

MADINAT AL IRFAN

AN URBAN CENTRE IN OMAN



A ONCE IN A GENERATION OPPORTUNITY ...

... TO GET IT RIGHT

A MODEL FOR THE NEW URBAN AGENDA IN THE AGE OF CLIMATE CHANGE:

'Humanity faces the greatest wave of urbanisation in its history, with 60% of the global population expected to live in urban areas by 2030 and 70% by 2050.'

This presents both a challenge and an opportunity – to lock new urban expansion into a new development model towards climate-resilient and low-carbon societies.'

A FRAMEWORK FOR SUSTAINABLE URBAN DEVELOPMENT



**RAPID URBANISATION
POSES A DESIGN
DILEMMA**



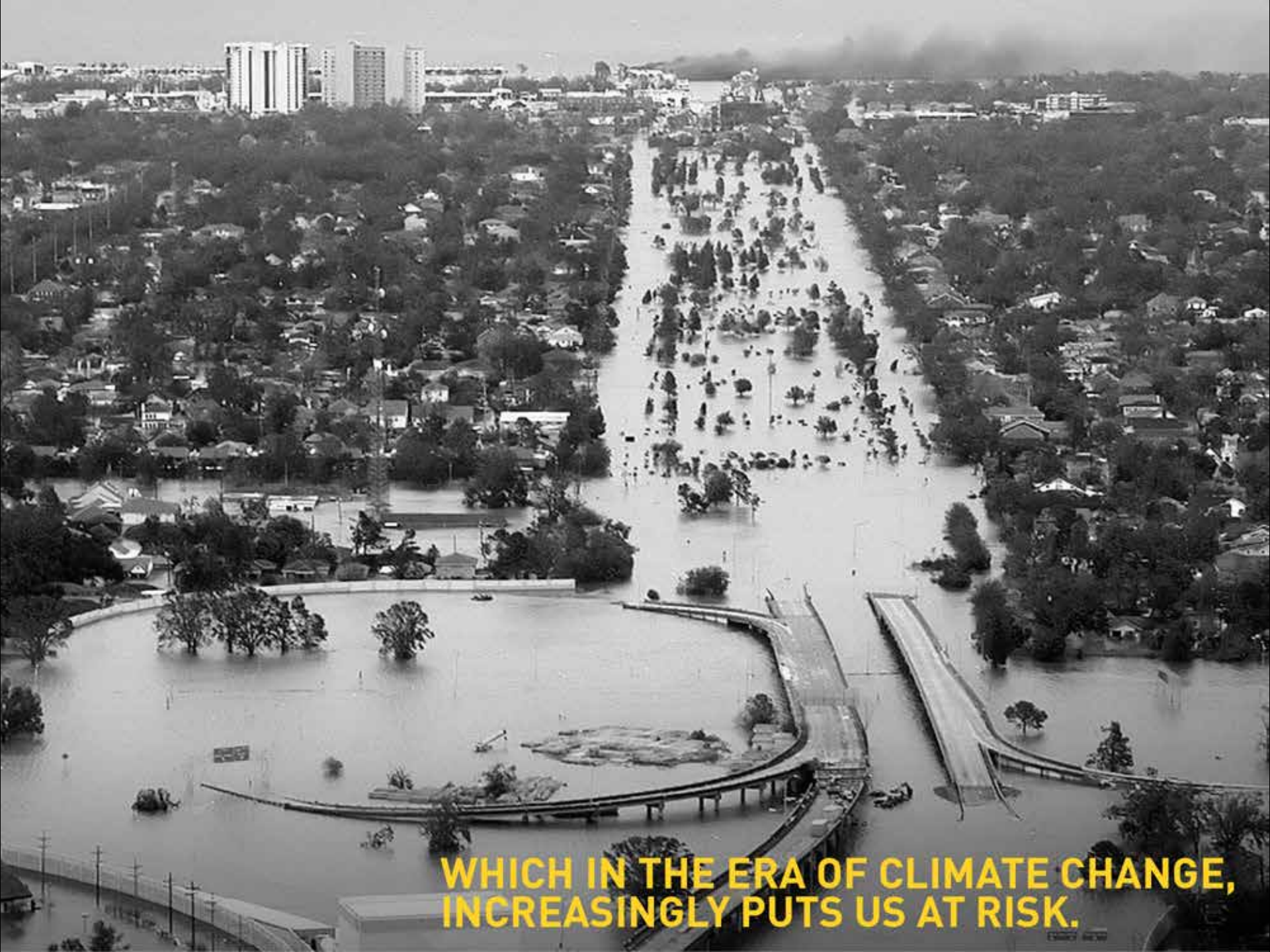
**MANY CITIES ARE STILL NOT BEING
DESIGNED WITH PEOPLE IN MIND.**



**THEY ARE INCREASINGLY HOMOGENEOUS
AND PLACELESS.**



**RAPID URBANISATION IS OFTEN
ILL-CONSIDERED, SPRAWLING
AND ENERGY INTENSIVE**



**WHICH IN THE ERA OF CLIMATE CHANGE,
INCREASINGLY PUTS US AT RISK.**

**GLOBALISATION THREATENS
TO ERODE NATIONAL IDENTITY ...**

CULTURE MATTERS

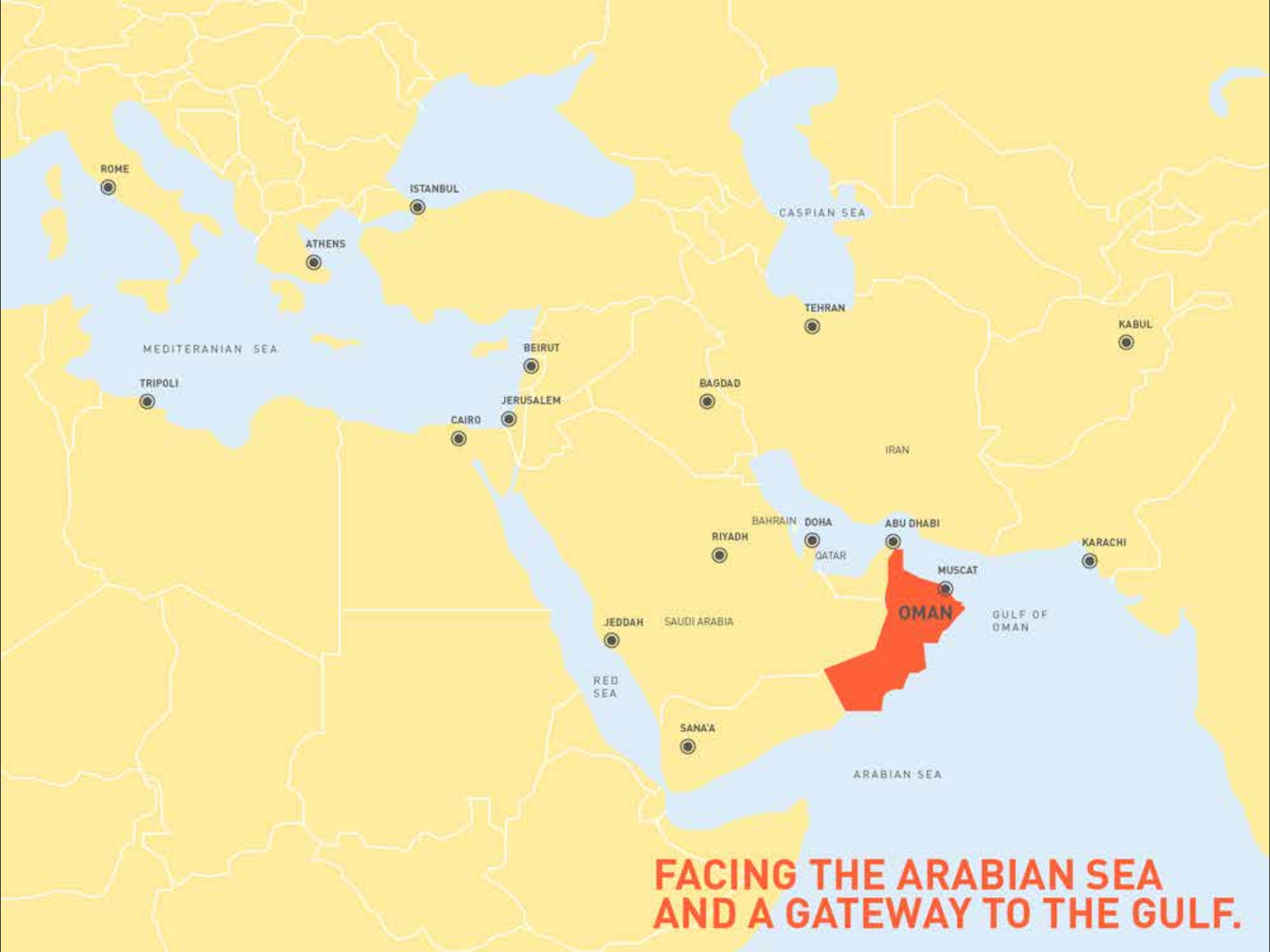
RAPID URBANISATION THREATENS
THE BALANCE WITH NATURE ...

CULTURE MATTERS
GEOGRAPHY MATTERS

CULTURE MATTERS
GEOGRAPHY MATTERS

**PERHAPS NOW MORE
THAN EVER**

**THE IRFAN MASTERPLAN
ENGAGES WITH
ALL OF THESE ISSUES ...**



ROME

ATHENS

ISTANBUL

CASPIAN SEA

TEHRAN

KABUL

MEDITERANIAN SEA

BEIRUT

BAGDAD

TRIPOLI

JERUSALEM

CAIRO

IRAN

RIYADH

BAHRAIN

DOHA

ABU DHABI

KARACHI

MUSCAT

OMAN

GULF OF OMAN

JEDDAH

SAUDI ARABIA

RED SEA

SANA'A

ARABIAN SEA

**FACING THE ARABIAN SEA
AND A GATEWAY TO THE GULF.**



**MUSCAT ... A CITY BETWEEN THE SEA
AND THE MOUNTAINS ...**

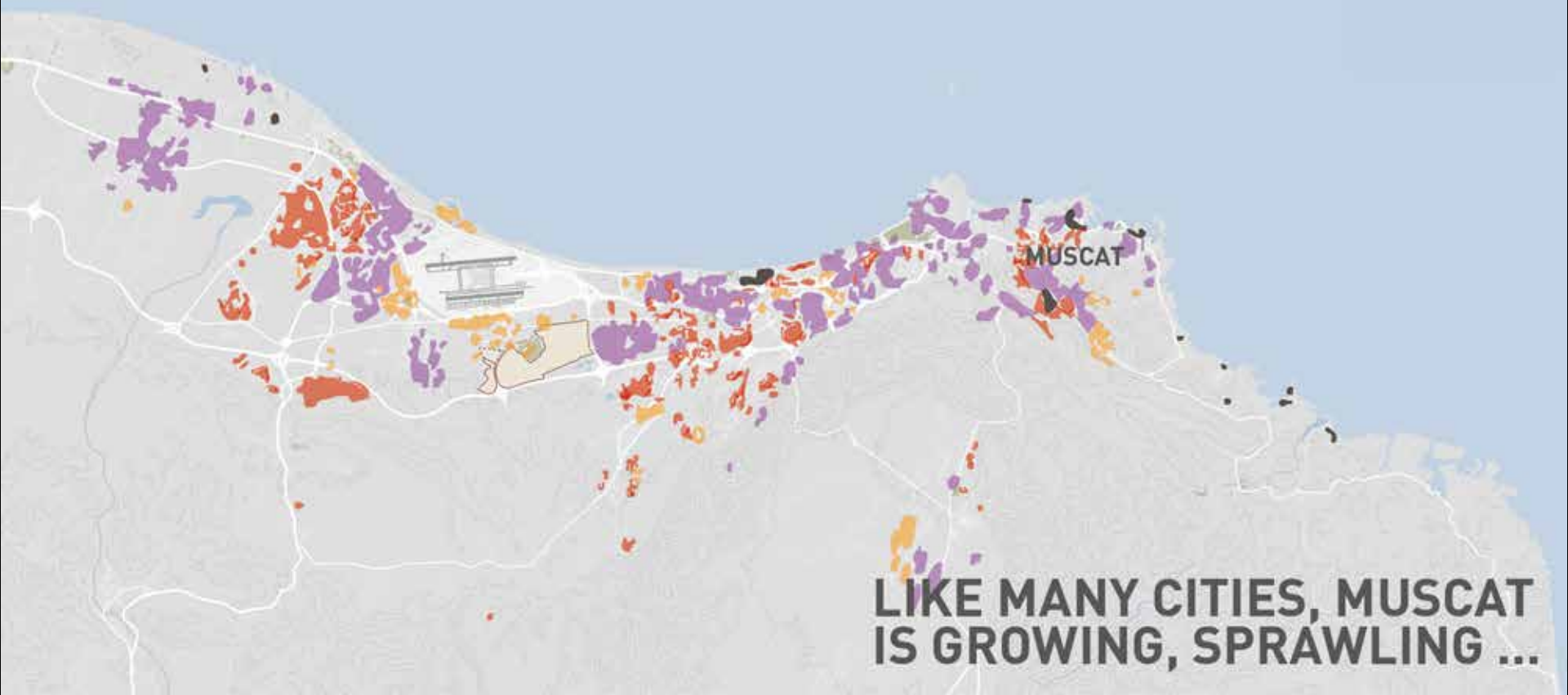


**WITH BUILDINGS SEAMLESSLY
EMERGING FROM THE LAND.**



MUSCAT

THIS IS OMAN'S CAPITAL, MUSCAT.



**LIKE MANY CITIES, MUSCAT
IS GROWING, SPRAWLING ...**



MUSCAT

**... BUT THERE IS A PLACE WHICH COULD
ACT AS A CATALYST FOR CHANGE ...**

A satellite-style map of Muscat, Oman, showing the coastline and city layout. The Muscat International Airport is marked with a black airplane icon and a small terminal building icon. A specific area in the city, south of the airport, is highlighted with a light orange/brown color. The text 'MUSCAT INTERNATIONAL AIRPORT' is placed above the airport icon, and 'MUSCAT' is placed to the right of the highlighted area.

MUSCAT
INTERNATIONAL
AIRPORT

MUSCAT

**... STRATEGICALLY LOCATED NEXT TO
MUSCAT INTERNATIONAL AIRPORT.**



SEEB

MUSCAT
INTERNATIONAL
AIRPORT



MURATH
MUSCAT
RUWI

**IN AN IDEAL LOCATION, A MISSING LINK
BETWEEN TWO SIDES OF A CITY REGION.**



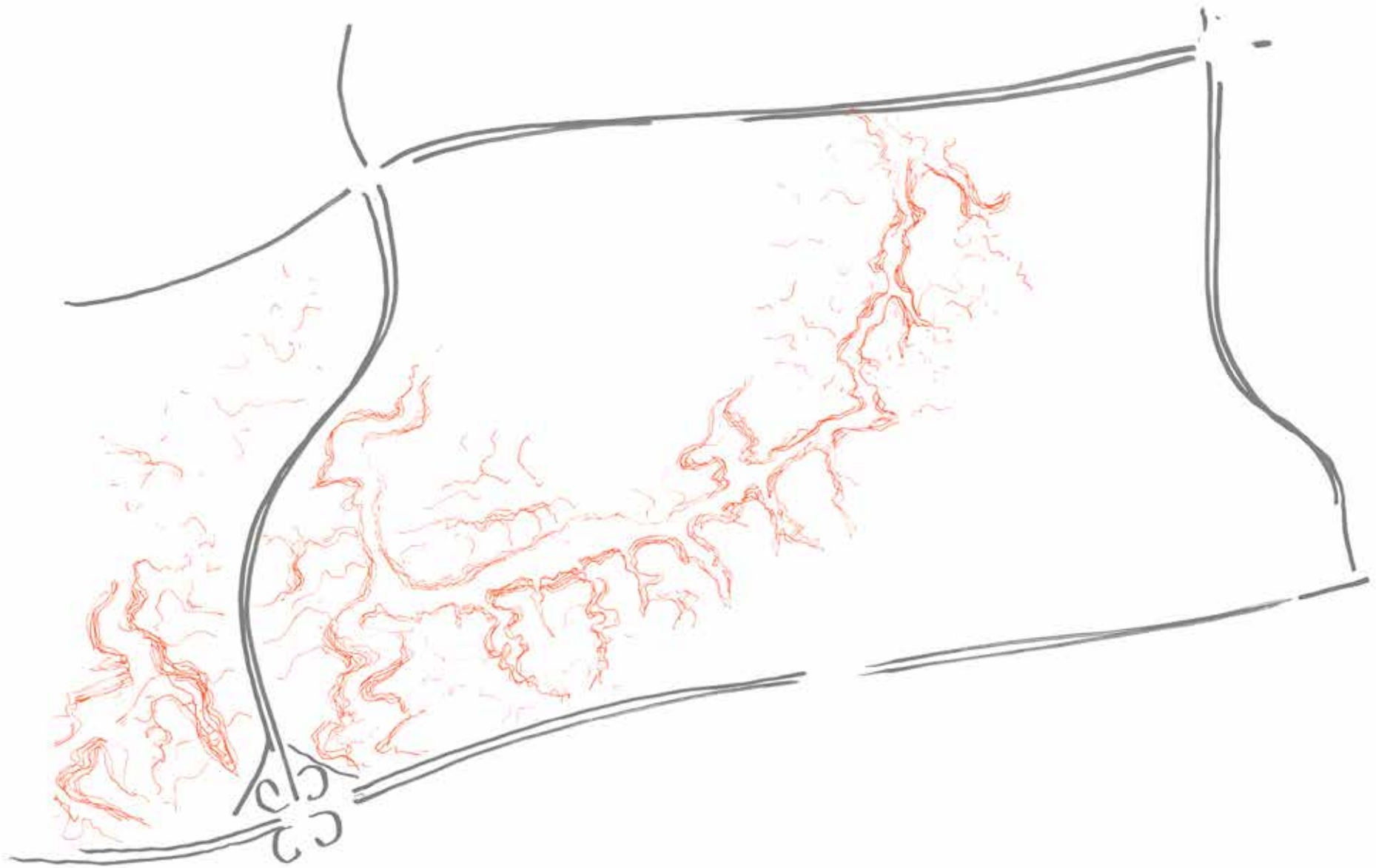
**A NEW TOWN WITH A WORKING, LIVING
AND VISITING POPULATION OF 280,000.**



**THE SITE:
AN OPEN LANDSCAPE, A WADI ...**



... WITH A DRAMATIC TOPOGRAPHY ...



**... THAT WAS THE STARTING POINT
TO CREATE A NEW CITY ...**



WITH THE WADI AS A LINEAR PARK ...



CONNECTED BY A SERIES OF BRIDGES ...



AND TWO DISTINCT TYPES OF SETTLEMENT ...



**A DENSE DOWNTOWN TO THE NORTH,
AND A MIXTURE OF VILLAGES AND HILL
TOP COMMUNITIES TO THE SOUTH ...**

THIS IS IRFAN ...



GOVERNMENT DISTRICT

IRFAN WEST

IRFAN HEIGHTS

IRFAN PARK

RECREATION AREA

HAMLETS

THE VILLAGES

IRFAN CENTRAL

... A CITY OF MANY PLACES

WADI PARK



**A NATURAL PARK, WITH AGRICULTURE,
PRODUCTIVE AND ATTRACTIVE ...**



A COMPACT URBAN CENTRE ...



A CITY OF BRIDGES ...



**NEW NEIGHBOURHOODS,
DENSE AND URBANE ...**



**AN ALTERNATIVE APPROACH TO
SUBURBAN LIVING ROOTED IN WHAT
WORKED IN THE PAST ...**

IRFAN WEST



**A PLACE FOR OMAN
TO WELCOME THE WORLD.**

A NEW CITY

**BASED ON SOME CLEAR
PRINCIPLES AND ROBUST
DESIGN CONCEPT**

11 DESIGN CONCEPTS

- 1 Learn from the past to inform the future.
- 2 Celebrate the natural landscape.
- 3 Create places with distinct character.
- 4 Create an integrated, sustainable community.
- 5 Embrace quality and diversity in its buildings.
- 6 Create active mixed-use places.
- 7 Provide an integrated transport system.
- 8 Create a comfortable environment for pedestrians.
- 9 A smart city.
- 10 Complete at every stage.
- 11 Provide a catalyst for change.

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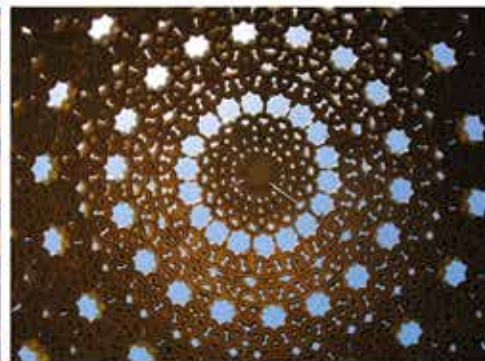
1

PRINCIPLE

LEARN FROM THE PAST TO INFORM THE FUTURE:
achieve a continuity between the past, present
and future



Places: rooted in their context, reflecting the character and informality of old cities.



Buildings: architecture of its time,
building upon Oman's rich heritage
and culture.



**Dense, compact, walkable,
blurring boundaries between
uses, outside and inside.**



2

PRINCIPLE

CELEBRATE THE NATURAL LANDSCAPE
work with nature, not against it

- 1 IRFAN EAST WADI
- 2 IRFAN HEIGHTS WADI
- 3 IRFAN WEST WADI
- 4 IRFAN VILLAGE WADIS
- 5 KEY WADI LOCATIONS
- 6 IRFAN PARK GARDENS



**Use the Wadi Park to enrich the city
and the lives of its residents and visitors ...**



**... by preserving, respecting
and repairing the Wadis ...**

Northern Wadi slopes:
Urban agriculture and falaj systems.



... by having both recreational
and agricultural uses ...

Central Wadi Basin:
A series of streets, promenades and gardens



**... in a place for families to enjoy
the simple pleasures of a walk outdoors.**

Queen Elizabeth Olympic Park,
London



Central Park, New York



Wadi Park: a central park and green infrastructure



**A great public park around
which the city can grow.**

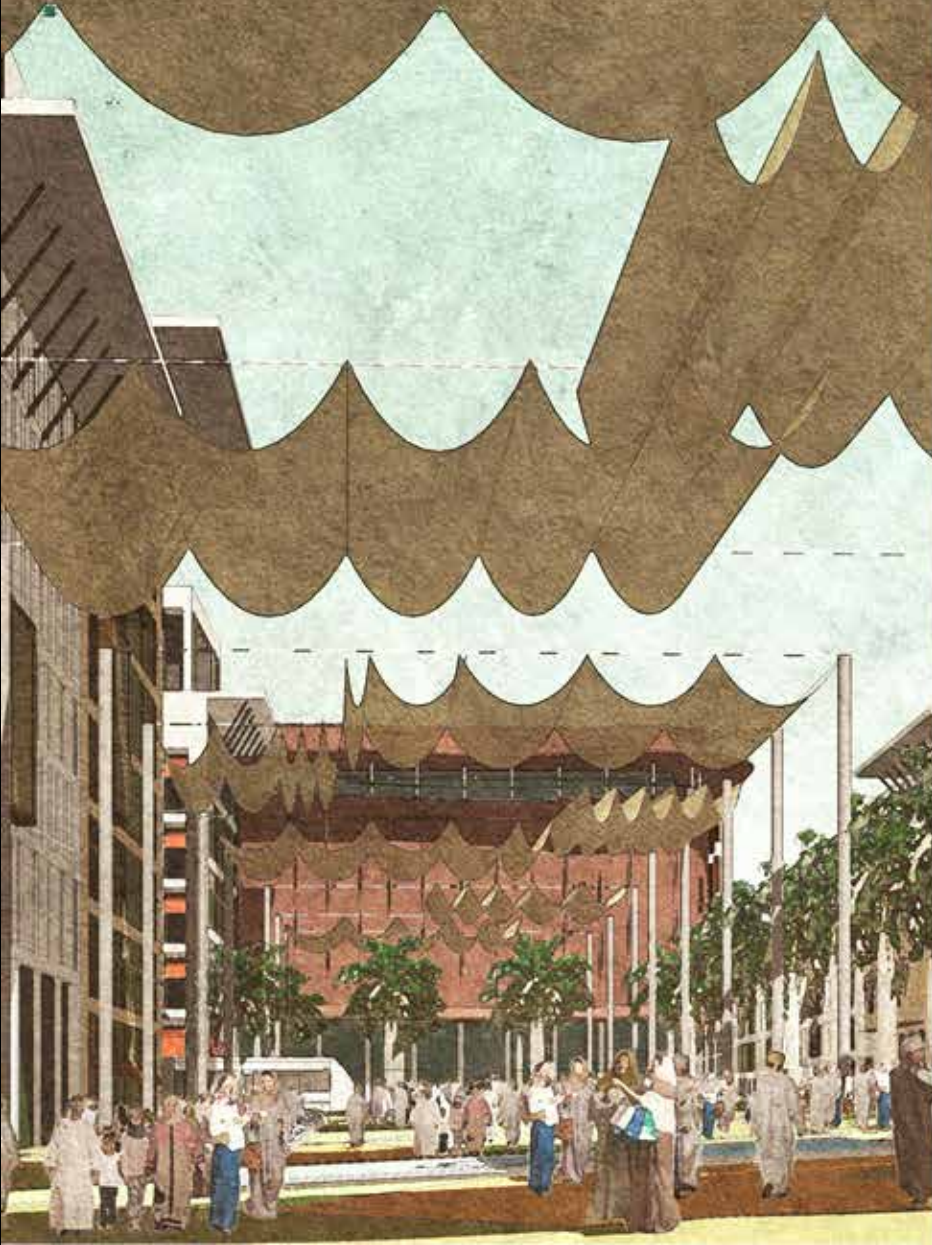


3

PRINCIPLE

CREATE PLACES WITH DISTINCT CHARACTER
somewhere different from anywhere else.

Informal arrangement of buildings:
Irfan Main Square



Clarity of public routes:
Irfan Central



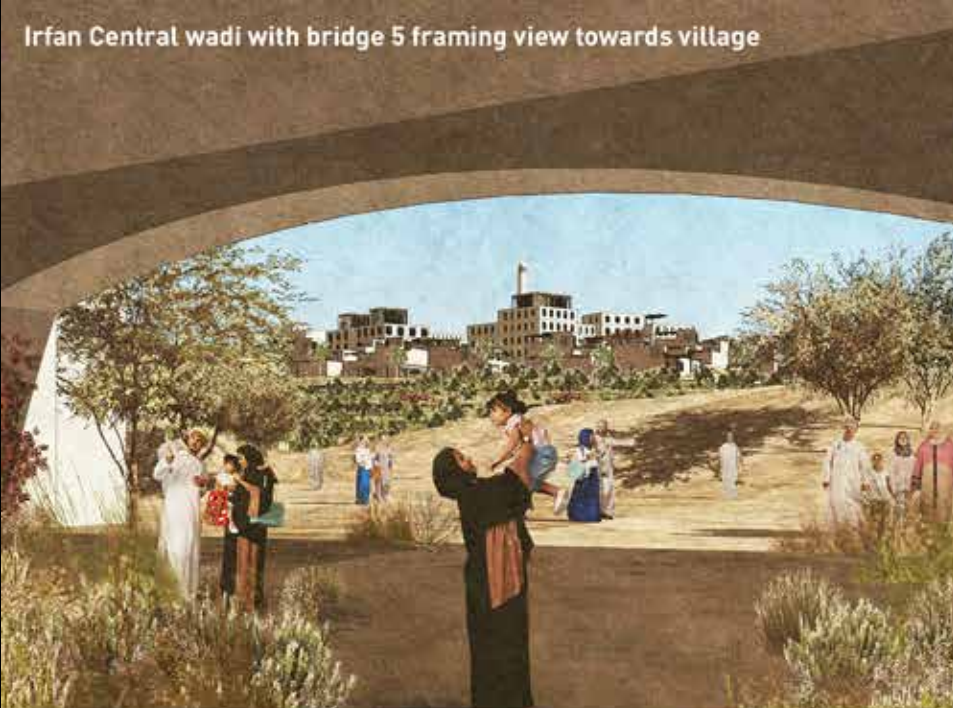
**An 'ensemble' of informal
and formal spaces ...**



**... shapes a distinct identity
setting Irfan apart from other modern cities.**



**One of a kind, a unique place
that can only be found here ...**



**... a great place to visit, to live,
to work and to invest.**



4

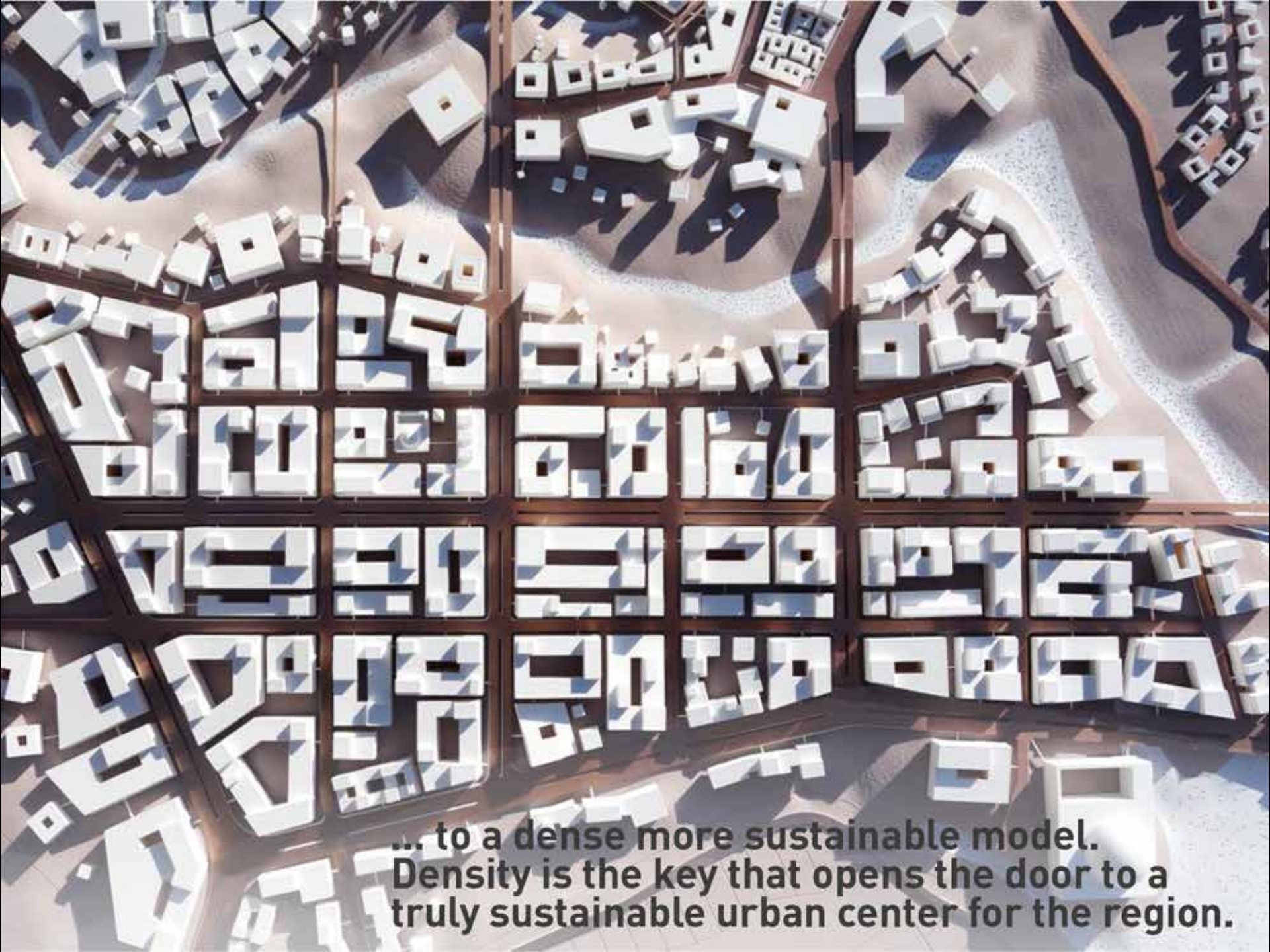
PRINCIPLE

**CREATE AN INTEGRATED, SUSTAINABLE
COMMUNITY**

a low-carbon city made possible through density

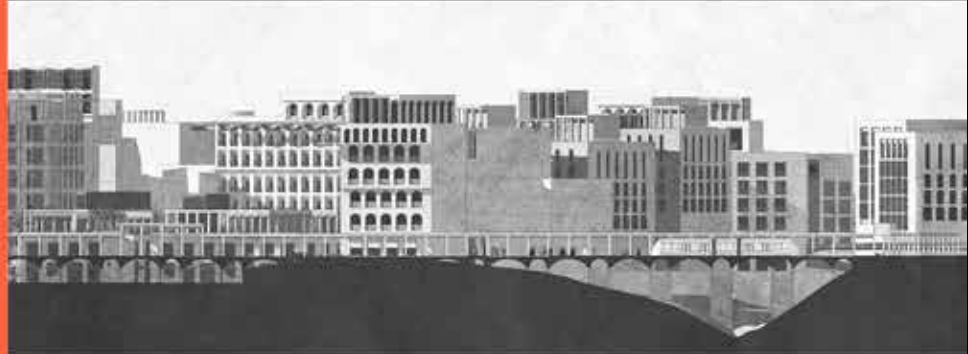


From a sprawling, fragmented model ...



... to a dense more sustainable model.
Density is the key that opens the door to a
truly sustainable urban center for the region.

**2x
GFA**



**Through dense urban form, Irfan
doubles the area of the brief.**



1/2 CARS

**Cutting car reliance through
the integration of a new public
transport system.**



1/2 WATER

By combining compact urban form, smart metering and efficient fixtures and fittings, Irfan will cut potable water demand by nearly 50% for a city of similar size.

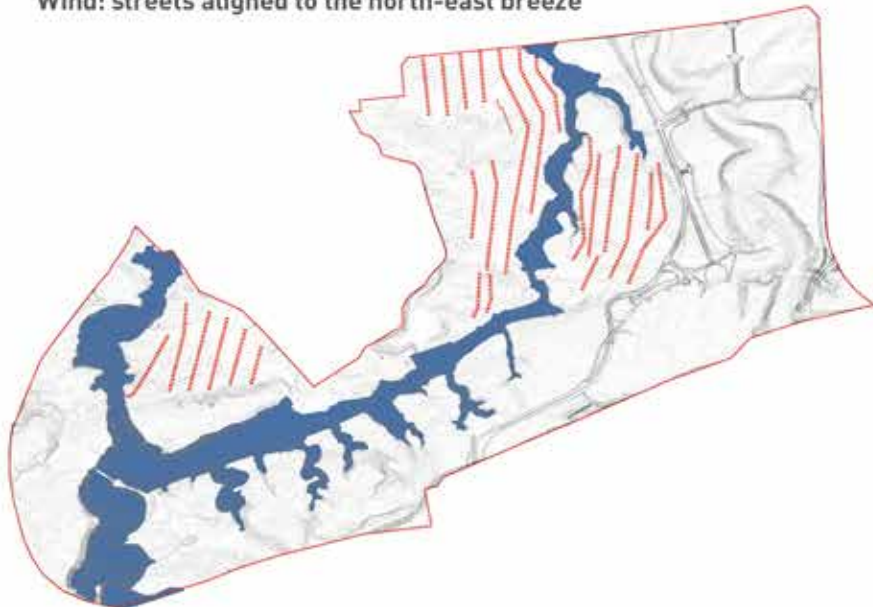


1/2 ENERGY

A holistic approach to buildings, renewables, natural cooling and climate-appropriate architecture halves energy use against business as usual.



Wind: streets aligned to the north-east breeze



Sun: streets following the north-south orientation



Urban form shaped by climate.



5

PRINCIPLE

**EMBRACE QUALITY AND DIVERSITY
IN ITS BUILDING**
appropriate architecture



Materials and textures that are appropriate to their context, evoking the past while looking to the future...



canopies



overhangs



corniches



windows



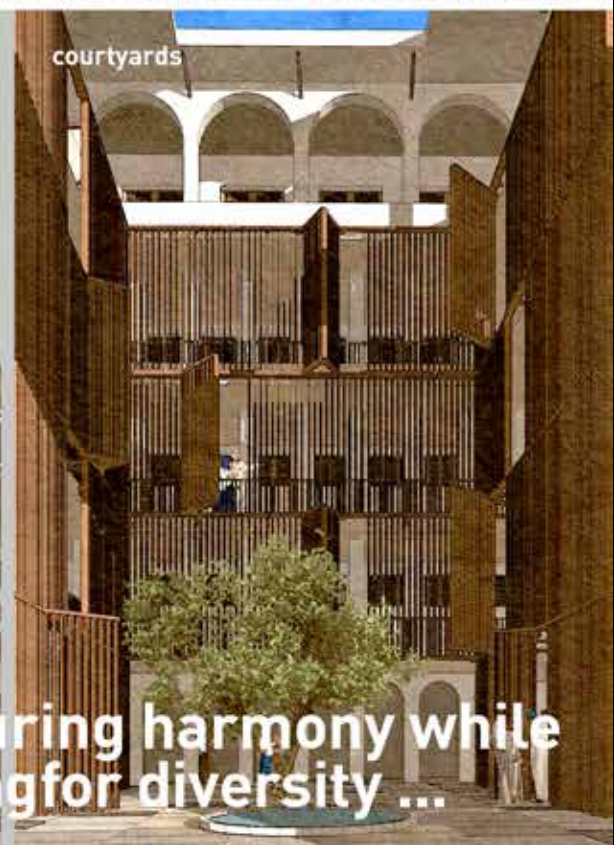
terraces



screens



colonnades



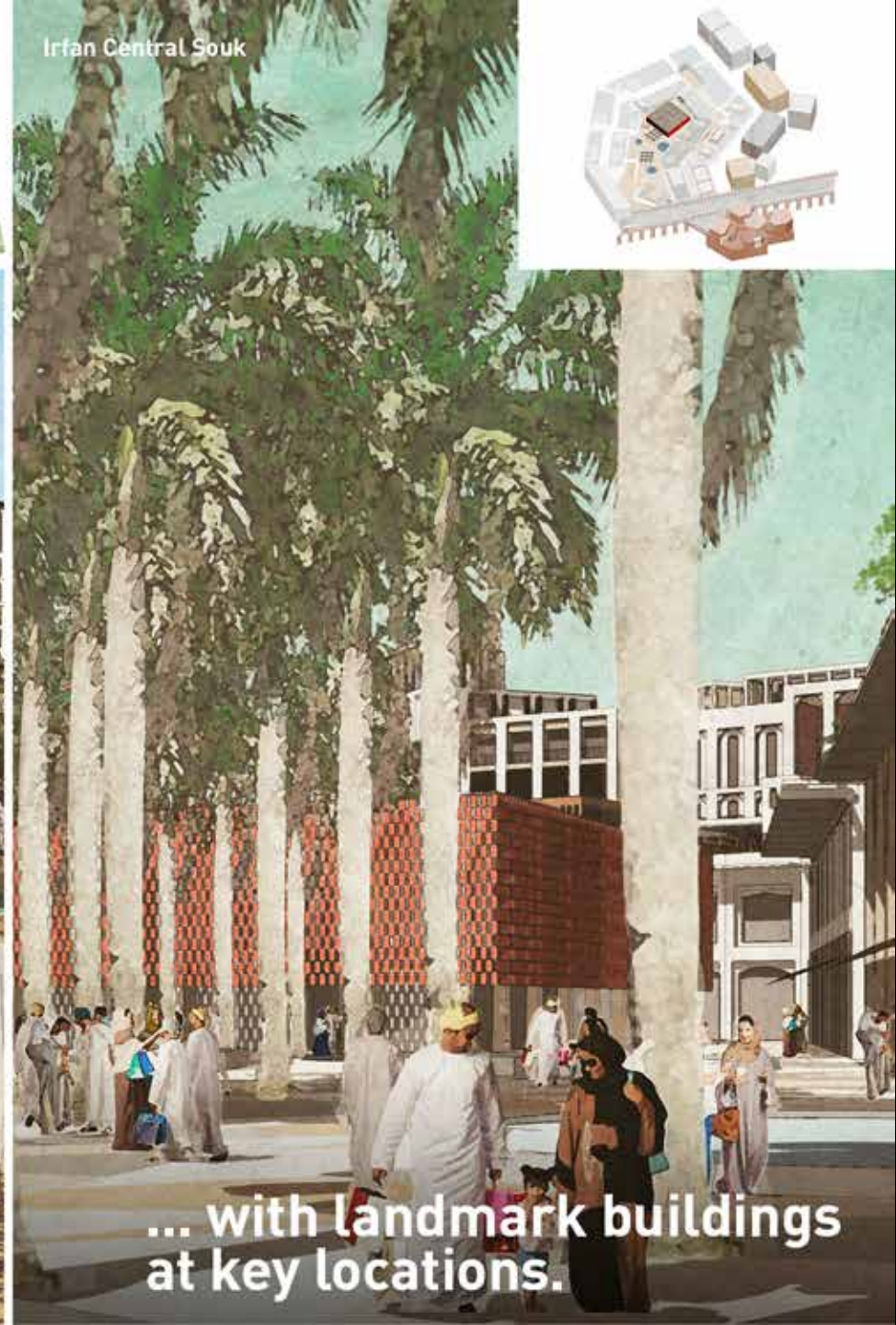
courtyards

... ensuring harmony while creating for diversity ...

Theatre,
Irfan Central Wadi
Promenade



Irfan Central Souk



... with landmark buildings
at key locations.



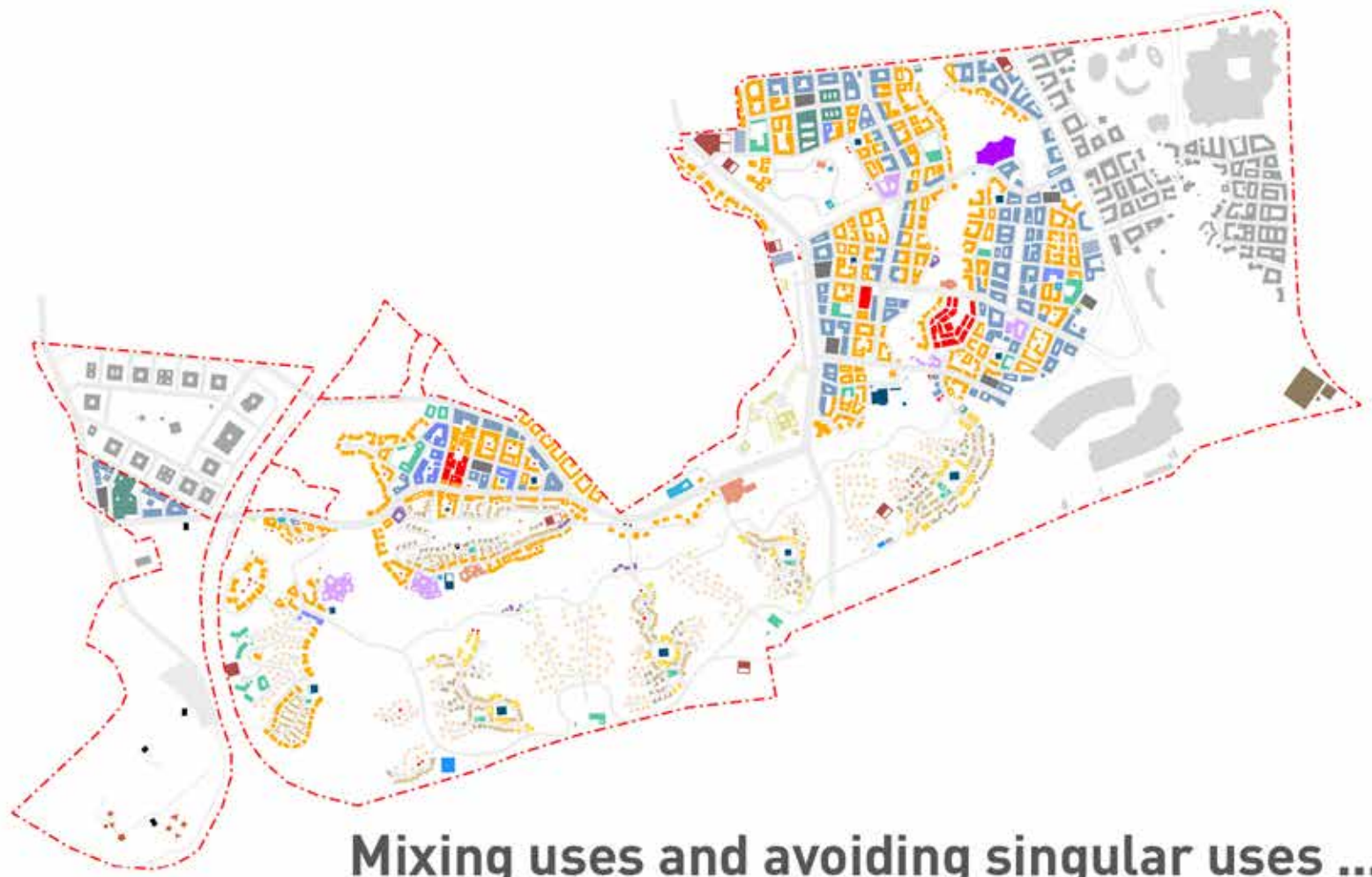
PRINCIPLE

6

CREATE ACTIVE MIXED-USE PLACES

a diverse, dense city; not mono-functional,
not zoning-led

46.9% Residential
 28% Commercial
 4.5% Educational Facilities
 4.4% Retail
 3.8% Healthcare Facilities
 1.7% Cultural
 3.09% Hotels
 0.4% Mosques



Mixing uses and avoiding singular uses ...

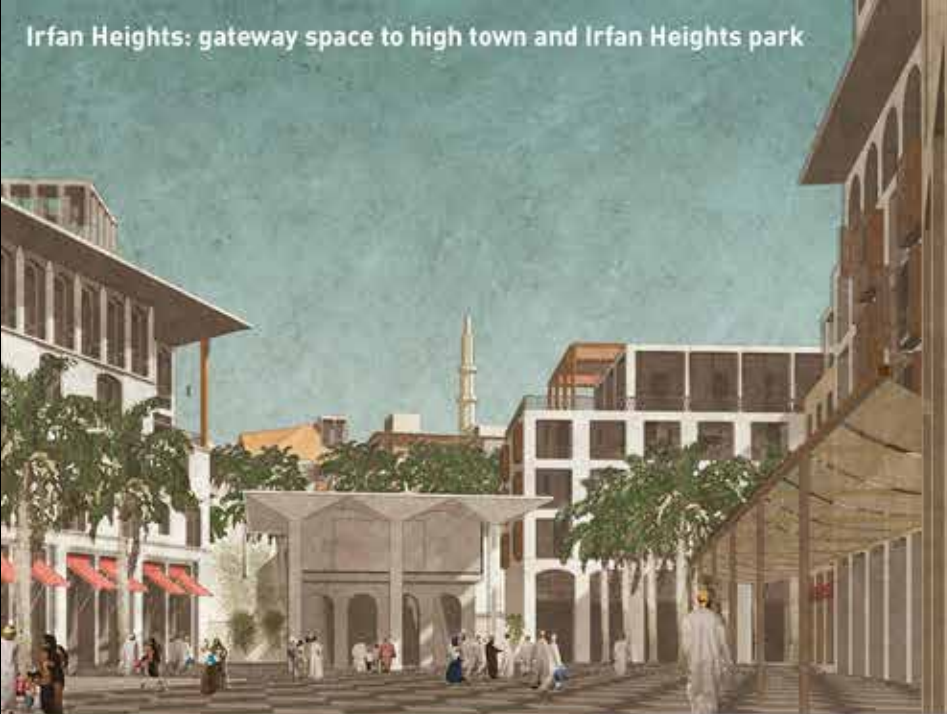


... within compact neighbourhoods that have the conveniences for residents use day-to-day.



**Comfortable public spaces
that encourage human interaction.**

Irfan Heights: gateway space to high town and Irfan Heights park



Irfan Central: souk main squares



Irfan Central: colonnades along boulevard looking to Triangle Square



Irfan Heights: mosque and museum create an urban plaza, framing view towards villages



Attractive, visually rich environments that become cherished spaces.



7

PRINCIPLE

PROVIDE AN INTEGRATED TRANSPORT SYSTEM
changing a car-centric mindset, and connecting
the city and the region

- - - Site boundary
- Square
- Shared surface
- Internal plot link
- Footpath



A walkable scale...



...with 31,000 trees providing comfort and shade.



Bridges provide key connections across the Wadi Park, connecting both sides of a city...

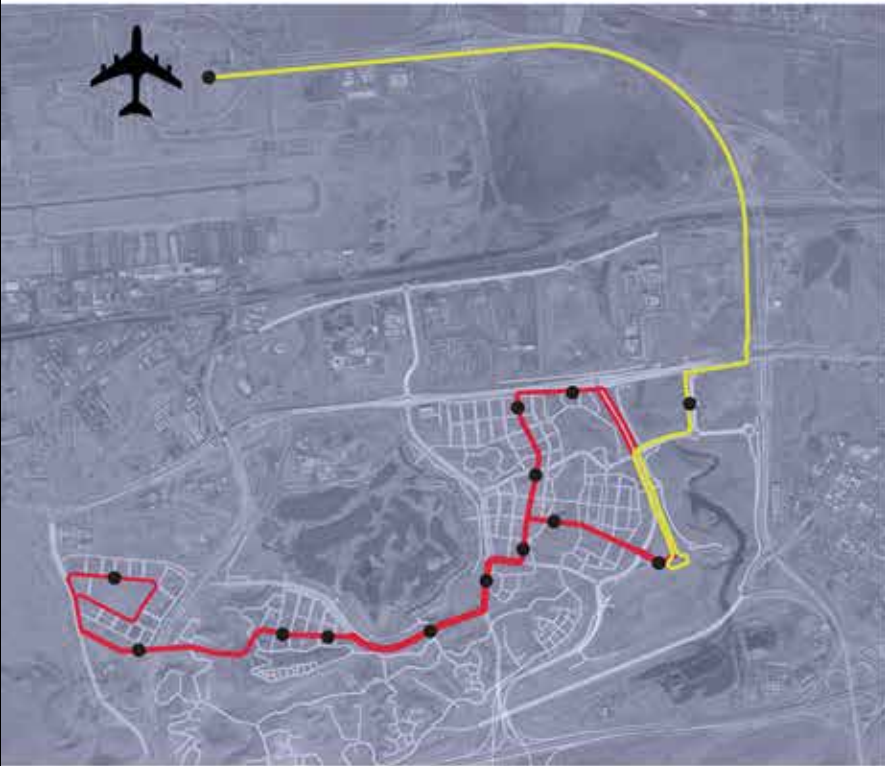


....linked together through public transport.

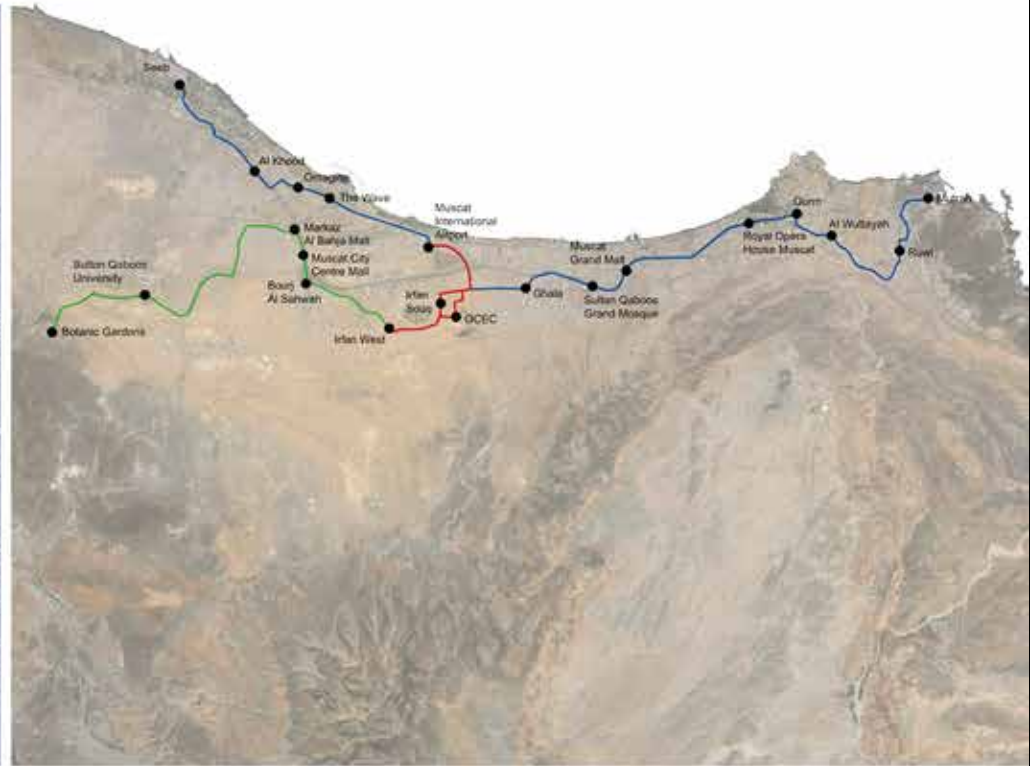
Shift behaviours towards walking and public transport ...



... by providing a real choice of transport options ...



Thinking globally:
Irfan light rail system and connection to
MCT international airport



Thinking regionally:
A Muscat-wide light rail system

... while developing future transport links
which will connect the city.

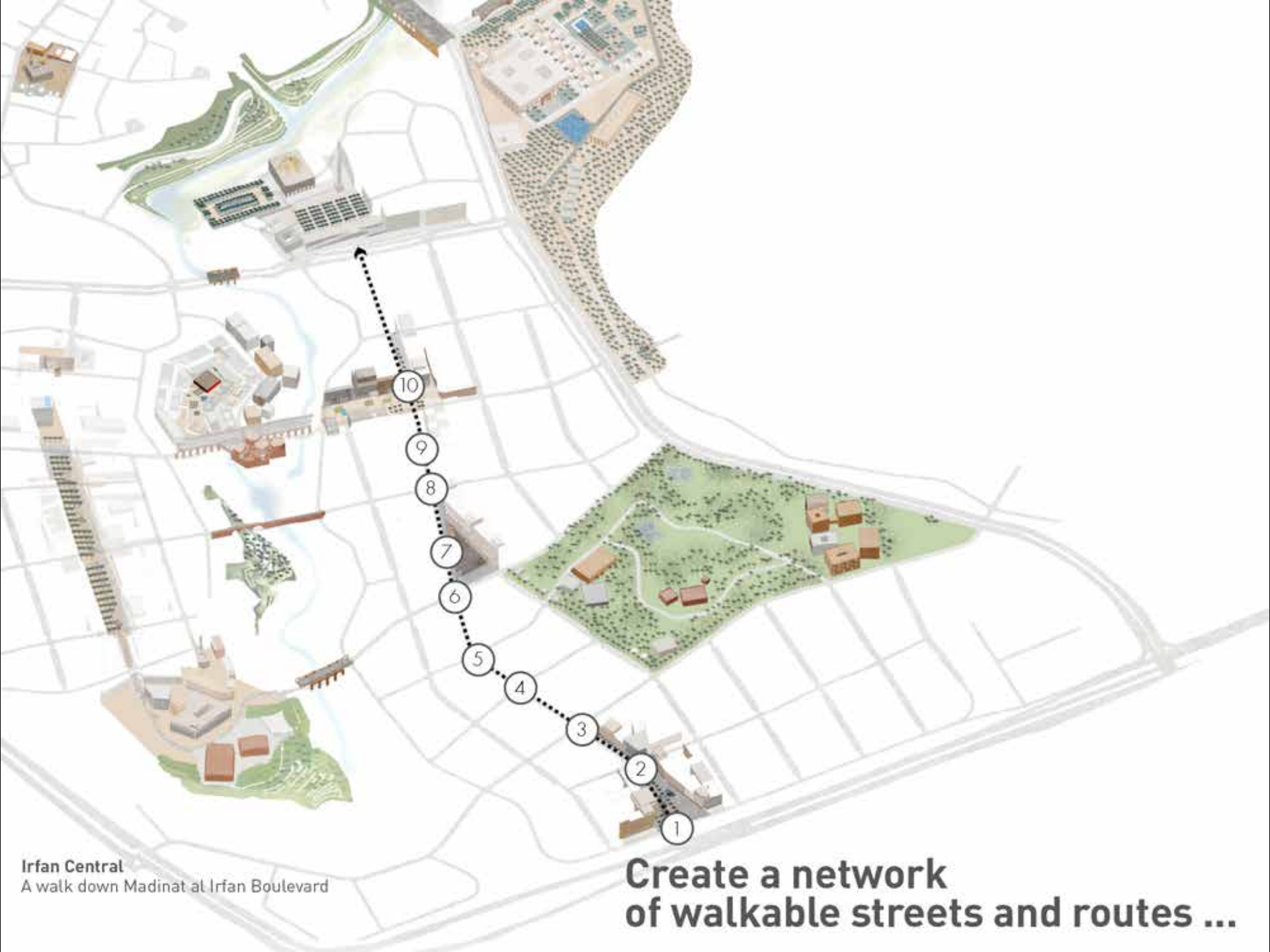


8

PRINCIPLE

**CREATE A COMFORTABLE ENVIRONMENT
FOR PEDESTRIANS**

design for the climate and for people



Irfan Central
A walk down Madinat al Irfan Boulevard

**Create a network
of walkable streets and routes ...**



Gateway entrance from Al Jami Al Akbar Street



2

1

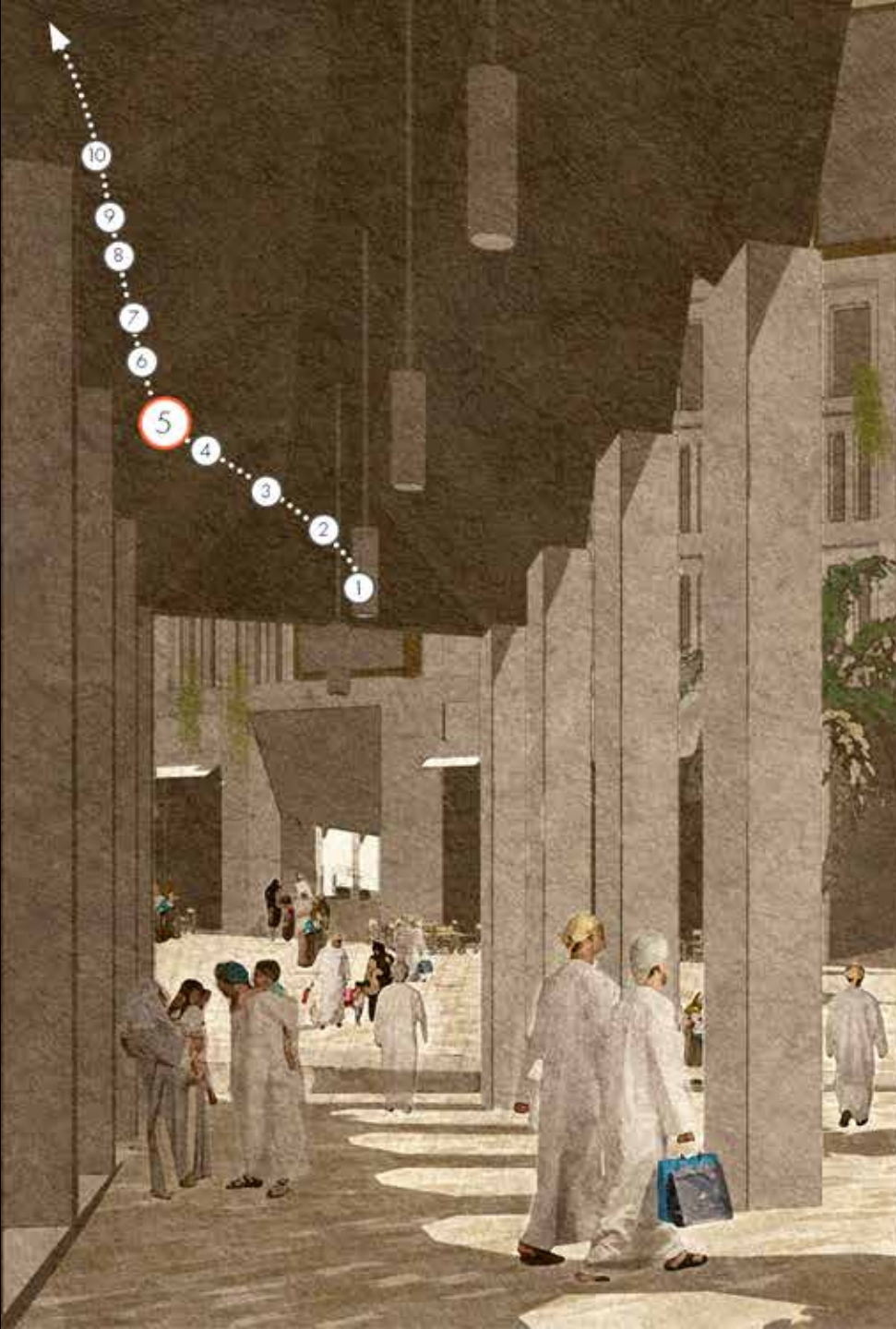
Open square between two streets, one vehicular and one pedestrian



Shaded street continuing up the boulevard



Approaching a landmark building



Under a colonnade looking towards Triangle Square



Approaching Triangle Square, which is shaded by a canopy

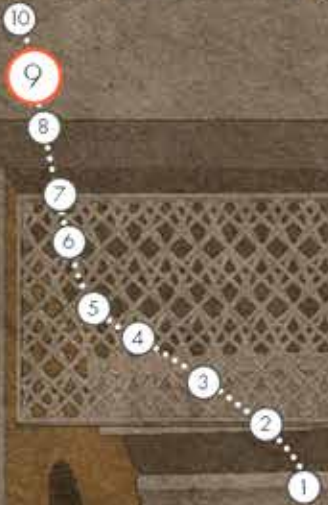


- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1

Under the shaded canopy at Triangle Square



Walking through the various levels of the space



Crossing the road towards a new intersection square



10

9

8

7

6

5

4

3

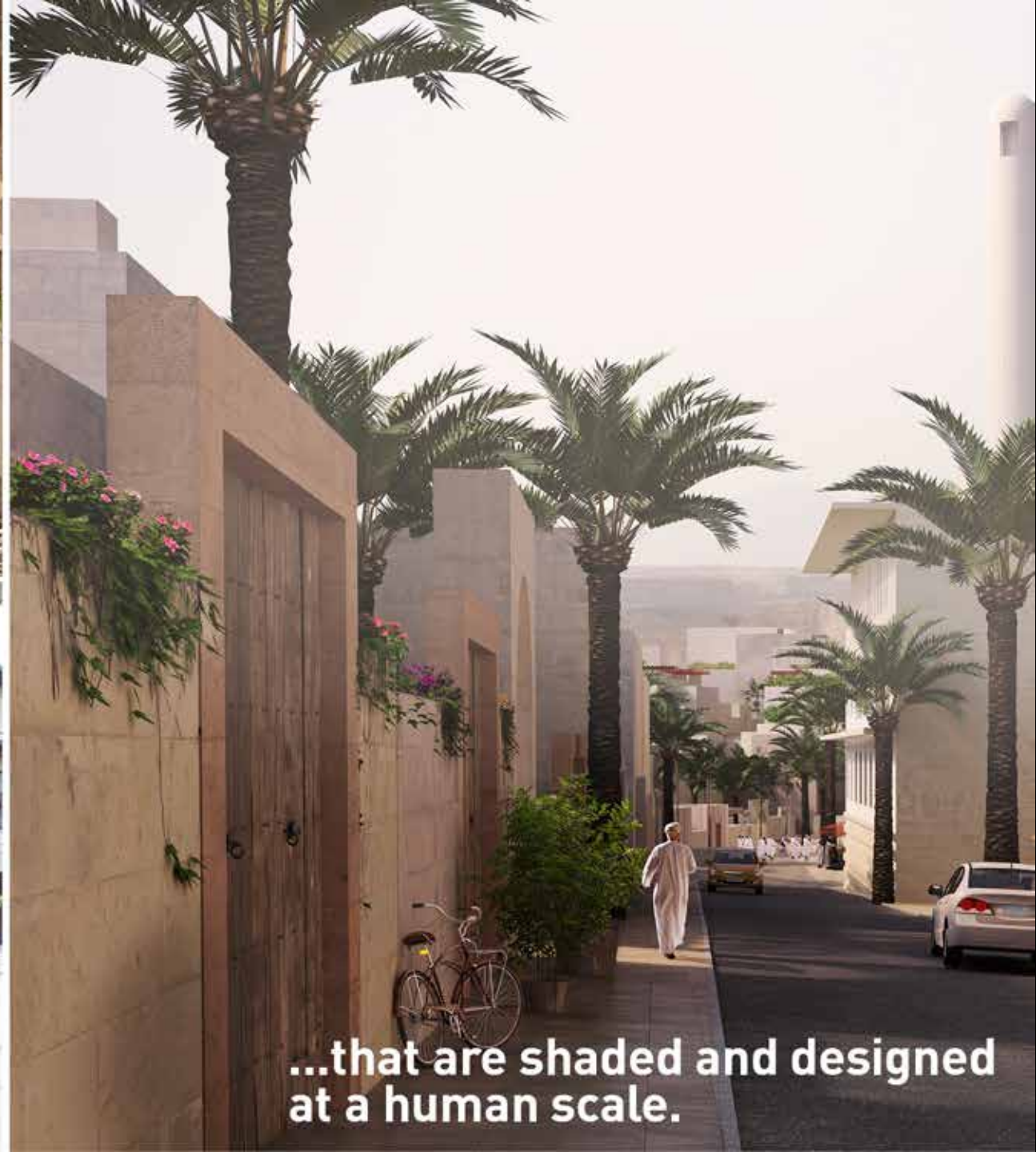
2

1

Continuing through a shaded colonnade



In a desert climate, create walkable routes that work for most of the day...



...that are shaded and designed at a human scale.



Encourage walking within neighbourhoods and between them.



9

PRINCIPLE

A SMART CITY

using technology to enable sustainable choices



What is a 'smart city' ?

... life in Irfan in 2025



Maitha
resident in Irfan



in the morning
real time
transport info App



travel to work
using public
transport



in the bus/LRT train
payment via
wearable device



throughout the city
free wifi



work/leisure
online open data service
feedback or request form



Marco
visitor in Irfan



before his trip
Irfan official
tourism website



10 best things to do
book via mobile
device



sightseeing
using public
transport



sightseeing
or via bike rental
traffic signal
priority through
sensors



throughout the city
free wifi

**Using mobile technology
to make getting around easier ...**



... all to encourage healthier urban behaviour and reduce reliance on cars.



10

PRINCIPLE

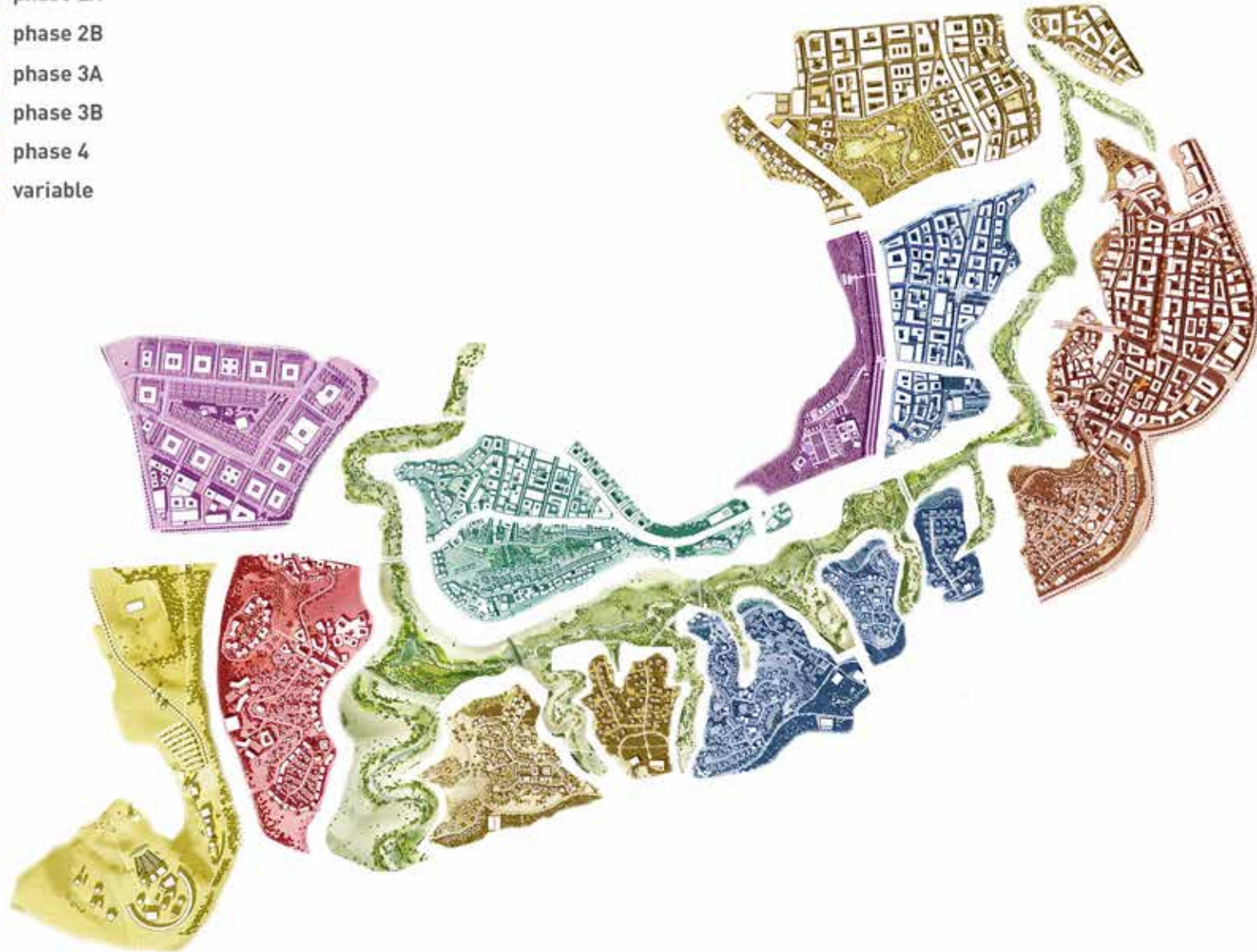
COMPLETE AT EVERY STAGE

create phases of development that are coherent and distinctive



The city's ...

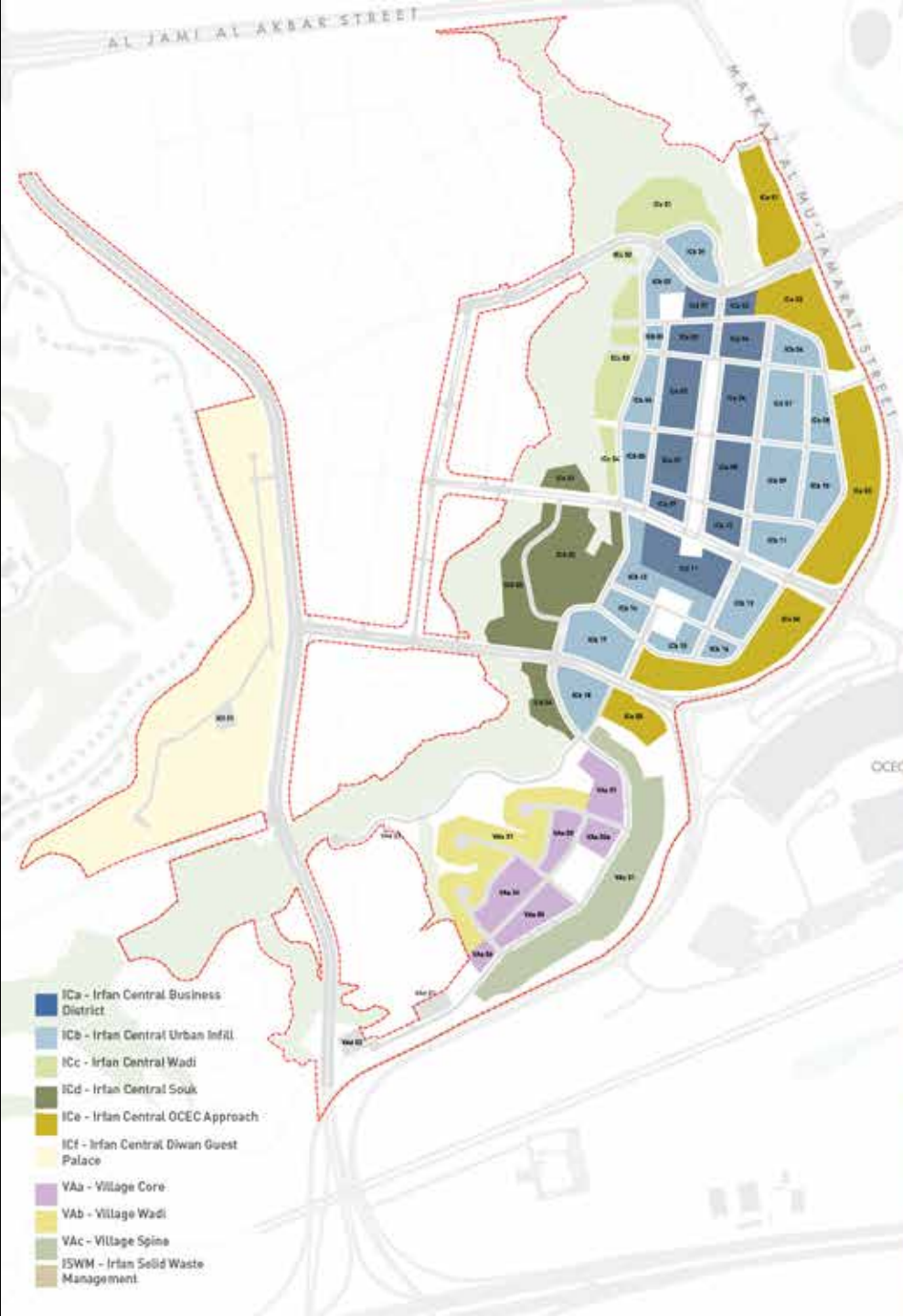
- phase 1
- phase 2A
- phase 2B
- phase 3A
- phase 3B
- phase 4
- variable



... different phases ...



with phase 1 as Irfan's catalyst...





11

PRINCIPLE

PROVIDE A CATALYST FOR CHANGE

create a framework to deliver the project while setting new standards for others to follow

A STEP-CHANGE IN DEVELOPMENT...



HOW TO GET THERE?

CERTAINTY
THROUGH DESIGN CODES

Complex and detailed thinking

$(F_g \times F_s) \times 100$

$(0.28 \times 0.55) \times 100$

0.154×100



$0.06 = F_w \times 0.28$
 $= 0.182 F_w$
 $F_w = 0.06 / 0.182$

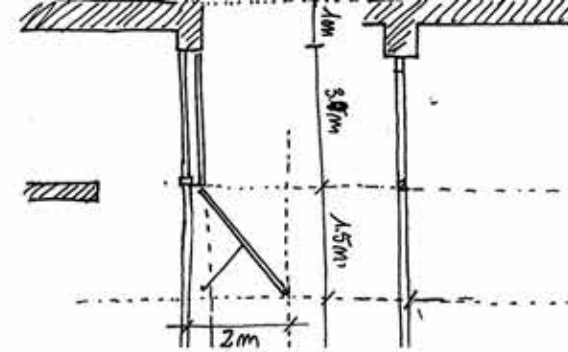
6% reduction with 500 mm reveal for 4 m height shopfront.
= 24% WWR

To achieve WWR of 75% shading factor of 0.286. \approx sun overcast 0.77.

↳ 28% open screen

(...)

FFL Measure
1.517



any otherwise in the S/W method/ wall.

$(F_w + F_g + F_s) \times 100$

$(0.28 \times 0.55) \times 100$

0.154×100

0.154×100

0.154×100

0.154×100

0.154×100

0.154×100

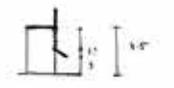
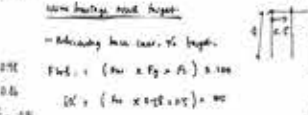
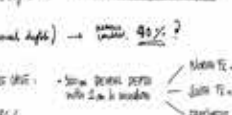
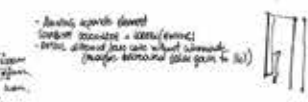
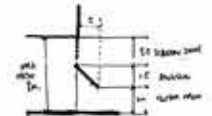
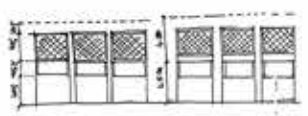
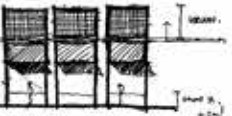
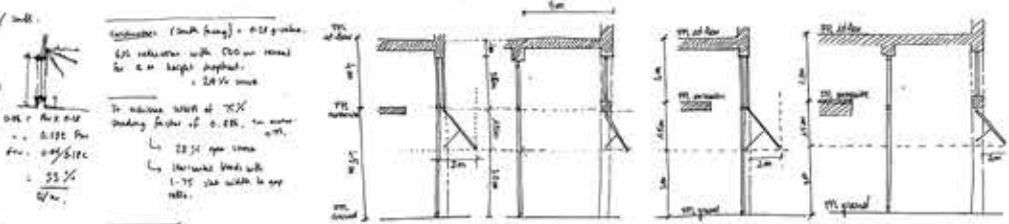
0.154×100

0.154×100

0.154×100

0.154×100

0.154×100



$0.154 \times 100 = 15.4\%$



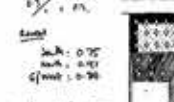
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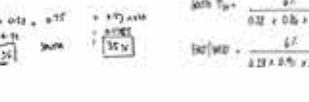
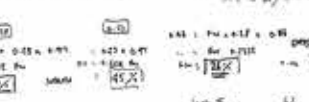
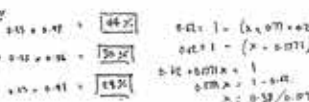
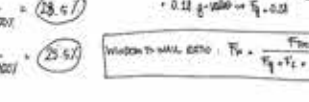
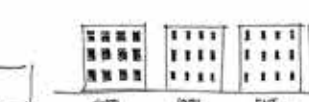
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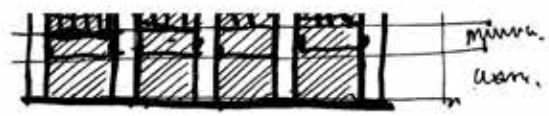
$0.154 \times 100 = 15.4\%$



$0.154 \times 100 = 15.4\%$



$= (F_w \times F_g \times F_s) \times 100$
 $= (0.28 \times 0.55) \times 100$
 $= 0.154 \times 100$
 $= 15.4\%$ (no reveal depth) → assume variable 40%?

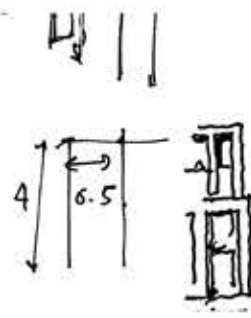


Incline brantage WWR target.

- Achieving base case, % target.

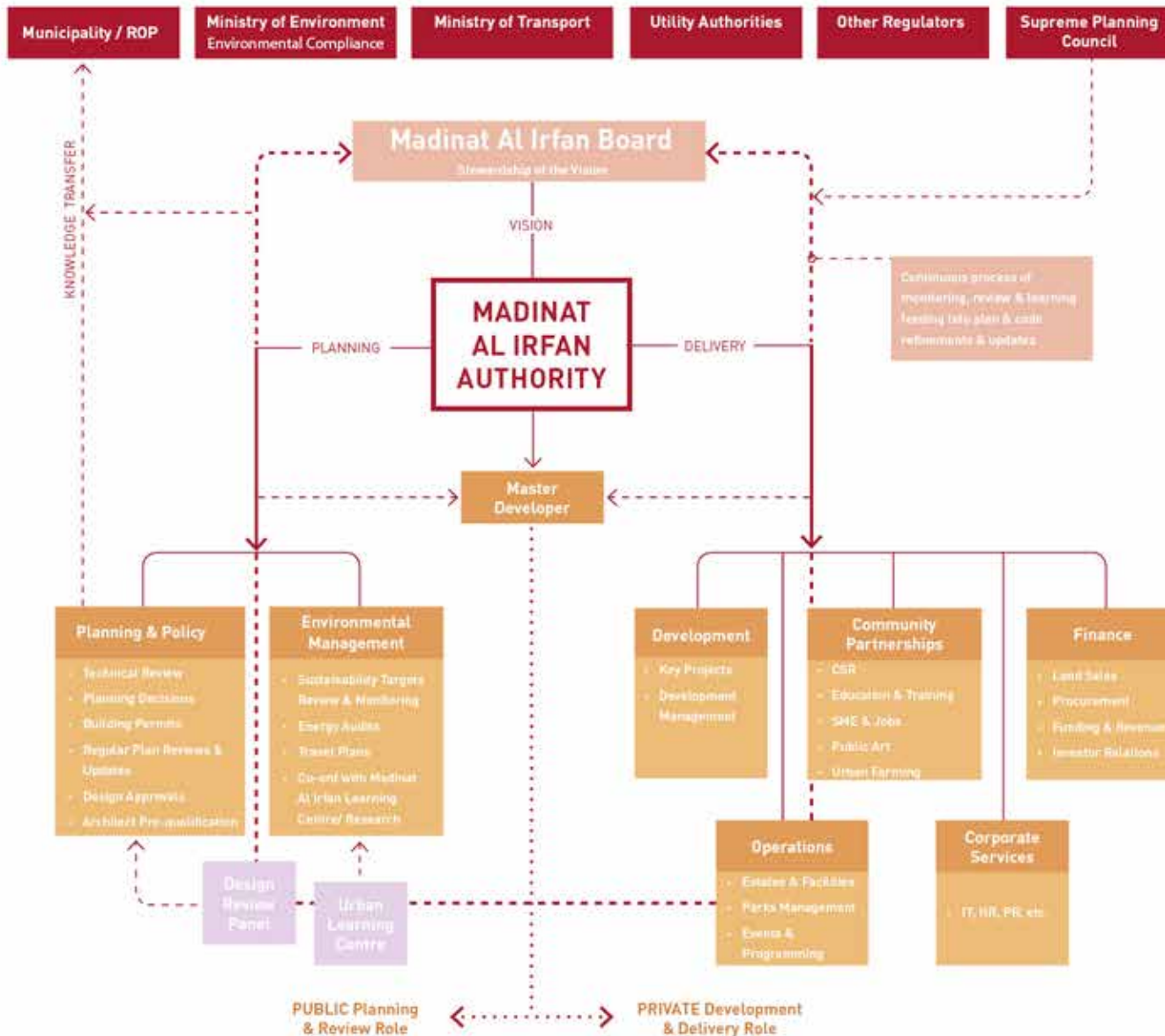
North Fc = 0.98

$F_{hd} = (F_w \times F_g \times F_s) \times 100$



Establish urban design codes that are policy ...

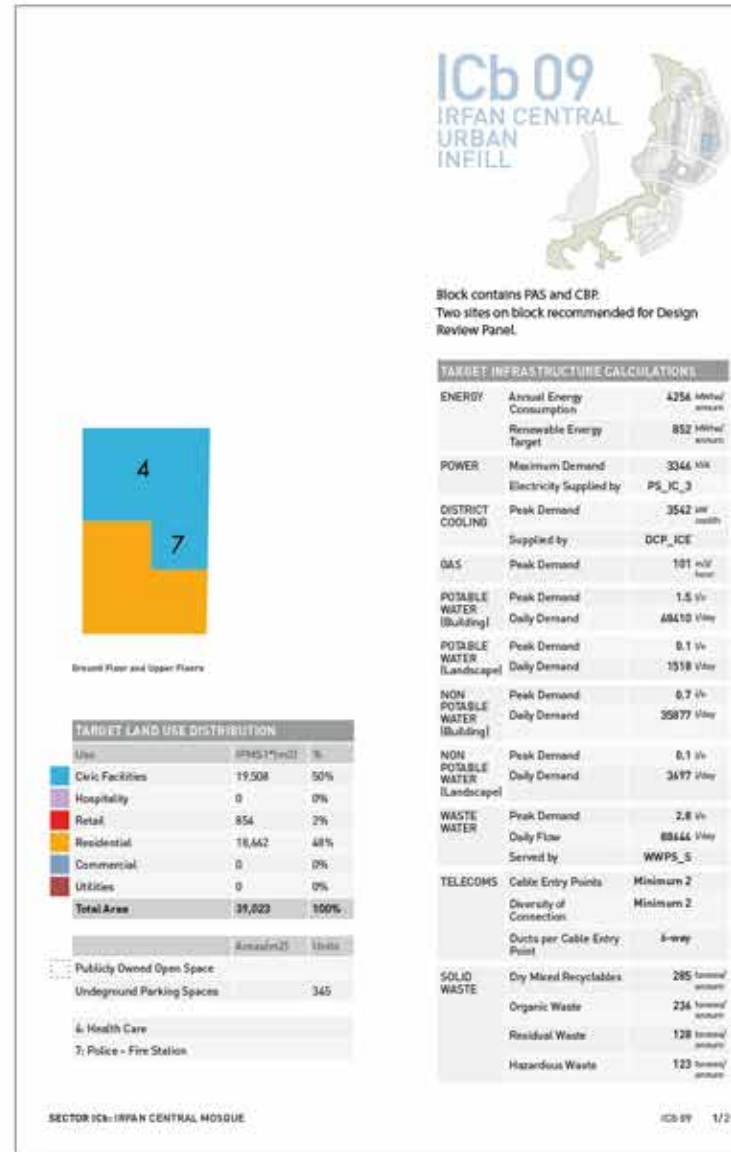
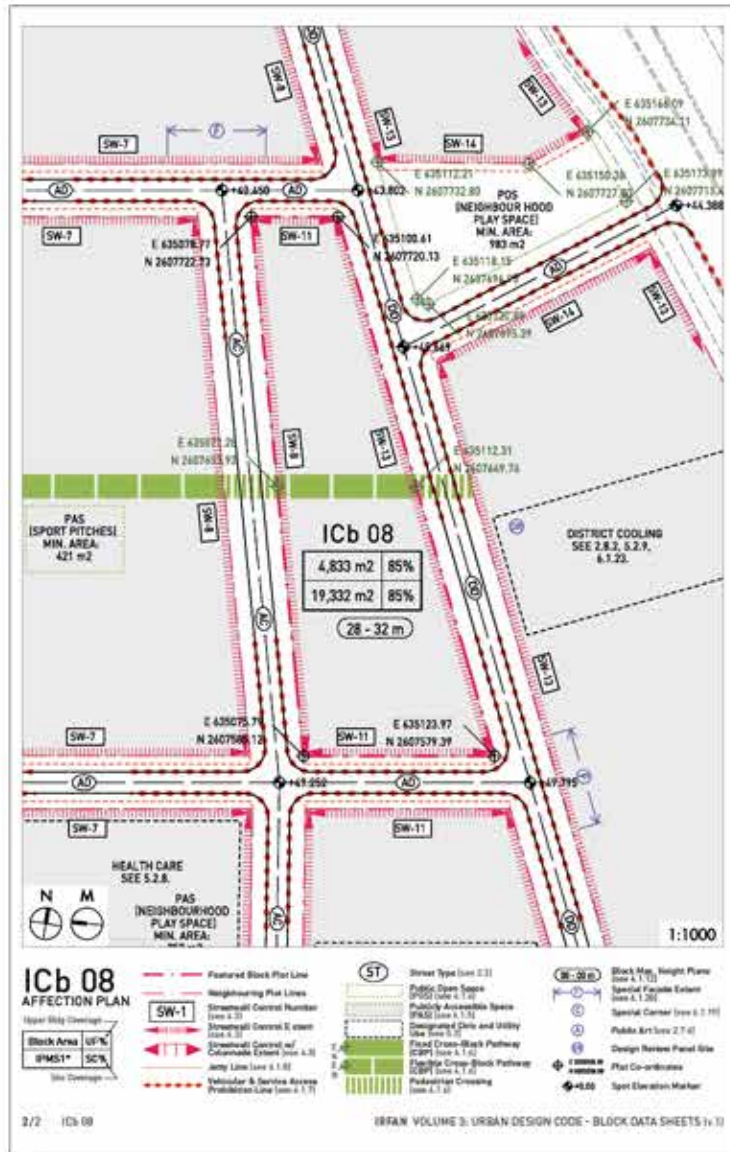
CLARITY
THROUGH GOVERNANCE



...administered through strong city management and leadership for the long-term.

INVESTOR-FRIENDLY
THROUGH TRANSPARENT
MARKETING OF EACH PLOT

Complex and detailed thinking ... distilled into a single A4 sheet for each development plot.



Translate the masterplan's vision into something simple to understand.

THIS IS IRFAN ...



GOVERNMENT DISTRICT

IRFAN WEST

IRFAN HEIGHTS

IRFAN PARK

RECREATION AREA

HAMLETS

THE VILLAGES

IRFAN CENTRAL

... A CITY OF MANY PLACES

IRFAN IS A MODEL FOR A NEW URBAN AGENDA.



**FROM AN APPRECIATION
OF WHAT WORKED WELL
IN THE PAST...**



... EMERGES TOMORROW'S RESILIENT CITY ...



greetings from
**THE CITY
OF BRIDGES**

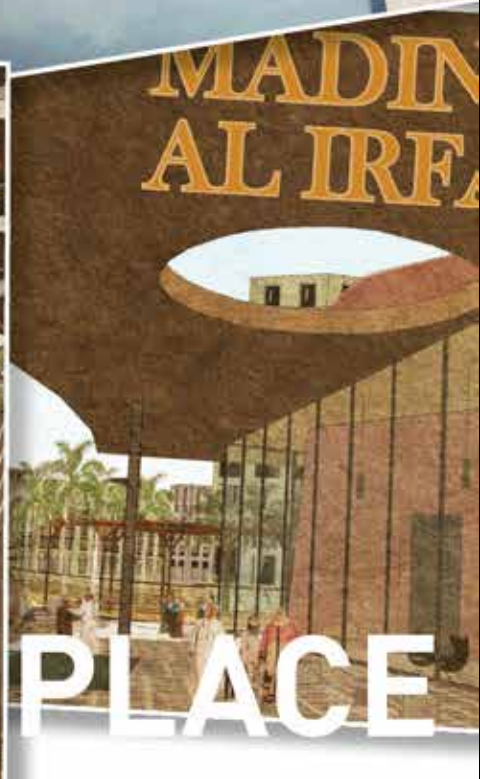
**MADINAT
AL IRFAN**

MADINAT AL IRFAN

Irfan



*s from
at al Irfan*



A MEMORABLE PLACE

A CITY OF BRIDGES...



AS IF IT HAS ALWAYS
BEEN THERE

