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Contextual Translation of Collaborative Housing Principles for Rural Aging in Place: From Local Evidence to Spatial Strategies in Quanfang Village, China

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Abstract

Population aging and the out-migration of working-age adults are reshaping aging in place in rural China. While many older residents prefer to remain in familiar villages, family members are not always able to provide continuous everyday support, and existing housing and social relationships vary in their capacity to sustain later-life living. This study examines how collaborative housing principles can be contextually translated into locally responsive spatial propositions. Using Quanfang Village in Jiangxi Province as the case, the study combines qualitative fieldwork with a design-led iterative process. Stage 1 (January–February 2026) comprised 11 interview records involving 17 participants, field observation, and spatial documentation. Stage 2 (February 2026) used visual-elicitation interviews with 12 residents, including five Stage 1 participants, to appraise preliminary spatial propositions. Housing fit and social–spatial fit were used as complementary qualitative diagnostic dimensions, while an Evidence-to-Translation Matrix made the translation process traceable. Resident appraisal refined the propositions by prioritizing self-contained living, voluntary and adjustable sharing, and controllable visual contact. The refined propositions and diagnostic findings informed two proposed spatial pathways: In situ Collaborative Support and Voluntary Nearby Re-clustering. The study contributes a principle-based, differentiated, and revisable approach to contextual translation for rural aging in place.

Keywords: aging in place; collaborative housing; rural aging; contextual translation; housing fit; social–spatial fit; mutual support

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1. Introduction

Population aging is becoming increasingly pronounced in rural China [1]. Many older rural residents prefer to remain in their villages and retain control over their everyday lives [2]. For those who remain, existing homes provide familiar living environments, but do not always accommodate changes in physical abilities and everyday needs in later life [1,3]. Institutional care provides an alternative by offering accommodation, organized services, and professional support, yet may reduce residents' control over everyday life and make familiar routines more difficult to maintain [4,5]. Together, these conditions point to the need for residential responses that can both accommodate later-life change and preserve continuity in everyday life.

Collaborative housing offers a valuable point of reference for considering this issue. Research on collaborative housing for older adults has examined how independent living

can coexist with shared spaces and activities, and how such arrangements can facilitate social connection and mutual support [6]. However, much of this existing research and practice has developed in European and other Western contexts [6,7]. When collaborative housing is considered as a reference for aging in place in rural China, a principle-based approach is needed to interpret its underlying principles in relation to local ways of living, existing housing conditions, and patterns of family and informal support, rather than reproduce established housing forms in a different context. From a sustainability perspective, this approach emphasizes the adaptive use of local spatial and social resources. Yet how such contextual translation can be developed into spatial responses remains underexplored.

To address this gap, Quanfang Village in Jiangxi Province, China, was selected as the primary case because it brings together conditions relevant to rural aging in place, including an aging population, varied housing conditions, and long-standing social relationships. This study combines an exploratory qualitative case-study approach with a design-led iterative process. Its methodological contribution lies in a traceable and revisable approach to principle-based contextual translation. Within this approach, housing fit and social–spatial fit serve as diagnostic dimensions, while an Evidence-to-Translation Matrix documents the development of spatial propositions and their refinement through resident appraisal.

The study is guided by the following three research questions:

RQ1. How do housing conditions, everyday practices, and social relationships shape aging in place among older residents in Quanfang Village?

RQ2. How can collaborative housing principles be translated into context-responsive spatial propositions based on these local conditions?

RQ3. How do residents appraise the preliminary spatial propositions, and how does their feedback inform their refinement?

The remainder of the paper reviews research on rural aging in place in China and collaborative housing before developing the conceptual framework. The case study, research design, and analytical methods are then introduced, followed by the results and a discussion of the main findings and their implications.

2. Literature Review and Conceptual Framework

2.1. Aging in Place in Rural China

Aging in place generally refers to older adults continuing to live in their own homes or communities with a certain degree of independence, rather than moving into institutional care [8]. It is shaped not only by housing conditions, but also by the wider residential environment, social relationships, and available support [8,9]. For example, Wiles et al. [8] show that home, neighborhood, and community all shape older adults' experiences of aging in place, while Pani-Harreman et al. [9] identify place, social networks, and support among five key themes of the concept.

In rural China, aging in place is shaped by a particular demographic and caregiving context. Population aging is more pronounced in rural than in urban areas, while the continued out-migration of working-age adults has changed traditional patterns of intergenerational living and family care [1,10]. Despite these changes, many older rural residents still prefer to remain in familiar villages. Chen et al. [2] found that older rural residents strongly valued living independently in the village and retaining control over their daily lives, while expecting their children to take on greater caregiving responsibility as their independence declined and care needs increased. Related research on rural migrant workers' retirement plans also found a strong preference for returning to rural hometowns, while showing that limited local care and social services could make such plans difficult to carry out [11]. Rural aging in place in China therefore concerns not only older residents'

preference to remain in familiar settings, but also how they can continue their everyday lives as their needs change in later life.

In response to these needs, existing research and practice have addressed housing conditions and care provision for older rural residents in several ways. Home modification represents one important response, improving home safety and facilitating daily activities to support older adults in continuing to live at home [3]. Other initiatives have focused on expanding locally available eldercare services. In rural Jiangsu, Zhang and Zhang [1] documented several forms of care and support, including home-based care, community day care, village-based "happiness homes" and senior apartments, alongside mutual-aid and volunteer services.

Beyond these forms of housing adaptation and care provision, Zhang and Qiu [12] show that the daily activities of older rural residents extend beyond the dwelling into surrounding spaces and the wider village environment, and that familiar spaces can acquire meaning through repeated use. Related research in rural China also highlights the continuing importance of familiar social relationships and neighborhood-based support in middle and later life [13]. Overall, existing studies indicate the importance of housing conditions, everyday practices, and local social relationships for rural aging in place, but how these dimensions interact within specific rural residential settings, and how such interactions should inform spatial responses, remain insufficiently examined.

2.2. Collaborative Housing and Recurring Principles

Collaborative housing is commonly used as an umbrella term encompassing a range of housing models, including cohousing, collective housing, intentional communities, and ecovillages [7,14,15]. These arrangements vary not only in architectural form but also in how they are developed and in their tenure structures [14]. Across this diversity, however, collectivity, varying degrees of resident involvement or self-organization, and the sharing of spaces and everyday practices remain recurring features [7,16]. These recurring features suggest that collaborative housing is better understood as a multidimensional residential practice involving spatial arrangements, social relationships, and organizational processes, rather than as a single fixed residential typology [7,17].

Within this broad field, older adults have become an important focus of collaborative housing research. Lang et al. [7] identified seniors as the most prominent first-order theme within the socio-demographic thematic area of their systematic review, noting that this body of work mainly examines how collaborative living affects social life, reciprocal support, and the capacity for self-determination in later life. For older adults, collaborative housing can be understood as an alternative residential option between conventional independent living and institutional care [18,19]. Rusinovic et al. [18] illustrate this arrangement in their study of eight collaborative housing communities in the Netherlands, where older residents live in their own apartments while sharing common spaces and participating in communal activities. This combination of independent living and a degree of communal life is particularly relevant to aging in place, as it can allow older residents to maintain personal autonomy while gaining greater opportunities for social connection and mutual support in everyday life [18,20].

This focus on older adults sits within a broader collaborative housing literature that spans multiple research dimensions. A thematic mapping of 195 peer-reviewed studies published between 1990 and 2017 organized the literature into five main areas: socio-demographic, collaboration, motivation, effects, and context [7]. Focusing specifically on older adults, Miranda [6] reviewed 26 relevant studies and identified four interrelated thematic strands: social connectedness and wellbeing, participatory design and governance, spatial and architectural considerations, and policy and economic sustainability. Despite

differences in terminology and research emphasis, several questions closely related to everyday living recur across this literature, including how residents maintain control over their own living arrangements, which spaces, facilities, or activities are shared, how everyday interaction occurs, and how residents provide and receive support [6,7]. These concerns are also evident in empirical studies of specific housing settings. Research on SällBo examined everyday social connections in common spaces and their relationship with social integration [21], while Tzika and Sentieri-Omarrementeria [22] explored how autonomy, shared living, and mutual support were negotiated through participatory decision-making and spatial design in a senior cooperative housing project.

Drawing on these recurring concerns and the context of rural aging in place, this study adopts autonomy, sharing, social connection, and mutual support as four principles for the subsequent analysis and contextual translation. Resident participation and self-governance are also important characteristics of collaborative housing, but they are commonly discussed in relation to organizational processes such as project development, collective decision-making, and everyday management [7,23]. They are therefore treated here as organizational considerations rather than as separate principles for spatial translation. The working definitions of the four principles and their key supporting references are summarized in Table 1.

Table 1. Recurring collaborative housing principles selected for the present study.

Principle	Working Definition	Key References
Autonomy	Residents' ability to retain control over private space, everyday routines, and their level of engagement with others.	[7,18,20,24]
Sharing	The shared use of selected spaces, facilities, or resources, and participation in selected everyday activities, alongside private living domains.	[7,16,17]
Social Connection	Opportunities for everyday contact and interaction through which residents can maintain or develop social relationships.	[6,7,21]
Mutual Support	Practical and emotional assistance that residents provide to one another in everyday life.	[6,18,20,24]

These four principles are interrelated in collaborative living, but the ways in which they are combined and expressed in practice vary across settings. Existing research shows that collaborative housing arrangements for older adults differ in how independent living, care and support, and a sense of community are organized. Such variation needs to be understood in relation to local cultural norms, institutional and legal conditions, housing systems, and prevailing understandings of aging and community [6,25]. These principles therefore provide the analytical starting point for this study, while their specific meanings and spatial expressions require further interpretation and translation in relation to local conditions.

2.3. Conceptual Framework

2.3.1. Transfer, Adaptation and Contextual Translation

To clarify different ways of applying experience from established housing models across cultural and regional contexts, this study distinguishes three analytical positions: transfer, adaptation, and contextual translation. Transfer refers to the introduction of an established housing typology into a new context while retaining most of its spatial, functional and organizational configuration. The receiving context changes, but the underlying typological structure remains largely intact. Adaptation, on the other hand, refers to the contextual adjustment of an established housing typology while retaining its basic spatial and organizational structure. Specific components, scales, functions or operating arrangements may be modified to respond to local conditions, but the identity and overall logic of the original typology are still recognizable.

Contextual translation, by contrast, refers to a process in which principles drawn from established housing approaches are reinterpreted through local empirical evidence and translated into context-specific spatial propositions, without assuming the adoption or preservation of any particular housing typology. The four principles identified in Section 2.2 provide the analytical basis for this process, while a complementary diagnosis is used to assess local conditions relevant to intervention.

2.3.2. Housing Fit and Social–Spatial Fit

For this diagnosis, the study uses two dimensions: housing fit and social–spatial fit. Housing fit draws on the person-environment (P-E) fit perspective in environmental gerontology, in which the relationship between personal competence and environmental press is central to understanding performance and comfort in necessary and desired daily activities [26,27]. Accordingly, housing fit refers to the degree of alignment between the conditions of existing dwellings and older residents' current and anticipated living needs, with attention to everyday functioning, autonomy, safety, and domestic practices.

Beyond physical conditions, P-E fit also encompasses social dimensions. Individual competence can include access to and engagement with supportive social networks, while environmental press can arise from both physical and social surroundings [28]. Bigonnesse and Chaudhury [29] further identify opportunities and spaces to create and maintain meaningful social connections as one of the conditions fostering aging in place. Extending the P-E fit logic to relational accessibility, social–spatial fit refers to the degree to which the spatial organization of everyday life supports older residents' practical access to relationships they regard as meaningful, trusted, or potentially supportive. This fit can be examined through four main dimensions: relational significance, spatial accessibility, everyday encounterability, and interaction affordance. Relational significance identifies the relationships that residents regard as meaningful, trusted or potentially supportive, while spatial accessibility concerns how easily the people involved can reach one another. Everyday encounterability further captures the extent to which their daily routes and activity spaces overlap, thereby creating opportunities for encounter; interaction affordance, in turn, refers to the capacity of the spaces where encounters occur to provide conditions for stopping and interaction. Housing fit and social–spatial fit therefore provide two complementary perspectives for assessing the conditions of aging in place and informing the focus and intensity of spatial intervention.

Overall, the conceptual framework of this study is summarized in Figure 1. The four collaborative housing principles guide the interpretation of local evidence and the development of spatial propositions, while housing fit and social–spatial fit serve as diagnostic dimensions for assessing local conditions and identifying intervention priorities. The inte-

gration of these two analytical processes informs the development of differentiated spatial propositions.

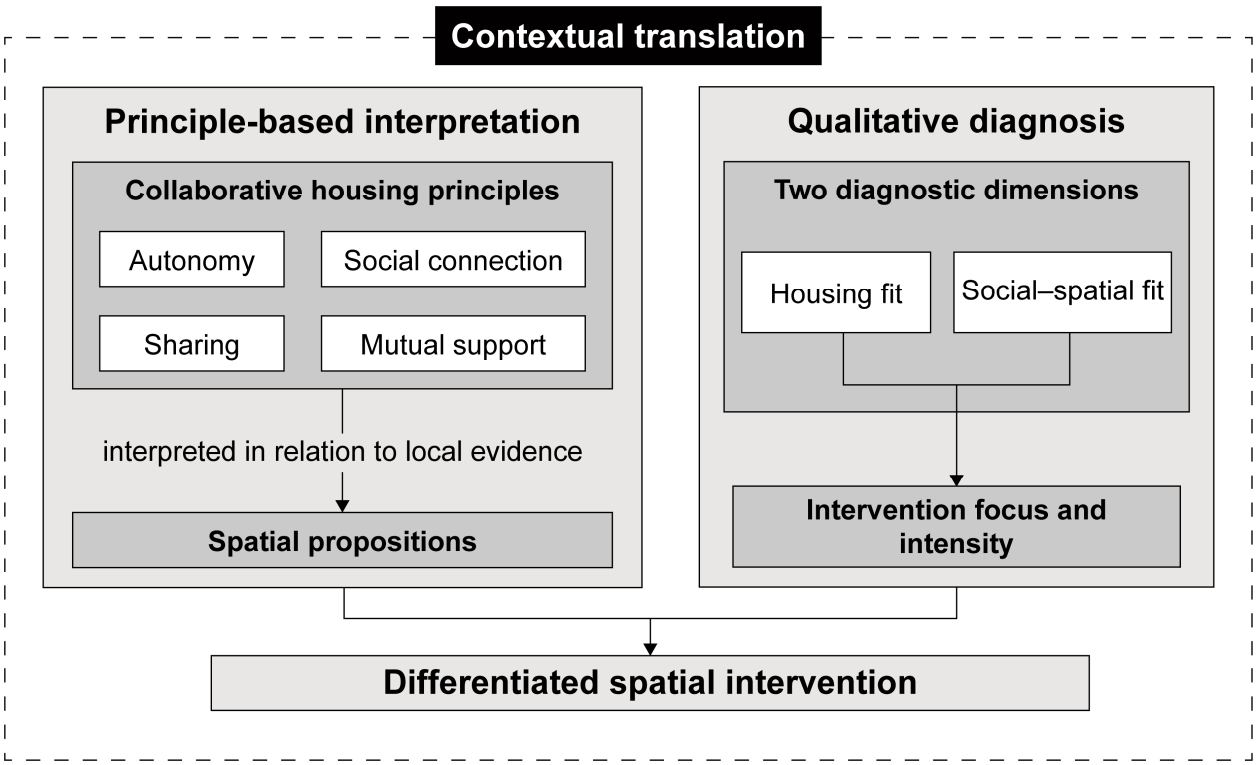

Figure 1. Conceptual framework for contextual translation.

3. Materials and Methods

3.1. Study Case and Reference Settings

Quanfang Village, located in Jiangxi Province, China, is a traditional rural settlement with a built-up area of approximately 0.5 km^2 and a population of about 430 residents (Figure 2). The village was considered particularly relevant to the research questions because it brings together several conditions central to rural aging in place. First, out-migration of working-age adults for employment has contributed to a population structure increasingly dominated by older residents. Second, the village contains dwellings built in different periods and in substantially different physical conditions. Third, long-standing acquaintance networks, shaped in part by clan-based traditions, continue to structure everyday social relations and provide a basis for informal mutual support. Together, these conditions provide a basis for examining how housing conditions and social relationships influence everyday life and rural aging in place, and how they inform the contextual translation of collaborative housing principles.

Beyond Quanfang Village, field visits were also conducted in two nearby villages, two eldercare facilities, and one senior collaborative housing project in Sweden. These settings provided contextual understanding and practical examples of different living, care, and spatial arrangements, which informed the development of preliminary spatial propositions for Quanfang Village (Table 2). The Quanfang field materials formed the empirical basis for the study's findings, housing-fit and social–spatial-fit assessments, and resident appraisal. The reference settings were not subjected to systematic cross-case comparison.

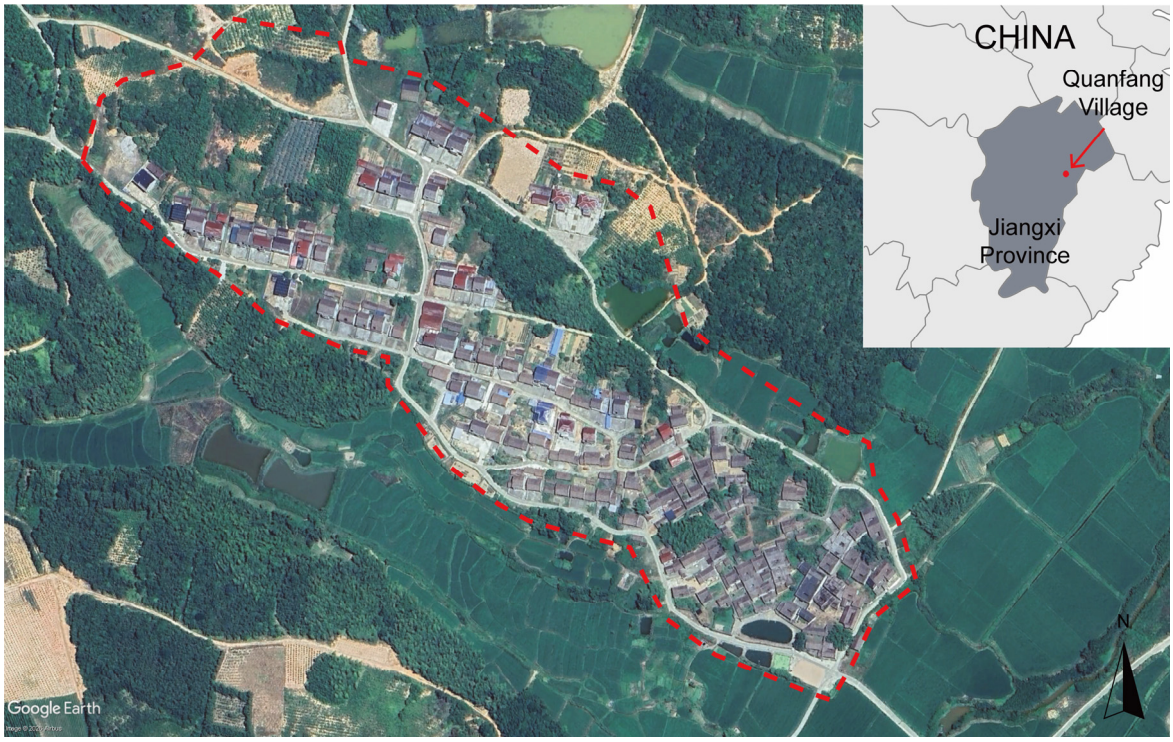

Figure 2. Geographical location and spatial setting of Quanfang Village, Jiangxi Province, China. The inset map (top right) situates the village within Jiangxi Province and China. The main map presents a satellite view of the settlement and its surrounding landscape, with the study area indicated schematically by the red dashed line. Satellite imagery: Google Earth Pro (Image © 2026 Airbus).

Table 2. Research settings and their roles in the study.

Setting	Research Status	Role in This Study
Quanfang Village	Primary case	Identifying older residents' residential arrangements, housing conditions, family and informal support, everyday activities, and associated spatial use patterns.
Zhuqiao and Dafang villages	Contextual rural references	Providing contextual perspectives on residential change, household arrangements, and intergenerational support in nearby villages under different development conditions.
Huwan Elderly Care Service Centre	Local institutional care reference	Providing a local institutional reference for how residential spaces, shared facilities, everyday activities, and care provision are organized.
Taikang Community, Tianjin	High-resource institutional care reference	Providing a higher-resource reference for how independent living units, shared facilities, organized activities, and formal care services are combined.
Collaborative housing project in Lund	Collaborative housing practice reference	Examining how private and shared spaces are organized, and how residents participate in shared living, everyday interaction, and mutual support.

3.2. Research Design

This study adopted an exploratory qualitative case-study approach combined with a design-led iterative process. Building on the conceptual framework developed in Section 2.3, the research was organized into two linked stages. Stage 1 began with field investigation using semi-structured interviews, field observations, and spatial documentation. The resulting materials were then analyzed and used to develop preliminary spatial propositions. Stage 2 used visual-elicitation interviews to examine residents' responses to these preliminary spatial propositions, focusing on their preferences, conditions for acceptance, reservations, and suggested modifications. The process was not strictly linear, as resident feedback was incorporated into the refinement of the preliminary propositions. Figure 3 summarizes the two-stage research and translation process.

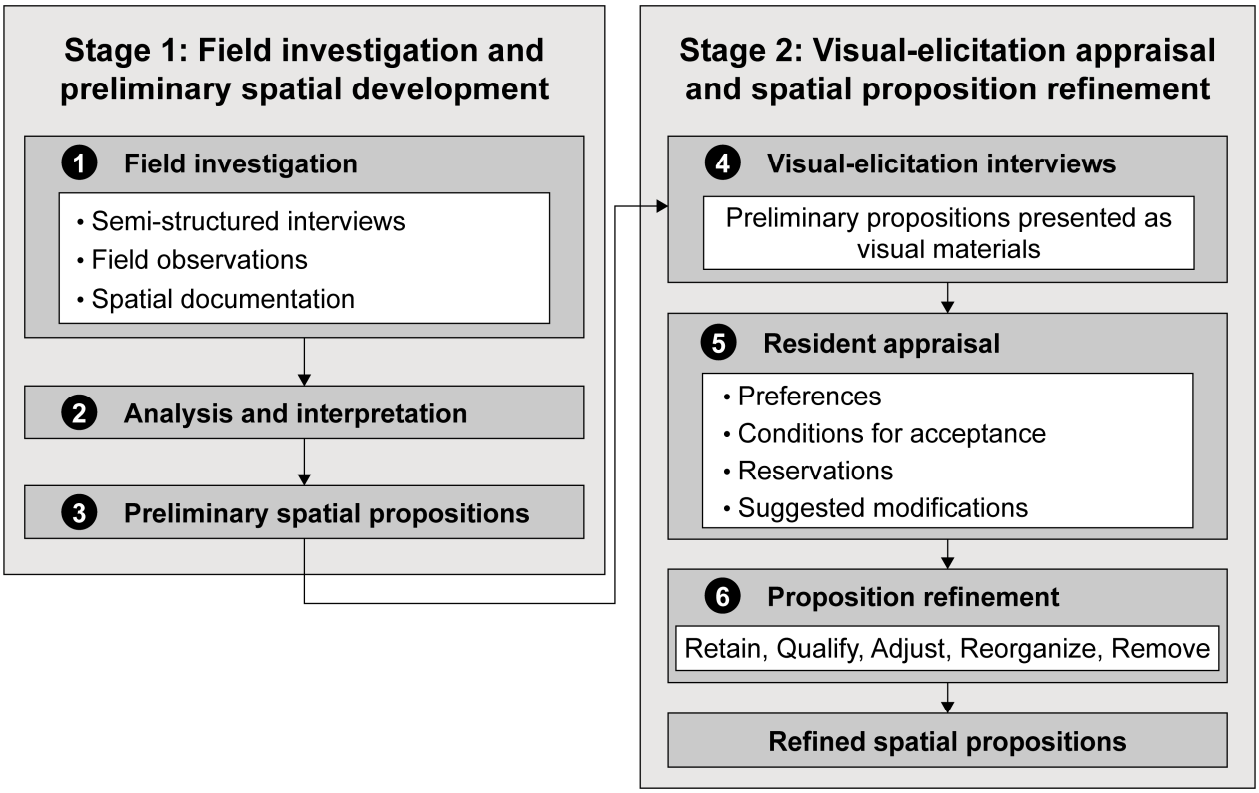

Figure 3. Two-stage research and translation process.

3.2.1. Stage 1: Field Investigation and Preliminary Spatial Development

The first stage of fieldwork in Quanfang Village was conducted mainly between January and February 2026. Participant recruitment followed a field-based purposive approach, seeking variation in age, housing conditions, living arrangements, and family circumstances relevant to the research questions. Older residents made up the majority of participants, while adult children and middle-aged villagers were also included to provide additional perspectives on family support, intergenerational responsibilities, and residential decision-making. Participants were approached on site during the field visits. As older men were more readily encountered in village public spaces, the researcher also actively approached female residents.

The final Stage 1 sample consisted of 11 interview records involving 17 participants (Table 3). Its size was shaped by the study's exploratory aims, practical access to participants during fieldwork, and the need for sufficient variation in residential and family situations for qualitative comparison. Formal theoretical saturation was not used as a stopping criterion.

Table 3. Stage 1 participants and interview records in Quanfang Village.

Record	Age Group	Participant Composition	Interview Format
QF-01	70+	Older couple	Dyadic interview
QF-02	Father 60+; son 40+	Father and adult son	Dyadic interview
QF-03	40+	Middle-aged female villager	Individual interview
QF-04	60+	Older male resident	Individual interview
QF-05	40+	Adult son working away from the village	Individual interview
QF-06	60–80+	Group of four older male villagers	Small group interview
QF-07	80+	Older male resident	Individual interview
QF-08	35+; 55+	Two middle-aged female villagers	Dyadic interview
QF-09	60+	Older male resident	Individual interview
QF-10	60+	Older female resident living with adult children	Individual interview
QF-11	45+	Adult son	Individual interview

Before each interview, the researcher explained the purpose of the study and the intended use of the collected information, and obtained verbal informed consent on the basis of voluntary participation. A structured questionnaire was prepared before the rural fieldwork. It addressed older residents' current living conditions, sources of everyday support, daily routine, social relationships, and anticipated housing and care needs in later life. Once the fieldwork began, it was used flexibly as a semi-structured interview guide organized around the same themes. Fixed item-by-item questioning proved less suitable for the local field context, as most participants had not previously met the researcher and some older residents were more comfortable communicating through informal conversation.

Interviews therefore usually began with participants' current living conditions and everyday activities, followed by further questions tailored to the issues and experiences raised in their responses. This approach maintained consistency across the main interview themes while allowing participants to explain their circumstances more freely. Interviews were conducted in Mandarin and generally lasted around 15–30 min. They usually took place where participants were encountered, and some continued while participants carried on with their everyday activities, allowing their accounts to be considered alongside the activities and spatial settings observed at the time.

Field observation was conducted alongside the interviews, with attention to the overall village environment, the physical condition of dwellings, the use of indoor and outdoor spaces, and the types and spatial locations of older residents' everyday activities. On-site materials were documented through photographs, spatial sketches, and annotated maps, providing an integrated record of older residents' everyday life and spatial use. Together,

these materials formed the empirical basis for the subsequent analysis and development of preliminary spatial propositions.

3.2.2. Stage 2: Visual-Elicitation Appraisal and Spatial Proposition Refinement

The second stage of fieldwork was conducted in Quanfang Village in February 2026 and involved 12 residents, five of whom had also participated in Stage 1, and produced nine interview records (Table 4). Participants were recruited on site in a manner consistent with Stage 1, with priority given to inviting participants from Stage 1 again. Repeat participants helped maintain continuity between the two stages, while new participants brought a broader range of preferences and concerns into the refinement of spatial propositions. The interviews retained individual, dyadic, and small-group conversational formats and generally lasted approximately 15–30 min.

Table 4. Stage 2 participants and interview records in Quanfang Village.

Record	Age Group	Participant Composition	Interview Format
QF2-01	70+	Older couple (repeat participants from QF-01)	Dyadic interview
QF2-02	60+	Older male resident (repeat participant from QF-02, father)	Individual interview
QF2-03	60+	Older male resident (repeat participant from QF-04)	Individual interview
QF2-04	60+	Older male resident (repeat participant from QF-09)	Individual interview
QF2-05	40+	Middle-aged female villager	Individual interview
QF2-06	45+	Adult son	Individual interview
QF2-07	60–80+	Group of three older male villagers	Small group interview
QF2-08	60+	Older female resident	Individual interview
QF2-09	70+	Older male resident	Individual interview

Note: Participants identified as repeat participants had also taken part in Stage 1, all others were new participants in Stage 2.

Preliminary spatial propositions developed in the first stage were presented as four sets of simplified and comparable visual materials, allowing participants to appraise them in relation to their own housing conditions and everyday lives. Participants considered each set of visual materials in turn, comparing the alternatives and explaining the reasons for their preferences and reservations, the conditions under which different options would be acceptable, and which elements they would retain, modify, or avoid. Both recurring preferences and differing or conditional views informed the subsequent refinement of the preliminary propositions. Table 5 presents the visual materials used in Stage 2 and the key issues discussed with participants.

Table 5. Main visual materials used in the stage 2 visual-elicitation interviews.

Visual Set	Visual Materials Presented	Main Discussion Focus
A. Residential Options and Future Needs	Scenarios of continuing to live in the existing dwelling; reference images of aging-friendly housing adaptations; scenarios of living in newly built housing within the village	Under what circumstances older residents would prefer to remain in their existing dwelling, continue living there after improvements, or relocate within the village; and how current housing conditions, future living and care needs, and meaningful social relationships influence these choices.
B. Meaningful Relationships and Residential Proximity	Comparative diagrams of different levels of residential proximity and co-residence	Who older residents would prefer to live closer to; under what circumstances the existing residential distance is sufficient to support everyday contact and when closer proximity may be needed; and whether close relationships imply a willingness to live together.
C. Threshold Spaces, Visibility and Everyday Contact	Pass–Pause–Stay spatial scenarios; diagrams of varying visual connections and privacy control	What spatial conditions make it easier for older residents to pause and interact; how many stopping points are appropriate along everyday routes; where visual contact is acceptable and where greater privacy is preferred; and how older residents would like to control the degree of seeing and being seen.
D. Domestic Independence, Shared Spaces and Sharing Arrangements	Comparative diagrams of self-contained units and higher-sharing living arrangements; scenarios showing different ways of organizing shared kitchens, dining, and everyday activities	Which domestic functions older residents would prefer to keep independent and which they would be willing to share; with whom they would be willing to share; what activities shared spaces should accommodate; and what forms and frequency of sharing are acceptable and which arrangements may become burdensome.

3.3. Data Analysis

The analysis followed an iterative qualitative process linking field evidence, empirical findings, interpretation, spatial proposition development, and resident appraisal. Interview content was documented primarily as written summaries rather than full verbatim transcripts, and participants' views are therefore presented mainly through paraphrase. The study used manual comparison across participants and data sources, without formal line-by-line coding.

In Stage 1, the analysis proceeded in three steps. First, the field materials were examined to identify recurring empirical patterns and contrasting situations related to housing conditions, everyday practices, social relationships and informal support, and anticipated later-life needs. Interview accounts were considered together with field observations and spatial documentation, including photographs, spatial sketches, and annotated maps, so that residents' descriptions could be understood in relation to the physical and social settings in which everyday activities occurred. Where different types of material addressed

the same issue, they were used to corroborate or qualify emerging findings. Less common or divergent views were retained when they revealed important exceptions to recurring patterns or differences in residents' circumstances and preferences.

Second, the empirical findings were interpreted in terms of their implications for aging in place and spatial organization. At this stage, the four collaborative housing principles of autonomy, sharing, social connection, and mutual support were used as interpretive lenses. The analysis therefore combined an inductive and a theory-informed process: empirical patterns were first identified from the field materials, and their relevance to these principles was then examined to inform spatial responses suited to local conditions.

Third, empirical findings with clear implications for spatial intervention were developed into preliminary Evidence-to-Translation chains. These chains linked empirical findings to social–spatial interpretations, relevant collaborative housing principles, spatial mechanisms, and preliminary spatial propositions. The nine chains presented in the Evidence-to-Translation Matrix emerged through this process, drawing on recurrent or analytically significant field findings. Some chains followed a relatively direct progression from one empirical finding to one spatial response, whereas others brought together several interrelated findings.

Stage 2 focused on residents' appraisal of the preliminary propositions. Responses were organized according to the four sets of visual materials and the corresponding propositions. Interview summaries were compared across participants to identify recurring preferences, reservations, conditions for acceptance, suggested modifications, and less common alternatives. Where preferences differed, the analysis considered the reasons for these differences and whether some arrangements should remain optional. The resulting feedback was used to retain, qualify, adjust, reorganize, or remove elements of the preliminary propositions. These appraisals and refinements completed the Evidence-to-Translation chains. The condensed matrix in Section 4.1 summarizes the main analytical progression and the outcomes of resident appraisal, while Appendix 6 (Table A1) presents the complete chains, including the underlying field evidence, relevant collaborative housing principles, preliminary spatial propositions, and corresponding field-record references.

Housing fit and social–spatial fit were used as complementary qualitative diagnostic dimensions. For housing fit, residents' accounts of everyday domestic use and anticipated needs were considered alongside observations of their dwelling conditions. Social–spatial fit was assessed using residents' accounts of meaningful relationships and everyday contact, together with field observations and spatial documentation of everyday routes and spaces for interaction. For both dimensions, judgments of adequate or constrained fit were based on qualitative interpretation of the field materials rather than standardized measurement scales or numerical thresholds. Where the evidence was mixed, the assessment considered whether identified constraints substantially hindered residents' everyday activities or their ability to maintain contact with people important to them. Table 6 summarizes the evidence considered and the qualitative criteria used for each dimension.

Table 6. Main evidence considered for housing fit and social–spatial fit.

Diagnostic Dimension	Main Evidence Considered	Adequate	Constrained
Housing fit	Physical condition and safety; accessibility and circulation; domestic facilities and everyday use; capacity to support current and anticipated needs	Existing dwelling conditions support residents' everyday functioning and autonomy without substantial barriers.	Physical or functional conditions create substantial barriers to safe and independent everyday use.

Table 6. *Cont.*

Diagnostic Dimension	Main Evidence Considered	Adequate	Constrained
Social–spatial fit	Relational significance; spatial accessibility; everyday encounterability; interaction affordance	Meaningful relationships remain practically accessible through ordinary patterns of everyday life.	Meaningful relationships exist, but their everyday accessibility is materially limited by distance, difficult routes, weak overlap of activity spaces, or insufficient opportunities for contact and interaction.

4. Results

4.1. Evidence-to-Translation Matrix

Stage 1 field investigation generated a range of empirical findings, several of which were particularly important for the subsequent spatial translation. One recurring finding concerned residential continuity. Older residents generally preferred to continue living in Quanfang Village. They placed greater importance on maintaining a familiar village environment, everyday life, and established social relationships than on remaining permanently in the same dwelling. Relocation preferences varied with existing housing conditions. Residents living in older houses, or in newer houses with relatively limited facilities, were generally more open to moving to better housing within the village. Those whose newer houses already provided relatively good living conditions were less willing to relocate.

Family members continued to play an important role in older residents' care and support. However, work, childcare, schooling arrangements, and residential separation made it difficult for adult children to maintain a continuous everyday presence and to provide timely assistance when needed.

At the village scale, immediate residential adjacency did not necessarily correspond to meaningful social relationships. People with whom older residents interacted regularly, trusted, or could potentially rely on for support could live in different parts of the village. Opportunities for everyday contact with these people varied with residential accessibility, overlap in daily routes, and opportunities to stop and interact along the way.

Alongside these relational conditions, ordinary everyday practices remained central to older residents' later life. Cooking, cultivation, poultry keeping, food processing, bamboo craftwork, household maintenance, and grandchild care continued to form a major part of their daily lives. These findings provided an empirical basis for the nine Evidence-to-Translation chains presented in Table 7.

A complete Evidence-to-Translation chain comprises field evidence, an empirical finding, a social–spatial interpretation, a collaborative housing principle, a spatial mechanism, a preliminary spatial proposition, resident appraisal, and subsequent refinement. For example, Chain 8 drew on observations of bamboo work at residents' doorsteps (QF-02, QF-04) and older residents gathering and chatting near the village entrance (QF-06). These uses of everyday spaces informed the Pass–Pause–Stay mechanism, distinguishing between moving through, pausing briefly, and staying longer along everyday routes. During Stage 2, residents welcomed opportunities to rest and talk, but did not favor densely spaced stopping points or expect every passage to lead to interaction. The proposition was therefore refined to keep routes clear and continuous for passing, while providing spaces for pausing and staying at selected locations connected to everyday routes and activities.

Table 7. Condensed Evidence-to-Translation Matrix.

Chain	Empirical Findings	Social–Spatial Interpretation	Spatial Mechanism	Resident Appraisal	Refined Proposition
1	Attachment to the village appeared more consistent than attachment to one specific dwelling.	Aging in place may depend on continuity of familiar people, routines, routes, and village life rather than permanent residence in the same dwelling.	Village-based continuity; voluntary nearby relocation	Residents generally accepted the two residential options, but their choices did not always correspond to current housing conditions. Some preferred to remain despite constrained housing conditions, while others with adequate housing were open to nearby relocation if it could better meet future needs without disrupting meaningful relationships.	Retain in situ adaptation and voluntary nearby relocation as valid options. Current dwelling conditions should inform the level of intervention, while the choice between remaining and relocating should also consider residents' preferences, anticipated future needs, and meaningful relationships.
2	Existing dwellings varied in their capacity to support aging in place.	A single housing response is inappropriate, and intervention intensity should be adjusted according to actual housing conditions.	Differentiated intervention; minimum necessary intervention		
3	Separate residence did not necessarily indicate weak family relationships; for some older residents it was a preferred way of maintaining control over everyday life.	Later-life support needs to coexist with control over private domestic space and self-directed routines.	Clear private boundaries; independent domestic functions; adjustable levels of sharing	Most participants preferred self-contained units. Higher-sharing arrangements were acceptable only to a smaller number of older residents, and only on a voluntary basis with familiar people whose everyday routines were compatible.	Maintain independent domestic living in existing homes and use self-contained units as the baseline for nearby re-clustering. Shared spaces should supplement rather than replace private domestic life. Higher-sharing arrangements should remain secondary and voluntary.
4	Family responsibility remained important, but continuous everyday presence was often difficult to maintain.	The key problem was a spatial–temporal mismatch between family responsibility and everyday availability.	Supplementary everyday awareness; controllable visibility	Older residents generally welcomed opportunities for familiar people to notice and respond when needed, particularly in semi-outdoor and everyday activity spaces, but wanted stronger privacy control in domestic interiors. They also preferred such support to remain informal rather than become a fixed caregiving obligation.	Retain opportunities for supplementary everyday awareness and low-intensity assistance as part of ordinary contact. The degree of visibility should vary according to the privacy needs of different spaces, while familiar relationships should not be turned into fixed caregiving obligations.
5	Familiar village relationships provided a basis for informal support, but such support was not always timely or continuously accessible.	Relational potential and everyday accessibility are different; familiar relationships require opportunities for everyday contact to become practically supportive.	Everyday co-presence; repeated low-intensity encounters		
6	Meaningful relationships did not necessarily coincide with immediate residential adjacency.	Social proximity cannot be inferred from physical distance alone. A mismatch may exist between meaningful relationships and their everyday spatial accessibility.	Relationship-informed proximity; route overlap	Older residents generally welcomed living closer to familiar and trusted people. However, they did not see closer proximity as a sufficient reason to relocate, and some considered short walking distances within the village acceptable.	Where residents remain in place, improve everyday routes to support contact with familiar people. Where relocation is chosen for broader reasons, meaningful or self-selected relationships should inform nearby clustering, but should not determine relocation on their own.

Table 7. *Cont.*

Chain	Empirical Findings	Social–Spatial Interpretation	Spatial Mechanism	Resident Appraisal	Refined Proposition
7	Older residents' everyday life remained structured by ordinary domestic, productive, and intergenerational practices.	The continuity of ordinary everyday practices, rather than the provision of separate programs of organized activity, should guide spatial intervention.	Continuity of everyday practices; flexible ordinary-use spaces	Older residents wished to continue their familiar everyday and productive activities and felt that frequently used spaces could be improved to better support them. They preferred new shared spaces to be adaptable to different needs rather than fixed-purpose activity rooms for older residents.	Prioritize improvements to courtyards, doorstep spaces, and semi-outdoor areas; organize new shared spaces as flexible, multipurpose settings linked to existing activities.
8	Everyday encounters did not necessarily develop into sustained interaction.	Spatial conditions for stopping influence whether residents pass by, pause briefly, or remain for longer interaction.	Pass–Pause–Stay	Residents welcomed a limited number of places to sit, stop, and find shade, but did not want stopping points to be distributed too densely along everyday routes and did not expect every passage to lead to interaction.	Keep routes clear and continuous for Pass, allowing residents to move through without having to interact, while concentrating Pause and Stay spaces at selected locations connected to daily routes and activities.
9	Organized shared dining did not fit well with residents' everyday access conditions and established cooking routines.	Shared facilities should fit around residents' existing routines rather than requiring regular participation.	Adjustable frequency of sharing; optional engagement	Residents were generally positive about occasional shared meals, but were reluctant to follow a fixed rotation for cooking or hosting.	Avoid fixed cooking or hosting rotations. Retain shared kitchens and dining spaces for occasional, voluntary use, with residents deciding when, with whom, and how to share.

Across the nine translation chains, residents were generally open to spatial improvements and greater opportunities for everyday contact, while repeatedly emphasizing control over independent living, privacy, and engagement. Meaningful relationships informed the organization of residential proximity and everyday contact, but did not directly determine relocation or co-residence. Sharing arrangements were refined to remain more voluntary and adjustable, visual connections more controllable and privacy-sensitive, and everyday interaction more optional.

4.2. Local Diagnosis and Spatial Pathways

To differentiate the focus and intensity of spatial intervention under different residential conditions, this study integrated housing fit and social–spatial fit within a qualitative diagnostic framework.

As shown in Table 8, interventions across different conditions share a common principle of addressing the constrained dimension while preserving conditions that remain adequate. Under conditions of adequate housing fit and constrained social–spatial fit, the dwelling can be treated as a stable resource, while intervention targets the surrounding spatial environment to improve the everyday accessibility of meaningful relationships. Where housing fit is constrained but social–spatial fit remains adequate, the existing alignment between social connections and everyday living spaces becomes an important strength to preserve. Housing intervention should therefore preserve existing social proximity, ensuring that improvements in physical conditions do not disrupt meaningful social relationships. Adequate housing fit combined with adequate social–spatial fit calls for the minimum necessary intervention, whereas constraints in both dimensions may call for more substantial improvements to housing conditions and social–spatial relationships.

Table 8. Qualitative diagnostic framework for housing fit and social–spatial fit.

	Adequate Social–Spatial Fit	**Constrained Social–Spatial Fit**
Adequate housing fit	Preserve existing housing conditions and accessible social relationships. Support everyday life with only the minimum necessary intervention.	Prioritize improvements to doorstep spaces, front yards, gathering places, and everyday routes to improve access to meaningful relationships.
Constrained housing fit	Prioritize housing adaptation where feasible, while preserving the everyday accessibility of established social relationships.	Address housing limitations and social–spatial constraints together, considering more substantial adaptation or residential reorganization where appropriate.

One example of how these diagnostic dimensions were applied concerns an older couple in Quanfang Village (QF-01). Their dwelling had insufficient daylight in the bedroom and inadequate domestic facilities, indicating constrained housing fit. The couple also lived relatively far from people with whom they maintained meaningful relationships, making everyday contact less convenient and suggesting constrained social–spatial fit. This combination showed that both housing conditions and the everyday accessibility of meaningful relationships required attention.

The diagnostic assessment did not, however, by itself determine the most appropriate residential response for individual residents. During Stage 2 visual-elicitation interviews,

for example, some residents with poor housing conditions welcomed improvements to their existing homes but were reluctant to relocate (QF2-01). Others with relatively good housing conditions were open to moving within the village if a new arrangement could better meet their future needs while maintaining meaningful relationships (QF2-08). The two diagnostic dimensions therefore informed the focus and intensity of spatial intervention, while the choice between remaining and relocating also required consideration of residents' preferences, anticipated future needs, and the feasibility of adaptation or relocation. These considerations informed the development of two spatial pathways (Figure 4). The framework is intended as a decision-support tool for planners, designers, local community representatives, and service providers working together with older residents. Older residents are both the intended beneficiaries and active participants in decisions about their living arrangements.

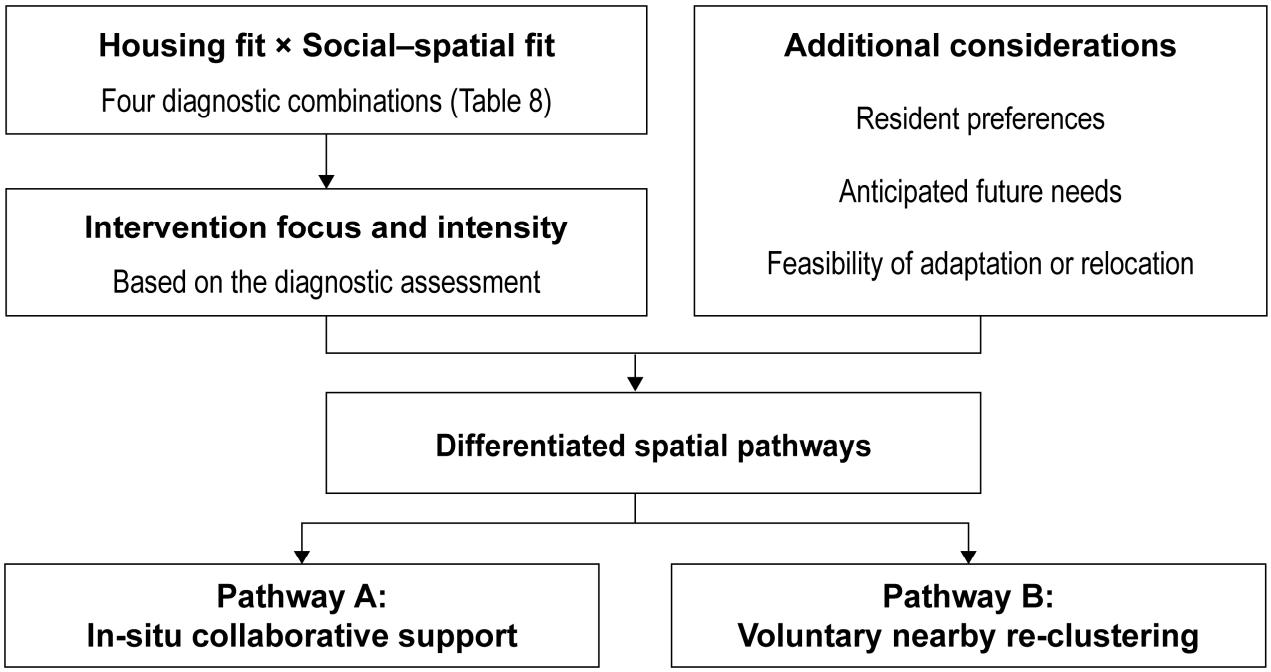

Figure 4. From qualitative diagnosis to differentiated spatial pathways.

4.2.1. Pathway A: In Situ Collaborative Support

Pathway A treats continued residence in the existing home as the primary basis for older residents' living arrangements. It applies when residents wish to remain in their existing homes and the dwelling is either suitable for continued use or can reasonably be adapted to meet current and anticipated future living needs. On this basis, social–spatial fit further influences the focus and direction of intervention. When housing adaptation is needed and meaningful relationships are already accessible in everyday life, intervention mainly focuses on the dwelling itself and addresses specific barriers encountered by older residents in daily use. Steps and level changes at dwelling entrances and between indoor and outdoor spaces often make access difficult. These conditions can be improved through gentle ramps, localized leveling, or the addition of handrails. Inside the dwelling, obstacles that disrupt movement through the main living spaces should be removed, while natural lighting and ventilation should be improved. Bathrooms can be made safer and easier to use through slip-resistant flooring, handrails, and other necessary assistive features. As a frequently used space in everyday life, the kitchen should support older residents in preparing meals independently. Measures such as adjusting countertop heights, providing

seated work areas, and optimizing the storage of frequently used items can help reduce the physical effort required for meal preparation. Together, these adjustments are intended to help older residents continue using their homes more independently while maintaining established routines.

When meaningful relationships already exist within the village but their everyday accessibility is constrained by spatial conditions, intervention can focus on the surrounding environment. Near the home, threshold spaces such as doorsteps and sheltered areas beneath the eaves can be equipped with seating, simple work surfaces, and other necessary facilities to provide more suitable conditions for resting, conversation, and handicraft activities. Courtyards can continue to accommodate existing uses such as planting, drying, and poultry keeping, while improved paving and shading can make these everyday and productive activities easier to sustain. While retaining the existing functions of semi-outdoor and outdoor spaces, these improvements can also increase opportunities for visual contact, stopping, and conversation among familiar residents, creating more favorable conditions for informal mutual support within everyday activities. Where visual connections are introduced or strengthened, they should remain controllable and avoid continuous exposure of private domestic spaces. At a broader scale, everyday routes connecting dwellings should be continuous and easy to use. Addressing uneven surfaces and significant level changes, improving nighttime lighting, and providing a small number of resting points in suitable locations can reduce the effort required for walking and everyday visits, making it easier for familiar residents who do not live immediately adjacent to one another to maintain regular contact. Overall, Pathway A allows intervention at different scales, from the dwelling interior to the surrounding environment, depending on the constraints identified. Guided by the principle of minimum necessary intervention, it aims to improve living conditions and support older residents in maintaining their everyday routines and established social relationships.

4.2.2. Pathway B: Voluntary Nearby Re-Clustering

Voluntary Nearby Re-clustering refers to residents voluntarily relocating within the same village into small residential groupings, while retaining self-contained living and organizing residential proximity around meaningful or self-selected relationships. It may be considered when the existing dwelling can no longer adequately support aging in place, or when residents voluntarily choose to relocate within the village after considering their housing conditions, anticipated future needs, and meaningful social relationships. In either case, relocation depends on residents' willingness and practical feasibility. New housing should remain within Quanfang Village, allowing older residents to improve their living conditions while continuing to live in a familiar environment. Familiar residents who previously lived further apart but maintained close relationships could thereby live in closer proximity, creating more opportunities for everyday contact and mutual support.

The proposed housing uses self-contained units as the primary residential form. Each unit includes a private bedroom, bathroom, kitchen, and basic living space, supporting independent everyday living while maintaining residents' own routines and personal boundaries. In addition to these essential living spaces, a flexible room can be provided according to residents' current lifestyles, family arrangements, and future care needs. At different stages, this room can be adapted for receiving visitors, personal activities, temporary accommodation, or supportive care. This flexibility may help the housing unit to accommodate changes in residents' circumstances over time, thereby supporting aging in place.

The residential units are organized around indoor shared spaces that support everyday and productive activities, and are connected through a range of threshold spaces. Within the

cluster, corridors maintain continuous and unobstructed circulation while also providing opportunities for brief pauses and interaction through local widening, seating, and pocket spaces. Windows in the kitchens and dining areas of individual units face the corridor or indoor shared spaces, with curtains allowing residents to control the degree of visibility. Balconies facing the courtyard remain open and visually permeable, providing places to pause and look outward, while more private spaces such as bedrooms are protected from direct exposure. In this way, residents can adjust the degree of visual openness themselves, protecting privacy when needed while allowing greater opportunities for mutual visibility, everyday awareness, and simple forms of assistance when desired. Shared kitchens, dining spaces, and productive courtyards are also provided near the cluster to support activities such as cooking, eating, planting, and processing, and can help residents to continue familiar everyday and productive practices after relocation. Where appropriate, some shared and productive spaces could also be made accessible to other villagers, allowing communal life within the cluster to remain connected to the wider village's everyday activities and social relationships.

The higher-sharing living arrangements are retained as a secondary and supplementary option. For a small number of older residents who know each other well, have compatible daily routines, and prefer a greater degree of companionship, kitchens, bathrooms, and some living spaces can be shared while private bedrooms are retained. Such arrangements should remain voluntary, and the people involved, the activities or spaces shared, and the degree of sharing can be adjusted according to participants' everyday habits. In this way, greater opportunities for everyday contact and mutual support can be provided while clear personal boundaries are maintained.

5. Discussion

5.1. The Spatial–Temporal Mismatch of Family Support

Evidence from Quanfang Village suggests that the changing pattern of rural eldercare cannot be fully explained simply as a decline in family support. Although family responsibilities and emotional relationships often remain after adult children leave the village for work or settle elsewhere, their capacity to be continuously and predictably present in older people's everyday lives and to provide timely support is clearly constrained. For example, in QF-02, an adult son's family stayed in the county during the week for work and children's schooling and returned to the village on weekends, while in QF-11, another adult son worked away from home during the day and could not provide continuous care. Existing studies of rural aging and population out-migration in China often frame these changes in terms of weakened family caregiving capacity, reduced availability of intergenerational support, or unmet care needs [30–32]. These accounts mainly emphasize the pressures placed on family caregiving capacity and intergenerational support, while paying less attention to how supportive relationships are reorganized through spatial separation and changing everyday temporal rhythms. In this sense, the spatial–temporal mismatch between family responsibility and continuous everyday availability offers a complementary interpretation of the pressures currently facing family-based eldercare in rural areas.

This reframing raises a more specific question of how to address gaps in everyday support when family members are unable to be continuously present. Recent studies on rural eldercare have also turned to neighborhood relations, social networks, community mutual support, and mutual-aid eldercare as supplementary forms of support beyond immediate family care [33,34]. Long-standing acquaintance networks and other meaningful local relationships in Quanfang Village provide a social basis for this supplementary support. Family members continue to bear primary kinship responsibilities and address more substantial needs, while familiar local relationships provide supplementary everyday

awareness and low-intensity assistance. This division of roles also clarifies where spatial intervention can contribute by improving the everyday accessibility of these local relationships when family members are not regularly present. Different forms of support in rural aging in place therefore complement one another.

5.2. Principle-Based Contextual Translation of Collaborative Housing

Existing collaborative housing research has recognized the diversity of residential models and the variation in their spatial organization, tenure, governance, and sharing arrangements across different cases and contexts [6,35,36]. This diversity suggests that collaborative housing cannot be reduced to a single spatial typology. It also highlights the importance of distinguishing collaborative housing principles from the residential forms through which they are expressed. While transfer and adaptation take an established housing typology as their point of reference, contextual translation takes these principles as its starting point, reinterpreting their meanings through local evidence to inform spatial propositions. The two spatial pathways identified in Quanfang Village, In situ Collaborative Support and Voluntary Nearby Re-clustering, differ substantially in residential form and intervention intensity, yet both are informed by the same underlying principles of autonomy, sharing, social connection, and mutual support.

Within this translation process, the four principles took on more specific meanings in the context of Quanfang Village. Autonomy was expressed through residents' control over private domestic life, everyday routines, and the choice of whether to remain in their existing dwelling or relocate within the village. Sharing remained voluntary and adjustable, with its content, frequency, participants, and degree varying according to residents' preferences and everyday routines. Social connection concerned maintaining or strengthening opportunities for contact within existing meaningful relationships. Mutual support took the form of supplementary everyday awareness and low-intensity assistance rather than formalized reciprocal care.

A further implication of this translation process is that collaborative principles need to be grounded in ordinary life. Older residents in Quanfang Village organized much of their everyday life around familiar domestic, productive, and intergenerational practices. These established practices helped sustain daily rhythms, social relationships, and family roles, while also shaping how residents used space and encountered others in everyday life. The reference settings also drew attention to the distinction between organized activity provision and the continuity of meaningful everyday practices. While institutional care settings and other residential environments with greater resources can provide organized activities and shared facilities, these do not necessarily substitute for routines and relationships that residents already regard as part of ordinary life. The spatial expression of collaborative principles should therefore begin with what residents already do, where these activities occur, and which aspects of everyday life they wish to retain. Taken together, these reinterpretations show that contextual translation concerns not only the spatial expression of collaborative housing principles but also the intensity, boundaries, and everyday meaning of collaboration under local conditions.

Contextual translation also differs in analytical focus from participatory design and age-friendly housing adaptation. Participatory design emphasizes residents' involvement in shaping design decisions, while age-friendly housing adaptation focuses on modifying living environments in response to older residents' needs. The Evidence-to-Translation Matrix reflects this approach to contextual translation by linking local evidence, interpretations of collaborative housing principles, and spatial propositions, rather than taking an established housing typology as the basis for design. The specific interpretations of the four principles and the two proposed spatial pathways are grounded in Quanfang

Village, but the analytical process combining principle-based interpretation, qualitative diagnosis, and resident appraisal may also be useful in other rural settings. Applying this process elsewhere would require reassessing local housing conditions, social relationships, residents' needs, and governance arrangements to develop spatial responses appropriate to the new context.

5.3. Social–Spatial Alignment for Everyday Informal Support

The findings from Quanfang Village suggest that the existence of meaningful social relationships does not necessarily ensure their everyday accessibility. Those who mattered most to older residents, including relatives, neighbors, and familiar villagers, did not always live immediately nearby. Everyday contact also depended on whether residents' routes overlapped, whether they could easily reach one another, and whether the spaces in which they encountered each other allowed them to pause and interact. Social proximity and spatial proximity therefore cannot be treated as equivalent. Social–spatial fit captures this distinction by considering both which relationships matter to residents and how everyday spatial conditions support continued contact.

The role of spatial intervention lies in improving the everyday accessibility of relationships that already matter. Architecture and the built environment do not determine whether residents maintain contact with or support one another, but they can make everyday contact and assistance easier or more difficult to sustain. This is consistent with evidence that the built environment can shape opportunities for social interaction [37]. Clear and walkable routes can reduce the effort required to visit familiar people; threshold spaces can create opportunities for brief contact; controllable visual connections can support mutual awareness; and appropriately located stopping spaces can allow encounters to develop into conversation. Together, these conditions can make low-intensity informal support easier to sustain within existing meaningful relationships.

The spatial implications differ according to the source of misalignment. Where meaningful relationships already exist but everyday contact is constrained by spatial conditions, intervention can improve accessibility without requiring relocation. Where residents voluntarily relocate for broader housing reasons, meaningful relationships can inform the organization of residential proximity, but should not determine relocation on their own. Social–spatial fit therefore provides a relational basis for differentiated spatial intervention. The aim is not simply to minimize physical distance or maximize interaction, but to improve the spatial conditions through which meaningful relationships can be maintained in everyday life.

5.4. Resident Appraisal as a Corrective Mechanism in Contextual Translation

The translation from field evidence to spatial intervention is not a direct or deterministic process. Empirical findings can indicate the conditions that design needs to address, but they do not by themselves prescribe a particular spatial form. Moving from observed housing conditions, everyday practices, and social relationships to a design proposition inevitably involves interpretation by the researcher. The preliminary propositions developed in Stage 1 were treated as provisional rather than as final design solutions. Resident appraisal in Stage 2 introduced a corrective step into this process, allowing these interpretations to be qualified, modified, reorganized, or rejected before being incorporated into the refined spatial strategies.

Several revisions illustrate this role. The visual materials used in Stage 2 presented periodic shared meals, including the possibility of rotating cooking or hosting among nearby households, but Stage 2 participants were generally more comfortable with occasional shared eating than with a fixed rotation, which some regarded as burdensome because of

differences in food preferences, household routines, and preparation effort. Fixed rotational hosting was therefore not retained in the refined proposition. Similarly, although Stage 1 considered higher-sharing residential arrangements, most participants preferred to retain their own kitchen, bathroom, and basic living space; higher-sharing options were consequently retained only as secondary and voluntary alternatives. Visual connection was also refined. Participants generally welcomed visibility in semi-outdoor and outdoor spaces but preferred stronger privacy control in domestic interiors. The refined proposition therefore emphasized varying the degree of visual contact according to the privacy needs of different spaces, while allowing residents to control visibility. These examples show that resident feedback helped clarify which arrangements needed to be revised and the conditions under which different forms of sharing and visibility would be acceptable.

Resident appraisal therefore served a different purpose from design validation. The visual-elicitation interviews did not establish whether the proposed interventions would improve wellbeing, strengthen mutual support, or perform successfully after implementation. They examined whether the researcher's interpretation of local evidence remained acceptable when translated into concrete spatial and organizational propositions. The Evidence-to-Translation Matrix makes this process explicit by linking field evidence, empirical findings, social-spatial interpretations, collaborative principles, spatial mechanisms, preliminary propositions, resident appraisal, and refined propositions. Its methodological value lies in making the translation process traceable and revisable, so that the evidential basis of spatial propositions remains visible while the propositions themselves remain open to modification. Whether these propositions would perform successfully in practice would require separate empirical evaluation.

5.5. Implementation Conditions and Practical Applicability

The practical implementation of the two proposed spatial pathways requires consideration of construction feasibility and long-term maintenance arrangements. Pathway A mainly involves improvements to existing dwellings and their surrounding environments. Housing adaptation first requires assessing whether the existing buildings can accommodate the proposed changes. With the consent of residents and relevant rights holders, the scope of adaptation can then be determined according to actual needs and available funding. Improvements to village roads, public resting areas, and other commonly used spaces require coordination at the village level to clarify how costs will be shared and who will be responsible for subsequent maintenance.

Pathway B involves voluntary relocation within the village and the development of small residential clusters, and requires more conditions to be met before implementation. Suitable sites that meet relevant land-use and construction requirements must first be identified, and arrangements for ownership or use rights to the dwellings after relocation need to be clarified. Whether construction funding can be secured and residents can afford the associated costs will affect whether this residential arrangement can proceed in practice. The long-term use of shared facilities also depends on how maintenance is funded and costs are shared, as well as how management responsibilities are allocated among residents, village-level organizations, and other relevant parties. As sharing is voluntary, arrangements for ongoing use should allow residents to adjust their level of participation or withdraw from shared arrangements as their needs change, so that participation does not become a fixed obligation. When residents' care needs exceed what everyday informal support can provide, coordination with family care and professional eldercare and healthcare services also needs to be considered.

5.6. Limitations and Future Research

This study focused on Quanfang Village as a single case and used qualitative research together with a design translation approach. The findings are therefore grounded in a specific context of housing conditions, social relationships, and everyday life. The participant sample also had limitations, as older women were less represented than older men and differences in functional ability were not systematically considered during recruitment. This may have limited the diversity of later-life needs and preferences captured. Future research could compare villages across different regions and settlement types and include a wider range of older residents to further examine the applicability of housing fit, social–spatial fit, contextual translation, and the two spatial pathways across different rural contexts.

In Stage 2, the preliminary spatial strategies were appraised and refined through visual-elicitation interviews, but this appraisal addressed residents' responses to the proposed interventions rather than their performance in actual living environments. How everyday contact, informal support, and sharing patterns might emerge and change if these interventions were implemented therefore remains empirically untested. Future research could use pilot implementation, longitudinal observation, and post-occupancy evaluation to examine how the proposed spatial mechanisms perform in practice and how residents' relationships, functional abilities, maintenance practices, and patterns of use change over time.

The study primarily addresses the spatial translation of collaborative housing principles. Organizational and operational conditions such as tenure arrangements, cost sharing, maintenance responsibilities, collective decision-making, and the coordination of professional care were not systematically examined. These factors may affect whether and how the proposed spatial arrangements could be implemented and sustained in practice and should therefore be examined in future pilot implementation and evaluation.

6. Conclusions

This study examined how collaborative housing principles can be contextually translated into spatial responses for rural aging in place through the case of Quanfang Village in Jiangxi Province, China. Rather than treating collaborative housing as a transferable residential typology, the study approached autonomy, sharing, social connection, and mutual support as principles whose spatial expression should be reinterpreted in relation to local housing conditions, social relationships, everyday practices, and residents' preferences.

The study combined housing fit and social–spatial fit as two complementary qualitative diagnostic dimensions to differentiate the focus and intensity of spatial intervention. Different combinations of the two dimensions informed a gradient of intervention that was synthesized into two proposed spatial pathways: In situ Collaborative Support and Voluntary Nearby Re-clustering. The suitability of either pathway also depends on anticipated living and care needs, willingness to relocate, and practical conditions for implementation.

Methodologically, the study integrates qualitative diagnosis with the development and resident-informed refinement of spatial propositions. The Evidence-to-Translation Matrix documents the reasoning and subsequent adjustments, making this process traceable and revisable. Three broader understandings emerged across the study: ordinary life should provide the starting point for intervention; support should be enabled rather than prescribed; and social and spatial proximity should be considered together rather than treated as equivalent.

The proposed spatial pathways are grounded in Quanfang Village and require evaluation in practice. The analytical process, however, may be adapted to other rural settings, offering a locally grounded way of developing spatial strategies that aim to support everyday life and meaningful relationships while preserving residents' autonomy and control over how they live and interact.

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Institutional Review Board Statement: Ethical approval for this study was obtained from the School of Architecture, Southeast University, China, on 10 December 2025 (Approval No. SEUARCH-RER-20251201). The study was approved as low-risk behavioral and social science research involving adult participants and did not involve medical intervention, clinical research, physical experimentation, drug use or harmful stimulation. All procedures were conducted in accordance with the approved research protocol, the institutional ethics requirements of the School of Architecture, Southeast University, and relevant science and technology ethics standards and administrative requirements in China. All participants included in this study were aged 18 years or above. Voluntary oral informed consent was obtained from all participants before interviews or questionnaires were conducted.

Informed Consent Statement: Verbal informed consent was obtained from all participants before each interview. This approach was adopted because the study involved low-risk, face-to-face qualitative fieldwork, primarily with older rural residents. In this context, verbal consent was considered more appropriate, as requiring a written signature could introduce additional formality and make some participants less at ease. Participants were informed of the study's purpose, the voluntary nature of participation, their right to withdraw, and how their information would be anonymized and used for academic research before agreeing to participate.

Data Availability Statement: The data supporting the findings of this study are not publicly available due to privacy and ethical considerations concerning the research participants.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

Table A1. Full Evidence-to-Translation Matrix.

Chain	Field Evidence	Empirical Findings	Social–Spatial Interpretation	Collaborative Principle(s)	Spatial Mechanism	Preliminary Spatial Proposition	Resident Appraisal	Refined Proposition
1	Continuing to live in Quanfang Village was a common preference among older residents. Field observations also identified cases of relocation from older dwellings to newer housing within the village. (Interviews: QF-01, QF-02, QF-04, QF-06–QF-10)	Attachment to the village appeared more consistent than attachment to one specific dwelling.	Aging in place may depend on continuity of familiar people, routines, routes, and village life rather than permanent residence in the same dwelling.	Autonomy + Social connection	Village-based continuity; voluntary nearby relocation	Where the existing dwelling can support aging in place, retain it with the minimum necessary adaptation. Where housing conditions constrain continued residence, consider more substantial adaptation or voluntary nearby relocation while maintaining continuity with familiar relationships and everyday life.	Residents generally accepted the two residential options, but their choices did not always correspond to current housing conditions. Some preferred to remain despite constrained housing conditions, while others with adequate housing were open to nearby relocation if it could better meet future needs without disrupting meaningful relationships. (Interviews: QF2-01–QF2-09)	Retain in situ adaptation and voluntary nearby relocation as valid options. Current dwelling conditions should inform the level of intervention, while the choice between remaining and relocating should also consider residents' preferences, anticipated future needs, and meaningful relationships.
2	Existing dwellings varied substantially in physical condition. Some required limited aging-friendly adaptation, whereas others had deteriorated structures, inadequate sanitary facilities, insufficient daylight and ventilation, or other more substantial spatial constraints. (Field observations)	Existing dwellings varied in their capacity to support aging in place.	A single housing response is inappropriate, and intervention intensity should be adjusted according to actual housing conditions.	Autonomy	Differentiated intervention; minimum necessary intervention			
3	Many older residents lived separately from their adult children. Some described separate living as a preferred arrangement because of differences in diet, daily schedules, and everyday habits, or because they wished to remain self-reliant. (Interviews: QF-01, QF-02, QF-06, QF-09)	Separate residence did not necessarily indicate weak family relationships; for some older residents it was a preferred way of maintaining control over everyday life.	Later-life support needs to coexist with control over private domestic space and self-directed routines.	Autonomy + Sharing	Clear private boundaries; independent domestic functions; adjustable levels of sharing	Maintain independent domestic living for residents who remain in their existing homes. For nearby relocation, provide alternatives with different levels of sharing, ranging from self-contained units with shared communal spaces to higher-sharing arrangements with selected shared domestic facilities.	Most participants preferred self-contained units. Higher-sharing arrangements were acceptable only to a smaller number of older residents, and only on a voluntary basis with familiar people whose everyday routines were compatible. (Interviews: QF2-01–QF2-09)	Maintain independent domestic living in existing homes and use self-contained units as the baseline for nearby re-clustering. Shared spaces should supplement rather than replace private domestic life. Higher-sharing arrangements should remain secondary and voluntary.

Table A1. *Cont.*

Chain	Field Evidence	Empirical Findings	Social–Spatial Interpretation	Collaborative Principle(s)	Spatial Mechanism	Preliminary Spatial Proposition	Resident Appraisal	Refined Proposition
4	Adult children remained emotionally and practically involved, but work, childcare, schooling arrangements, and residential separation often limited their continuous everyday availability. Some family members considered remote monitoring because they could not remain nearby. (Interviews: QF-01–QF-03, QF-05, QF-11)	Family responsibility remained important, but continuous everyday presence was often difficult to maintain.	The key problem was a spatial–temporal mismatch between family responsibility and everyday availability.	Mutual support + Social connection	Supplementary everyday awareness; controllable visibility	Introduce spatial conditions that allow familiar people to notice older residents' everyday presence and changes in routine through ordinary contact and selective visual connections, without requiring scheduled checking.	Older residents generally welcomed opportunities for familiar people to notice and respond when needed, particularly in semi-outdoor and everyday activity spaces, but wanted stronger privacy control in domestic interiors. They also preferred such support to remain informal rather than become a fixed caregiving obligation. (Interviews: QF2-01–QF2-04, QF2-07–QF2-09)	Retain opportunities for supplementary everyday awareness and low-intensity assistance as part of ordinary contact. The degree of visibility should vary according to the privacy needs of different spaces, while familiar relationships should not be turned into fixed caregiving obligations.
5	Residents recalled traditions of household help and expressed greater reassurance when familiar people nearby could notice older residents and respond when needed. In one case, an older resident living alone was not discovered until several days after death. (Interviews: QF-02, QF-08)	Familiar village relationships provided a basis for informal support, but such support was not always timely or continuously accessible.	Relational potential and everyday accessibility are different; familiar relationships require opportunities for everyday contact to become practically supportive.	Mutual support + Social connection	Everyday co-presence; repeated low-intensity encounters			
6	Older residents who frequently socialized together were not always immediate neighbors. Their everyday contact was also shaped by overlapping routes and opportunities to meet within the village. (Interviews: QF-06; Field observations)	Meaningful relationships did not necessarily coincide with immediate residential adjacency.	Social proximity cannot be inferred from physical distance alone. A mismatch may exist between meaningful relationships and their everyday spatial accessibility.	Social connection	Relationship-informed proximity; route overlap	Where residents relocate, organize nearby clustering with reference to meaningful or self-selected relationships. Where residents remain in place, improve everyday routes to make familiar people easier to reach and encounter.	Older residents generally welcomed living closer to familiar and trusted people. However, they did not see closer proximity as a sufficient reason to relocate, and some considered short walking distances within the village acceptable. (Interviews: QF2-01–QF2-04, QF2-07–QF2-09)	Retain both spatial responses. Meaningful relationships should inform residential proximity where relocation is chosen for broader reasons, but should not determine relocation on their own.
7	Cooking, cultivation, poultry keeping, food processing, bamboo craftwork, household maintenance, and grandchild care remained central to older residents' everyday routines. Public spaces available for everyday use were limited within the village. (Interviews: QF-01, QF-02, QF-04, QF-09, QF-10; Field observations)	Older residents' everyday life remained structured by ordinary domestic, productive, and intergenerational practices.	The continuity of ordinary everyday practices, rather than the provision of separate programs of organized activity, should guide spatial intervention.	Autonomy + Sharing	Continuity of everyday practices; flexible ordinary-use spaces	Retain and improve existing spaces for everyday domestic and productive activities. Where new shared spaces are introduced, their functions should be aligned with activities that residents regularly undertake.	Older residents wished to continue their familiar everyday and productive activities and felt that frequently used spaces could be improved to better support them. They preferred new shared spaces to be adaptable to different needs rather than fixed-purpose activity rooms for older residents. (Interviews: QF2-01–QF2-04, QF2-07–QF2-09)	Prioritize improvements to courtyards, doorstep spaces, and semi-outdoor areas; organize new shared spaces as flexible, multipurpose settings linked to existing activities.

Table A1. *Cont.*

Chain	Field Evidence	Empirical Findings	Social–Spatial Interpretation	Collaborative Principle(s)	Spatial Mechanism	Preliminary Spatial Proposition	Resident Appraisal	Refined Proposition
8	Residents frequently encountered familiar people while using doorstep spaces, courtyards, and semi-outdoor areas around dwellings. Where seating, shelter, or other conditions made it easier to stop, brief pauses and conversations were more likely to occur. (Interviews: QF-01, QF-02, QF-04, QF-06; Field observations)	Everyday encounters did not necessarily develop into sustained interaction.	Spatial conditions for stopping influence whether residents pass by, pause briefly, or remain for longer interaction.	Social connection	Pass–Pause–Stay	Provide spatial options for passing, brief pauses, and longer stays within everyday circulation. Maintain clear routes for direct passage while introducing stopping and resting spaces along everyday routes, with seating or shelter where needed.	Residents welcomed a limited number of places to sit, stop, and find shade, but did not want stopping points to be distributed too densely along everyday routes and did not expect every passage to lead to interaction. (Interviews: QF2-01–QF2-09)	Keep routes clear and continuous for Pass, allowing residents to move through without having to interact, while concentrating Pause and Stay spaces at selected locations connected to daily routes and activities.
9	A community dining service had previously operated in the village, but residents found eating there regularly inconvenient. Together with economic difficulties, this contributed to its closure after several months. (Interviews: QF-06)	Organized shared dining did not fit well with residents' everyday access conditions and established cooking routines.	Shared facilities should fit around residents' existing routines rather than requiring regular participation.	Sharing	Adjustable frequency of sharing; optional engagement	Retain independent everyday cooking while providing shared kitchens or dining spaces for optional communal use.	Residents were generally positive about occasional shared meals, but were reluctant to follow a fixed rotation for cooking or hosting. (Interviews: QF2-01–QF2-09)	Avoid fixed cooking or hosting rotations. Retain shared kitchens and dining spaces for occasional, voluntary use, with residents deciding when, with whom, and how to share.

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