



XII INTERNATIONAL CONFERENCE MES-2018
'Modern Engineering Systems. Architecture of Health'

CAPITALMED, CAIRO

Shannon Kraus, FAIA, FACHA, MBA
Executive Vice President



CAPITALMED

MEDICAL CITY

80 ACRES
OF PURE
MEDICAL SCIENCE

- 323,000 m² of *Hope*
- 15.0 Bn LE of *Passion*
- 636,320 m² of *Humanity*

The Capital Of Medicine In The Middle East

CapitalMed stretches over 80 acres, 323,000 m² of land with a built-up area of 636,320 m² and a total investment of LE Bn. 15.0

CAPITALMED MISSION

Our mission and purpose is to serve all of the different socio-economic classes in Egypt, Africa and MENA region with an international standard of comprehensive, evidence based medical service. Every single examination and procedure strictly adheres to JCI standards.

We are building an advanced platform for medical education, training and research for all medical specialties. Through bringing this advanced medical expertise and research to Egypt, we are repositioning our country as practitioners of the most cutting edge medical sciences.

We are proudly carrying Egypt's rich legacy of medical excellence into the 21st century.



Sekhmet, Ancient Egyptian goddess of healing

CAPITALMED CONTEXT

Egypt is one of the largest markets in the Middle East and North Africa, with a population of almost 100 million.

CapitalMed is purposefully located to easily serve Egypt's population, and the rest of the Middle East. The location enjoys direct access to the Delta and Upper Egypt governorates, is located right across from the New Capital City, and is near the new communities around Cairo-Suez.

In the heart of the Middle East, CapitalMed will be the only qualified integrated healthcare destination that can fully cater to this vast market. CapitalMed's location reflects its purpose: to serve all who need care.





COMPREHENSIVE MEDICAL SERVICES

- BUC Hospital Centre
- Rehabilitation Institute
- Wellness Institute
- Doctor's Plaza
- Emergency and Trauma Institute
- Women's and Children's Institute
- Transplant Institute
- Precision Medicine
- Skilled Nursing
- Mall
- Hotel and Residential
- Central Plant
- Administration

CapitalMed is a 2000 bed world class medical city planned to start construction by mid-2018. Sited on 80 acres of new development across from the new capital city of Egypt on Cairo Suez Road, it is poised to be an anchor and catalyst to the surrounding area.

The initial phase of the medical city will include a 375 bed state-of-art general hospital, doctor's plaza, rehabilitation and wellness institute, hotel and 9 specialised medical excellence centres around 57 acres of open green areas.

The project will be solidly grounded in the roots of Egyptian culture, yet modern and clean in its expression of architectural and interior design.

MASTERPLAN



Commercial
Facility
Services

Doctors
Plaza

University
General
Hospital

Emergency and
Trauma
Institute

Central
Services

Wellness
Institute

Rehabilitation
Institute

Women's and
Children's
Institute

Central
Plant

Skilled
Nursing

Precision
Medicine

Hotel

Transplant
Institute

1. Arrival Plaza
2. Park West
3. West Plaza
4. Rehabilitation and Wellness Garden
5. Mosque Gardens
6. The Woodlands
7. Solace Garden
8. Sensory Gardens
9. East Plaza
10. Park East
11. North Park Active





CAPITALMED FIGURES

- 2000 bed medical facility
 - Phase 1: 615 beds
 - Phase 2: 1373 beds and 24 labor and delivery Rooms
- 80 acre site
- 57 acres open space (70% of site)
- 23 acres built area over 5 floors (30% of site)
- 636, 320 square meters of medical care
 - Phase 1: 347,580 square meters
 - Phase 2: 284,580 square meters
- 9 specialty medical institutes
- 13 buildings
- 5 star hotel on campus, with a 100 room capacity
- 7-10 years of construction, completed in four phases
- 10,000-13,000 job opportunities will be created
- \$750 million approximate total investment
 - Phase 1: estimated construction cost \$150 million
- \$1,440/m² estimated construction cost for medical buildings

CAPITALMED TIMELINE

- | | |
|-------------|---|
| 2016 | SEPTEMBER: Land Approval |
| 2017 | APRIL: Master Plan Approval
DECEMBER: Medical Buildings Design Completed |
| 2019 | FEBRUARY: Phase 1 Construction Started |
| 2021 | APRIL: General Hospital & Phase 1 Completed |
| 2022 | APRIL: Phase 2 Specialty Centers Construction Starts |
| 2025 | APRIL: Specialty Centers Construction Completed |



CAPITALMED EXTERIOR ARCHITECTURE

Ancient Egyptian architecture maintains a strong sense of architectural order. Massive scale, repetition, colonnades and screening elements all reinforce the rhythm present in the Egyptian archetype. These elements naturally promote comfortable and liveable environments in the Egyptian climate.

Extruded window forms, thick walls and deeply recessed openings found throughout the medical campus help to protect the buildings from the harsh sunlight. These methods connect the building to the vernacular techniques that have sustained the Egyptian built environment for centuries.

The exterior is designed to respond to cultural, historical, and contextual regional influences. Additionally, an intense study of energy efficiency has been layered into the facade design - utilizing regional methods and materials.

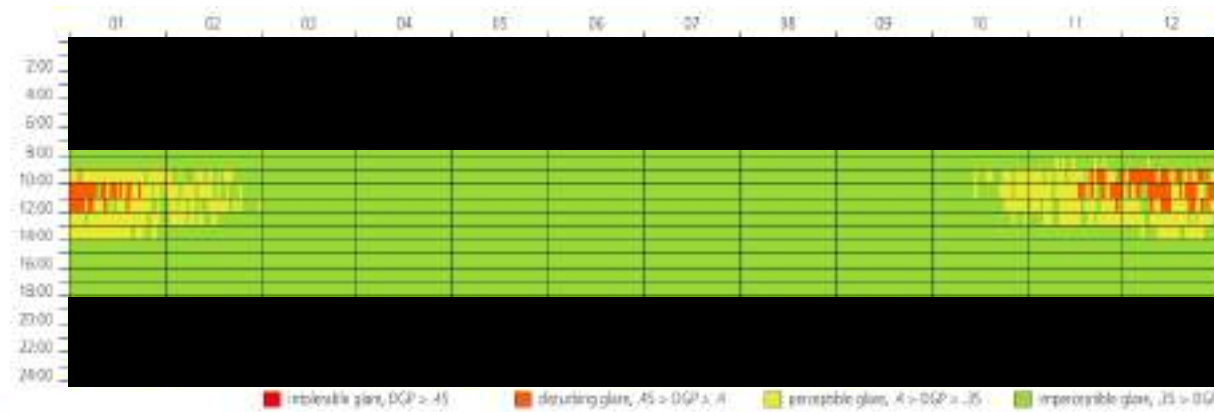
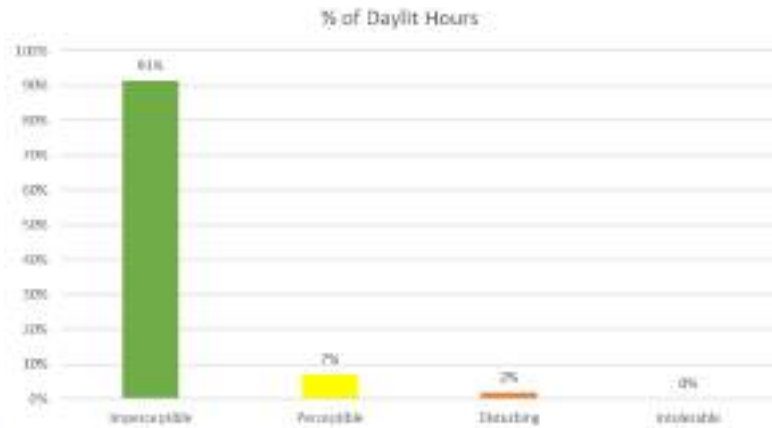
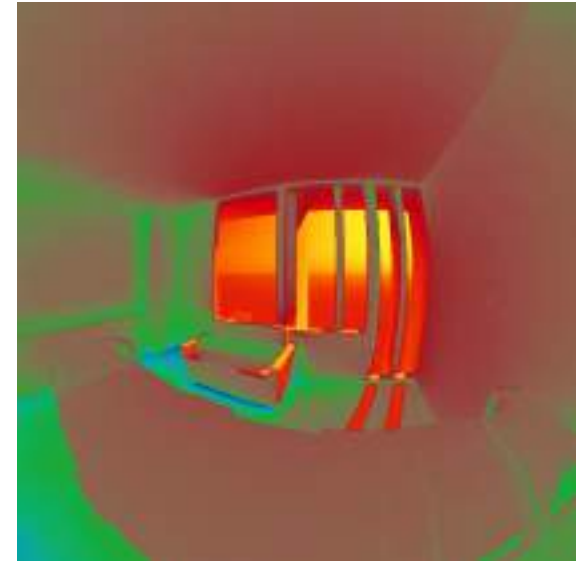


Daylight Glare Probability

- Percent of Daylight Hours with Glare
 - 7% Perceptible Glare
 - 2% Disturbing Glare
 - 0% Intolerable Glare
- Images to right are of the 35% WWR at 1PM in December which have *imperceptible glare* = DGP 32%



% of Occupied Hours



CAPITALMED
INTERIOR
ARCHITECTURE
PUBLIC

Similar to how the Nile connects and sustains Egypt, cohesive interior elements thread throughout the campus. The continuity combines and balances the public spaces with the private patient rooms. Breaks in pattern, texture and light allow various types of reprieve.

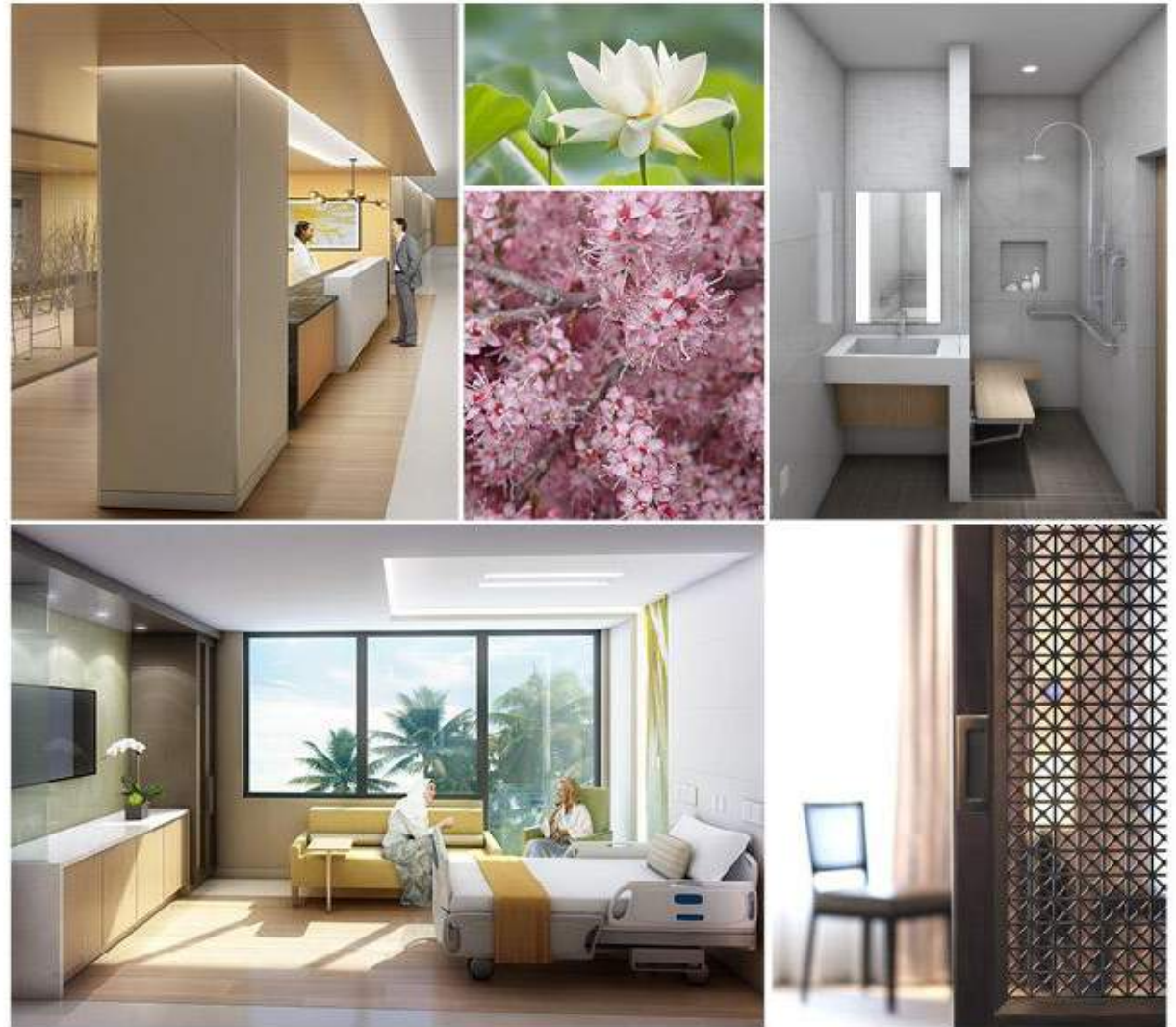
Understanding that a connection to nature is important during the healing process, the interiors have incorporated textures inspired by the Egyptian landscape. This connection allows for minimal stress when crossing the threshold from exterior to interior.



CAPITALMED
INTERIOR
ARCHITECTURE
PRIVATE

Each building design will be accented with a natural healing element traditionally used by Ancient Egyptians. Color and pattern will distinguish each space, assisting in way-finding while celebrating Egyptian heritage and providing opportunities for learning and education.

Semi private hallways allow a transition area into private patient rooms, fostering a protected and secluded space for healing. Alcoves, porches, and light diffusing elements along these passageways further promote a sense of solitude for individuals and their families.



CAPITALMED LANDSCAPE

Inspired by the natural surrounding influences, the design proposes a balance between a sustainable low water use, native landscape and a green, shaded retreat. 70% of the site (57 acres) will be green open areas.

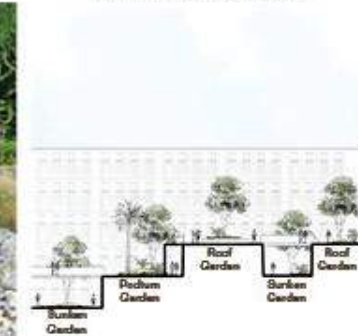
The desert landscape surrounding the site transitions into a low maintenance, cost effective xerophytic landscape that creates a landscape buffer between the desert/road and the internal courtyards of the medical campus.

In addition to creative flexible, interesting and stimulating spaces, the landscape design is supported by scientific research. This study has informed the location of the specific gardens in relation to relevant building uses, ensuring that the outdoor spaces can be utilised as an extension of the internal medical facilities.

DESERT



BUFFER LANDSCAPE



GREEN RETREAT



The central spine that connects the entire campus is key to the overall masterplan as it creates a pedestrian corridor between all medical buildings.

Podium and roof gardens are raised areas that serve to reinforce the central green spine of the campus and allow greater visibility of the landscape from patient rooms.

Sunken gardens allow facilities in the basement to benefit from natural light and continue the connection between interior and exterior.



1. Arrival Plaza
2. Park West
3. West Plaza
4. Rehabilitation and Wellness Garden
5. Mosque Gardens
6. The Woodlands
7. Solace Garden
8. Sensory Gardens
9. East Plaza
10. Park East
11. North Park Active
12. Landscape Buffer

CAPITALMED LANDSCAPE

Arrival Plaza

The Arrival Plaza is a piece of public realm that serves as the primary gateway to Phase 1 of CAPMED including drop offs for The General Hospital, Doctor's Plaza and The Mall.

The outer arid landscape breaks down into contemporary forms celebrating the movement from a contextually rooted outer landscape to a modern medical facility. The road to recovery begins with an appealing arrival before moving into the network of CapMed gardens.

Key Elements

1. Drop-off points
2. Central plaza
3. Shared surface
4. Vehicle ramps to basement
5. Buffer landscape



CAPITALMED LANDSCAPE

Park West



Park West's undulating lawns, meandering pathways and play park offer patients and staff of CAPMED a place for both passive and active recreation albeit unaware they are above the basement parking.

Mounding throughout the park creates additional soil depth, enabling the planting of large mature trees.

Key Elements

1. Flexible plaza
2. All ages play space
3. Sunken Garden
4. Rolling turf area
5. Informal seating areas
6. Vehicle drop-off



CAPITALMED LANDSCAPE

West Plaza

The West Plaza is a core pedestrian intersection where staff and visitors alike will move between hospitals, socialise and relax.

Located in West Plaza's centre is the Mosque, its private garden and grand water feature. Set in a natural landscape it gives the community operating in CAPMED a place to practise their faith separately from the activities in the hospitals.

Key Elements

1. Mosque
2. Central Reflection Pond
3. West Park
4. Woodlands
5. Sunken Mosque Garden
6. Vehicle Drop-Off



CAPITALMED LANDSCAPE

Sensory Garden

Centred between the University General Hospital and the Emergency and Trauma Institute, the Sensory Garden will comprise of many sensory elements to assist in relaxation and recovery, by transporting patients to a place of beauty, tranquillity, and sensory enrichment.

Key Elements

1. Water Feature (Hearing)
2. Sculpture (Sight)
3. Scented Plants (Smell)
4. Textured Vegetation (Touch)
5. Fruit Trees (Taste)
6. Primary footpath between hospitals



Touch

Provides tactile experiences through materiality and vegetation texture.



Smell

Aromatic herbs are massed together enticing visitors to touch and sniff them as they pass by.



Sight

Interesting and exciting public artwork will engage and promote discussion



Hearing

Subtle background sounds of water running and wind moving through the trees creates a calming effect

CAPITALMED LANDSCAPE

East Campus

The parklands of the West Campus extend into the East through Park East and East Plaza.

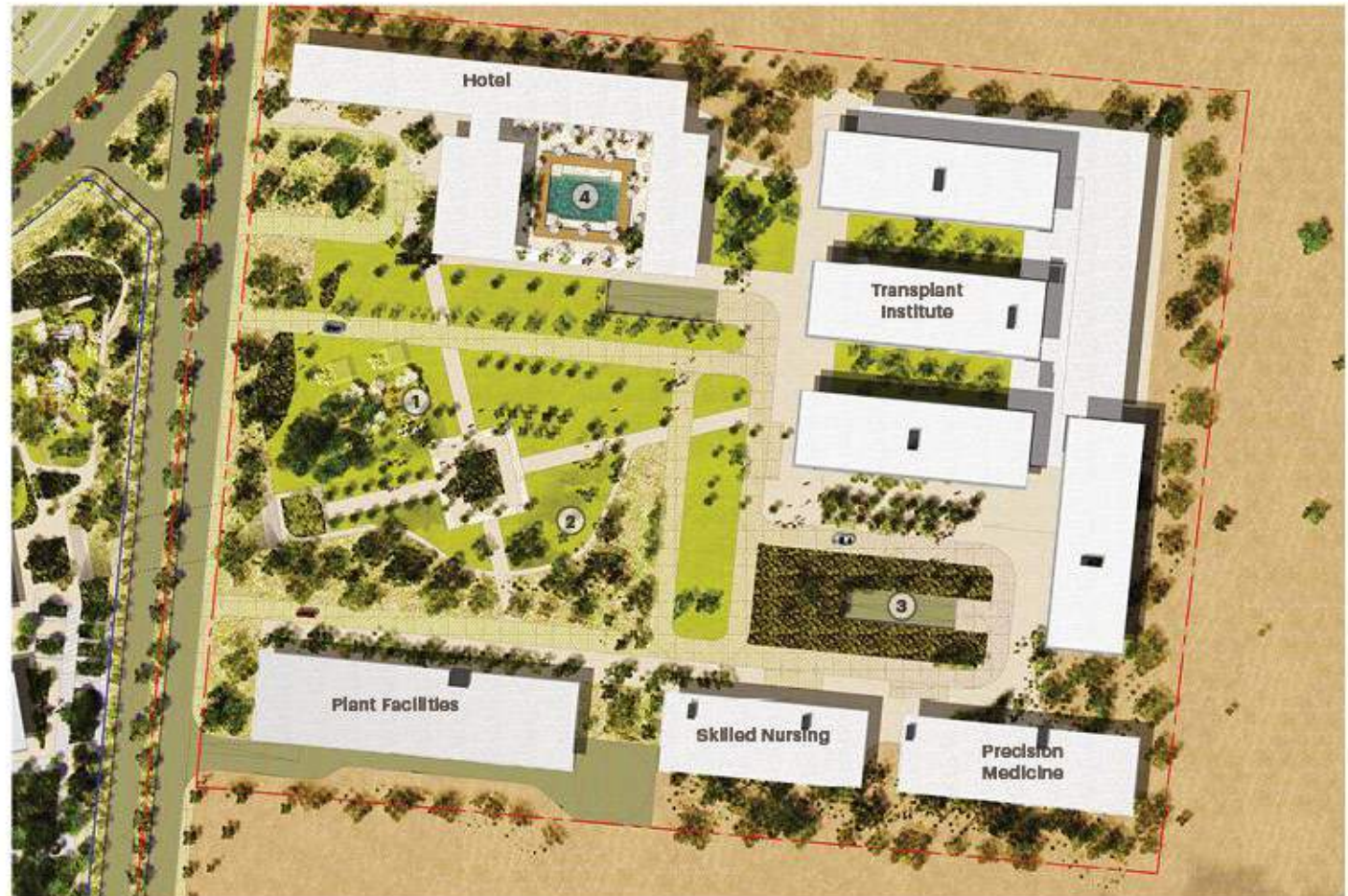
With its own play space, sweeping lawns and central square the East Campus continues to deliver socio-restorative benefits to the patients and staff of Precision Medicine and the Transplant Institute.

Parking and plant facilities are screened by the penetrating perimeter landscape which also contributes to the arrival sequence for the hotel.

The hotel itself has its own self contained private courtyard with pool facilities.

Key Elements

1. East Plaza
2. Park East
3. Park East Play
4. Hotel Court



GARDEN LEVEL
DOCTORS APPROACH



GARDEN LEVEL
LOBBY ENTRANCE



GROUND LEVEL
WELLNESS AND
REHABILITATION INSTITUTE



GROUND FLOOR
MOSQUE GARDENS



GROUND FLOOR
BURN ICU PATIENT ROOM



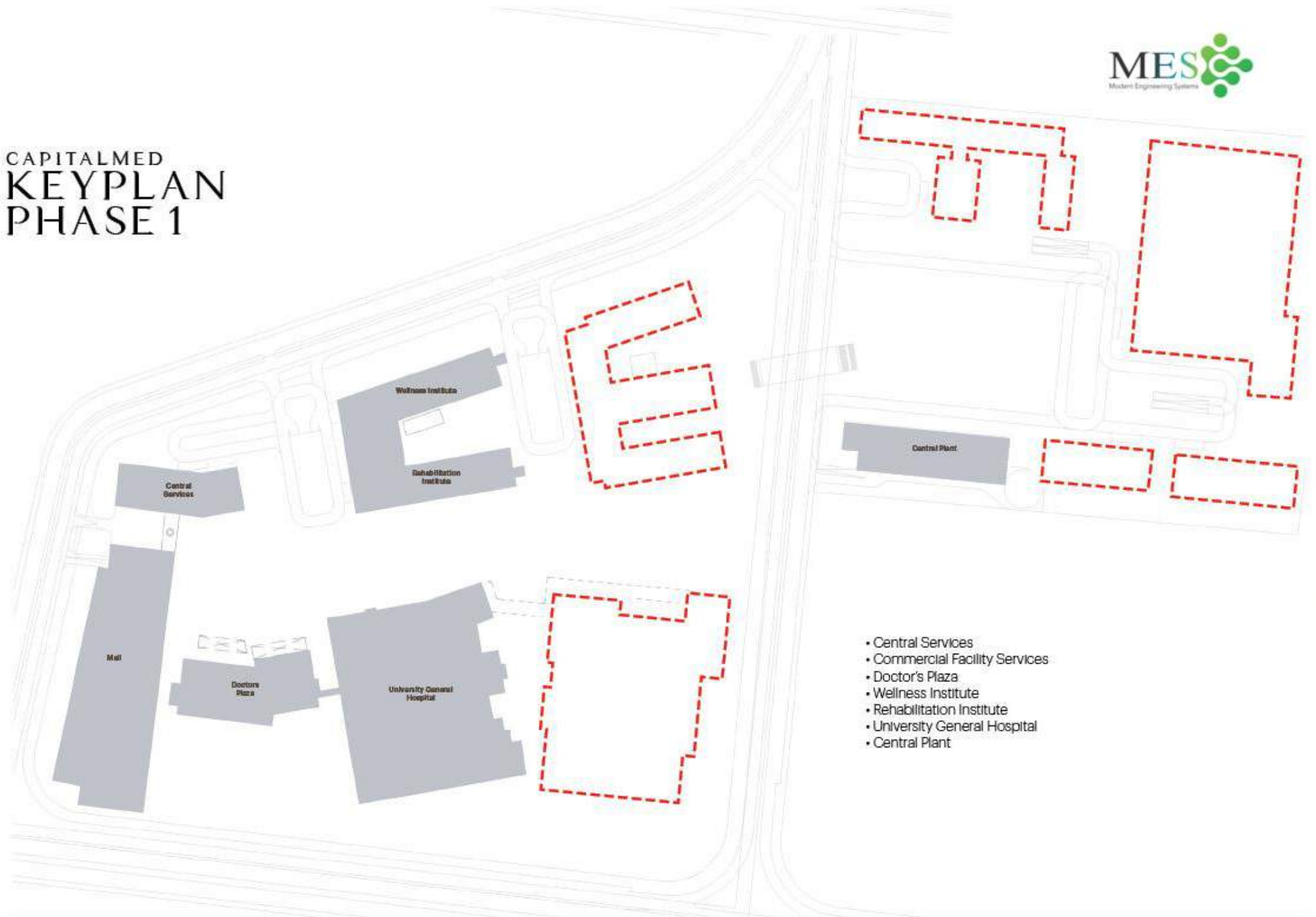
CAPITALMED PHASING

1. Commercial Services Facility
2. Doctor's Plaza
3. University General Hospital
4. Emergency and Trauma Institute
5. Women's and Children's Institute
6. Wellness Institute
7. Rehabilitation Institute
8. Central Services
9. Central Plant
10. Precision Medicine
11. Transplant Institute
12. Skilled Nursing
13. Hotel and Residential



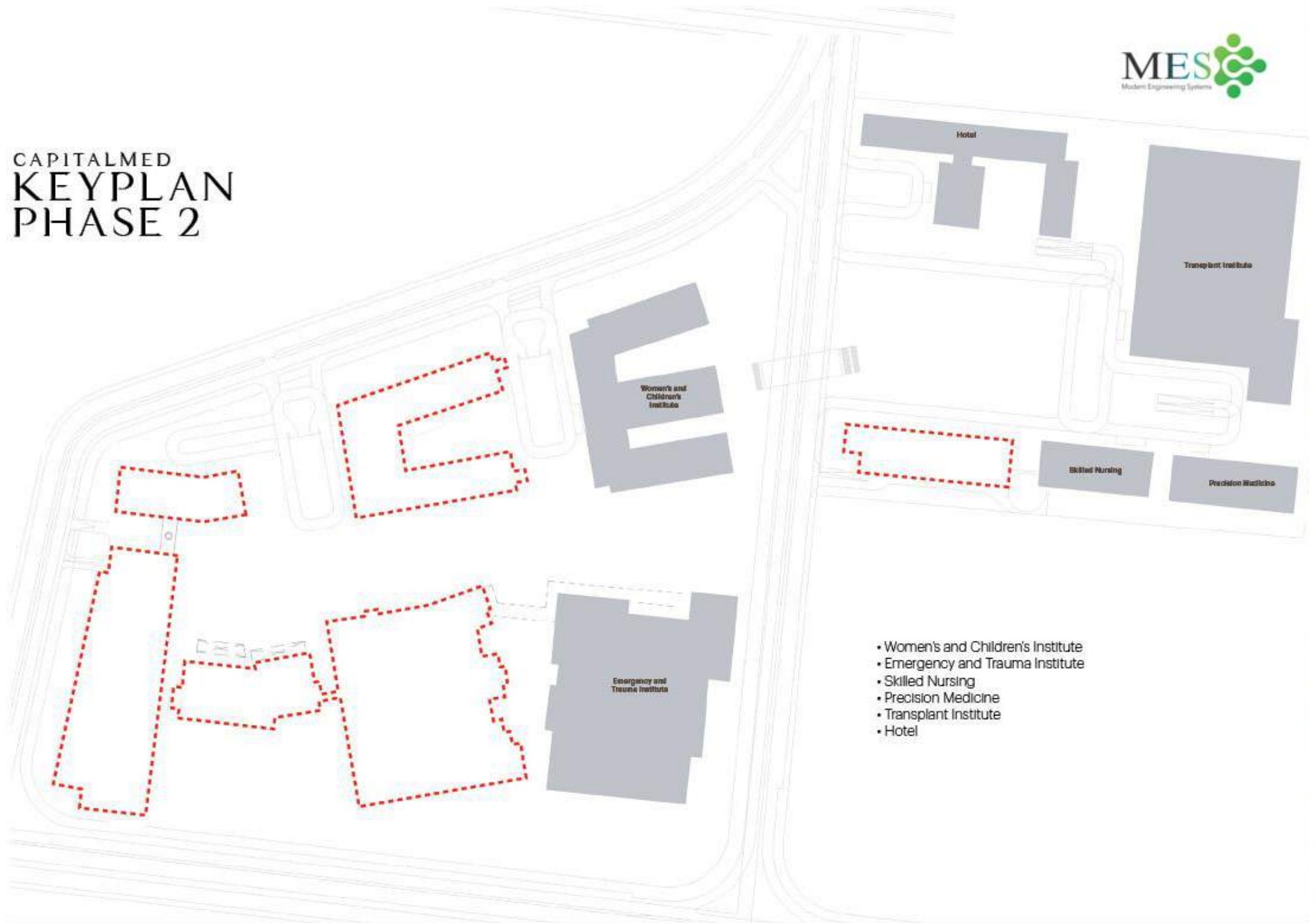
Phase 1
Phase 2

CAPITALMED KEYPLAN PHASE 1





CAPITALMED KEYPLAN PHASE 2



- Women's and Children's Institute
- Emergency and Trauma Institute
- Skilled Nursing
- Precision Medicine
- Transplant Institute
- Hotel



Circulation

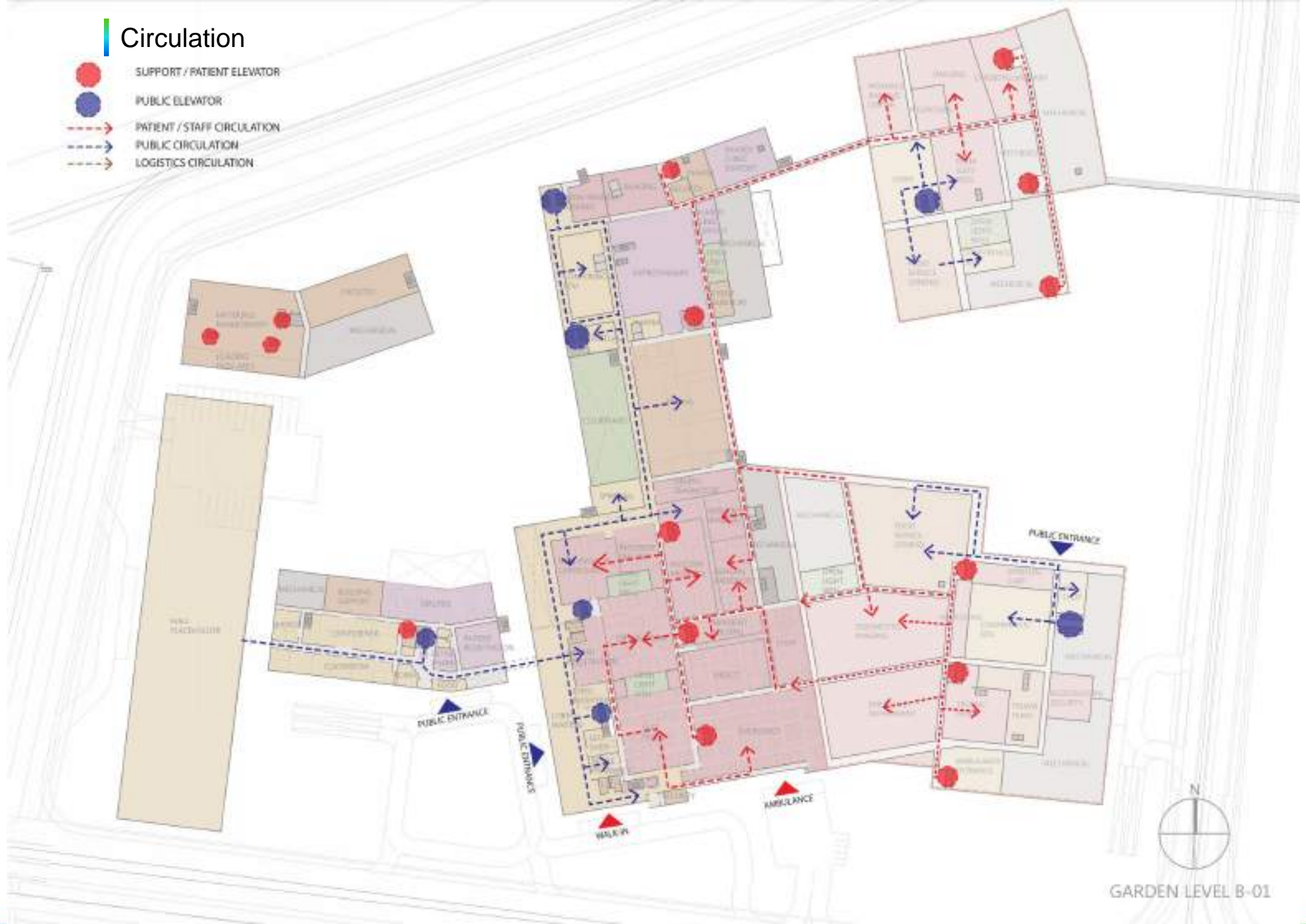
-  SUPPORT / PATIENT ELEVATOR
-  PUBLIC ELEVATOR
-  PATIENT / STAFF CIRCULATION
-  PUBLIC CIRCULATION
-  LOGISTICS CIRCULATION




BASEMENT LEVEL B-02

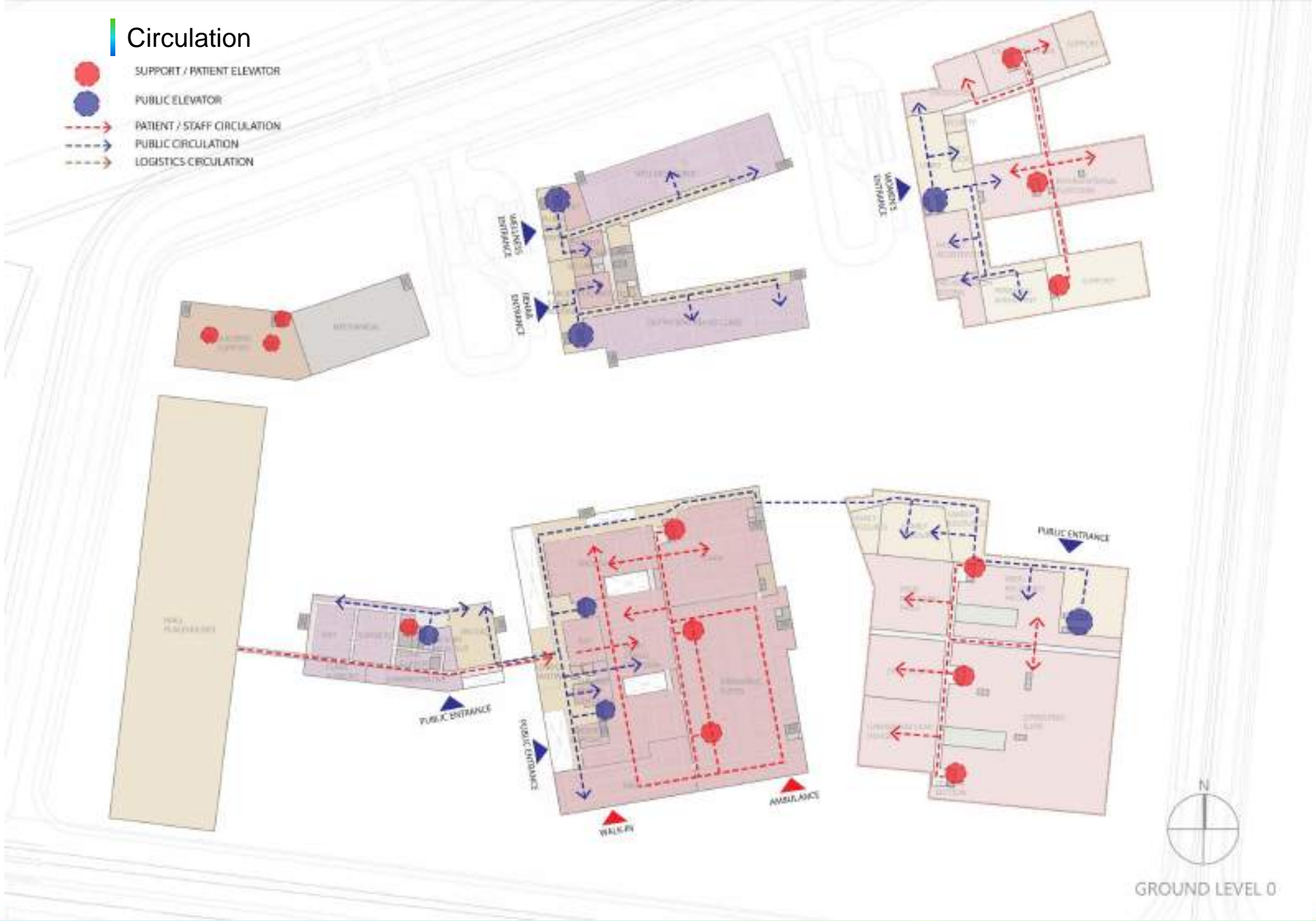
Circulation

-  SUPPORT / PATIENT ELEVATOR
-  PUBLIC ELEVATOR
-  PATIENT / STAFF CIRCULATION
-  PUBLIC CIRCULATION
-  LOGISTICS CIRCULATION



Circulation

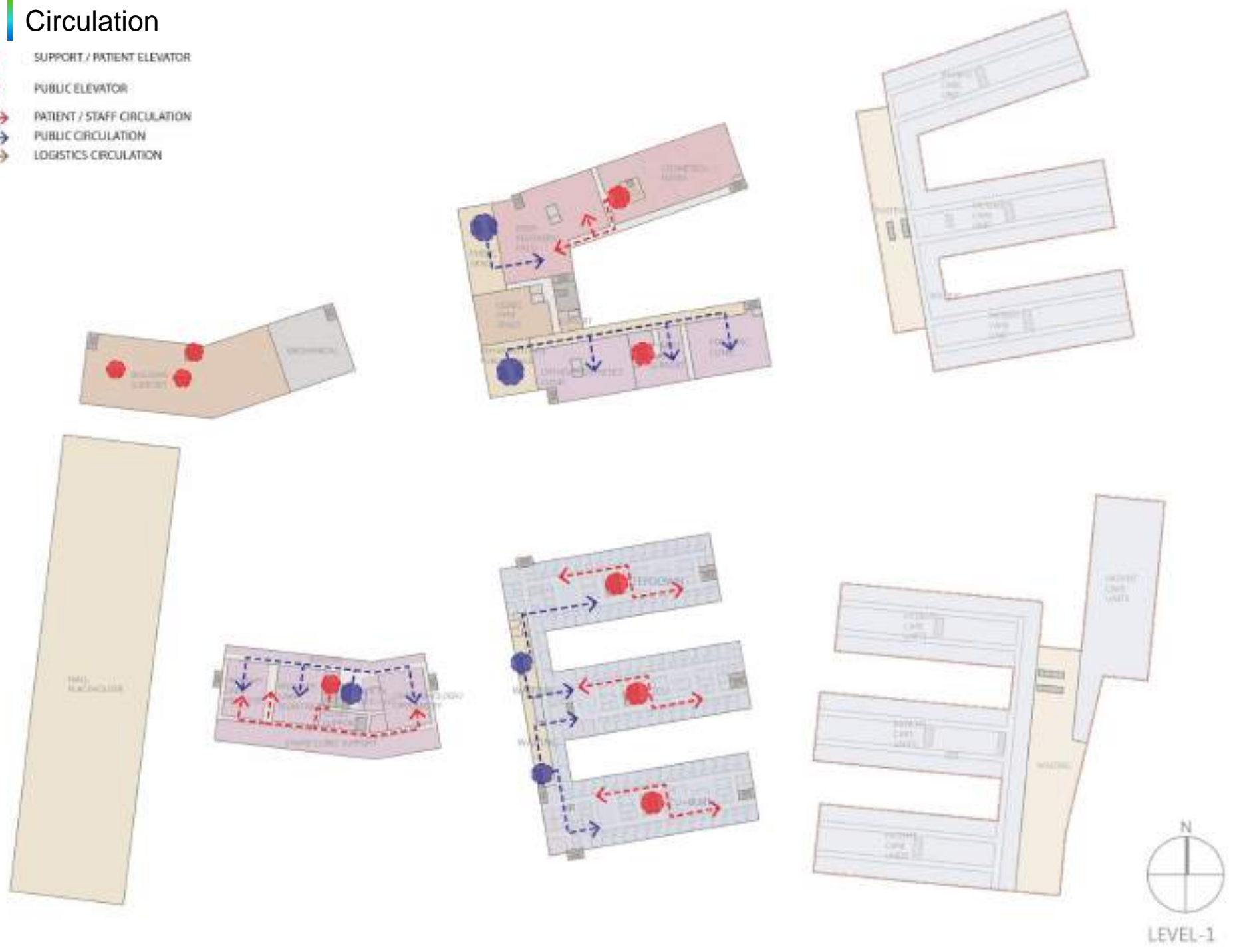
-  SUPPORT / PATIENT ELEVATOR
-  PUBLIC ELEVATOR
-  PATIENT / STAFF CIRCULATION
-  PUBLIC CIRCULATION
-  LOGISTICS CIRCULATION








GROUND LEVEL 0

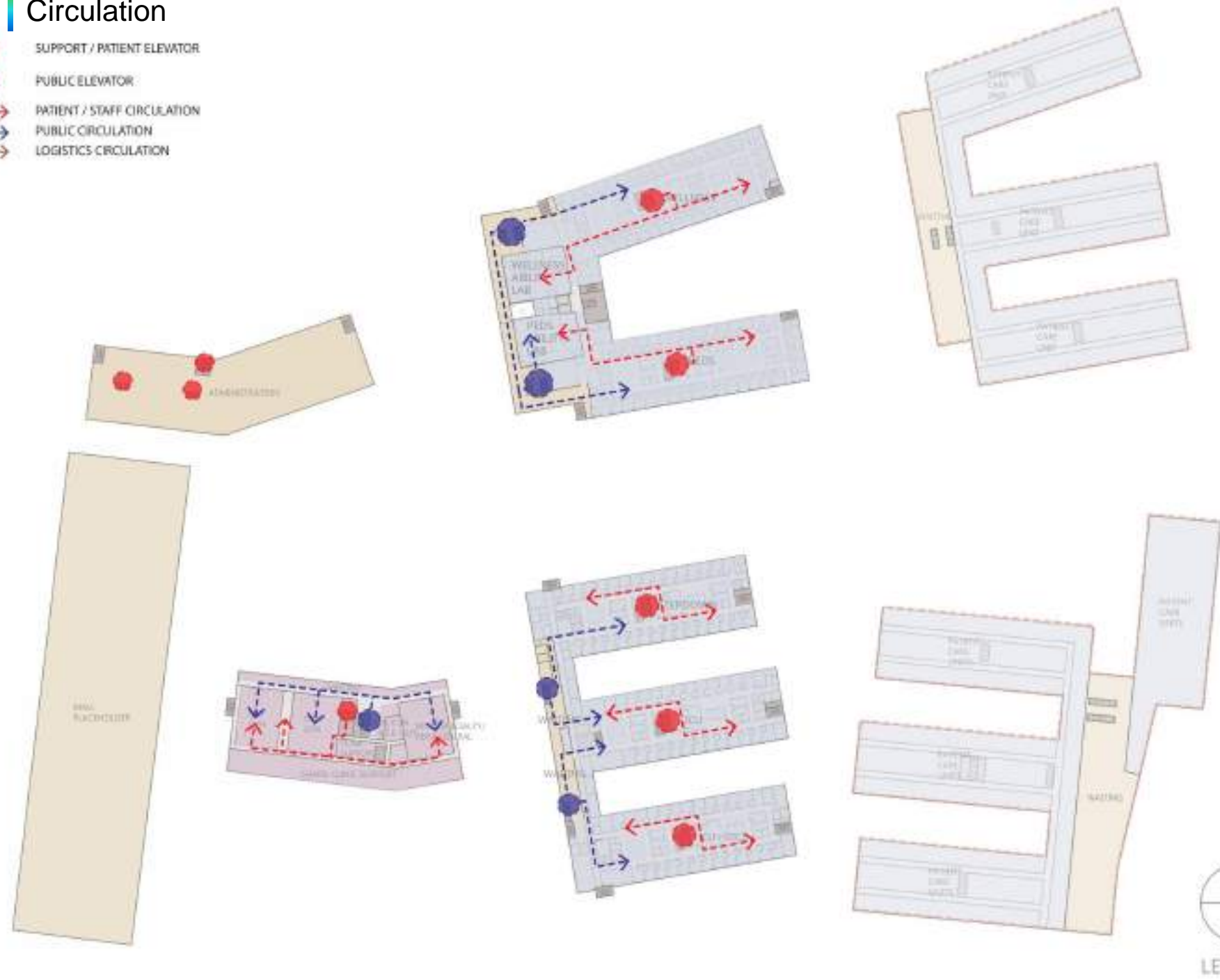
Circulation

-  SUPPORT / PATIENT ELEVATOR
-  PUBLIC ELEVATOR
-  PATIENT / STAFF CIRCULATION
-  PUBLIC CIRCULATION
-  LOGISTICS CIRCULATION



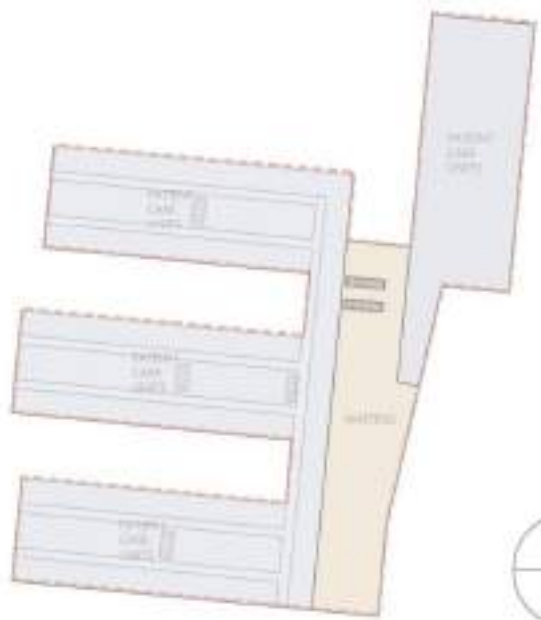
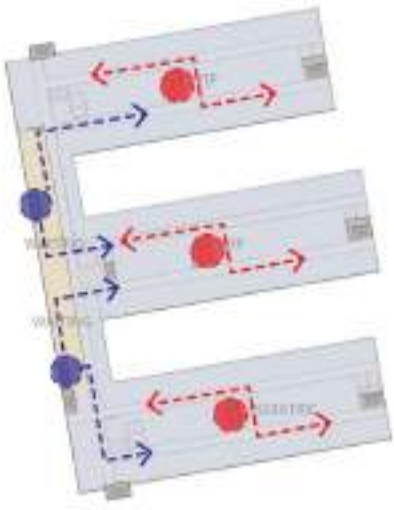
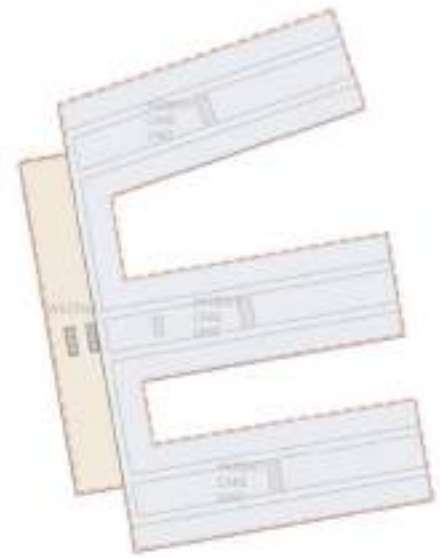
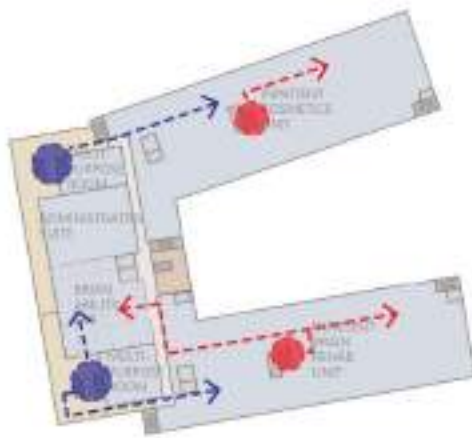
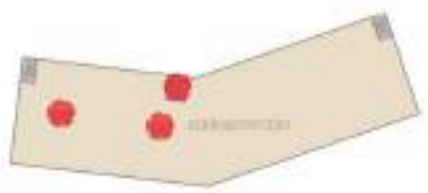
Circulation

-  SUPPORT / PATIENT ELEVATOR
-  PUBLIC ELEVATOR
-  PATIENT / STAFF CIRCULATION
-  PUBLIC CIRCULATION
-  LOGISTICS CIRCULATION



Circulation

-  SUPPORT / PATIENT ELEVATOR
-  PUBLIC ELEVATOR
-  PATIENT / STAFF CIRCULATION
-  PUBLIC CIRCULATION
-  LOGISTICS CIRCULATION



CAPITALMED
PARTNERS AND
COLLABORATORS



CAPITALMED CURRENT FUNDING

- Egyptians Health Care
- Cairo Company for Investment and Real Estate Development
- Badr University in Cairo
- Egyptian Company for Numbering
- University professors, consultants, and specialists from all medical and technical disciplines
- Announcement of public offering is scheduled in 2017
- Loans shall not exceed 35% of the total capital



Building future of healthcare