Nha Chinh* as shown in the right picture of Fig. 5-36. In *Nha Chinh* and *Nha Phu*, the functional patterns such as *Phong Khach*, *Phong Ngu*, *Phong Bep*, and *Phong Tho* remained on their original positions. The transformation of HTGH A09 is similar to that of HTGHs B15 and B22 except that the rental space for restaurant in HTGH B15 and a private classroom in HTGH B22.

The transformation of HTGH B16 is also quite similar to the transformation of HTGH A09 when a new separated building was added in the rear part of the land. This separated building is used as a space for private surgery of the owner as shown in Fig. 5-37. However, another new building was constructed adjoining *Nha Phu*, which is used as a private classroom for a relative of the owner.



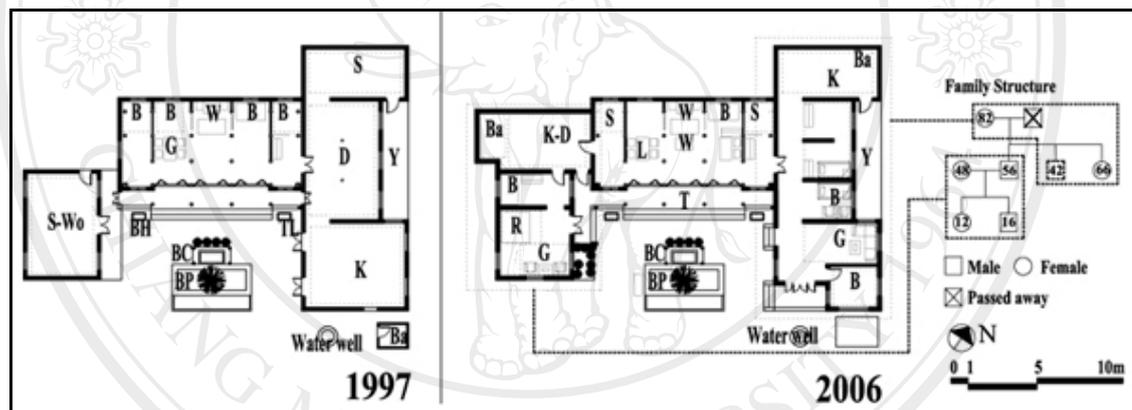
**Figure 5-37:** The alley leads to the surgery building in HTGH B16 with *Nha Chinh* on the right side

Another example in type A-1 is HTGH B01. The owner of this house is a descendant of one high-ranking mandarin of Nguyen Dynasty. At the beginning, *Nha Chinh* of this HTGH had six *Phong Ngus*, *Phong Tho*, *Phong Lam Viec*, *Phong Thu Gian*, and two *Khos*, while *Nha Phu* had *Phong Bep* and *Phong Ngu* for female. *Phong Ve Sinh* was located outside around the rear part of *Nha Phu* (Fig. 5-38). In 1995, the mother of present owner sold the land of *Nha Phu* to the owner of neighboring house because of financial problem. Then, a new *Nha Phu* was added adjoining *Nha Chinh* on the left side as demonstrated in the right picture of Fig. 5-38. The previous *Phong Ngu* in *Nha Phu* was cut out while *Phong Ve Sinh* was moved inside *Nha Phu*. In *Nha Chinh*, the previous *Phong Lam Viec* was converted into



### 5.5.2 House Type A-2 (HTGHs B12 and B14)

There are two HTGHs in this type, which are altered due to the growth of family members. The former owner of HTGH B14 is Mr. Bui Quang Dien, who sold the house to Mrs. Phan Thi Bach Yen, the present owner in 1957. At that time, the house catered for a family of five; Mrs. Bach Yen, her husband, and their three children. The house had two *Nha Phus*; the left one was used for *Nha Bep*, *Kho*, and *Phong An*, while the right one was used as *Phong Lam Viec* and *Kho* (Library). *Phong Ve Sinh* abutted on the left *Nha Phu* in the front. *Nha Chinh* had *Phong Tho* in the middle *gian*, four *Phong Ngus*, and a *Phong Khach* as shown in the left picture of Fig. 5-39.



**Notes:** B-*Phong Ngu*; Wo-*Phong Lam Viec*; W-*Phong Tho*; D-*Phong An*; R-*Phong Thu Gian*; S-*Kho*; K-*Phong Bep*; Ba-*Phong Ve Sinh*; T-*Hien*; G-*Phong Khach*; L-*Phong Sinh Hoat Chung*; Y-*Yard*; BP-*Binh Phong*; BC-*Be Can*; BH-Symbol of White Tiger; TL-Symbol of Green Dragon.

**Figure 5-39:** Transformation of spatial organization in HTGH B14

The house was subsequently enlarged to the rear part of the right *Nha Phu* when the number of family members increased after the wedding of the oldest son in 1997. At present, the right *Nha Phu* is used for the living house of new family while the left *Nha Phu* is the living space of the owner and the other two children. In *Nha Chinh*, *Phong Tho* maintains its original position but it was extended to the front, while the previous *Phong Khach* was converted into *Phong Sinh Hoat Chung* of the

family on ceremonial days such as Tet (Vietnamese Traditional New Year's days). The previous two *Phong Ngus* located in two *chais* were also converted into *Khos*.

The present *Nha Phu* where the oldest son's family live consists of a *Phong Khach*, *Phong Thu Gian*, and *Phong Ngu*, which formerly were *Kho* and *Phong Lam Viec*. An extension was added for *Phong Bep*, *Phong An*, and *Phong Ve Sinh* for the family of the oldest son (right picture in Fig. 5-40).

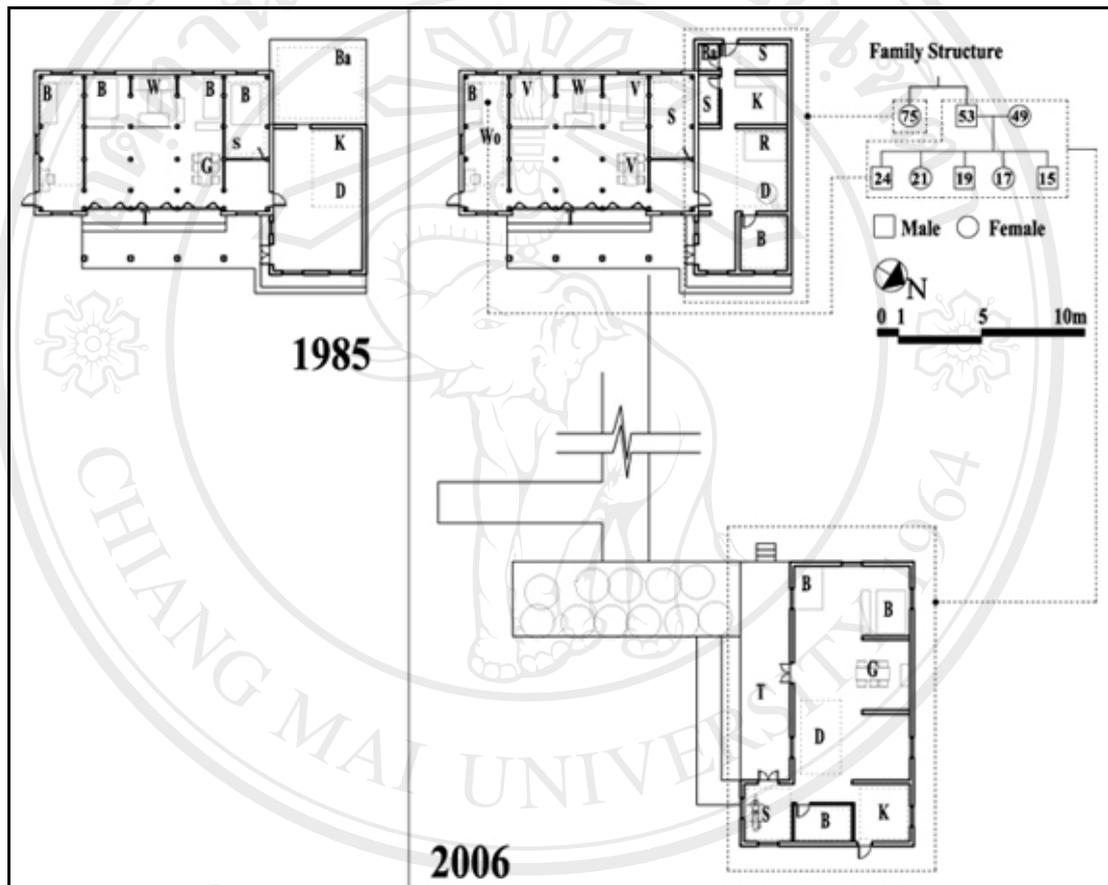
The left *Nha Phu* was rebuilt in 1997. The front part, which was used to be *Phong Bep*, was for *Phong Khach* and *Phong Ngu*. The previous *Phong Ve Sinh* was moved inside *Phong Bep* in this *Nha Phu* took the place of the former *Kho* while the previous *Phong An* became *Phong Ngu* of the present owner (left picture in Fig. 5-40).



**Figure 5-40:** The left *Nha Phu* and right *Nha Phu* of HTGH B14

Another house in this type is HTGH B12, where a new dwelling house was built when the owner got married in 1985 (Fig. 5-41). However, unlike HTGH B14, the new dwelling house was built separately in the front part of *Nha Chinh*. At present, *Nha Chinh* consists of *Phong Tho* that remains the original place, *Phong Ngu* and *Phong Lam Viec* for a son of the owner, *Kho*, and some vacant spaces, which formerly were four *Phong Ngus*, *Phong Tho*, *Kho*, and *Phong Khach*. *Nha Phu* is the living space of a relative of the owner.

At the beginning, *Nha Phu* had *Phong Bep* and *Phong An*, while *Phong Ve Sinh* was outside around the rear part of *Nha Phu*. At present, *Nha Phu* was extended about 4 meters to the back to use as *Phong Bep*, *Kho*, and *Phong Ve Sinh*. In addition, a new *Phong Ngu* for that relative was added in the front part of *Nha Phu*, while the other rooms (*Phong Thu Gian* and *Phong Bep*) remained on their original positions.



**Notes:** B-*Phong Ngu*; Wo-*Phong Lam Viec*; W-*Phong Tho*; D-*Phong An*; S-*Kho*; K-*Phong Bep*; Ba-*Phong Ve Sinh*; T-*Hien*; G-*Phong Khach*.

**Figure 5-41:** Transformation of spatial organization in HTGH B12

The new separated dwelling house of HTGH B12 consists of a *Phong An*, a *Phong Bep*, a *Phong Khach*, three *Phong Ngus*, and a *Kho* used as a garage (the right picture of Fig. 5-41).

It is obvious that HTGHs in type A-2 reveal two directions of transformation due to the growth of family members. In the first direction, *Nha Phu* is extended and

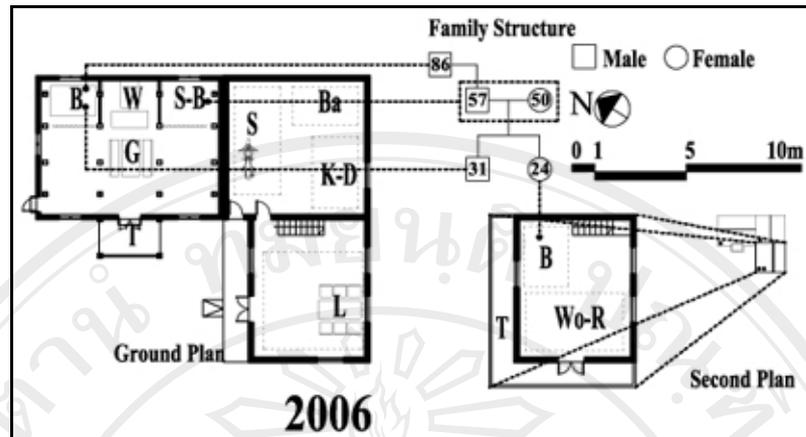
rebuilt a new household (HTGH B14), while in the second direction, a new separated building is added for dwelling house of a new household (HTGH B12). The difference of the transformation between HTGH B12 and HTGH B14 is probably due to the size of the land. In addition, several spatial patterns in *Nha Chinh* such as *Phong Khach* and *Phong Ngu* have lost their functions after the alteration and they may become vacant space, while *Phong Tho* still keeps its function.

In the case of HTGH B14, its transformation should be applied for other HTGHs for contemporary use. The spatial functions in *Nha Phu* of the house are altered for living spaces with private *Phong Ngu*, *Phong An*, *Phong Bep*, and *Phong Ve Sinh* for new household, while *Nha Chinh* is used for *Phong Tho* and *Phong Khach* functioning as *Phong Sinh Hoat Chung* for all members in ceremonial days. With these spatial functions, the house can answer the need of space due to family growth and can maintain unique family structure (nuclear family) of Hue people.

### 5.5.3 House Type B-2 (HTGH C04)

The original spatial function of HTGH C04 in this type is not clear. However, according to the information from interviewing with the owner, *Nha Chinh* still remains on its original spatial functions (Fig. 5-42). At present, *Nha Chinh* is used as the living space of the owner with a *Phong Tho*, a *Phong Khach* which is usually crowded on ceremonial days such as Tet, and two *Phong Ngu* (one for the owner and another is *Phong Ngu* for his son and the daughter-in-law, which incorporates *Kho*).

Because of the limitation of the land size, *Nha Phu* was rebuilt into two-stories structure after the son of the owner got married. The ground floor has *Phong Bep* which also functions as *Phong An*, *Phong Ve Sinh*, *Phong Kho* which is also used as a garage, and *Phong Sinh Hoat Chung* in the front part. *Phong Ngu*, *Phong Thu Gian*, and *Phong Lam Viec* are on the second floor.



Notes: B-Phong Ngu; Wo-Phong Lam Viec; W-Phong Tho; D-Phong An; S-Kho; K-Phong Bep; Ba-Phong Ve Sinh; T-Hien; G-Phong Khach; R-Phong Thu Gian.

**Figure 5-42:** Transformation of spatial organization in HTGH C04

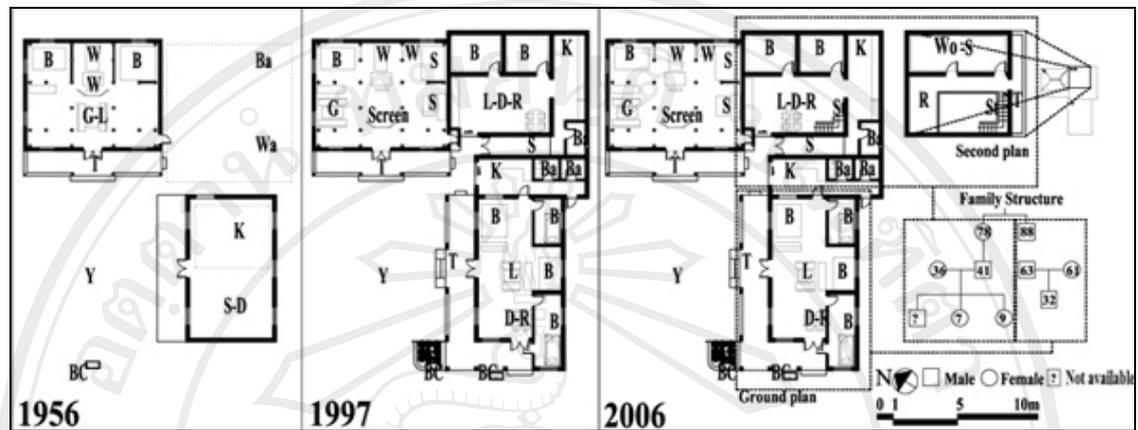
#### 5.5.4 House Type C-2 (HTGHs A06 and C10)

There are two HTGHs in this type, HTGH A06 and HTGH C10. As they experienced a similar process of transformation of spatial organization, only HTGH A06 is chosen for an analysis of the transformation.

At the beginning, the spatial patterns of HTGH A06, which was built in 1956, was similar to the original spatial pattern of HTGH A09, in which *Nha Phu* had a *Phong Bep* and a *Phong An*, which also functioned as *Kho*. The washing space and *Phong Ve Sinh* were located outside in the rear part of *Nha Phu* (left picture in Fig. 5-43).

When the younger sister of the owner and her family came to live in the house in 1961, at first, the house was enlarged horizontally to the back of *Nha Phu* to accommodate the new dwelling house of the new family (middle picture in Fig. 5-43). At that time, the spatial pattern of the new dwelling house consisted of two *Phong Ngus*, *Phong Khach* which also served as *Phong An* and *Phong Thu Gian*, *Phong Bep* and *Phong Ve Sinh*, and *Kho* which was used as a garage. *Nha Phu* was rebuilt as a dwelling house for the owner's family, which had four *Phong Ngus*, a *Phong Khach*, *Phong An* incorporated *Phong Thu Gian*. In *Nha Chinh*, the previous *Phong Khach* was moved to the right side, while the previous *Phong Tho* and the right *Phong Ngu*

remained on their original place. The left *Phong Ngu* was converted to a *Kho* and another *Phong Tho*.



**Notes:** B-*Phong Ngu*; W-*Phong Tho*; D-*Phong An*; R-*Phong Thu Gian*; S-*Kho*; K-*Phong Bep*; Ba-*Phong Ve Sinh*; T-*Hien*; G-*Phong Khach*; L-*Phong Sinh Hoat Chung*; V-Vacant space; Y-Yard; BC-*Be Can*.

**Figure 5-43:** Transformation of spatial organization in HTGH A06

After 1997, the family of the sister increased in size when three children were born. That was the reason why this house was enlarged again. Because of the lack of ground space, the house compelled extending vertically into two-storied building as shown in the right picture of Fig. 5-43. At the present, the functional patterns on the ground floor remain on their original places, while the second floor consists of *Phong Thu Gian*, *Phong Lam Viec* incorporating *Kho* (Book library). In addition, the functional patterns in *Nha Chinh* and *Nha Phu* also remain unchanged.

The transformation of another HTGH in this type (C10) can be represented by the transformation of HTGH A06. However, there is a small difference in their *Nha Phus*. The functional patterns of *Nha Phu* in HTGH A06 was altered for living space of one family, while those in HTGH C10 still remain on their original positions.

To conclude, HTGHs in this type were enlarged horizontally at first due to the growth of family members. Then, the lack of ground space forced the house to extend vertically into a two-storied building. Moreover, the functional spaces of HTGH A06

can also express the style of nuclear family, which is similar to the case of HTGH B14 of type A-2.

### 5.5.5 House Type A-3 (HTGHs A01, A15, A17, A21, B05, B06, B07, C09, C14, C15, and C16)

There are two HTGHs, which are now used as public houses: nursery school (HTGH A17) and Ho Chi Minh Monument (HTGH C16). In the past, the original owner of HTGH A17 was a despotic landowner. When the country unified in 1975, he ran away from the new government. Finally, the house was occupied by the government and local people. At present, only *Nha Chinh* and the front yard belong to Thuan Loc Popular Committee and it is used as the nursery school, while the other parts of its land were occupied by other persons (Fig. 5-44).

HTGH C16 is used as a monument of the President Ho Chi Minh. The original owner was Mrs. Truong Thi Dieu who put her house for rent. President Ho Chi Minh and his father then rented this house from 1895 to 1901 for living and studying. The house was completely destroyed by the war in 1945. Then, it was rebuilt by the government for the monument of President Ho Chi Minh (Fig. 5-45).



Figure 5-44: HTGH C16

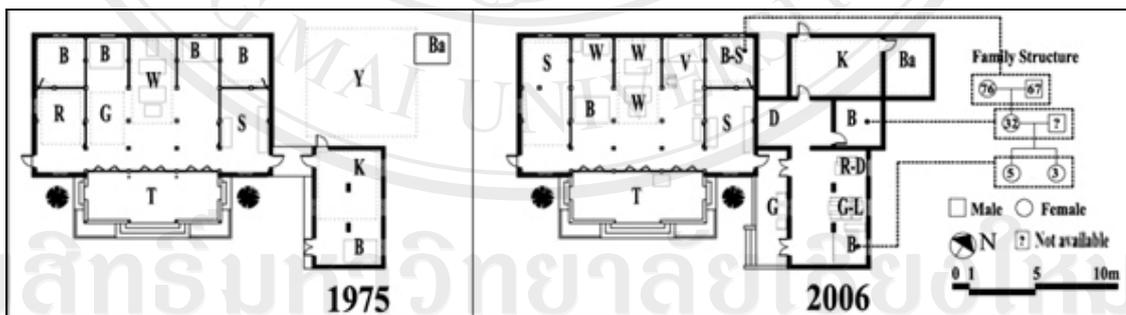


Figure 5-45: HTGH A17

From the survey, the spatial organization of HTGH B07 in this type is transformed due to the purpose of clan worship. Its transformation could be described as follows.

The owner of HTGH B07 is also a descendent of one high-ranking mandarin under Nguyen dynasty. In the beginning, the house built in 1938 had a *Phong Tho*, four *Phong Ngus*, a *Phong Khach*, a *Phong Thu Gian*, and a *Kho* in *Nha Chinh*, while *Phong Bep* and *Phong Ngu* for female were in *Nha Phu*. *Phong Ve Sinh* was located outside in the rear part of *Nha Phu* (The left picture in Fig. 5-46).

After 1975, *Nha Chinh* was converted to the space for clan worship, while *Nha Phu* was extended to the back to accommodate a *Phong An*, a *Phong Ngu*, and a *Phong Bep*. *Phong Ve Sinh* remained on its original position but now was in the structure of inside *Nha Phu*. The original spatial patterns of *Nha Phu* were altered as *Phong Khach* that also functions as *Phong Sinh Hoat Chung* in the middle, flanked by the original *Phong Ngu* and *Phong Thu Gian* which also functions as *Phong An* (formerly *Phong Bep*). In addition, there was another *Phong Khach*, which was added to the right side of *Nha Phu*. In *Nha Chinh*, the space of *Phong Tho* was extended to the front and the right side of it, while the previous *Phong Ngu* located on *Phong Tho*'s left side was altered as vacant space. The right *chai* of *Nha Chinh* consisted of two *Khos*, an old one in the right *chai* and a new one that incorporates with the previous *Phong Ngu*.

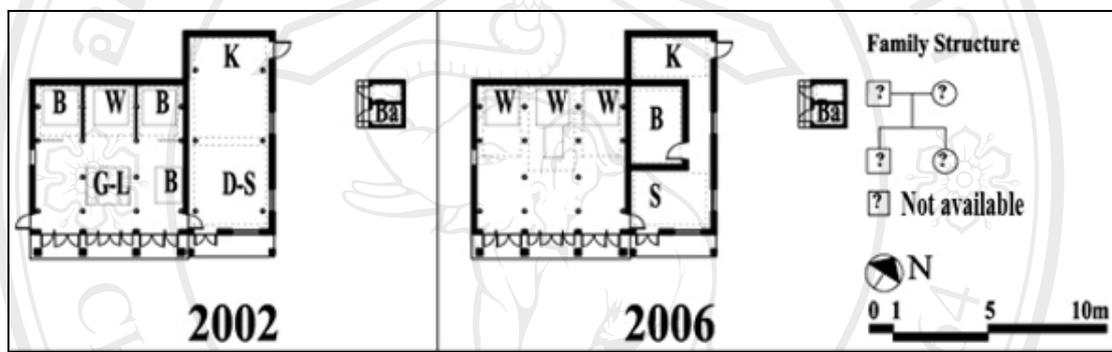


**Notes:** B-*Phong Ngu*; W-*Phong Tho*; D-*Phong An*; R-*Phong Thu Gian*; S-*Kho*; K-*Phong Bep*; Ba-*Phong Ve Sinh*; T-*Hien*; G-*Phong Khach*; L-*Phong Sinh Hoat Chung*; V-Vacant space; Y-Yard.

**Figure 5-46:** Transformation of spatial organization in HTGH B07

The transformation of spatial organization in HTGH B07 is similar to the condition of HTGH A01, which is the representative of HTGHs A15 and C15 (Fig. 5-47). However, the owner's family of HTGH A01 moved to stay in another place and

*Nha Phu* was gradually turned into a vacant space while *Nha Chinh* has become the space of clan worship. The main original functional patterns (*Phong Tho*, *Phong Ngu*, *Phong Khach*, *Phong Bep*, *Phong An*, and *Kho*) in *Nha Chinh* and in *Nha Phu* of HTGH A01 are, on the whole, similar to those of above mentioned HTGHs such as HTGH A06, HTGH A09, and HTGH B14. At present, a new *Phong Ngu* was added in the middle part of *Nha Phu*, while the previous *Phong Tho* was extended to the two sides, which formerly were *Phong Ngus*. The other functions in *Nha Chinh* such as *Phong Khach* and *Phong Sinh Hoat Chung* were converted into vacant spaces.



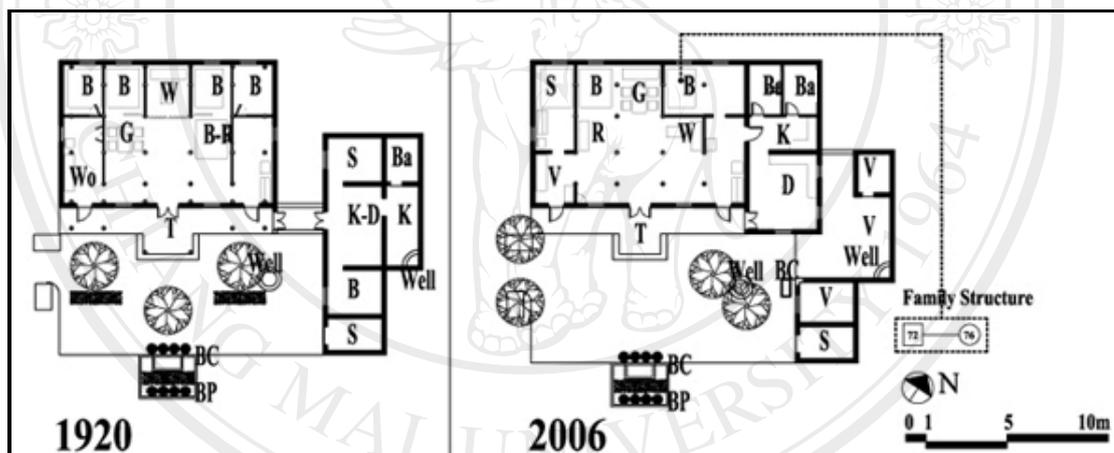
**Notes:** B-*Phong Ngu*; W-*Phong Tho*; D-*Phong An*; S-*Kho*; K-*Phong Bep*; Ba-*Phong Ve Sinh*; G-*Phong Khach*; L-*Phong Sinh Hoat Chung*.

**Figure 5-47:** Transformation of spatial organization in HTGH A01

The spatial organization in the other HTGHs (A21, B05, B06, C09, and C14) has altered for the convenient use of the family. In HTGH B06, as a representative of these, the elements and designs on the facade of *Nha Chinh* have not much altered. However, several spatial patterns in *Nha Chinh* were altered due to the viewpoint of the owner. Initially, *Nha Chinh* had *Phong Tho*, five *Phong Ngus* (one of them also functioned as *Phong Thu Gian*), a *Phong Khach*, *Phong Lam Viec*, and a front *Hien*. In *Nha Phu*, a *Kho* and *Phong Ngu* for female were located in the front, while a *Phong Bep*, a *Phong An*, a *Phong Ve Sinh*, and another *Kho* were in the back (The left picture in Fig. 5-48).

Currently, *Phong Khach* is located in the place, which formerly was *Phong Tho* as shown in Fig. 5-50, while the previous *Phong Tho* was moved to the middle

part of the left *gian* (Fig. 5-51). According to the owner as he has another house for clan worship, it is not necessary to have a space for worship in this HTGH. However, this house is the only one with *Phong Tho* not located in the rear of the middle *gian*. The original *Phong Khach* was converted to *Phong Thu Gian*, while the previous *Phong Ngus* on the left side were combined into a large space for the owner and his wife. The previous *Phong Ngu* in the right *chai* was converted to *Kho*, while the original *Phong Lam Viec* was shifted to vacant space after the son of the owner moved to stay in another place. *Nha Phu* was also extended to its back adjoining *Nha Chinh* on the left side. This new space is used as *Phong An*, *Phong Bep*, and *Phong Ve Sinh* that is located in the rearmost. All the previous spatial functions in *Nha Phu* were turned to vacant spaces except the front *Kho* still maintaining its original function.



**Notes:** B-*Phong Ngu*; W-*Phong Tho*; D-*Phong An*; R-*Phong Thu Gian*; S-*Kho*; K-*Phong Bep*; Ba (Wc)-*Phong Ve Sinh*; T-*Hien*; Wo-*Phong Lam Viec*; G-*Phong Khach*; V-Vacant space; BP-*Binh Phong*; BC-*Be Can*.

**Figure 5-48:** Transformation of spatial organization in HTGH B06



**Figure 5-49:** *Phong Khach* of HTGH B06



**Figure 5-50:** *Phong Tho* of HTGH B06

To sum up, the transformation of spatial organization of HTGHs in this type can be concluded as follows.

If the spaces in a HTGH is needed for public use, it will be altered in functions. All the original spatial functions are rearranged for using as public space for recreation (HTGH C16) or monument (HTGH A17).

The purpose for clan worship also is another cause that determines the alteration in functional patterns of HTGHs. In general, some original functional patterns in *Nha Chinh* such as *Phong Khach*, *Phong Ngu*, and *Phong Thu Gian*) were turned to vacant space, while the space for *Phong Tho* was extended to the front and two sides for the space of clan worship. *Nha Phus* either remained their functions (HTGHs A01, A15, and C15) or were extended to the back for using as living space of the family (HTGH B07).

In the other HTGHs in this type (HTGHs A21, B05, B06, C09, and C14), *Nha Phus* were extended to their back with the alteration in room functions due to the viewpoints of users.

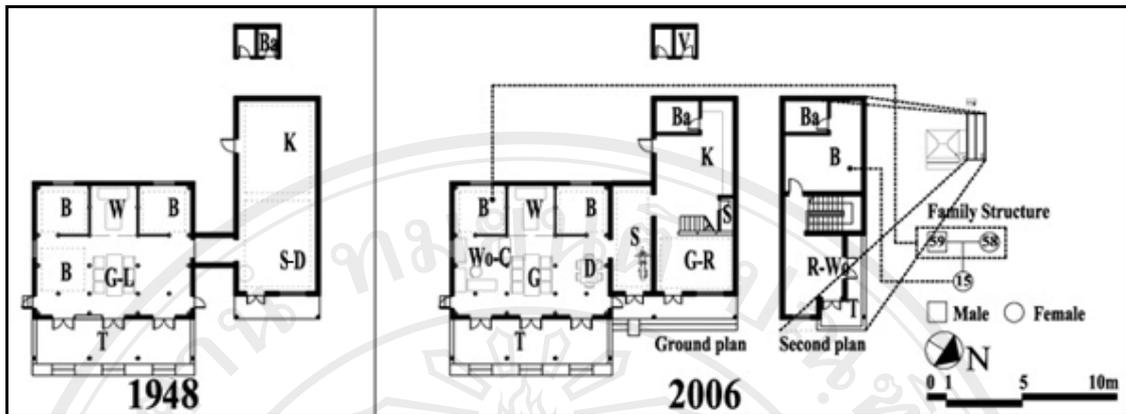
### 5.5.6 House Type B-3 (HTGHs A11, A14, A18, B04, B18, B20, and C05)

Among seven HTGHs in this type, HTGH B04 is converted into a public building. In the beginning, the house belonged to Mr. Ho Dinh Chu, who left it in 1975 when Thuan Loc Popular Committee took over the power and used the house as an office. In 2003, the house was used as *Kho* and vacant space, while a new two-storied building on its left side was built for working place (Fig. 5-51).

The transformation of spatial organization in HTGH A18 is a good representative for the other HTGHs in this type (Fig. 5-52). The owner bought the land and built the house in 1948 following type A of *Nha Chinh* (one *gian* & two *chais*). At the beginning, the functional patterns in *Nha Chinh* and *Nha Phu* of HTGH A18 was quite similar to those of HTGH A01 (Fig. 5-4), HTGH A03 (Fig. 5-35), and HTGH A06 (Fig. 5-43). *Phong Ve Sinh* was also located outside in the rear of *Nha Phu*.



**Figure 5-51:** HTGH B04



**Notes:** B-Phong Ngu; W-Phong Tho; D-Phong An; R-Phong Thu Gian; S-Kho; K-Phong Bep; Ba-Phong Ve Sinh; T-Hien; G-Phong Khach; L-Phong Sinh Hoat Chung; Wo-Phong Lam Viec; V-Vacant space; T-Hien.

**Figure 5-52:** Transformation of spatial organization in HTGH A18

After the tragic flood in 1999, the house was in really condition. The front verandas of *Nha Chinh* and *Nha Chinh* were destroyed and the wooden structure was ruined. Then, the owner repaired the veranda, elevated the flood, and tiled the new roof of *Nha Chinh*, while *Nha Phu* was rebuilt into a new two-storied structure to provide shelter in case of flood. At present, there are *Phong Khach* which also serves as *Phong Thu Gian*, one *Phong Bep*, *Kho*, and *Phong Ve Sinh* in the ground floor, while the second floor consists of *Phong Lam Viec* (also incorporates *Phong Thu Gian*) and *Phong Ngu* with a private *Phong Ve Sinh* inside.

In *Nha Chinh*, two *Phong Ngus* and *Phong Tho* in the rear part remain on their original positions. The original *Phong Khach* that also functioned as *Phong Sinh Hoat Chung* is now turned to *Phong Khach*, which is only used on ceremonial days such as *Tet*. In addition, there are a *Phong Lam Viec* for the owner (Formerly was *Phong Ngu*) as shown in Fig. 5-53 and a new *Phong An*, which was added in the middle left *chai*. The space in the middle, flanked by *Nha Chinh* and *Nha Phu* is used as *Kho* (Garage for motorcycles), while the original *Phong Ve Sinh* was left to be a vacant space.



**Figure 5-53:** *Phong Lam Viec* of the owner in HTGH A18

The transformation of the other HTGHs in this type is similar to that of HTGH A18. However, the owner of HTGH C05 built a new mezzanine in *Nha Phu* as a shelter in case of flood, while a part of *Nha Phu* in HTGHs A11, A14, B18, and B20 was extended to be a two-storied building due to the disaster from the flood (Fig. 5-54 and 5-55).



**Figure 5-54:** Mezzanine in HTGH C05



**Figure 5-55:** Two-storied *Nha Phus* in HTGHs A11, A14, B18, and B20

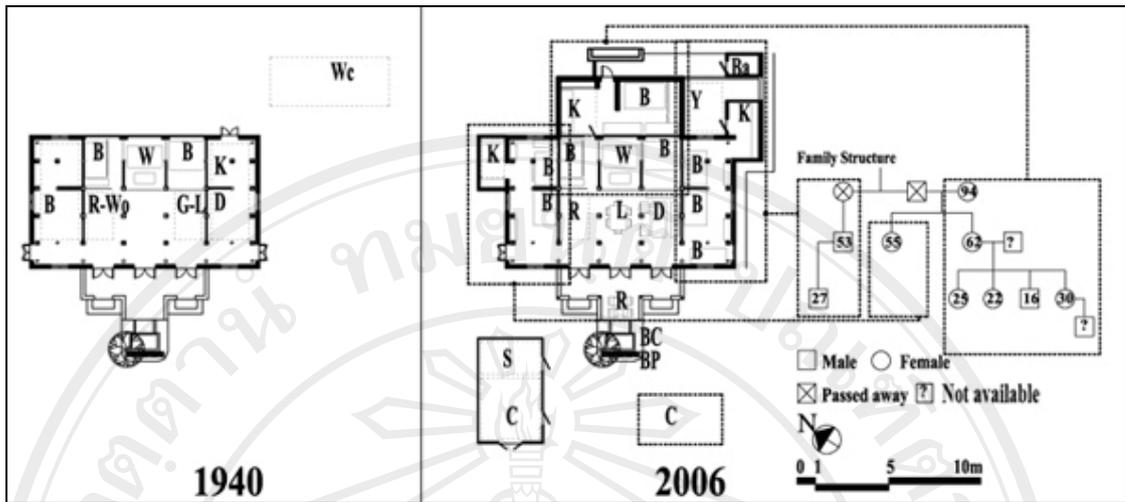
Two directions of the transformation of HTGHs in the type B-3 could be observed in the above analysis. In the first direction, the function of HTGH B04 was change to the office for Thuan Thanh Popular Committee.

In the second direction, the cause of transformation in other HTGHs (HTGHs A11, A14, A18, B18, B20, and C05), is for building shelter in case of flood . Among these HTGHs, *Nha Phu* of HTGH A18 was rebuilt into a two-storied structure. In HTGHs A11, A14, B18, and B20, a part of *Nha Phus* was extended to two-storied structure, while a mezzanine was built in *Nha Phu* of HTGH C05.

#### 5.5.7 House Type A-4 (HTGHs A08, A12, B09, B10, B11, B19, B21, C03, and C11)

Among the HTGHs in this type, the spatial organization of HTGHs A08, A12, B09, B10, and C11 was transformed due to the growth of family members and the need of space for doing business. HTGH B09, built in 1940, is chosen to be a representative for analyzing the above all HTGHs. Originally, *Nha Chinh* of HTGH B09 had three *Phong Ngus*, one *Phong Bep*, *Phong An*, *Phong Tho* located in the rear middle *gian*, *Phong Khach* functioned as *Phong Sinh Hoat Chung*, and *Phong Lam Viec* incorporating with *Phong Thu Gian*. *Phong Ve Sinh* was located outside in the left rear part of *Nha Chinh* (left picture in Fig. 5-56).

The growth of family members is the main reason of transformation. The house was enlarged and new buildings were added to accommodate three households of 11 family members. The first household is for a 55-years-old daughter of the owner. The household occupies the right *Chai* of the house for a living space, which consists of two *Phong Ngus* and a *Phong Bep* that was added later. The left *chai* is used as living space of the second household with two members. The functional spaces of this *chai* consists of three *Phong Ngus* and another *Phong Bep* that was extended to the rear left side of the house. A new *Nha Phu* was added in the rear of *Nha Chinh* and it functions as *Phong Ngu* and *Phong Bep* for the third household, which caters the family of eight. The members of the third household also use two *Phong Ngus* located on both sides of *Phong Tho*. *Phong Khach*, *Phong An*, and *Phong Thu Gian* are the sharing spaces for all family members of the three households. Only one *Phong Ve Sinh*, which remains on its original position, is used for all family members in this HTGH.



**Notes:** B-Phong Ngu; W-Phong Tho; D-Phong An; R-Phong Thu Gian; S-Kho; K-Phong Bep; Ba (Wc)-Phong Ve Sinh; T-Hien; G-Phong Khach; L-Phong Sinh Hoat Chung; Wo-Phong Lam Viec; Y-Yard; C-Space for business ventures; BP-Binh Phong; BC-Be Can.

**Figure 5-56:** Transformation of spatial organization in HTGH B09

In addition, a new room was built in front of the left *chai* for a *Kho* and vehicle repaired shop, while the land in front of the right *Chai* is also used as stall for selling *Banh Loc* (The name of a local cake) as shown in Fig 5-57.



**Figure 5-57:** Commercial space in HTGH B09

Although the transformation of HTGHs A12, B10, and C11 can be represented by the transformation of HTGH B09 as mentioned above, there is a minor difference. That is, new buildings were added adjoining *Nha Chinh* and *Nha Phu* in HTGH A12 due to the growth of family members and the business ventures (The new building

used for business venture in this HTGH is in the right building in Fig. 5-58). The owner of HTGH B10 uses one part of *Nha Chinh* for commercial purpose (the left space in Fig. 5-59). In HTGH C11, two new buildings were added for commercial purpose (One abuts on *Nha Phu* and the other was built separately from *Nha Chinh* and *Nha Phu*).



**Figure 5-58:** HTGH A12

**Figure 5-59:** HTGH B10

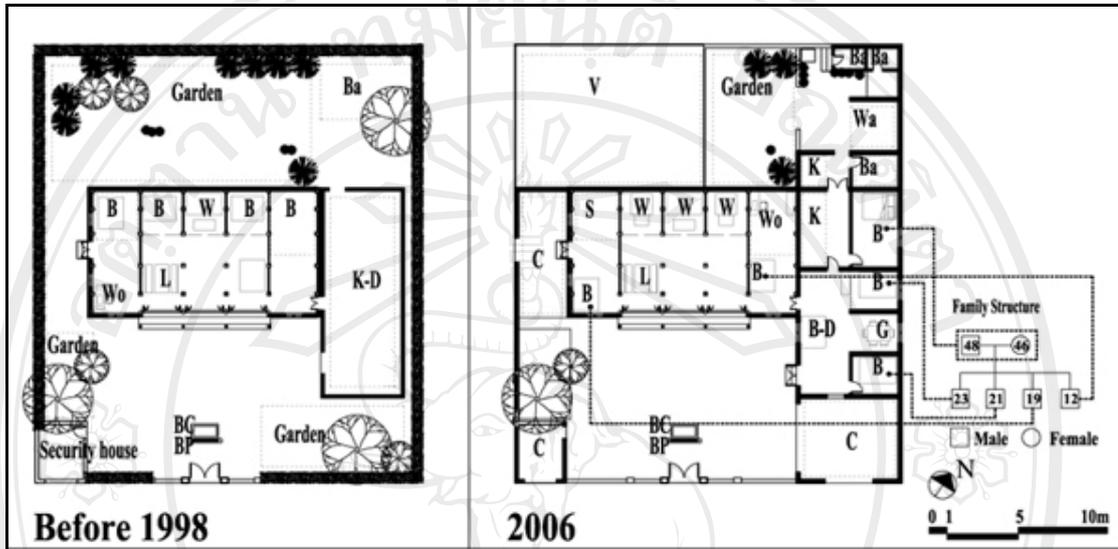
By interviewing with the inhabitants, the other HTGHs (B11, B19, B21, and C03) in this type were transformed due to the growth of family members, the need of space for doing business, and clan worship. For this case, HTGH B19 is chosen to analyze its transformation.

The original functional spaces in *Nha Chinh* of the HTGH were quite similar to those of HTGH B12 (Fig. 5-41) or HTGH B14 (Fig. 5-39). *Nha Phu* of HTGH B19 was used as *Phong Bep* and *Phong An*. *Phong Ve Sinh* was located outside in the rear part of *Nha Phu*. In addition, there was a small room in the front on the right side of the land, which was used as a guardhouse.

At present, *Nha Chinh* is used as *Phong Tho*, the space for clan worship, extended to the space of two previous *Phong Ngus* in the *Gians*. The previous *Phong Sinh Hoat Chung* remains on its original position and it is mainly used on ceremonial days. In addition, there are two *Phong Ngu*, one *Phong Lam Viec*, and *Kho* in *Nha Chinh* as shown in the right picture of Fig. 5-60.

The alteration in *Nha Chinh* led to the subsequent enlargement of *Nha Phu* to the back when there was an increase in family members. The present *Nha Phu*

consists of four *Phong Ngus* (three enclosed ones and the rest incorporates *Phong An*), one *Phong Khach*, and *Phong Bep*, while the new enlarged space has *Phong Ve Sinh*, *Phong Bep*, and washing space.



**Notes:** B-*Phong Ngus*; W-*Phong Tho*; D-*Phong An*; R-*Phong Thu Gian*; S-*Kho*; K-*Phong Bep*; Ba (Wc)-*Phong Ve Sinh*; G-*Phong Khach*; L-*Phong Sinh Hoat Chung*; Wo-*Phong Lam Viec*; Wa-Washing space; Y-Yard; C-Space for business ventures; V-Vacant space; BP-*Binh Phong*; BC-*Be Can*.

**Figure 5-60:** Transformation of spatial organization in HTGH B19

*Nha Phu* also was extended about 5 meters to its front to accommodate a shop for the business ventures. Moreover, the guardhouse gave away to a garage for motorcycles, while a new shop for selling *Banh Canh* (Vietnamese local name of a soup) was added adjoining the right *Chai* of *Nha Chinh*.

The transformations of HTGHs B11, B21, and C03 are similar to those of HTGH B19 except some minor differences. In HTGH B11, there are new buildings adjoining *Nha Phu* due to the business ventures, while in HTGH B21 and HTGH C03, the space for business ventures is separated from *Nha Chinh* and *Nha Phu*. For HTGH B19, the new buildings for business ventures were added in both positions (One abuts on *Nha Chinh* or *Nha Phu* and one is separated from *Nha Chinh* and *Nha Phu*).

As mentioned above, the tendencies of transformation of HTGHs in type A-4 can be concluded as follows.

Among the HTGHs in this type, the transformation of HTGHs A08, A12, B09, B10, and C11 is due to the combination of need of space for doing business and the growth of family members. While the other HTGHs (B09, B19, B21, and C03) are transformed not only because of need of space for doing business and the growth of the family members, but also for the purpose of clan worship.

The modification of functional spaces in *Nha Phu* and the extension of *Nha Phu* are due to the growth of the family members, while that of *Nha Chinh* is due to the purpose of clan worship.

#### **5.5.8 House Type B-4 (HTGHs A02, A19, and B08)**

In the beginning, the spatial patterns in *Nha Chinh* and *Nha Phu* of HTGH B08 is similar to those of HTGH B19 (Fig. 5-60) except a minor difference on left *Gian* of *Nha Chinh* in HTGH B08, used as *Kho* and the existence of one more *Phong Ngu* in *Nha Phu* (the left picture in Fig. 5-61).

The flood in 1999 was the main cause of destruction of *Nha Phu* of HTGH B08. After the flood, the owner rebuilt *Nha Phu* into a two-storied structure to provide shelter for the family from flood, while in *Nha Chinh*, new roof was tiled and the floor was elevated in 2000. At that time, *Nha Chinh* was used as *Phong Tho* for clan worship taking the place of the previous *Phong Ngu* and *Kho* located in the *Gians*, while the original *Phong Khach* was mainly made use on ceremonial days such as *Tet*. Two *Chais* in *Nha Chinh* were altered for *Khos* except *Phong Ngu* in the left *Chai* remained its position.

In *Nha Phu*, the stair is placed in the middle, flanked by *Phong Ngu* that formerly was *Phong Bep* and *Phong Khach* also functioning as *Phong Sinh Hoat Chung*. In the rear part of *Nha Phu*, there are *Phong Ve Sinh* adjoining *Phong Ngu*, *Phong Bep*, and *Phong An*. On the second floor, *Phong Sinh Hoat Chung* that

incorporates *Phong Thu Gian* is placed at front, while two *Phong Ngus* and *Phong Ve Sinh* are laid in the back (the right picture in Fig. 5-61).



**Notes:** B-*Phong Ngu*; W-*Phong Tho*; D-*Phong An*; R-*Phong Thu Gian*; S-*Kho*; K-*Phong Bep*; Ba-*Phong Ve Sinh*; G-*Phong Khach*; L-*Phong Sinh Hoat Chung*; Wo-*Phong Lam Viec*; Wa-Washing space; T-*Hien*; V-Vacant space.

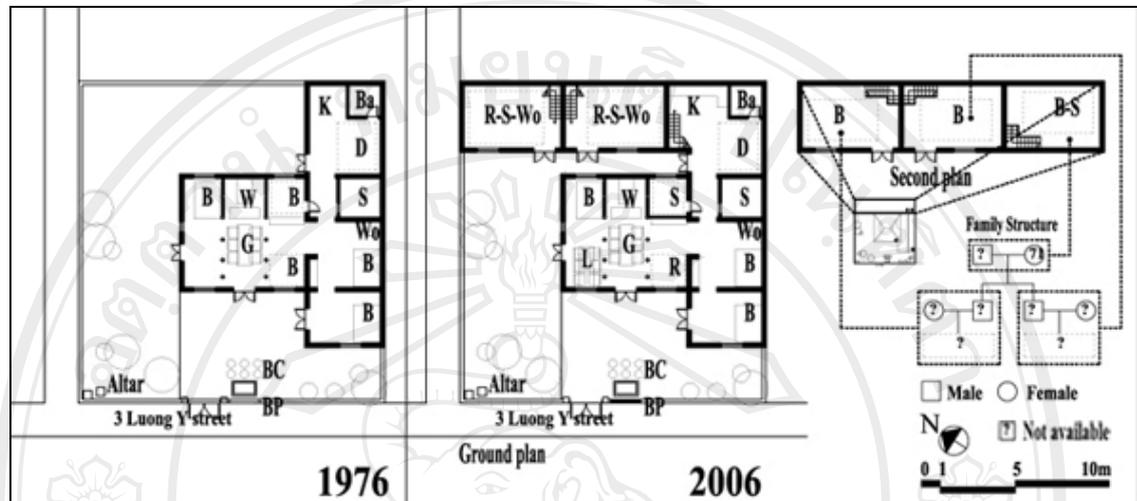
**Figure 5-61:** Transformation of spatial organization in HTGH B08

The transformation of spatial patterns HTGH A02 can be represented by that of HTGH B08. However, at present *Nha Chinh* of HTGH A02 is used as *Phong Tho*, *Phong Ngu* for the owner's father, and *Kho* for storing bicycles and motorcycles.

The HTGH A19 was built in 1951 and the present owner bought it in 1975. Originally, *Nha Chinh* of the house had *Phong Tho* that was located in the middle rear part of *Gian*, three *Phong Ngus*, and a *Phong Khach* in front of *Phong Tho*. *Nha Phu* consisted of two *Phong Ngus* in the front, one *Phong Lam Viec*, *Kho*, *Phong An*, *Phong Bep*, and *Phong Ve Sinh* in the rearmost as shown in the left picture in Fig. 5-62.

When two sons of the owner got married, the house accommodated three households as shown in the family structure in Fig. 5-62. *Nha Phu* was expanded to the rear part of *Nha Chinh* to use for living space of two sons' families. In addition,

the rear part of *Nha Phu* was vertically extended into a two-storied structure to make shelter in case of flood.



**Notes:** B-Phong Ngu; W-Phong Tho; D-Phong An; R-Phong Thu Gian; S-Kho; K-Phong Bep; Ba-Phong Ve Sinh; G-Phong Khach; L-Phong Sinh Hoat Chung; Wo-Phong Lam Viec; BP-Binh Phong; BC-Be Can.

**Figure 5-62:** Transformation of spatial organization in HTGH A19

At present, *Nha Chinh* consists of a *Phong Ngu* and *Phong Sinh Hoat Chung* in the right *Chai*, *Phong Tho* and *Phong Khach* in the middle *Gian*, and *Phong Thu Gian* and *Kho* that formerly were two *Phong Ngus*. These spaces in *Nha Chinh* are shared by all members of three households.

The previous functional spaces in *Nha Phu* still remain their original positions and functions except a newly built stair in *Phong Bep*. The ground floor of the extended building is divided into two parts for two families of the sons. Each part had *Phong Thu Gian*, which also functions as *Phong Lam Viec* and *Kho*. The second floor is divided into three parts. Two parts are used as *Phong Ngus* for the families of the sons, while the third part is *Phong Ngu* and *Kho* for the owner.

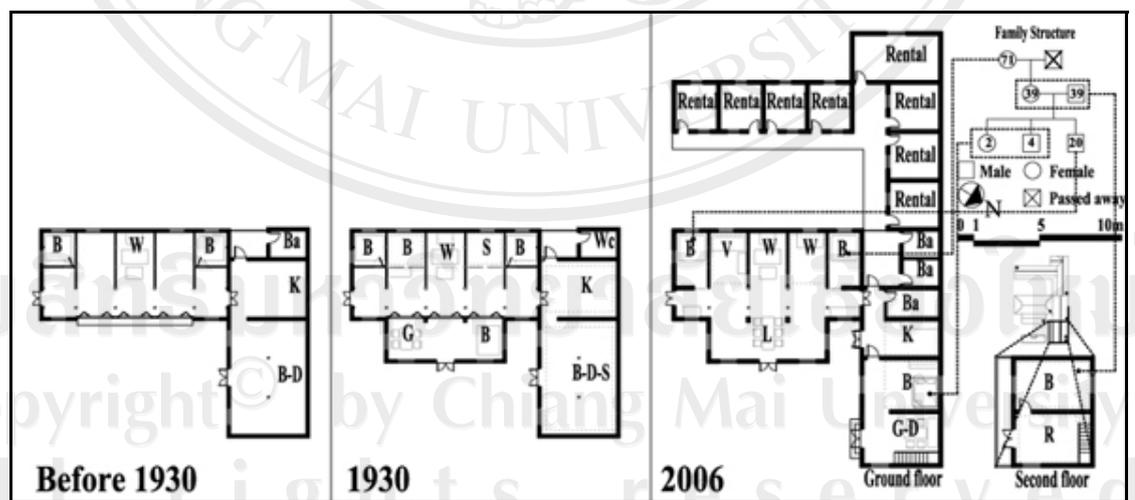
It is obvious that the functional spaces of this HTGH is similar to those of HTGHs A06 and B14 where *Nha Phu* is extended due to family growth and the need of shelter when flood, while the functional spaces of *Nha Chinh* are used as *Phong*

*Tho*, *Phong Sinh Hoat Chung* also incorporating *Phong Khach* for all family members.

From the analysis of the three HTGHs in type B-4, it is important to note that *Nha Chinh* usually became the space for *Phong Tho* due to the purpose of clan worship, while the extension in *Nha Phu* and the modification of its functional spaces are the solution to the matter of the growth of family members. The extension of *Nha Phu* or one part of it into a two-storied structure is for the case of flood

**5.5.9 House Type C-4** (HTGHs A04, A05, A07, A10, A13, A20, B02, B03, B13, B17, C07, C08, and C13)

The owner of HTGH B03, a representative of HTGHs in type C-4, is a descendent of one high-ranking mandarin of Nguyen Dynasty. The original spatial patterns in *Nha Chinh* consisted of two *Phong Ngus* in two *Chais* and a *Phong Tho* located in the middle *Gian*, while *Nha Phu* had *Phong Ngu* for female, *Phong An* which also incorporated *Phong Bep*, and *Phong Ve Sinh* (the right picture in Fig. 5-63).



Notes: B-*Phong Ngu*; W-*Phong Tho*; D-*Phong An*; R-*Phong Thu Gian*; S-*Kho*; K-*Phong Bep*; Ba-*Phong Ve Sinh*; G-*Phong Khach*; L-*Phong Sinh Hoat Chung*.

**Figure 5-63:** Transformation of spatial organization in HTGH B03

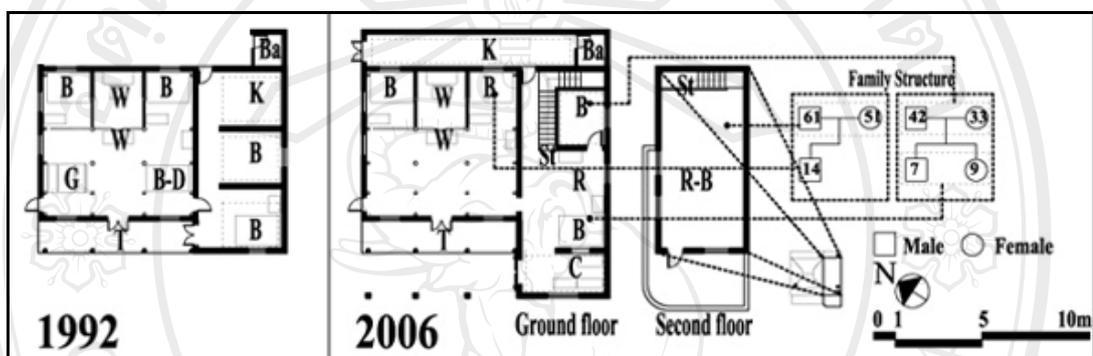
Later on, the former owner added three more *Gians* in front of *Nha Chinh*, which was used as *Phong Khach* in the right *Gian* and his *Phong Ngu* in the left *Gian*. There was no significant alteration in *Nha Phu* except the previous *Phong An* which also incorporated *Phong Ngu* for female as shown in the middle picture of Fig. 5-63.

After the tragic flood in 1999, the front part of *Nha Phu* was extended to a two-storied structure for preventing family from flood. In 2002, *Nha Phu* was expanded to its back to use as the space for rent and a new rental building was added adjoining the expanded space of *Nha Phu* in the rear of *Nha Chinh*. The extended building and the new building consist of seven rental rooms (the right picture in Fig. 5-63).

In the present *Nha Chinh*, the previous *Phong Tho* and two *Phong Ngu* located in two *Chais* still remain on their original positions, while the original *Kho* was converted to another *Phong Tho*. The other spaces in *Nha Chinh* were turned to vacant. In *Nha Phu*, the front part consists of a *Phong Ngu* and *Phong Khach* which also functions as *Phong An*. *Phong Bep* and *Phong Ve Sinh* are located in the rear part adjoining *Phong Ngu*. The second floor is divided into two parts by a brick wall to accommodate *Phong Ngu* and *Phong Thu Gian*.

The transformation of HTGH B03 can be a representative for transformation of HTGHs A05, A13, B02, B03, B13, and C17. However, there are minor differences among them. *Nha Phu* of HTGH A05 was extended to a two-storied structure to provide shelter in case of flood, and the space for doing business in HTGH A13 is both for a rental room and a garage for motorcycles. In HTGH B02, *Nha Chinh* is used for clan worship, while the alteration of spatial patterns is the same as in HTGH B03 except no space for doing business. There is no significant alteration of the functional patterns in *Nha Chinh* and *Nha Phu* of HTGH B13 except separated buildings were constructed due to the growth of population and the need of space for doing business. The transformation of HTGH C07 is similar to that of HTGH A05. However, there is no separated building for the business ventures.

Another house in the type C-4, which can be the representative of HTGHs A10 and C13, is HTGH A04. Originally, *Nha Chinh* had *Phong Tho* in the *Gian*, two *Phong Ngus* in the rear *Chais*, *Phong Khach*, and *Phong Ngu* functioning as *Phong An*. *Nha Phu*, which was laid perpendicularly on the left side of *Nha Chinh*, consisted of two *Phong Ngus* for female in the front part and a *Phong Bep* in the back. The *Phong Ve Sinh* was placed outside adjoining the *Phong Bep* (the left picture in Fig. 5-64).



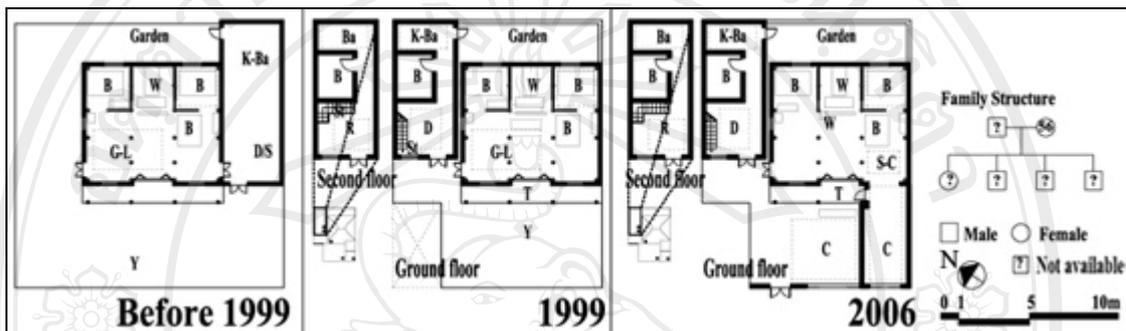
**Notes:** B-*Phong Ngu*; W-*Phong Tho*; D-*Phong An*; R-*Phong Thu Gian*; K-*Phong Bep*; Ba-*Phong Ve Sinh*; G-*Phong Khach*; C-Space for business ventures; T-*Hien*; St-Stair.

**Figure 5-64:** Transformation of spatial organization in HTGH A04

In 2002, *Nha Phu* was extended to the rear part of *Nha Chinh* for *Phong Bep* and was upgraded into two storied to provide shelter in case of flood. At present, next to the stairs, *Phong Ngu* for the owner and his wife replaces of the original *Phong Bep*. In the front part of *Nha Phu*, one of the previous two *Phong Ngus* was converted to *Phong Thu Gian* while the other remained its original position. Due to the need of space for doing business, the owner extended *Nha Phu* to its front for an electric shop (Fig. 5-64)

In general, the transformation of HTGH A04 can also represent that of HTGHs C08 and A07. However, in HTGH A07, a new separated building was constructed due to the growth of family members, while In HTGH C08 there are new buildings adjoining *Nha Phu* for the business purpose and serving the growth of family members.

Among the other HTGHs in type C-4 (HTGHs A20 and B17), HTGH A20 can be chosen as the representative in the transformation of the spatial organization as shown in Fig. 5-65. Firstly, the alteration of the spatial patterns of HTGH A20 is due to the causes of the growth of family members and the flood protection (the left picture and the middle picture in Fig. 5-65). See also the transformation of A02 mentioned in the type B-4.



**Notes:** B-Phong Ngu; W-Phong Tho; D-Phong An; R-Phong Thu Gian; K-Phong Bep; Ba-Phong Ve Sinh; G-Phong Khach; L-Phong Sinh Hoat Chung; S-Kho; C-Space for business ventures; T-Hien; St-Stair.

**Figure 5-65:** Transformation of spatial organization in HTGH A20

At present, the land in front of *Nha Chinh* is for a shop selling commodities and clothing due to the business purpose. In *Nha Chinh*, the previous *Phong Khach* has lost its function, while the front left part is used as *Kho* for the shop. The other spatial functions in *Nha Chinh* and *Nha Phu* have not altered since 1999.

The transformation of HTGH B17 is similar to that of HTGH A20 except that there is no new space for doing business adjoining *Nha Phu*.

Transformation of the 13 HTGHs in type C-4 is complex. Normally, *Nha Phu* or one part of it was extended into two-storied structure for flood protection. In some HTGHs such as A20 and B17, the two-storied structure of *Nha Phu* is also built due to the cause of the growth of family members. The business purpose was the main factor that shapes the transformation of all HTGHs in this type except HTGH B02. Normally, a part of *Nha Chinh* or *Nha Phu* was altered as the space for the business

purpose. Also, new extended buildings, either adjoining or separate from *Nha Chinh* or *Nha Phu*, are the spaces for doing business.

To sum up, Fig. 5-66 illustrates the variation in composition of form and space of HTGHs from nine types according to the directions and the causes of transformation as in Table 5-7<sup>2</sup>. Each type can be split further into various types, for example those of type A-1 can be divided into A-11, A-12, A-13, and A-14 according to positions of the space for doing business. From the Fig. 5-66, needless to say, the need of space for doing business is the typical factor making the transformation of 32 HTGHs, while only three HTGHs (A17, B04, and C16) were transformed due to the purpose of public usage. Moreover, most alterations in HTGHs are mainly concentrated in *Nha Phu* and garden due to various purposes such as the growth of family members, the space in case of flood, and the need of space for doing business. The unique characteristic of transformation of HTGHs is expressed in *Nha Chinh*, when only its functional spaces are altered for the purpose of clan worship.

As can also be seen in Fig. 5-66, if the house alteration is necessitated by the need of space for doing business, a part of *Nha Chinh* or *Nha Phu* was altered as a solution (A-11, A-41, C-41, C-42, C-43, C-45, and C-410 in Fig. 5-66). If sufficient ground space is available, an extension of *Nha Phu* or a new separate building were constructed as a possible solution (A-12, A-13, A-14, A-42, A-43, A-44, A-45, A-46, A-47, C-45, C-46, C-47, C-48, C-49, and C-410 in Fig. 5-66). There are various kinds of business ventures that can be categorized such as garage, stall, small shop, small restaurant, and room for rent.

*Nha Chinh* is always the space for the purpose of clan worship (A-31, A-32, A-47, B-42, and C-44 in Fig. 5-66). Normally, the space in the middle of the rear *gian* is used as *Phong Tho* and it can be extended to its front or to two sides due to that purpose.

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<sup>2</sup> For simple illustration of transformation of all 59 surveyed HTGHs, Type 1 of arrangement between *Nha Chinh* and *Nha Phu* (*Nha Phu* is laid perpendicularly on the left side of *Nha Chinh*) is the representative of the other types of arrangement as in Fig. 5-27.

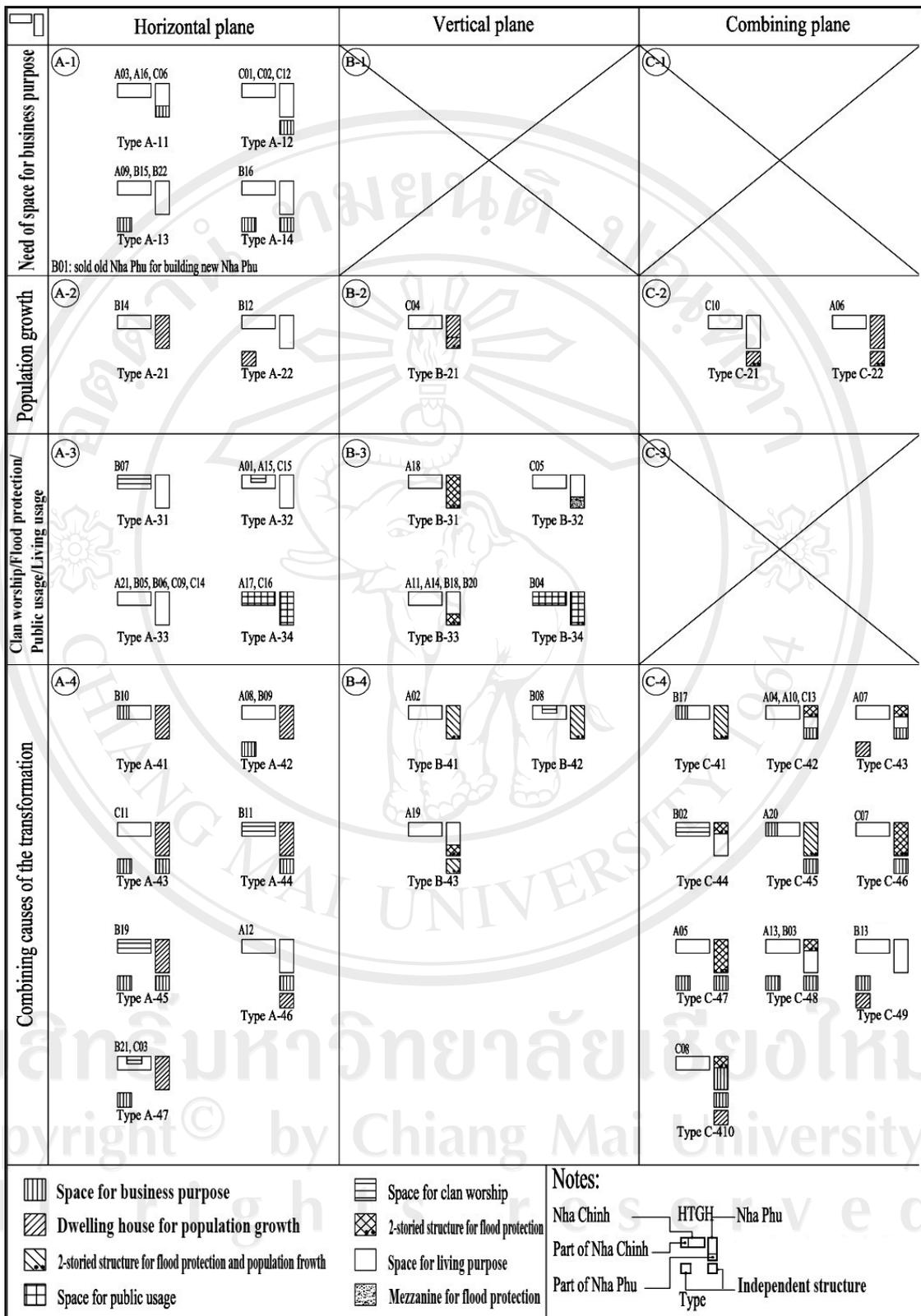


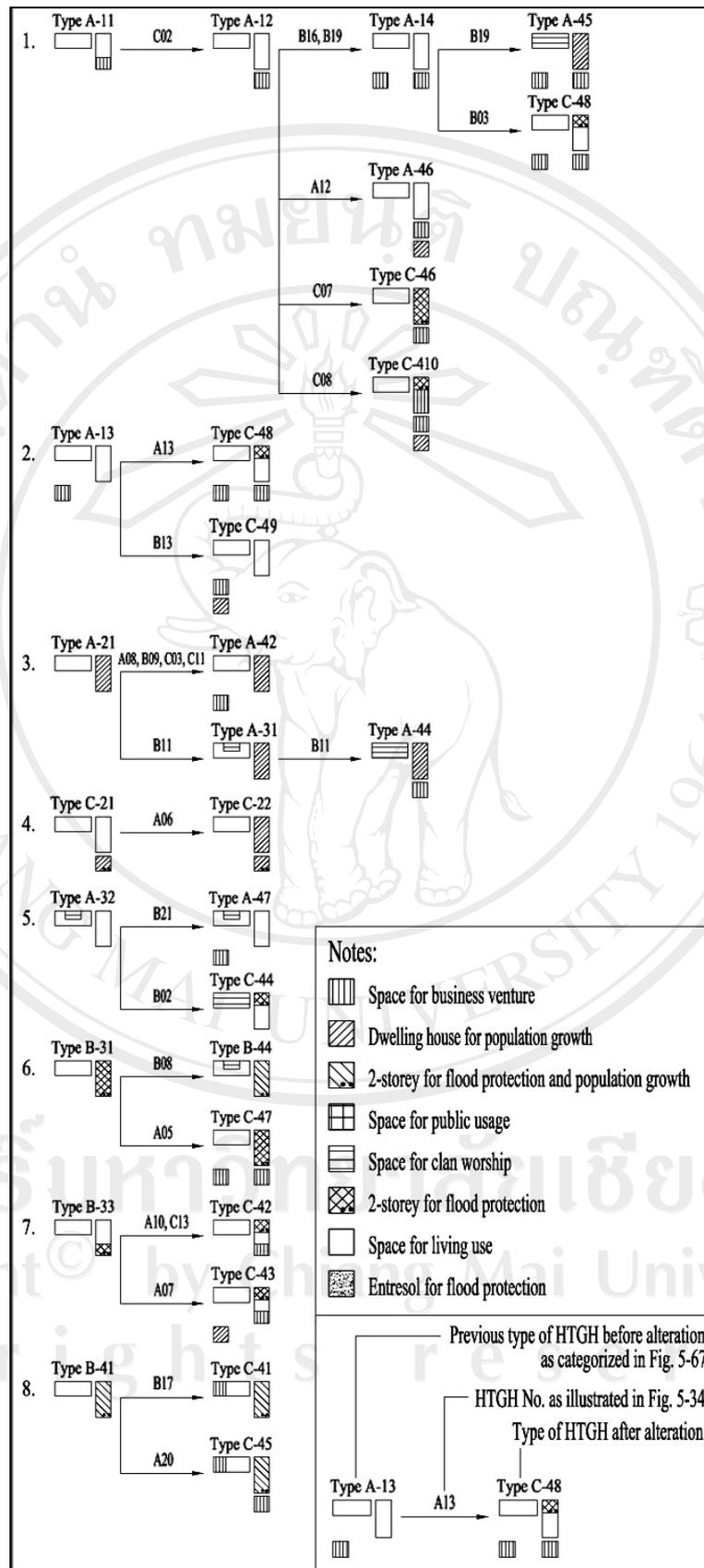
Figure 5-66: Physical transformation of HTGHs in the citadel area

The growth of family members is also the factor that makes transformation of HTGHs. If sufficient ground space is available, *Nha Phu* was rebuilt or/and extended with the alteration in its spatial functions (A-21, A-31, A-46, B-41, B-42, B-43, B-44, B-45, and C-22 in Fig. 5-66). In addition, new buildings located separately from *Nha Chinh* and *Nha Phu* are also due to the family growth (A-22, C-49, and C-410 in Fig. 5-66). If the ground space is insufficient, possible alternatives such as vertical expansions or modifications of functional spaces are ventured (B-21, C-21, and C-22 in Fig. 5-66). Normally, when the *Nha Phu* was extended into two-storied structure for the growth of family members, it can also be the space for preventing the family from flood (B-41, B-42, B-43, C-41, and C-45 in Fig. 5-66).

Due to the shelter in case of flood, *Nha Phu* (or its part) was extended into two-storied structure (B-31, B-33, B-43, C-42, C-43, C-44, C-46, C-47, and C-410 in Fig. 5-66) or new mezzanine was added in *Nha Phu* (B-32 in Fig. 5-66).

There are a few HTGHs in the citadel area whose spatial functions are altered due to living purpose such as those of type A-33. In addition, three HTGHs are used as public buildings; Thuan Loc Popular Committee, Ho Chi Minh Monument, and Nursery.

With the above nine types of HTGHs as in Fig. 5-66, the transformation among them can also be observed (Fig. 5-67). Fig. 5-68 illustrates that the transformation of nine types can be classified into eight directions. Each direction can be further divided into different types according to their possible transformation. For example, type A-13 in the direction 2 formerly had an independent structure for business purpose. It can be transformed into two types; C-48 when a part of *Nha Phu* is extended into two-storied structure and new independent structure is added respectively due to flood protection and space for doing business; and C-49 when newly built structure is due to family growth. Generally, the spatial functions of HTGHs are transformed from the simple to complex form and space.



**Figure 5-67:** Transformation process of HTGHs among nine types as in Fig. 5-66

## 5.6 Conclusion

From the above analysis, some unique characteristics of transformation of HTGHs can be concluded as follows.

By the difference in the number of *Gians* and *Chais* in *Nha Chinh*, there are three basic types of HTGHs, which are types A (one *gian*-two *chais*), B (three *gians*-two *chais*), and C (three *gians*). Among three types, most HTGHs of type B (three *gians* – two *chais*) are original dwelling houses of high-ranking mandarins and royal families during Nguyen dynasty except five HTGHs (two of them are used for clan worship, while the rest is not clear). Most original owners of HTGHs of type A (one *gian* – two *chais*) and type C (three *gians*) are ordinary people except five houses of type A which originally was dwelling houses of royal families of Nguyen dynasty. This demonstrates that the number of *gians*, in some ways, can represent the social status of the owners.

According to the facade elements and designs of *Nha Chinh*, the surveyed HTGHs could be classified further into seven types. Among these types, type 5 (HTGH with brick walls/veranda/canopy) is the typical type for the elements and designs of facade in the present. The transformation of the facade elements and designs of HTGHs can be found. The wooden veranda columns of *Nha Chinh* are converted to brick columns. The wooden front wall of *Nha Chinh* is replaced by brick wall, while veranda roof tiled with *Liet* is replaced by *Moc* or is converted into concrete roof or corrugated iron roof. By interviewing with dwellers, the facade elements and designs of HTGHs are transformed for protecting the houses from strong sun, heavy rain, and harsh climate. However, extension of new canopy for answering the need of space for doing business can be observed in several HTGHs located nearby business areas.

With the undergone land subdivision of at least 24 HTGHs in the citadel area, the original rectangular shape of their compounds have been altered into various configurations. Normally, two sides of *Nha Chinh* are the land that the owners usually made the land subdivision. The arrangement between *Nha Chinh* and *Nha Phu* of

HTGHs in the citadel area could be divided into four types as shown in Fig. 5-26. Among these types, type I (*Nha Phu* is laid perpendicularly on the left side of *Nha Chinh*) is the typical type in which *Nha Chinh* and *Nha Phu* are arranged follow the “Dinh” shape of Chinese letter, while the other types were altered from type I as shown in Fig. 5-27. The convenience in daily activities where *Nha Phu* with *Phong Bep*, *Phong Ve Sinh*, and *Phong Kho* abuts on the left side (space for female) of *Nha Chinh* is the main reason for the predominant number of HTGHs in this type I.

There are a few HTGHs with all elements (gate and fence, alley, *Binh Phong*, *Be Can*, symbols of White Tiger and Green Dragon) in the citadel area (Table 5-5). At present, the alley and the symbols of White Tiger and Green Dragon in layout of most HTGHs have gradually been disappeared due to the influence of the land subdivision, the use of space for doing business, and the growth of family members, while a significant number of *Binh Phong* and *Be Can* still exist in 42 HTGHs. In total, the lay out of HTGHs looks like a small scale of the citadel where *Binh Phong*, *Be Can*, symbols of White Tiger and Green Dragon are respectively like *Ngu Binh* Mountain, *Huong* River, Hen sandbank, and Da Vien sandbank. Moreover, there is a large number of *Nha Chinh* of HTGHs, which have the same facing orientation (Southeast) to the citadel. This demonstrates that there is an intimate relationship between HTGHs and the citadel relating to the religious belief of Hue people, while Feng Shui principle still have an influence on the arrangement of elements in layout of HTGHs.

Looking into the spatial functions of 59 surveyed HTGHs, their transformation can be illustrated as variants of nine types according to directions (horizontal plane, vertical plane, and combined plane) and causes (for example; need of space for business purpose, family growth, purpose for clan worship, and combination of various purposes) of transformation as shown in Fig. 5-66.

Most of transformation was done due to the need of space for doing business accounting for 32 HTGHs, while only three HTGHs were transformed due to the public purpose. Only *Nha Chinh* is the space due to the purpose of clan worship, while most transformations mainly concentrate in *Nha Phu* and garden. This indicates

that the transformation in the spatial functions has not much related to the alteration of façade elements and designs of *Nha Chinh*. However, in several HTGHs (A20 and C12), the need of space for doing business leads to the extension of canopy in front of *Nha Chinh*. In addition, the transformation of nine types of HTGHs can be found by their eight directions (Fig. 5-67). Each direction can be further divided into different types according to their possible transformation. Normally, the spatial functions of HTGHs are transformation from simple to complex form and space.

From the above analysis, an understanding about transformation of HTGHs in the citadel area will be a valuable reference for establishing some preliminary guidelines for their conservation into contemporary use.