



echelon

PORTUGAL ELDERLY HOME

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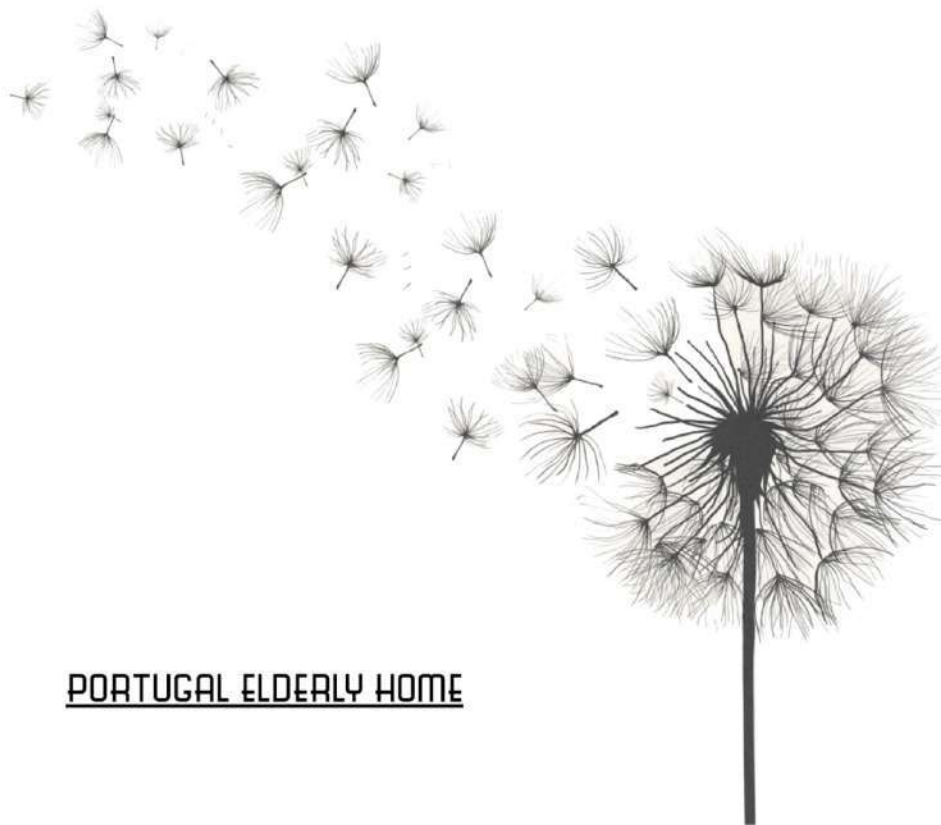
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Architecture Competitions

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Introduction

This book presents the **HAIGH**Architects+Designers entry for the Portugal Elderly Home International Architecture Competition

To face aging in a happier and more peaceful way is the challenge of designing elderly homes. Fostering human relations and sharing is key to stimulating seniors to offset the loneliness, insecurity, isolation, and depression associated with old age. The underlying goal of the echelon project is to address these issues with dignity and respect.



PORTUGAL ELDERLY HOME

ARCHITECTURE COMPETITION

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an international architecture competition



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The Competition

PORTUGAL ELDERLY HOME

People are living longer than ever before, as a result an aging population is struggling to find a place to live out their golden years. While there are of course often concerns about healthcare and support, there are a huge number of factors that affect older generations that aren't always considered. Many in the older generation struggle to adapt to lifestyle changes. They're not able to do everything they used to do, they're not working or interacting with their community as much, and of course many will be dealing with the loss of loved ones.

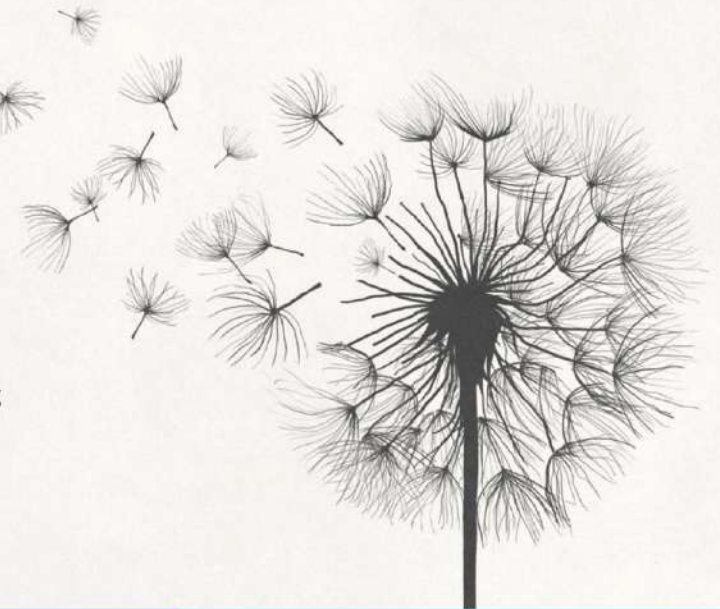
The impact of the COVID-19 pandemic is also being felt, as staff shortages, tighter budgets and new health and safety restrictions make the supply of suitable retirement housing even more limited.

Portugal is one of the most popular countries in the world for retirement living, having ranked 4th in International Living's Global Retirement Index for 2022. In addition to great weather and a combination of stunning coasts, countryside and cities, retirees in Portugal love the country's friendliness and sense of community.

The Portugal Elderly Home competition is tasking participants with designing a retirement home in central Portugal. It will need to be able to comfortably house 60 residents and ten support staff. It should also include several features including a small library, a gathering room, a chapel, a kitchen and dining room, as well as a private area which could function as a nurse's room and therapy room for psychological support.

By putting accessibility at the forefront of design and creating a space that meets the unique requirements of an aging population of residents, architects and designers have the chance to reinvent accessible architecture.

The Portugal Elderly Home competition is a chance for participants to explore how architecture can offer support to those who need it most. How can architecture influence how a person moves through a home? How can it help people to feel safe, comfortable, and independent?



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Introduction

An aging population means the demand for suitable housing is constantly increasing. As older generations move out of their homes they often look for a place where they can be supported yet independent, retaining the freedoms and dignity they deserve while not having to worry about getting help when needed.

The Portugal Elderly Home competition is tasking participants with designing an elderly home in Portugal, one of the most popular countries for retirement in the world.



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Site - Views - Plans - Details



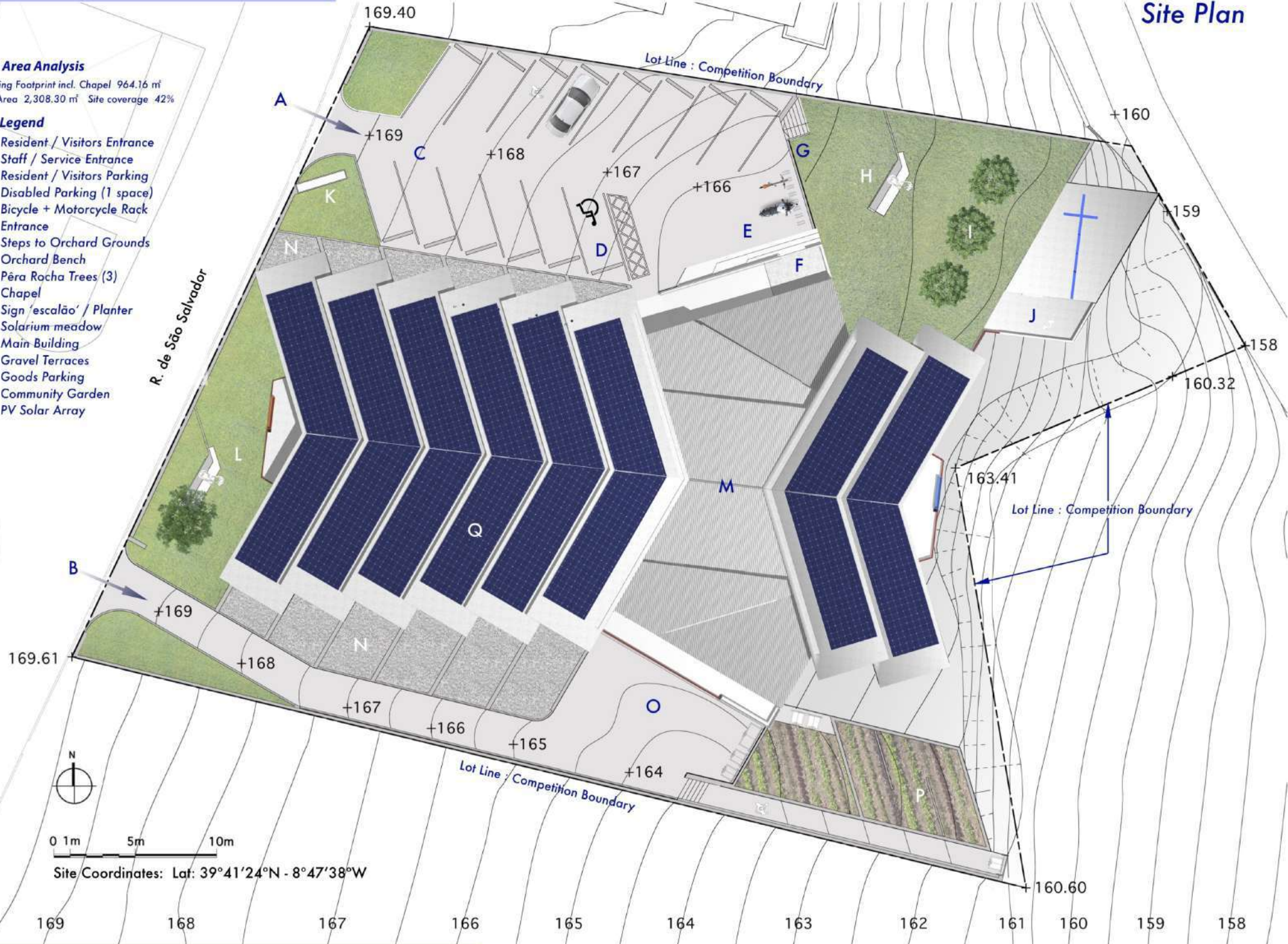
Site Plan

Site Area Analysis

Building Footprint incl. Chapel 964.16 m²
 Site Area 2,308.30 m² Site coverage 42%

Site Legend

- A Resident / Visitors Entrance
- B Staff / Service Entrance
- C Resident / Visitors Parking
- D Disabled Parking (1 space)
- E Bicycle + Motorcycle Rack
- F Entrance
- G Steps to Orchard Grounds
- H Orchard Bench
- I Pêra Rocha Trees (3)
- J Chapel
- K Sign 'escalaão' / Planter
- L Solarium meadow
- M Main Building
- N Gravel Terraces
- O Goods Parking
- P Community Garden
- Q PV Solar Array



Site Coordinates: Lat: 39°41'24"N - 8°47'38"W

169 168 167 166 165 164 163 162 161 160 159 158



Site Legend

- A Resident / Visitors Entrance
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- Q PV Solar Array

South East View

Architectural Concepts

Key concepts, embodied in the competition submission, include the modular planning and assembly of residential units into echelon configurations surrounding community spaces. These interstitial spaces evoke urban streets and plazas, with multiple meeting spaces clustered along circulation paths. The exterior modulation of the facades created by the echelon serration, visually articulates the scale of the overall building volume. In reference to Portuguese vernacular urban architecture, coloured facades, balconies and planters are expressed to create identity, individuality, and sense of place. The vestigial Chapel is conceived as a place of pilgrimage, available for worship and contemplation by residents and community visitors. The Chapel is approached across an orchard planted with a trinity of Pêra de Rocha trees, adding further local meaning and symbolism.

Site Legend

- A Resident / Visitors Entrance
- B Staff / Service Entrance
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- M Main Building
- N Gravel Terraces
- O Goods Parking / Entrance
- P Community Garden
- Q PV Solar Array
- R Clerestory
- S Roof Trench Gutter



Site Design Strategies

Rural road R. de São Salvador [N543], connecting the communities of Leiria and Andreus, provides primary vehicular access to the competition site. Separate site entry points to the Resident/Visitors driveway [A] and the Goods/Service driveway [B], create spatial margins from adjacent property lines. Permeable surfaced driveways and Parking areas [C] slope to the East aiding rainwater runoff and drainage. The natural slope of the site towards the East is utilized in a 'cut and fill' approach to the contouring and landscaping of the site. The echelon volumetric composition responds to this declination to maximize views and add individual privacy to the residential units. The East lot line and competition site boundary is characterized by angular indentations, creating vestigial areas for the siting of the Chapel [J] and residents Community Garden [P].

South West View



escalão



West View

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North View

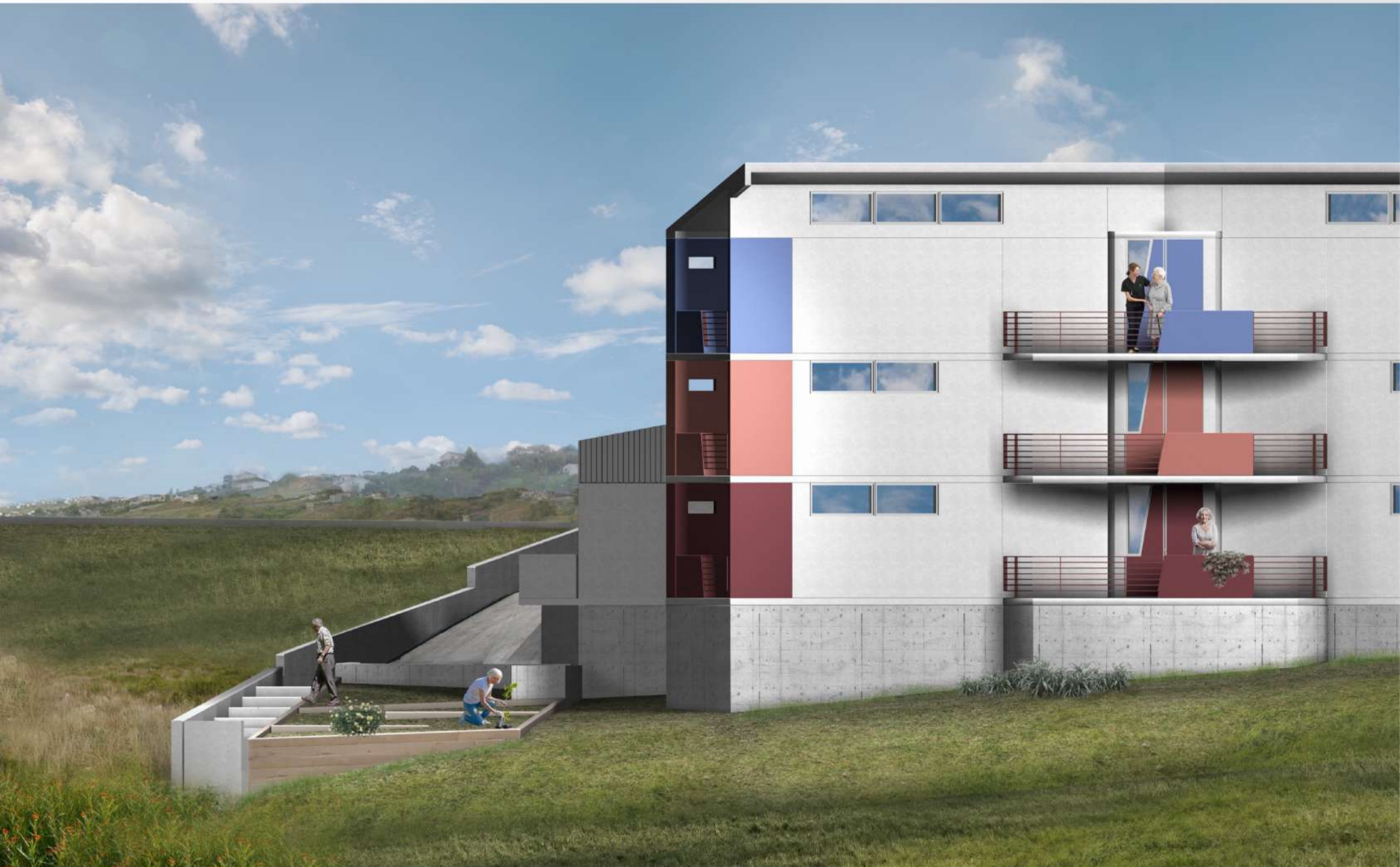
PORTUGAL ELDERLY HOME





South View

PORTUGAL ELDERLY HOME





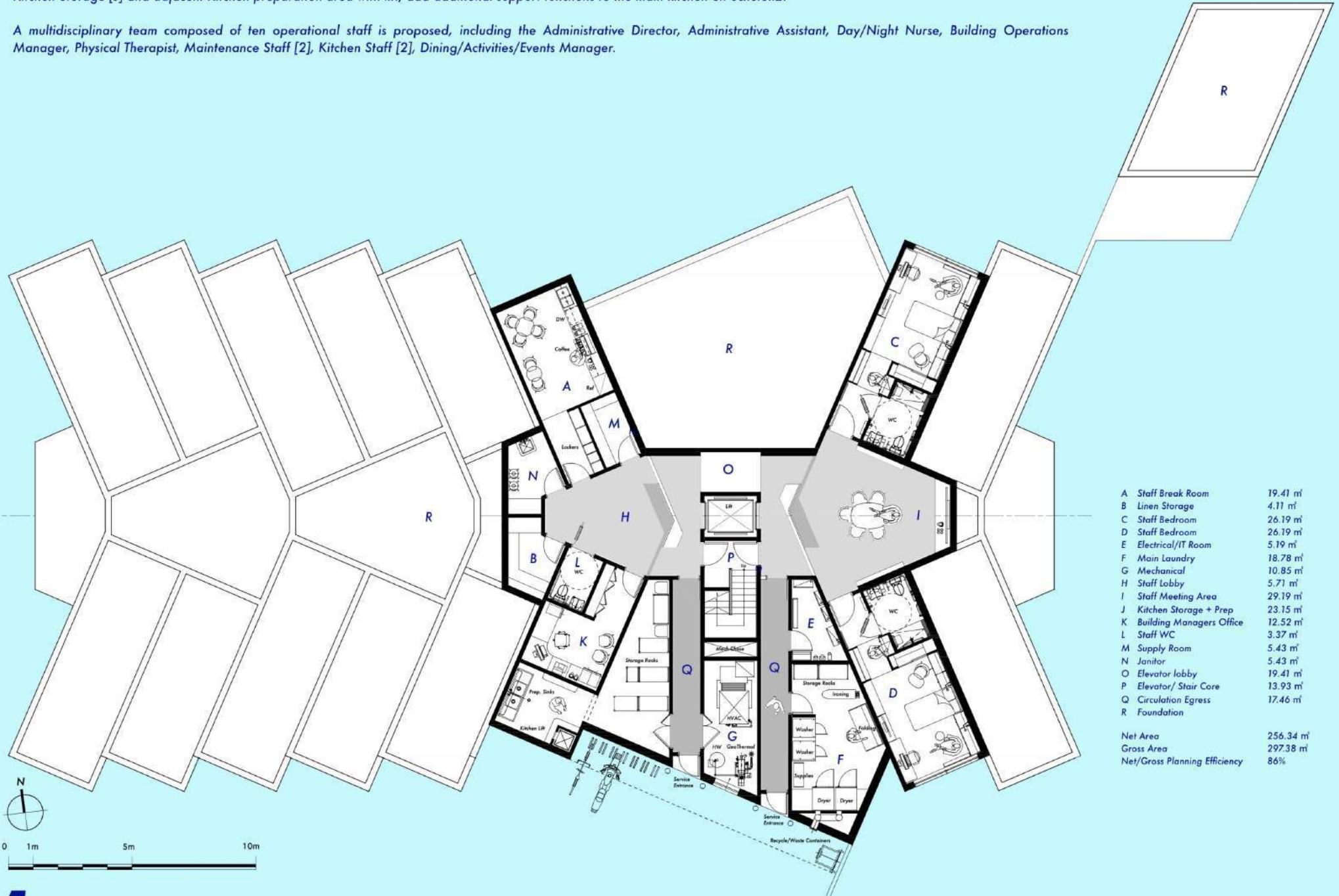
East View

PORTUGAL ELDERLY HOME

echelon1

echelon1 is the primary Staff / Service level. Accessed directly from the Lobby [O] and Staff Meeting Area [I] are the Building Managers Office [K], Staff Break Room [A], two Staff Bedroom Suites [C,D] and Staff Bathroom [L]. Service and Goods Entrances [Q] lead directly from the exterior to the Mechanical [G] and Electrical/IT spaces [E], and Laundry [F]. Kitchen Storage [J] and adjacent Kitchen preparation area with lift, add additional support functions to the main kitchen on echelon2.

A multidisciplinary team composed of ten operational staff is proposed, including the Administrative Director, Administrative Assistant, Day/Night Nurse, Building Operations Manager, Physical Therapist, Maintenance Staff [2], Kitchen Staff [2], Dining/Activities/Events Manager.

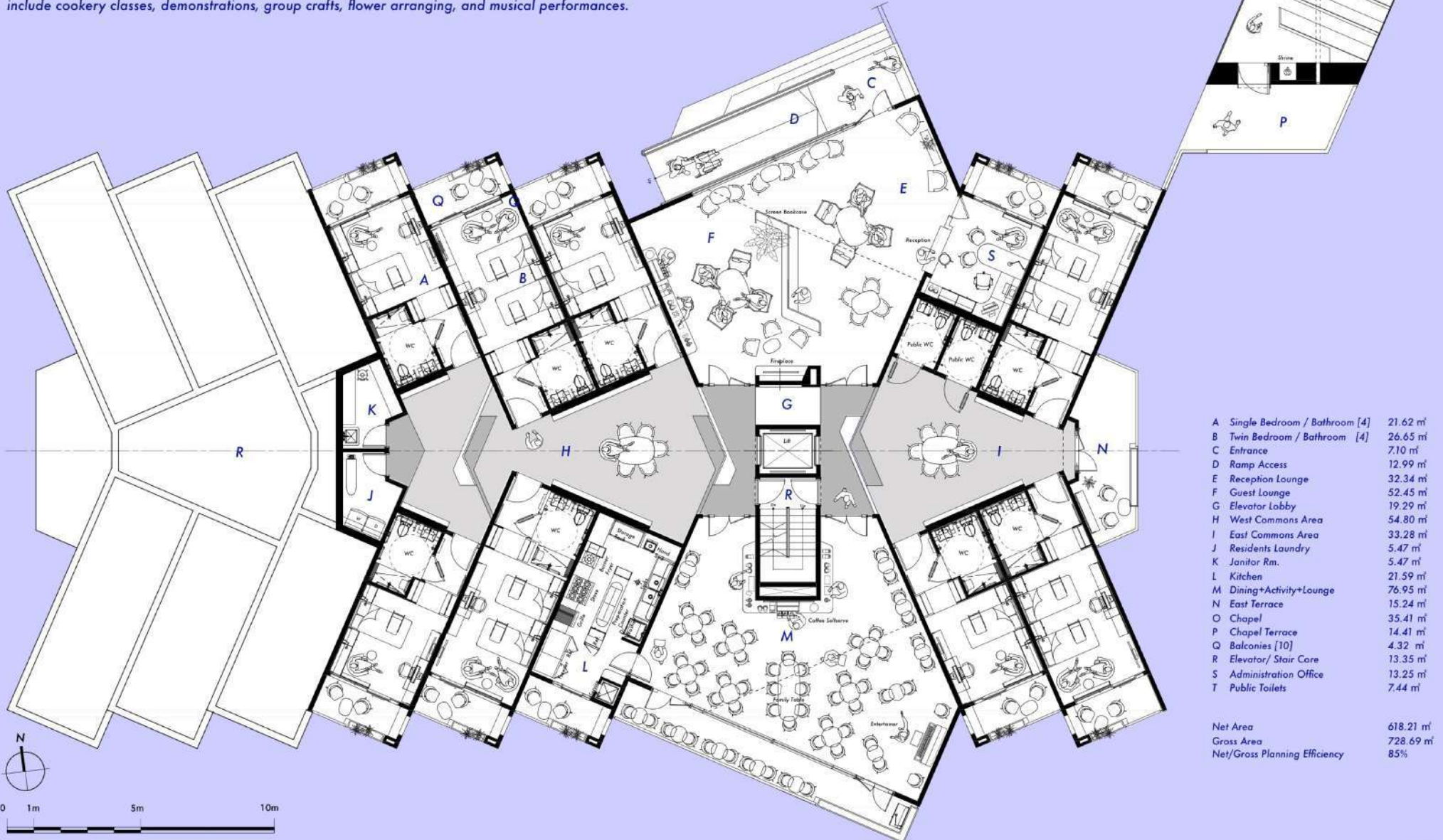


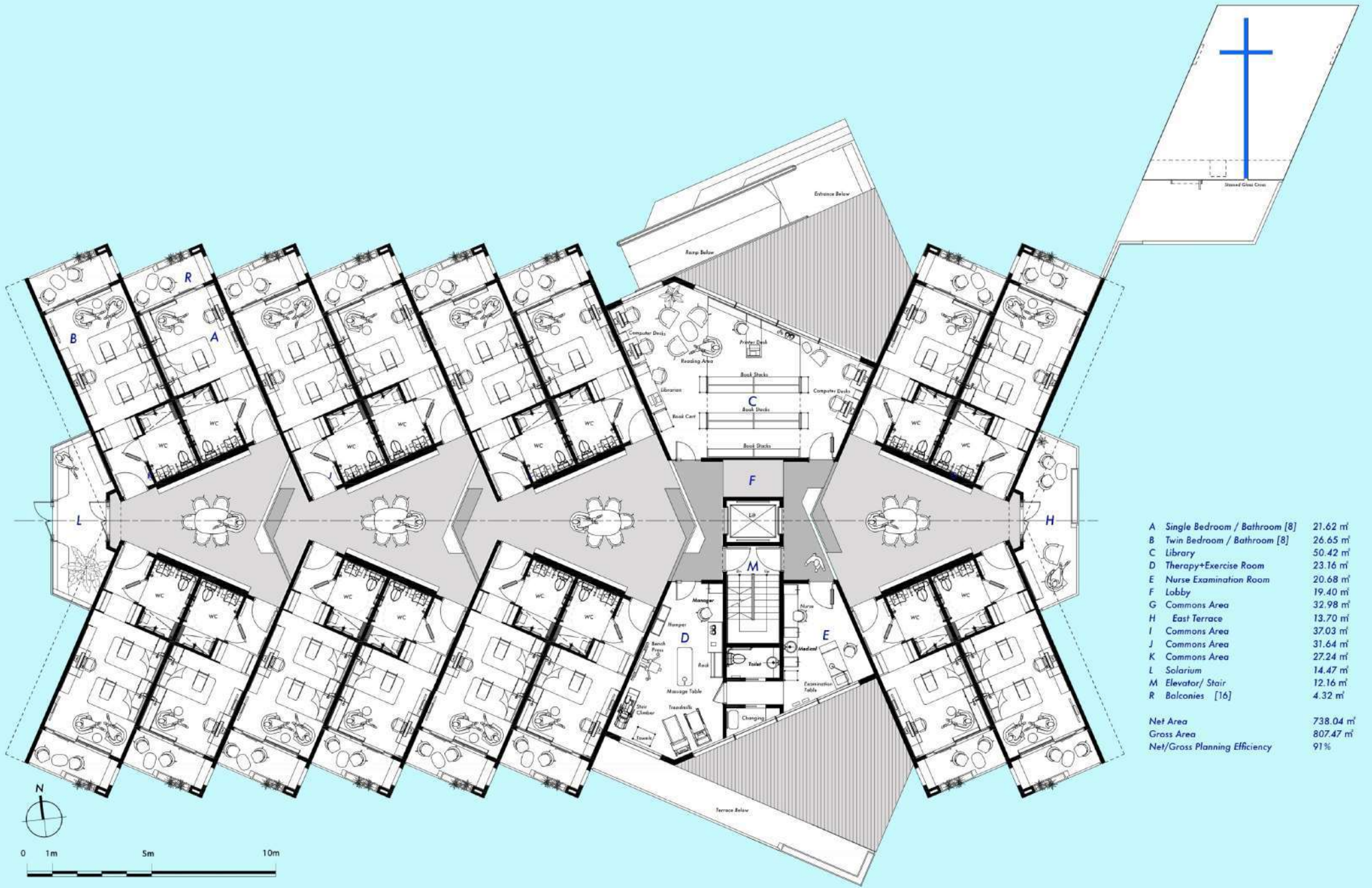
A	Staff Break Room	19.41 m ²
B	Linen Storage	4.11 m ²
C	Staff Bedroom	26.19 m ²
D	Staff Bedroom	26.19 m ²
E	Electrical/IT Room	5.19 m ²
F	Main Laundry	18.78 m ²
G	Mechanical	10.85 m ²
H	Staff lobby	5.71 m ²
I	Staff Meeting Area	29.19 m ²
J	Kitchen Storage + Prep	23.15 m ²
K	Building Managers Office	12.52 m ²
L	Staff WC	3.37 m ²
M	Supply Room	5.43 m ²
N	Janitor	5.43 m ²
O	Elevator lobby	19.41 m ²
P	Elevator/ Stair Core	13.93 m ²
Q	Circulation Egress	17.46 m ²
R	Foundation	
	Net Area	256.34 m ²
	Gross Area	297.38 m ²
	Net/Gross Planning Efficiency	86%

echelon2

echelon2 is the Entry level for Residents and Visitors. Approached directly from the North parking areas, the Main Entrance [C] and Entrance wheelchair ramp [D] provide accessible entry to the Reception [E] and Guest Lounge [F]. Features and amenities in these areas include Lounge seating, dividing screen with bookshelves, Coffee service, and Fireplace. The main Lobby [G] has full visual and ambulatory connectivity to the Resident Commons areas [H,I] and the Dining/Activity/Entertainment space [M]. Emphasis is placed on the concept of having commons areas serving clusters of adjacent bedroom suites. Typical to each floor the Lift [R] is designed as fully wheelchair accessible with double access doors from both East and West commons.

The multi-functional Dining/Activity/Entertainment space [M] has a planned occupancy of 60 persons. A full service Kitchen [L] is planned to accommodate daily and special event culinary demands. A self-service counter surrounds the Lift/Stair core [R], and includes an espresso machine, salad bar, charcuterie and dessert case and digital menu display. Dining planning includes table settings for two and four persons, and a eight person family table. A seasonal outdoor terrace is planned for ten persons. Anticipated activity and entertainment uses, include cookery classes, demonstrations, group crafts, flower arranging, and musical performances.





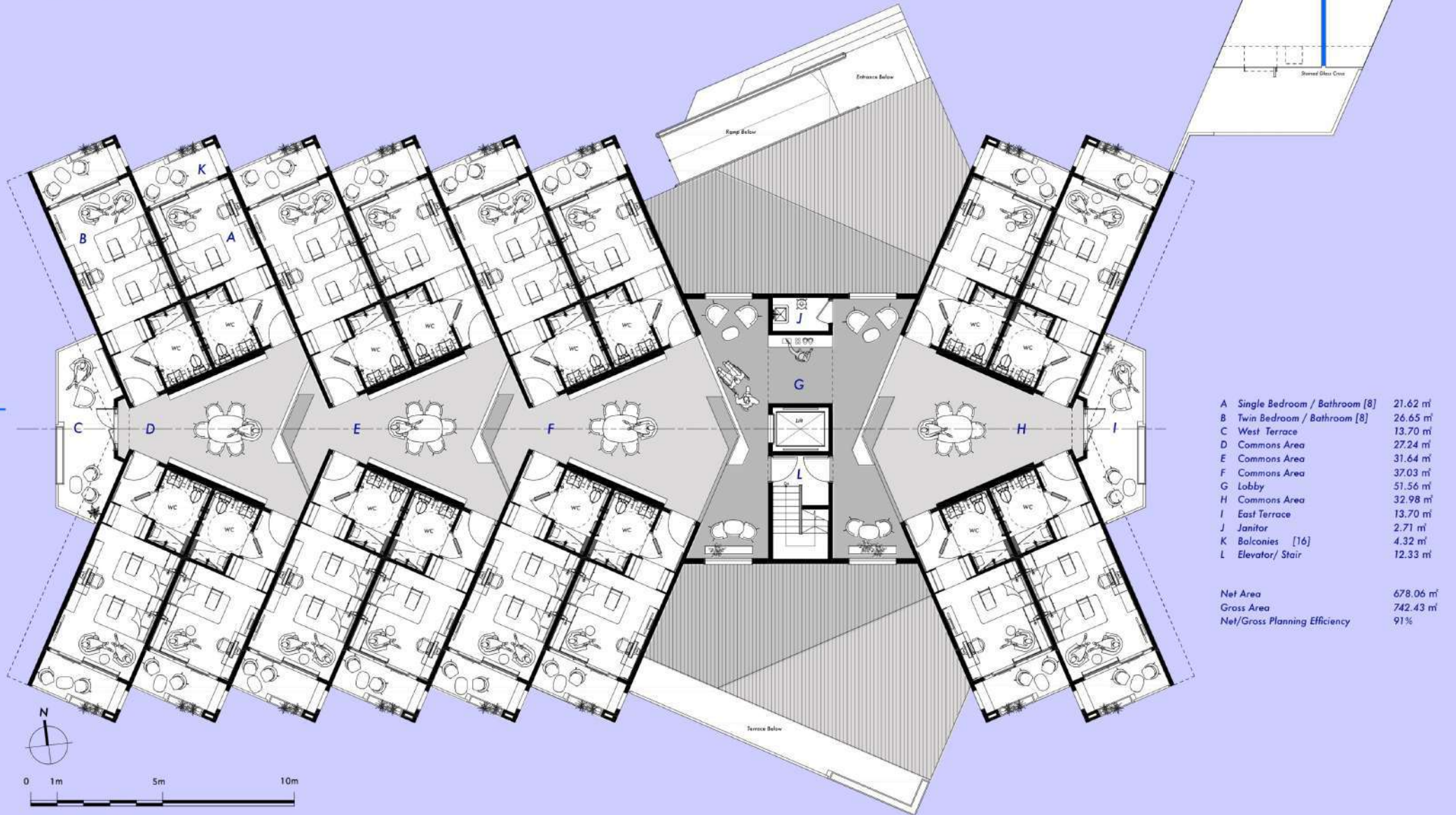
A	Single Bedroom / Bathroom [8]	21.62 m ²
B	Twin Bedroom / Bathroom [8]	26.65 m ²
C	Library	50.42 m ²
D	Therapy+Exercise Room	23.16 m ²
E	Nurse Examination Room	20.68 m ²
F	Lobby	19.40 m ²
G	Commons Area	32.98 m ²
H	East Terrace	13.70 m ²
I	Commons Area	37.03 m ²
J	Commons Area	31.64 m ²
K	Commons Area	27.24 m ²
L	Solarium	14.47 m ²
M	Elevator/ Stair	12.16 m ²
R	Balconies [16]	4.32 m ²
Net Area		738.04 m ²
Gross Area		807.47 m ²
Net/Gross Planning Efficiency		91%

Sustainability and Materials Approach

The Sustainability intent is to embody principles of environmental sustainability comparable to BREEAM guidelines. Specific consideration has been given to material selection, lifecycle costing, and reduction of operating costs and maintenance through integration of new energy technologies.

The exterior materials approach, in addition to the naturally exposed fair-faced concrete wall structures, includes double standing-seam metal roofing and fascias at the public spaces, custom anodized aluminum window and door units and PVDF coated metal railings.

All interior commons, lobbies and circulation areas are defined by a sequence of alternating materials, intended to define thresholds for visually impaired residents. These areas present an opportunity to introduce Portuguese ceramics contrasted with durable low-pile carpet for anti-slip resistance and sound control attenuation. Lounges and Dining Areas have engineered wood floors.



A	Single Bedroom / Bathroom [8]	21.62 m ²
B	Twin Bedroom / Bathroom [8]	26.65 m ²
C	West Terrace	13.70 m ²
D	Commons Area	27.24 m ²
E	Commons Area	31.64 m ²
F	Commons Area	37.03 m ²
G	Lobby	51.56 m ²
H	Commons Area	32.98 m ²
I	East Terrace	13.70 m ²
J	Janitor	2.71 m ²
K	Balconies [16]	4.32 m ²
L	Elevator/ Stair	12.33 m ²

Net Area	678.06 m ²
Gross Area	742.43 m ²
Net/Gross Planning Efficiency	91%

Color, Connectivity, and Community

echelon2 is typical of how each echelon is organized along several circulatory and visual connectivity axes. The circulatory axes [1] provide horizontal, vertical and egress pathways for accessible routes. The visual connectivity axes [2][3] of interior spaces, bedroom units, and community areas are crucial to providing safe, observational care and support to residents. A transference of the color of each facade [4], i.e. outside to inside, reinforces the community analogy and personalizes the identity of each residential unit.

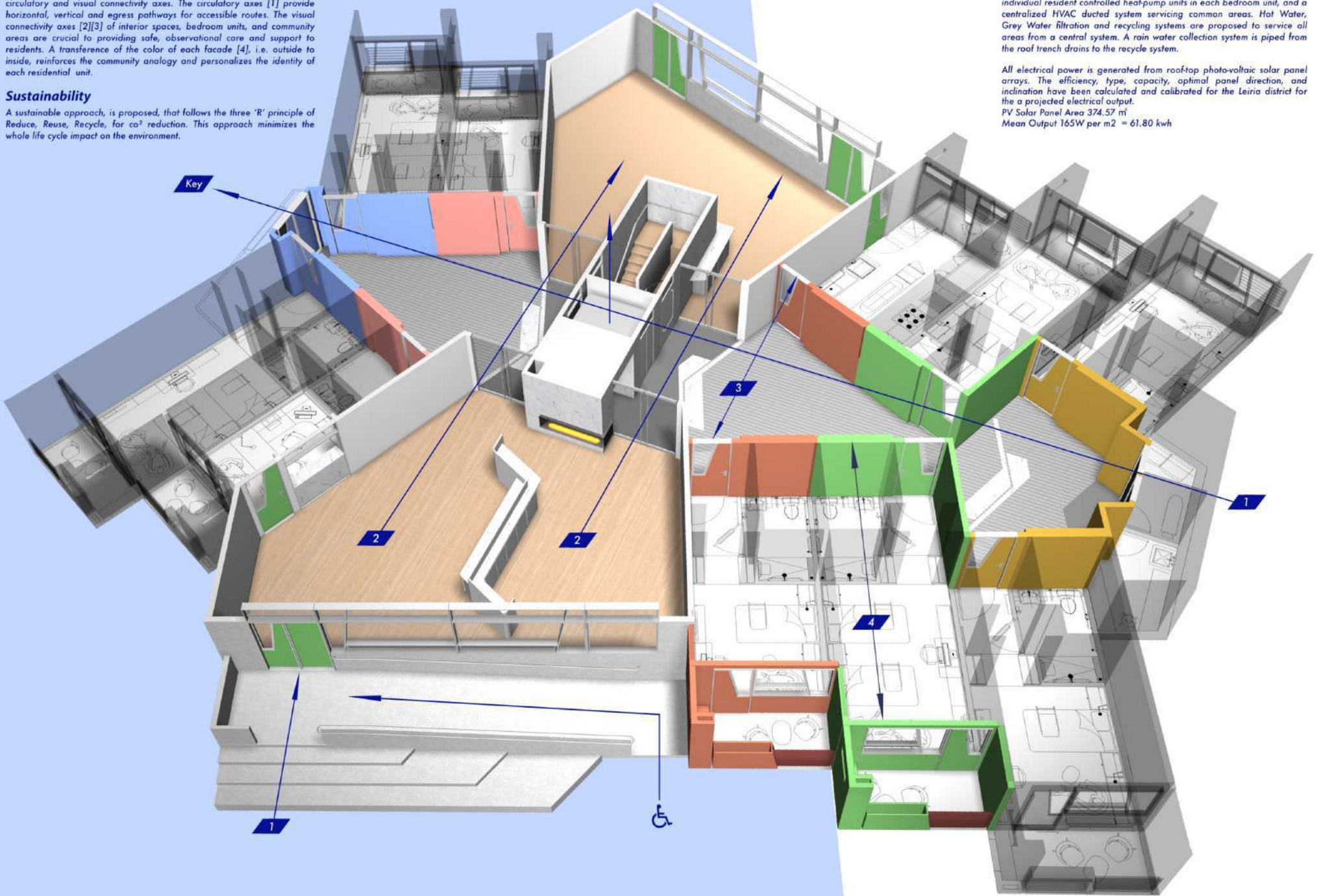
Sustainability

A sustainable approach, is proposed, that follows the three 'R' principle of Reduce, Reuse, Recycle, for CO₂ reduction. This approach minimizes the whole life cycle impact on the environment.

Energy Systems

Heating, Ventilation and Cooling systems are scaled and divided between individual resident controlled heat-pump units in each bedroom unit, and a centralized HVAC ducted system servicing common areas. Hot Water, Grey Water filtration and recycling systems are proposed to service all areas from a central system. A rain water collection system is piped from the roof trench drains to the recycle system.

All electrical power is generated from roof-top photo-voltaic solar panel arrays. The efficiency, type, capacity, optimal panel direction, and inclination have been calculated and calibrated for the Leiria district for a projected electrical output.
PV Solar Panel Area 374.57 m²
Mean Output 165W per m² = 61.80 kwh



Construction

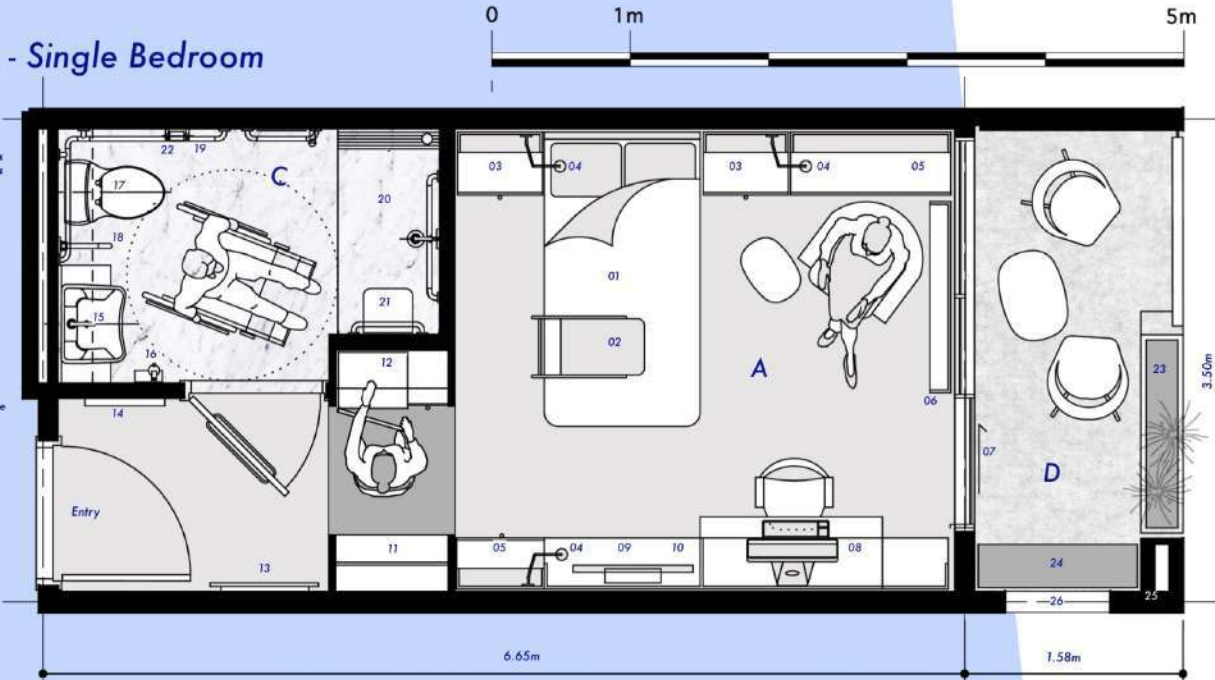
The selection of precast modular concrete construction, for the echelon project construction method, produces the following positive advantages.

By optimizing the design, advanced precasting technologies, and new concrete material technology, the ultra-high performance concrete (UHPC) delivers superior strength with reduced tolerances, thinner sections. Additionally, this pre-engineered solution reduces on-site construction assembly times.

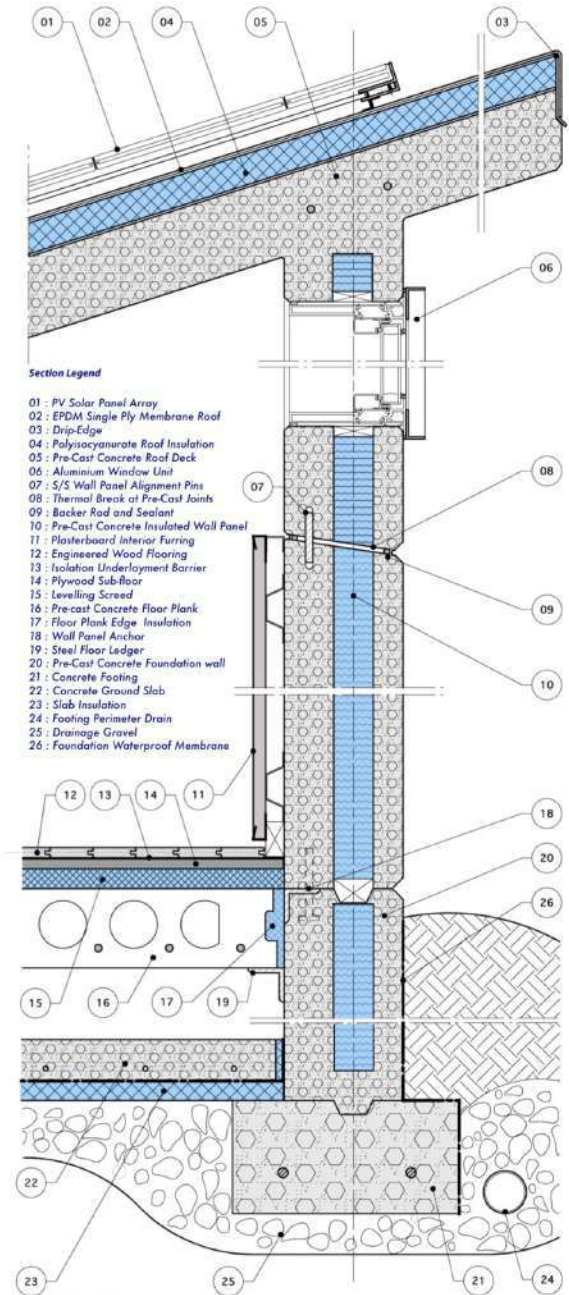
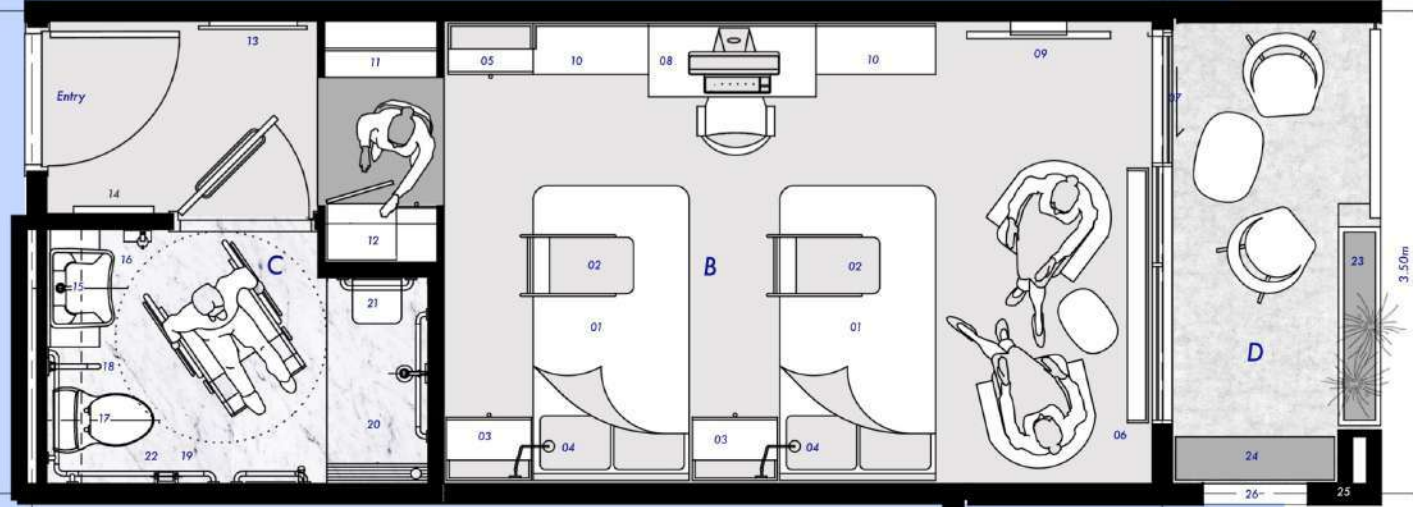
Precast concrete's intrinsic properties are particularly suited to the design of elderly homes, providing thermal inertia, acoustic insulation, fire safety and flame spread compartmentation. Precast concrete also supports a healthy indoor air quality with no emissions to environment. Versatility in factory production, guided by employing sustainable strategies and the use of local materials, allows for a wide choice of surface finishing, colour selection and custom roof section profiles.

PLAN Unit A - Single Bedroom

- A Single Bedroom / Bathroom 20 Units
- B Twin Bedroom / Bathroom 20 Units
- 01 Single Bed
- 02 Serving Table
- 03 Bedside Dresser
- 04 Reading Lights
- 05 Drawer Unit
- 06 Heat Pump
- 07 Sliding Door
- 08 Computer Desk
- 09 Wall Mounted TV
- 10 Bookshelf
- 11 Wardrobe
- 12 Refrigerator / Microwave Bar
- 13 Dress Mirror
- 14 Security / Control Panel
- C Accessible Bathroom
- 15 Wall Sink / Mirror / Towel Storage
- 16 Wall hung Hair Dryer
- 17 Elongated Toilet
- 18 Fold Down Grab Bar
- 19 Horizontal Two-Wall Grab Bar
- 20 Roll-In Shower w/ Trench Drain
- 21 Fold Down Shower Seat
- 22 Paper Holder
- D Balcony
- 23 Planter
- 24 Storage Unit
- 25 Roof drainage chase
- 26 Brise Soleil Aperture



PLAN Unit B - Twin Bedroom



Section Legend

- 01 : PV Solar Panel Array
- 02 : EPDM Single Ply Membrane Roof
- 03 : Drip-Edge
- 04 : Polysyaranurate Roof Insulation
- 05 : Pre-Cast Concrete Roof Deck
- 06 : Aluminium Window Unit
- 07 : S/S Wall Panel Alignment Pins
- 08 : Thermal Break at Pre-Cast Joints
- 09 : Backer Rod and Sealant
- 10 : Pre-Cast Concrete Insulated Wall Panel
- 11 : Plasterboard Interior Furring
- 12 : Engineered Wood Flooring
- 13 : Isolation Underlayment Barrier
- 14 : Plywood Sub-Floor
- 15 : Levelling Screed
- 16 : Pre-cast Concrete Floor Plank
- 17 : Floor Plank Edge Insulation
- 18 : Wall Panel Anchor
- 19 : Steel Floor Ledger
- 20 : Pre-Cast Concrete Foundation wall
- 21 : Concrete Footing
- 22 : Concrete Ground Slab
- 23 : Slab Insulation
- 24 : Footing Perimeter Drain
- 25 : Drainage Gravel
- 26 : Foundation Waterproof Membrane

Wall Section

Reference Images



ARCHITECTURE COMPETITION

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Architecture Competitions

Competition Presentation Boards



South East **A**



Introduction

To face aging in a happier and more peaceful way is the challenge of designing elderly homes. Fostering human relations and sharing is key to stimulating seniors to offset the loneliness, insecurity, isolation, and depression associated with old age. The underlying goal of the echelon project is to address these issues with dignity and respect.

Architectural Concepts

Key concepts, embodied in the competition submission, include the modular planning and assembly of residential units into echelon configurations surrounding community spaces. These interstitial spaces evoke urban streets and plazas, with multiple meeting spaces clustered along circulation paths. The exterior modulation of the facades created by the echelon serration, visually articulates the scale of the overall building volume. In reference to Portuguese vernacular urban architecture, coloured facades, balconies and planters are expressed to create identity, individuality, and sense of place. The vestigial Chapel is conceived as a place of pilgrimage, available for worship and contemplation by residents and community visitors. The Chapel is approached across an orchard planted with a trinity of Pêra de Rocha trees, adding further local meaning and symbolism.

Site Legend

- A Resident / Visitors Entrance
- B Staff / Service Entrance
- C Resident / Visitors Parking (13 spaces 5 EV Charging)
- D Disabled Parking (1 space)
- E Bicycle + Motorcycle Rack
- F Entrance
- G Steps to Orchard Grounds
- H Orchard Bench
- I Pêra Rocha Trees (3)
- J Chapel
- K Sign 'escada' / Planter
- L Salarium meadow
- M Main Building
- N Gravel Terraces
- O Goods Parking / Entrance
- P Community Garden
- Q PV Solar Array
- R Clerestory
- S Roof Trench Gutter



B Site Plan

Site Area Analysis

Building Footprint incl. Chapel 964.16 m² Site Area 2,308.30 m² Site coverage 42%



South West **C**

Site Design Strategies

Rural road R. de São Salvador [NS43], connecting the communities of Leiria and Andraus, provides primary vehicular access to the competition site. Separate site entry points to the Resident/Visitors driveway [A] and the Goods/Service driveway [B], create spatial margins from adjacent property lines. Permeable surfaced driveways and Parking areas [C] slope to the East aiding rainwater runoff and drainage. The natural slope of the site towards the East is utilized in a 'cut and fill' approach to the contouring and landscaping of the site. The echelon volumetric composition responds to this declination to maximize views and add individual privacy to the residential units. The East lot line and competition site boundary is characterized by angular indentations, creating vestigial areas for the siting of the Chapel [J] and residents Community Garden [P].



PORTUGAL ELDERLY HOME

echelon

echelon1

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A multidisciplinary team composed of ten operational staff is proposed, including the Administrative Director, Administrative Assistant, Day/Night Nurse, Building Operations Manager, Physical Therapist, Maintenance Staff [2], Kitchen Staff [2], Dining/Activities/Events Manager.

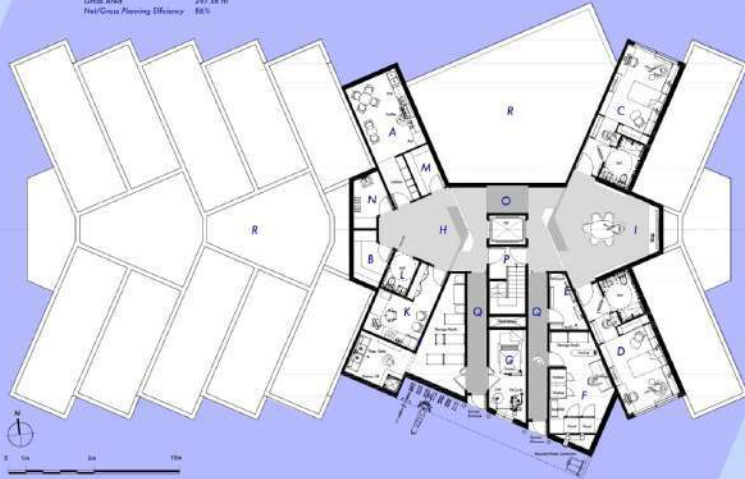


North View

1 echelon

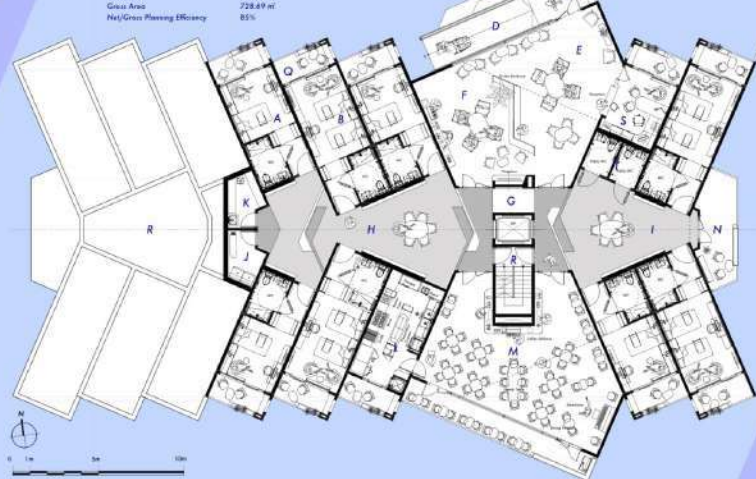
A	Staff Break Room	70.81 m ²
B	Living Storage	43.17 m ²
C	Staff Bedroom	26.19 m ²
D	Staff Bedroom	26.19 m ²
E	Electrical/IT Room	5.19 m ²
F	Main Laundry	38.78 m ²
G	Mechanical	30.85 m ²
H	Staff Lobby	5.71 m ²
I	Staff Meeting Area	29.19 m ²
Net Area		256.34 m ²
Gross Area		297.88 m ²
Net/Gross Planning Efficiency		86%

J	Kitchen Storage + Prep	23.31 m ²
K	Building Managers Office	12.52 m ²
L	Staff WC	3.37 m ²
M	Supply Room	3.43 m ²
N	Lavator	5.42 m ²
O	Elevator Lobby	19.40 m ²
P	Elevator/ Stair Core	13.92 m ²
Q	Corridor/ Egress	17.88 m ²
R	Foundation	



A	Single Bedroom / Bathroom (4)	21.82 m ²
B	Two Bedroom / Bathroom (4)	29.65 m ²
C	Bedroom	7.10 m ²
D	Ramp Access	12.99 m ²
E	Reception Lounge	22.34 m ²
F	Guest Lounge	52.48 m ²
G	Director Lobby	19.29 m ²
H	Wait Common Area	54.86 m ²
I	Staff Common Area	32.28 m ²
J	Residents Laundry	5.47 m ²
Net Area		618.21 m ²
Gross Area		729.49 m ²
Net/Gross Planning Efficiency		85%

K	Junior Bm	5.87 m ²
L	Kitchen	21.25 m ²
M	Dining/Activity/Entertainment Lounge	76.95 m ²
N	Staff Terrace	12.24 m ²
O	Clippel	25.41 m ²
P	Clippel Terrace	14.41 m ²
Q	Balconies [10]	4.22 m ²
R	Elevator/ Stair Core	13.35 m ²
S	Administration Office	13.25 m ²
T	Public Toilet	2.44 m ²



echelon **2**

echelon2

echelon2 is the Entry level for Residents and Visitors. Approached directly from the North parking areas, the Main Entrance [C] and Entrance wheelchair ramp [D] provide accessible entry to the Reception [E] and Guest Lounge [F]. Features and amenities in these areas include Lounge seating, dividing screen with bookshelves, Coffee service, and Fireplace. The main Lobby [G] has full visual and ambulatory connectivity to the Resident Commons areas [H,I] and the Dining/Activity/Entertainment space [M]. Emphasis is placed on the concept of having commons areas serving clusters of adjacent bedroom suites. Typical to each floor the Lift [R] is designed as fully wheelchair accessible with double access doors from both East and West commons.

The multi-functional Dining/Activity/Entertainment space [M] has a planned occupancy of 60 persons. A full service Kitchen [L] is planned to accommodate daily and special event culinary demands. A self-service counter surrounds the Lift/Stair core [R], and includes an espresso machine, salad bar, charcuterie and dessert case and digital menu display. Dining planning includes table settings for two and four persons, and a eight person family table. A seasonal outdoor terrace is planned for ten persons. Anticipated activity and entertainment uses, include cookery classes, demonstrations, group crafts, flower arranging, and musical performances.



West View

echelon3 + echelon4

Public areas on echelon3 and echelon4 include East and West commons areas each serving clusters of four adjacent bedroom suites. The Solarium [L], on echelon3, engages with the residents passion for nature and plants. Direct connection and access to the West lawn offers additional outdoor space. The East Terrace presents views across the valley towards Cortes.

Accessed directly from the echelon3 Lobby [F], the Library [C], Therapy + Exercise [D], and Examination [E] areas take into account key provisions for elderly use. These include clear lines of sight for resident monitoring, appropriate privacy and inter-connectivity between therapy and examination areas. Interior lighting is proposed to create an even ambient and soothing interior atmosphere. Durable low-pile carpet is proposed for anti-slip resistance and to enhance sound control and transmission.

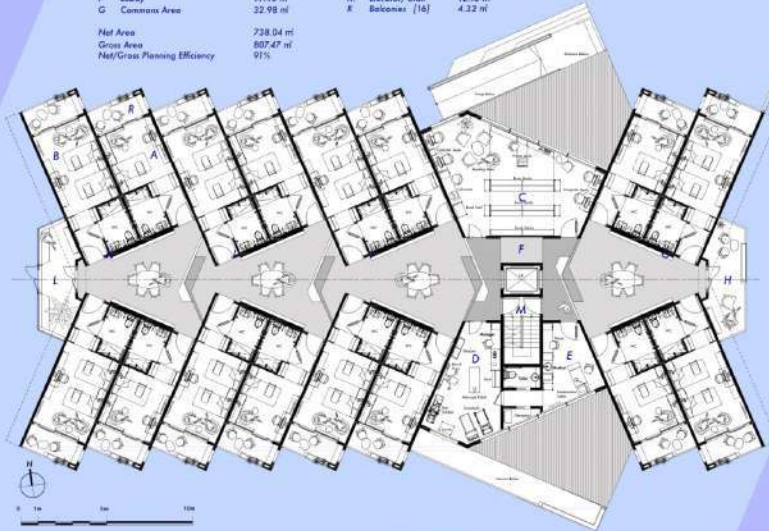
Library planning provides amenities for internet and computer use, a coffee and reading area, writing desk and printer. Accessible low height bookshelves and aisles are wheelchair compliant.

South View

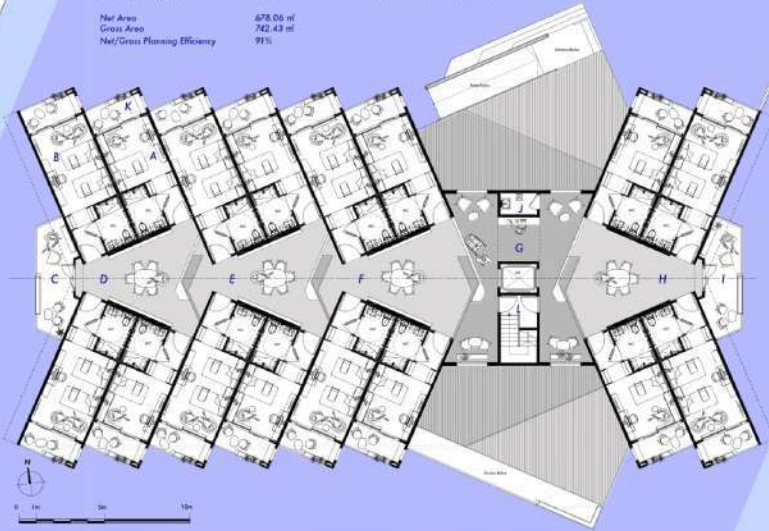


3 echelon

A Single Bedroom / Bathroom [8]	21.62 m ²	H East Terrace	13.70 m ²
B Twin Bedroom / Bathroom [8]	26.65 m ²	I Commons Area	37.03 m ²
C Library	50.42 m ²	J Commons Area	31.64 m ²
D Therapy+Exercise Room	23.76 m ²	K Commons Area	27.24 m ²
E Nurse Examination Room	20.68 m ²	L Solarium	14.47 m ²
F Lobby	19.40 m ²	M Elevator/ Stair	12.36 m ²
G Commons Area	32.98 m ²	N Balconies [16]	4.32 m ²
Net Area	738.04 m ²		
Gross Area	807.47 m ²		
Net/Gross Planning Efficiency	91%		



A Single Bedroom / Bathroom [8]	21.62 m ²	G Lobby	51.56 m ²
B Twin Bedroom / Bathroom [8]	26.65 m ²	H Commons Area	32.98 m ²
C West Terrace	13.70 m ²	I East Terrace	13.70 m ²
D Commons Area	27.24 m ²	J Janitor	2.71 m ²
E Commons Area	31.64 m ²	K Balconies [16]	4.32 m ²
F Commons Area	37.03 m ²	L Elevator/ Stair	12.33 m ²
Net Area	678.06 m ²		
Gross Area	742.43 m ²		
Net/Gross Planning Efficiency	91%		



echelon 4



East View

Sustainability and Materials Approach

The Sustainability intent is to embody principles of environmental sustainability comparable to BREEAM guidelines. Specific consideration has been given to material selection, lifecycle costing, and reduction of operating costs and maintenance through integration of new energy technologies.

The exterior materials approach, in addition to the naturally exposed fair-faced concrete wall structures, includes double standing-seam metal roofing and fascias at the public spaces, custom anodized aluminum window and door units and PVDF-coated metal railings.

All interior commons, lobbies and circulation areas are defined by a sequence of alternating materials, intended to define thresholds for visually impaired residents. These areas present an opportunity to introduce Portuguese ceramics contrasted with durable low-pile carpet for anti-slip resistance and sound control attenuation. Lounges and Dining Areas have engineered wood floors.

A Axonometric View

Color, Connectivity, and Community Key

echelon2 is typical of how each echelon is organized along several circulatory and visual connectivity axes. The circulatory axes [1] provide horizontal, vertical and egress pathways for accessible routes. The visual connectivity axes [2][3] of interior spaces, bedroom units, and community areas are crucial to providing safe, observational care and support to residents. A transference of the color of each facade [4], i.e. outside to inside, reinforces the community analogy and personalizes the identity of each residential unit.

Sustainability

A sustainable approach, is proposed, that follows the three 'R' principle of Reduce, Reuse, Recycle, for CO₂ reduction. This approach minimizes the whole life cycle impact on the environment.

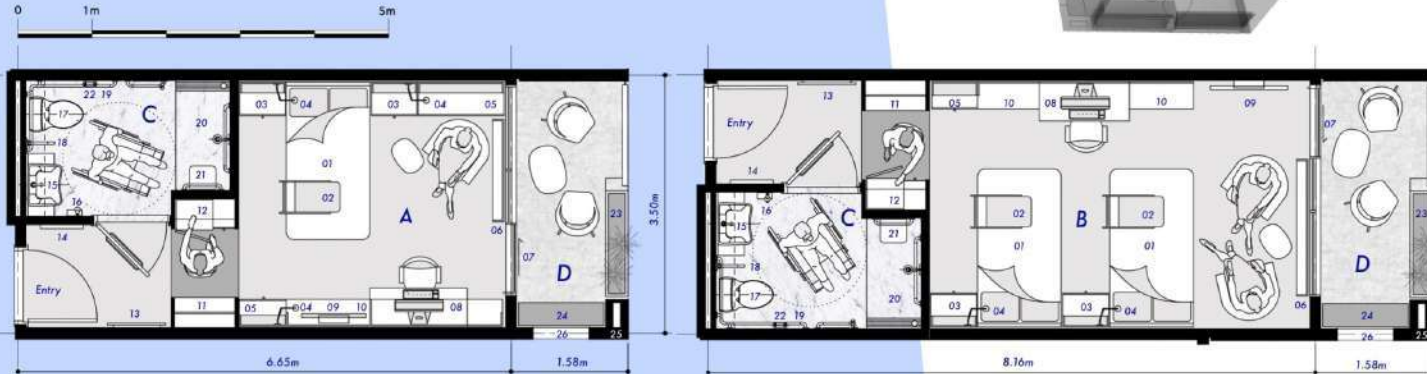
Energy Systems

Heating, Ventilation and Cooling systems are scaled and divided between individual resident controlled heat-pump units in each bedroom unit, and a centralized HVAC ducted system servicing common areas. Hot Water, Grey Water filtration and recycling systems are proposed to service all areas from a central system. A rain water collection system is piped from the roof trench drains to the recycle system.

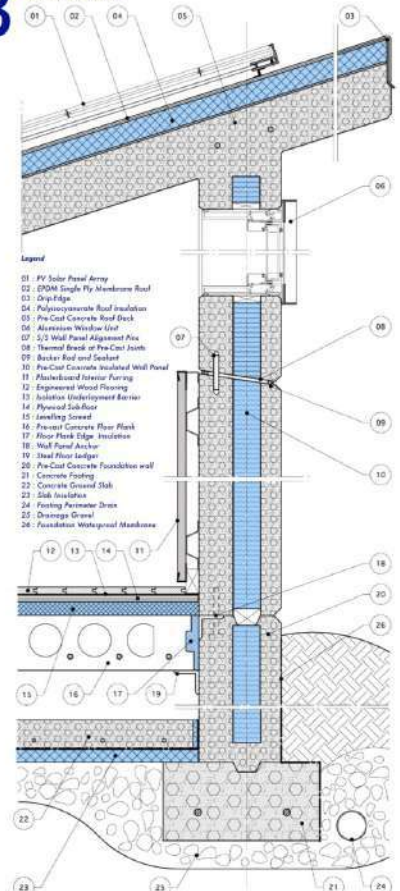
All electrical power is generated from rooftop photovoltaic solar panel arrays. The efficiency, type, capacity, optimal panel direction, and inclination have been calculated and calibrated for the Leiria district for the a projected electrical output. PV Solar Panel Area 374.57 m². Mean Output 165W per m² = 61.80 kWh

Bedroom Module Layouts

- A Single Bedroom / Bathroom 20 Units
- B Twin Bedroom / Bathroom 20 Units
- 01 Single Bed
- 02 Serving Table
- 03 Bedside Dresser
- 04 Reading Light
- 05 Drawer Unit
- 06 Heat Pump
- 07 Sliding Door
- 08 Computer Desk
- 09 Wall Mounted TV
- 10 Bookshelf
- 11 Wardrobe
- 12 Refrigerator / Microwave Bar
- 13 Dress Mirror
- 14 Security / Central Panel
- C Accessible Bathroom
- 15 Wall hung Sink / Mirror / Towel Storage
- 16 Wall hung Hair Dryer
- 17 Elongated Toilet
- 18 Fold-Down Grab Bar
- 19 Horizontal Two-Wall Grab Bar
- 20 Roll-In Shower w/ Trench Drain
- 21 Fold-Down Shower Seat
- 22 Paper Holder
- D Balcony
- 23 Planter
- 24 Storage Unit
- 25 Roof Storage Chaise
- 26 Brise Soleil Aperture



B Wall Section



Legend

- 01 PV Solar Panel Array
- 02 EPDM Single Ply Membrane Roof
- 03 Drip Edge
- 04 Polystyrene Roof Insulation
- 05 Pre-Cast Concrete Roof Deck
- 06 Aluminium Window Unit
- 07 1/2 Wall Panel Alignment Pile
- 08 Thermal Break at Pre-Cast Joint
- 09 Backer Rod and Sealant
- 10 Pre-Cast Concrete Insulated Wall Panel
- 11 Plywoodboard Interior Furring
- 12 Engineered Wood Flooring
- 13 Isolation Underlayment Barrier
- 14 Physical Subfloor
- 15 Swelling Sowed
- 16 Pre-cast Concrete Floor Panel
- 17 Above Deck Slope Insulation
- 18 Wall Panel Anchor
- 19 Steel Floor Ledger
- 20 Pre-Cast Concrete Foundation wall
- 21 Concrete Footing
- 22 Concrete Ground Slab
- 23 Slab Insulation
- 24 Finishing Perimeter Drain
- 25 Drainage Channel
- 26 Foundation Waterproof Membrane



Construction

The selection of precast modular concrete construction, for the echelon project construction method, produces the following positive advantages.

By optimizing the design, advanced precasting technologies, and new concrete material technology, the ultra-high performance concrete (UHPC) delivers superior strength with reduced tolerances, thinner sections. Additionally, this pre-engineered solution reduces on-site construction assembly times.

Precast concrete's intrinsic properties are particularly suited to the design of elderly homes, providing thermal inertia, acoustic insulation, fire safety and flame spread compartmentation. Precast concrete also supports a healthy indoor air quality with no emissions to environment. Versatility in factory production, guided by employing sustainable strategies and the use of local materials, allows for a wide choice of surface finishing, colour selection and custom roof section profiles.

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The **HAIGH**Architects+Designers studio was founded in New York in 1985, by Paul Haigh and Barbara H.Haigh. The practice is recognized as a leading multi-disciplined architecture and design firm for its portfolio of award winning projects. The studio has completed projects for a wide variety of cultural and commercial clients in the United States, Italy, United Kingdom, France, Japan, and Australia.



PORTUGAL ELDERLY HOME