

ORIGINAL ARTICLE

Adaptive spatial genotypes in Thai Lue houses across rural–town–urban contexts: A space syntax study in Xishuangbanna, China

Supplementary Files

S1. Spatial layouts and J-graphs for contemporary cases

This supplementary section presents the floor plans and corresponding justified graphs (J-graphs) for all 24 contemporary case studies across the six selected settlements, categorized into three distinct urbanization contexts: urban (Mandou and Manla), town (Mane and Manzhang), and rural (Mansailong and Manxiu).

S1.1. Urban context: Mandou and Manla villages

(i) Mandou village cases

A mandou01

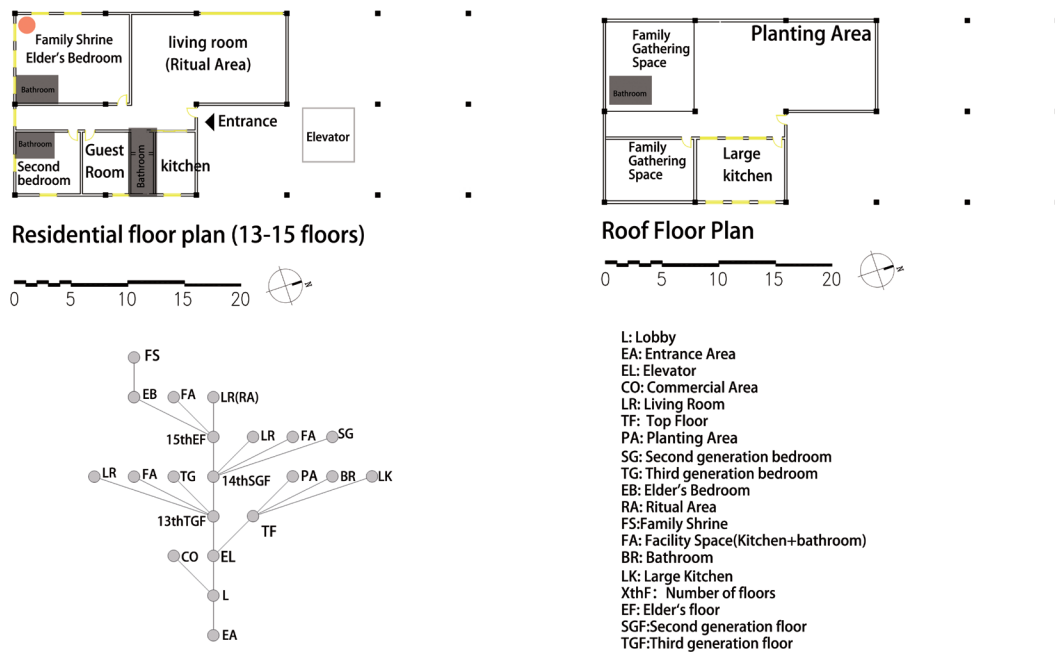
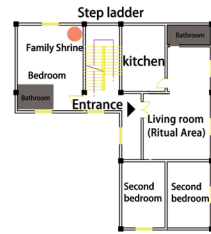


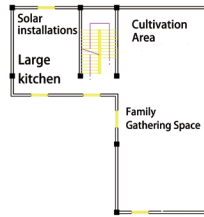
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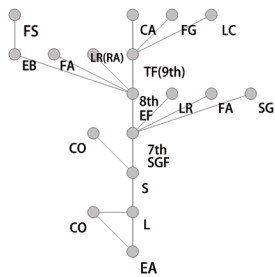
**B**  
mandou02



Residential floor plan (7-8 floors)  
0 5 10 15 20

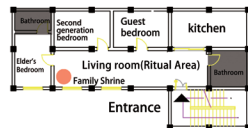


Roof Floor Plan  
0 5 10 15 20

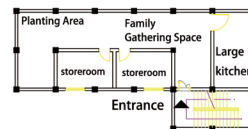


- L: Lobby
- EA: Entrance Area
- EL: Elevator
- CO: Commercial Area
- LR: Living Room
- RL: Residential layers
- TF: Top Floor
- CA: Cultivation Area
- SG: Second generation bedroom
- TG: Third generation bedroom
- EB: Elder's Bedroom
- RA: Ritual Area
- FS: Family Shrine
- FG: Family gathering space
- FA: Facility Space(Kitchen+bathroom)
- LK: Large Kitchen
- S: Staircase
- XthF: Number of floors
- EF: Elder's floor
- SGF: Second generation floor
- TGF: Third generation floor

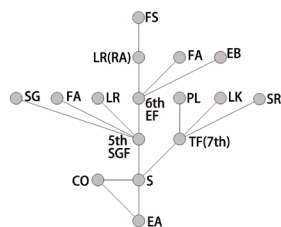
**C**  
mandou03



Residential floor plan (5-6 floors)  
0 5 10 15 20



Roof Floor Plan  
0 5 10 15 20



- EA: Entrance Area
- CO: Commercial Area
- LR: Living Room
- TF: Top Floor
- PA: Planting Area
- SG: Second generation bedroom
- EB: Elder's Bedroom
- RA: Ritual Area
- FS: Family Shrine
- FA: Facility Space(Kitchen+bathroom)
- LK: Large Kitchen
- S: Staircase
- XthF: Number of floors
- EF: Elder's floor
- SGF: Second generation floor

Figure S1. Continued

(Cont'd...)

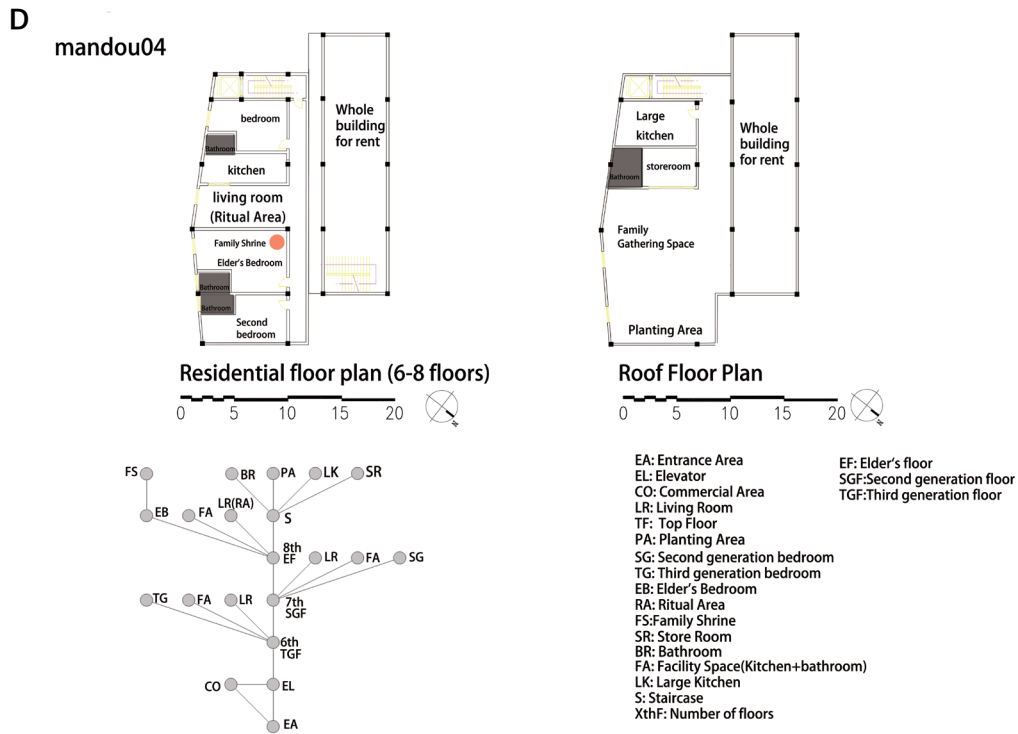


Figure S1. Floor plans and J-graphs for Mandou cases. (A) Mandou 01; (B) Mandou 02; (C) Mandou 03; (D) Mandou 04. Source: Drawings by the authors (ii) Manla village cases

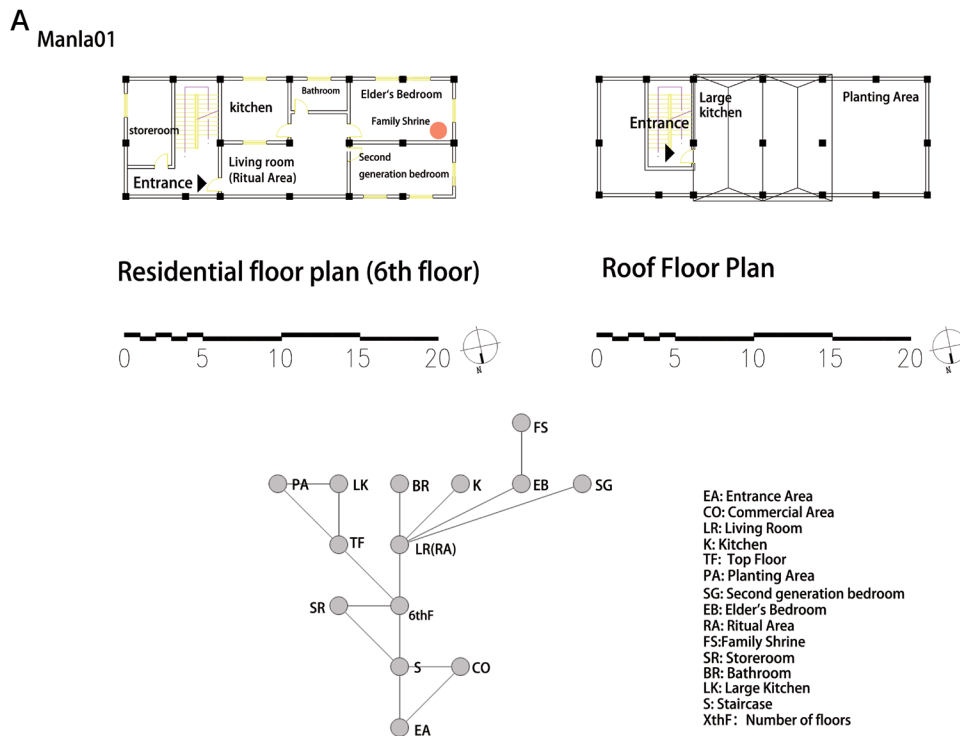
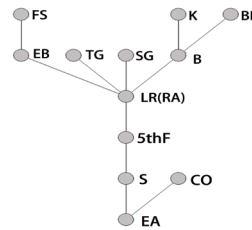
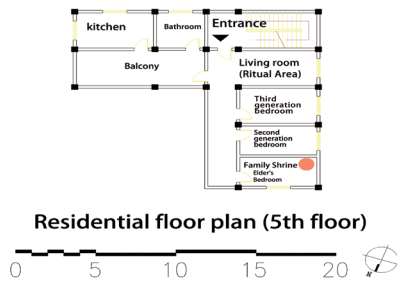


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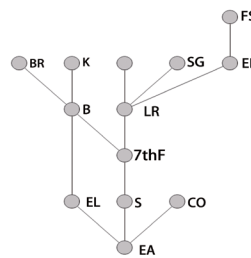
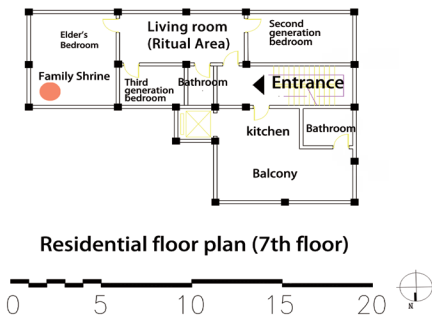
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**B** Manla02



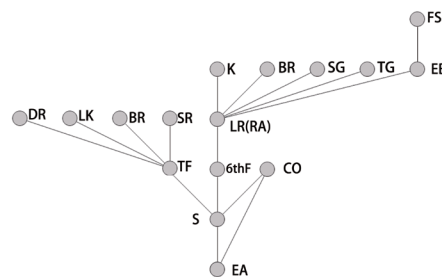
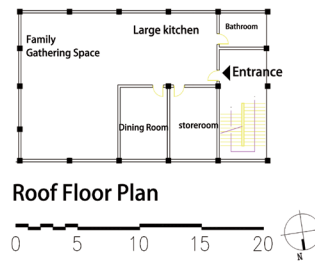
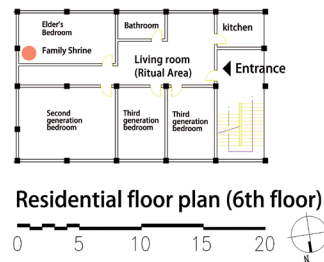
EA: Entrance Area  
CO: Commercial Area  
LR: Living Room  
K: Kitchen  
SG: Second generation bedroom  
TG: Third generation bedroom  
EB: Elder's Bedroom  
RA: Ritual Area  
FS: Family Shrine  
BR: Bathroom  
S: Staircase  
XthF: Number of floors  
B: Balcony

**C** Manla03



EL: Elevator  
EA: Entrance Area  
CO: Commercial Area  
LR: Living Room  
K: Kitchen  
SG: Second generation bedroom  
TG: Third generation bedroom  
EB: Elder's Bedroom  
RA: Ritual Area  
FS: Family Shrine  
BR: Bathroom  
S: Staircase  
XthF: Number of floors  
B: Balcony

**D** Manla04



EA: Entrance Area  
CO: Commercial Area  
LR: Living Room  
K: Kitchen  
TF: Top Floor  
PA: Planting Area  
SG: Second generation bedroom  
TG: Third generation bedroom  
EB: Elder's Bedroom  
RA: Ritual Area  
FS: Family Shrine  
SR: Store Room  
BR: Bathroom  
LK: Large Kitchen  
S: Staircase  
XthF: Number of floors  
DR: Dining Room

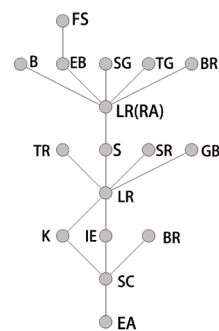
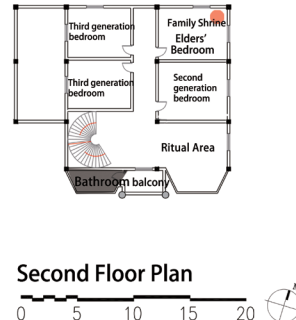
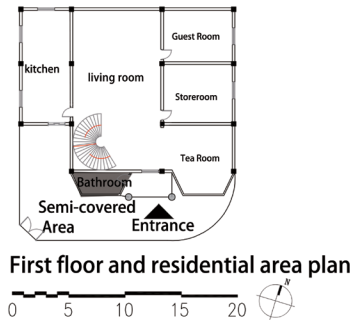
**Figure S2.** Floor plans and J-graphs for Manla cases. (A) Manla 01; (B) Manla 02; (C) Manla 03; (D) Manla 04. Source: Drawings by the authors

## S1.2. Town context: Mane and Manzhang villages

(i) Mane village cases

A

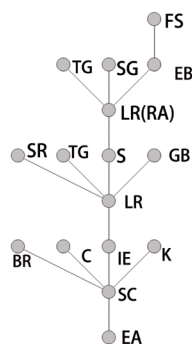
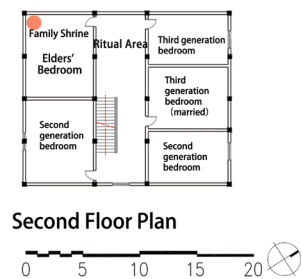
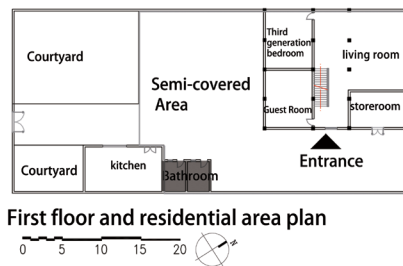
mane01



LR: Living Room  
 K: Kitchen  
 TR: Tea Room  
 GB: Guest Bedroom  
 SR: Store Room  
 SG: Second generation bedroom  
 TG: Third generation bedroom  
 EB: Elder's Bedroom  
 BR: Bathroom  
 RA: Ritual Area  
 SC: Semi-covered Area  
 FS: Family Shrine  
 S: Staircase  
 B: Balcony  
 IE: Indoor Entrance  
 EA: Entrance Area

B

mane02

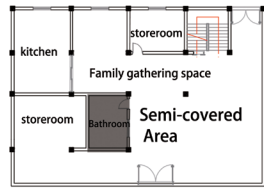


LR: Living Room  
 K: Kitchen  
 GB: Guest Bedroom  
 SR: Store Room  
 SG: Second generation bedroom  
 TG: Third generation bedroom  
 EB: Elder's Bedroom  
 BR: Bathroom  
 RA: Ritual Area  
 IE: Indoor Entrance  
 EA: Entrance Area  
 SC: Semi-covered Area  
 FS: Family Shrine  
 S: Staircase  
 C: Courtyard

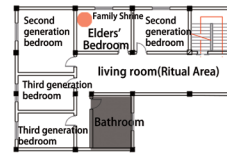
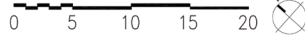
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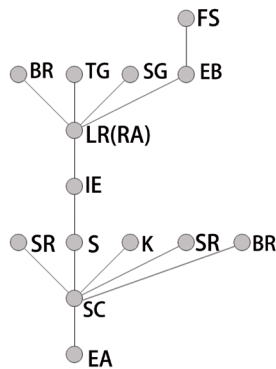
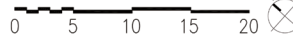
C  
mane03



First floor and residential area plan

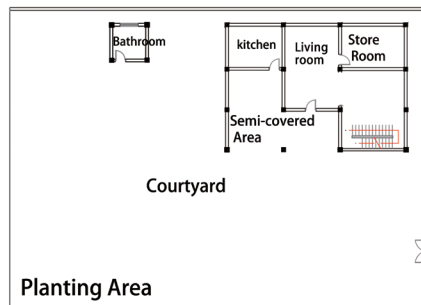


Second Floor Plan

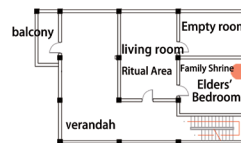
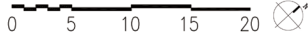


LR: Living Room  
K: Kitchen  
GB: Guest Bedroom  
SR: Store Room  
SG: Second generation bedroom  
TG: Third generation bedroom  
EB: Elder's Bedroom  
BR: Bathroom  
RA: Ritual Area  
SC: Semi-covered Area  
FS: Family Shrine  
S: Staircase  
IE: Indoor Entrance  
SC: Semi-covered Area  
EA: Entrance Area

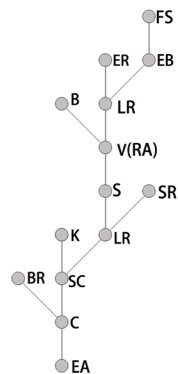
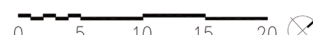
D  
mane04



First floor and residential area plan



Second Floor Plan

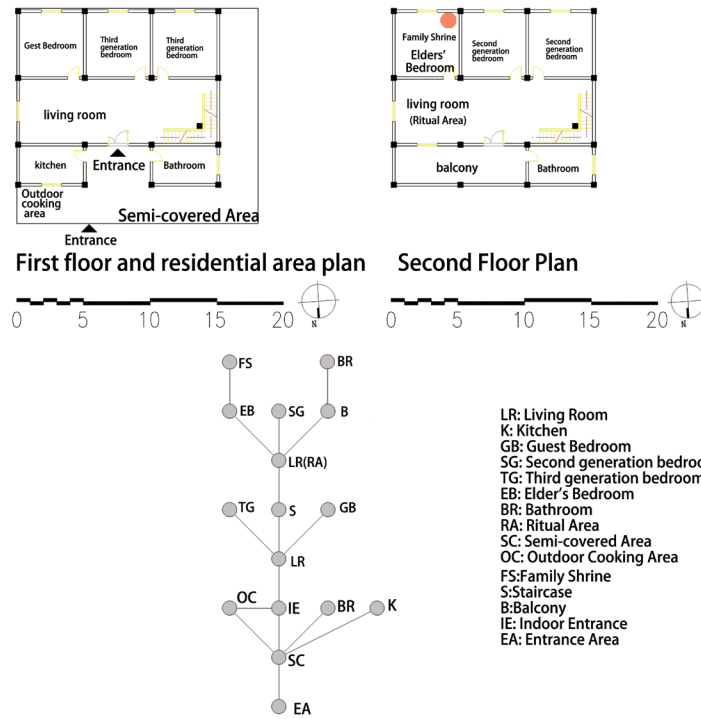


LR: Living Room  
K: Kitchen  
SR: Store Room  
EB: Elder's Bedroom  
BR: Bathroom  
RA: Ritual Area  
EA: Entrance Area  
SC: Semi-covered Area  
FS: Family Shrine  
S: Staircase  
C: Courtyard  
V: Verandah  
B: Balcony  
ER: Empty Room  
PA: Planting Area

Figure S3. Floor plans and J-graphs for Mane cases. (A) Mane 01; (B) Mane 02; (C) Mane 03; (D) Mane 04. Source: Drawings by the authors

(ii) Manzhang village cases

A  
Manzhang01



B  
Manzhang02

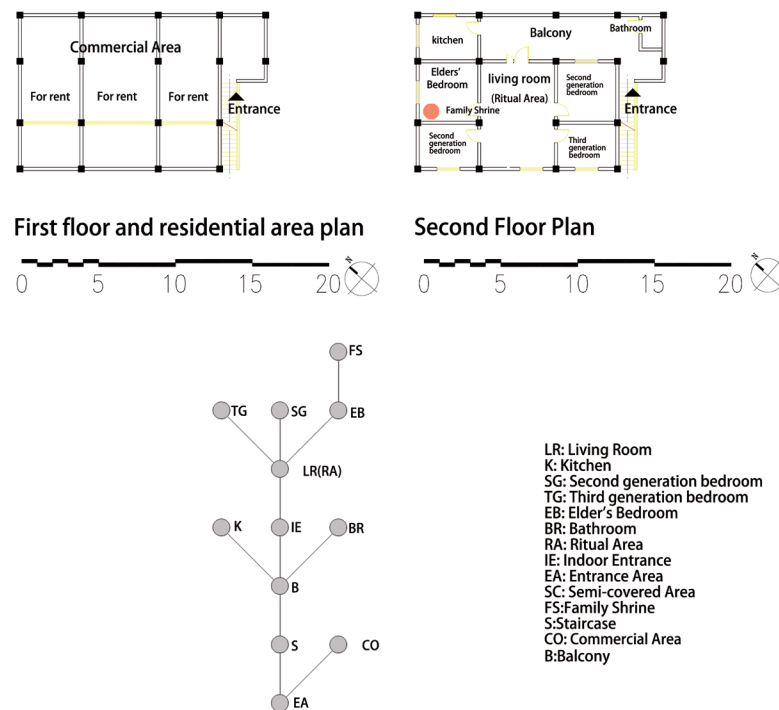
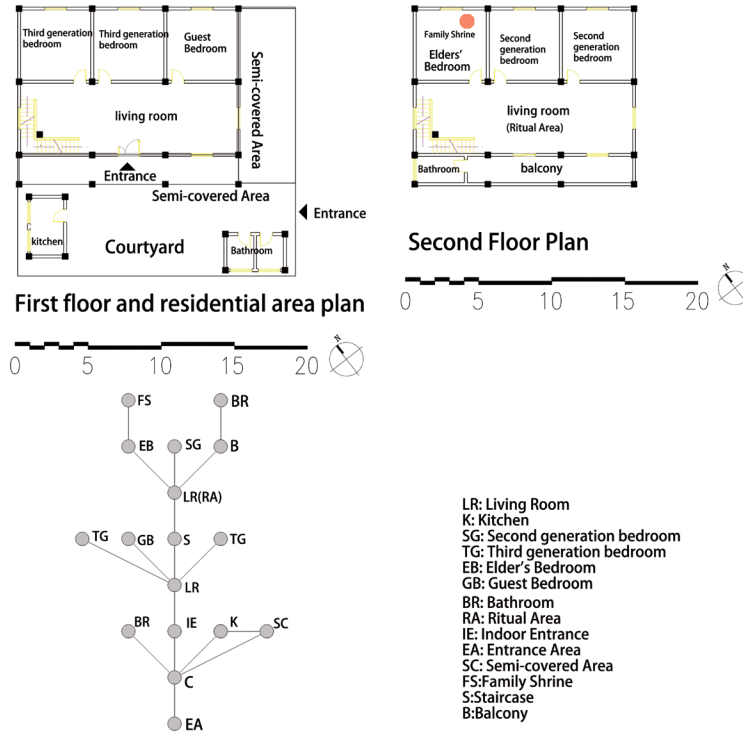


Figure S4. Continued

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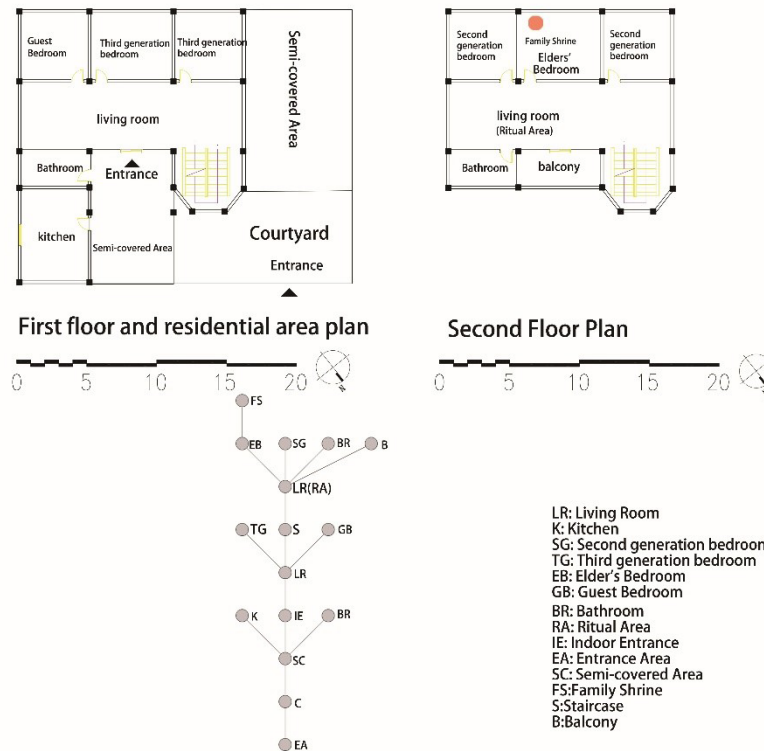
C

Manzhang03



D

Manzhang04

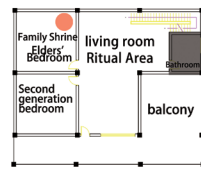
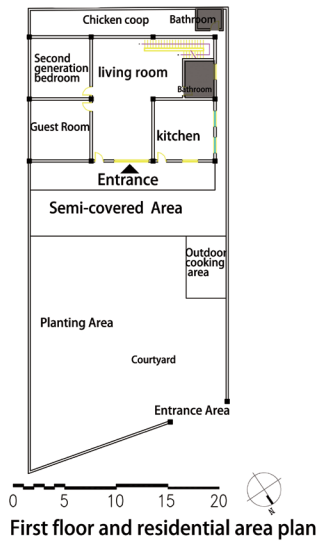


**Figure S4.** Floor plans and J-graphs for Manzhang cases. (A) Manzhang 01; (B) Manzhang 02; (C) Manzhang 03; (D) Manzhang 04. Source: Drawings by the authors

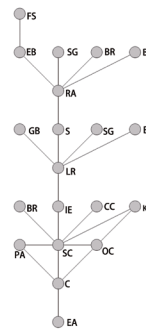
S1.3. Rural context: Mansailong and Manxiu villages

(i) Mansailong village cases

A mansailong01

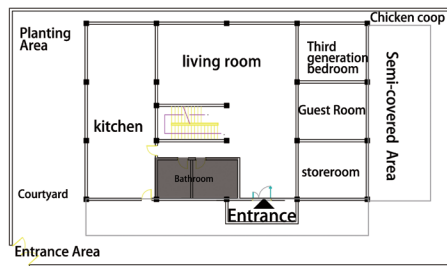


Second Floor Plan

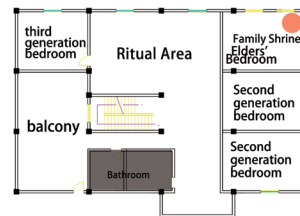


- B: Balcony
- GB: Guest Bedroom
- SG: Second generation bedroom
- EB: Elder's Bedroom
- S: Staircase
- BR: Bathroom
- RA: Ritual Area
- LR: Living Room
- OC: Outdoor Cooking Area
- K: Kitchen
- CC: Chicken Coop
- IE: Indoor Entrance
- PA: Planting Area
- BR: Bath Room
- SC: Semi-covered Area
- C: Courtyard
- EA: Entrance Area
- FS: Family Shrine

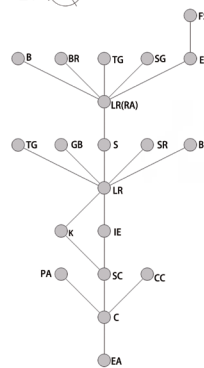
B mansailong02



First floor and residential area plan



Second Floor Plan

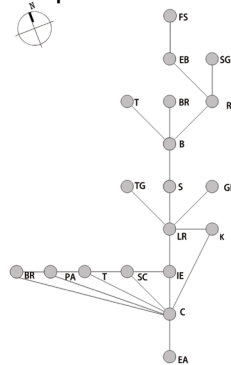
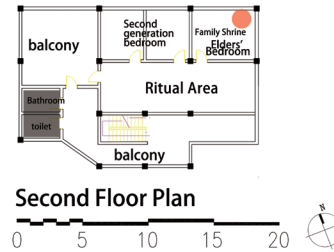
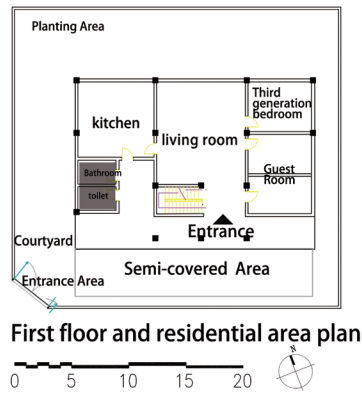


- B: Balcony
- GB: Guest Bedroom
- SG: Second generation bedroom
- TG: Third generation bedroom
- EB: Elder's Bedroom
- S: Staircase
- BR: Bathroom
- RA: Ritual Area
- LR: Living Room
- K: Kitchen
- CC: Chicken Coop
- IE: Indoor Entrance
- PA: Planting Area
- SC: Semi-covered Area
- C: Courtyard
- EA: Entrance Area
- SR: Store Room
- FS: Family Shrine

Figure S4. Continued

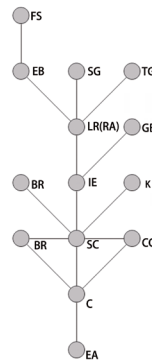
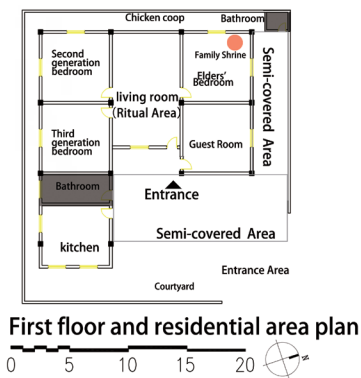
(Cont'd...)

C  
mansailong03



- B: Balcony
- GB: Gest Bedroom
- SG: Second generation bedroom
- TG: Third generation bedroom
- EB: Elder's Bedroom
- S: Staircase
- BR: Bathroom
- RA: Ritual Area
- LR: Living Room
- K: Kitchen
- IE: Indoor Entrance
- PA: Planting Area
- T: Toilet
- SC: Semi-covered Area
- C: Courtyard
- EA: Entrance Area
- FS: Family Shrine

D  
mansailong04

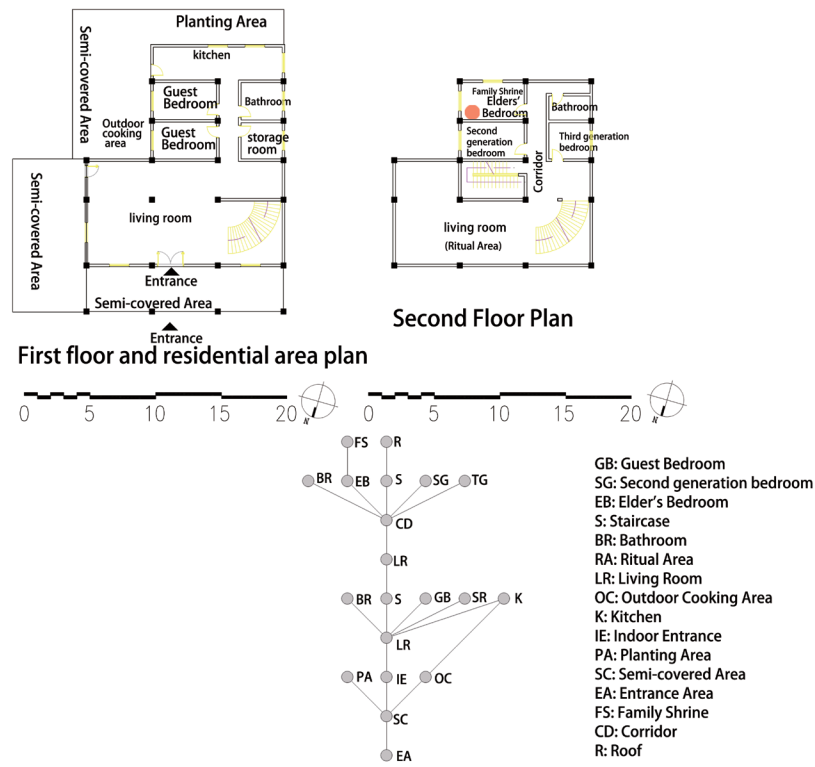


- GB: Guest Bedroom
- SG: Second generation bedroom
- TG: Third generation bedroom
- EB: Elder's Bedroom
- BR: Bathroom
- RA: Ritual Area
- LR: Living Room
- K: Kitchen
- CC: Chicken Coop
- IE: Indoor Entrance
- SC: Semi-covered Area
- C: Courtyard
- EA: Entrance Area
- FS: Family Shrine

Figure S5. Floor plans and J-graphs for Mansailong cases. (A) Mansailong 01; (B) Mansailong 02; (C) Mansailong 03; (D) Mansailong 04. Source: Drawings by the authors

(ii) Manxiu village cases

A  
Manxiu01



B  
Manxiu02

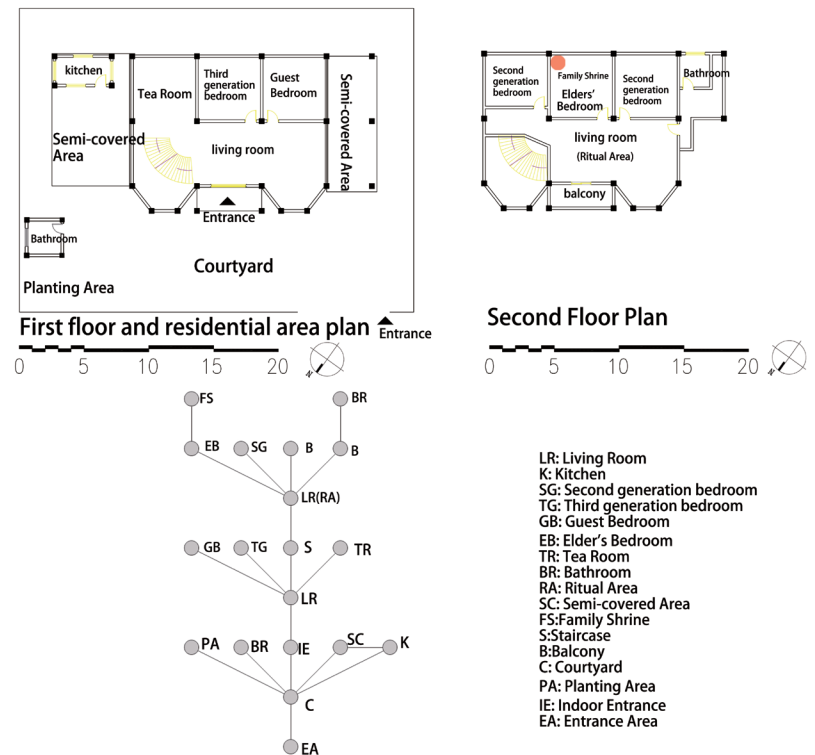


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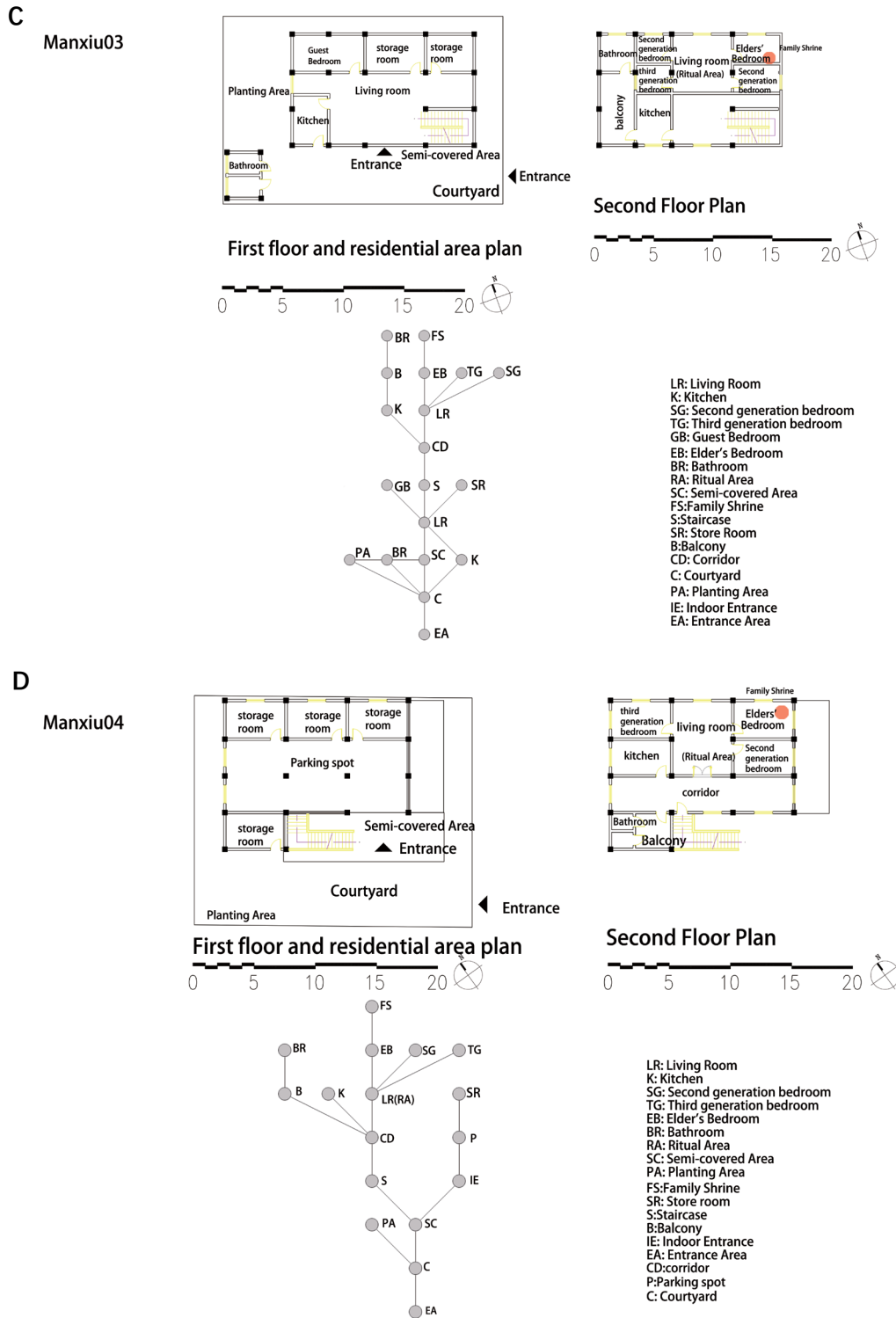


Figure S6. Floor plans and J-graphs for Manxiu cases. (A) Manxiu 01; (B) Manxiu 02; (C) Manxiu 03; (D) Manxiu 04. Source: Drawings by the authors

S2. Spatial layouts and J-graphs for traditional baselines

This supplementary section presents the floor plans and J-Graphs for the two traditional timber stilt houses used as diachronic comparative baselines in this study. These include the Pure Prototype, which represents the classic traditional form, and the Transitional Prototype, which illustrates an early-stage adaptation integrating modern functional demands.

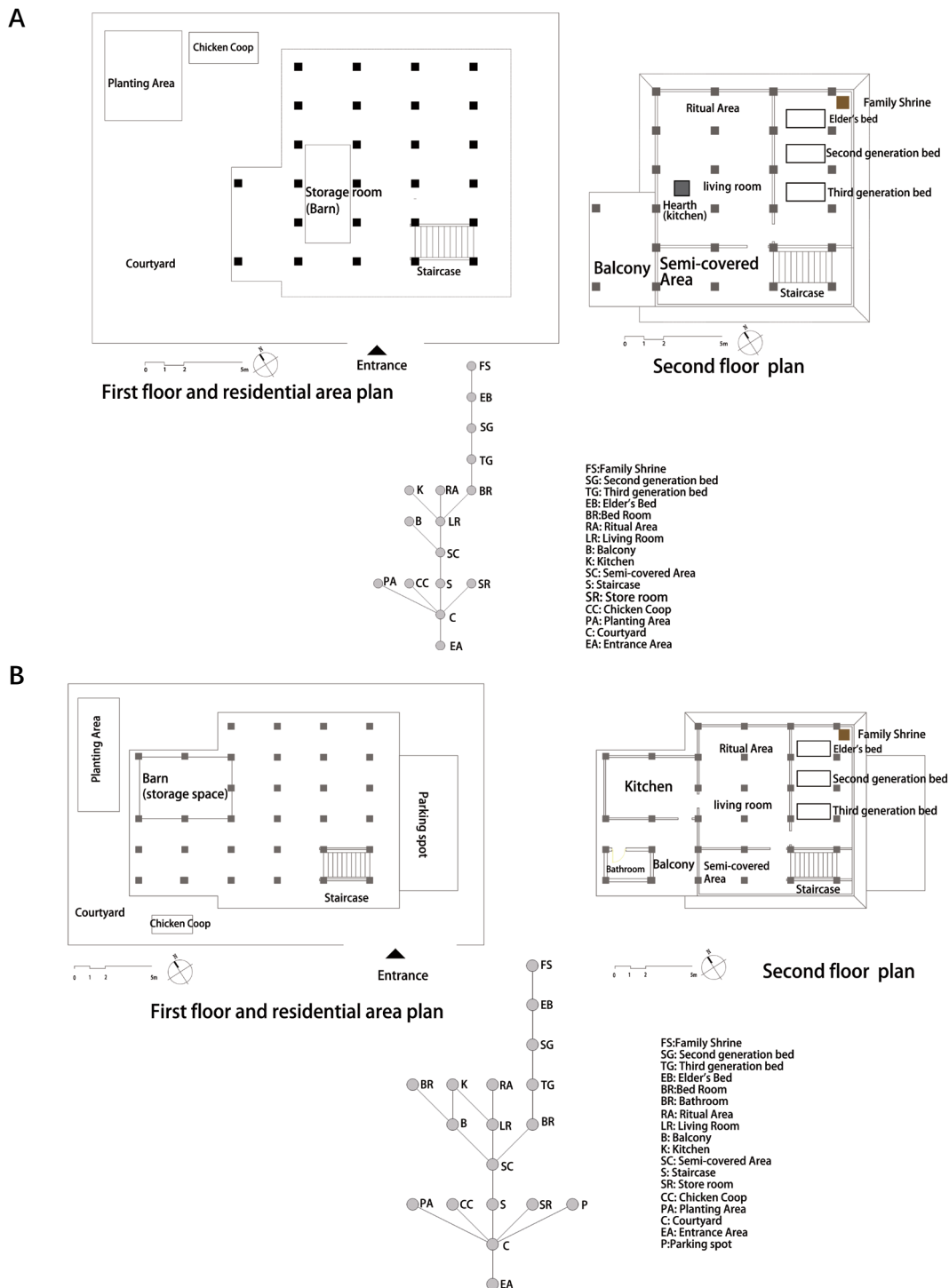


Figure S7. Floor plans and J-graphs for traditional baselines. (A) Pure Prototype; (B) Transitional Prototype. Source: Drawings by the authors