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# Reimagining Hospice as Home: A Study in Kerala Context

## ABSTRACT

Hospice care provides a critical environment for patients facing terminal illnesses. This study aims to explore how residential architectural elements can foster the home-like environment of hospice focusing on the cultural, climatic, and caregiving context of Kerala. While Kerala has established a successful model of home-based palliative care, the system remains insufficient for many end-of-life situations, it has very few dedicated hospices. The rate of population ageing is extremely rapid in Kerala. Current literature offers limited guidance on how the region's distinctive residential architectural traditions can be translated into the design of hospice settings. Following a qualitative research design, this study analyses case studies of existing hospices, palliative care centres, and residential models within the Kerala context. Through spatial mapping and environmental quality assessments, the research identifies specific design factors and principles that support a home-like atmosphere. Findings reveal that spatial planning, indoor environmental quality, use of courtyards, and social interaction and cultural aspects are vital for establishing a sense of home, familiarity and belonging for residents. Introducing hospices that are rooted in residential architectural elements provides a culturally relevant solution with a dignified environment which helps in extending Kerala's existing care model into physical, purpose-built typologies. This study initiates an architectural rethinking of hospice design in Kerala by proposing a framework and design recommendations that inform future architectural practices for a more humane, context-specific, home-like care environment.

**Keywords** – Hospice, Palliative care, Kerala Residential Architecture, Spatial planning, Home-like environment.

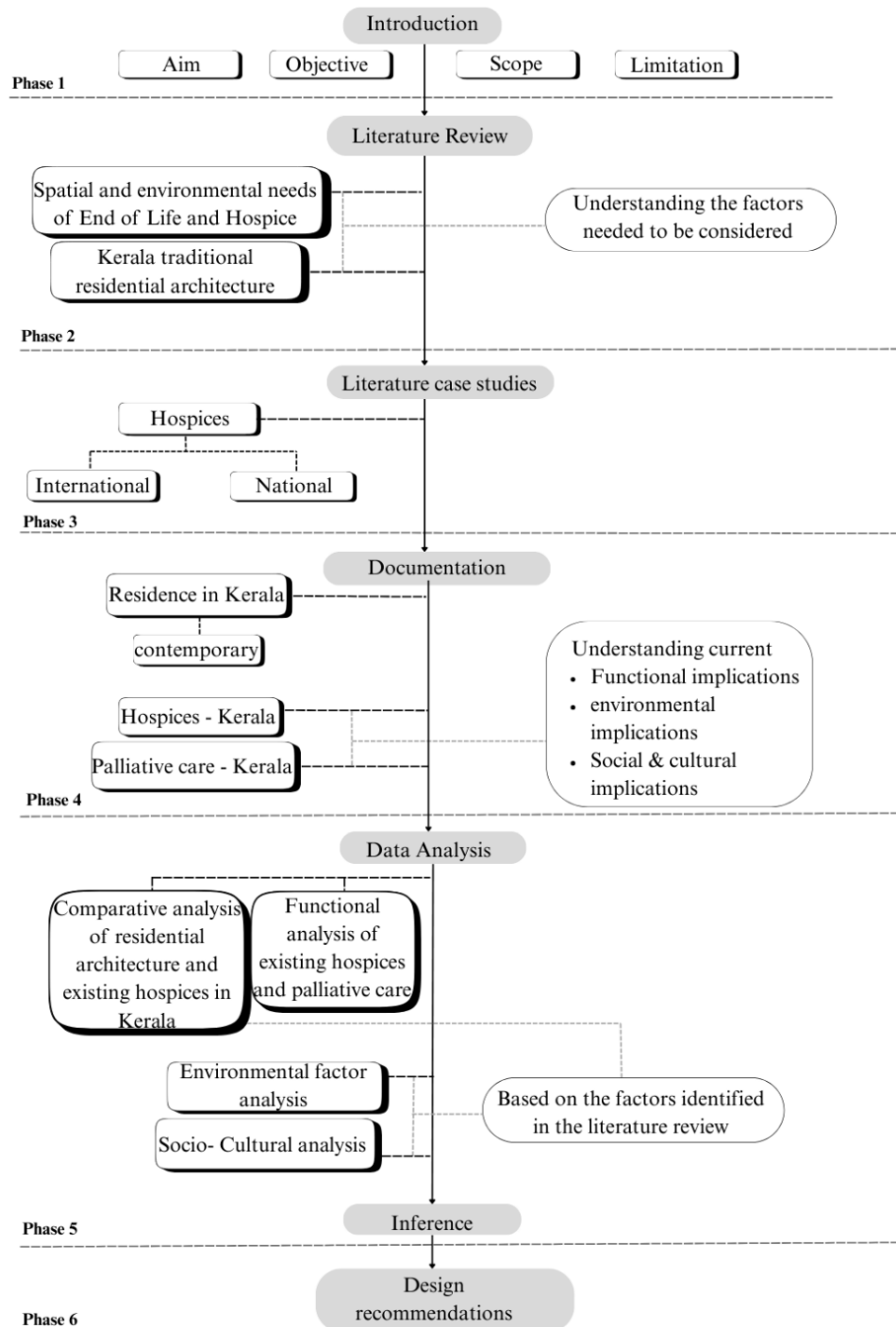
## 1. Introduction

Hospice care is mostly a community-based program that gives patients with terminal illness (i.e., expected survival less than six months) and their families multidimensional care from different professionals. Volunteers help provide services like symptom management and bereavement care (Hui et al., 2013; Montoya, 2017). Based on the 2011 Census, India was home to approximately 104 million senior citizens. Individuals aged 60 years and older made up 8.6% of the total population in India, while in Kerala, this figure was 12.6% (Anandh et al., 2021). The pace of ageing in India is moderate amongst South Asian countries with the elderly population expected to reach 10.1% by 2021, 13.1% by 2031, and 15% by 2036. In contrast, Kerala demonstrates a much faster demographic transition, where the proportion of elderly is projected to grow from 16.5% in 2021 to 20.9% in 2031, and further to 22.8% by 2036. In 2036, 8.4 million is the projected growth of elderly aged 60 and above of total population in Kerala (*Economic Review 2024*, n.d.). Rapidly ageing population, rising chronic

and terminal illnesses, shifting family structures, increases the need for hospice care in Kerala. There are so many global research on hospice architecture which emphasizes the importance of the built environment in shaping the emotional and spiritual experience of terminally ill patients (Adams, 2016; Sagha Zadeh et al., 2018; Verderber, 2014; Worpole, 2023). These studies highlight that domesticity, natural light, indoor environment, nature integration and spatial dignity contribute significantly to healing even when cure is not possible. Existing studies also focuses on the need of “home-like environment” in hospice settings (Swenson, 2009; Verderber, 2014; Sagha Zadeh et al., 2018), most studies are done to present generalised strategies which overlooks sufficient attention to how these approaches must adapt to specific geographical and cultural contexts (Sagha Zadeh et al., 2018). This creates a gap in knowledge based on how architectural and environmental design can respond to localised definitions of “home.” The scope of the dissertation includes the strategies for creating home-like environments in hospice design in the Kerala context, by the adaptation of residential and traditional architectural elements. This is done by understanding the spatial requirements of hospice care settings by studying the architectural language of Kerala's vernacular and residential spaces and analysing built form implications of Kerala's community-based palliative care system and existing hospices to propose a design solution that incorporates residential architectural concepts into hospice design. The study emphasizes on the factors that ensure the quality of life within hospice care, specifically spatial needs and planning, indoor environmental quality, opportunities for social interaction and cultural aspects, the broader perception of a home-like environment. The study examines these factors at multiple levels of spatial, experiential, cultural, and environmental, focusing on architectural dimension rather than on medical or policy aspects.

## **2. Methodology**

This section outlines the research methodology adopted to achieve the study objective, which develops a framework for future architectural practices for hospice design in Kerala. It follows a systematic progression from theoretical formulation to design synthesis, as illustrated in Fig.1, adopting a qualitative methodology structured into six phases that begins with defining the aim, objectives, scope, and limitations. The following stages involve a literature review and case study and analysis to identify global functional benchmarks for hospice care. Data collection focuses on documenting traditional and contemporary Kerala residences and existing palliative centre and hospice to evaluate their current functional, environmental, and socio-cultural implications. Documentation of traditional Kerala residence was done by analysing existing studies. Site visits and on-site field observations were used to gather primary data for the documentation of spatial configurations and environmental quality of contemporary Kerala residence, existing palliative centre and hospice. Unstructured interviews with users of residence, palliative care specialists and caregivers, which record lived experience and qualitative insights into patient requirements, were added to this. By giving expert narration and perceived comfort precedence over merely mechanical measurements, the study guarantees that the final framework is based on practical, real-world care dynamics. These specific datasets were gathered to understand how local domesticity can be integrated into clinical environments, ensuring the study is grounded in the regional architecture. The data analysis stage involves a comparative study of residential typologies against existing hospice facilities. This analysis aims to bridge the gap between home and healthcare, examining various factors identified during the literature review. By synthesizing these environmental and socio-cultural findings, the study draws critical inferences that form the basis for the final design recommendations. This ensures that the resulting architectural interventions are not only functionally efficient but also culturally empathetic to the Kerala context.



**Fig. 1.** Methodology chart depicting the steps involved for the formulation of research design

### 3. Literature Review

#### 3.1 Theoretical foundation

A hospice is a facility for the treatment of patients with terminal illnesses. Hospice care, which involves helping ill patients and their families during the last period of life, is an integral part of palliative care (Matebekwane, 2009). The philosophy of hospice care focuses on the primary objective of delivering comfort, relief, and pain control during a period of significant emotional and physical strain. The majority of individuals receiving hospice care are given a prognosis of six months or fewer left to live (Verderber & Refuerzo, 2019). In the brief that motivated St. Patrick's Hospital in Cork, Ireland (Adams, 2016), a hospice is described as a setting where everyday individuals confront exceptional difficulties and, with the support of committed and skilled healthcare professionals, prevail despite ongoing physical decline and successive losses. Individuals exist until their passing, and it is the responsibility of hospice care to support and empower every patient to experience their life to the fullest extent. It serves as a space for contemplation and a space to seek meaning and purpose. In *Modern Hospice Design*, Ken Worpole's begins with a sharp criticism of hospital environments in general and especially as places to die (Adams, 2016). According to the French architect Nils Dégrémont, "In our civilization, a death outside the home can be likened to a death outside society—because, in a hospital environment and despite the existence of palliative care units, death is still something of which to be ashamed." (Adams, 2016). A strong preference to stay at home during end-of-life care is commonly observed (Parker et al., 2004; Rigby et al., 2010). A key feature of the "hospice movement" in institutional end-of-life environments was the establishment of smaller, home-like structures and surroundings (Sagha Zadeh et al., 2018). By dismissing hospital architecture, the movement favoured the tradition of residential design, acknowledging the idea that the ideal place to pass away is at home. Hospital historian Grace Goldin identifies the lasting impact of hospices-in-houses to what she refers to as a "protohospice," St. Luke's House in London, which functioned from 1893 to 1921. St. Luke's House moved from house to house (Adams, 2016), providing its terminally ill patients, protohospice which gives home like comfort achieved through spacious staircase, generous staircase, muslin window hanging, flowerboxes, sitting rooms, polished brass hardware (Adams, 2016). "Homes for the dying" are central to Clare Humphrey's research on the hospice movement's nineteenth-century beginnings, where she identifies in three quasi-therapeutic establishments in London: St. Luke's House, the Hostel of God, and St. Joseph's House (Adams, 2016). This historical belief that individuals prefer to die at home still influences the notion that distinct institutions for the dying benefit society and affect their design. "The hospice building must be sympathetic to, and supportive of, our best efforts (Adams, 2016)". Historically, hospices emerged from homes and family customs, highlighting dignity and comfort. Even though the initial modern hospice (St. Christopher's) couldn't completely avoid hospital-like structures (Adams, 2016), its concept influenced subsequent hospice designs: spaces of solace, support, and connection, rather than clinical sterility.

#### 3.2 Environmental Design Factors

Previous studies have highlighted that the physical and built environment influences overall well-being and quality of life of individuals in end-of-life (EOL) care (Sagha Zadeh et al., 2018). Drawing from a range of interdisciplinary research, R. Sagha Zadeh summarized key evidence to guide future studies on this topic. The foundations of palliative care design stem from Cicely Saunders' philosophy of "*total pain*", which recognizes interconnected physical, emotional, social, and spiritual aspects of human distress that must all be addressed in hospice settings (Sagha Zadeh et

al., 2018). Based on her review, Sagha Zadeh (Sagha Zadeh et al., 2018) identified five major environmental dimensions frequently emphasized in the literature: (1) opportunities for “social interaction”, (2) access to “positive distractions”, (3) “privacy” and user control, (4) “personalization and” homelike qualities, and (5) the “ambient environment”. Additional considerations include spiritual support, efficient spatial organization, and cleanliness. Well-designed care settings, she notes, enable meaningful relationships among patients, families, and caregivers—facilitating interactions not only within the care team but also between the facility and the broader community. Positive sensory experiences such as natural views, daylight, and art can serve as beneficial distractions, while single-occupancy rooms and clearly defined zones help promote privacy and control. Furthermore, the quality of light, temperature, and acoustics together shape the ambient atmosphere of care environments. “An optimized ambient environment may decrease disruptive and aggressive behaviour among patients, improve patient mood and satisfaction, and elevate staff functioning.” (Sagha Zadeh et al., 2018).

### 3.3 Kerala Palliative Care Model

The study (Kumar, 2007) outlines the social and operational framework necessary for a hospice design to actually function as a home in the Kerala context. The Kerala model of palliative care suggests that a hospice should feel more like a home than a hospital. By moving away from a rigid, doctor-led hierarchy and toward a community-driven “social ecology,” the Neighbourhood Network in Palliative Care (NNPC) highlights that end-of-life care is deeply personal—a psychological and spiritual journey that feels most natural in a domestic setting (Kumar, 2007). Traditional hospital environments can often feel cold, alienating, and out of reach. To be truly effective, care needs to fit the local culture and way of life. This is where architecture plays a vital role by incorporating familiar features of traditional homes Kerala like the verandah or shared living spaces. This can move away hospice design from an institutional feel. These familiar spaces do more than just provide shelter. They act as design referents that help patients feel in control and keep them connected to their community. Ultimately, the hospice becomes a natural extension of the neighbourhood rather than an isolated clinic ensuring the building itself serves as a therapeutic means for dignified, person-centered care.

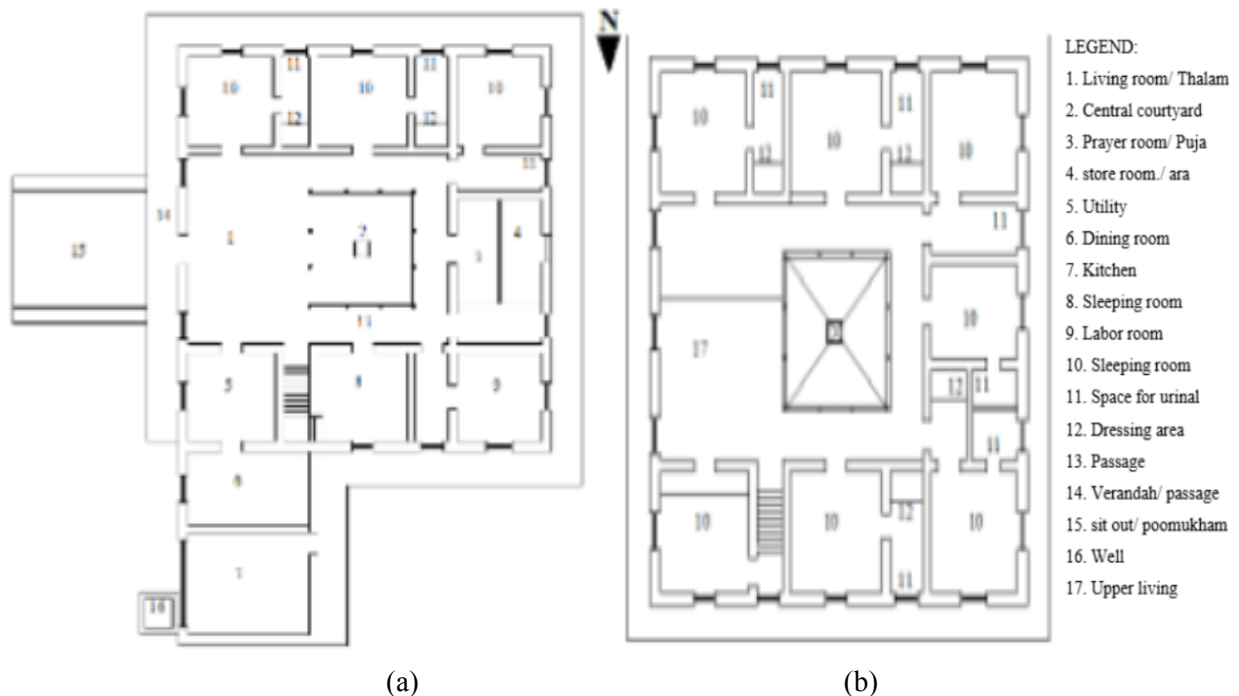
### 3.4 Kerala Residential Architecture

The vernacular architecture of each region evolves gradually in response to various determinants which are climate and cultural practices. Materials, construction systems, and technological progress act as modifying influences that shape this evolution. In Kerala, the regional housing typologies have developed under the combined impact of climate, locally sourced materials, indigenous building methods, and prevailing social customs and traditions. Understanding these social and cultural dynamics is crucial for analysing built form. Kerala’s traditional domestic architecture represents a highly rational and context-sensitive model that integrates environmental, technical, and cultural (Dr. Janmejy Gupta (1), Naushaba Jameel (2) & PushpitaPadhy (3)., n.d.). Traditional house forms range from the *akasala* (single block) to *dwissala*, *thrissala*, *nalukettu* (four blocks), and *ettukettu* (eight blocks), with some extended forms such as the *pathinarukettu* incorporating sixteen blocks and four courtyards (Saaya Ann Jacob & Dr. Nischay N Gowda, 2024). As (Dr. Janmejy Gupta (1), Naushaba Jameel (2) & PushpitaPadhy (3)., n.d.) emphasize architects can draw valuable insights from Kerala’s vernacular heritage by adapting its design logic and spatial principles such as the use of courtyards, climate-responsive orientation, appropriate roof forms, and fenestration into contemporary design to preserve both cultural character and functional performance.

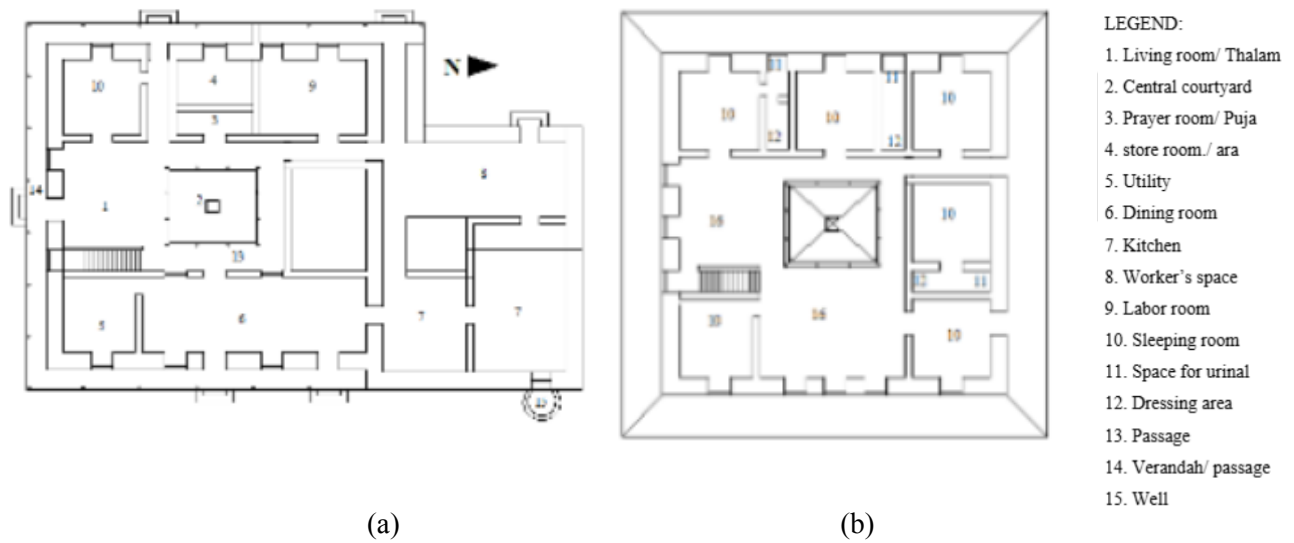
**Table 1.** “Basic characteristics of traditional construction” (Prakash et al., 2023)

| S. No. | Characteristics of architecture | Factors affecting characteristics                                                     | Features of characteristics                                                     |
|--------|---------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 1      | Design                          | “Demographic profile, Socio-cultural characteristics, Socio-economic characteristics” | Room structure: Size and numbers, shape, number of stories, Courtyard position. |
| 2      | Construction                    | Climate, topography                                                                   | Massive construction and Lightweight Construction                               |
| 3      | Planning                        | Climate, socio-cultural factors                                                       | Compact layout                                                                  |

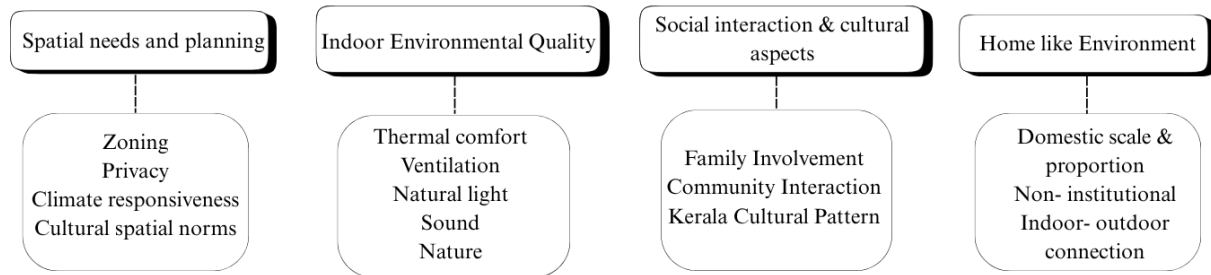
These are two traditional residences in Kerala. These are double storey residence with courtyards. Building entry is through sit-out which leads to living area. Spaces include kitchen, dining, storage, prayer area, Main courtyard is used for rituals, rear side courtyard is private space for women. Semi open verandahs act as gathering space whereas open space in first floor is for entertainment purpose. The built form is formed for natural consequence for functional requirements. The spaces area arranged around the central courtyard. Fenestrations ensure air movement. Built form is designed for climatic as well as social needs. Verandah reduces exposure to solar radiation. Courtyard brings interior spaces connecting to nature. Use of sloping roofs, raised plinth, attic spaces, central courtyards, low ceiling height, locally available materials enhance the climate responsiveness. These elements represent Kerala's spatial and cultural pattern. Factors that need to be considered for reimagining hospice as home is deriving from environmental design factors and from elements and principles of Kerala residential architecture is illustrated in Fig. 4.



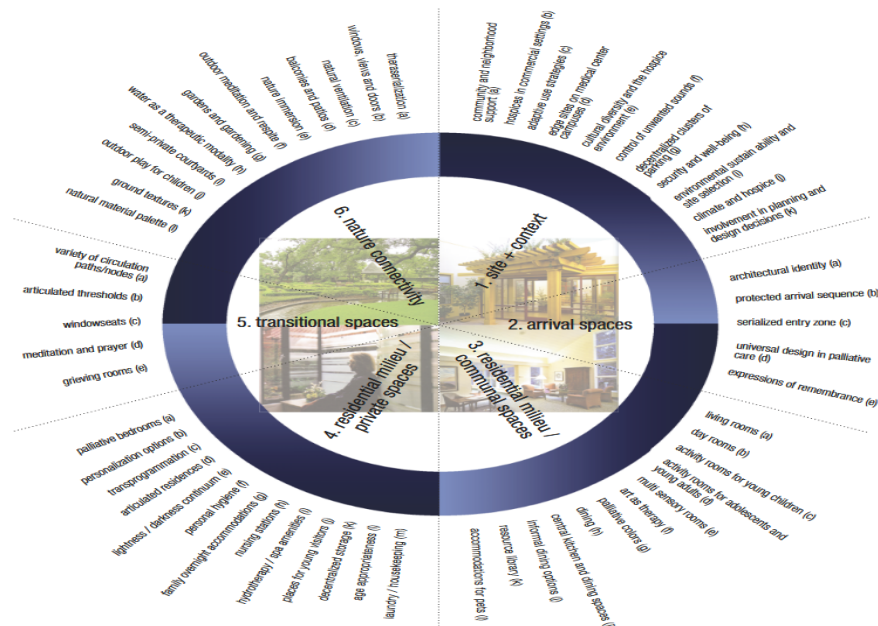
**Fig. 2.** Floor Plans of traditional residence at Cheranellur: (a) Ground Floor Plan (b) First Floor Plan(Gini Gopinath, 2014)



**Fig. 3.** Floor Plans of traditional residence at Varapuzha (a) Ground Floor Plan (b) First Floor Plan (Gini Gopinath, 2014)



**Fig. 4.** Factors and subfactors considering for the design guidelines for hospice design in Kerala



**Fig. 5.** “Architectural and Landscape Design Considerations in Residential Hospice Environments: Adapted from Residential Hospice Environments: Evidence-Based Architectural and Landscape Design Considerations.(Verderber, 2014)

## 4. Case Studies

### 4.1 Literature Studies

#### i) *Our Lady's Hospice in Dublin, Ireland*

Our Lady's Hospice in Dublin in Ireland, designed by Reddy Architects uses domestic in scale architectural form that creates a cohesive and compassionate environment which emphasizes comfort, familiarity, and dignity to the end-of-life patients and designed specifically for them and their families. The study is valuable for understanding how architecture responds to emotional, psychological and social needs, not only medical needs and exemplifies a purpose-built hospice facility where architectural and interior design strategies are directly derived from the philosophy of end-of-life care for human-centered design. New built extension with 36 single bed family bedrooms with its supporting facilities are provided. The design rejects institutional feeling by adopting a domestic scale, natural materials, soothing colours, and soft finishes which enhances a home-like and emotionally supportive environment for patients, families, and staffs. A central courtyard forms the heart of the building which acts as an inviting communal space for relaxation, interaction, and small events. The six-bedroom wings radiate from this core which is connected by glazed corridors. This frame views across the site and maintains visual continuity. Thoughtful circulation and wayfinding are enhanced by feature colours. This ensures clarity and ease of movement. Each bedroom balances privacy and connection with an opening onto a semi-private area leading to shared spaces. Interiors use neutral palettes, soft lighting, and discreet integration of clinical elements for comfort and flexibility. Family presence is encouraged through ample seating, fold-out beds, and reading lights which allows loved ones to remain close. The ensuite wet rooms mirror the bedroom's material quality, offering fully assisted, private care settings. The building and interiors create a warm, community-centered hospice that supports healing and togetherness at final stage of life (*IDI Design Awards*, n.d.)

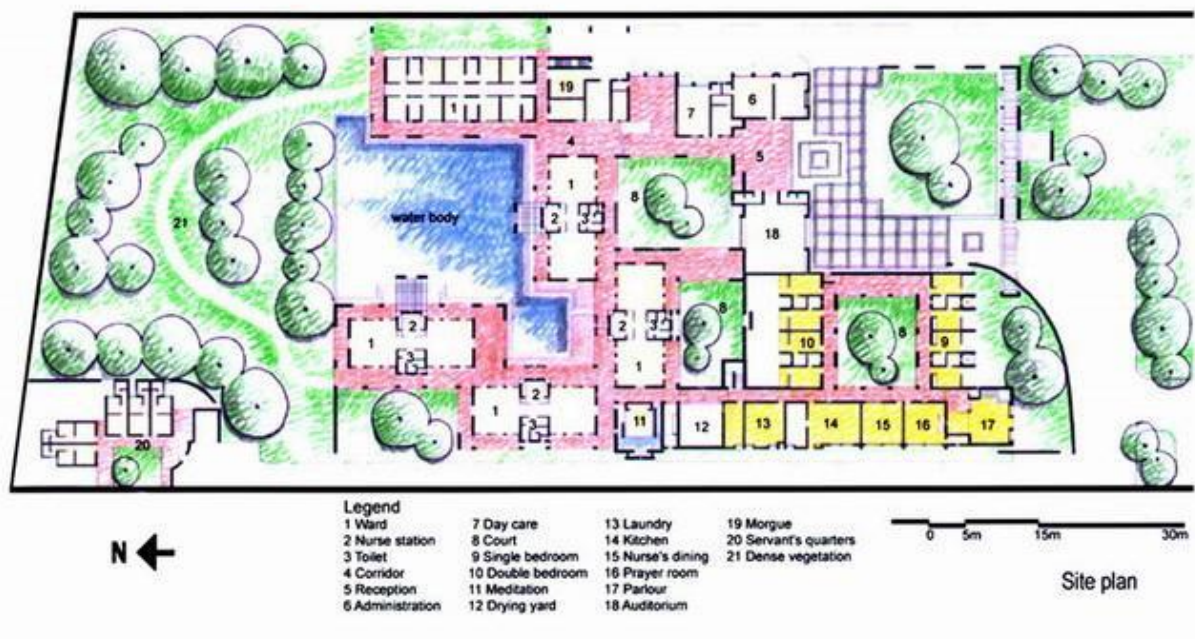


**Fig. 6.** Images of Our Lady's Hospice, Dublin, Ireland  
(*IDI Design Awards*, n.d.)

ii) *Karunashraya Hospice Trust, Bangalore*

Karunashraya Hospice Trust, India's one of the purpose-built cancer hospice provides a locally relevant model which is deeply rooted in Indian cultural attitude towards death, family and caregiving. This also exemplifies residential scale hospice design in India. The main concept of the hospice is its strong relationship with green spaces and water by creating a balance between the size and form of the courtyards. There are several open courtyards that are thoughtfully designed to be accessible to patients. It offers places to sit, relax, and experience nature. There are variety of plants, trees, and shaded seating areas to provide visual and sensory comfort. The overall ambience is kept calm and simple.

Each courtyard serves a different purpose like some encourage social interaction, while others offer quiet retreat. Water bodies and open courts not only enhance ventilation and daylight but also act as spaces for interaction. The hospice consists of five wards each accommodating twelve beds with a shared washroom. Every bed is oriented to face the water body which ensures that patients have view of nature from their space (Abhishek Das, 2021). Clustered organisation of spaces and open spaces are merged with whole composition. Courtyard are used in design to aid the ventilation of the internal spaces, also create meeting places for interaction ("Contemporist," 2017).



**Fig. 7.** Site Plan of Karunashraya Hospice ("Contemporist," 2017)



**Fig. 8.** Karunashraya (Karunashraya Hospice Centre, n.d.)

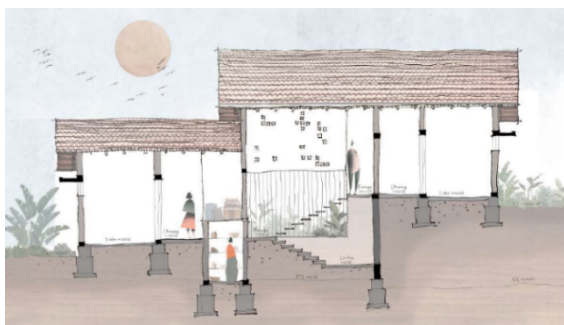
## 4.2 Documentation

### i) Contemporary residence in Kerala- Split level house

Split level house is a residence designed by Akhil Albin Architects in Kannur. It is a budget friendly house of area 1700 sq.ft situated at Sreekandapuram in Kannur in the state of Kerala, India. The site has sloping terrain, with highest point to the north and the lowest point to the south. access road is in the south direction. The project is located in a hilly area near a laterite quarry site. Laterite stones and hard rocks are abundantly available in this area. Due to the site's sloping terrain, the design emphasises various levels to prevent over cutting. Design provides much consideration to the existing site. A house that was designed to serve purpose. The spaces include living room, dining room, wash area, kitchen, workspace, prayer room, bedroom, utility room and terrace. For public areas, the client desired open planning. additionally, private spaces must have adequate seclusion.



**Fig. 9.** Floor plan of Split-level residence (Each colour represents difference in floor height)(Akhil Albin Architects, n.d.)



**Fig. 10.** (a) Section showing level differences (b) Exterior view (Akhil Albin Architects, n.d.)



(a)

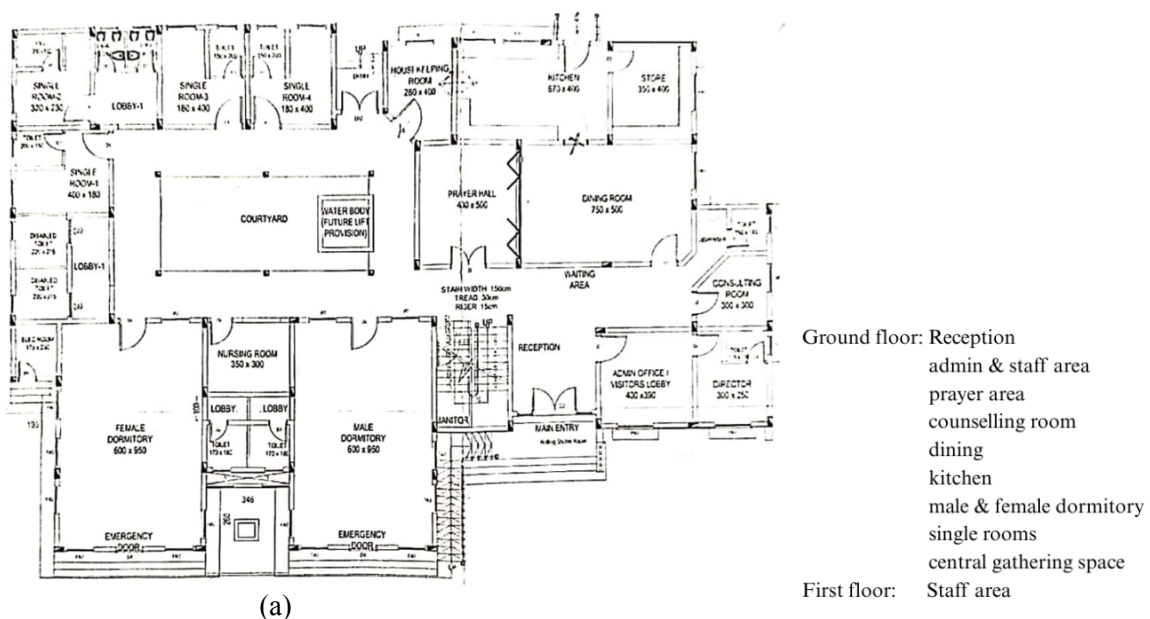
(b)

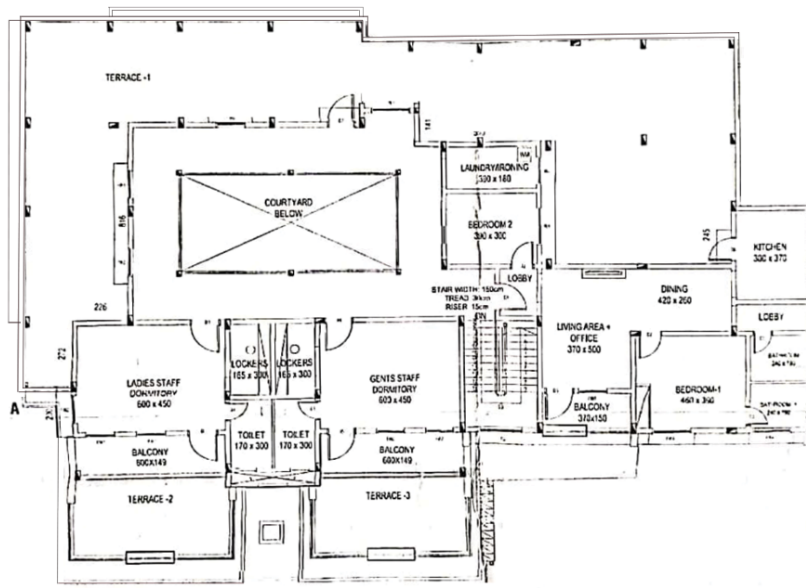
ii) *Hospice in Kerala- Bethesda Hospice Care*

Bethesda Hospice Care is a purpose-built located at Mannarakulanji in Pathanamthitta in Kerala, India. Constructed in 2024, the study helps to understand how the existing hospice models in Kerala considers the residential elements in Kerala architecture and translates it to the hospice care settings. The study of current built form implication helps to understand what all factors to be considered further and how existing factors affect the emotional, psychological and social needs of the inhabitants. Double-storied building with four single rooms and separate dormitories for male and female patients. The single rooms are provided with attached toilet. There are rooms for staff accommodation. The spaces are arranged around a gathering space with its roof covered. Dormitories and single rooms are provided at ground floor whereas staff accommodation at the first floor. The design includes lobby, admin and staff area, prayer hall, private room, kitchen, dining area. There is no lift provided, but provision for future addition is given.



**Fig. 11.** (a) Double height central space (b) Dormitory outdoor view (c) lobby (d) Central gathering space



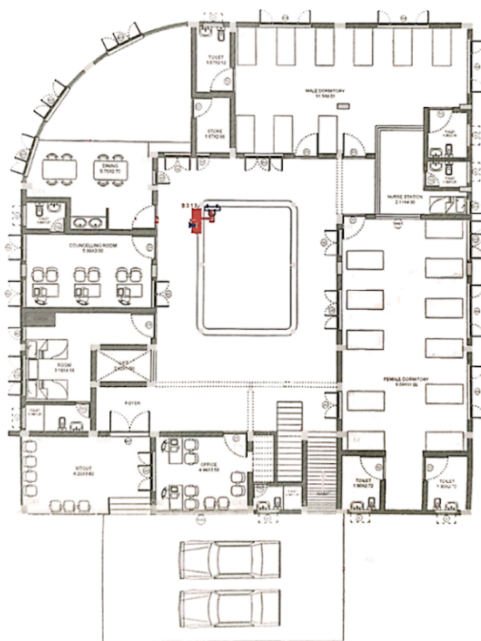


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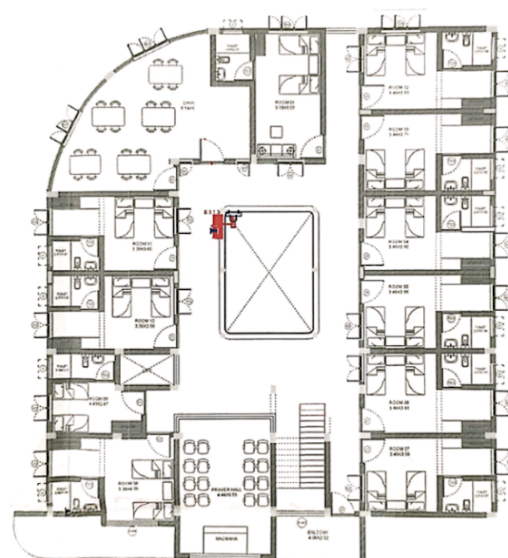
**Fig. 12.** Floor Plans of Bethesda Hospice Care (a) Ground Floor Plan (b) First Floor Plan

### iii) Palliative care in Kerala- Mar Chrysostom Palliative Centre

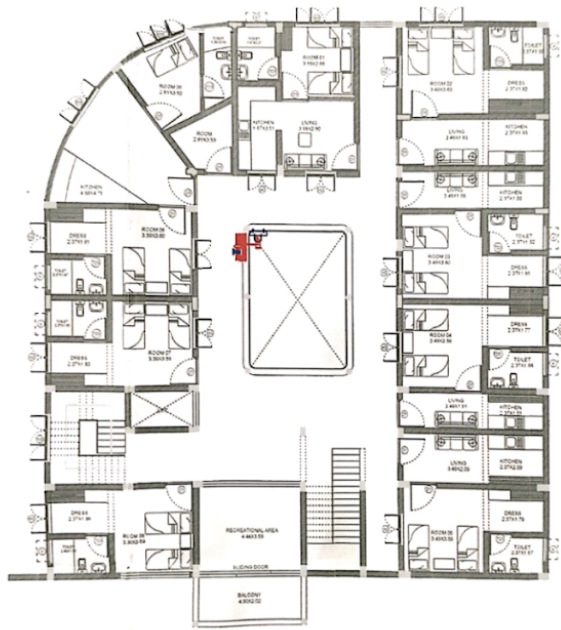
Located in Mavelikkara in Kerala, India, is a purpose-built triple-storied building with palliative care and assisted living. The study is done for understanding the current built form implications in palliative care setting in Kerala. It was constructed in 2023 with built-up area of 1475sq.m in the site of area 3137sq.m. There are single rooms and separate dormitories for male and female patients. Single rooms are provided with a living, small kitchenette and bedroom with attached toilet. Staff accommodation is also provided. The spaces are arranged around a courtyard with its roof covered. The design includes counselling room, admin area, nursing station, prayer area, common gathering space, kitchen, dining area. Dormitories are provided at ground floor whereas single rooms at the first floor. All floors are accessible by lift.



(a)



(b)



(c)

Ground floor: Sit-out  
 admin area  
 staff area  
 counselling room  
 dining  
 kitchen  
 male & female dormitories  
 First Floor: Single rooms  
 prayer area  
 dining  
 Second floor: Assisted living  
 recreational area

**Fig. 13.** Floor plans of Mar Chrysostom Palliative Centre (a) Ground floor (b) first floor (c) second floor



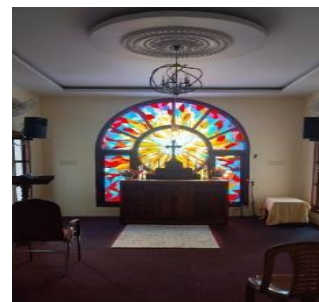
(a)



(b)



(c)



(d)

**Fig. 14.** (a) Sit-out (b) recreational area (c) dormitory (d) Prayer area

## 5. Result and Analysis

The following section analyses three architectural settings individually, the residence, hospice, and palliative care centre based on the spatial needs and planning, indoor environmental quality, homelike environment, and social interaction and cultural aspects which are factors identified earlier. Each typology is studied to understand how these factors are expressed through spatial organization and design elements as shown in Table 2.

**Table 2.** Detailed findings of case study based on identified factors

| <i>Factors</i>             | <i>Sub factors</i>     | <i>Residence<br/>(Contemporary)</i>                                                                                                                                           | <i>Hospice</i>                                                                                                                                                                                                                                                                                                                                                                                     | <i>Palliative Care</i>                                                                                                                                                                                                                                                          |
|----------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Spatial needs and planning | Zoning                 | <p>Sit-out directly faces the street.</p> <p>Sit-out, living, dining, and kitchen are arranged linearly along one axis.</p> <p>Bedrooms are in three different levels</p>     | <p>Lobby, administration, and family rooms in one end.</p> <p>Private areas - away from the direct visual axis of the entrance</p> <p>Dining and prayer spaces, mediate between the entry and the central zone</p> <p>Vertical circulation core (stair and lift) is discreetly positioned adjacent to the lobby</p> <p>Central space and lobby functions as node for private and public areas.</p> | <p>Organized around the central courtyard</p> <p>Linear arrangement enables the administration to monitor both visitor and patient movement</p> <p>Clear segregation between the functions- public semi public and private</p> <p>Self-contained unit layout in first floor</p> |
|                            | Privacy                | <p>Arrangement of different spaces.</p> <p>Bedrooms away from public zones excluding the room used by bedridden person.</p> <p>Plants are used as natural visual barriers</p> | <p>Clear linear spatial segregation, without physical barriers</p> <p>External openings maintain restricted access to the outdoors</p> <p>Use of curtains for each bed</p>                                                                                                                                                                                                                         | <p>Privacy within the building is achieved through spatial hierarchy and sectional zoning</p> <p>Open corridors and courtyard-facing windows allow visual connectivity</p>                                                                                                      |
|                            | Climate responsiveness | <p>Openable windows to facilitate cross-ventilation.</p> <p>Clerestory windows on the south.</p> <p>Use of locally available materials, sloping roofs, shading devices</p>    | <p>Orientation avoids direct western glare</p> <p>Central courtyard allows cross-ventilation and light diffusion</p> <p>Absence of open verandahs and shaded external pathways leads to harsh solar radiation</p>                                                                                                                                                                                  | <p>Building's orientation in cardinal direction</p> <p>Triple-height courtyard, with clerestory openings</p> <p>Private areas in areas with harsh solar radiation causes discomfort</p>                                                                                         |

|  |                        |                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                  |
|--|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Cultural spatial norms | <p>Inclusion of prayer area in the main living zone.</p> <p>Use of threshold – sit-out</p> <p>Elevated site and plinth from the street, use of interior courtyard</p> <p>Plants are used as natural visual filters</p> | <p>Planning around a central courtyard-like space - retained at the plinth level</p> <p>Prayer area is located along the corridor</p> <p>Dining area is designed as flexible communal zone</p> <p>Unlike traditional Kerala residences, limited physical connection with external spaces</p> | <p>Nalukettu typology, with spaces arranged around a central courtyard</p> <p>Sit-out at the entrance evokes domestic familiarity</p> <p>Arrangement of spaces according to privacy required</p> |
|--|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                              |                 |                                                                                                            |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                 |
|------------------------------|-----------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indoor Environmental quality | Thermal comfort | <p>Passive design strategies- orientation, material, north facing large windows, openable windows</p>      | <p>NE-SW alignment allows controlled daylight entry in morning and minimize direct exposure to harsh western sun</p> <p>Central courtyard with covered roof and clerestory allows indirect light and air movement across internal corridors and dormitories.</p> <p>Nursing station positioned internally without external openings</p> | <p>Building's orientation along the cardinal directions</p> <p>Dormitories positioned in the south and west receive stronger solar radiation</p> <p>Proximity of the kitchen and dining area to the dormitories results in discomfort for patients with heightened sensory sensitivity</p>      |
|                              | Ventilation     | <p>Openable windows ensure cross ventilation</p> <p>Multi-level and open planning ensure easy air flow</p> | <p>Achieved through central courtyard</p> <p>Absence of windows in nursing station restricts airflow</p>                                                                                                                                                                                                                                | <p>Central courtyard space, large windows, clerestories ensure air movement</p> <p>Each patient room and dormitory has openings both towards the outdoor environment and towards the internal corridor</p> <p>North-facing balconies on the first and second floors capture prevailing wind</p> |
|                              | Natural light   | <p>South clerestory - diffused daylight into interior spaces</p>                                           | <p>Central courtyard admits diffused natural light into adjoining spaces</p>                                                                                                                                                                                                                                                            | <p>Daylighting is balanced through clerestory openings, large windows, and internal courtyards,</p>                                                                                                                                                                                             |

|                                         |                       |                                                                                                                                                                                                                        |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                             |
|-----------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         |                       | <p>Openings on north- soft reflected light.</p> <p>Vegetation near openings filters harsh sunlight.</p> <p>Multi-level and open planning.</p> <p>Absence of open to sky internal green space limits natural light.</p> | <p>Spaces such as the nursing station receive limited daylight due to internal enclosed positioning</p>                                                                                                                                      | <p>ensuring that the spaces remain well-lit without glare</p> <p>Patient rooms and dormitories benefit from soft daylight entering from both external and internal openings</p>                                                                             |
|                                         | Sound                 | <p>Materials of high thermal mass</p> <p>Open planning and linear arrangement cause acoustic privacy.</p> <p>Use of plants in facade reduces street level noises</p>                                                   | <p>Calmness due to its inward-focused planning</p> <p>The administrative and public spaces are concentrated near the entrance which helps to isolate dormitories from visitor traffic and service noises.</p>                                | <p>Dormitories are located away from the public and administrative zones</p> <p>Light roofing at the central courtyard space may introduce some degree of sound reflection during heavy rainfall</p>                                                        |
|                                         | Nature                | <p>Internal green space on the middle level</p> <p>Natural materials - laterite, rubble, and vegetation are used</p>                                                                                                   | <p>Physical and visual access to the outdoor is very limited</p> <p>Absence of verandah and balcony limits engagement with the nature.</p>                                                                                                   | <p>Central planted courtyard and the balconies facing the north landscape</p>                                                                                                                                                                               |
| Social interaction and cultural aspects | Family involvement    | <p>Open, linear and hierarchically organised planning of functions</p> <p>Multi-level arrangement provides personal spaces</p>                                                                                         | <p>Family room and sick room are located near the administrative zone which allow family members to stay close to patients without intruding into patient-specific areas</p> <p>Single allows one family member to stay with the patient</p> | <p>First-floor patient rooms include provisions for a bystander and small kitchenette</p> <p>Administrative zone positioned near the entrance acts as a spatial filter that regulates visitor access</p> <p>Absence of semi-private transitional spaces</p> |
|                                         | Community interaction | <p>Sit-out directly facing the street</p> <p>Elevated site and landscape edge maintain a clear threshold</p>                                                                                                           | <p>Dining and prayer area is located along the corridor act as the main points of community engagement</p> <p>Courtyard functions as heart of the community within the hospice</p>                                                           | <p>The courtyard is visually accessible from multiple rooms, functions as a shared visual core to patients, staff, and visitors</p> <p>Prayer areas, recreational space and balcony</p>                                                                     |

|                       |                               |                                                                                                                                                                                                     |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                   |
|-----------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       |                               |                                                                                                                                                                                                     |                                                                                                                                                                                                                                       | Design remains inward-oriented, with limited outward-facing community interface except near administrative zone                                                                                                                   |
|                       | Kerala Cultural Pattern       | Human scale, climatic sensitivity, material usage and integration of nature                                                                                                                         | Central courtyard mirrors the nadumuttam of vernacular dwellings<br><br>Spatial arrangement focusing privacy                                                                                                                          | Kerala's traditional domestic architecture- its courtyard centric organisation and human-scaled built form<br><br>North-facing sit-out and entry                                                                                  |
| Home like environment | Domestic scale and proportion | Proportion of openings and the tactile presence of natural materials<br><br>Open, continuous, comfortably confined volume<br><br>Split-level design challenge elderly and physically limited users. | Low-rise built form<br><br>Spatial segregation without physical barriers other than wall<br><br>Communal spaces and prayer areas, narrow corridors<br><br>curtains as screens in dormitories uses the colours as used in institutions | Human-scaled rhythm of spaces, using moderate ceiling heights<br><br>Absence of long corridors<br><br>Spatial arrangement- functional hierarchy<br><br>Private rooms on the upper floor are designed with residential proportions |
|                       | Non-institutional             | -                                                                                                                                                                                                   | Absence of long corridors<br><br>Central gathering space                                                                                                                                                                              | Absence of long corridors<br><br>Central green space<br><br>Usage of colours in private rooms                                                                                                                                     |
|                       | Indoor-outdoor connection     | Sit-out bordered by planting<br><br>Internal green space- but absence of an open to sky limits natural light and ventilation<br><br>Use of terrace                                                  | Very limited indoor-outdoor connection due to lack of verandahs and balcony                                                                                                                                                           | Central courtyard filled with plants and open to the sky through clerestories<br><br>Presence of balcony and large windows                                                                                                        |

In residence, well-structured zoning maintains the functionality despite the open planning. Vertical levels differences add privacy to the inhabitants but accessibility is difficult for elderly or differently-abled users and reduce the immediate interaction between the levels. Sit-out directly facing

the street reduces visual privacy and acoustics. Open linear planning departs from compartmental zoning of traditional Kerala homes which can reduce the sense of enclosure and introspection valued in older typologies. This linear zoning may cause less variety in movement and privacy is ensured using landscape. The plantings act as soft barriers. Internal and external greenery adds to natural cooling and psychological comfort. Inner positioning of private areas ensures personal privacy. The spaces provide a strong alignment with the cultural pattern by using thresholds, prayer areas, natural elements. Controlled daylight receives through the clerestories. Use of fixed windows and clerestory cause discomfort which caused by the reduced air movement. Enclosed central green space between the levels with covered roof and poor ventilation might trap humidity. Use of plants around sit-out reduces harsh solar penetration into the interiors. The open planning and linear zoning promote constant communication and togetherness among the family. Spaces flow into one another without harsh boundaries which supporting shared meals, conversations, and daily rituals. The vertical layering of spaces allows sense of personal not institutional.

In Kerala, the hospice and palliative care settings are functioning in almost same way. The palliative care is also treating terminally ill patients as in hospice. Even now, people are unaware about the concept of hospice.

In hospice, proper zoning and proper public to private transition supports patient's privacy, ensures administrative control and supports ease of supervision. In Kerala, generally this is done through the use of corridors. Linear and narrow corridor appear monotonous and institutional which lacks the climatic transition and social permeability of a traditional verandah. The separate dormitories for male and female patients and single rooms respect patient's dignity and comfort. Along with patients, other occupants of the hospices also needed to be considered in the design. Integration of prayer and dining spaces promotes social and spiritual wellbeing. Central courtyard and communal dining foster a sense of internal community. Central open space provides visual permeability and spatial clarity and also enhances microclimatic comfort by enabling air circulation and filtered daylight. It also provides passive light and moderate ventilation. Courtyard centric organization reflects the Kerala vernacular spatial language. Outdoor extensions and verandah spaces which is a typical transitional zone in Kerala is not used in the hospice which reduces opportunities for natural interaction, movement and transitional microclimate zones. Introverted design reduces the external noise intrusion. Placement of public spaces near entrance limits sound transmission to private zones. But minimal visual connection to the family and patient zone reduces the interaction between patient and family members. Minimal landscape integration limits biophilic and therapeutic potential of the environment. The low-rise form preserves human scale and accessibility of the building. Spatial hierarchy mirrors domestic progression from shared to private spaces. Repetitive dormitory layout reduces the sense of personal identity and domestic warmth. Dormitories also lack direct semi-open spill-out zones for casual outdoor engagement of patients.

In palliative care, logical functional segregation of spaces ensures clarity and control. Dormitories in the south and west direction causes heat gain in afternoon. In addition to this, the kitchen and dining area near the patient's ward cause discomfort through transfer of heat and odour. The orientation of building in cardinal direction enables balanced solar radiation. Central courtyard design and clerestory openings enable passive design regulation by effective air movement through the spaces, and also offers visual connectivity. Windows in the predominant wind direction captures cool breezes which enhances comfort. Clerestories enhance the diffused daylight which reduces the glare and visual fatigue. Well-lit interior spaces with natural light during daytime enhances the well-being of patients. Covered central courtyard limits the full potential of stack effect and also reduces the direct view to

the sky which changes the lighting quality. Introverted and enclosed design minimizes the external noise intrusion and make a quiet interior environment which supports the emotional healing. The triple height spaces can cause sound reflections. Proximity of kitchen can cause noise in resting areas. Plants integrated to the interior spaces increases the connection to the nature even though the physical movement is impossible to the patients. Absence of semi opened landscaped zone reduces the sensory engagement with the nature. Common areas encourage informal interactions and shared activities.

## 6. Design Recommendation and Guidelines

The following guidelines and recommendations translate earlier findings into a practical design framework, shifting the focus from an institutional facility to a culturally empathetic home for end-of-life care.

### 1. *Spatial Needs and Planning*

Spatial planning of a hospice is important to move away from institutional like to home like environment.

**Hierarchical Spatial Flow:** The progression of spaces as in Kerala homes should be used. Spaces should flow from entrance, sit-out and reception/administration (public) to dining, community gatherings spaces, family spaces (semi-public) to patient rooms (private areas). This layered organization of spaces maintains privacy while maintaining security.

**Courtyard-Centric Organization:** The retaining of courtyard can act as spatial and emotional node, but need to modify it for its use in hospice. Instead of fully enclosed or opened courtyards, provide partially opened, double height courtyards with adjustable roofing which helps to balance daylight, ventilation, rain etc. Also integrate plants, shaded seatings to support sensory therapy and microclimate regulation.

**Cluster Planning Over Linear Corridors:** Avoid usage of long narrow corridors instead use cluster planning around courtyards, shared gathering spaces (de-institutionalizing the circulation). Each cluster (4 to 6 rooms) forms a small neighbourhood which create a sense of belonging and reduces institutional feel.

**Integration of Transitional Zones:** Incorporation of verandahs, sit-outs, and shaded walkways between clusters and in the exterior can create zones as in Kerala residential architecture.

**Zoning for Sensory Comfort:** Avoid placing of kitchen and dining zones close to patient's zone. Also avoid these spaces in prevailing wind direction. Avoid the placement of private areas in areas with harsh solar radiation. Plants can also act as shading devices if this is not possible.

**Accessibility and Flow:** Level differences should be avoided within the floor. Use gentle, straight ramps avoid turning, wide circulation corridors.

### 2. *Indoor Environmental Quality*

**Thermal Comfort through Passive Design:** Use of passive cooling techniques inspired from traditional homes, that is deep eaves, double roofs, shaded verandahs, and landscape buffers. Patient's rooms should be oriented toward the north or east to receive diffused daylight and minimize heat gain.

**Ventilation and Air Flow:** Use openable windows in the room in both sides for effective cross ventilation. The window size should be of optimum. The clerestories, courtyards ensure effective air

flow through the spaces. Jali walls can be used for interior to diffuse airflow while maintaining privacy. Avoid congestion in room.

**Daylight Quality:** Use diffused daylight for illuminate the interior rather than using direct sunlight. Clerestories, double height spaces enable this. Diffused daylight supports circadian rhythm, improves mood, and reduces glare which are important for bedridden patients.

**Sound:** Use textured materials which can avoid the echoes in the double height spaces. Place noisy areas like kitchen and services away from the patient's zone. Landscape buffers with bamboo or dense shrubs can cut external noise.

**Integration of Nature:** Visual and physical contact with nature should be possible from every bed which helps in emotional and psychological well-being.

### 3. *Social interaction and cultural aspects*

**Family Participation in Care:** Design patient spaces with family spaces in the adjacent region. Physical proximity can be reduced and could provide visual connectivity with the patient's room. Individual rooms can be provided with small living, kitchenette which can give a home like environment reflecting Kerala's caregiving culture where families stay with patients.

**Community and Shared Spaces:** Provide multi-purpose common areas for dining, prayer, and activity areas that encourage informal social bonds among patients, families, and caregivers. The emotional connection between the caregivers and patients are important for the home like feel. Small gathering spaces, balconies near patient's area promote community without crowding by balancing interaction with privacy.

**Cultural Familiarity:** Use verandahs, sit-outs, inner courtyards as symbols of home and memory.

**Spiritual Inclusivity:** Include neutral spaces for prayer which are open to all beliefs and connected to nature rather than enclosed halls.

### 4. *Home-like Environment*

**Domestic Scale and Intimacy:** Maintain a horizontal and low-rise built form. The smaller room volumes and intimate proportions can enhance the home like feel (ceiling heights between 2.7-3.3m) and avoids the sterile feel of hospital wards thus reducing patient anxiety. The rooflines and heights should vary gently for avoiding a monotonous institutional feel. Avoid repetitive layouts by introduce small variations in window form, furniture, and orientation of individual spaces without affects the circulation.

**Personalization and Identity:** Allow patients to personalize their adjacent spaces with family photos, belongings, or plants. This transforms into their space which reinforces dignity and individuality.

**Indoor–Outdoor Continuity:** Every unit should open to a garden, veranda, or courtyard to the places where one can experience sun, wind, or rain safely. This blurs the line between interior life and nature that mirroring the openness of traditional Kerala homes.

## 7. **Conclusion**

This study aims to explore how residential architectural principles can be reinterpreted for creating more comforting, sensitive and regionally rooted hospice design in Kerala. The analysis revealed that spatial planning, indoor environmental quality, nature and community integration, social interaction

and the use of domestic scale elements significantly enhance the home-like environment. These findings suggest that hospice design in Kerala should integrate these aspects to improve end-of-life experiences. The study was limited to very few case studies within Kerala and not represent other climatic and cultural contexts. Although the study concentrates on a purposeful sample of two facilities in Kerala, both locations were chosen as crucial case studies that exemplify common palliative care typologies. Such a sample size enables a detailed, high-fidelity examination of spatial arrangements in qualitative architectural research that a more comprehensive statistical survey could miss. The depth of this inquiry is triangulated with a robust analysis of vernacular residential grammar of Kerala. This allows for the synthesis of a framework, while it is regionally specific, offers a transferable logic for culturally empathetic design. Future research could expand this evidence base through cross-regional comparisons to further validate the generalisability of these findings. The study does not investigate the medical technologies, clinical and patient's medical data and treatment protocols and does not focus on the financial feasibility or operational management models of hospice design. The primary data collection from the terminally ill patients is limited due to the sensitivity of the EOL care. This study prioritized proxy-narratives from long-term caregivers and specialists in order to uphold ethical standards and patient dignity. This ensures that the design framework is informed by those with the most consistent, long-term experience of patient needs. Future research can explore on the sensory aspects that influence the end-of-life. This study contributes to the ongoing hospice architecture by extending current design trends towards more human-centred, residential models of care.

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