















# site concept







▲ current aerial of built community



#### **COMMUNITY AND RESIDENTIAL COMPLEX - Phase 1**



Apartment Buildings

Townhouses, Houses & Villas



Phase 2 Energy Fields



community center i

# PLACE OF ENERGY FIELDS OVERLOOK

# CENTRAL GREEN SPACE



WORSDIP Mosque

TOWNHOUSES, APARTMENTS and VILLAS

# COMMUNITY ENTRANCE



# landscape strategy

'Desert Bloom' concept diagram as a landscape strategy for open space, defined public place and a circulation of energy and sustainability within 1st and 2nd phase housing.

The Place of Renewal marks the Community Entrance into the Site and is highlighted by 'Managed Wetlands' for water purification and the creation on a beautiful landscape feature



West of a state of the state of



site key 🔺

site plan 🔺

## renewal

COMMUNITY ENTRANCE

The place of immersion is the landscape central green area that connects community to the Research and Development Facilities on the competition site.







# immersion

#### CENTRAL GREEN AREA



The 'Place of Worship' is the landscape central green area that holds the community Musalla/Mosque program as its main feature and anchoring element. Its Ceremonial location is "central" to the majority of residential housing and it is in close proximity to Western side of the Community Center area.

![](_page_11_Picture_1.jpeg)

![](_page_11_Picture_2.jpeg)

site plan 🔺 🦳 site key 🔺

# worship

![](_page_11_Picture_5.jpeg)

![](_page_12_Picture_0.jpeg)

![](_page_13_Picture_0.jpeg)

![](_page_14_Picture_0.jpeg)

 $\bigcirc$  residential community center plan **\blacktriangle** 

![](_page_14_Picture_2.jpeg)

![](_page_14_Picture_3.jpeg)

community

#### COMMUNITY CENTER

![](_page_15_Picture_0.jpeg)

![](_page_15_Picture_1.jpeg)

![](_page_15_Picture_2.jpeg)

community

![](_page_16_Picture_0.jpeg)

#### residential park with townhouses

![](_page_16_Picture_2.jpeg)

![](_page_16_Picture_3.jpeg)

site plan 🔺

![](_page_16_Picture_5.jpeg)

![](_page_17_Figure_0.jpeg)

ALLEYWAYS

![](_page_17_Figure_2.jpeg)

![](_page_17_Figure_3.jpeg)

SIKKAS

![](_page_17_Figure_5.jpeg)

PEDESTRIAN MOVEMENTS

neighborhood plan 🔻

![](_page_17_Picture_8.jpeg)

![](_page_17_Picture_9.jpeg)

![](_page_18_Picture_0.jpeg)

![](_page_18_Picture_1.jpeg)

▲ villas bordering central park

![](_page_18_Figure_3.jpeg)

▲ townhouse plans and block elevation

![](_page_18_Picture_5.jpeg)

residential block with townhouses

Eight different types of residential housing categories were developed. Within each category, multiple options were created to achieve a variety one expects for this type of development.

The types -apartments, townhouses, houses, and villas- are distributed throughout the KAPSARC community.

livir

![](_page_19_Figure_2.jpeg)

![](_page_19_Figure_3.jpeg)

![](_page_19_Figure_4.jpeg)

**RESIDENTIAL TYPES** 

#### Executive Villa 6 Bedroom Villa

![](_page_20_Picture_1.jpeg)

Lot Size: Target Area: 900qsm

Phase 1: 2 Phase 2: 0

#### 5 Bedroom Villa

![](_page_20_Picture_5.jpeg)

Lot Size: 35m x 30m Target Area: 700qsm

Phase 1: 8 Phase 2: 0

![](_page_20_Picture_8.jpeg)

4 Bedroom Villa

![](_page_20_Picture_10.jpeg)

Lot Size: 35m x 30m Target Area: 625qsm

Phase 1: 8 Phase 2: 0

#### 4 Bedroom House

![](_page_20_Picture_14.jpeg)

Lot Size: 24.5m x 30m Lot Size: 28m x 30m Target Area: 500qsm

Phase 1: 35 Phase 2: 8

![](_page_20_Picture_17.jpeg)

![](_page_20_Picture_18.jpeg)

#### RESIDENTIAL TYPES

![](_page_21_Picture_0.jpeg)

**RESIDENTIAL TYPES** 

# living

![](_page_22_Picture_0.jpeg)

# RESIDENTIAI DESIGN

K

## the first and still the largest LEED for Homes project outside of North America

KAPSARC is the first and largest project outside of North America to achieve LEED for Homes certification, as one of the instigators of the LEED-Homes International Pilot Program. All villas have been awarded LEED for Homes Gold certification and all the multi-family and community amenity buildings have been awarded LEED-NC Platinum

In addition, the project is targeting to be the first LEED ND (Neighborhood Design) project in the Middle East.

The community is organized in a dense, walkable, mixeduse configuration with buildings spaced closely to shade one another and the pedestrian spaces between. Traditional Saudi Sikkas (cut-throughs) provide pedestrian shortcuts through the site. Design of the public buildings were seen as an extension of the landscape forms, with the central park flowing over the buildings to create sculptural roof forms and protective canopies for pedestrians

# sustainability

4.2%

The public realm was judiciously landscaped using 100% reclaimed water to provide a comfortable microclimate for pedestrian and cycling activity and recharge the water table. Internal bus and shuttle routes

Percent reduction of regulated potable water

also carry residents from home to the research center and from campus into the city.

In Phase 1 wastewater is treated in the Sewage Treatment Plant shared with the adjacent university. In Phase 2 wastewater will be treated at KAPSARC campus in a

constructed wetland. 100% of wastewater from the KAPSARC campus is treated to tertiary standards and returned for nonpotable uses, such as irrigation, cleaning and makeup. 70%

Percent of rainwater from maximum anticipated

![](_page_23_Picture_8.jpeg)

WATER

![](_page_24_Picture_0.jpeg)

Percent of spaces with enough daylight to allow lights to be off durring dayling hours Solar energy is abundant in Saudi Arabia. But before relying on renewable energy, it's critical to reduce demand. All homes and amenity buildings are designed to be as energy efficient

as possible, employing high performance thermal envelopes, mechanical systems, lighting and equipment.

Daylight and heat gain control are an integral part of the building architecture, filtering solar radiation as well

![](_page_24_Picture_5.jpeg)

Percent of views that look to the outdoors

as providing privacy with louvers and the more traditional mashrabiya. Strategies such as sensors and controls, energy recovery ventilation and natural daylighting augment efficient envelopes and systems.

Solar energy is harvested through rooftop solar thermal hot water panels and a 5.8 MW solar farm at the west end of the campus. The solar farm is built with room for expansion as the KAPSARC community grows, positioned to be Net Zero Energy at full build out. Current solar energy meets 35% of demand, demonstrating Saudi Arabia's movement from fossil fuels towards its alternative energy economy.

### ENERGY

![](_page_25_Picture_0.jpeg)