رؤيـــة VISION 2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

العمـــارة السعودية SAUDI ARCHITECTURE

Northern Najdi

Architectural Design Guidelines

وزارة البلديات والإسكان
Ministry of Municipalities and Housing

مركز دعم هيئات التطوير
DEVELOPMENT AUTHORITIES SUPPORT CENTER

برنامج جودة الحيـاة
QUALITY OF LIFE PROGRAM

VERSION 1.0

FIG.1 **NORTHERN NAJDI ARCHITECTURAL CHARACTER AREA**

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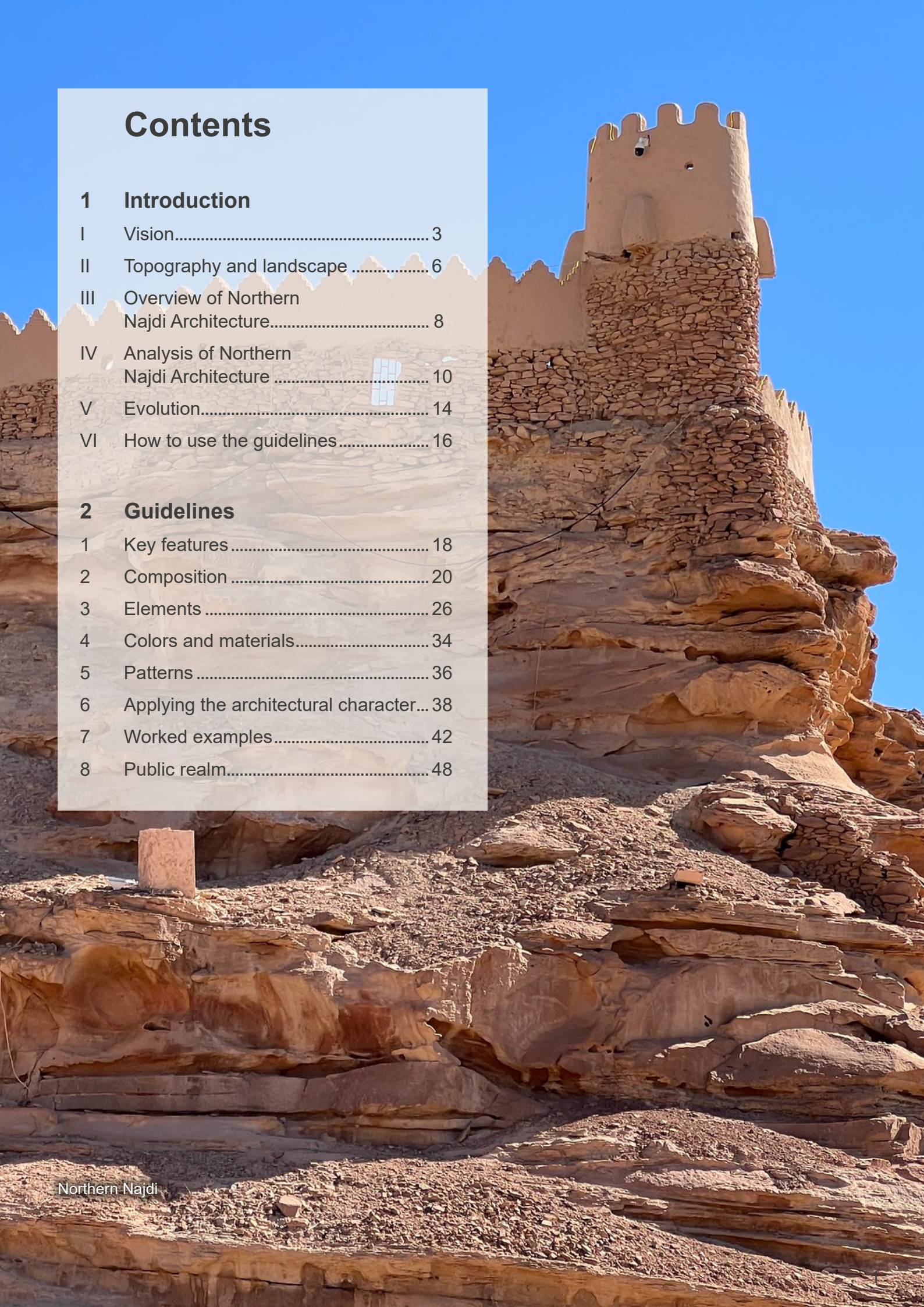


Northern Najdi

FIG.2 **ARCHITECTURAL CHARACTERS MAP OF KSA**

INTRODUCTION

I Vision

Celebrate and preserve Saudi Arabia's rich architectural legacy inspired by culture, heritage and nature.

I.1 Guidelines philosophy

The Architectural Design Guidelines (hence referred to as ADG) aim to foster progressive contemporary design that is rooted in the diverse geographic and cultural contexts of the Kingdom.

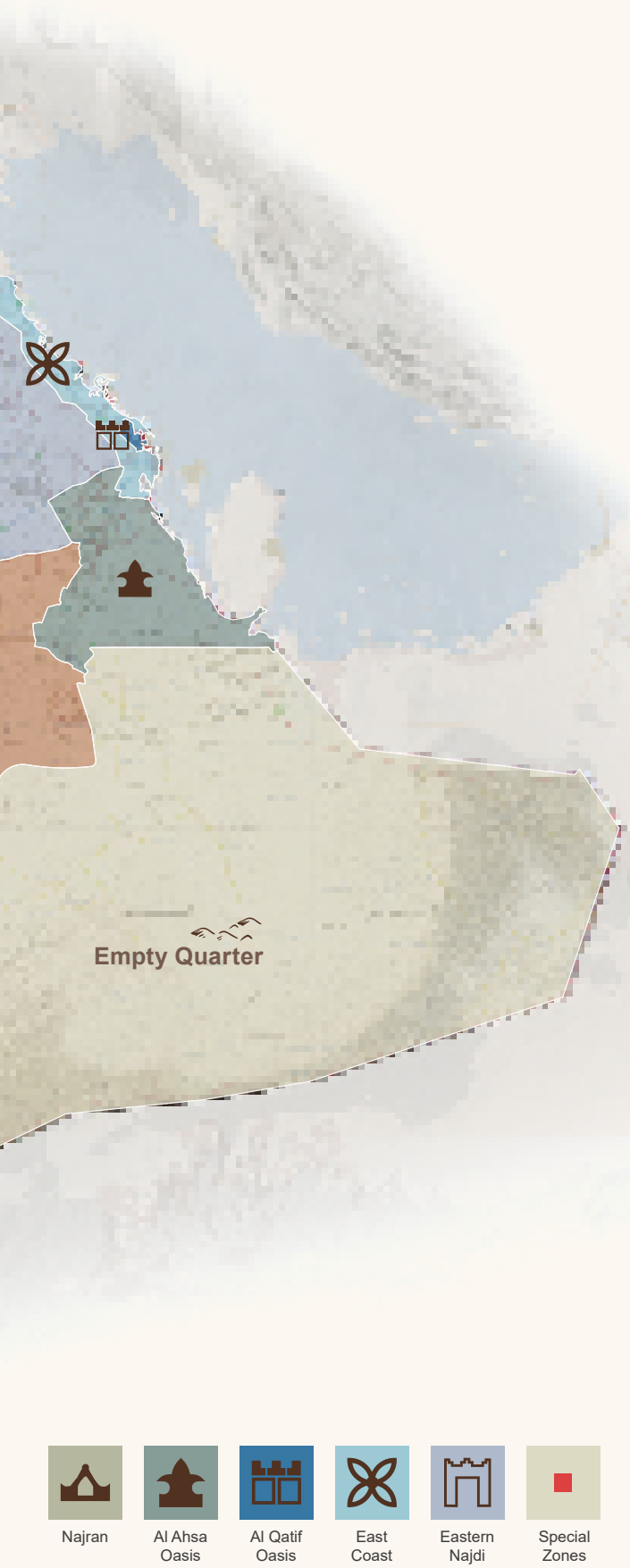
Its propositions are based on the study of historical precedent, taking inspiration from vernacular forms and the embedded knowledge shaped by generations of practice and experience.

The guidelines are forward-looking, intended for a wide range of contemporary development and suited for different levels of prescription. They aim to be succinct, well organized and useful: a positive resource for designers and easy to implement by planning authorities.

I.2 National context

This volume belongs to a suite of 19 documents, each exploring a different geographic context and describing a distinct architectural character within the Kingdom. Together they form a comprehensive portrait of the architectural heritage of the country.

Though application boundaries for the architectural character have been defined (fig. 2), influences may extend across boundaries. Designers are advised to consult adjacent architectural guidelines documents and confirm the status of their building context with facts on the ground.



Najran | Al Ahsa Oasis | Al Qatif Oasis | East Coast | Eastern Najdi | Special Zones

I.3 Northern Najdi

The focus of this publication is the Northern Najdi area, which lies in the northernmost section of the Kingdom of Saudi Arabia. Northern Najdi envelops parts of the provinces of Tabuk, Al Jouf, Hail, and Northern Borders. Its location on the Najdi plateau and An Nafud Desert renders the natural landscape a red-brick canvas. The region's desert areas, oases and grassy areas, as well as its water wells and aquifers have all shaped its natural landscape and built environments. Before the 20th century, the urban fabric consisted mainly of settlements along pilgrimage routes to Mecca and proximity to water sources. Many settlements were enclosed by walls and designed with Masjids placed in the center, with dwellings and other buildings surrounding the Masjid.

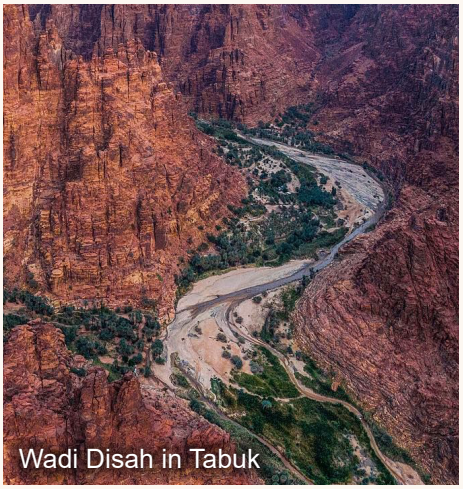
The traditional Northern Najdi architectural style is reflected in austere aesthetics with raw geometries and symmetrical shapes on buildings crowned by stepped parapets. This style came as a historical response to resource limitations imposed by the economic and natural factors of the region. Significant landmarks such as the palace in Sakaka and Al Rumman castle sit majestically in Northern Najdi as evidence of the region's rich heritage and continuity throughout time.


Marid Castle in Al Jawf


Tabuk


Sakaka


Sakaka


Wadi Disah in Tabuk


Al Jouf

Masjid entrance in Dawmat al Jandal


Tayma


Haddaj well in Tayma

FIG.3 **NORTHERN NAJDI**

II Topography and landscape

Observations on the links between landscape, climate, culture and the architectural character of the Northern Najdi.

II.1 Landscape

An Nafud Desert occupies the region's core in the south with its red-brick-colored sand. The desert is noted for its sudden violent winds that cause its shifting dunes and frequent sandstorms, which have been challenging to travel through the ages. While An Nafud is largely barren since it only rains once or twice a year, some watering and grassy areas exist and have historically sustained some nomadic herding and the agriculture of dates, vegetables, barley, and fruits. The region north of An Nafud is an upland plateau with multiple wadis, most of which head northeast toward Iraq. On the western side of the An Nafud Desert sits a rocky terrain that entails sedimentary layers dating back to the Cambrian and Early Devonian Eras, surrounded by sand dunes and sedimentary rocks, Al Jaref, that acts as a reservoir.

Further east, two dunes form large rocky outcrops called Al Saq, predating the Cambrian Period. An 80 meter layer of shale clay hydraulically separates the dunes. The rocky layers of Al Saq can contain and store large amounts of groundwater due to the broad and deep nature of its layers.

II.2 Climate

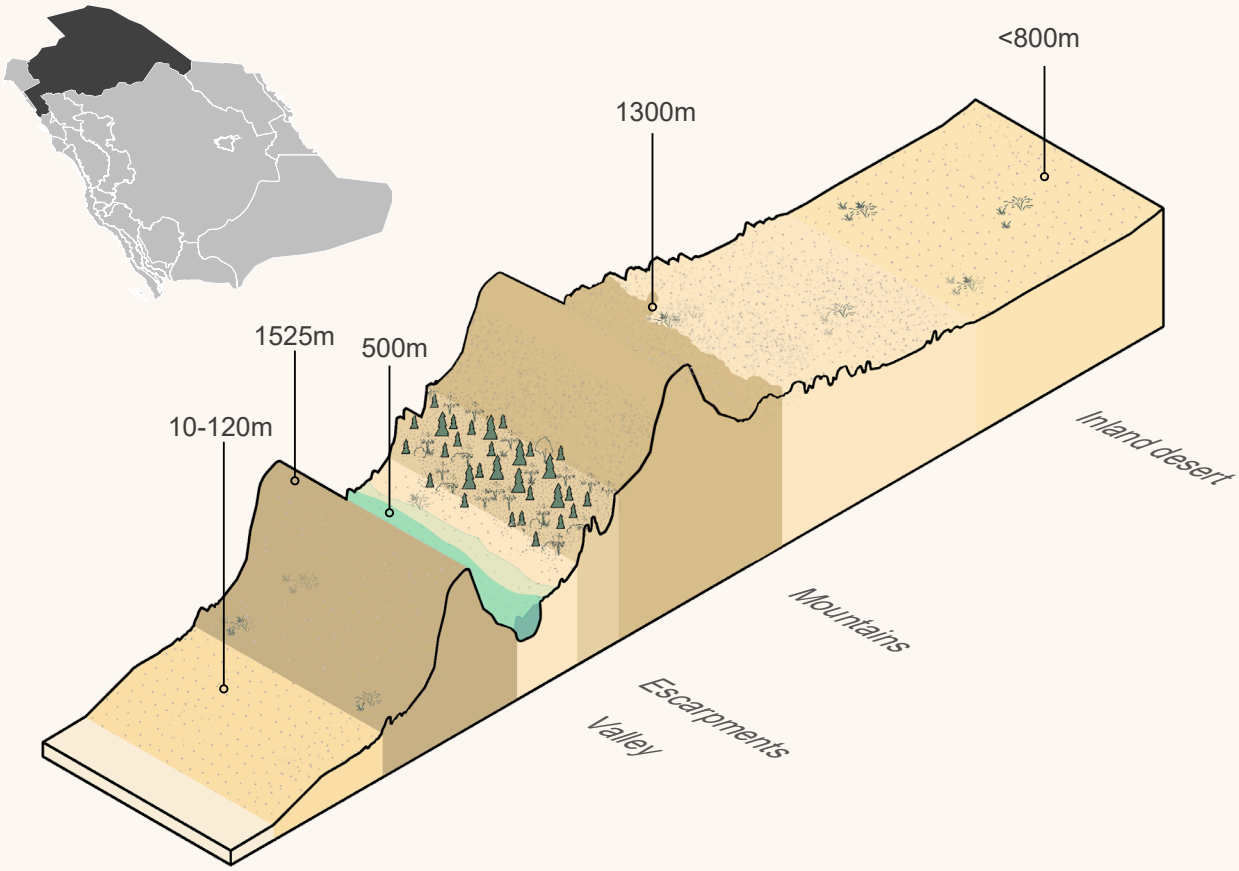
In the south of the region, intersecting with Hail province, the average temperatures are 10 °C in winter, and up to 40 °C in the summer. Hail province is moderately windy and considerably dry; some months are characterized by regular humidity, while some are extremely dry. With prevailing winds in the winter reaching 20 km per hour, the shift in temperature levels from summer to winter can be extreme, with the temperature dropping below freezing in winter. Further north, the city of Arar is a moderately hot desert as summertime highs can reach 40°Celsius and wintertime lows hover at 3°Celsius.

II.3 Culture

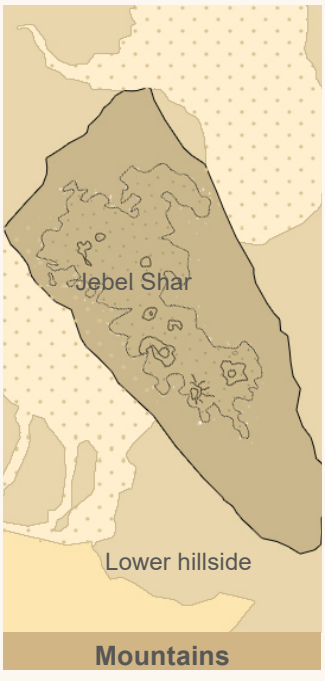
Water sources have shaped human settlement and economic activity in Northern Najdi. Nomadic and semi-nomadic herders have historically moved along the green areas in the wadis and the grass plains of this region. The low-lying plain of Tabuk city and its prominent Wadi Abu Nashifa has resulted in flash floods destroying historic settlements, which has pushed the city to expand north and west. The region's wadi ecosystems, as well as the natural wells, have been transformed over the years into an intricate ecosystem for agricultural production, enabling the trans-historical and millenary settlement of this area.

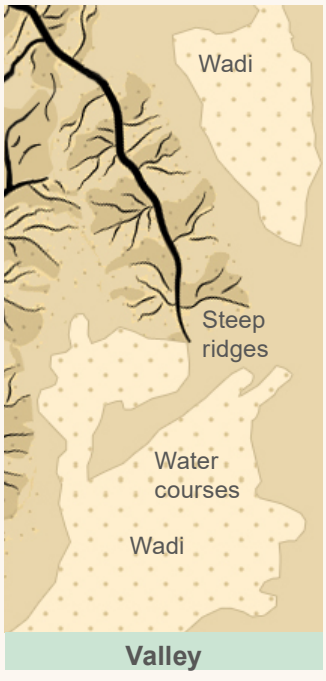
II.4 Architectural influence

The region's topography and landscape influenced its architecture in terms of building design and materials used. Settlements were designed following an introverted architecture around courtyards as a way of ensuring ventilation amid the heat. Vernacular façades are mostly closed with limited openings responding to the harsh warm climate of the area. In terms of materials, local sun-dried mud bricks were used, and their color depended on the various color palettes of mud found in the region.







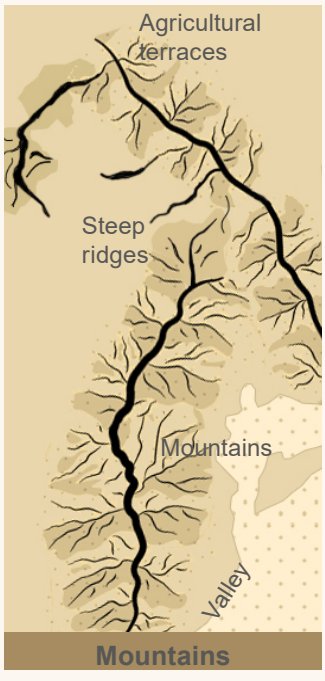


FIG.4 **NORTHERN NAJDI TOPOGRAPHY**

III Overview of Northern Najdi Architecture

A summary of the existing character of traditional architecture and settlements in the Northern Najdi.

III.1 Architectural character

Northern Najdi buildings were composed of thick load-bearing mud walls with small-sized openings. Present across the structure are fenestrations for ventilation, privacy, and lookouts, or other openings which are usually square or triangular, towards the top wall. The roof was often built with tamarisk wood layered with palm fronds and then covered with the same mixture of mud and hay. Wood was also used for lintels and door frames. Its characterizing features included crenelations on parapets (shuraf), fenestrations on the upper section of the façade (alfuraj), and prominent peep holes (turmah) above doors. Unlike Central Najdi, the Northern Najdi style entailed minimal ornaments on the façades and fewer colors. Moreover, parapets differed in shape, color, and material to those found in Central Najdi; they consisted of not three but five steps,

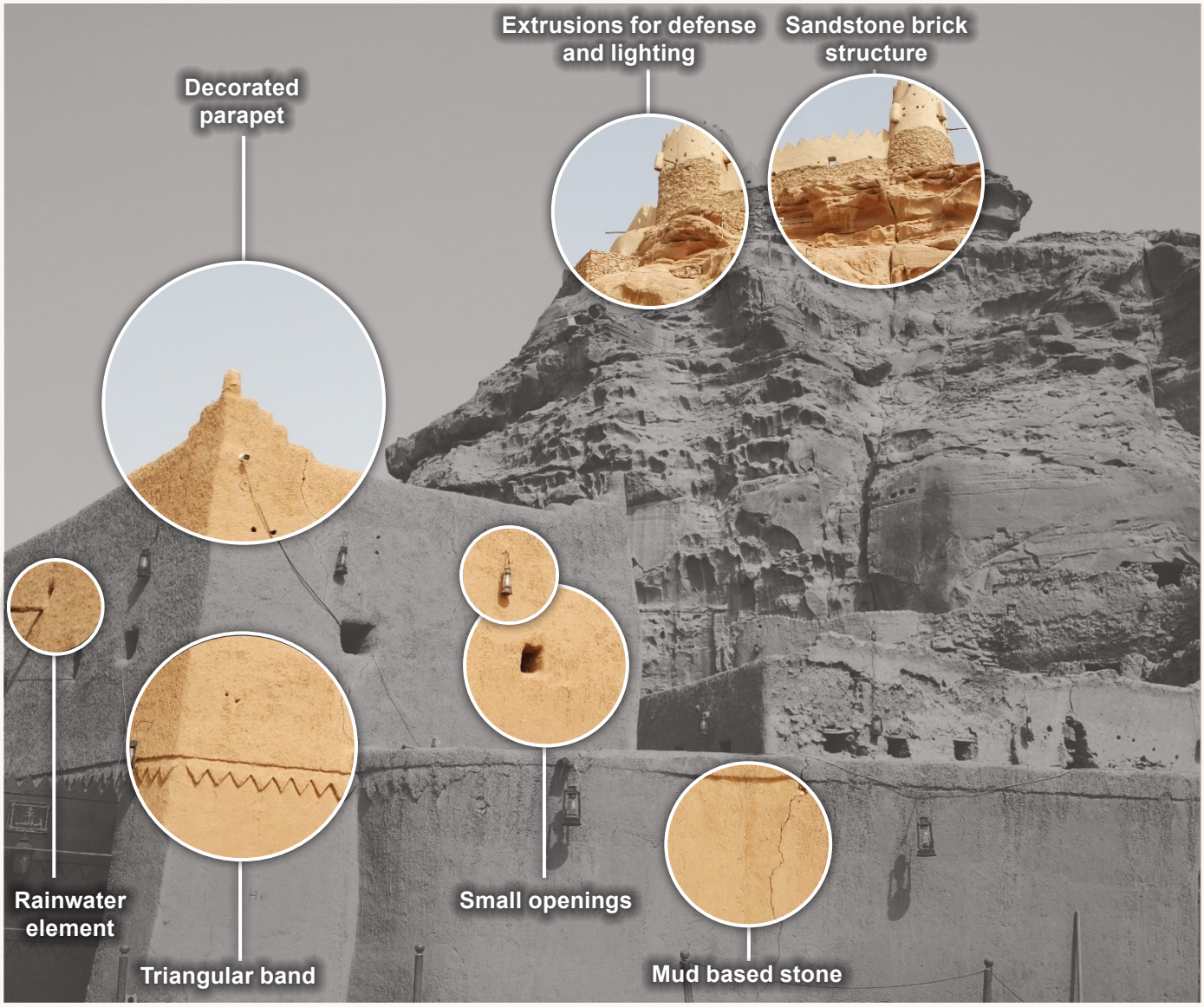


FIG.5 TYPICAL BUILDING FORM, SAKAKA

were the same color as the rest of the façade, and were built with austere unworked rocks, instead of the worked stone found in Central Najdi. The Tabuk region is characterized by its stone architecture entailing elements such as stone arches, awnings, narrow openings, and tinted window shutters, in local stone.

III.2 Settlement character

Cities such as Tabuk and Tayma followed organic patterns of growth dominated by numerous clusters of dwellings, meanwhile wide and open souqs mark distinct streets and squares. Residential and public spaces were designed to allow space for social gathering, and thus for close interaction. The walls of houses were attached to each other. Typical houses in the northern region were built around courtyards with shared walls, often thick and load-bearing. The introverted architecture was a tool for both climate adaptation and privacy. Sun-dried mud bricks were the traditional building material, while mud mixed with hay was used for cladding. The mud's color varied from region to region depending on the hues of local stones used in the mixture. This approach allowed the structures to integrate harmoniously into the surrounding landscape.

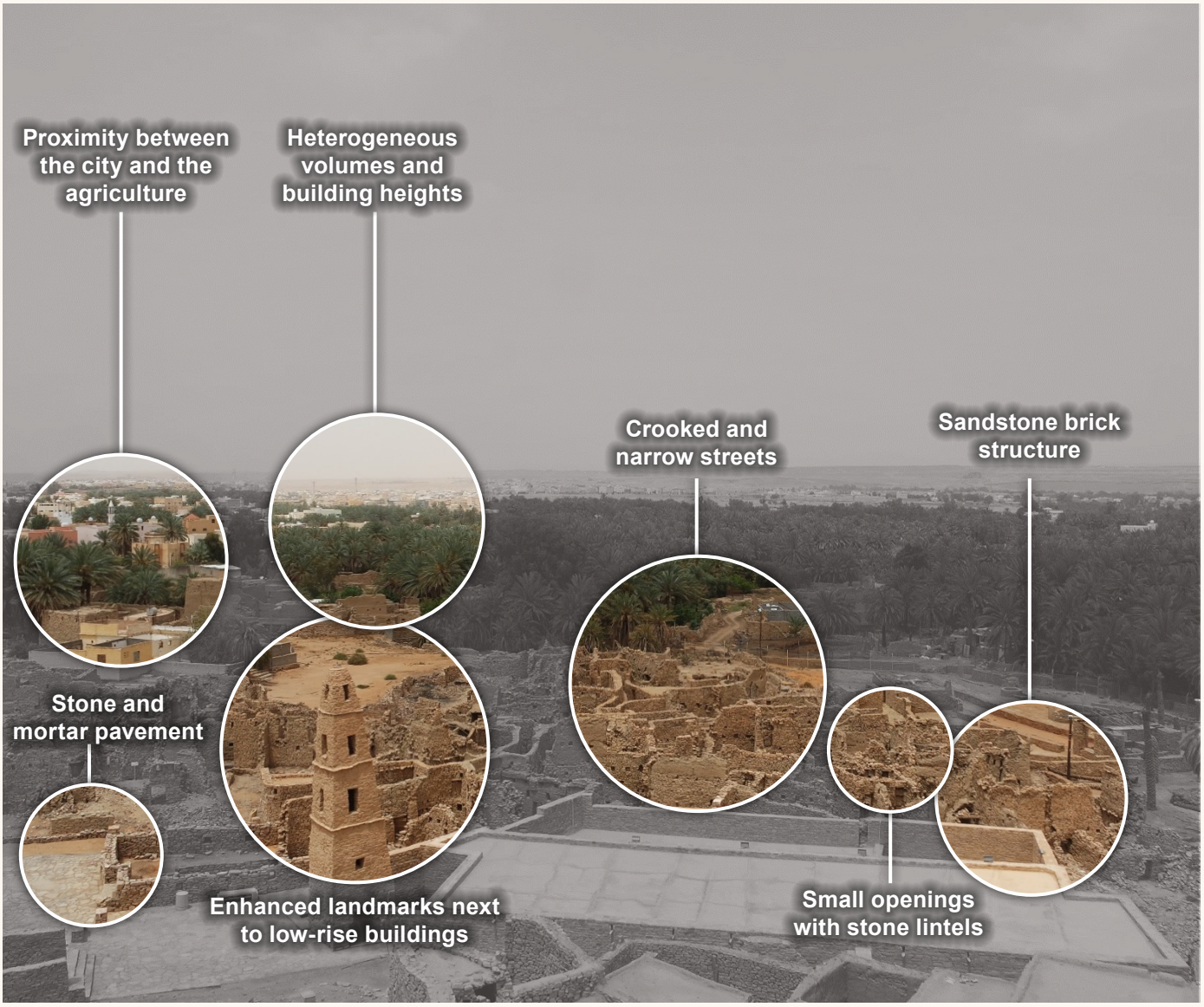


FIG.6 **SETTLEMENT FORM, DUMAH AL JANDAL**

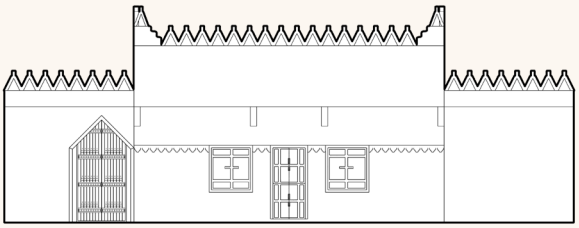
IV Analysis of Northern Najdi Architecture

The evidence and formal analysis upon which the guidelines are based.

IV.1 General typology

Traditional Northern Najdi constructions are characterized by the use of locally sourced materials, particularly mud, stone and sandstone. Traditionally, buildings in Northern Najdi do not present decoration. The apertures on the ground floor tend to be limited and narrow, providing privacy and ventilation compared to the upper floors, where they are more significant.

Locations



Museum in Tayma

IV.2 Aspect ratio

In Tayma, buildings are characterized by strong horizontal proportions, indicated by a width-to-height ratio of 2.6:1.When it comes to vernacular palace buildings, the palace in Sakaka is strongly horizontal, with a width-to-height ratio of 2.5:1, while other palaces like Al Rumman Castle in Tayma have more squared proportions with a ratio of 1.3:1.

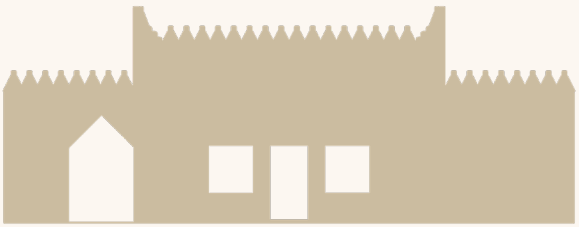
Width to Height Ratio

2.6:1

IV.3 Solid-to-void ratio

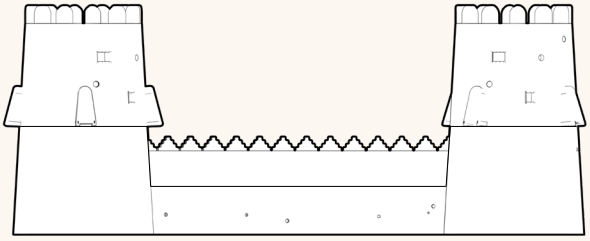
Some buildings present a high degree of opacity, as indicated by the modest void going as low as 0.7% in Sakaka with a 2% opening, while others might have more open façades with up to 25% of the façade's surface consisting of windows or doors. Palaces are predominantly opaque. Al Rumman castle has a slightly more open facade, with one large door and a few small-sized openings repeated along the first floor, constituting a total opening of 12.4% .

Façade analysis

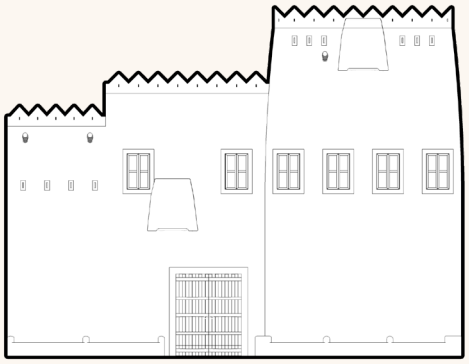


Façade area – 96 sqm
11% void

Vernacular façade studies



Sakaka Fort

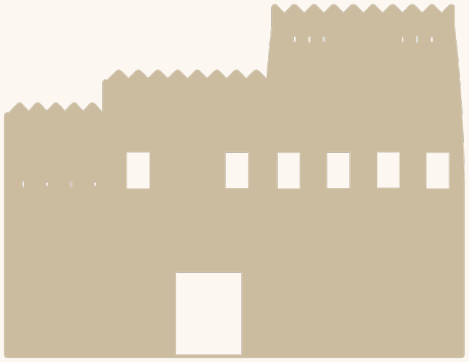


Al Rumman Castle

2.5:1

1.3:1

Façade area – 618 sqm
0.7% void



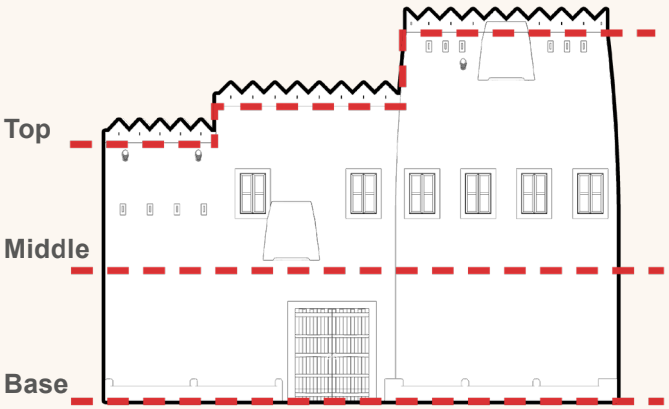
Façade area – 113 sqm
12.4% void

IV.4

Tripartite articulation

Tripartite articulation is a typical feature of Northern Najdi buildings. Façades are typically split into three separate tiers with their own distinct character:

- base - main entrance and few or no windows.
- middle - windows.
- top - crenelation, vent holes and roofscape.



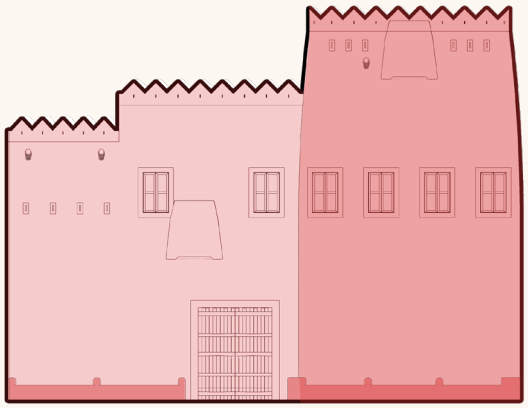
Tripartite articulation

Façades are typically split into three separate tiers base, middle, and top.

IV.5

Façade depth

Façades are usually split into planes of different depths, often with height variations. This three-dimensional aspect adds a dynamic element to the building, and sections the overall square building into narrower, more vertical portions.



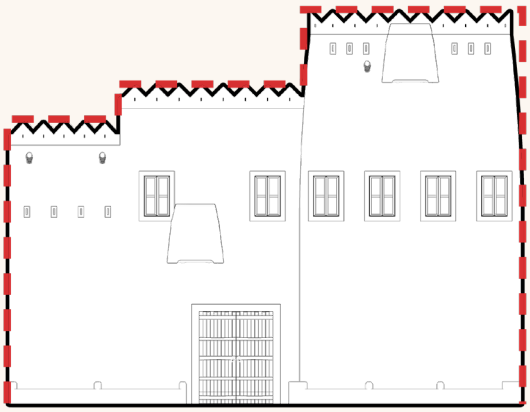
Façade depth

The Northern Najdi façade is often of a volume-rich nature.

IV.6

Variation in heights

The height of traditional Najdi structures often varies according to each habitable space and the function it serves within the building. Usually, buildings show clear vertical bands in the façades with varying heights.



Variation in heights

Façades typically demonstrate a variation in height based on habitable spaces and their functions.

IV.7 Ornamentation

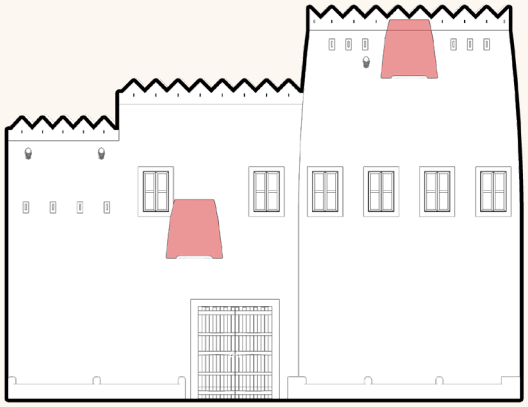
The top portion of the façade is characterized by the use of decorative parapets or banding. Triangulated crenelations are a prominent feature of Najdi vernacular architecture as well as elemental ornamentation. Apart from triangulated parapets and the occasional use of plaster frames around openings, façades feature scarcely any decorative elements.

Ornamentation

Most façades have finely detailed repeating and alternating elements.

IV.8 Projecting elements

Projected bays and turmah's are the most characteristic projected elements on Northern Najdi façades. The turmah is a protruding pocket-like architectural element with small downward openings for protection, usually placed at higher levels so individuals in upper levels of the structure may look at who is at the entrance. They may be incorporated along more than the main facade.



Projecting elements

Turmahs and inhabitable bays are the most common projecting elements.

TAB. 1 Najdi regional character comparison

ARCHITECTURAL CHARACTER	Opening percentage	Use of stone	Arches	Use of arcades	Ornamentation frequency
CENTRAL NAJDI	2 - 25%	At base plinth	Squared and pointed arches	Medium	High
NORTHERN NAJDI	0.7 - 25%	Ground floor and above	Squared and pointed arches	Low	Medium
EASTERN NAJDI	1.4 - 11%	Low to zero	Semicircular arches	High	Low

V Evolution

The connection of contemporary design with traditional forms to strengthen the architectural character of a place.

V.1 Connecting past to future

The guidelines aim to provide architectural roots for contemporary buildings so that they connect to their historical context, draw upon their local culture and reflect the spirit of a place.

At the same time, a balance between continuity and innovation is needed. Advances in construction technology, material science, patterns of development and specifications for new building uses require buildings that can accommodate these changes while preserving the essence of local architecture.

V.2 Connecting environment to form

The guidelines also aspire to connect buildings to their geography. Physical context has traditionally influenced the materials available, the patterns of development and the climate response required from architecture.

These environmental constraints have created a matrix of related, regional building typologies. The guidelines aim to provide a layer of stylistic influence to accentuate these regional building types into distinct characters that can be gathered into a diverse yet related national ‘family portrait’ of architectural character across the Kingdom.

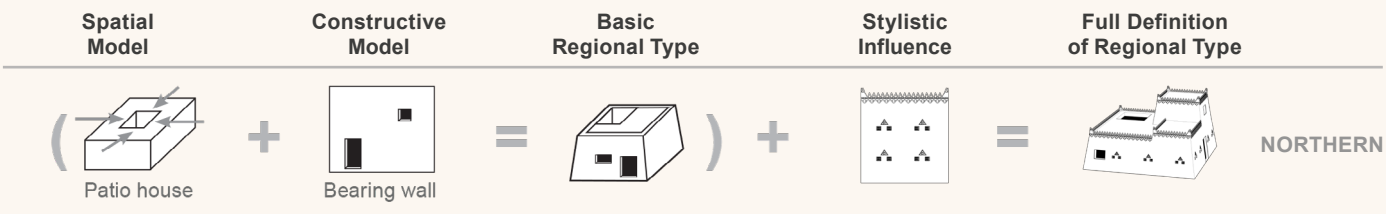
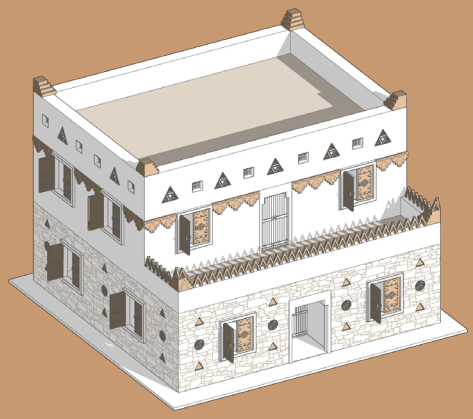


FIG. 7 Character equation for the Northern Najdi

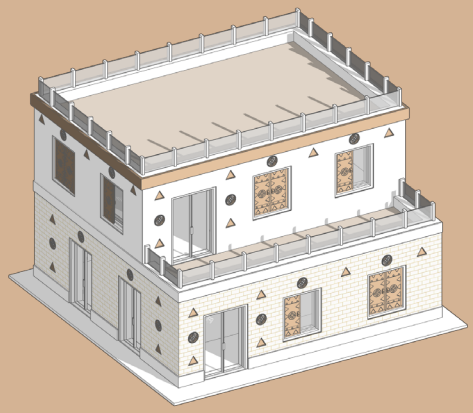


Traditional style

TRADITIONAL

Thick earth or stone walls, irregular geometric profile.

A multitude of volumes and planes, with small openings, crenelated parapets, and geometric fenestrations.



Transitional style

TRANSITIONAL

Smooth planes in earth tones, integral small windows and monumental openings.

Sharp detailing and interpretation of traditional urban form.

Contemporary style

CONTEMPORARY

Abstraction of geometric planes and forms, adapting to a range of building types and increased daylighting.

Perforated walls, screens and setbacks for shade.

VI How to use the guidelines

The guidelines have been organized to present the rules of architectural character in a clear, efficient and useful way.

VI.1 Chapter organization

The first chapters sort the guidelines into different dimensions that help define architectural character:

1 **Key features -** The most essential characteristics for the architectural character.

2 **Composition -** The rules by which buildings are shaped and elements are related to one another.

3 **Elements -** The individual parts that are the building blocks of the architectural character.

4 **Material and color -** The prevalent materials used and color range found within the architectural character.

5 **Pattern -** Common motifs and patterns used in the traditional craftsmanship and material culture of the local character.

These chapters are followed by two sections focused on guideline implementation:

6 **Applying the architectural character -** Guidance for the proper interpretation and use of architectural style in new buildings.

7 **Worked examples -** Design studies that illustrate the use of architectural character at different scales and strengths.

The document concludes with:

8 **Public Realm -** An overview of public realm character in Northern Najdi.

VI.2 Guideline formatting

Individual guidelines are formatted graphically to make them more useful:

1 **Chapter number and heading -** Guidelines are gathered into major categories for ease of reference.

2 **Guideline number and heading -** Guidelines are given a unique 2-digit decimal number and heading for ease of reference and to provide precision in enforcement.

3 **General description -** Descriptive text to introduce the guideline topic.

4 **Guideline actions -** Instructions clearly identifying the actions to be taken by designers. Each action is numbered for ease of reference and to provide precision in enforcement.

5 **Rationale -** Set in colored text and highlighted by a side bar are the objectives and reasons for the guideline. This gives the applicant an opportunity to propose designs that meet the rationale through alternative ways. Alternatives require the approval of the relevant local authority.

6 **Illustrations -** Illustrations, photos and diagrams that help explain the guidelines. They are examples only: where contradictions arise between illustrations and guideline text, the text shall overrule the illustration.

The items above correspond to the figure on the facing page.

Link to the Contents page

1 Chapter number and heading

2 Guideline number and heading

3 General description

4 Guideline actions

5 Rationale

6 Illustrations

2 **Composition**

The rules by which buildings are shaped and elements are related to one another.

The aesthetic of a building is the relationship between its different architectural elements. These can be calibrated by implementing the following guidelines:

2.1 **Asymmetry of the façade**

Asymmetry is a key feature of the design in buildings across Northern Najdi, thus:

1 Buildings should express a monolithic character.

2 General asymmetry and varied clustering of volumes should be followed.

3 The building profile should be irregular.

To ensure that the façade corresponds and is in dialogue with the architectural traditions of the area.

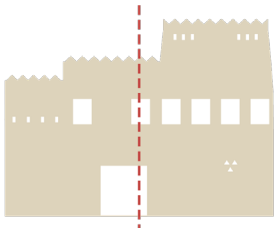


FIG. 12 Asymmetry on typical façade

2.2 **Grouping of elements**

Grouping sections of similar height together to clearly delineate the differences between elements.

1 Buildings should have clear legible vertical bands.

2 The highest vertical band can go up to two to three stories maximum with additional height for parapets.

To sustain the consistency of the visual banding style across traditional and contemporary development.

FIG. 13 Legible vertical bands

FIG. 8 Typical guideline structure

GUIDELINES

1 Key features

The most important attributes essential for conveying the architectural character of the Northern Najdi.

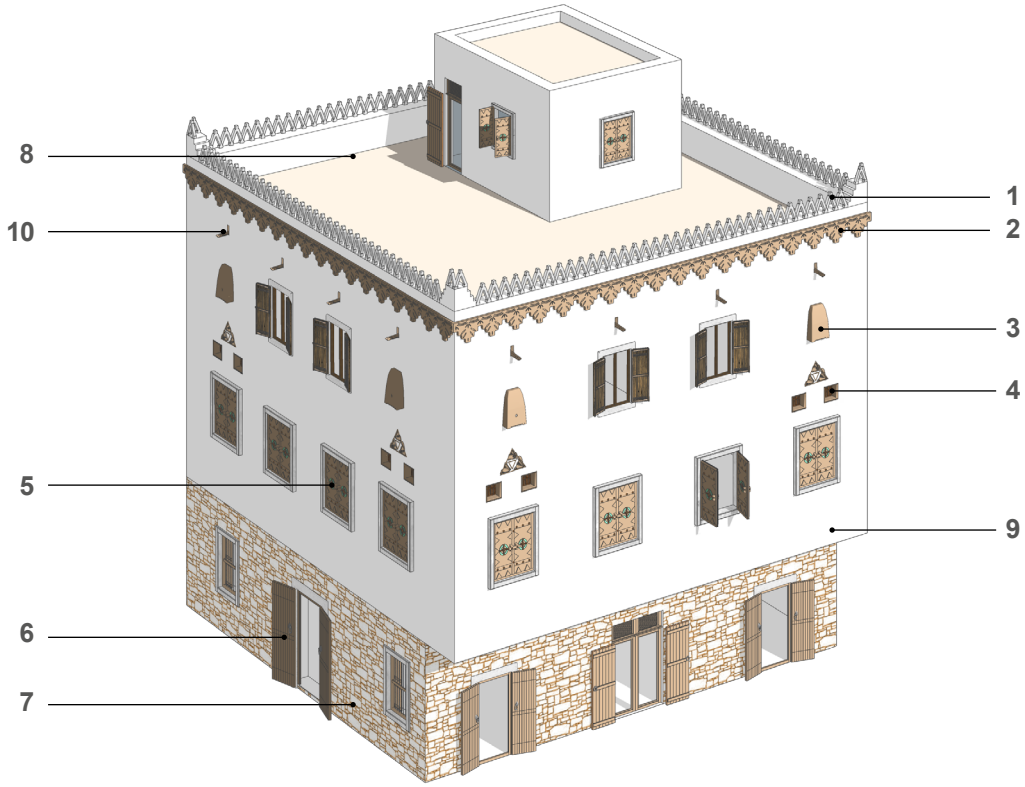


FIG. 9 Northern Najdi key features

Key features:

1 Parapet: The top of the parapet is highly crenelated. Corner crenelation is a key feature in this region.

2 Triangular bands: A simple line on the top or middle section of the façade without further ornament.

3 Turmah: A prominent closed window with one or more peepholes that can be closed with wood, allowing identification of visitors.

4 Fenestrations: Simple combinations of triangular or squared fenestrations.

5 Ornamented timber shutters.

6 The main door: Decorated with a frame on the external walls and contrasted with dark timber shutters.

7 Stone finish: Rusticated stone can be used in the base of buildings.

8 Varying heights: Employ vertical contrast across different levels of the overall structure.

9 Facade depth: Varying depths of the facade planes increase verticality and dimensionality.

10 Projecting elements: A network of mizabs, drainage pipes, project from the top.

FIG. 10 Al Dushan Museum

FIG. 11 Examples of Northern Najdi architecture

1.1

Character summary

Northern Najdi architecture, similar to most Najdi styles, embodies the essence of the traditional style. It has its own distinguished features that are specific to the area's historical trajectory and environmental conditions. For example, it possesses a distinctive façade composition and use of patterns.

The general Najdi aesthetic is more austere than the one found in Central Najdi. Openings are limited in quantity and frequency in comparison to the central region where they are more abundant. The low perforation rates of the façades are a response to the harsh climate of the area.

While not many variations exist for each ornamentation type such as in Central Najdi, the northern region is characterized by some forms of decorations. Intricate triangular bands are frequently used and can be employed to outline the heights of each level of the building. Moreover, pure geometries are the dominant shapes used when decorating the façades of buildings in the north. These geometries go in line with the organic primitive shapes that characterize the Northern Najdi style. Parapets are another example of raw shapes adopted. As the crenelations are not detailed the stone used is unworked, a stark contrast with the case of the central region. Parapets are highly crenelated and consist of not three - the case in Central Najdi - but five levels; they often have the same color as the rest of the façade.

2 Composition

The rules by which buildings are shaped and elements are related to one another.

The aesthetic of a building is the relationship between its different architectural elements. These can be calibrated by implementing the following guidelines:

2.1 Asymmetry of the façade

Asymmetry is a key feature of the design in buildings across Northern Najdi, thus:

1 Buildings should express a monolithic character.

2 General asymmetry and varied clustering of volumes should be followed.

3 The building profile should be irregular.

To ensure that the façade corresponds and is in dialogue with the architectural traditions of the area.

FIG. 12 Asymmetry on typical façade

2.2 Grouping of elements

Grouping sections of similar height together to clearly delineate the differences between elements.

1 Buildings should have clear legible vertical bands.

2 The highest vertical band can go up to two to three stories maximum with additional height for parapets.

To sustain the consistency of the visual banding style across traditional and contemporary development.

FIG. 13 Legible vertical bands

2.3 Solid façades

Per traditional architecture, facades feature less openings.

1 Small-scale openings should be adopted.

2 Opaque façades with fewer openings should be followed.

3 The middle band should consist of repetitive small-sized openings.

To design the openings of façades building upon the region's traditional architecture.

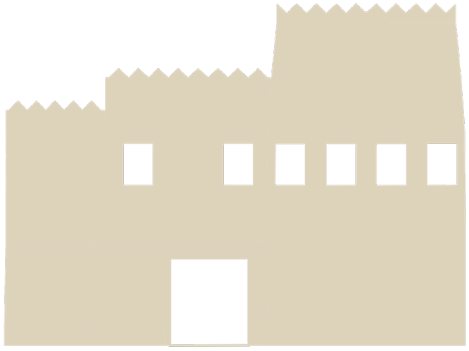


FIG. 14 80-90% Solid

2.4 Ornamentation

Generally employ less and simple ornamentation. Avoid distorting the typical character of Northern Nadji buildings, as this could undermine their local architecture.

1 Minimal ornamentation should be followed on the façade.

2 The building should have key features like crenelations on parapets (shuraf), fenestrations on the upper section of the façade (alfuraj), and prominent peep holes (turmah) above doors.

3 Turmahs of large proportions should be a prominent feature.

4 Triangular fenestrations should be provided on the façade for ventilation, lighting and surveillance.

5 Façade ornamentation should include triangular bands.

6 Simple framed windows and doors with no ornamentation should be adopted.

To ensure that the ornamentations reflect the style of the Northen Najdi architecture and distinguish it from other Najdi regions.

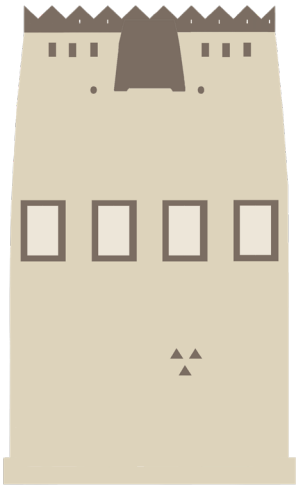


FIG. 15 Façade with minimal ornamentation

2.5 Geometry of the components

Organize side facades, openings, and decorations with cohesive use of various geometric shapes.

1 The windows and doors should follow an orthogonal design.

2 Triangular shaped fenestrations and triangular bands should be used for wall articulation

3 The crenelations should have triangulated form - except in contemporary, where the parapet does not feature crenelations.

To ensure that the scale and proportions of the opening show solid façades which harmonize with the character of the area.

FIG. 16 Wall articulations

2.6 Width-to-height ratio

Employ the prescribed proportions to maintain a cohesive understanding of traditional structures.

1 The overall proportion of the building should be wider than it is high.

2 Width-to-height ratio of the whole building should be around 1.3:1. to 2.6:1.

3 Recommended proportions for individual vertical bands are 1:5.

To ensure that the proportions of the buildings embody the essence of traditional sources.

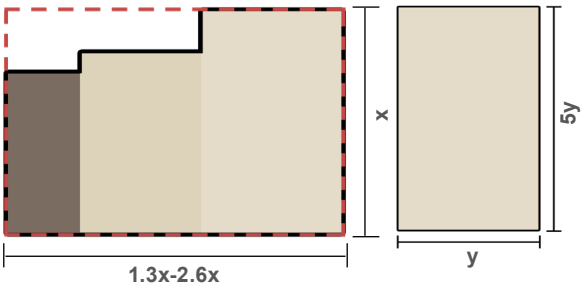


FIG. 17 Width-to-height ratio of of whole structure is 1.3:1 to 2.6:1

2.7 Entrances and articulation

Main entrances are typically differentiated by some element. All entrances should:

1 The entrances should consist of orthogonal doorways.

2 Access to buildings should be directly from the street.

3 They may be placed under arcades to provide shade cover.

4 Main entrances are typically placed under an arch, either rectangular or pointed,

5 The ground level may feature a shaded arcade.

To build transitional spaces between private and public spheres.

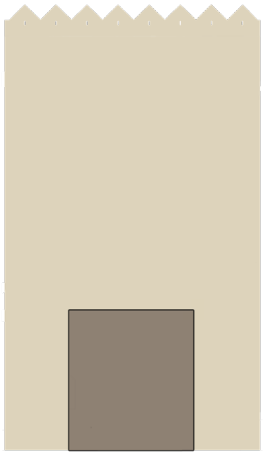


FIG. 18 Simple orthogonal entrance

2.8 Wall to ground relationship

Wall finishes demonstrate a close relationship with the ground. New buildings should:

1 The building should sit on a plinth.

2 The material for the plinth may be stone.

3 In the case of tower-like structures, the stone façade should go up to the mid-section.

4 Extending to the perimeter, to ease the transition from the building to the street, incorporate seated areas.

To ensure that the building relates to the ground following a tradionally-informed approach.

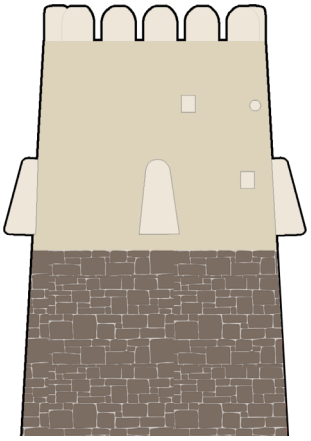


FIG. 19 Wall to ground relationship

2.9 Roofscape and rooftop elements

Roof and parapets form a distinctive component in Northern Najdi. The design of new buildings should:

1 Crenelations on the towers and outer walls should be continuous.

2 Crenelation design should be minimal with a mizab (drainage spout) below them.

3 Triangulated crenelations should be followed with a mud finish.

4 Rooftops of larger sized buildings tend to not be habitable, instead, there are more balconies and verandas.

To ensure that roofscape and skyline follow historically-sensitive designs.

FIG. 20 Triangulated crenellation on the roof

2.10 Secondary frontage

With minimal openings, all facades should ensure to maintain privacy.

1 Façades should have bare minimal openings towards the streets.

2 Façades should provide smaller square or triangular fenestrations closer to the top wall for light and ventilation purposes.

3 The base levels should comprise fewer windows to avoid any direct line of vision from the street.

4 Variations in setback from perimeter line allow for increasing levels of privacy from the street.

To design for domestic privacy following a traditional architectural approach.

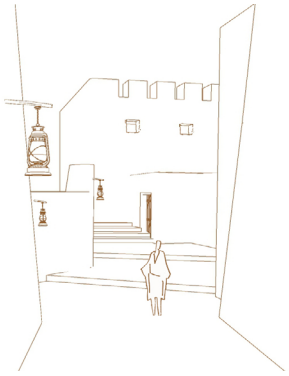


FIG. 21 Secondary frontage

2.11 Narrow streets

Clustering buildings together in accordance with traditional building habits is important to maintain the organic integrity of the neighbourhood.

1 Organic street grid patterns should be adopted.

2 Group buildings together to create narrow streets. Arranging them in clusters can create public and private spaces.

3 Ensure buildings are tightly positioned.

4 Buildings should not be more than three storeys tall.

To design a city grid which builds upon historical urban traditions.

FIG. 22 Narrow streets

2.12 Building cluster and courtyards

While maintaining areas for privacy, sharing a courtyard between new buildings facilitates interconnectedness and socialization.

1 Buildings should be envisioned as clusters with shared courtyards

2 Thick and load-bearing shared walls should be shared neighbouring buildings.

3 Public and private functions should be considered while designing the shared courtyards.

To distinguish clearly between private and public spaces by observing existing spatial arrangements.

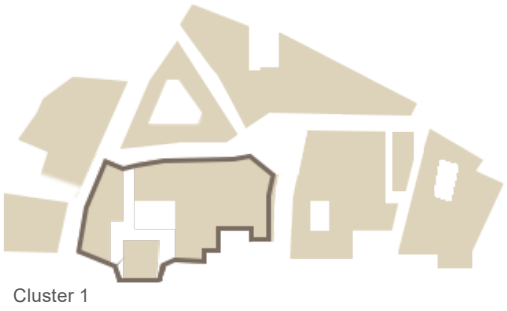


FIG. 23 Building Cluster

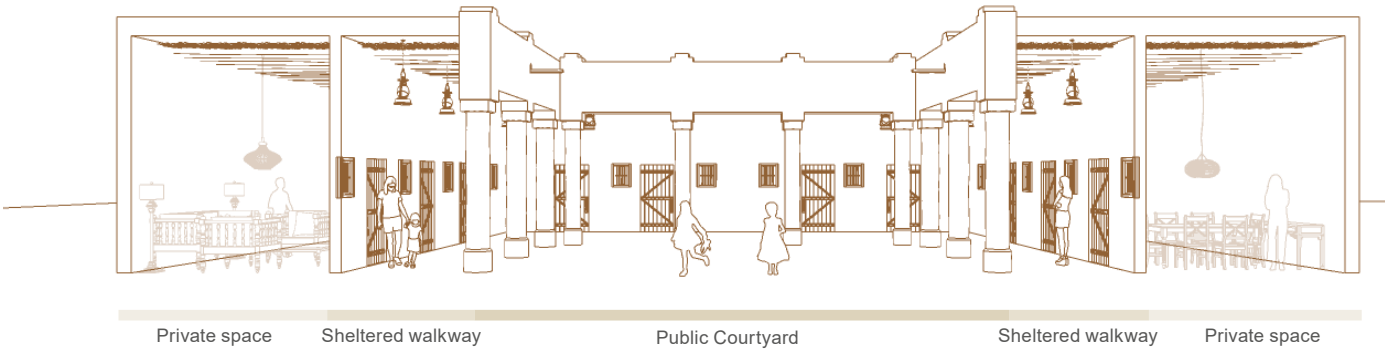
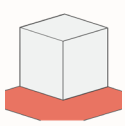


FIG. 24 Public courtyards

3 Elements

The individual parts that are the building blocks of the Northern Najdi architecture.

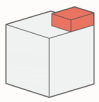
TAB. 2 Northern Najdi architectural elements

	GENERAL ELEMENTS	
	**Key characteristics**	Refer to "1 Key features" on page 18
	**Façade proportion**	Traditional Northern Najdi buildings should be defined by marked horizontal proportions indicated by a width-to-height ratio between 1.5:1 and 2.6:1. These proportions reflect the horizontal hierarchy and procession between public to private spaces that characterize traditional Northern Najdi buildings for low-rise to mid-rise residential and mixed-use buildings.
	**Window-to-wall %**	Some buildings should be highly opaque with a 0.7% opening ratio, while others should have more open façades with up to 12.4% of the façade's surface consisting of windows or doors. The apertures on the ground floor should generally be limited and narrow compared to the ones on the upper floors.
	**Opening proportions**	The façade's composition should be asymmetrical without a clear vertical order. Openings should be generally vertical with width-to-height ratios ranging between 1:2 to 1:5 for doors, 1:2 to 1:7 for windows, and a proportion of 1:1 for attic windows.
	**Composition**	Tripartite articulation is a typical feature of Northern Najdi buildings, highlighting the hierarchical elements of a building's elevation. Façades should generally be split into three separate tiers, base, middle, and top, each with its own distinct character. The base should usually consist of the first story but can vary depending on the overall building size.
	BASE ELEMENTS	
	**Entrances**	Should not exceed the ground floor story in height, should consist of either triangular arches or longitudinal contrasted dark timber shutter doors, light gypsum frames on external walls, and recessed from the main wall. Timber should be used for doors and jambs and can be highly patterned or carved. See expanded guidelines "3.2 Doorways and entrances" on page 31
	**Shop fronts**	Retail or commercial façades should typically be located at the ground level and should only include rolling shutters when carefully integrated with the architecture (e.g., they are recessed, co-ordinated).
	**Arcades**	Colonnades and arcades are typical to Najdi architecture. They should usually run along the ground floor, show minimal decoration, and consist of clean flat arches that sit on squared columns that are flush with the main façade.
	**Curtilage**	Urban furniture, lighting, green areas, and water features should be integrated into the surrounding areas of the building. These elements should emphasize the Northern Najdi style by using locally sourced materials, Najdi patterns, native plants, or Najdi architectural features and details that merge into the main façade.

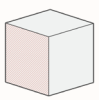
MIDDLE ELEMENTS

 **Wall articulation**	Tripartite articulation should be adopted while showing different characters for the base, middle, and top tiers. The base tier should be located on the ground floor and can incorporate a materiality distinction, such as stone, to contrast with the rest of the mud wall of the base and top areas. See expanded guidelines "3.1 Tripartite articulation" on page 30
 **Windows and openings**	See expanded guideline "3.3 Windows and openings" on page 32.
 **Projecting elements**	The entrance bays can project in front of the main façade and arcades can be added outside the building plot. However, design should not adversely affect circulation or safety in the public realm. Some elements such as triangular bands, opening frames, shading structures, turmahs, or mizabs should be distinctive features that project outwards from the main wall. The size and proportion of some of these elements such as turmahs, varies from one region to another as it is wider in the Northern and Central regions than in the Eastern Najdi.
 **Recessed elements**	Should be set inwards from the building façade, extending the access or perception of the public realm inside the plot boundary. This includes recessed entrances, arcades, or overhangs.
 **Shutters and shading**	Ornamented timber shutters should be used while; projecting metal awnings should not. Should follow the vernacular language as illustrated in this section.
 **Corner features**	On narrow or busy street intersections, corners should be chamfered and rounded at the junction of two exterior walls at the base to improve pedestrian flow.

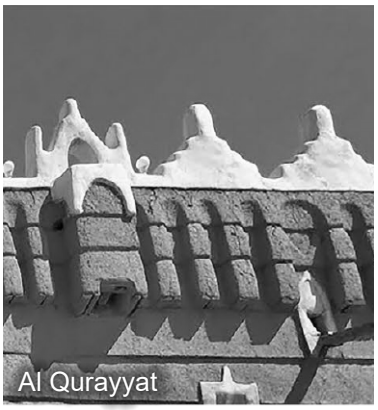
TOP ELEMENTS

 **Roofscape**	All rooftops should generally be flat and accessible from the central courtyard. Their use as an amenity space is encouraged. See expanded guidelines "3.4 Roofscape perimeter & parapet detail" on page 33
 **Rooftop elements**	Rooftop pavilions or structures can be covered or exposed and should give direct access to the roof terrace. This area can become a gathering space that provides privacy and ventilation.
 **Parapets**	They should be either crenelated or flat. They should become an extension of the external walls above the roof level to provide privacy to the rooftop. Parapets can also be combined with fenestrations at the base, to facilitate airflow in habitable spaces.

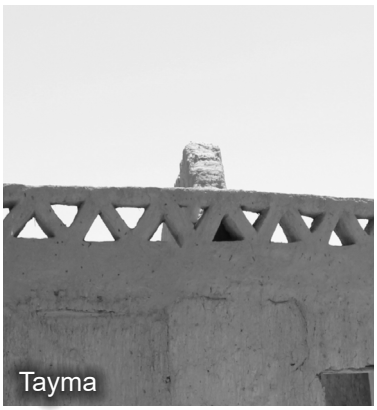
OTHER ELEMENTS AND ORNAMENTATION

 **Materiality**	See expanded guideline "4 Colors and materials" on page 34
 **Color**	See expanded guideline "4 Colors and materials" on page 34
 **Pattern**	See expanded guideline "5 Patterns" on page 36

Top

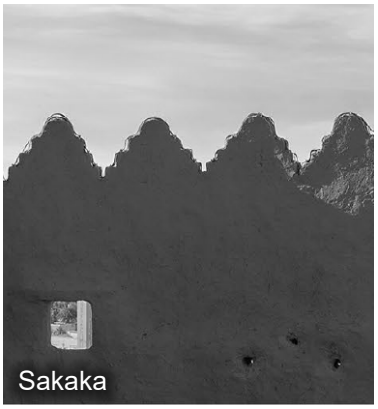


Traditional crenelations

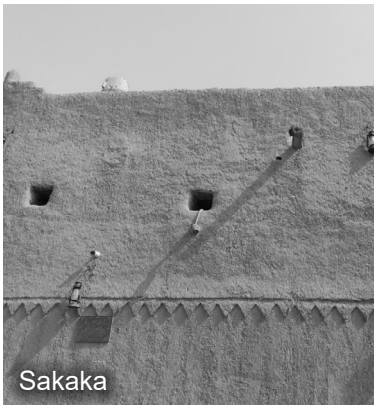


Trilateral void parapet

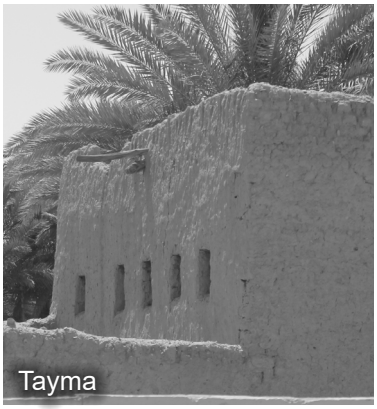
Mud based parapet



Traditional crenelations

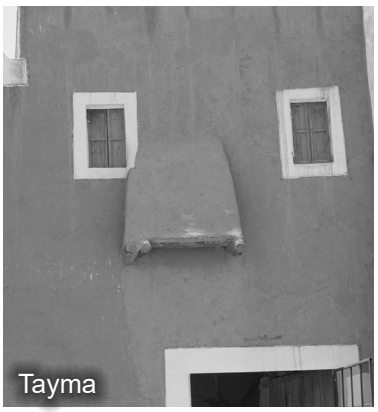


Mud based parapet

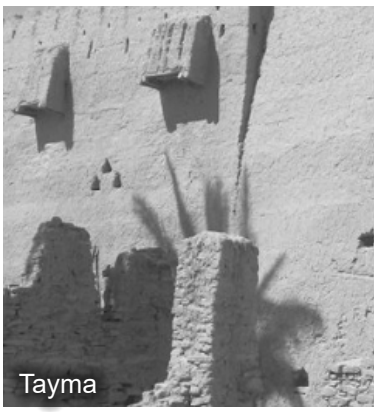


Mud based parapet

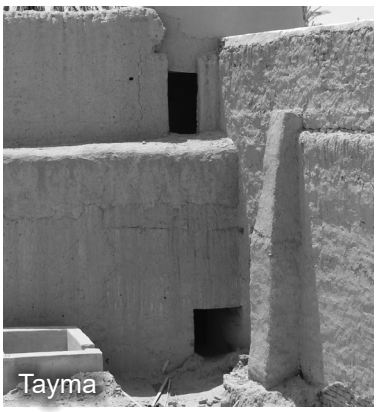
Middle



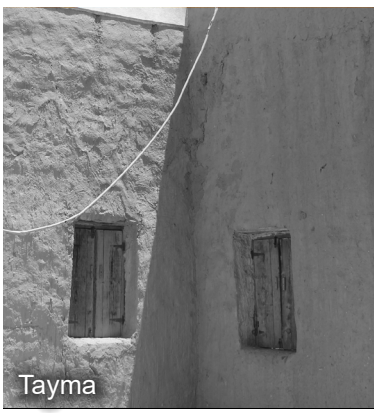
Typical turmah



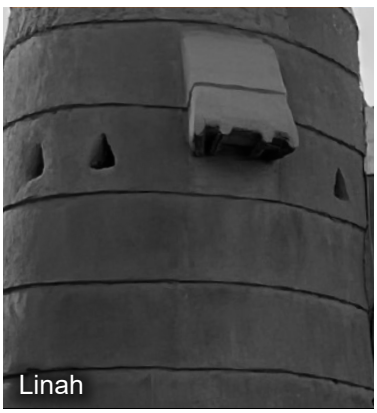
Typical turmah



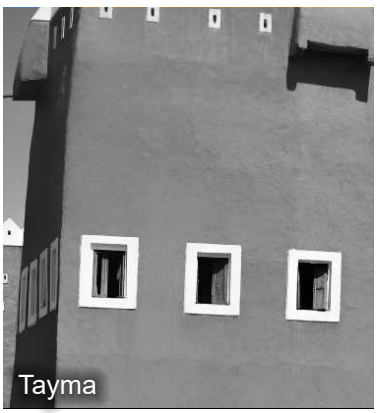
Depth in façade



Typical window openings

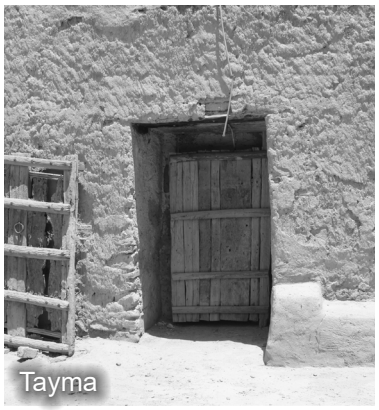


Articulated fenestration with turmah

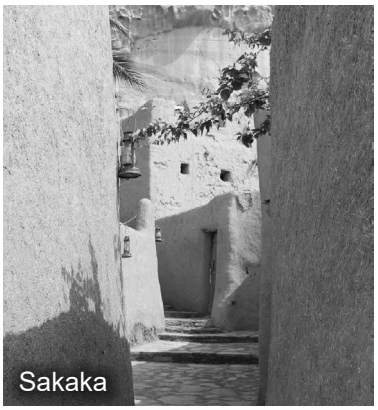


Painted white framed openings

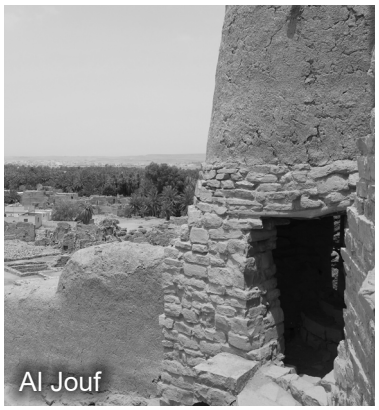
Base



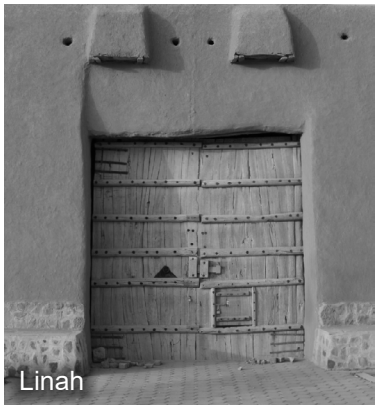
Traditional door



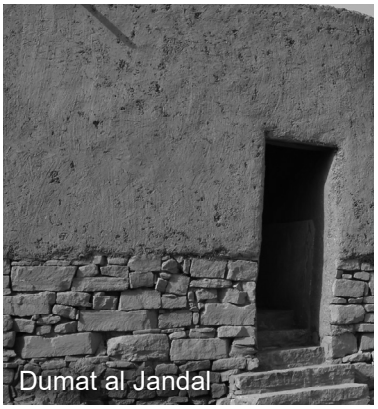
Pathway leading to entrance



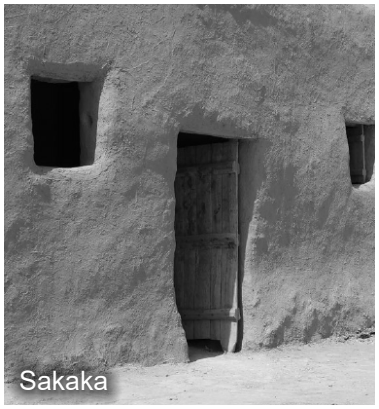
Entrance with stone base



Traditional double door

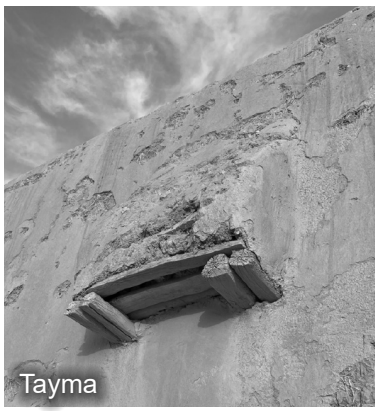


Entrance with stone base

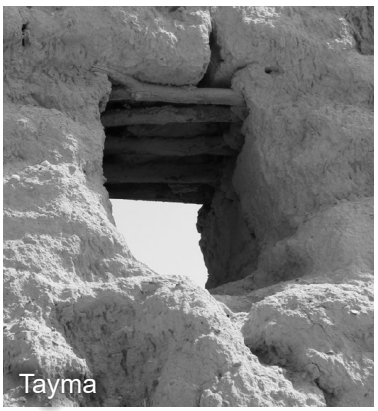


Traditional doors and windows

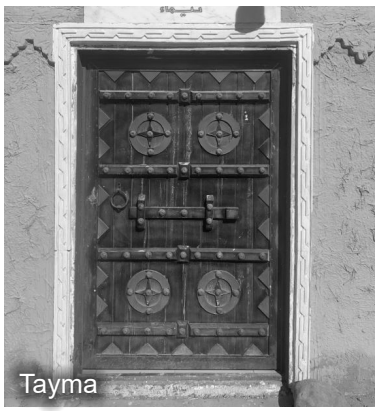
Ornaments and other elements



Typical turmah

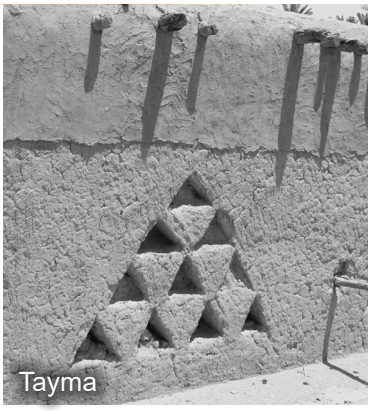


Wall openings

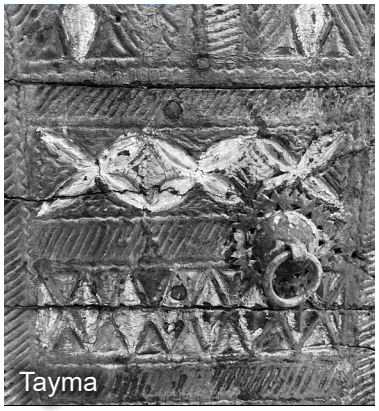


Ornamented door

Corner parapet detail



Traditional patterns



Example engraved ornamentation

3.1 Tripartite articulation

Tripartite articulation is a typical feature of Najdi buildings that highlights the hierarchical elements of a building's elevation. Building façades are typically split into three separate tiers of base, middle, and top, with each tier having its own distinct character. The top section of the building should include various decorative and fenestration elements that address the roofscape of the building.

The most common elements found in Northern Najdi settlements include doorways, turmahs, fenestrations, and crenelations.

1 Squared openings and windows should be articulated with a change in materiality and/or color from the main façade.

2 Windows to the outside should be limited or positioned above human eye-level to maintain the privacy of the interior.

3 Frames should usually be ornamented and projected from the main façade.

4 Windows should be made from local wood and, when located on lower levels, stone lintels should figure on top.

5 Middle openings should be smaller in scale in comparison to the rest of the façade and they should often pair with base elements.

Elements depicted here should be a starting point for interpretation rather than direct duplication.

To evoke the character and presence of traditional Najdi architecture throughout the Northern Najdi region.

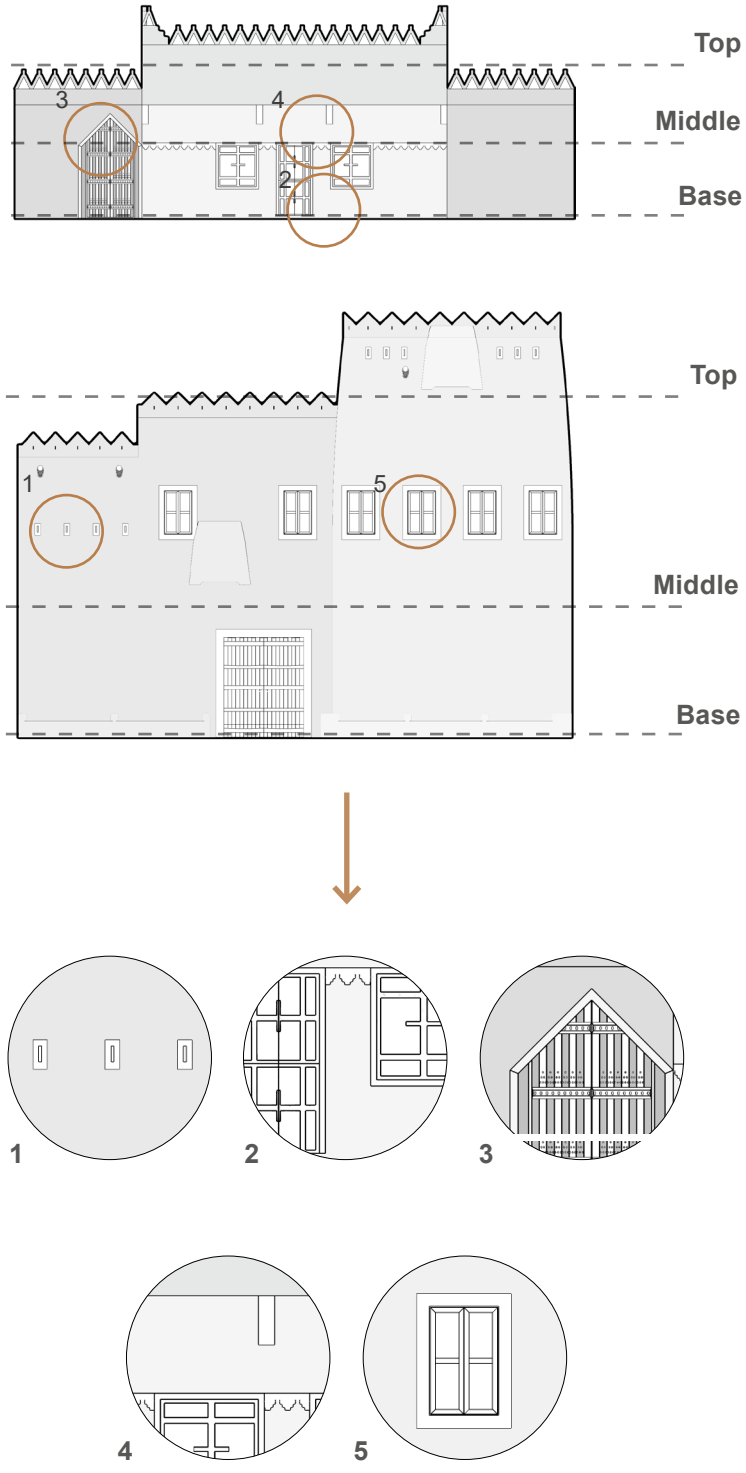


FIG. 25 Tripartite articulation elevations

3.2 Doorways and entrances

The traditional architecture of the Northern region benefits from the same Najdi influence that is also found in Central and Eastern regions; the traditional najdi doors are one of the key features that bring the local architecture.

Characteristics include:

1 Informal groupings; the doors' alignment should figure in relation to the interior rooms' layout rather than the external façade's composition. The position of the private or public doors should also depend on the planning of the street, discerning between spaces that are considered private and those which are communally shared.

2 Access to buildings should be directly from the street.

3 Doors should be characterized by:

- Geometrical patterns.
- Local wood and stone lintels on the top.
- Metallic chains and ring handles.

4 Simple squared openings with flat tops should figure on solid walls; avoid the use of semicircular and pointed arches as they are not used in this region.

5 Openings should be surrounded by ornamental plaster frames.

6 Doors should be generously scaled and employ decorative over-panels. Doors should also be of a width-to-height ratio in which the width ranges from 1:2 to 1:5.

Elements illustrated here should be used as starting points for interpretation and not simply duplicated.

To continue the tradition of ornamented front doors for future generations.

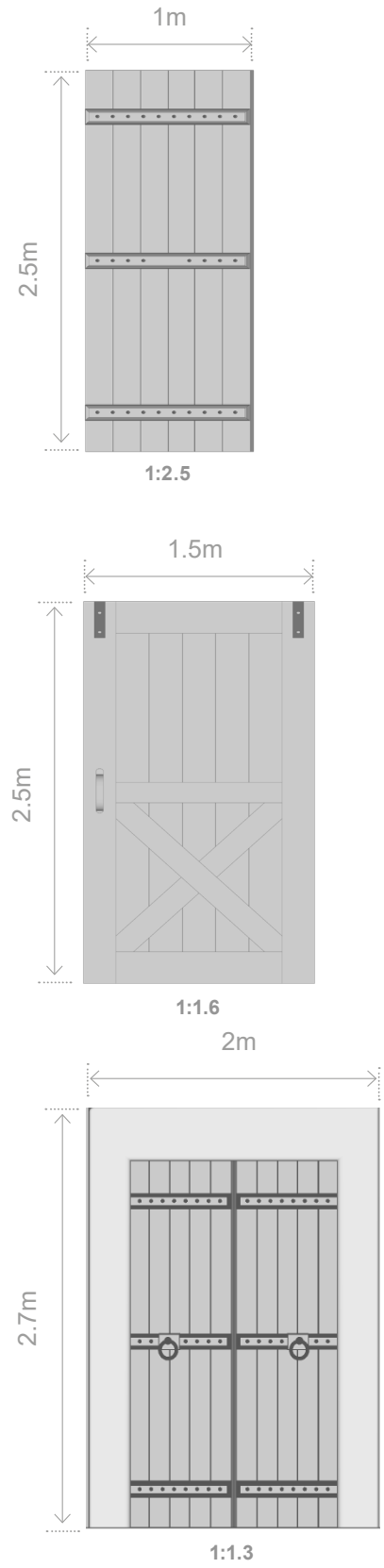


FIG. 26 Traditional door elements

3.3 Windows and openings

The traditional architecture of the northern region benefits from the same Najdi influence found in the central and eastern regions, which encompasses crenelations, triangular bands, fenestrations, doors, and windows. Characteristics include the following:

1 Informal groupings; the windows' alignment should figure in relation to the layout of the rooms' interiors rather than the external façade's composition.

2 Windows should be characterized by:

- Geometrical patterns.
- Local wood as material.
- Metallic chains and ring handles.

3 Simple squared openings with flat tops should figure on solid walls; avoid the use of semicircular and pointed arches as they are not used in this region.

4 Openings should usually be surrounded by ornamental plaster frames.

5 Upper floors should generally have more openings than ground floors; these openings should be more generous in scale than the ones at the ground level.

6 In general, vertical windows should be of proportions within the 1:7 - 1:2 margin, and attic windows, which sit horizontally, a more suitable proportion of around 1:1.

Elements should be used as starting points for interpretation and not simply duplicated.

To evoke historical window formation and urban character of Northern Najdi throughout the region.

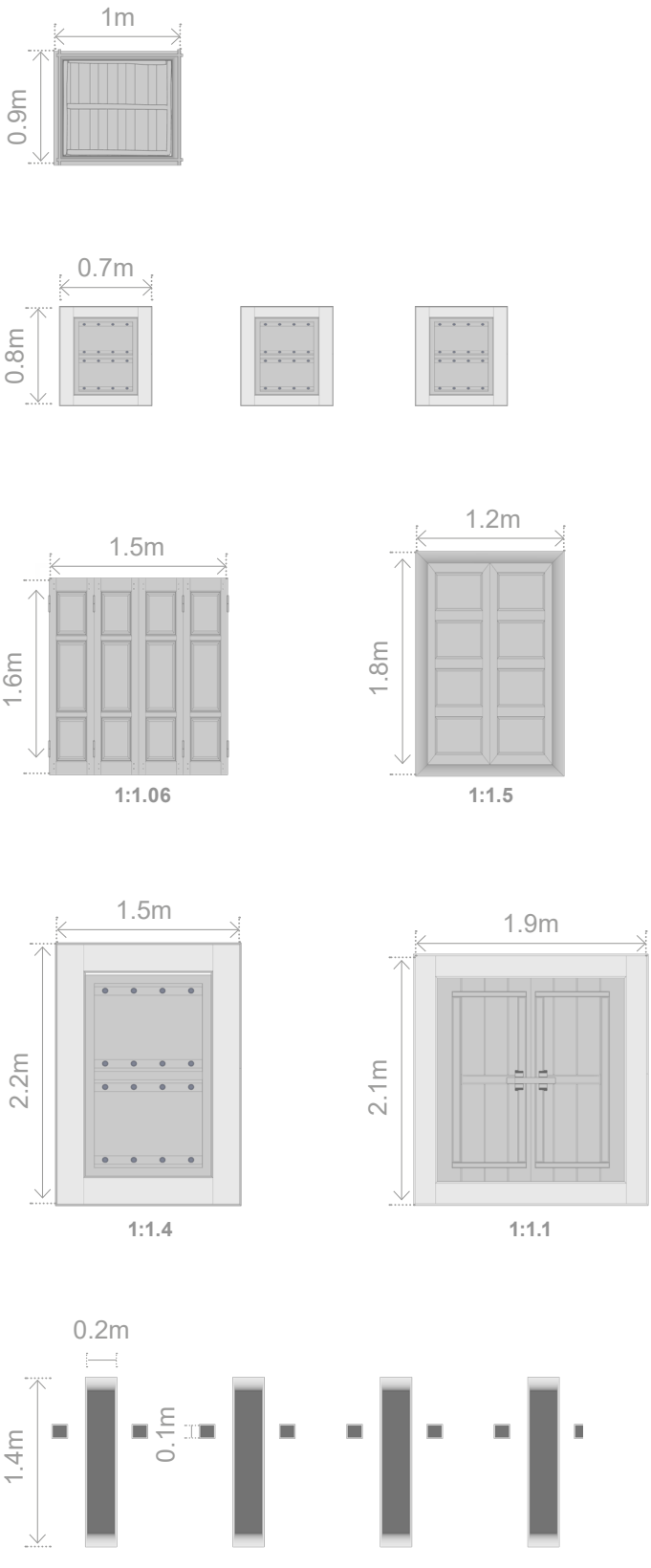


FIG. 27 Traditional window elements

3.4 Roofscape perimeter & parapet detail

The traditional roofscape of the Northern Najdi region is characterized by stepping rooflines and habitable roof terraces. Characteristics include the following:

1 Crenelated terraces; façades should run up flush into tall crenelated terraces that provide privacy between terraces and buildings.

2 The size, proportion, and shape of the crenelation may vary depending on the building's use or status. In the Northern Najdi region, simplicity of form should lead to sincere and austere aesthetics in comparison with other regions.

3 Crenelations should be carved from mud and can be covered with white lime plaster.

4 Fenestrations, which are small geometric openings in the traditional Najdi façade that provide ventilation and lighting, should be adopted. Crenelations should usually be combined with fenestration bands to facilitate the airflow to the roofscape.

Elements should be used as starting points for interpretation and not simply duplicated.

To create functional inhabitable roof spaces screened from each other and neighboring buildings.

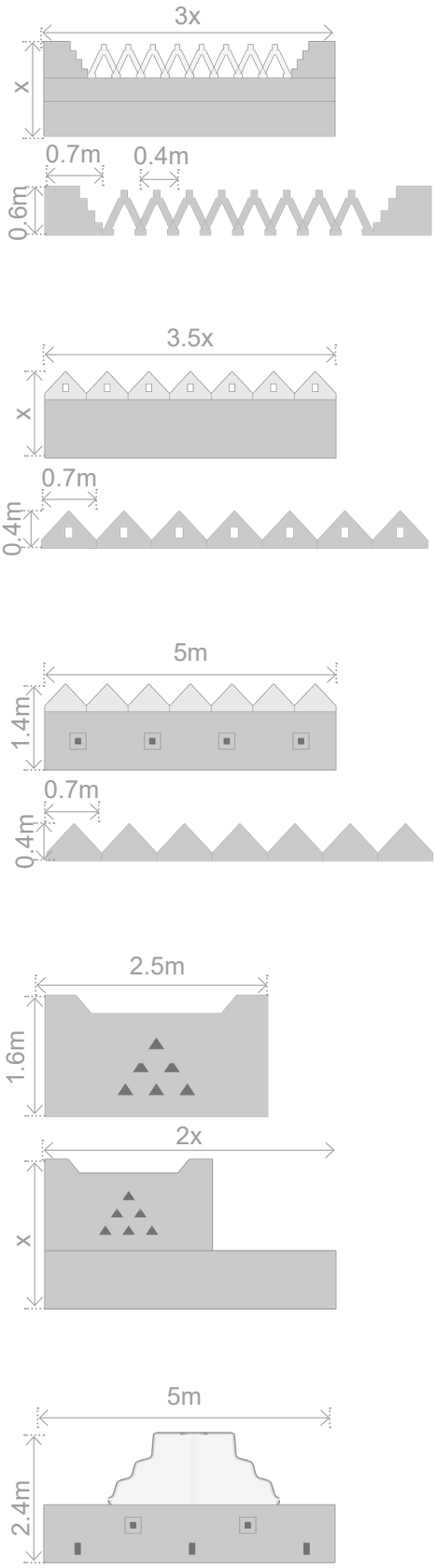


FIG. 28 Traditional roofscape perimeter and parapet detail

4 Colors and materials

The prevalent materials used and color range found within the architecture of Northern Najdi.

Utilizing a unified material and color scheme strengthens the architectural character and contributes to a harmonious and unique urban aesthetic. The following recommendations should be applied in Northern Najdi architectural character:

1 Align the chromatic scale of buildings with the surrounding landscape by matching the hues of different natural elements and materials within the immediate environment.

2 Use earth tones as primary colors for the building's palette and layer with assorted lighter or darker colors as secondary or accent colors.

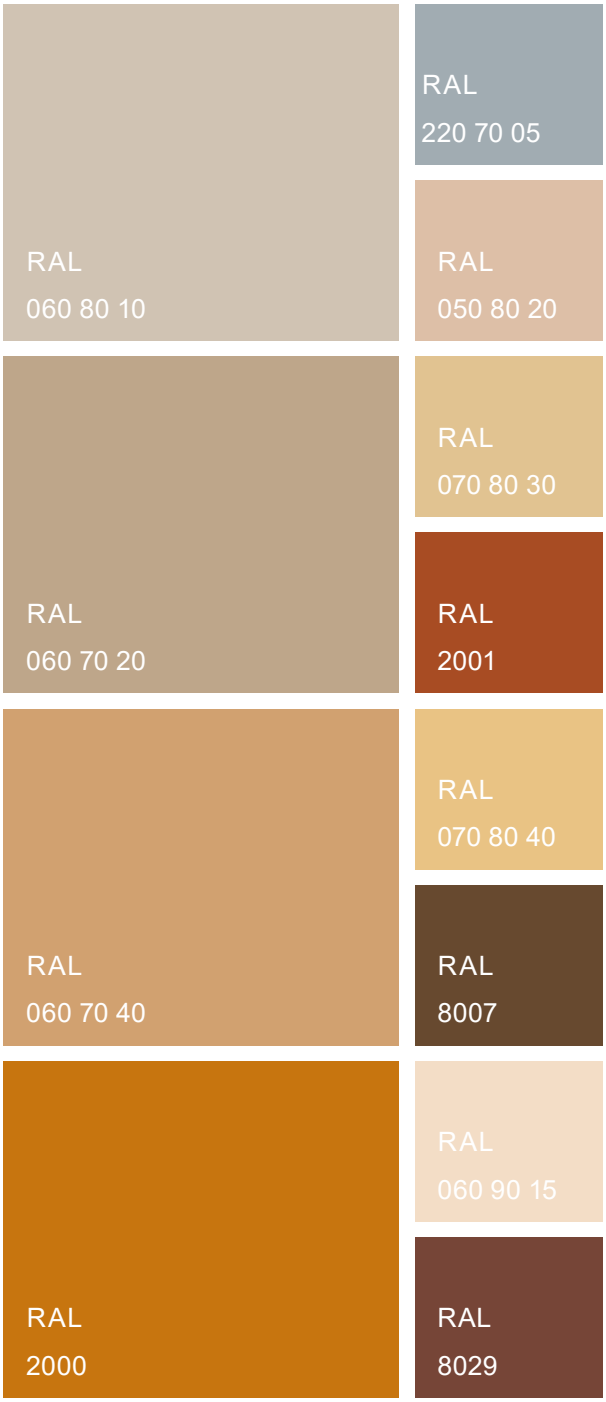
3 Base colors are used on walls and should be chosen in correlation with the hues of sand and stones specific to each site. Color examples include light grays and shades of beige with earthy yellow-orange undertones.

4 Prioritize the use of natural and locally sourced materials such as clay, stone, tamarisk wood, and palm materials.

5 Create contrast with textures by layering smooth finishes such as gypsum with rough or textured surfaces like stone, earth, or wood.

6 Add shadows to the façades through the use of protruding elements, openings and perforated surfaces.

To integrate the building in its geographical and cultural context by unifying and strengthening the local architectural character through material use.



RAL codes are part of a universal color-matching system used to provide consistency in architectural finishes. It is recommended that teams verify colours with a physical fan deck. For more information visit www.ral-farben.de/en/

FIG.29 **COLORS AND MATERIALS**

5 Patterns

Common motifs and patterns used in the traditional craftsmanship and material culture of the Northern Najdi.

In the Northern Najdi region, there is the unique Al Sadu, which is an ancient tribal weaving craft that portrays the rich cultural heritage of the North Najdi region. Each element has a specific meaning, resulting in a unique symbol. The woven geometric patterns and symbols reflect the traditional tribal lifestyle, the desert environment, and the creative expression of local architecture.

1 Original traditional patterns should be consulted as they are composed of multiple adjacent and patched layers of geometric motifs.

2 Individual traditional motifs should be extracted and abstracted from their traditional patterns to form elementary motifs.

3 Each geometric motif should be re-interpreted in a first instance by repeating it, thus forming a new geometric pattern.

4 The newly created patterns should then be further re-interpreted in a second instance by abstracting it, rendering it a simpler version yet still inspired by its predecessor.

5 Re-interpreted patterns should be used in the façades of new buildings whether in fenestrations or crenelations.

Patterns illustrated here should be used as starting points for interpretation and not simply copied.

To create spaces that embody continuity with patterns of traditional buildings, whether through the aesthetics of the façades in the exterior or the lighting effect that they create in the interior.

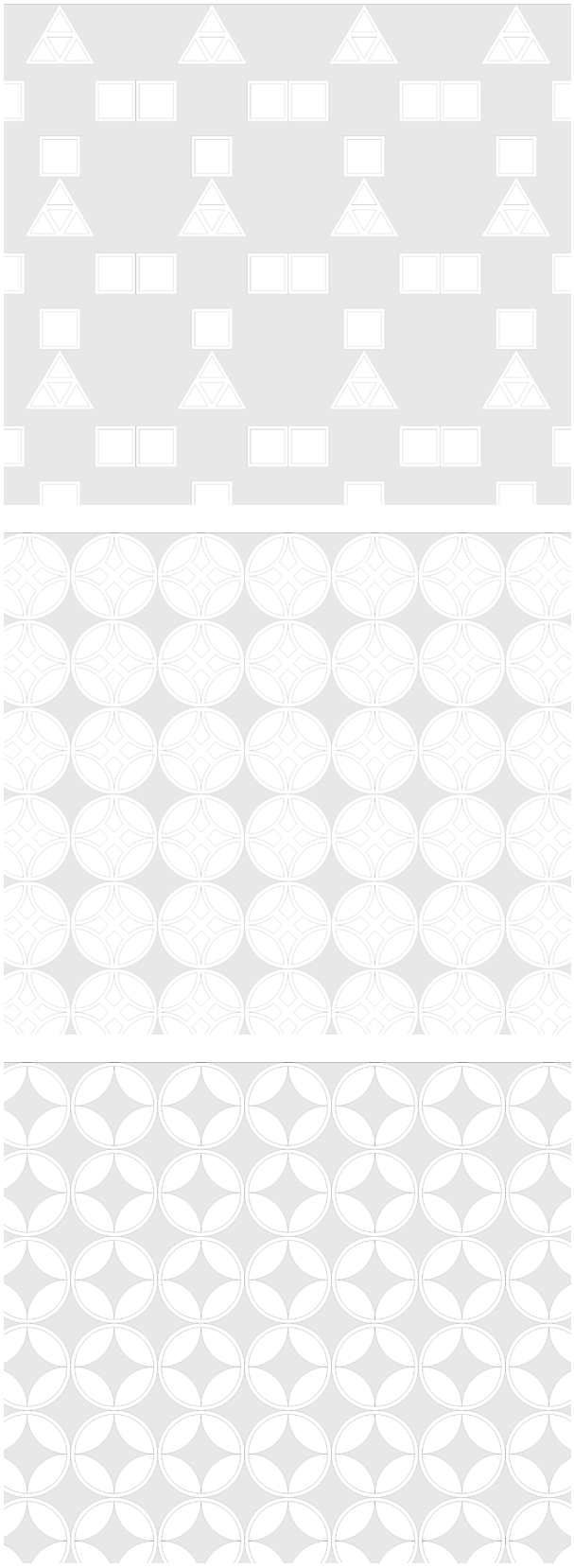


FIG. 30 Patterns abstraction

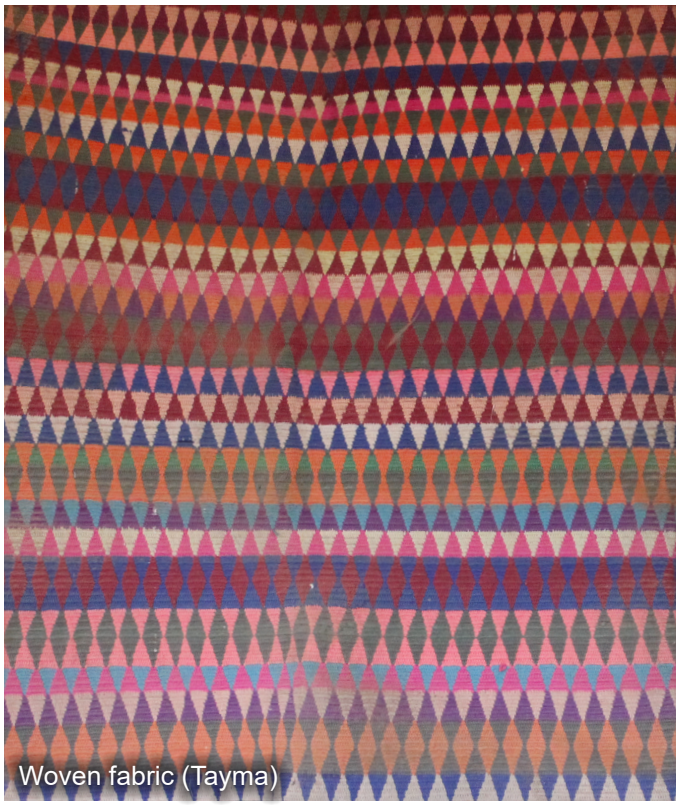

Wall openings (Tayma)


Door detail (Tayma)

Wall openings (Tayma)


Woven fabric (Tayma)


Punched wall pattern (Tayma)


Woven fabric (Tayma)


Woven carpet (Tayma)


Window shutter detail (Tayma)


Interior details (Tayma)

FIG.31 **PATTERNS**

6 Applying the architectural character

Guidance for the careful interpretation and application of architectural character to contemporary developments

6.1 Interpretation

Good application of architectural character does not mean direct copying of historical examples. Their contemporary use should involve interpretation: a selective emphasis of characteristics to create meaning and beauty in its new context. Designers can selectively use formal characteristics such as:

- Color (hue, tonality, tint).
- Shape (figure, outline, 2-D geometry).
- Form (volume, 3-D geometry).
- Texture (physical surface quality).
- Line (verticals, horizontals, diagonals, zigzags, curves, dashes, etc.).
- Value (lightness to darkness).

Interpreted elements can be further transformed in the way they relate to one another. Designers can play with compositional rules such as:

- Balance (equality or harmony of parts).
- Contrast (difference of parts).
- Emphasis (strengthening of parts).
- Movement (change, directionality).
- Pattern (repetition, symmetry).
- Rhythm (even and uneven spacing).
- Unity/variety (degrees of variation).

Designing with architectural characters is an interpretive art, an effort to express the spirit and essence of the original character in new yet familiar ways.

To encourage contextually sensitive contemporary design.

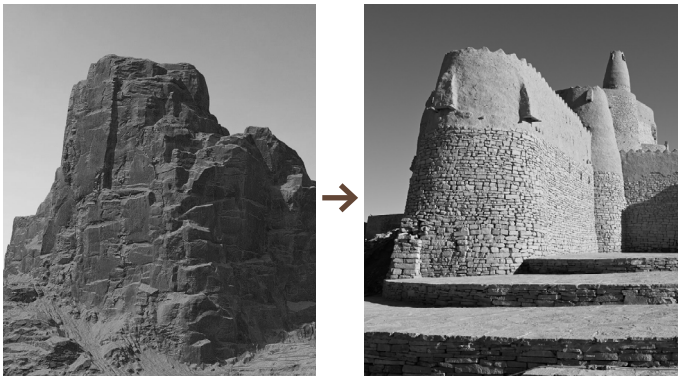


FIG. 32 Example of building form abstraction*

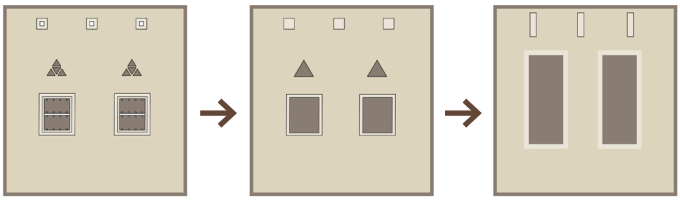


FIG. 33 Example of window shape abstraction*

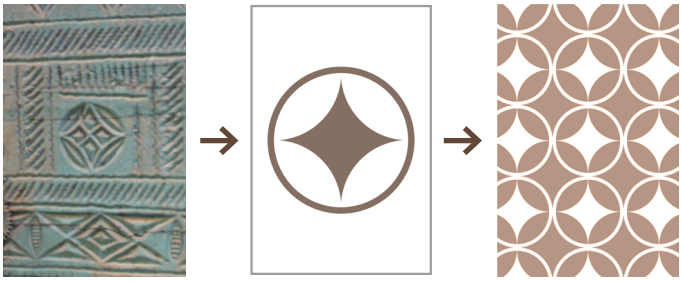


FIG. 34 Example of pattern abstraction*

*Note: Diagrams in this chapter are for explanation of design concepts only. The examples are taken from a variety of sources, and do not form part of the definition of the Northern Najdi architectural character.

6.2 Scaling

Architectural characters often come from historical building types of a particular size. When applied to new developments of a dramatically different size, the original character can become distorted or repeated in a way where their quality and craftsmanship are reduced.

When applying architectural characters to new developments, designers should:

1 Be sensitive to the challenges of large project sizes. Break down building massing into smaller, more diverse and interesting massings that can better fit traditional elements of architectural character.

2 Observe the way elements are related to one another and to interior layouts in the source examples of architectural character.

3 Avoid mechanical repetition of elements without a clear design intention.

4 Respect the proportion, size and construction logic of the original architectural elements.

5 Do not scale and distort a small elements into oversized graphic features that ignore the principles behind the use of the original element.

6 Pay special attention to building elements visible from the public realm, especially at the ground floor. The closer the element is to the public, the greater the fidelity and quality it should be. Conversely, elements farther away from public view may be more highly abstracted.

To successfully apply elements of traditional architectural character to large contemporary buildings.

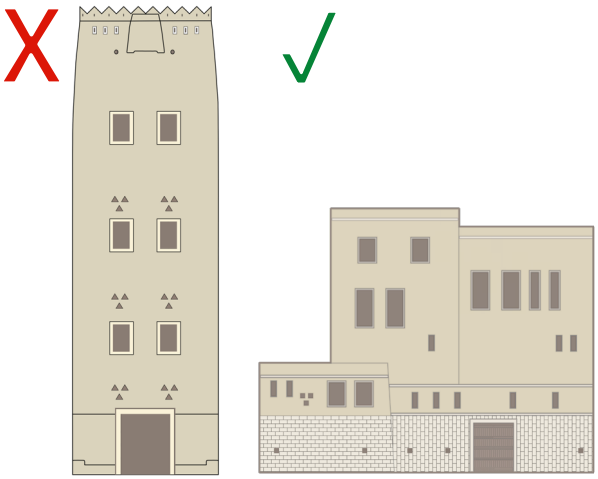


FIG. 35 Break down building massing to better fit traditional elements of architectural character*

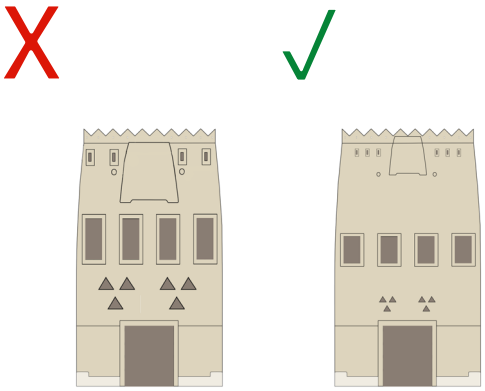


FIG. 36 Do not scale and distort smaller elements into oversized graphic features*

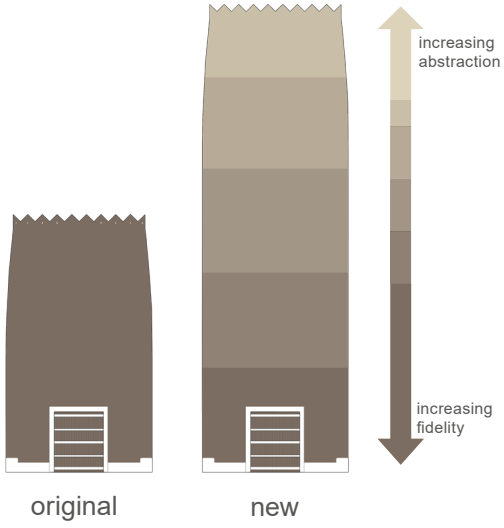


FIG. 37 Pay attention to building elements near the public realm, especially at the ground floor*

6.3 Functionality

Architectural elements should perform functionally like their traditional counterparts, and not be applied superficially like graphic signage.

1 Architectural elements should be purposeful, contributing to the climatic or technical performance of a building. (For example: shutters should be operable, providing shading and privacy.)

2 Architectural characters should not be applied in a superficially like wallpaper on an unrelated building form.

3 Architectural elements should not employ material fakery. (For example: the use of one material that pretends to be another.)

4 Ornamental architectural elements are permitted where they strengthen the character and improve the quality of the building.

To maintain the functionality of architectural elements.

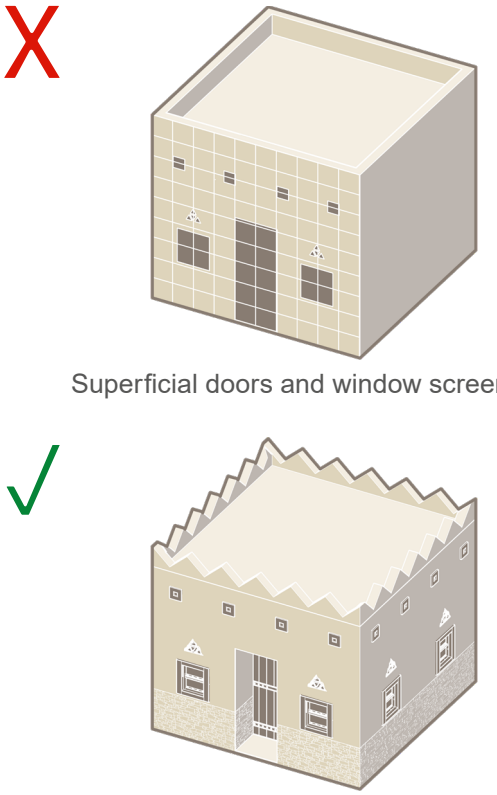


FIG. 38 Example of functional architectural elements*

6.4 Adaptation

The application of traditional architectural styles to new building types requires sensitive adaptation.

1 Precious materials from the original may need to be substituted with suitable replacements.

2 Some architectural elements may need to be adapted for new building systems or methods of construction.

3 Some new building systems may clash with an architectural character, and should be avoided (for example: large space frames, spider-joint glazing, and large areas of curtain wall).

To apply architectural character through contemporary means.

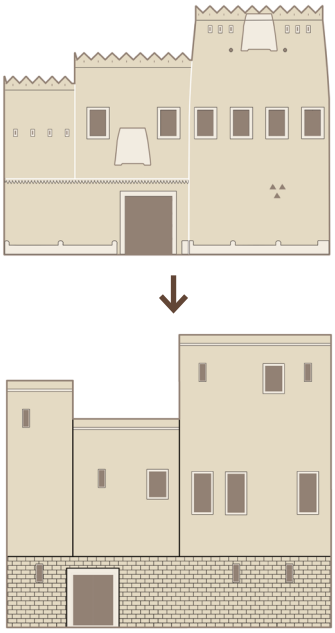


FIG. 39 Adaptation of traditional architectural elements to a contemporary building*

*Note: Diagrams in this chapter are for explanation of design concepts only. The examples are taken from a variety of sources, and do not form part of the definition of the Northern Najdi architectural character.

6.5 Mixing

Architectural characters are part of living cultures that continually grow and change. The boundaries defining architectural character areas should be understood as provisional, open to influences from all around, rather than as fixed borders. This invites the possibility of styles and character strengths mixing together in large scale projects, particularly in sites located on the edge of two or more characters.

1 In large scale projects, when the project site is located at the edge of two or more characters, the adjacent characters can influence the project by mixing the characters in different buildings, while prioritizing one above the other based on an analysis of the local context.

2 Avoid mixing more than one character within a single building; instead, the mixing should occur across different buildings depending on their location within the project and their functional use.

3 When mixing characters, the permitted style (traditional, transitional, or contemporary) should be taken into consideration based on the specified level.

4 Exercise informed creativity. Do not slavishly copy architectural characters.

To propose a clear method for the mixing and blending of architectural characters in large scale projects.

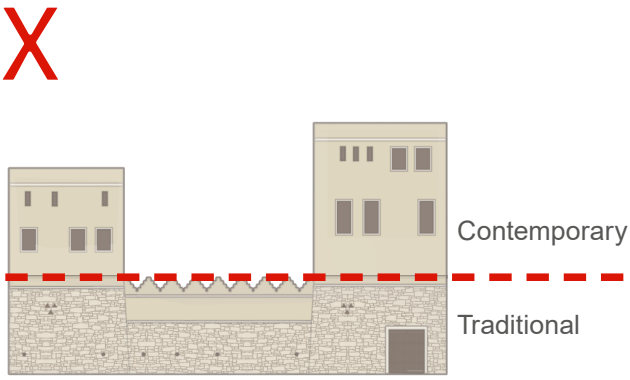


FIG. 40 Do not create hard breaks between mixed sources*

FIG. 41 Create gradual transitions between mixed sources and strengths of character application*

7 Worked examples

A set of design studies illustrating the application of the Northern Najdi character to buildings, at different strengths and scales.

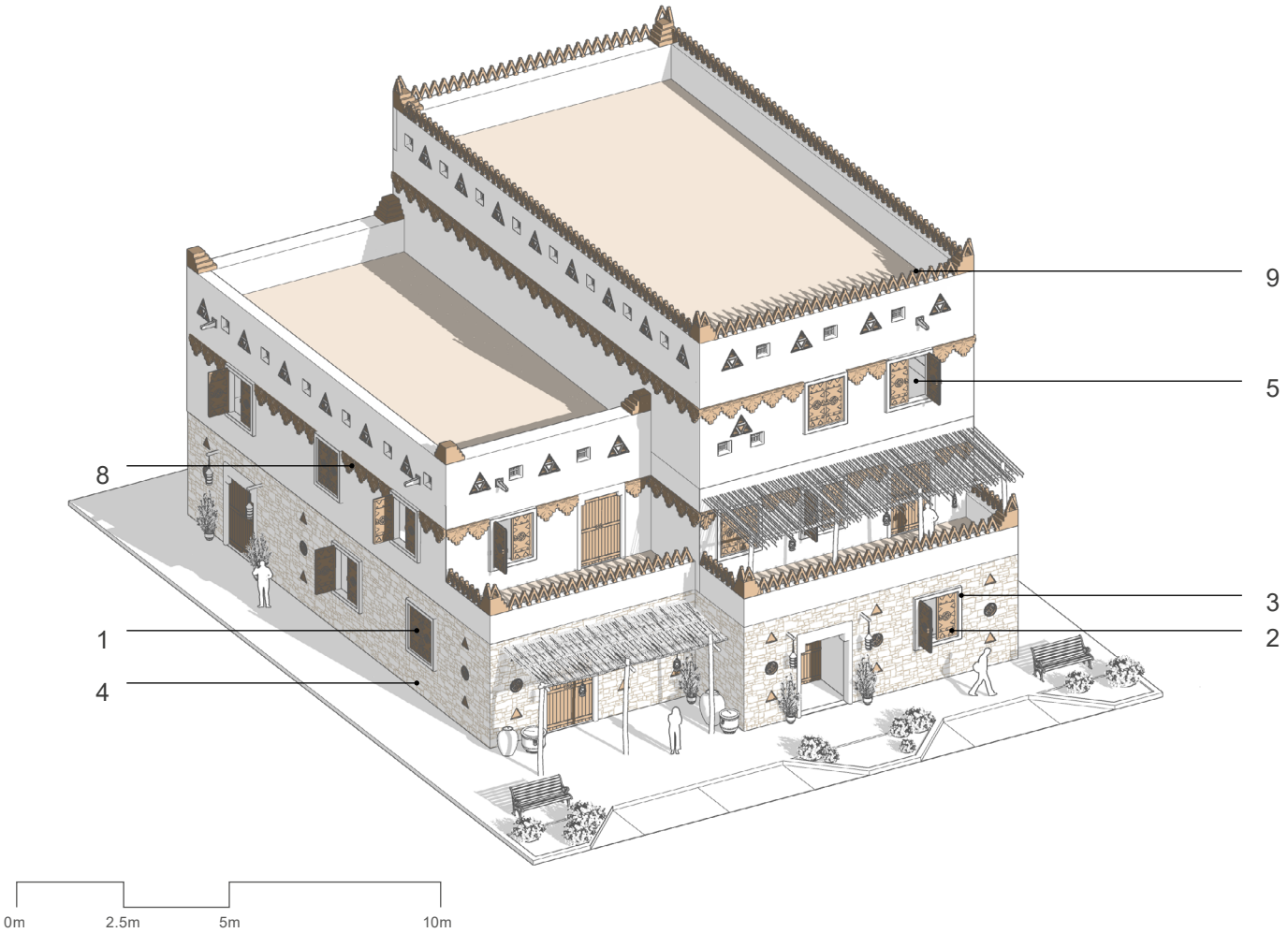


FIG. 42 Small size building

7.1 Traditional

This worked example of the traditional style incorporates a robust and comprehensive application of sections 3-5 of the guidebook. The scenario shows a continuum with the traditional stone and mud building materials, use of the traditional motifs and decorations in its most organic and geometric as well as asymmetric tower design.

1 The window-to-wall ratio vary from 20 to 40 %.

2 The elements of the façade are not symmetrical nor aligned to a central axis.

3 Windows and openings have ornamental gypsum frames with traditional timber shutters

4 The lower part of the building has a stone finish, without exceeding the ground floor, contrasting with the typical muddy walls on the upper levels.

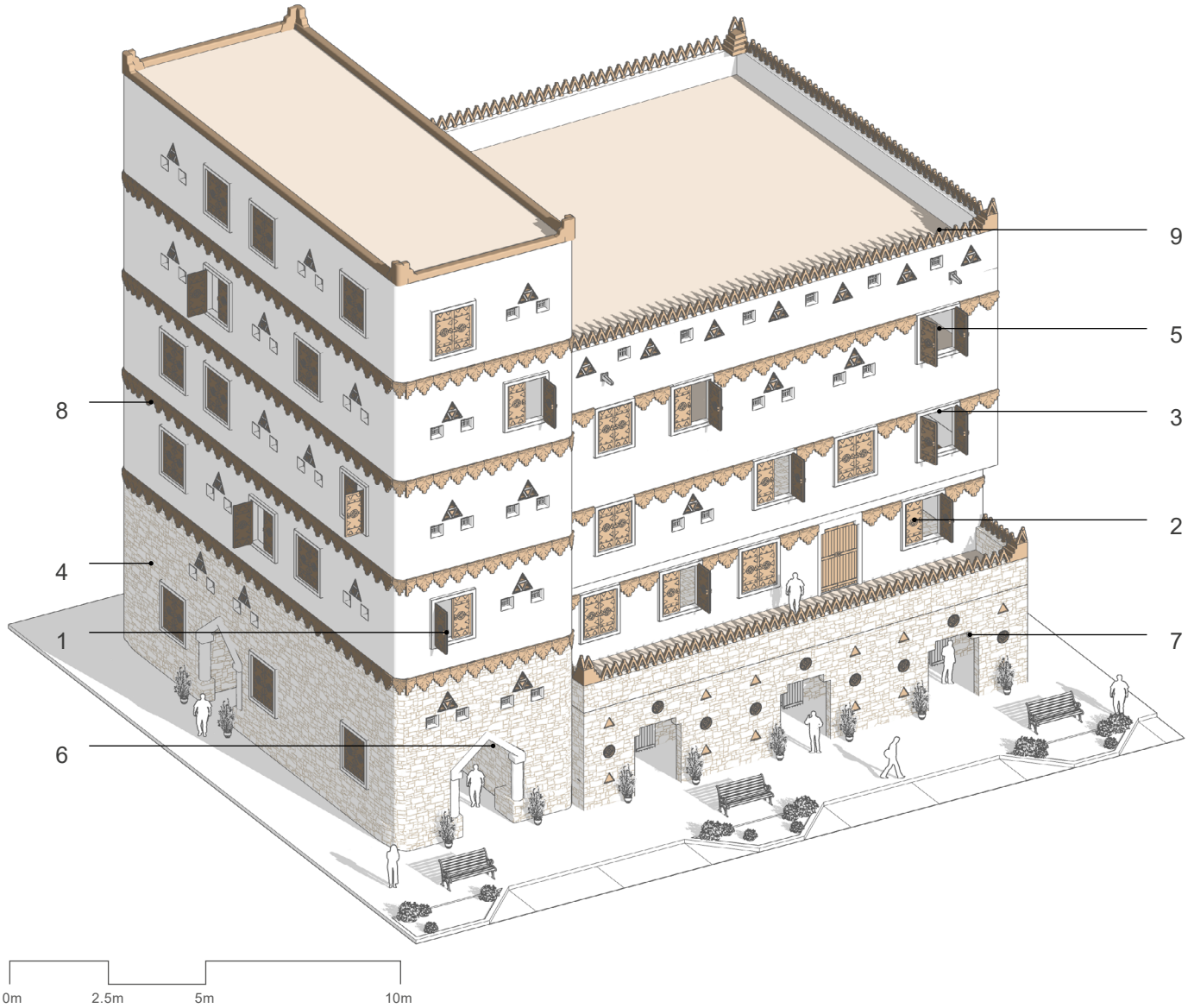


FIG. 43 Large size building

5 Opening are vertical and rectangular with a proportion of at least 1:2.

6 Passages and entrances are emphasized by a triangular arch.

7 Arcades have flat arches with squared columns that are integrated into the stone wall.

8 Each wall tier has their own character separated by a combination of triangular bands and a single shadow gap.

9 Rooftops consist of triangular crenelation bands and parapets with special corner units.

To develop adaptations in contemporary contexts which reuse material and built heritage of the region.

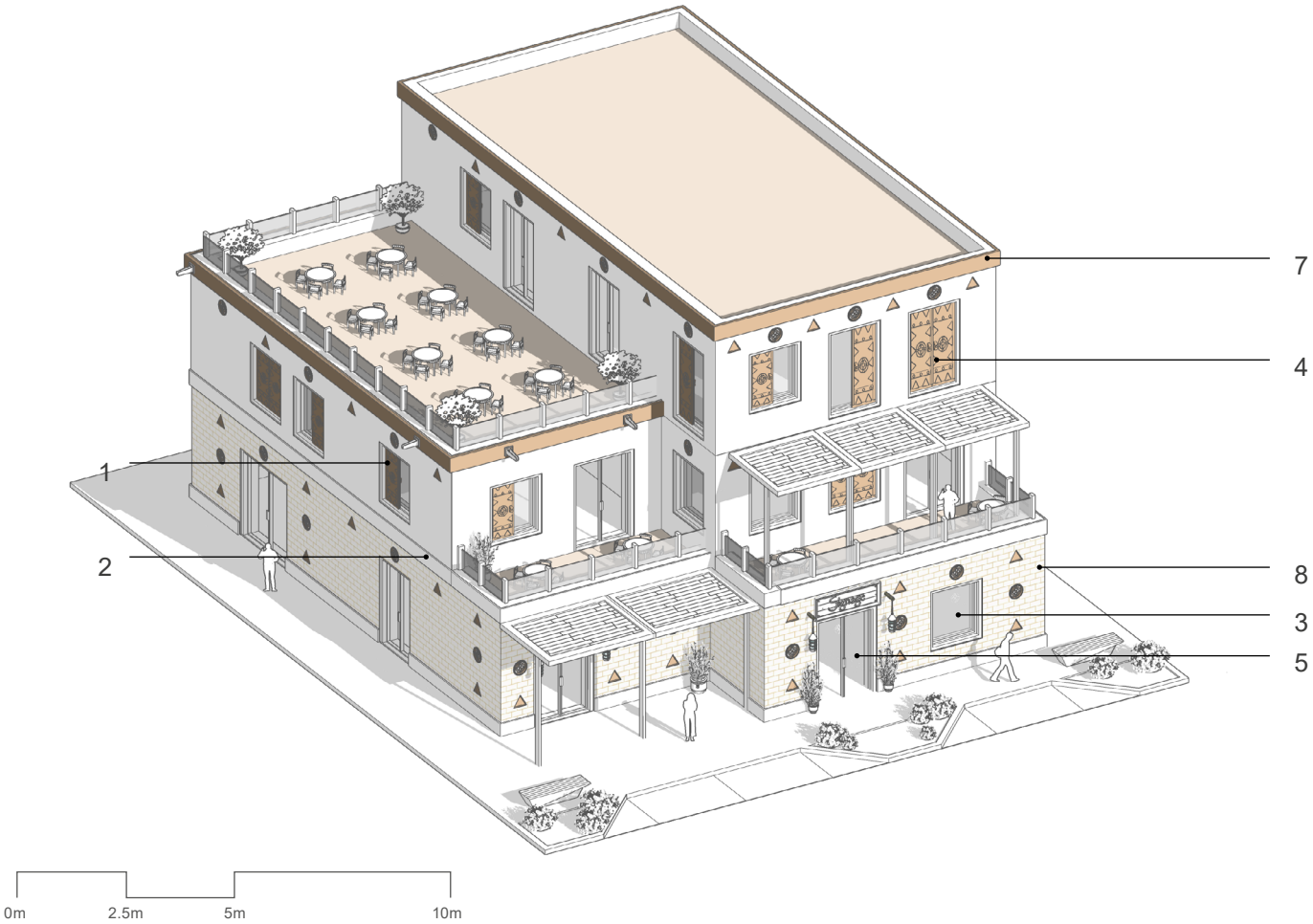


FIG. 44 Small size building

7.2 Transitional

This worked example of the transitional style incorporates a robust and comprehensive application of sections 3-5 of the guidebook. Borrowing and relying on the original traditional source, this scenario distills yet incorporates angular and more muted design appearances, such as flat parapets, bigger windows, and continuous façades.

1 Window-to-wall ratio ranges from 20 to 40%.

2 Façades are divided into three tiers which are separated and articulated by a combination of gypsum and fenestration bands.

3 Windows and openings are bigger than the ones of traditional buildings and follow the vernacular language using ornamented timber shutters and shading structures.

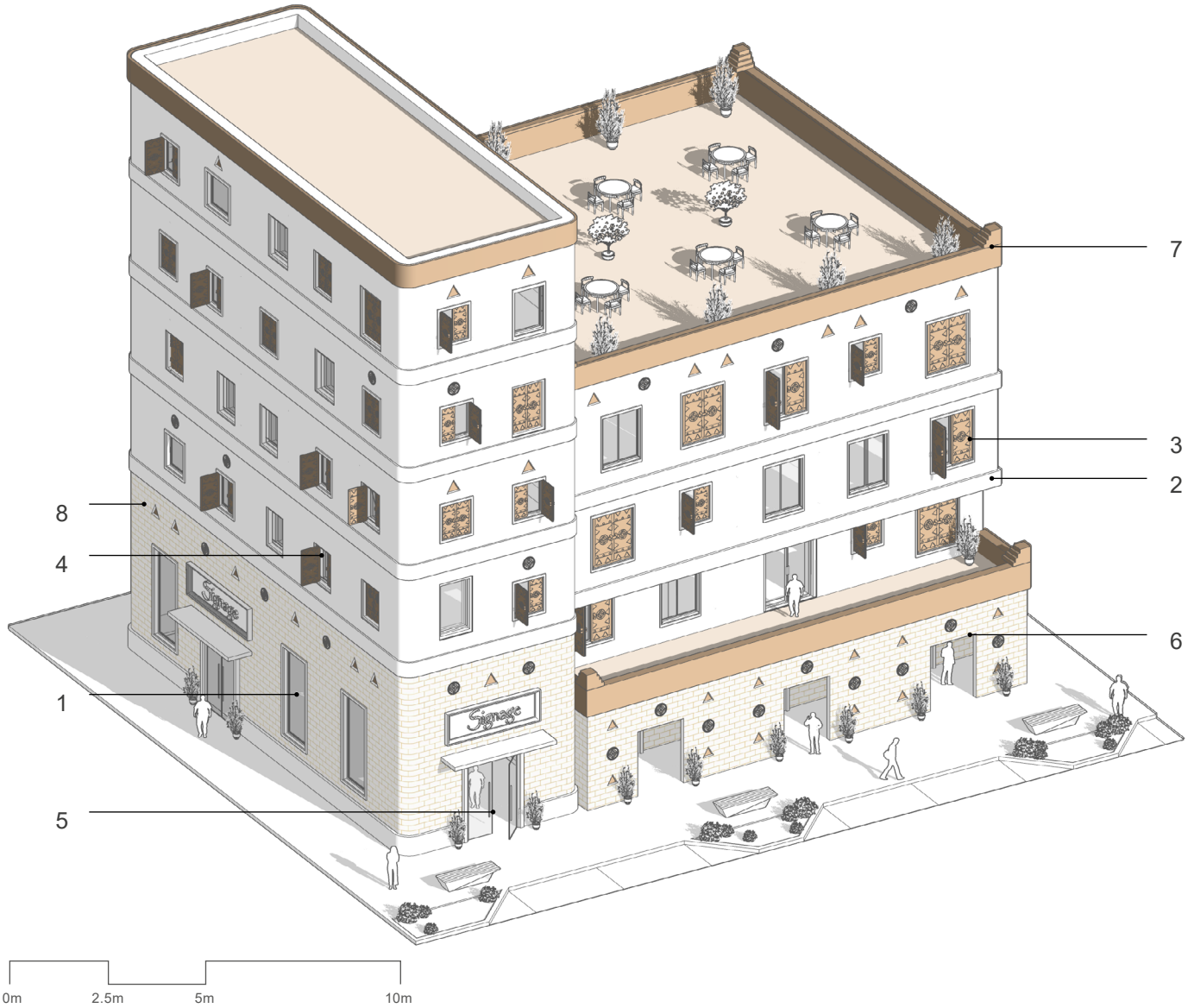


FIG. 45 Large size building

4 Opening proportions are longitudinal and range from 1:1 to 2:1 and vertically aligned from each level to another.

5 Entrances have a double glass door with a gypsum shutter on top.

6 Arcades are shaped as a sequence of stone walls with Najdi ornaments and flat arches.

7 Flat parapets with colors that contrast the main wall and are crowned with crenelations at corners.

8 The materiality combines stone and rendered wall and can go beyond the first floor.

To embrace modern living through built architecture which connects with traditional sources.

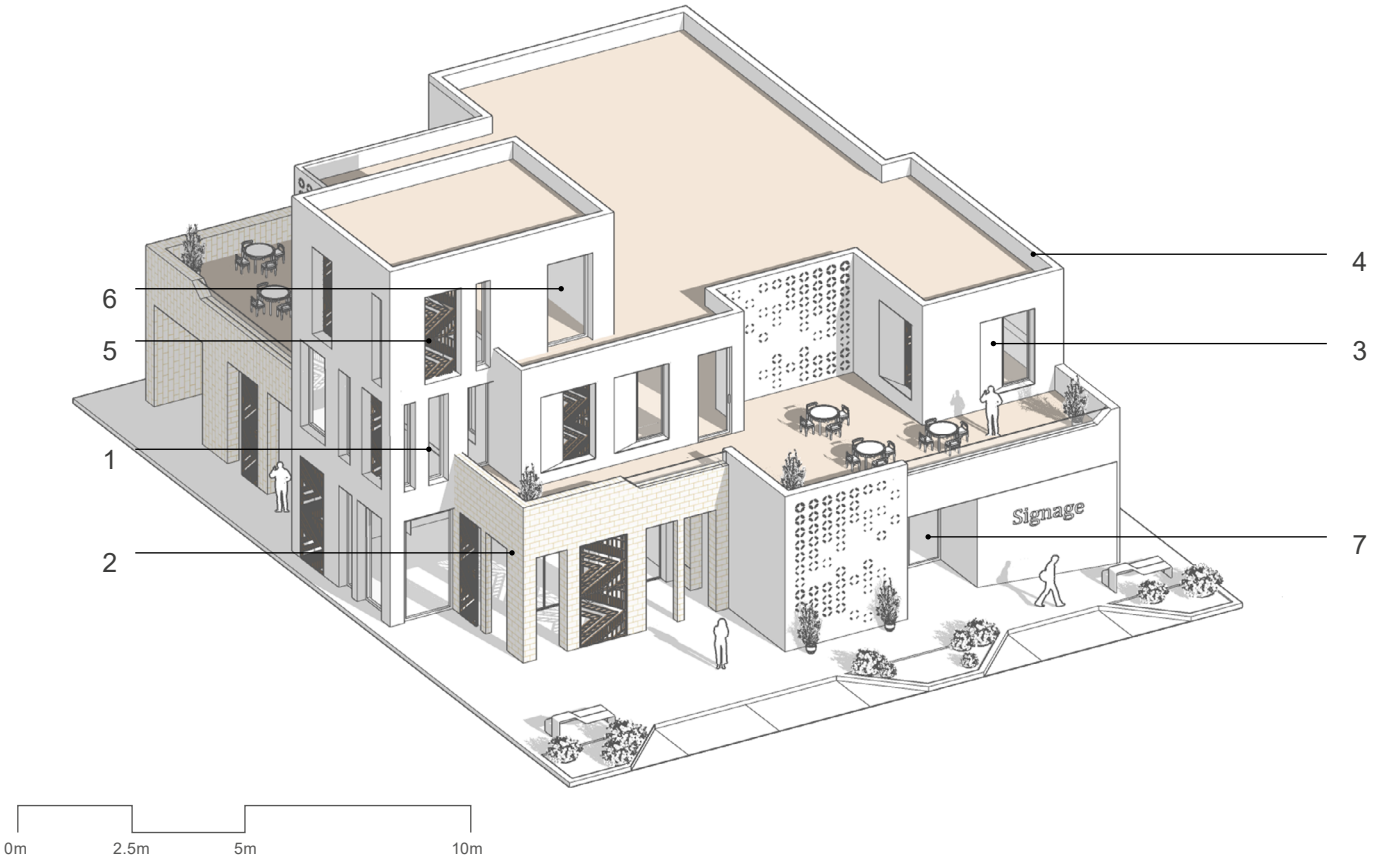


FIG. 46 Small size building

7.3 Contemporary

This worked example of the contemporary style incorporates a robust and comprehensive application of sections 3-5 of the guidebook. Expanding the traditional source and embracing new architectural style, this scenario evokes slick hybrid design with abstracted local motifs and large openings.

1 Window-to-wall ratio range between 40 to 60% in contemporary Northern Najdi buildings.

2 Arcades have squared columns and rectangular openings which could integrate timber louvres of traditional Najdi patterns. They should not exceed the first level and do not align with the façade.

3 Recessed elements sit on inclined niches of window openings, reintrepreting the

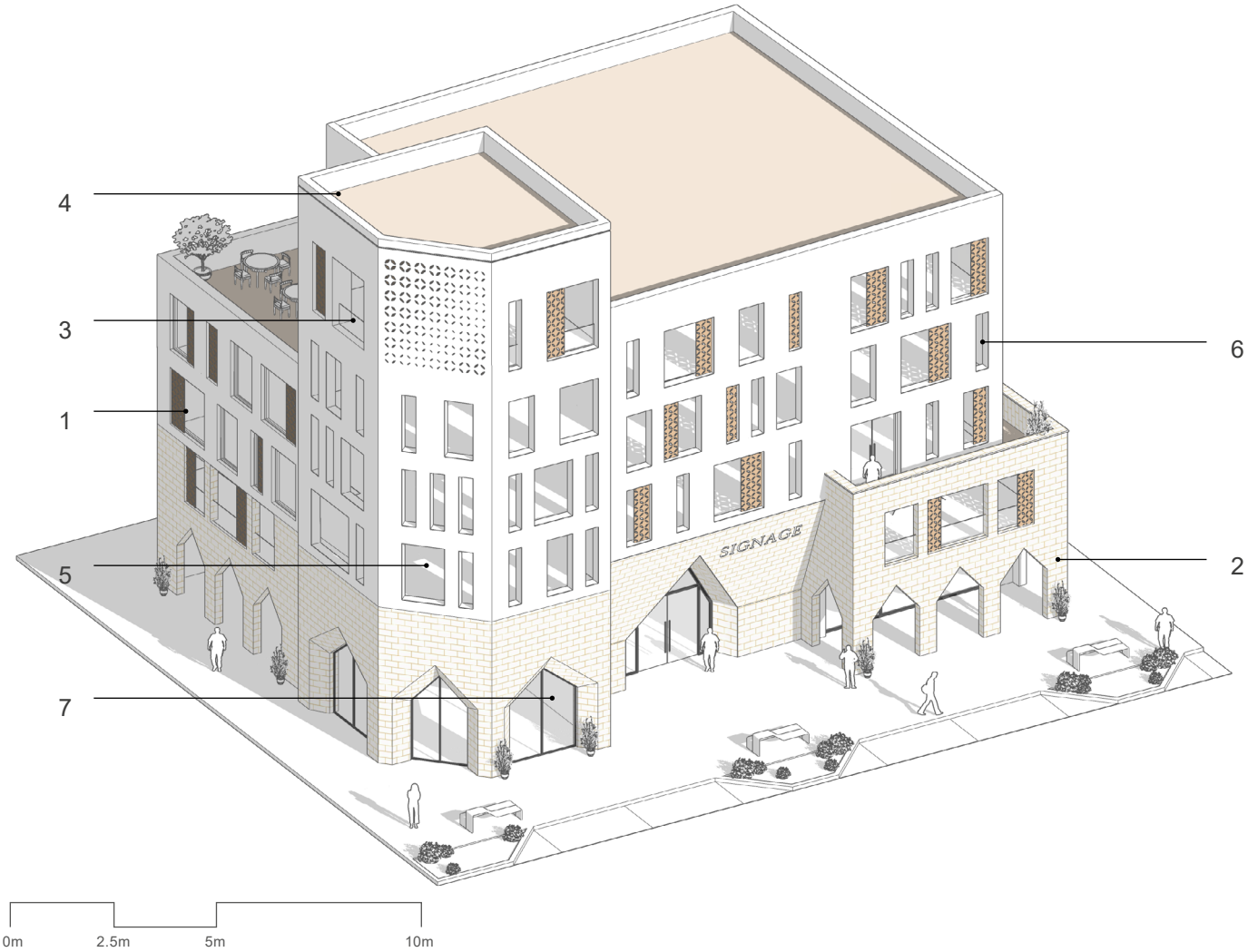


FIG. 47 Large size building

traditional Najdi style and balconies with glass handrails or other new materials.

4 Rooftops feature flat parapets without ornament (i.e., crenelations).

5 Façade composition: openings should not be aligned with a vertical axis from one level to another.

6 Windows are vertical and have proportions that vary from 1:2 to 1:4.

7 Entrances recess from the façade and topped with an asymmetrical triangular arch.

To create opportunities for simple and innovative design which integrate traditional styles through abstraction and subtle referrals.

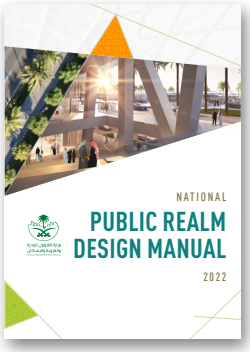
8 Public realm

An overview of public realm character in Northern Najdi.

8.1 Overview

The focus of the public realm guidelines within this document is to strengthen local architecture by identifying and enhancing distinct characteristics of public realm in Northern Najdi. It is meant to provide high-level principles and recommendations to be further developed in masterplans and public realm strategies within the Northern Najdi.

These guidelines are not intended to be a comprehensive technical resource. For this the designer should consult the National Public Realm Design Manual prepared by the Ministry of Municipalities and Housing, and support the five key principles identified in it.



1 Human scale

2 Pedestrian mobility

3 Sustainability

4 Culture and heritage

5 Visual appeal

FIG. 48 National Public Realm Design Manual and its five key principles.

This chapter is organized as follows:

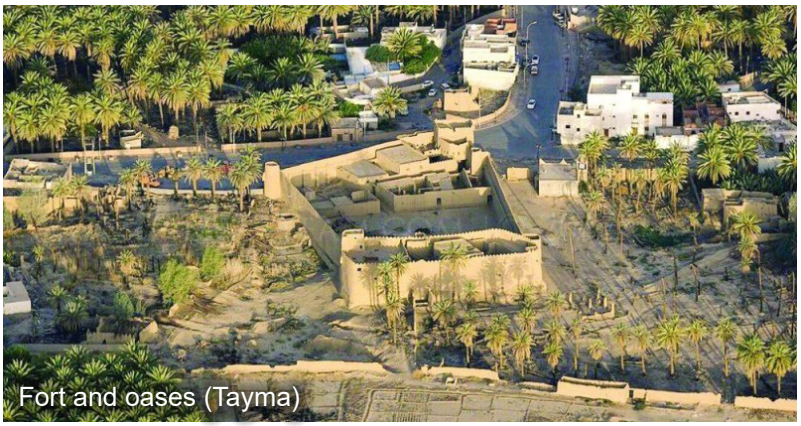
- **General character -** a narrative summary and photographic overview of characteristic public realm found in the Northern Najdi.
- **Types of public space -** A selection of spatial types that provide the Northern Najdi distinctive character.
- **Materials -** A summary of hardscape character for the Northern Najdi.
- **Planting -** A summary of softscape character for the Northern Najdi.
- **Street furniture -** Suggestions and precedents for suitable street furniture.
- **Lighting -** High-level lighting principles for the enhancement of the public realm.
- **Signage -** High-level signage principles for the enhancement of the public realm.
- **Parking -** High-level parking design principles for enhancement of the public realm.
- **Worked examples -** Visualizations that illustrate the combined intentions of the public realm guidelines.

Together the sections above aim to give a broad overview of public realm that will reinforce the character of Northern Najdi.

8.2 General character

The adjacent photographs summarize the characteristics of public realm and local landscape in the Northern Najdi. The region is distinctive for its raw geometries and symmetrical designs, as well as built architecture that sits in relation to the surrounding landscape. Microclimates support the development of agriculture in some areas. Mud and stone is the main building material and projecting elements from structures are very common. Similar to other Najdi regions, architecture is grouped around an internal courtyard and settlements public realms share a central mosque and souk.


Zuqaq (Tayma)


Fort and oases (Tayma)


Baraha


Boundary walls (Tayma)


Street lighting (Tabuk)


Market square (Tabuk)


Pedestrian walkways (Tabuk)


Street furniture (Tayma)

FIG.49 **PUBLIC REALM AREAS AND ELEMENTS IN NORTHERN NAJDI**

8.3 Types of public space

Northern Najdi public realm is characterized by a hierarchy of typical streets and spaces. These typologies are distinguished by their scale, character, and relationship with predominant land uses.

Together, these spaces create a diverse public realm which caters for residents and visitors alike, and contributes to the distinct architecture of the settlement.

The plan illustrates a typical hierarchy of urban spaces and streets in Northern Najdi. The following spaces are considered to be the principal typologies:

- Street: Primary routes which define the edges of smaller settlements, mediating between green oasis areas, and buildings.
- Saha: Larger local space which is more likely to include adjacent commercial uses.
- Baraha: Smaller local space, typically with a more residential character.
- Zuqaq: Local alleys of varying width and footfall which connect spaces and streets across settlements.

Specific areas might include additional variations in these typologies, reflecting local scale, character and use. Parks and recreation areas should also be provided.

FIG. 50 Typical urban plan

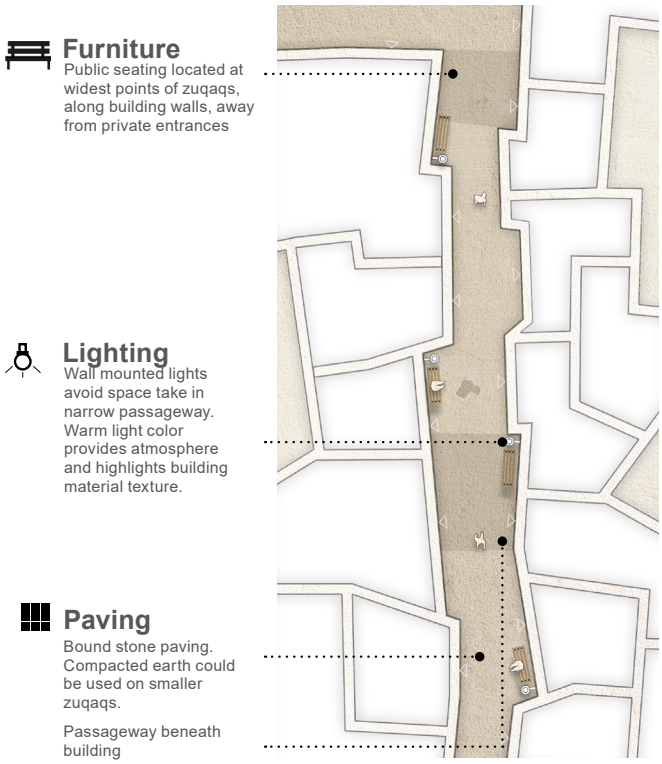


FIG. 51 Zuqaq

No vehicle access.

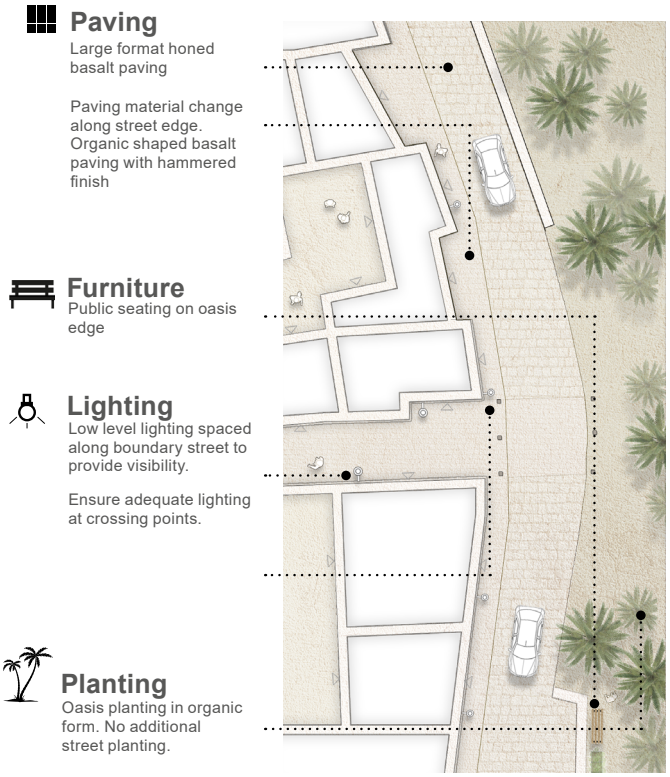


FIG. 52 Street on Oasis edge

Vehicle access.

Should allow connections to Oasis.

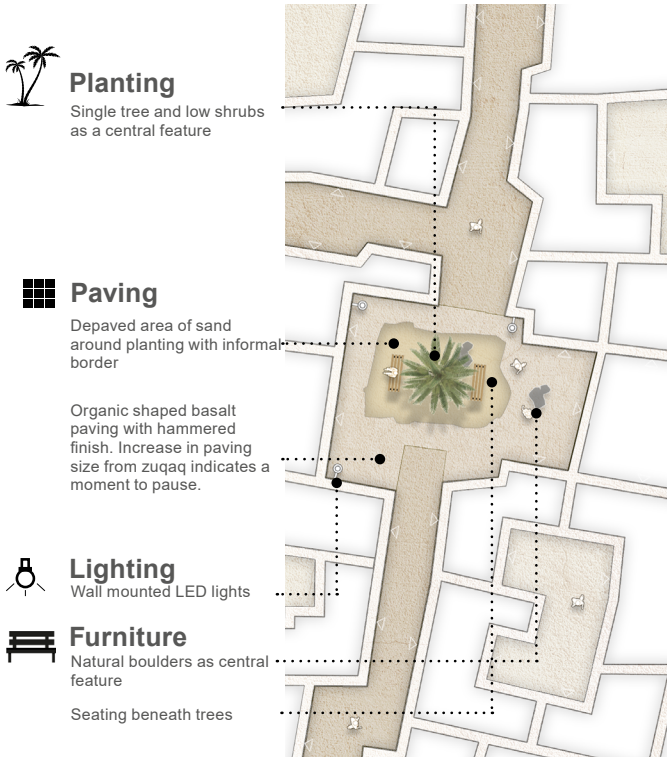


FIG. 53 Baraha

Trees should be used in baraha located close to the oasis. Baraha furthest from the oasis could use a canopy for shade.

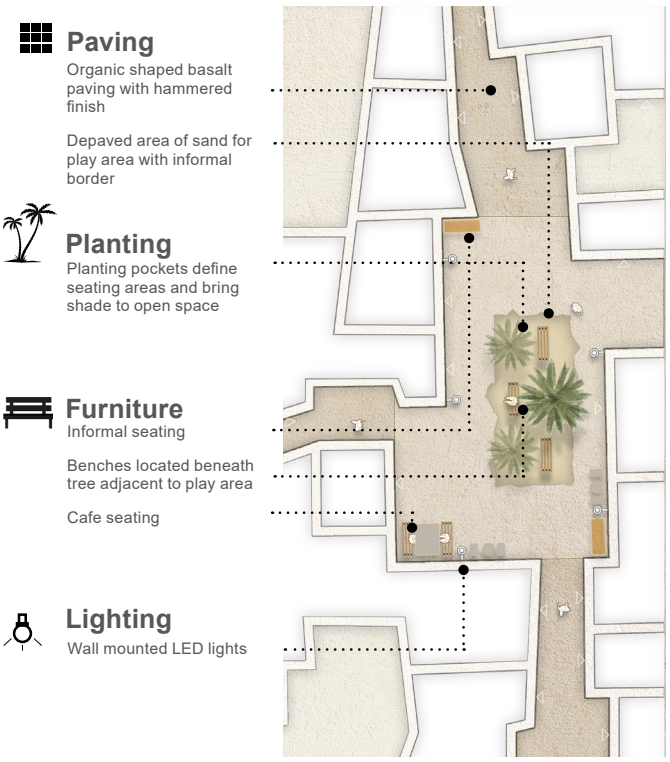


FIG. 54 Saha

Varied seating types/ uses.

Depaved area for play.

8.4 Materials

The suggested palette for materials to be integrated in the Northern Najdi has been conceived to be contextual and complementary to the existing character of the area.

Key considerations

1 Select locally sourced Saudi materials with low embodied carbon, such as rock, and recycling aggregates from ruin sites or community waste.

2 Areas with higher footfall, such as souks and commercial areas or pedestrian walkways, need paving and should have higher specification and materials that are durable, minimizing the need for regular repair and replacement.

3 Select materials that have longevity and that can be easily cleaned, repaired and sourced – so high-quality materials such as granite or basalt and similar igneous rocks.

4 De-pave and rely less on concrete where possible to improve the microclimate and use suitable sands or aggregates in place of paving.

5 Materials should provide varying textures complementing the area's architectural character and color palette.

6 Employ subtle changes to paving to highlight difference between typologies.

7 Map and discover existing streetscapes and ensure materials are replaced only when necessary to minimize carbon footprint.

8 Use a larger paving format to emphasize more prominent routes.

9 Consider incorporating special patterns to emphasize important places or spaces.

To design public spaces which complement the material and environmental properties of the area.


Sand:
Landscape and planting areas


Gravel:
Zuqaqs and Baraha


Dry stone:
Flooring


Natural irregular stones:
Flooring


Sandstone:
Roads

8.5

Planting

Tree planting should coexist with the agricultural character of Northern Najdi, building on existing traditions and fostering future-oriented sustainable practices.

Key considerations

1 The tree landscape character should carefully calibrate and work with existing aquifers, rainwater, irrigation, and canal systems.

2 Rely less on importing new tree species, and source existing drought tolerant and saline water resistant, as well as native and locally adapted species.

3 Adopt an informal layout, to avoid overly linear or formal planting for a characterful contribution to the quality of routes and spaces.

4 Plant where shade can be best utilized or where shade is necessary to encourage using the public realm.

5 Consideration should be given to how a tree is seen and how trees can be used as wayfinding markers.

6 Planting should be relatively limited within the urban area, and more prominent within baraha areas.

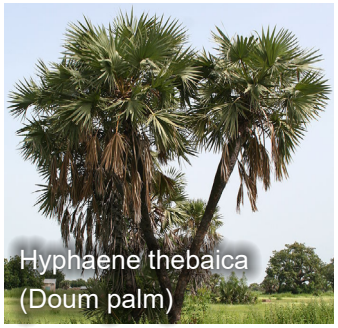
7 Design multi-layered planting systems comprising a variety of palm species, fruit trees, fodder grasses and additional habitat value such as fruits for birds.

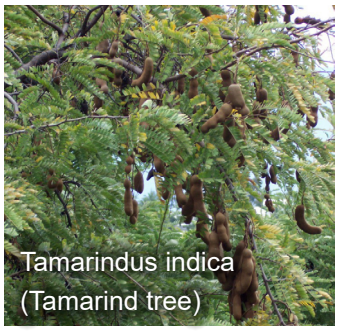
8 Minimize understory and decorative planting. If under story planting is necessary, it should be functional e.g. edible herbs and plants.

To ensure that planting projects work with the existing ecosystem and provide multiple values for the public.

Trees


Cocos nucifera
(Coconut tree)


Hyphaene thebaica
(Doum palm)


Tamarindus indica
(Tamarind tree)


Olea europaea
(Olive tree)

Shrubs


Agave sisalana
(Sisal hemp)


(Vachellia farnesiana)
(Needle bush)


Lampranthus spectabilis
(The trailing iceplant)


Duranta
(Golden dewdrops)


Hibiscus schizopetalus
(Spider hibiscus)


Hibiscus rosasinensis
(Rose mallow)

8.6 Street furniture

Street furniture should be selected to provide continuity, co-ordination, and limiting clutter. Colors and style of furniture should blend into the context rather than stand out as features. In general, the design of street furniture should find opportunities to use local materials, respond to the local landscape and cultural heritage, and celebrate local craft skills.

Key considerations

1 Be distributed evenly across all areas with reference to space types above.

2 Not obstruct pedestrian movement nor clutter public open spaces.

3 Show a color and material consistency.

4 Be minimal in the public realm as traditionally was the case and potentially movable.

5 Feel ephemeral and informal, acknowledging the historic condition of street furniture in the region.

6 Give consideration to accessibility with seating distributed at suitable intervals and heights.

7 Be of high quality, coherent, and rationalized to minimize street clutter.

8 Avoid duplication by rationalizing and combining elements.

9 Be easily maintained and repaired with replaceable components.

10 Be retained and improved where existing furniture has heritage value.

11 Boundary walls should contribute to the landscape character and context

To provide thoughtful, inviting, and locally-relevant outdoor public furniture.

FIG. 55 Seating

FIG. 56 Trash bin

FIG. 57 Shading

FIG. 58 Planter

8.7 Lighting

Lighting fixtures are street furniture elements that enhance visibility and wayfinding at night. However, lighting design can also be utilized to highlight important buildings or parts of buildings.

Key considerations

1 Type, texture, color and design of the lighting fixture must follow the architectural design language of the building.

2 Source and research existing and traditional lighting methods to innovate a modern take that is contextually relevant.

3 Lighting element placed on the floor should be decided carefully so it doesn't obstruct pedestrian mobility on the sidewalk.

4 The type, design, consistency and size of lighting fixtures can either degrade and disrupt a scenic area or rather enhance the architectural and urban setting.

5 The sequence and intensity of lighted areas must not be decided randomly as it guides the journey of pedestrians. Lighted areas draw people's attention and thereby determine the path that users walk.

6 The typical light color is white and yellow shades. Incorporating other colors should have a reasonable justification and used with care to not create visual pollution or degrade the quality of the space or building.

To use lighting elements in enhancing the user experience and perception of building and public realm.

FIG. 59 Ceiling light

FIG. 60 Wall hanging light

FIG. 61 Free standing light

FIG. 62 Bollard

8.8 Signage

The purpose of signage is to communicate orienting messages to the public. Signage can be promotional to persuade customers into a commercial area and supports the direction of members of the public in reaching their desired destination.

Key considerations

1 Signage font, material, and color should follow and complement the architectural design language of the building.and thus should be straightforward, simple in design, and accurately orient the public to the location.

2 Inconsistent and unregulated sizes, colors, heights and typography distort the character of a place and reduce the architectural value of buildings, contributing to the city´s overall visual pollution. It should be carefully designed to maximize efficiency in conveying the message as well as maintaining the theme and character of the area.

3 The width and alignment of wall signage boards must be consistent across the building as well as across the entire street frontage in the area.

4 Readability of signage depends on the distance it is viewed from. The maximum distance a signage is to be viewed from by a target receiver is from the opposite side of the street.

To create a consistent visual language across the city and be effective for the orientation of members of the public.

FIG. 63 Main signage

FIG. 64 Wall hanging signage

FIG. 65 Free standing signage

FIG. 66 Column signage

8.9 Parking

Street front parking is provided for customers of active retail frontages, and for visitors to access building entrances as well as for residents of a building. Undesignated parking spaces disturb the visual appeal of the district, but it also may affect public access.

Key considerations

1 The width of parking lots must always be enough for easy parking for all sizes of anticipated vehicles. For this, parking angles are a necessary consideration. Parallel spaces are also common.

2 Parking spaces for those with limited or hampered mobility should always be prioritized and provide easy access to main areas.

3 Parking must never become a physical obstacle that limits access to spaces. Parking must consider other vehicles such as bicycles and motorcycles as well as the navigation of pedestrians between the parking areas.

4 Parking spaces accompanied by shading structures and vegetation is an advantage as it helps protects vehicles from the climate.

5 Creating a planted buffer between the parking and the pedestrian sidewalk or the bike lanes is encouraged where possible.

To ensure that parking spaces attend to multiple needs and work with their surroundings.

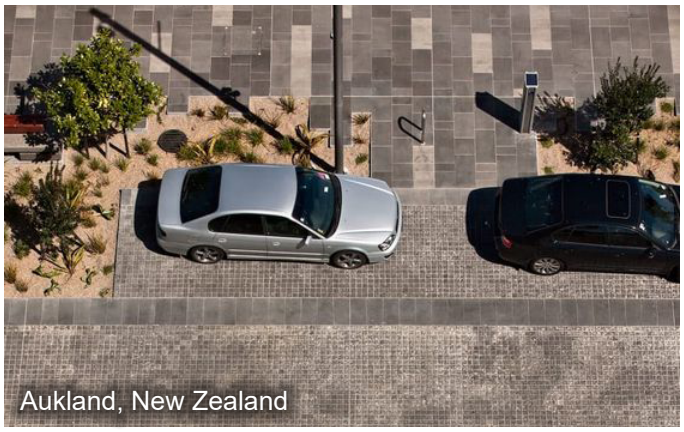


FIG. 67 Parking example

FIG. 68 Road side parking - Type 1

FIG. 69 Road side parking - Type 2

8.10 Public realm worked examples

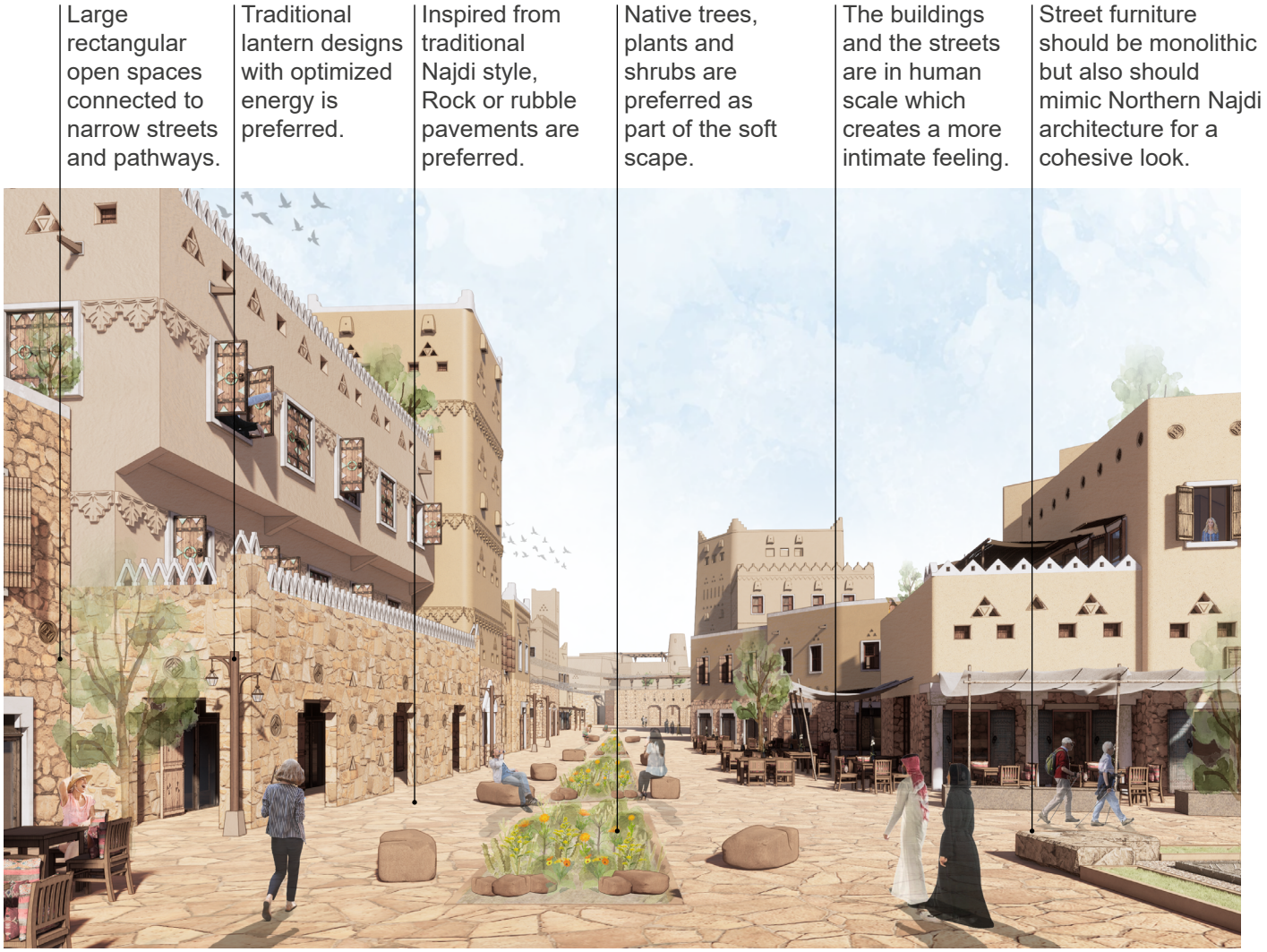


FIG.70 PROPOSED VIEW OF COMMERCIAL PLAZA IN NORTHERN NAJDI

This worked example incorporates suggestions proposed in this section. The scenario presents a public realm adapted to the Northern Najdi's built environment, which is defined by horizontal proportions, closed façades, and a characteristic procession between public and private spaces. The scenario interprets traditional ornamental styles and uses stone in the lower part of the building.

1 Material prioritizes the use of natural and locally sourced materials such as clay, stone, tamarisk wood, and palm materials.

2 Color uses earth tones as primary colors and layers them with lighter or darker colors as secondary or accent colors. Colors include light grays and shades of beige with earthy yellow-orange undertones.

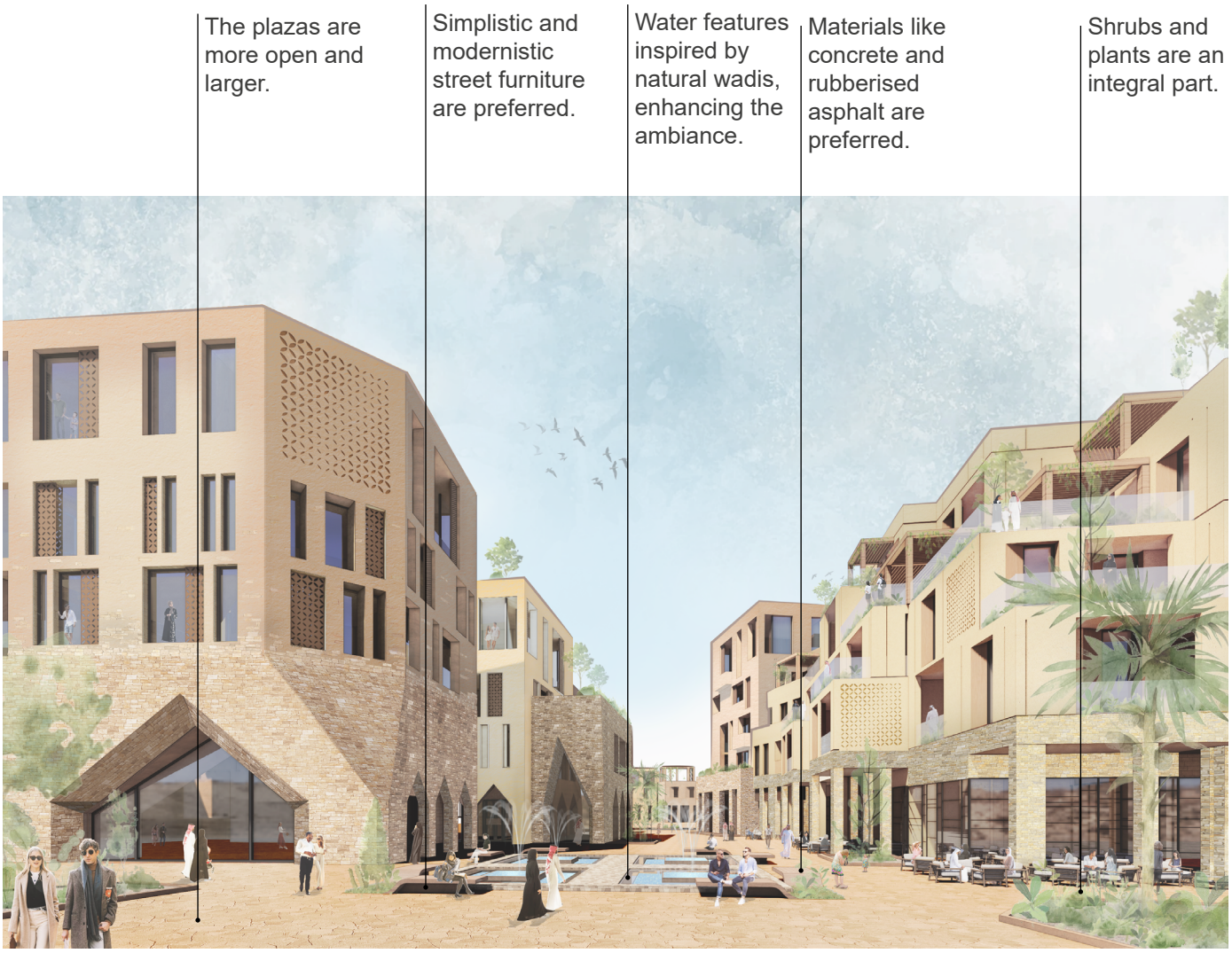


FIG.71 **PROPOSED VIEW OF COMMERCIAL PLAZA IN NORTHERN NAJDI**

3 Traditional stone in the lower tier of the façades as a base as well as a landscape features and flooring. Textured concrete is used for feature walls and planting areas.

4 Locally sourced wood is adapted for benches as well as flooring. The use of wood is also used as a shading structure.

5 The lighting strategy uses hanging lanterns and wooden street lamps.

6 Landscaping is composed of native plant species as well as water features to complement the surrounding landscape and act as a buffer between built spaces.

To create public realms which connect with the built heritage of the region and express a strong sense of place.

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A. AlNaem, Dr. Mashary. “Historical Mosques in the Kingdom of Saudi Arabia: Investigating Architectural Styles Typology”, Abdullatif Al Fozan Award, 7 Mar. 2019, https://alfozanaward.org/historical-mosques-in-the-kingdom-of-saudi-arabia-investigating-architectural-styles-typology/

Al-Duwaihi, Hammoud. “Spinning the surfaces..” Al Riyadh, 26 Oct. 2013, http://www.alriyadh.com/878708

Alsabt, Khalid (visitsaudi.ar), “Ushaiger Heritage Village”, Instagram, 29 Apr. 2020, https://www.instagram.com/p/B_icKBJnvKy/?utm_source=ig_web_copy_link

Mijlof, Kyle (mijlof). “Disa Valley in the Tabuk region of Saudi Arabia...”, Instagram, 23 Jan. 2019, https://www.instagram.com/p/Bs-nUqklEye/?utm_source=ig_web_copy_link

Tarlach, Gemma. “A Desert Oasis Hints at a Long History of Resilience and Exploration”, Atlas Obscura, 20 Apr. 2021, https://www.atlasobscura.com/articles/paleolake-jubbah-saudi-arabia-climate-change

Lafforgue, Eric. “Ancient haddaj well, Tabuk province, Tayma, Saudi Arabia”, Alamy, 24 Jan. 2010, https://www.alamy.com/ancient-haddaj-well-tabuk-province-tayma-saudi-arabia-image182574927.html

Mansoor Meshal, ‘‘North of Saudi Arabia Tabuk region’’, flickr, 2 Apr. 2014, https://www.flickr.com/photos/60444808@N02/12319246345

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‘‘Al Jouf’’, waytosaudi.com, https://waytosaudi.com/al-jouf/

Al-Tamimi, Muhanna. “Patoral Terrain and Facilities Attracts Owner.” SABQ, 31 May 2022, https://sabq.org/saudia/

“Wadi Al Disah Tour”. Ottlah, https://ottlah.com/st_tour/wadi-al-disah-tour/

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Babbington Jem, ‘‘Zabaal Castle-Sakaka’’, Birdsofsaudiarabia.com, 14 Jan. 2020, https://www.birdsofsaudiarabia.com/2020/01/zaabal-castle-sakaka.html

Pika. “Leaves Wallpaper Iphone”, https://pin.it/4qixQwl

NAPA74. “Clay surface, clay wall texture background”, IStock, 16 Jan. 2021, https://www.istockphoto.com/photo/clay-surface-clay-wall-texture-background-gm1295952199-389515284?phrase=seamless%20cracked%20mud%20wall

Dutour, Thomas. “Closeup Shot of a Mud Wall Texture Stock Photo.” Adobe Stock, https://www.123rf.com/photo_143025177_closeup-shot-of-a-mud-wall-texture.html?vti=mo6porn4g3a0pzfjyf-1-8

PublicDomainPictures. Pixabay, 5 Apr. 2014, https://pixabay.com/photos/wood-wooden-texture-surface-314774/

AND Pokotilo. “Red sandstone paved patio texture”, Shutterstock, https://www.shutterstock.com/cs/image-photo/red-sandstone-paved-patio-texture-461045254

v_sot. “Seamless Texture of Cement Plaster...”, Adobe Stock, https://stock.adobe.com/images/seamless-texture-of-cement-plaster-wall-background-repeatable-pattern-with-finishing-layer-of-gypsum-plaster-pastel-colors-delicate-tint-of-orange/210677289

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Marie, Claude. “2022-01-18 Sakaka-142”, Flickr, 18 Jan. 2022, https://flic.kr/p/2n2moVN

Vejzovic, Alen. “Desert Mountains 3 “, Art Station, 2018, https://www.artstation.com/artwork/xzqGlO

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Al Amri, Abdel Aziz. “The farms encircle the castle in the historic area”, alyaum, 2 Feb. 2019, https://www.alyaum.com/article/6208900

“Tabuk ancient castle”, tourzable, https://www.tourzable.com/landmarks/tabuk-ancient-castle

“Tayma heritage tour”, Experience Al Ula, https://www.experiencealula.com/en/discover-alula/Tayma/tayma-heritage-tour

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Devitt, Simon. “A public ‘boulevard’ with a pedestrian focus ..”, Architecturenow, https://architecturenow.co.nz/articles/jellicoe-street-north-wharf-promenade-and-silo-park/

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