رؤية VISION 2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

العمارة السعودية
SAUDI ARCHITECTURE

Tuhama Coast

Architectural Design Guidelines

وزارة البلديات والإسكان
Ministry of Municipalities and Housing

مركز دعم هيئات التطوير
DEVELOPMENT AUTHORITIES SUPPORT CENTER

برنامج جودة الحياة
QUALITY OF LIFE PROGRAM

VERSION 1.0

FIG.1 **TUHAMA COAST ARCHITECTURAL CHARACTER AREA**

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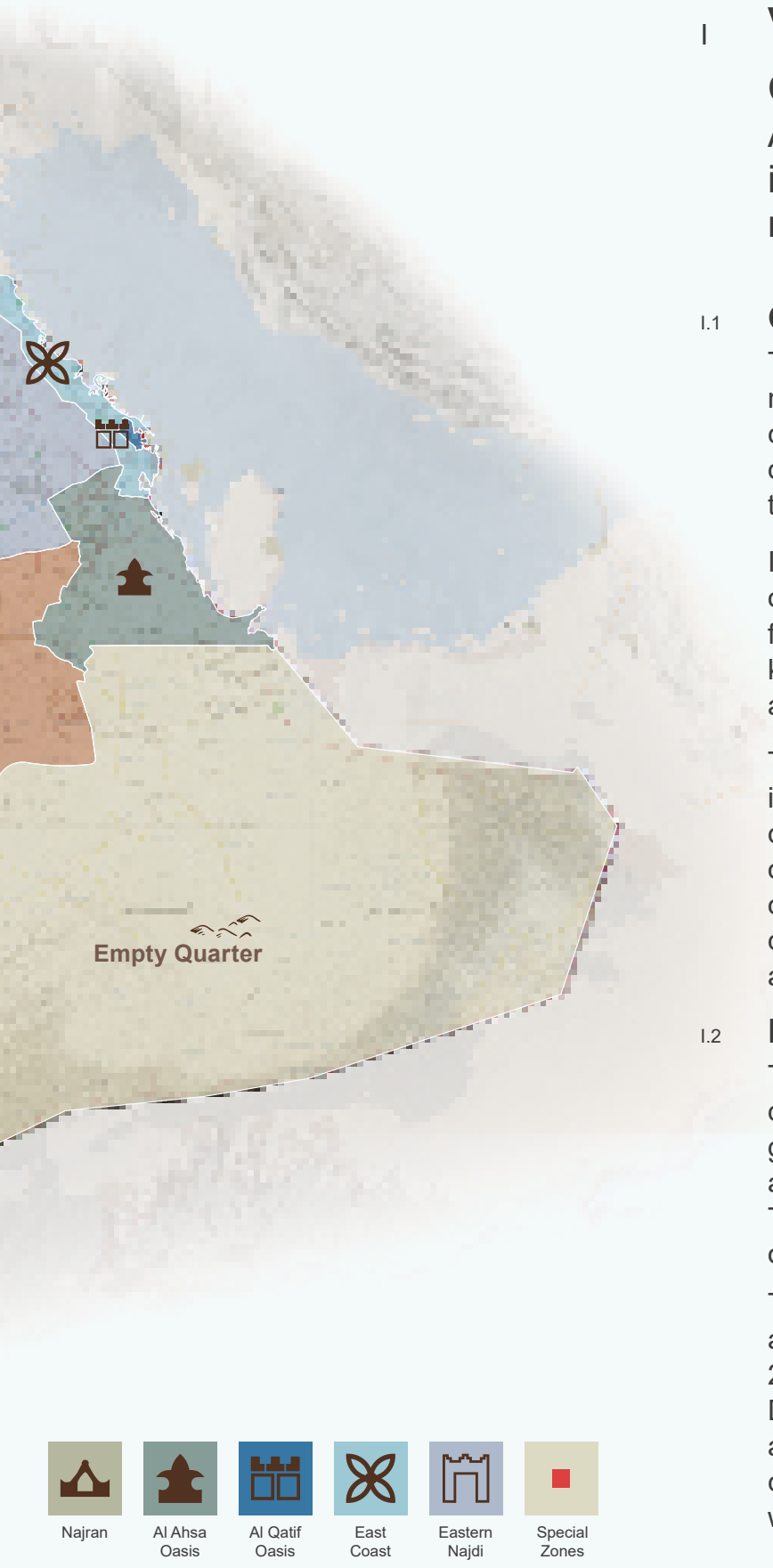
FIG.2 **ARCHITECTURAL CHARACTERS MAP OF KSA**

INTRODUCTION



I Vision

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

I.1 Guideline 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.

I.3 Tuhama Coast

The Tuhama Coast character area is located on the Red Sea coastal plains extending from Aseer region to Jazan region in the kingdom's south west. The architectural character within the Tuhama Coast in both regions shares similarities due to the common context, heritage and historic pilgrim and trade routes.

The main purpose of Tuhama Coast ADG is to help raise the overall architectural design quality of built environment especially in the expression of regional character of the Tuhama Coast zone for the improvement of both architecture and public realm design. Based on a regional character study identifying key heritage sites, natural environments as well as typical cultural landscapes, the guidelines are founded on an understanding of the traditions and heritage forming the character zone's sense of style.

Most importantly, the guidelines seek to promote the creation of new and contextually inspired architecture for the Tuhama Coast respecting and fostering the character of the respective place.

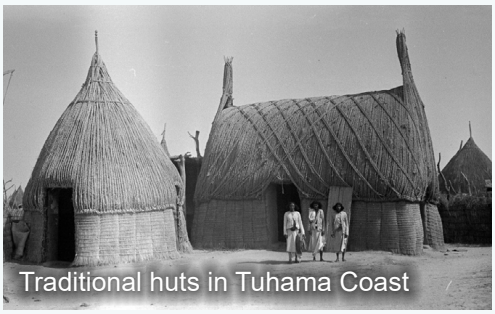
They are also intended to promote a general excellence in landscape design and urban design, and intend to promote the development of an attractive, representative, and inviting public realm, with a generous and lush landscape environment.

The guidelines are developed with the following main goals:

1. **Celebrate Tuhama Coast's natural and cultural landscapes, a foundation of unique architecture for the character zone and its people.**
2. **Preserve open space and topography remarkable settings.**
3. **Safeguard the architectural heritage interrelated with the cultural landscape and enhance their relationship.**
4. **Create lasting connections between people and places with new development that respects and fosters the special character and heritage of the Tuhama Coast.**
5. **Inspire the production of a more contextually rooted new architecture for the area.**


Fort in Jazan


Al Birk, Aseer


Traditional huts in Tuhama Coast


Local patterns


Local art


Sabya, Jazan


Local art


Mangroves along Red Sea coast


Vast wadi plains, Jazan

FIG.3 **TUHAMA COAST**

II Topography and landscape

Observations on the links between landscape, climate, culture and the architectural character of Tuhama Coast.

II.1 Key information

The coastal area is influenced by the Red Sea climatic conditions; receiving little rainfall and characterized by sand dunes reaching up to 4m that steadily migrate towards the sea, wadis, flood plains and few rocky hills at the Tuhama Foothills threshold.

Vegetation is typically of a lower coverage/density. Xerophytes, vegetation adapted to the low rainfall, are of a higher percentage, however with low coverage. Grassland vegetation is typical, with occasional trees found throughout the rocky hills, which grow under specific micro-climates. Mangroves are found along the inter-tidal zone of the seashore. Soil is typically found to be a thin layer of poorly sorted fine to coarse grained sand and gravel, but can also include saline soil, lava rocks, sand dunes, hard sandy-silty soil of alluvial deposits, water courses, and disturbed grounds.

II.2 Landscape

The main shoreline features a matrix of alluvial fans, Sabkha (mud flats), sporadic lava fields, sand dunes and wadis. Vegetation is typically of a lower coverage and sparse. Mangrove habitats are generally of a higher quality, yet fragmented. Deep green mangrove habitats are interspersed with heavily disturbed habitats, adjacent to urban areas.

The Northern coastal area is defined by vast, exposed plains of volcanic hills and lava fields, interspersed with sand dunes. Vegetation is sparse, with the exception of where wadis have carved out dramatic channels, allowing the vegetation to be protected and supported. Soil is generally of a granite sandy type.

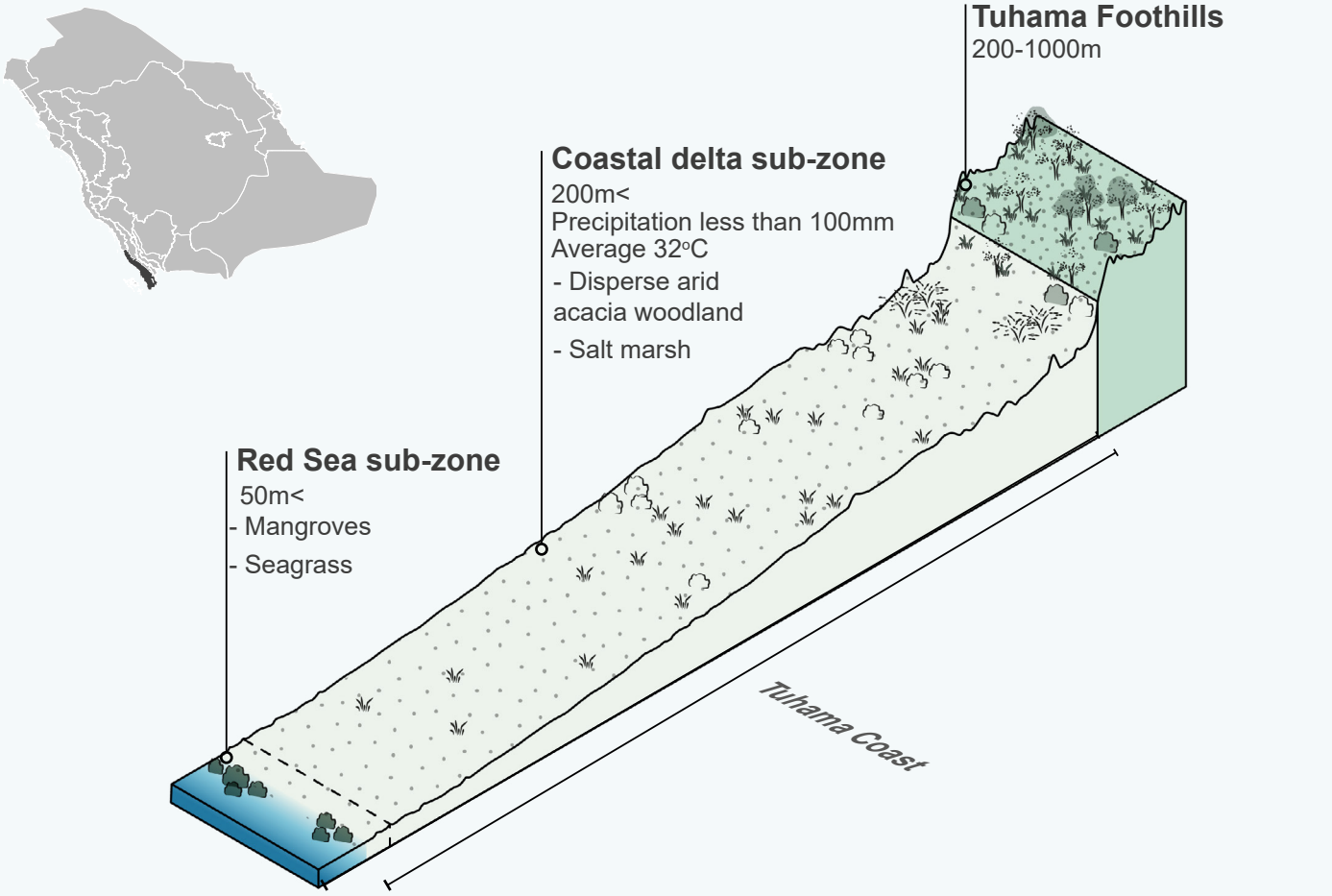
The Southern coastal plains consist of wide flat basins with alluvial fans surrounded by high volcanic hills. Wadi water courses typically feature moderate vegetation coverage. Urban areas are typically of a lower-density. Productive landscapes in the form of flat fields are typically scattered throughout the coastal plains including the volcanic lava fields, whilst wadi farms are generally clustered along wadi corridors.

Towards the east, adjacent to Tuhama Foothills, rocky hills and smaller mountains, features granite rocky slopes, cliffs, and crevices with many plant species found on the slopes of the foothills.

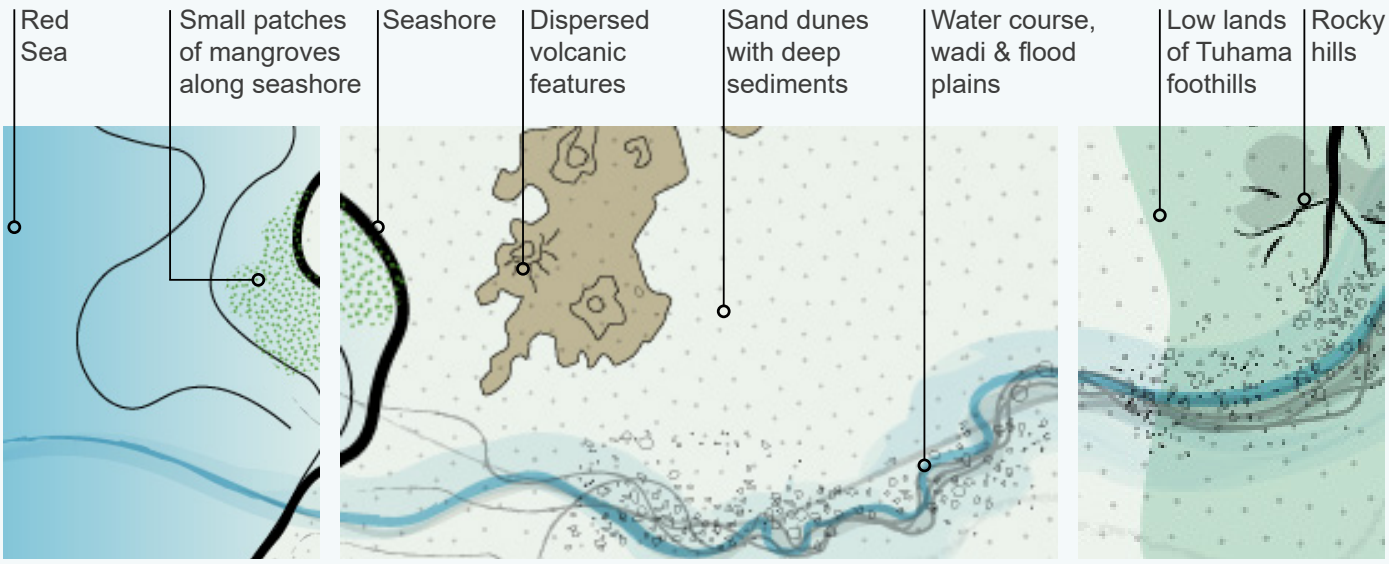
In general, summers are hot, sweltering and can reach 38°Celsius and winters are warm with the lowest temperature of 23°Celsius. Half of the year from May to October is mostly cloudy with high precipitation reaching 50mm in July and high humidity levels during the year. Wind speed varies mildly during the year from 12 to 13 km per hour, with the highest speed in July.

II.3 Architectural influence

The vernacular architecture in Tuhama Coast responds to the context, climatic needs and the availability of materials and resources. In addition, it also responds to the influences from other regions due to its location on the trade and pilgrim routes. Higher concentrations of settlements (e.g. mud huts, quadrangular mud hut, stone arch houses) can be found along wadi corridors and adjacent to coastal edges. Materials used are mostly local stone and mud from the wadi plains.



Natural color palette



Red Sea sub-zone | Coastal delta sub-zone | Tuhama Foothills

FIG.4 **TUHAMA COAST LANDSCAPE FEATURES AND TOPOGRAPHY**

III Overview of Tuhama Coast Architecture

A summary of the existing character of traditional architecture and settlements in the Tuhama Coast.

III.1 Settlement character

The coastal areas are experienced as a vast, open and horizontal landscape. Traditionally, tribes in this area lived as nomads. They developed a mobile lifestyle and settled where water and grazing were sufficient. The material used to construct their houses reflected their mobile living condition.

Dispersal of stone or mud houses based on the direction of the prevailing winds in the region from the western sea side. Minimal entrances to the building.

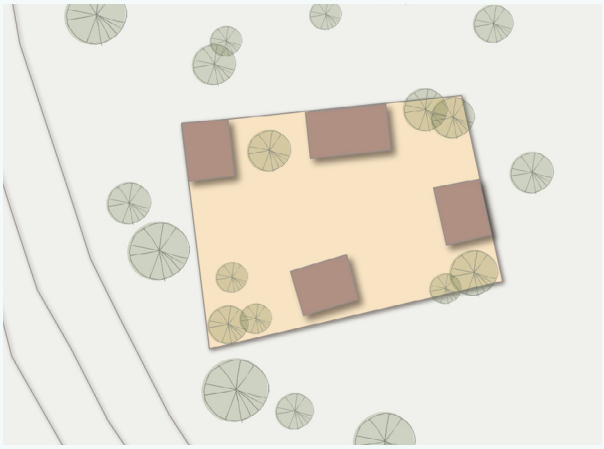


FIG.5 Al Birk village traditional settlement pattern

Mud huts with only two perpendicular entrances, of which one is oriented towards the west.

Buildings with mud/stone have internal courtyards with large openings. Mud houses surrounded by a light wall of wood and straw called Masharej.

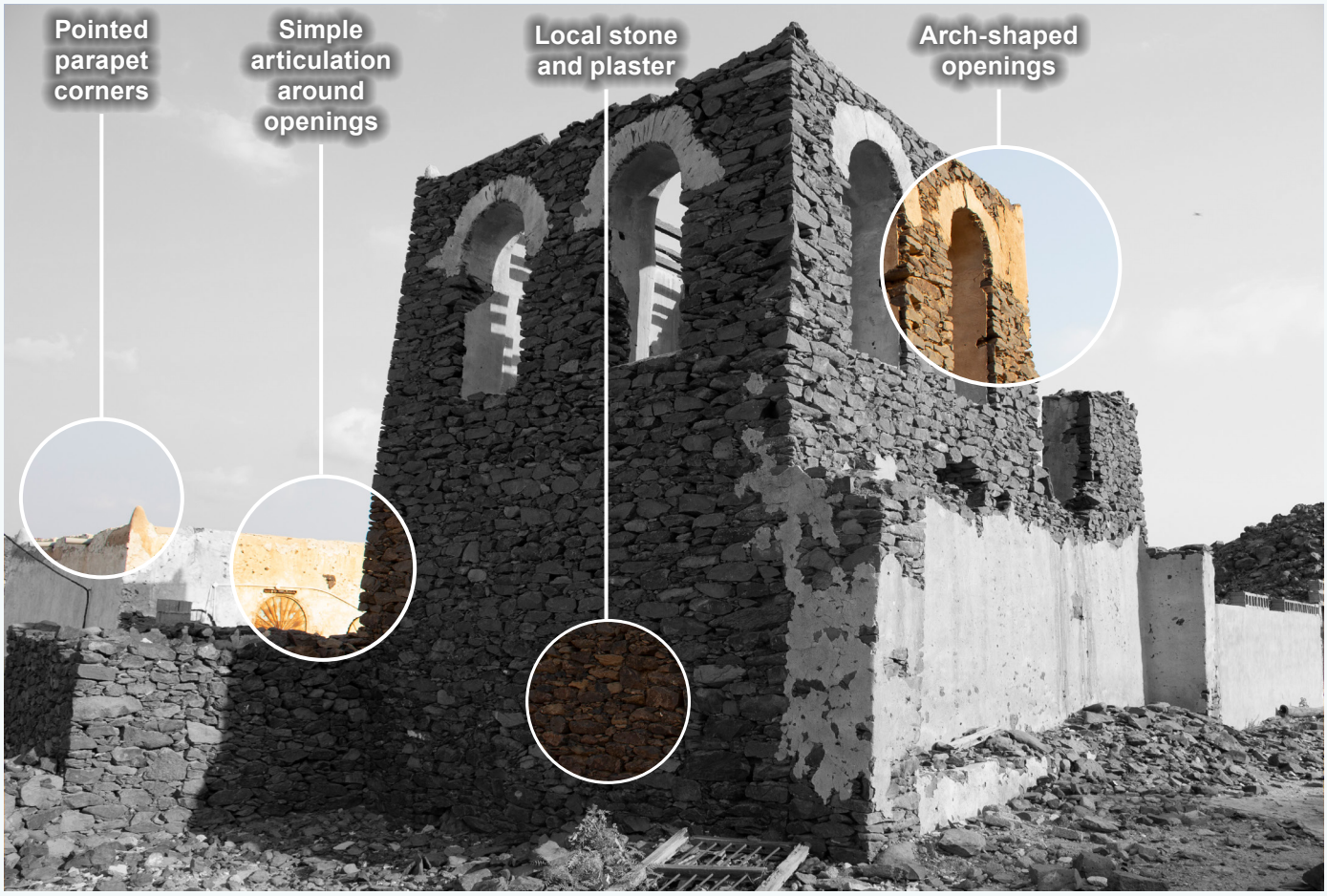


FIG.6 **TRADITIONAL SETTLEMENT IN AL BIRK**

Productive landscapes and cultural landscapes surrounding the built settlement are flat field farming and wadi farming.

Apart from the general residential architecture, the Tuhama coast also feature fortifications for defensive purposes.

III.2 Architectural character

Typical architecture along Red Sea coast were huts constructed with locally available vegetation, timber and some stone structures where material was available. There are three main types of vernacular architecture found in Tuhama coastal plains.

Reed House (Al Ushah): the Reed mud houses were very common in the plains. These straw roofed houses, depending on the size and wealth of families, were comprised of multiple huts.

The Quadrangular Mud Hut (Al Arisha): The rectangular shaped (Al Arisha) huts were also found in the plains but were generally uncommon due to the nature of the building material which had a very short life expectancy (about three or four decades).

Stone Arch House: stone arch houses were one to two stories high. They were specifically designed to bring in the breeze, hence, the large arch shaped openings on the facades.

The houses showcased more articulation around openings towards south in Jazan, owing to other influences prevalent in that area.

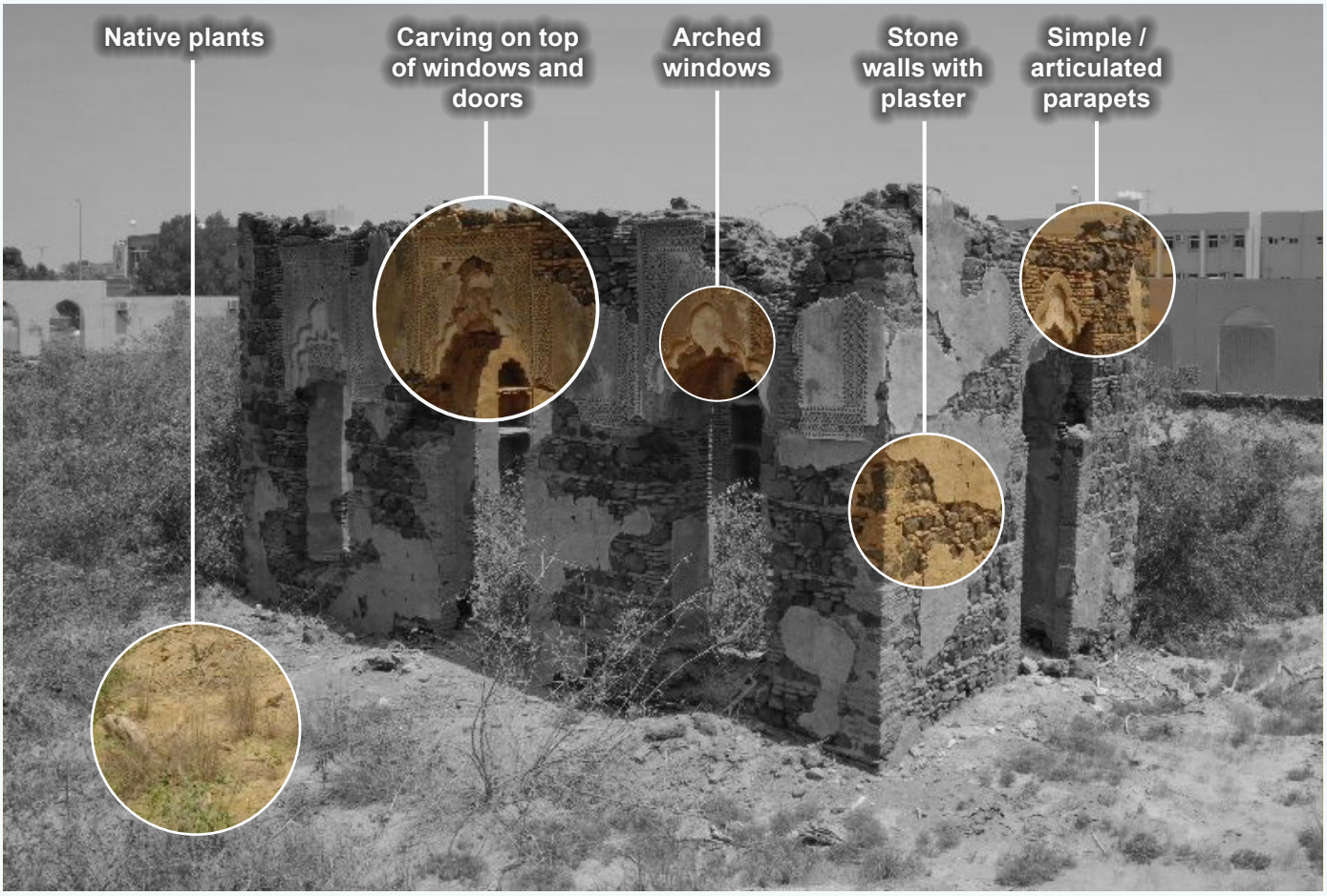


FIG.7 **TRADITIONAL SETTLEMENT IN SABYA, JAZAN**

IV Analysis of Tuhama Coast Architecture

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

To find objective characterizations of vernacular architecture in Tuhama Coast, elevation studies were conducted to assess and compare overall building proportions, alternation of materials, solid-to-opening ratio and articulations of building facades. A sample of representative traditional dwelling typologies were selected to provide a meaningful sample range.

IV.1 General typologies

Vernacular buildings typically comprise simple, orthogonal forms, with building heights generally low rise, ranging from 1 to maximum 3-story structures.

IV.2 Horizontality

Strong horizontal proportions, indicated by a width-to-height ratio between 1:0.5 to 1:1.5 are characteristic of vernacular architecture in the area.

IV.3 Solid to opening ratio

Facades are mainly composed of stone with large openings in the plains (between 8.8 to 14.5%). Openings are larger to bring in the breeze.

These proportions are in line with the historical and geographical situation of the region.

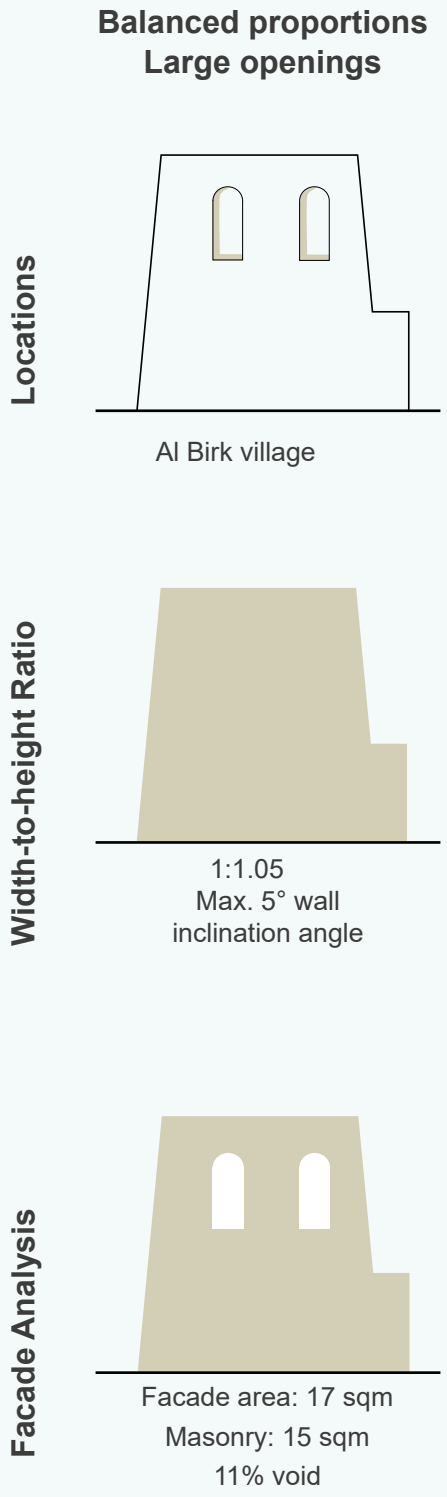
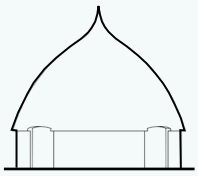


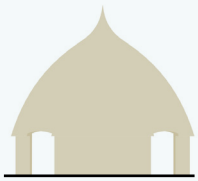
FIG.8 VERNACULAR FACADE STUDIES

Cylindrical form
No openings



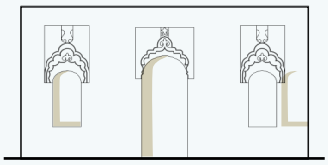
Traditional coastal villages

1:1.5
Domed roof,
vertical walls



Facade area: 17 sqm
Wood & Straw: 15.1 sqm
8.8% void

Horizontally symmetrical
Large facade openings



Traditional stone house, Jazan

1:0.5
Vertical walls

Facade area: 51 sqm
Masonry: 43 sqm
Timber: 8.75 sqm
14.5% void

IV.4 Building grouping patterns

Buildings of medium size and mass, composed with facade breaks and clustered together.

Thick stone walls used in stone houses and tree trunks in huts.

Soft and simple massing, articulated with openings. Balconies are generally not used.

Facades with breaks either with material change or massing.

Roofs are flat with minimal parapet articulation.

Building blocks of traditional huts are either circular in shape or orthogonal with pitched roof. The horizontal projection of the roof allows least facade surface to be exposed to the sun.

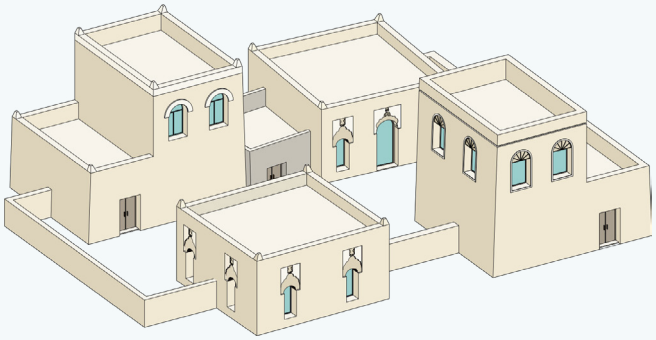


FIG. 9 Building grouping patterns

IV.5 Horizontal emphasis

A general low development of one to two stories high with simple geometries /gently tapered walls with a maximum inclination angle of 3°.

The horizontal massing responds to the nature of the vast coastal plains and helps preserving the horizontal and open character of the plains.

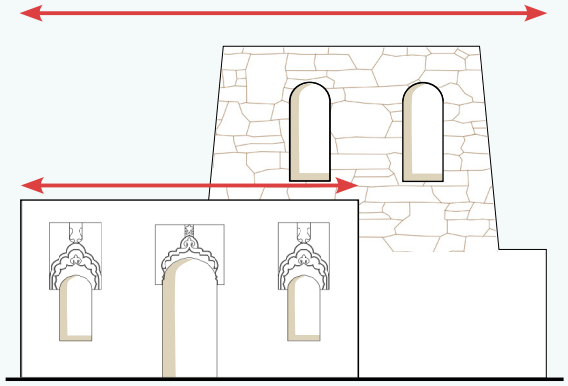


FIG. 10 Horizontal massing

Simple massing with slanted walls and solemn facades.

IV.6 Large openings

Huts feature limited openings, fortified structures and castles feature narrow openings, while houses feature medium to large openings. Openings are both orthogonal and arch shaped. Combination of materials and construction techniques used for variation in facade.

Larger openings oriented towards west bringing the gentle wind from the Red Sea.

Openings do not cover more than 25-30% of the overall facade.

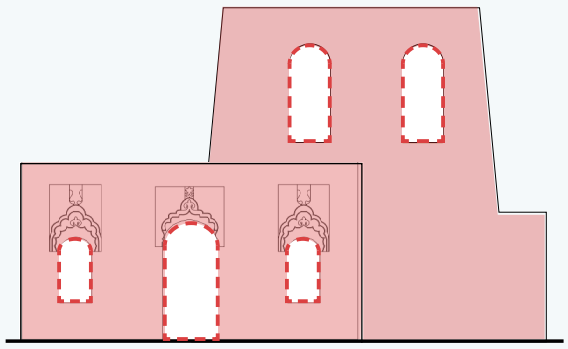


FIG. 11 Window-to-wall ratio

Large openings to bring the sea breeze in. Arch shaped openings are common.

IV.7 Bipartite articulation

The facades of the buildings are generally bipartite or monolithic for single story buildings. The bipartite classification in 2 story buildings is brought through clear distinction between base / ground floor and upper floor. This distinction between the floors is expressed most clearly through the solid base and larger openings on top with minimal parapet articulation in form of pointed parapets.

Upper: simple parapets, sometimes articulated with pointed corners. Huts featured curved roof with pointed top. Flat roofs with pointed parapet / corniced corners decorated with geometric and plant relief patterns.

Large openings primarily for bringing in the breeze. Arches took the shape of horseshoe.

Base: solid base with stone masonry is prevalent. Huts have base with tree trucks or other plant timber like branches. Interior walls featured arch shaped niches.

Windows and doors are framed with decorations usually in geometric or plant relief patterns as in stone houses of Jazan.

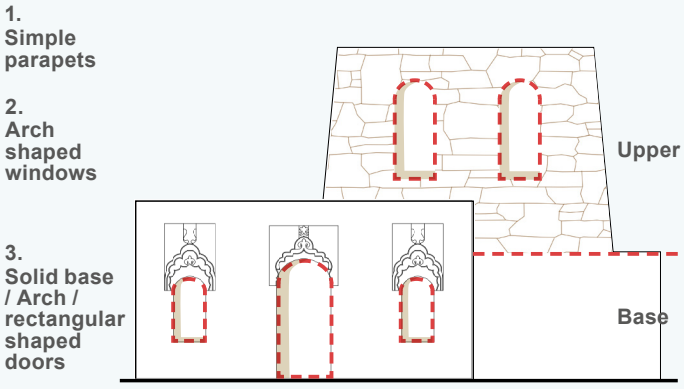


FIG. 12 Architectural elements in top, middle and base parts of the building

IV.8 Localized symmetries

Analysis indicates a limited palette of opening types. Common openings include arch and rectangular shapes. The openings are generally symmetrical in placement pattern. With change in volumes, openings maintain localized symmetries.

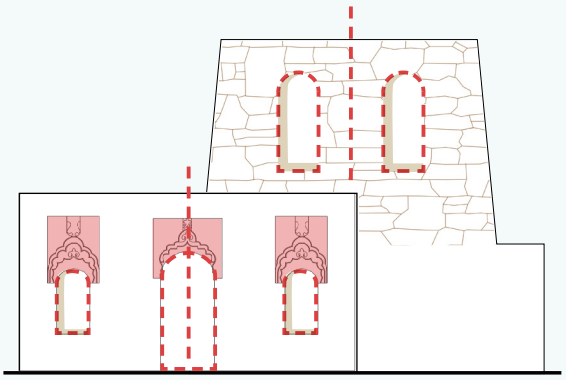


FIG. 13 Openings: arched openings with simple carving on top of them

Window openings occurring in symmetrical pattern. Defense openings are irregular.

IV.9 Flat roofs

Buildings in Tuhama Coast flat roofs with simple parapets.

Huts showcase conical roof form.

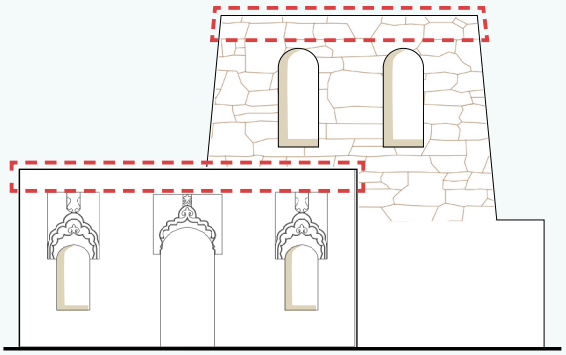


FIG. 14 Flat roofs

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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.

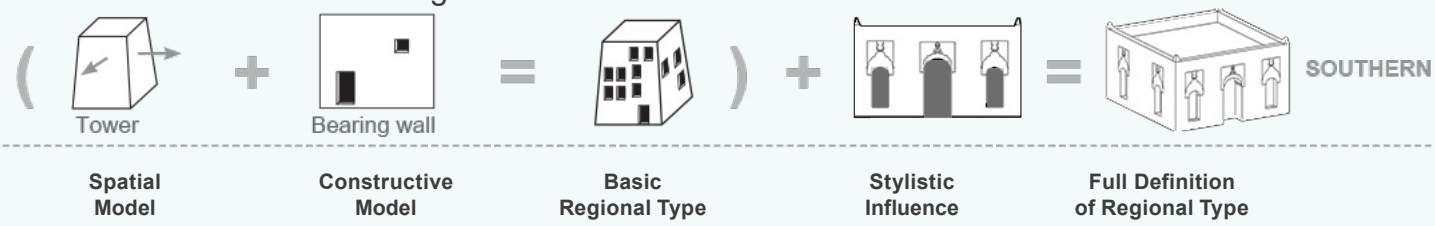
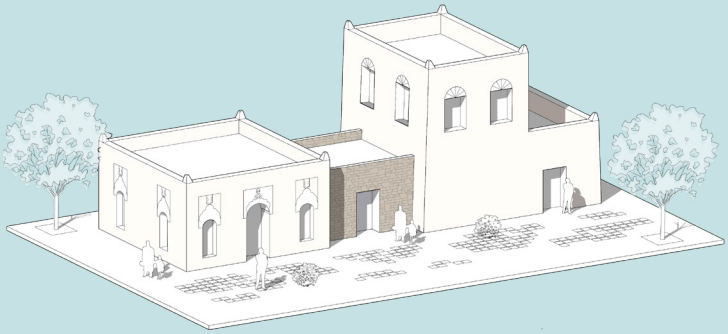


FIG. 15 Character equation for the Tuhama Coast (after Ishteeaque & Al-Said 2008)

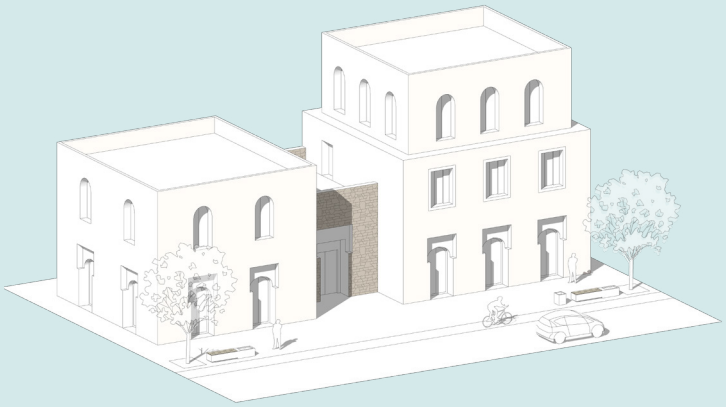


Traditional building

TRADITIONAL

The massing and design of the new building should foster the architectural character, not necessarily by replicating it, but by adopting in an innovative and sensible way the traditional forms and patterns, elements and decorations, materials and colors.

Walls with tapering geometric profile, large arch shape openings with simple articulation, pointed parapet corners, locally specific materials like stone with plaster.

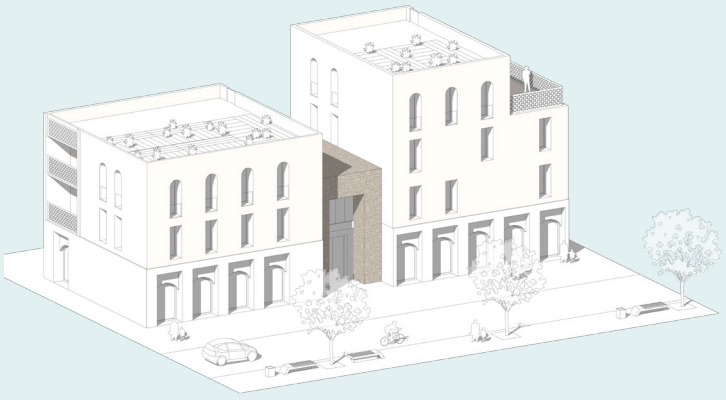


Transitional building

TRANSITIONAL

The form and style to be adopted for transitional style should distill the most essential qualities and character giving architectural elements, such as the use of appropriate material and color palette and interpretation of dominant architecture features.

Balance of arched and rectangular openings, horizontal volumes and bipartite facades, terraces with shadings and recesses in higher floors.



Contemporary building

CONTEMPORARY

The form and style of contemporary style should distill the essential qualities and values of vernacular architecture in a new and ever contemporary expression

Abstraction of geometric planes and forms, active frontages, adapting to a range of building types and increased daylighting. Perforated walls, screens and setbacks for shade and repetitive patterns.

FIG. 16 Evolution of styles

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 qualities 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 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 character 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 Tuhama Coast.

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

Composition

In contemporary parameters, the different compositional elements of layout, open space, massing, design,and facades described in chapter 1 should translate into the following provisions.

2.1 Townscape groupings

Guidance for layout aims to achieve and contribute to factors like topography of site and its context, figure ground qualities, and public realm.

1 Human-scale, socio-cultural and family values, with different levels of privacy should be fostered in the design.

2 Spatial enclosures should be promoted to achieve a sense of place with a clear hierarchical variety of open spaces.

3 Walkable and non-car dominated environments with attractive public realm should be prioritized.

4 Land use should promote a mix of uses.

5 Large blocks (>100m in any direction) should in general be avoided, or provide mid-block passages for walkability.

A permeable block structure with mix of uses is essential to create a walkable and vibrant urban space.

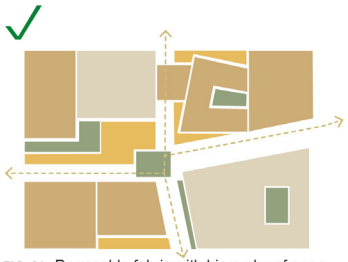


FIG. 21 Permeable fabric with hierarchy of open spaces, mixed uses, and continuous pedestrian network should be encouraged

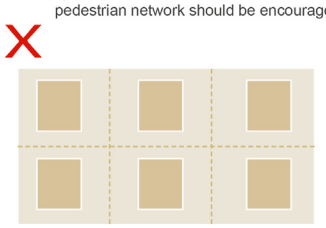


FIG. 22 Large blocks / consolidated blocks without pedestrian permeability should be discouraged

2.2 Relationship to landscape

1 Conservation and enhancement of environmental and cultural resources on site should be prioritized.

2 Development should be sensitively designed so as not to impact the flat, open and vast visual character of the coastal plains.

3 In general, a usable open space should be provided within the plot oriented toward the public frontage.

To respect and respond to the natural landscape context, climate and environment.

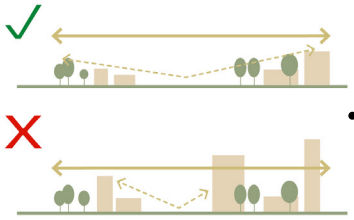


FIG. 23 Respecting the natural vastness of plains and open views to the landscape

FIG. 17 Typical guideline structure

GUIDELINES

1 Key features

The form and style of contemporary Tuhama Coast architecture should distill the essential qualities, key features and the values of vernacular architecture.

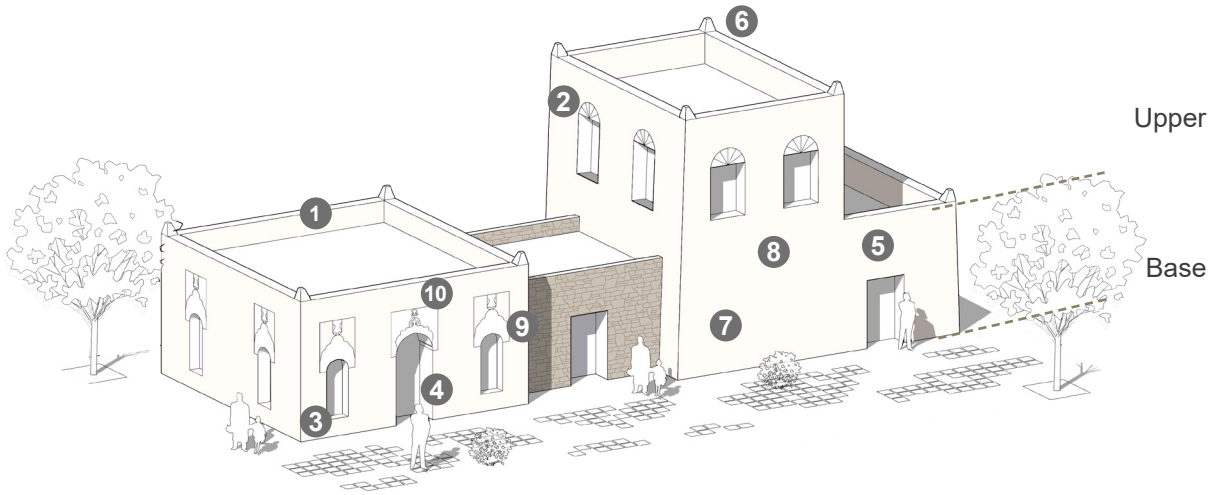


FIG. 18 Tuhama Coast key features

Key features:

1 A general low development of one to two stories high with facade breaks brought in by vertical massing. Occasional inclination angle of max. 5 degrees.

2 High positioned large openings oriented towards west bringing the gentle wind from the Red Sea.

3 Arched windows are prevalent in this style of architecture.

4 Simple facades with general symmetrical arrangements of openings with variation brought through change in massing.

5 Openings do not cover more than 30-50% of the overall facade.

6 Flat roofs with parapets articulated with pointed corners.

7 Generally divided into two parts with a uniform facade character.

8 Typical colors are mainly shades of beige, brown, orange and white derived from locally available natural stone (black volcanic rock), sand, and white coral from sea.

9 Local art is also used for decorating internal walls and doors.

10 Occasional carving features on top part of the building or niche above the openings.

1.1 Character summary

The design of vernacular architecture distinguishes itself from the neighboring styles with large openings, often arch shaped, to bring the sea breeze in. The general massing is low lying with simple facades and symmetrical composition.

Tuhama Coast also features fortifications very low opening ratio for defense purposes. Openings are with simple geometries of arch or rectangle.

Arched windows placed on upper floors articulated with plaster prevalent in this style to bring the sea breeze in. Openings do not cover more than 30-50% of the overall facade. Gently tapered walls with a maximum inclination angle of 5°.

The graphic illustrates an example of a dominant style of vernacular architecture in the Tuhama Coast.

Contemporary architecture in Tuhama Coast may be achieved by re-interpreting in an innovative way vernacular forms and patterns, architectural elements and decorations, and, materials and colors while retaining the values of the local culture.

FIG. 19 Vernacular architecture in Al Birk

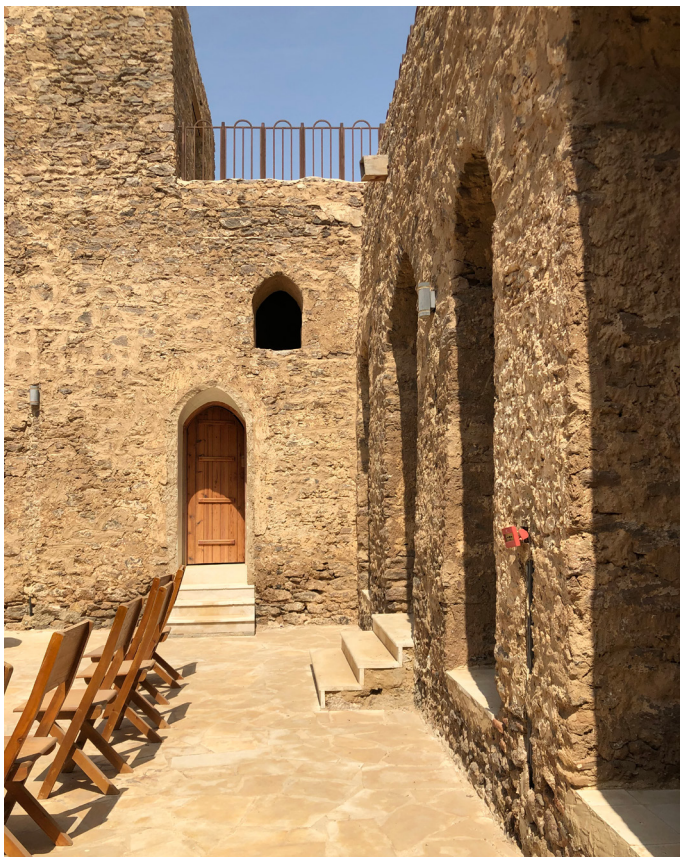


FIG. 20 Jazan fort

2 Composition

In contemporary parameters, the different compositional elements of layout, open space, massing, design,and facades described in chapter 1 should translate into the following provisions.

2.1 Townscape groupings

Guidance for layout aims to achieve and contribute to factors like topography of site and its context, figure ground qualities, and public realm.

1 Human-scale, socio-cultural and family values, with different levels of privacy should be fostered in the design.

2 Spatial enclosures should be promoted to achieve a sense of place with a clear hierarchical variety of open spaces.

3 Walkable and non-car dominated environments with attractive public realm should be prioritized.

4 Land use should promote a mix of uses.

5 Large blocks (>100m in any direction) should in general be avoided, or provide mid-block passages for walkability.

A permeable block structure with mix of uses is essential to create a walkable and vibrant urban space.

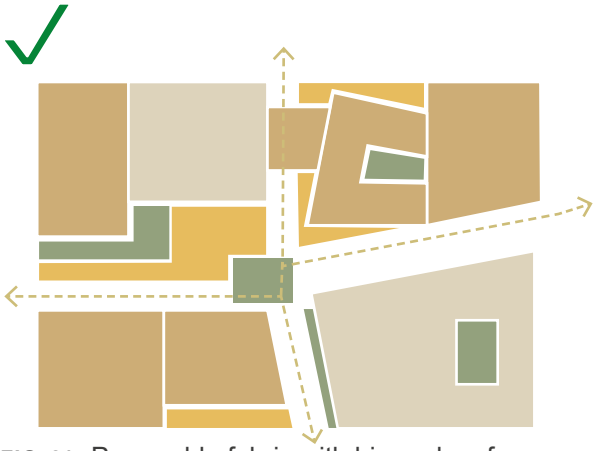


FIG. 21 Permeable fabric with hierarchy of open spaces, mixed uses, and continuous pedestrian network should be encouraged

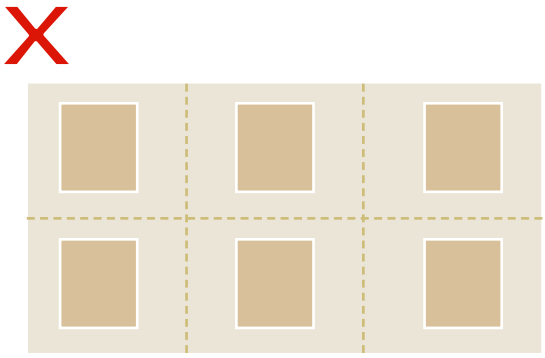


FIG. 22 Large blocks / consolidated blocks without pedestrian permeability should be discouraged

2.2 Relationship to landscape

1 Conservation and enhancement of environmental and cultural resources on site should be prioritized.

2 Development should be sensitively designed so as not to impact the flat, open and vast visual character of the coastal plains.

3 In general, a usable open space should be provided within the plot oriented toward the public frontage.

To respect and respond to the natural landscape context, climate and environment.

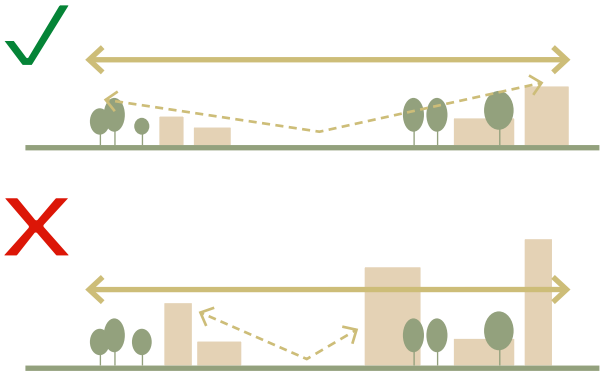


FIG. 23 Respecting the natural vastness of plains and open views to the landscape

2.3 Horizontal building forms

Building form guidelines aim to contribute to the contemporary interpretation of factors like scale of buildings, heights and proportions.

1 Generally, building massing should adopt low-rise horizontal form, responding to the immediate context of the coastal plains and history, while also fostering human scale.

2 Forms should be compact with strong geometric shapes and provide a well-balanced variety that adds to the skyline.

3 Occasional use of inclined facades, limited to inclination angle of 5 degrees may be provided to add variety to the skyline.

4 Large building massing should be avoided; typically, larger floor plates should be broken by means of full breaks and/or recessed to introduce variation and foster human scale.

To retain the typical horizontal form of traditional settlements.

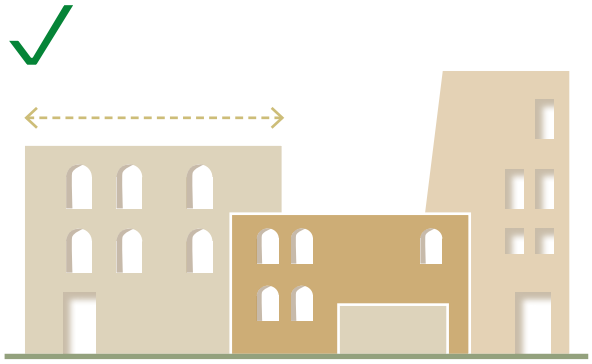


FIG. 24 A general horizontal massing with flat roofs with variation achieving human scale and variety to the skyline

FIG. 25 Large monolithic building blocks, non contextual roof profiles should be avoided

2.4 Flat roofs

Roofscape guidelines significantly contribute to the character of the place through contemporary interpretation of roof line, views and skyline.

1 Building massing should be designed to have flat roofs. Varied roof line can be created with stepped co-joined units, gateways and compound walls with varying heights.

2 MEP equipment, utilities, delivery, refuse containers, and other types of utilities should always be screened by parapets or located underground / internalized.

To maintain the traditional flat roof forms.

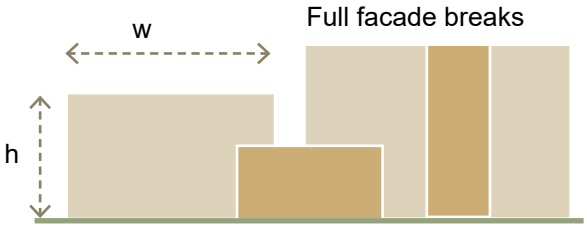


FIG. 26 Flat roofs, width-to-height ratio and facade breaks promoting horizontality

2.5 Facades with localized symmetries

The guidance for elevations and frontages aims to achieve and contribute to the contemporary interpretation of factors like, use of traditional facade elements, ratio of solid and openings/voids, placement patterns, relationship to street, orientation for quality of light and shadow, and privacy requirements.

1 Localized symmetry should be maintained in the placement, rhythm and patterns of the openings, interpreting the general symmetry of houses from the vernacular architecture.

2 Facade design should be integral to all public sides (i.e. with the same level of design quality and a consistent treatment).

3 Facade design should always ensure privacy of neighboring residential buildings.

4 Large-scale symmetry should be reserved for only the most important of civic and religious buildings.

5 Materials may be used to highlight features to break the uniformity and symmetry.

To observe simple symmetry defining the traditional architecture.

FIG. 27 General symmetry on ground floors, localized symmetry in opening placement patterns

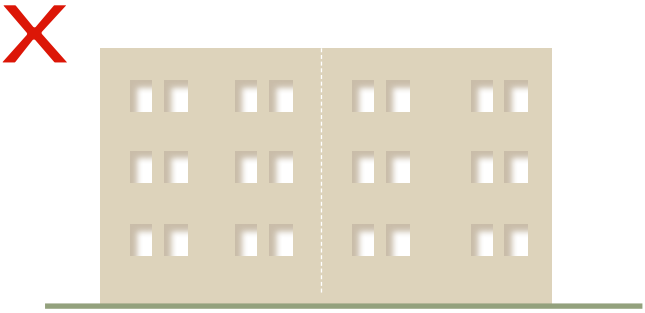


FIG. 28 Long monotonous facades, large scale symmetry without facade breaks should be avoided

2.6 Simple openings

Facades should be articulated by windows, horizontal and vertical breaks and also by finishes, recessed entries, fenestration pattern and projections.

1 Generally, openings should consist of medium sized windows of simple geometry. Large windows in balanced proportion may be used on upper floors, oriented to bring the see breeze in.

2 Arch shaped openings should be used in balanced proportion to reflect the character of the zone.

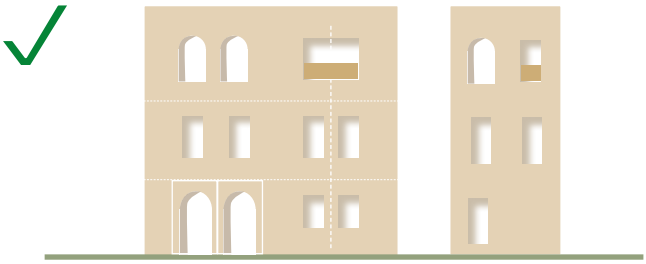


FIG. 29 Moderate opening percentages with localized symmetry and articulation using patterns. Max. 30-50% openings

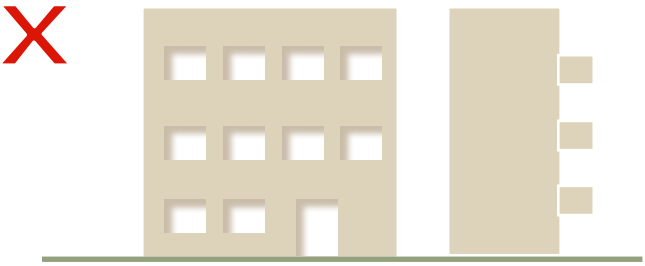


FIG. 30 Large openings, arranged in grid patterns, projected balconies should be discouraged

3 Windows and doorways should feature ornamentation, use of patterns, niches, screenings to reflect the detail articulation of the vernacular architecture.

4 Generally, openings should have a maximum share of 30 to 50% of the overall facade surface, according to their solar and wind exposure.

5 Loggias may be incorporated in frontages and should be preferred over abutting balconies.

To observe the rich, diverse and distinct aesthetic character of the coastal plains.

FIG. 31 Grounded facades with active ground floors

2.7 Grounded facades

1 Generally, facades should express external solid walls that are grounded to the street level.

2 Ground floor facade treatment should foster a high-quality interface between the building and the street, with active frontages.

3 Arcades and colonnades are encouraged for active frontages.

4 Facade materials should be hard-wearing and robust.

Design of ground floors should express the architectural intent and character of the place.

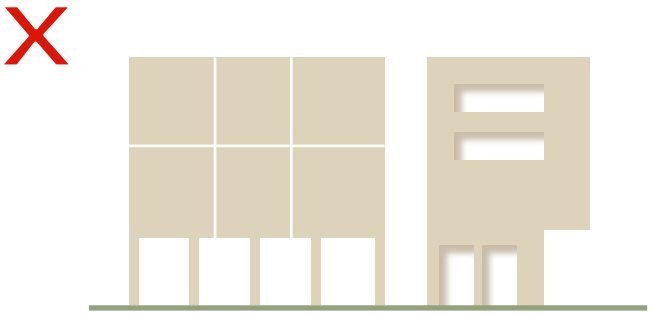


FIG. 32 Very large openings at base, thin columns, blank, recessed ground floors, non-integral facades, lack of respect to privacy needs, should be avoided

2.8 Variation in openings

1 Floor wise varying rhythm, grouping, alignment and geometry of openings should be considered while maintaining a general symmetry. For example, only ground floor openings may feature niches or arch shaped openings reserved for upper floors.

To support the bipartite nature of the traditional architecture creating recognizable upper and lower zones.

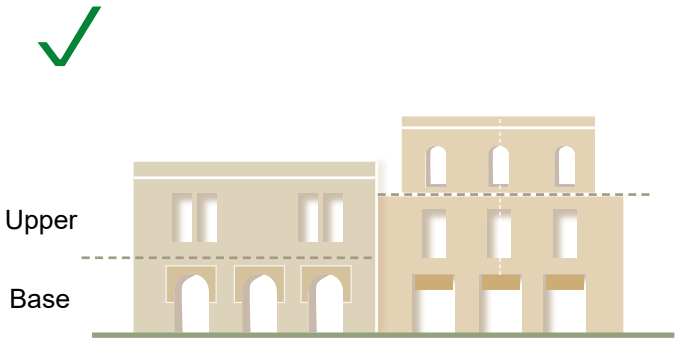
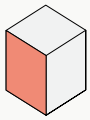
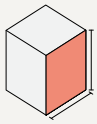
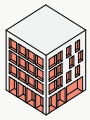
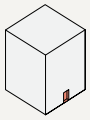
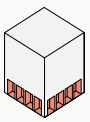
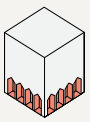
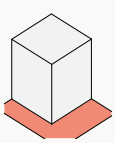


FIG. 33 Variation in openings achieving the bipartite treatment with distinct ground floor and upper floors

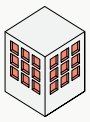
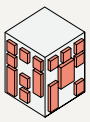
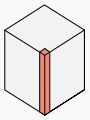
3 Elements

The individual parts that are the building blocks of the Tuhama Coast architecture.

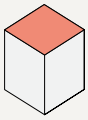
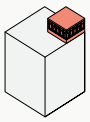
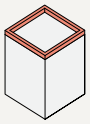
TAB. 1 Tuhama Coast architectural elements

	GENERAL ELEMENTS	
	**Key characteristics**	Compact form, strong geometries, massing is generally horizontal, with balance of vertical volumes, simple localized symmetries and occasional use of gently tapered walls with an inclination angle between 1.5° and 3°. Refer to Guidelines Section 1 ‘Key Features’ page number 18 for all the characteristics.
	**Facade proportion**	Human scale massing and design of the new building that responds to context and history, and work with the existing proportions of the heritage built form. Generally horizontal building form with balance use of vertical volumes.
	**Window-to-wall %**	Openings should generally not exceed 30-50% of the overall facade surface and propose a similar window-to-wall % to the heritage site, if located adjacent to it. Larger openings maintaining the balance of solid facade are encouraged in coastal areas to bring the breeze in.
	**Opening proportions**	Opening proportions should interpret the traditional character of openings in the region / heritage site, intended use as well as the environment. Refer to section “3.3 Windows and openings” on page 28.
	**Composition**	Depending on overall building size, the base may be characterized by as much as the first 1 - 3 stories of the building above ground. For taller buildings, stepping the massing at lower floors may help establish a sense of horizontality at street level.
	BASE ELEMENTS	
	**Entrances**	Entries should be recessed from the building facade and well proportioned for a pedestrian scale. They should be well defined, clearly visible, and universally accessible from the sidewalk. Vehicular entrances should be placed at the back of the building.
	**Shop fronts**	Active frontages between ground floor and main street should be emphasized. Large openings if provided should maintain grounded base quality of the ground floors. Recessed ground floor should be avoided.
	**Arcades**	Arches should be encouraged for active frontages.
	**Curtilage**	Curtilage: small yard or court. Buildings’ exterior ground floors, particularly arcades’ covered exterior area, should strive for material and design integration with the surrounding public realm. The transition from the public domain to the curtilage should be universally accessible, with no abrupt changes in level, single steps, or other trip hazards. By optimizing the micro climate around buildings, it is possible to ensure a favorable pedestrian experience.

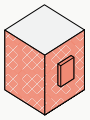
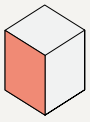
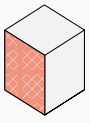
MIDDLE ELEMENTS

	**Wall articulation**	Facades should feature recessed entrances, use of niches and varied openings. They should create a visually engaging streetscape with regular breaks (generally at maximum 30 meters intervals) along building facade, varied elements like offsets, recesses, openings, and change in materials and colors, while also promoting the bipartite character. Wall breaks should be a minimum of 1.5 meters deep and 3 meters in length and extend to at least 70% of the facade vertically.
	**Windows and Openings**	Openings should follow a pattern and rhythm encouraging local symmetries, contributing to the character of the place, as well as designed for human comfort. Window and opening design are subject to a large number of compositional guidelines. Refer to section “3.3 Windows and openings” on page 28.
	**Projecting elements**	Projecting features should reference historic examples, if used, being appropriately sized for the rooms they serve. Projecting balconies should take care of the privacy requirements. Integrated loggias should be preferred over projections.
	**Recessed elements**	Recessed elements are set inwards from the building facade; they extend access or perception of the public realm inside the plot boundary. This may include: recessed entrances, arcades, overhangs and chamfered corners.
	**Shutters and Shading**	Shading may be achieved by recessing openings from the facade, or providing perforated or latticed screens. Should adapt to the vernacular language. Complementary color palette may be used to highlight shutters as special feature, based on the vernacular language.
	**Corner features**	Building corners should be well defined and positively contribute to the public realm and help pedestrian movement.

TOP ELEMENTS

	**Roofscape**	Active, accessible roof space is encouraged. Roofscapes should be used as amenity space and to incorporate sustainability and green roof measures is encouraged.
	**Rooftop Elements**	Should be set back min.4m from the parapet / building facade and be of a lighter expression of construction (i.e. materiality or color). Rooftop rooms derived from vernacular architecture are encouraged. Temporary fabric shading also permitted. Rooftop elements usually, should not extend more than 33% of the frontage.
	**Parapets**	Parapets should be horizontal, and typically low in height. Parapets may be articulated, not necessarily duplicated based on the vernacular style, or feature as extension of external walls. Refer to section “3.4 Roofscape” on page 29.

OTHER ELEMENTS AND ORNAMENTATION

	**Materiality**	Materials should match the local character area zone and reference the near-by heritage; be consistent in nature, minimum 50% of facade should feature one material. Excessive layering of multiple materials and generally, use of low quality materials is discouraged. See expanded guideline “4 Materials and Colors” on page 30.
	**Color**	Generally, approximately 70% of facade should be in one light earth tone color. Complementary colors, integrated in design composition may be used to highlight features, generally up to 30% of total facade surface. See expanded guideline “4 Materials and Colors” on page 30.
	**Pattern**	Local art and patterns should be integrated in design composition, generally between 10-20% of total facade surface. See expanded guideline “5 Patterns” on page 34.

Top


Pointed parapet articulations


Plastered parapet with carvings


Pointed top of huts


Flat parapet


Pointed parapet

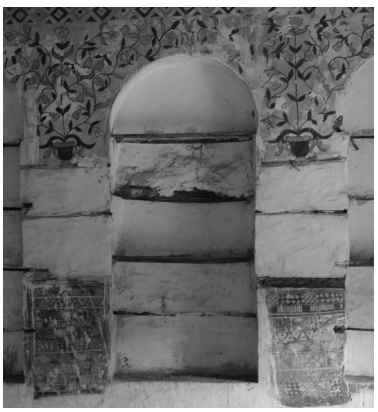

Defensive openings - castle

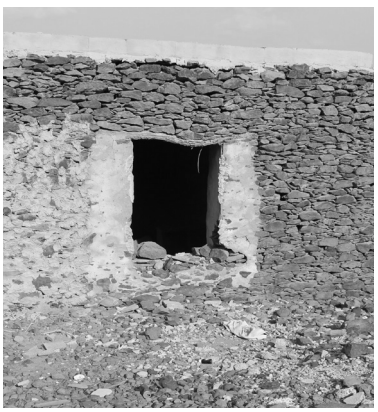
Middle


Arch shape opening


Rectangular opening with arch shape articulation


Niche on top of arch shaped opening


Niche in interior walls


Regular shapes


Irregular openings

FIG. 34 Examples for top, middle, base, ornamentation and other elements

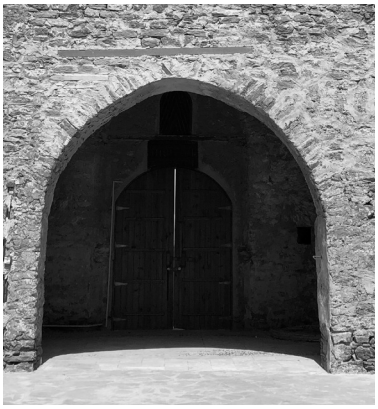
Base

Solid base with minimal opening

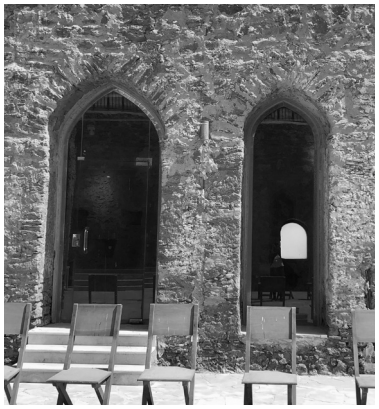
Rectanglular shaped openings

Minimal openings

Arch opening with niche

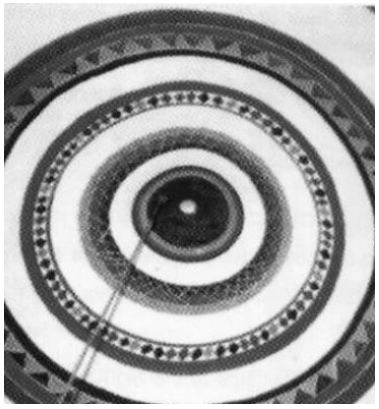


Wide arch opening - special typology used in forts



Pointed arch openings

Ornaments and other elements



Art form present in the region

Floral ornamentation

Intricate carving

Pattern with stone variation

Carving - curvilinear pattern

Niches / openings in walls

3.1 General details and considerations

Details and construction techniques guidance provides standards and guidelines for use of traditional elements, provisions to translate these details to contemporary parameters, types and percentage of elements on the facade, protection and enhancement of traditional building features. Elements depicted should be used as starting points for interpretation rather than direct copying.

1 In general, architectural elements like the rooftop elements, openings, entrances, and construction techniques should express a plain, simple and elegant style.

2 A vocabulary of architectural details should celebrate or re-interpret the traditional architectural elements, as per identified in Section 1.

3 Traditional architectural elements should be combined with contemporary and new technologies in an innovative way.

4 Contemporary architectural elements and construction techniques should be appropriately selected to respond to climatic conditions as per identified in Section 1 (i.e. shading strategy and use of non-reflective surfaces, wind directions, rain harvesting, green roofs).

5 Contemporary adaptation of traditional building techniques and materials, should be proposed (i.e. limestone, mud colored plaster, beige metal/ high-pressure laminate HPL cladding).

Architectural elements are the unique details and component parts that working together with specific construction techniques form the architectural style of buildings.

3.2 Doors and entrances

1 Generally, doors, entrances and gateways should consist of geometries ranging from rectangular geometry to variety of arch shapes such as pointed arch and regular arch.

2 Doors should be of a width-to-height proportion width 1:2 - 1:3.

3 Arched entrances range from 1:2.3 - 1:2.6. Wide arches are limited to special typology of buildings or entrances.

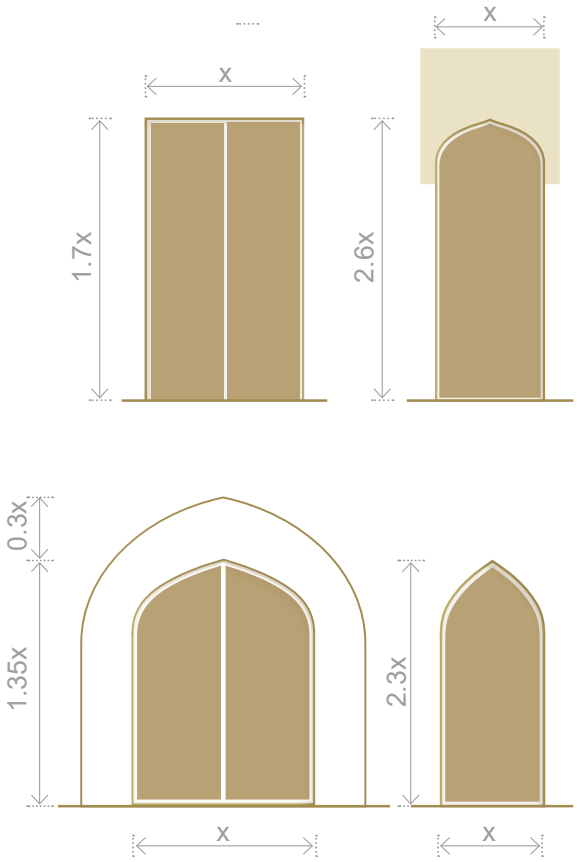


FIG. 35 Traditional door and entrance elements proportions

3.3 Windows and openings

1 Openings should be articulated with niches, screens, and recessed over-panels which can be embellished with patterned carving.

2 Opening surrounds may be recessed or projected from the main facade to increase compositional layering and the play of light on the facade.

3 Generally, openings should consist of medium sized windows of simple geometry. Generally vertical windows should be of proportions 1:1.25 - 1:2.

4 Arch shape openings, common to Tuhama coast are generally of 1:2 - 1:2.5 proportion.

5 Locally symmetrical alignments related to both, interior room layouts and external facade composition.

6 To generate bigger orders and levels of hierarchy on the facade, windows on different floors should adopt axial alignments.

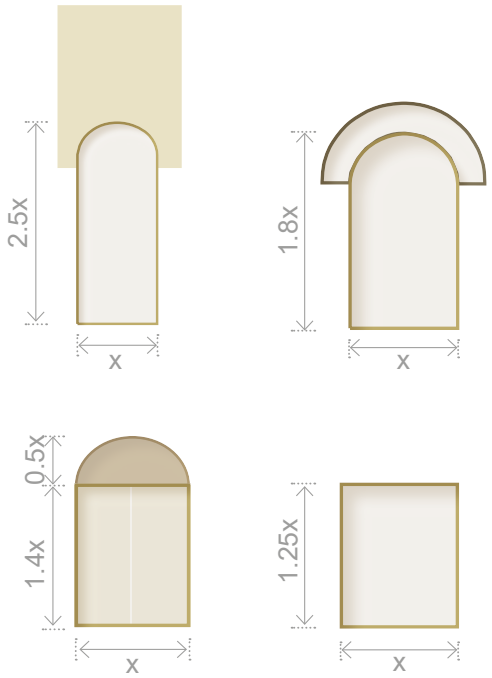


FIG. 36 Traditional window elements proportions

3.4 Roofscape

The traditional roofscape of the Tuhama Coast is characterized by the use of parapets and articulation.

1 Articulation of parapets is limited to flat parapets and pointed corners with proportions as shown in the figure.

2 Top part of the building occasionally articulated with plaster carving with curvilinear geometries.

3 Contemporary adaptation of the roofscape may feature articulated parapets and/ or distinct / articulated roof elements. It should clearly define and articulate roof top with distinct materials and/or features.

4 Contemporary use of parapets should retain the values of vernacular architecture such as privacy, showcase of art and patterns and defense, to create screening for utilities, articulation and creating interesting skyline.

Contemporary interpretation of architecture through factors like ratio of solid and openings/voids, proportion and size of openings maintain the traditional architectural source of the Tuhama Coast.

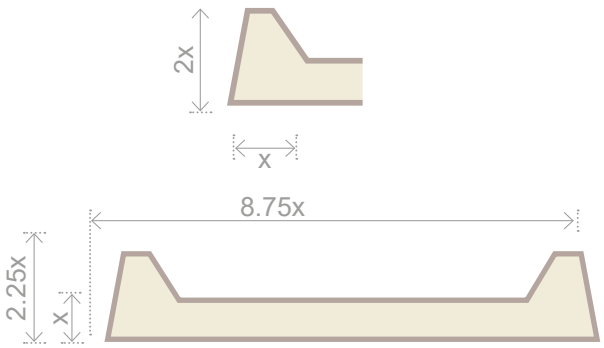


FIG. 37 Traditional parapet elements

4 Colors and materials

The skillful interpretation, application and interplay of light, shadows and colors, so characteristic of Tuhama Coast traditional architecture, can convey additional meaning and contribute to providing a rich and contextual experience of the space.

In contemporary parameters the use of colors for new buildings should focus on:

1 A limited spectrum of natural colors and materials to be preferred.

2 Limited use of complementary colors may also be used for public realm, hardscape and softscape elements.

3 For all public frontages, typically, 70% to 80% range of the project's colors palette to be composed of light gradations of earth tones, with a maximum of 20% to 30% of the total composition reserved for stronger gradations and complementary colors.

4 Intensified and/or contrasting colors to be reserved for accentuating important elements, such as entries, arcades, openings, etc. The range for intensified and/or contrasting colors should be maximum 5% of the total composition.

5 Changes of exterior color, texture or material may be used to reinforce the architectural formal idea and are best accompanied by changes in plane or occur at an inside corner (i.e. at vertical recesses, or horizontal step-backs), or accommodated via architectural detailing, such as gaps, or other changes in plane.

Appropriate colors derived from the local landscape and heritage vernacular palette should be used to contribute to an esthetically pleasing, and distinctive while more uniform urban environment.

RAL Color codes

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

FIG. 38 Tuhama Coast color palette

FIG. 39 Tuhama Coast colors and materials mood board

In contemporary parameters the use of construction materials and finishes should focus on:

1. Generally, materials finishes and colors treatment should be integral to all sides of the building and particularly along public frontages.
2. Solid materials and clear shaped geometries should be preferred.
3. Use of locally available traditional materials should be preferred.
4. Materials should convey a sense of quality and durability and that are able to retain their appearance over time.
5. High-quality durable materials should be used particularly for public facades. Since the lower part of a building, typically the first 4 levels, has the greatest visibility at ground level and while driving, its materials should be of enhanced quality and durability.
6. Changes of exterior color, texture or material may be used to reinforce the architectural formal idea and are best accompanied by changes in plane or occur at an inside corner (i.e. at vertical recesses, or horizontal step-backs), or accommodated via architectural detailing, such as gaps, or other changes in plane.
7. Generally, the use of min. 50% of facade treatment with one consistent material should be required.
8. Generally, the use of metal cladding and curtain walls should be limited to max. 20% of the total facade area.

Material and finishes should aim to achieve and contribute to the Tuhama Coast architecture through factors like quality of new materials, hierarchy, proportion and palette of materials responding to the local context.

Recommended materials

Recommended materials are those durable and quality materials that give the building a sense of authenticity, weight, texture, and mass, such as:

- Local stone / natural stone.
- Colored concrete.
- Terra cotta.
- Mud brick (full or face brick).
- Rammed earth.
- Cementitious panel siding.
- Green walls.
- Smooth plaster.
- Terrazzo.
- Robust stone veneer.
- Low reflectivity clear glass.
- Limited use of high-quality metal panels.
- Durable tensile fabric for shading structures.

Discouraged materials

Use of low-quality building materials and elements are discouraged, such as:

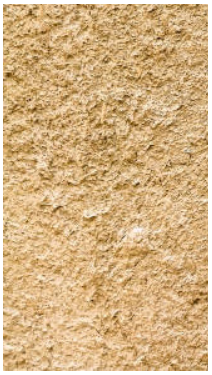
- Metal cladding.
- Colored and mirrored glass.
- Plywood siding, T-1-11 plywood siding.
- Vinyl siding.
- Thin layers of stone or unit masonry that appear veneer-like.
- Corrugated plastic sheets.

From the tradition


Local stone


Local stone


Clay plaster

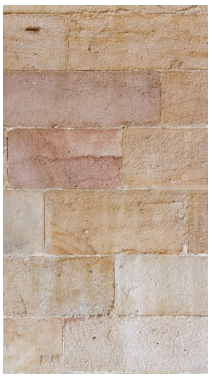

Plaster

Contemporary interpretation


Diorite


Granite


Basalt


Sandstone

Earth base

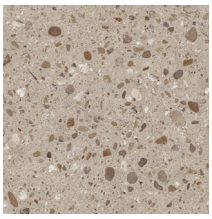

Plaster


Adobe


Rammed earth


Mud bricks


Soapstone


Terrazzo


Shell limestone


Shell limestone


Concrete


Pigmented concrete

Other materials limited to 10% - 20%


Wood


Metal cladding


Tensile fabric


Travertine

FIG.40 TUHAMA COAST - RECOMMENDED MATERIALS

5 Patterns

Common motifs and patterns used in the traditional craftsmanship and material culture of the Tuhama Coast.

Traditional patterns help to express the architectural character and preserve its sociocultural values, customs and traditions. The Tuhama Coast is renowned for its diverse artistic expressions and decorative motifs, deeply rooted in its rich history, with influences from other origins.

Typically, the interior walls of the traditional coastal huts featured plaster paint adorned with rich geometric and organic forms unique to the region.

Intricate geometric, curvilinear, floral, and triangular patterns embellished the interior walls, and occasionally exterior facades, openings, and door shutters of the traditional stone houses.

1 Traditional patterns and motifs may be represented through use in façade treatment, public realm and hardscape elements.

2 Art pattern should be used to reinforce the architectural formal idea, accentuate openings, entrance areas and for special architectural elements. Art patterns may also be used for enhancing a blank facade. In public plazas and open spaces, local art may be used to theme public realm elements

3 In general, the range for decorative patterns should be between 10%-20% of the total facade area.

Patterns inspired from traditional art forms and coastal architecture are used in Tuhama Coast area.

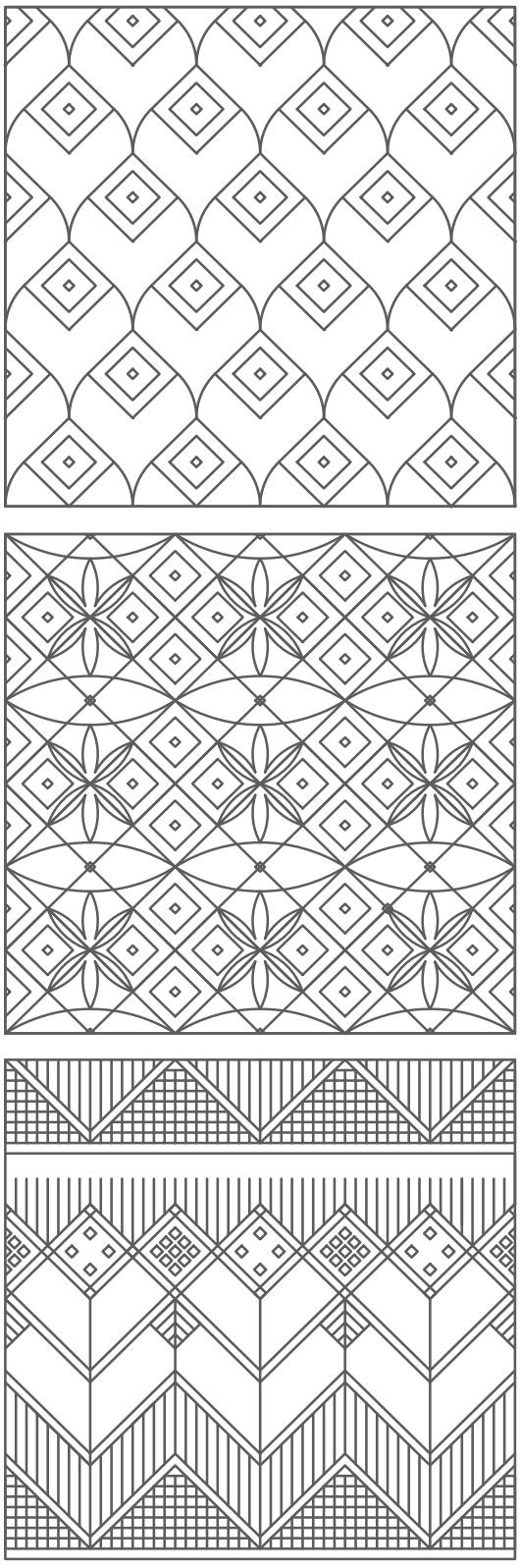


FIG. 41 Example of abstraction of decorative patterns and motifs

FIG. 42 Traditional patterns present in Tuhama Coast

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 architecture in new yet familiar ways.

To encourage contextually sensitive contemporary design.

FIG. 43 Example of building material abstraction

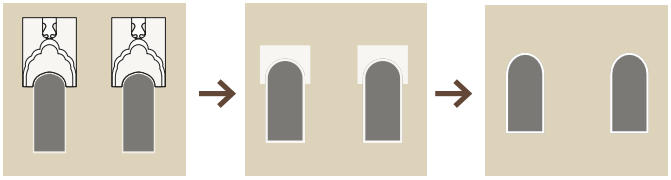


FIG. 44 Example of window shape abstraction

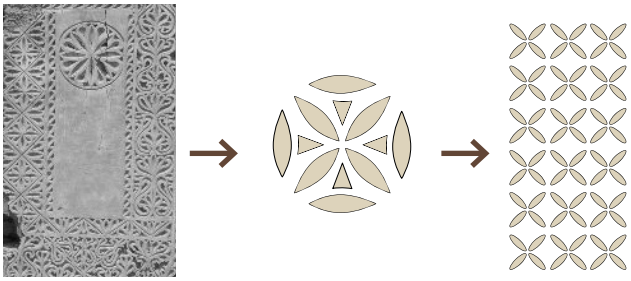


FIG. 45 Example of pattern abstraction

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 massing 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 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. 46 Break down building massing to better fit traditional architectural elements

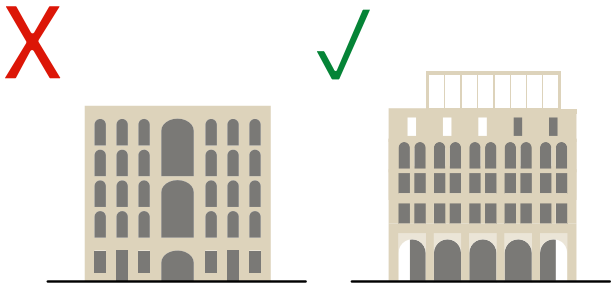


FIG. 47 Do not scale and distort smaller elements into oversized graphic features

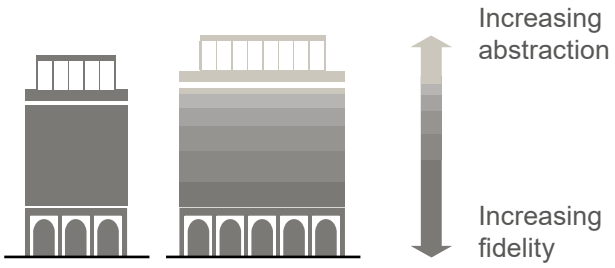


FIG. 48 Pay attention to building elements near the public realm, especially at the ground floor

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.

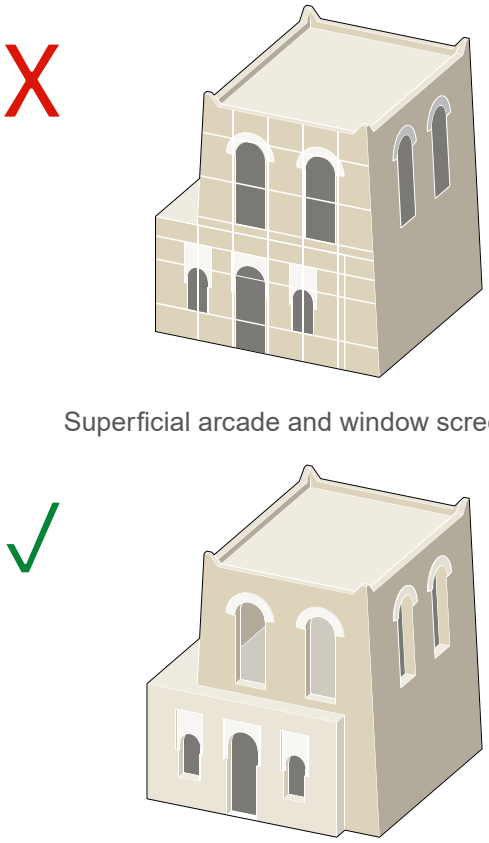


FIG. 49 Example of functional architectural elements

6.4 Adaptation

The application of traditional architectural characters 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.

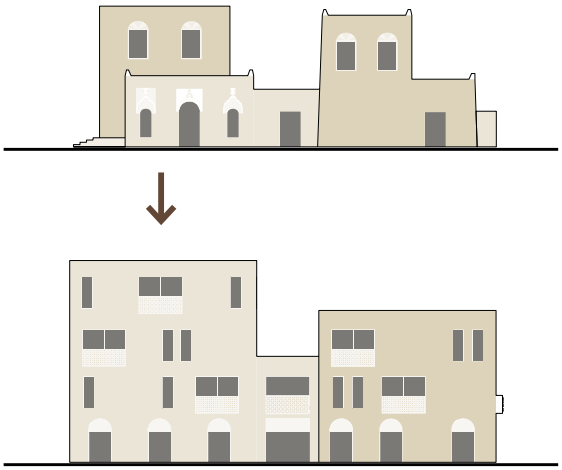


FIG. 50 Adaptation of traditional architectural elements to a contemporary building

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 projects, and particularly in sites located on the edge of two or more character areas.

1 In large projects, when the project site is located at the edge of two or more character zones, 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 projects.

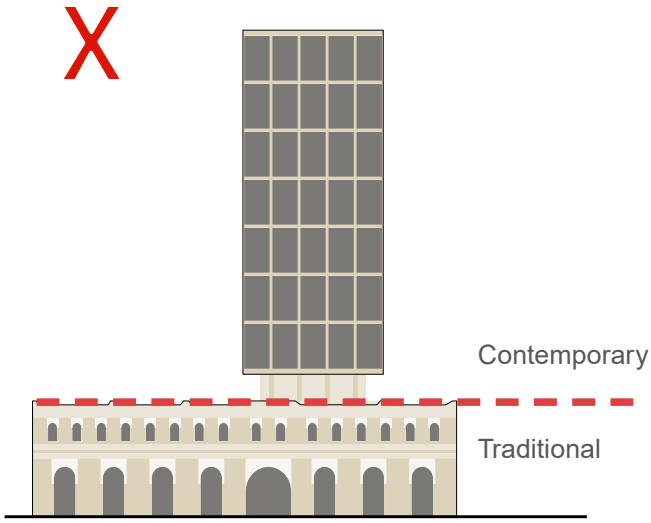


FIG. 51 Do not create hard breaks between mixed sources

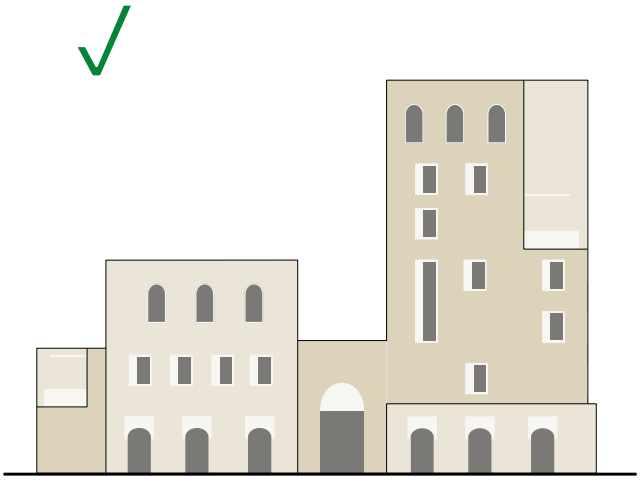


FIG. 52 Create gradual transitions between mixed sources and strengths of character application

7 Worked examples

This section provides examples for three styles, ranging from the traditional, transitional to contemporary as described in chapter 1 for Tuhama Coast character zone showcasing application of key compositional elements.

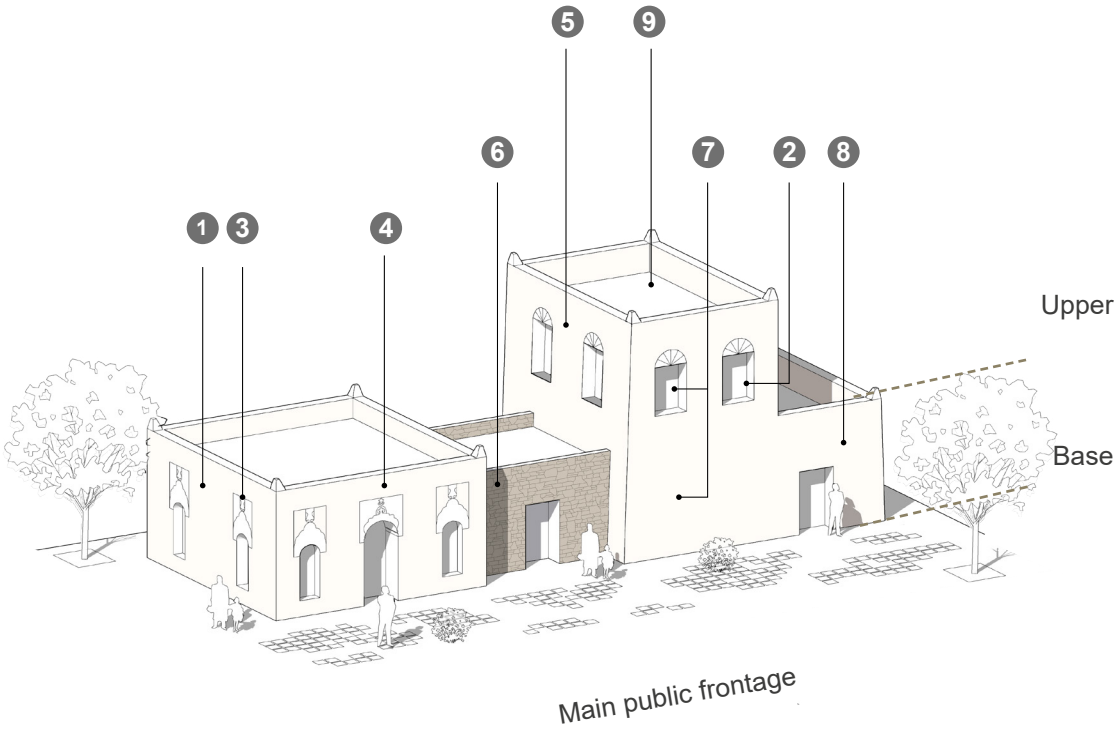


FIG. 53 Medium size building

7.1 Traditional

The massing and design of the new building should foster the character, by adopting in an innovative and sensible way the traditional forms and patterns, elements and decorations, materials and colors.

Walls with tapering geometric profile, slanted walls, large openings at top with simple articulation above them, pointed parapet corners, locally specific materials like stone with plaster.

1 A general low development of one to two stories high with facade breaks promoting horizontal volumes.

2 High positioned large openings oriented towards west bringing the gentle wind from the Red Sea.

3 Arched windows are prevalent in this style of architecture with occasional craving features and articulation above openings.

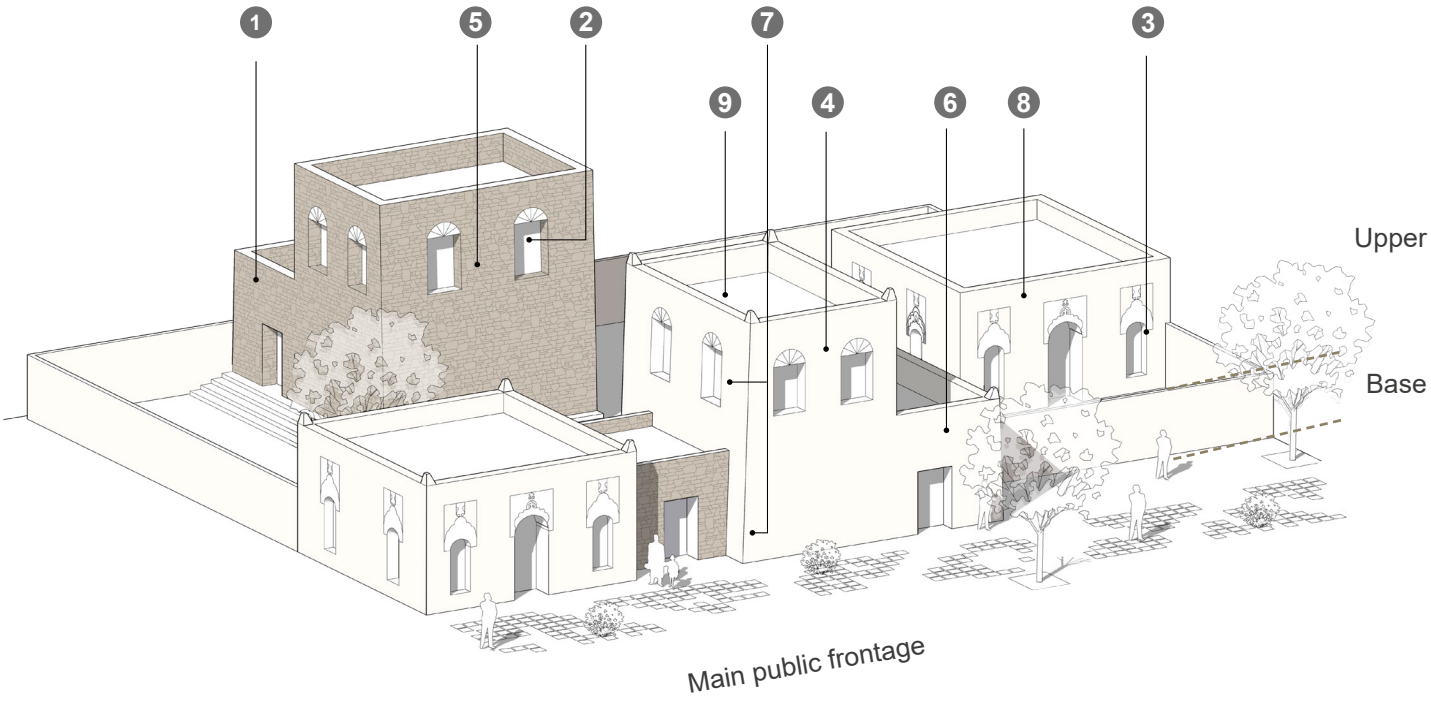


FIG. 54 Large size building

4 Simple facades with general symmetrical arrangements of openings with variation brought through vertical volumes and articulation.

5 Moderate window-to-wall ratio: grounded facades with moderate to large size windows. Openings do not cover more than 30% of the overall facade.

6 Solid base with stone masonry is prevalent.

7 General bipartite to monolithic facade character with base and top.

8 Generally, limited variation of materials in the facade with the use of stone and plaster. Typical colors are mainly shades of beige, brown, orange and white derived from locally available natural stone (black volcanic rock), sand, and white coral from sea. Local art is also used for decorating internal walls and doors.

9 Flat roofs with parapets articulated with pointed corners.

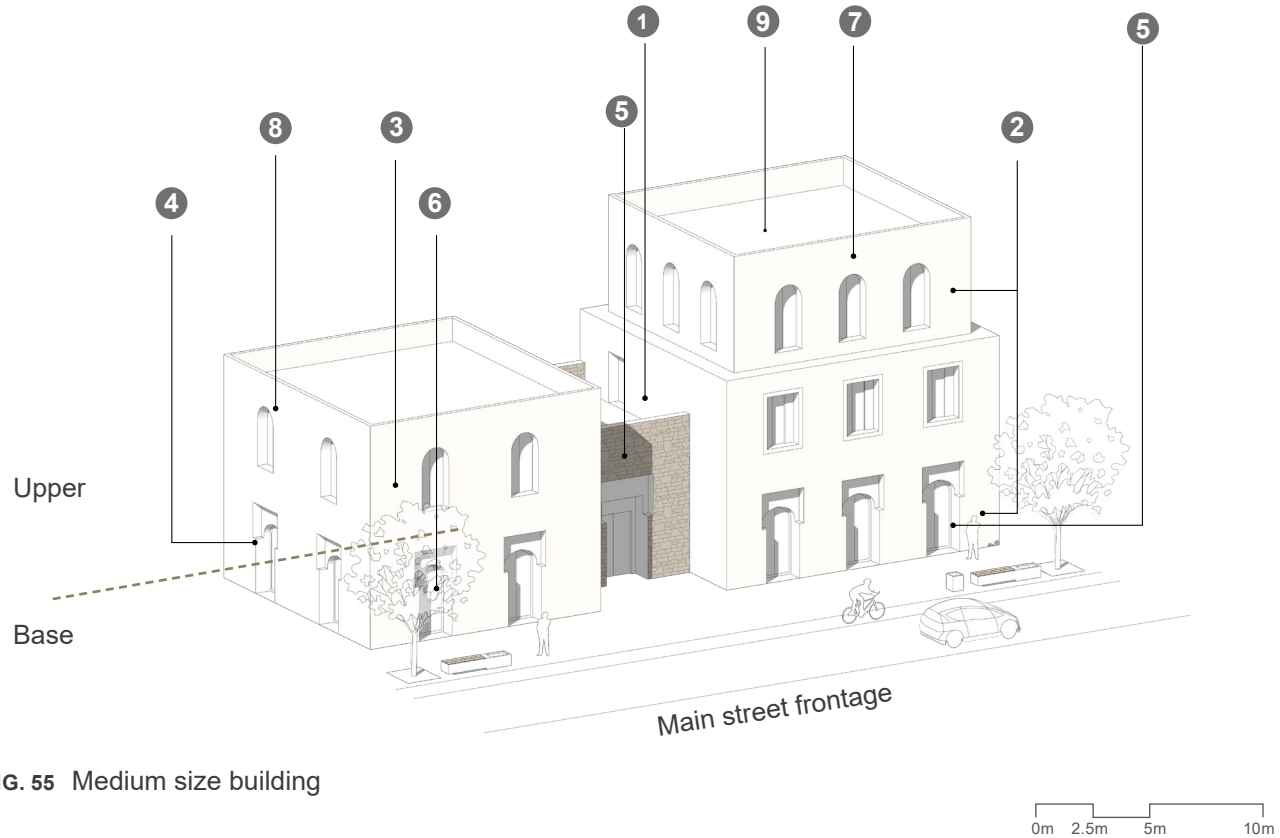


FIG. 55 Medium size building

7.2 Transitional

The form and style of transitional style should distill the essential qualities and values of vernacular architecture addressing the need of new ways of living yet reflect a strong character respecting and celebrating the local character and traditions; providing a sense of belonging.

Mixing between arched and rectangular openings, bigger framed windows, Balance of volumes and Hierarchy of masses, terraces with shadings. Introducing facade breaks and recesses in higher floors for horizontal and vertical balance.

1 Compact massing with strong geometric shapes, and flat roofs.

2 General bipartite to monolithic facade character with even transition between base and top.

3 Moderate to large size windows and occasional use of integrated loggias. Max. 40% openings of the overall facade surface.

4 Interpretation of arched openings with niche on top, horizontal volumes and use of new materials.

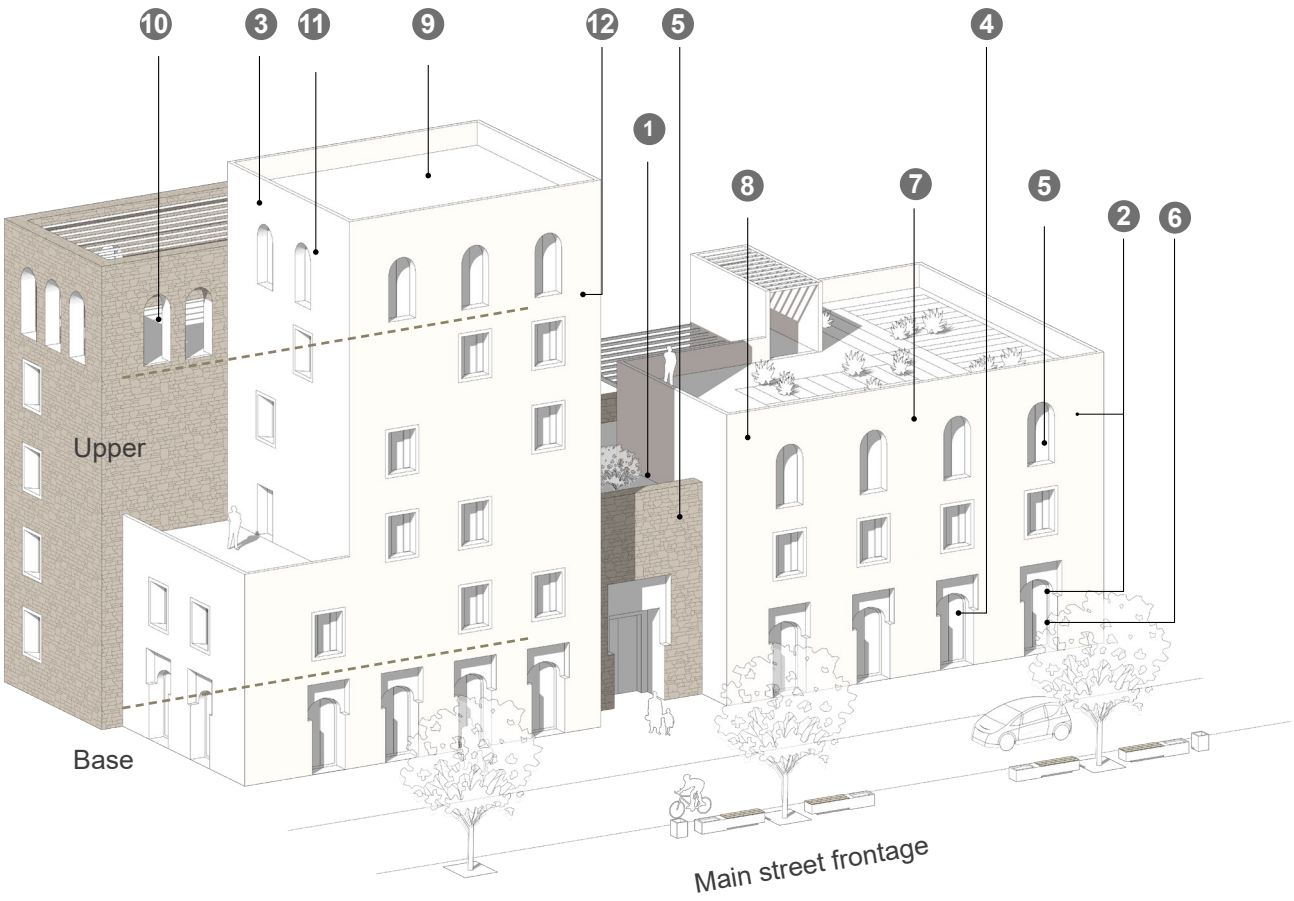


FIG. 56 Large size building

5 Use of arcades for active frontages. Arch shape openings used in balanced proportion. Entrance gateway highlighted with use of stone.

6 Integrated shopfronts, shutters and screens, maintaining grounded base. Perforations and patterning in surfaces.

7 Facades with generally symmetrical composition, use of volumes bringing variation through vertical accentuation.

8 Variation of materials used in facade is limited. General palette of off-white, beige, brown, and white, using recommended palette of materials, colors and finishes.

9 Flat roofs with distinct top part of the building, supporting privacy requirements and hiding roof top equipments.

10 Large buildings/ towers shall be tall, slender structures that enhance the skyline, large, elongated, boxy or slab like floor plates should be avoided.

11 Articulation of top zone should positively contribute to the skyline and design may be used to create landmarks.

12 In general large buildings more than 6-7 stories should not be encouraged.

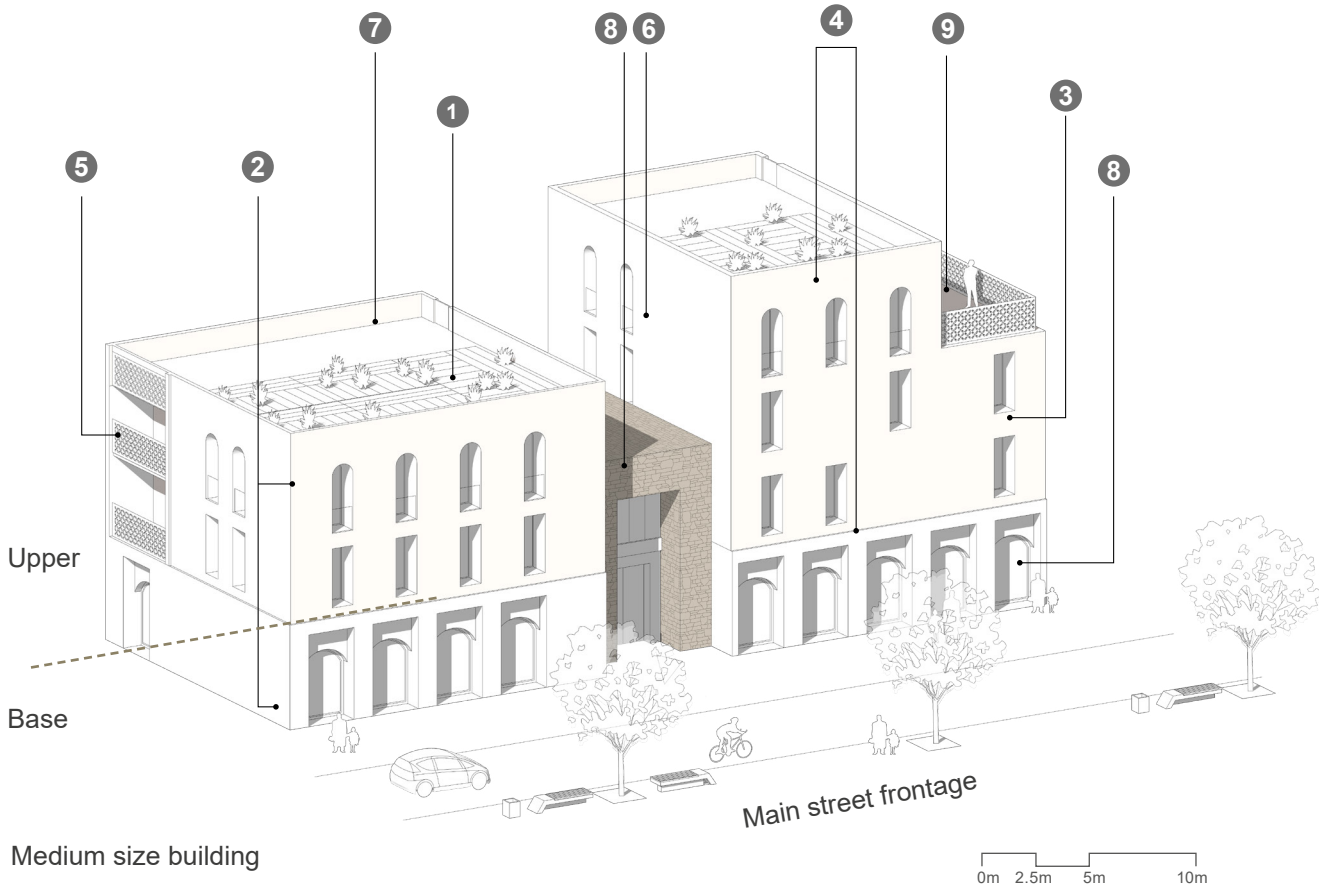


FIG. 57 Medium size building

7.3 Contemporary

The form and style of contemporary style should distill the essential qualities and values of vernacular architecture in a new and ever contemporary expression. It should address the need of contemporary living yet respect and celebrate the local natural character and traditions; providing a unique character to the built form and a sense of belonging.

Abstraction of geometric planes and forms, active frontages, adapting to a range of building types and increased daylighting. Perforated walls, screens and setbacks for shade and repetitive patterns.

1 Compact massing with strong geometric shapes, and flat roofs.

2 General bipartite to monolithic facade character with even transition between base and top.

3 Moderate to large size windows and occasional use of integrated loggias. Max. 50% openings of the overall facade surface.

4 Generally, the use of maximum 2 architectural compositional motives for the design derived from the sources is recommended.

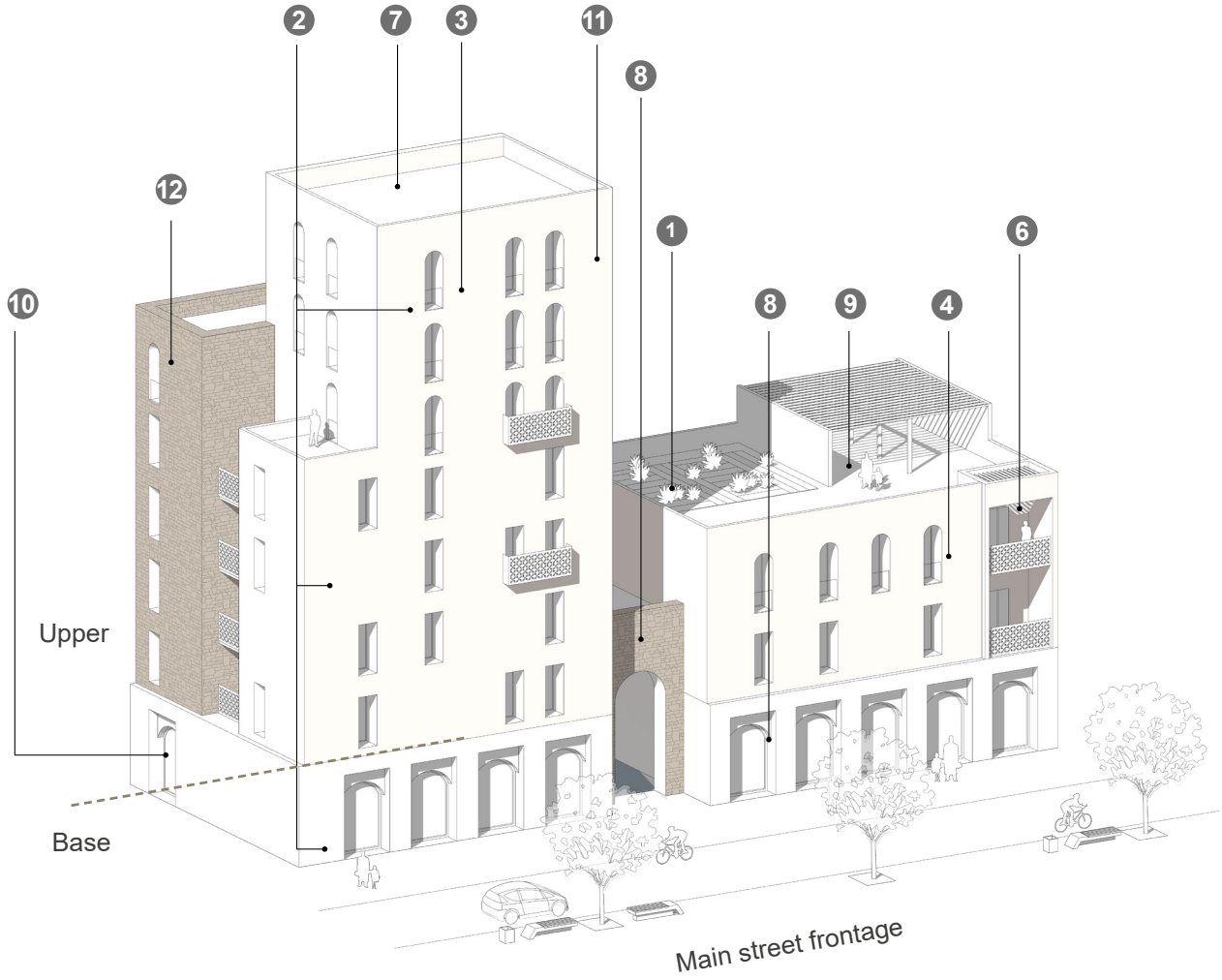


FIG. 58 Large size building

5 Simplified detailing and accents.

6 General palette of off-white, beige, brown, and white, using recommended palette of materials, colors and finishes.

7 Flat roofs with distinct top part, supporting privacy requirements and hiding rooftop equipments.

8 Active ground floors. Niched arched openings, arcades should be preferred. Entrance gateway highlighted with use of stone.

9 Integrated terraces and rooftop gardens.

10 In large buildings, height of podium should establish street wall and reinforce the human scale and character of the area. Large buildings more than 8 stories should not be promoted.

11 Large buildings/ towers shall be tall, slender structures that enhance the skyline, large, elongated, boxy or slab like floor plates should be avoided.

12 Articulation of top zone should positively contribute to the skyline and design may be used to create landmarks.

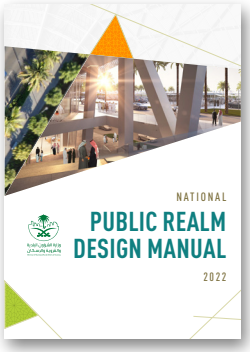
8 Public realm

An overview of public realm character in Tuhama Coast.

8.1 Overview

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

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. 59 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 the qualities of public realm found in the character area.
- **Types of public space -** a selection of spatial types that provide the built environment distinctive character.
- **Materials -** a summary of hardscape character for the area.
- **Planting -** a summary of softscape character for the area.
- **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 Tuhama Coast.

8.2 General character

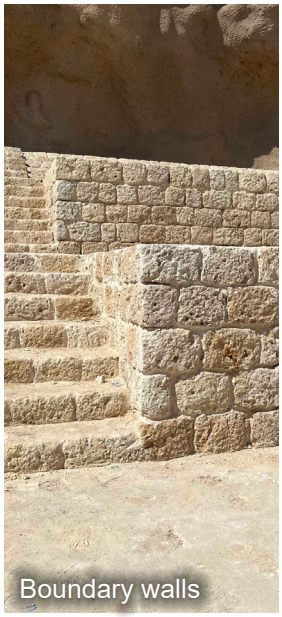
The adjacent photographs summarize the typical characteristics of public realm and local landscape in Tuhama Coast. As set out in the introduction, the Tuhama Coast area is characterized by the Red Sea coastal plains and Tuhama foothill to the east, as the most southern part of the kingdom's coastline, south of the Tuhama Coast.


Jazan fort


Sandy shoreline


Shorelines with mangroves


Saha


Boundary walls


Sandy plains with intermittent rocky hills


Traditional textiles


Narrow zuqaq shaded by tall walls


Vegetated wadi plains

FIG.60 **PUBLIC REALM ELEMENTS**

8.3

Types of public space

Tuhama Coast's public realm is characterized by smaller open spaces, often simple internal courtyards with larger openings, surrounded by walls of wood and straw. Surrounding lands were often set aside for farming and livestock, with nearby larger settlements incorporating smaller squares (Baraha), with occasional larger areas (Saha) and community courtyards for gatherings and the selling of produce and livestock.

The general characters and hierarchy of the public realm are distinguished by their scale, character, and relationship with the surrounding topography and predominant land uses.

Collectively these spaces create a diverse public realm which contributes to the community for both residents and visitors alike and reinforces the distinct architecture of the area.

The following plan illustrates a typical hierarchy of urban spaces and streets in the Tuhama Coast.

The following categorizations are considered the principal typologies:

- Street- primary routes which define the edges of smaller settlements, mediating between green oasis areas, and buildings.
- Baraha- local public open space, usually found in a residential neighborhood. Often appear as a widening of streets and the confluence of several streets.
- Saha- larger local open space with a public function, such as public gatherings or markets.
- Promenade / Seafront- primarily associated with harbors and coastal settlements, traditionally part of overland transit routes but latterly recreation.

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

FIG. 61 Typical urban plan

Street
Zuqaq
Baraha
Saha
Private courtyards
Buildings
Livestock fields
Plot curtilage
Trees

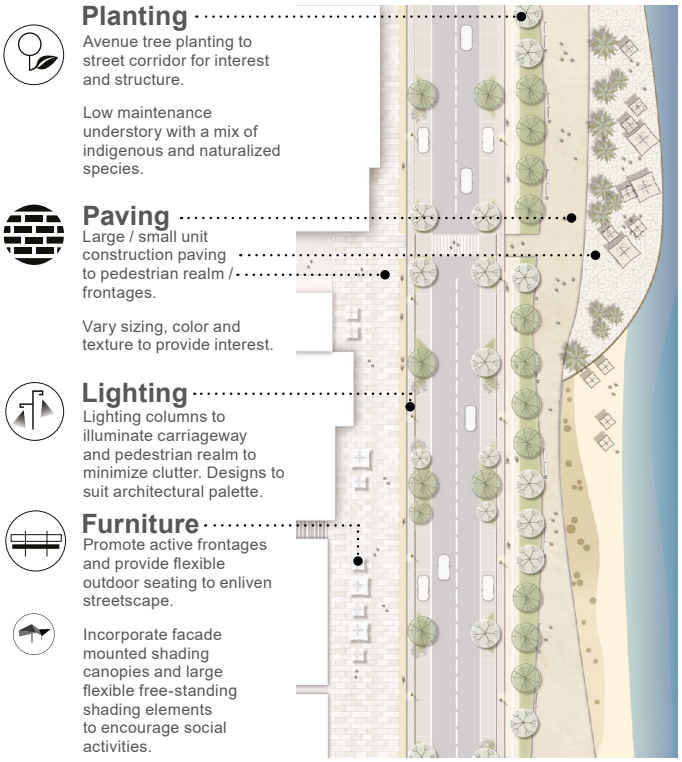


FIG. 62 Street / Promenade
Vehicle corridor with adjacent pedestrian realm

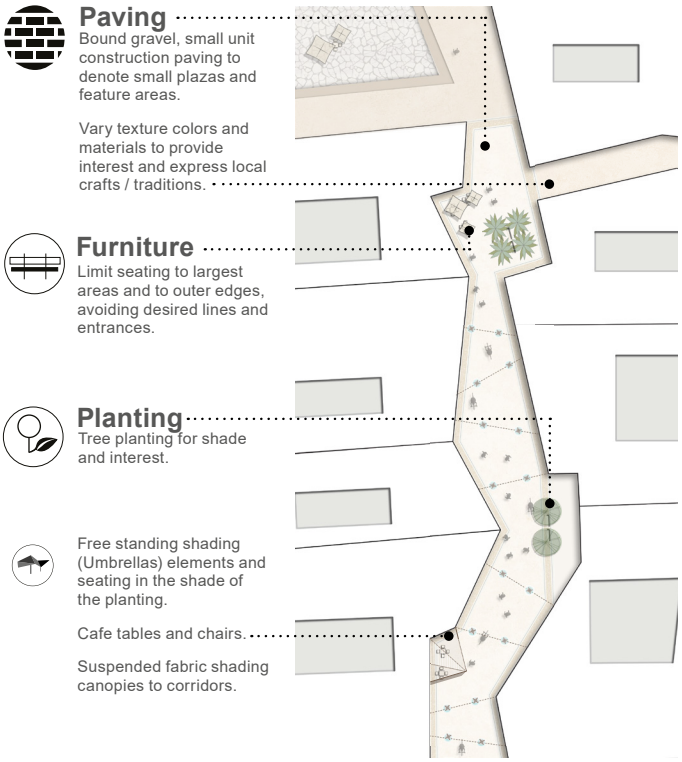


FIG. 63 Zuqaq
Pedestrian realm, no vehicular access or shared access.

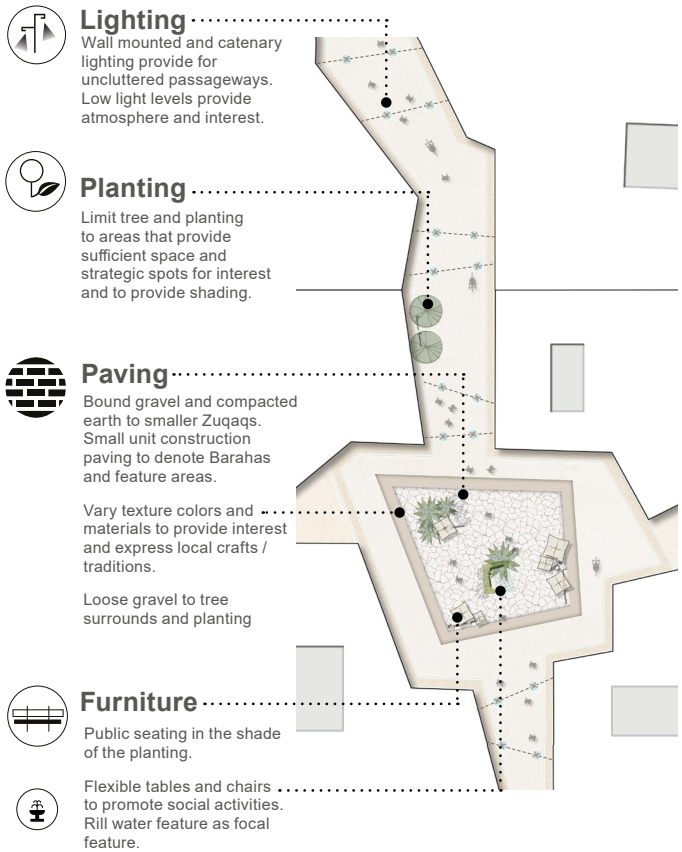


FIG. 64 Baraha
Pedestrian realm, no vehicular access or shared access.

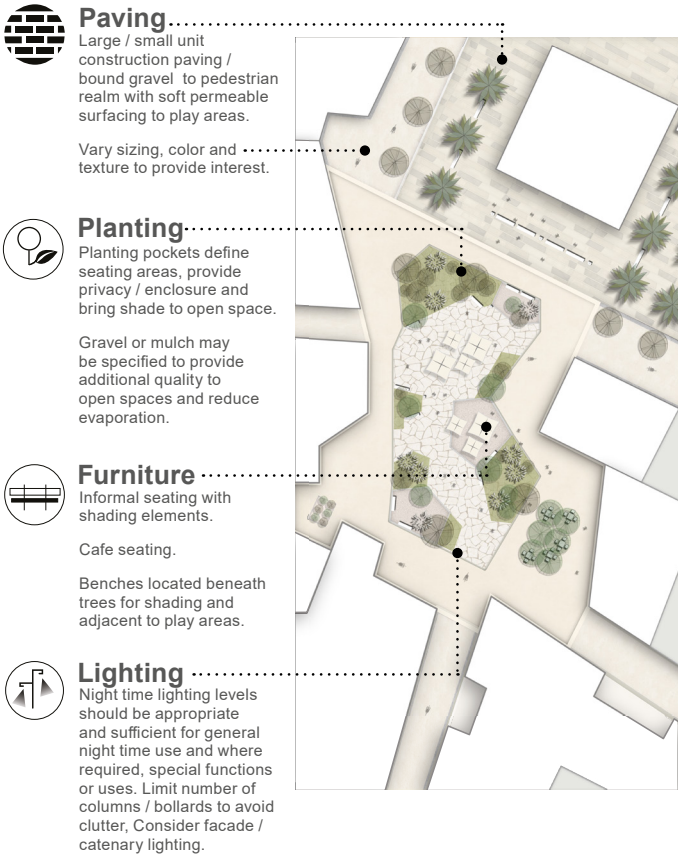


FIG. 65 Saha
Pedestrian realm, no vehicular access or shared access.

8.4

Materials

The materials palette for Tuhama Coast has been designed to be simple and sensitive to the existing character of the area.

Key considerations

1 Select locally sourced KSA materials with low embodied carbon and high content of reused or recycled aggregates (for non-natural materials).

2 Areas with higher footfall demand paving should have a higher specification and durable materials, fit for purpose, minimizing the need for regular repair and replacement.

3 Re-use materials where possible formed from waste material.

4 Deliver materials to site using sustainable means of transport, where possible.

5 Select materials that are robust and have longevity and that can be easily cleaned, repaired, and sourced – so high-quality materials can be replaced like for like. Maintain a nominal extra supply of materials to enable quick replacement of damaged or missing units.

6 De-pave where possible to improve the micro-climate and use suitable sands / aggregates or suitable hydro zones in place of non-permeable paving.

7 Materials should provide varying textures within a simple color palette to compliment the area's architectural character.

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

9 Make good and renovate existing streetscapes, ensuring materials are replaced only when necessary to minimize carbon footprint.

10 Using a larger paving format to emphasize more prominent routes.

11 Consider incorporating special patterns or textures to emphasize important places or spaces.

Sand:
Informal play spaces and tree surrounds, Baraha and Saha

Compacted earth:
Less intensively used areas, Zuqaqs, private courtyards

Gravel:
Zuqaqs and private courtyards

Bound gravel:
Zuqaqs and smaller Baraha

Natural stone:
Large unit construction paving, Saha, larger Baraha and streets

Natural stone:
Small unit construction paving, Saha, larger Baraha and streets

8.5 Planting

Tree and shrub planting should complement the overall character of the Tuhama Coast area, helping to define places and enable planting habitats through sustainable methods.

Key considerations

1 Water must:

- Be considered carefully, responding to the local micro-climate and water availability.
- Use drought tolerant species and consider Xeriscapes principles to minimize water consumption.

2 Trees should:

- Adopt informal arrangements, avoiding linear (unless forming street avenues or promenades), or formal compositions. Tree clusters, increased along wadi corridors, reflect the natural tree habitat.
- Only be planted where shade can be best utilized for pedestrian comfort and interest.
- Make a characterful contribution to the quality of routes and spaces. Consideration should be given to how a tree is seen and how trees can be used as wayfinding markers and frame important views and routes.

3 Planting should:

- Be limited to Xeriscape solutions within urban areas, mainly in gathering spaces (Saha / Baraha). Contribute to maintaining and enhancing wadi corridors, using informal planting where appropriate, comprising a variety of indigenous species.
- Minimize ornamental planting outside urban areas.
- Consider additional habitat value such as fruits for birds, etc.
- A varied mix of indigenous and naturalized species will help create an appropriate response to rural or urban applications.

Trees


Acacia ehrenbergiana (Salam tree)


Albizia julibrissin (Silk tree)


Phoenix dactylifera (Date palm)


Zizipus spina christi (Sidr tree)

Shrubs


Aloe rubroviolacea (Arabian aloe)


Aptenia cordifolia (Rock rose)


Leucophyllum frutescens (Silver leaf)


Lavandula dentata (Lavender)


Pennisetum setaceum (Fountain grass)


Rosemary officinalis (Rosemary)

8.6 Street furniture

Street furniture should be carefully selected to provide continuity and co-ordination, 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 explore opportunities to utilize local materials, respond to the local landscape and cultural heritage and celebrate local crafts, traditions, and skills.

Key considerations

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

2 Not obstruct pedestrian movement, cycle paths nor clutter public open spaces.

3 Consider color and material consistency.

4 Be integrated into the public realm, flexible and movable where required.

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

6 Consider accessibility with seating distributed at suitable intervals and have suitable heights and have backs or armrests.

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

8 Have a co-ordinated appearance, with a consistent materials and color palette to compliment character of the public realm.

9 Avoid duplication by rationalizing and combining elements.

10 Be easily maintained and repaired with easily available / replaceable components.

11 Be retained and renovated / improved where existing furniture has heritage value.

12 Boundary walls should contribute to the landscape character and scale and contribute to the character and setting of the space.

FIG. 66 Reconstituted stone as seating element / bollard. Riyadh, KSA

FIG. 67 Using complementary mix of colors of Red Sea coast for paving and furniture elements. Aseer coast, KSA

FIG. 68 Walls and steps using local natural stone. Al Wajh, KSA

FIG. 69 Light textile shading structures for shading walkways and seating. Riyadh, KSA

8.7 Lighting

A coordinated lighting strategy should create an appropriate and distinctive atmosphere for different areas to reinforce Tuhama Coast's architecture. Lighting should not be distracting, the focus should always be on the setting, mood or character and quality of the space and buildings.

Key considerations

1 Light levels should be kept as low as possible to minimize light pollution and adverse effects on ecology and habitats.

2 Utilize lighting to increase overall safety and enjoyment at night.

3 Provide lighting and light levels that are appropriate to patterns of use, character, and context.

4 Utilize lighting temperature to reinforce difference between routes and to define contrast between character areas.

5 Sensitively highlight historic buildings, mosques and public buildings / spaces after dark, subtly revealing their architecture without over-use of light.

6 Utilize lighting that is appropriate to scale and context of routes and spaces- e.g. lower mounted lights on smaller lanes and in historic conditions to highlight textures.

7 Utilize contemporary lighting elements which are low energy, low heat, and dust resistant with a long life expectancy.

8 Manage private light spill, light pollution, or trespass - particularly over-lighting of shopfronts on souqs and streets - producing diffuse, soft and warm light.

9 Design of lighting fixtures should be authentic to the area - simple, sensitive to the setting, not historically pastiche or using imported historic forms.

10 Introduce a lighting control system that allows variable light levels.

FIG. 70 Lighting inspired from traditional colors and patterns, integrated along Abu Dhabi's corniche. Abu Dhabi, UAE

FIG. 71 Traditional luminaries facade mounted for evening souk attraction. Al Ula, KSA

FIG. 72 Traditional catenary lights for outdoor dining and attractive ambiance. Al Ula, KSA

8.8 Signage

Signage and public information system design, including materials, should respond to the character and environmental elements within the Tuhama Coast area.

Signage elements should be seen as part of a wider strategy that seamlessly integrates with the furniture, lighting elements and landscape, reflecting and complimenting the hardscape materials palette

Key considerations

1 Should include a combination of unified and integrated elements that are simple, concise, legible, and consistent that help and orient people to find their way, educate, entertain or to provide relevant information.

2 These can include, landmarks, points of interest, sculptural designs integrated with architecture, materials, landscape, lighting, furniture, and digital information.

3 Robust, flexible, and hard wearing with high quality durable finishes which adopt sustainable processes.

4 Allow for upgrading / updating and possible customization (e.g. special events).

5 Consider minimizing the amount of visual clutter by keeping fittings and support elements to a minimum by utilizing lighting columns, buildings and other structures in lieu of standalone columns and supports.

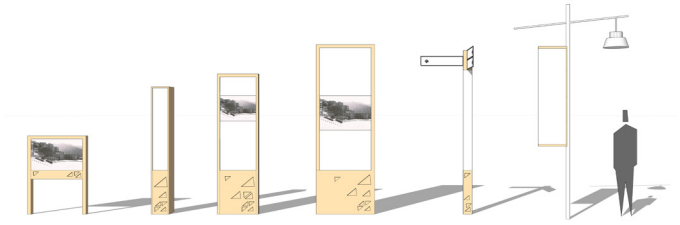


FIG. 73 Example of a signage family illustrating how contextual elements of traditional patterns and colors could be expressed within the lighting and signage elements

FIG. 74 Signage / way finding design reflecting traditional arts and colors of the region. Riyadh, KSA

FIG. 75 Integration of signage / wayfinding elements in paving. London, UK. Space Agency Design

8.9 Parking

Parking areas are divided into two distinct groups, off-street parking which is predominantly private and on-street parking which is dedicated to public parking.

Consideration of parking layouts within the public realm can be designated into three types:

- Perpendicular parking.
- Parallel parking.
- Angled Parking.

The design of parking areas should be integrated into the overall design of the public realm, considering, requirements of the user, pedestrians, urban mobility, landscape, and hardscape elements.

Key considerations

1 Consideration shall be given to the needs of all users, with design solutions for ease of accessibility to parking for the physically impaired.

2 Clear legible, defined, and safe pedestrian links between parking areas and adjacent destinations should be planned.

3 The screening of large areas of parked cars shall be considered, with trees, hedging and landscape berms helping to minimize views of parked cars.

4 Consider introducing planting in regular parking spaces, to break up the expanse of cars and introduce shading.

5 Large canopy trees should be considered for the shading of vehicles.

6 Consider adopting sustainable urban drainage solutions for surface storm water runoff. The use of permeable surfacing materials and bioswales to parking medians with suitable planting should be encouraged.

FIG. 76 Example of parking & pedestrian route improvement with private development setback area

FIG. 77 Example of an attractive public realm, incorporating parking, pedestrians and planting

FIG. 78 Public realm with generous pedestrian corridor, incorporating vehicular bollards (to deter parking) / informal seating and tree avenue planting. Berlin, Germany

8.10 Public realm worked examples

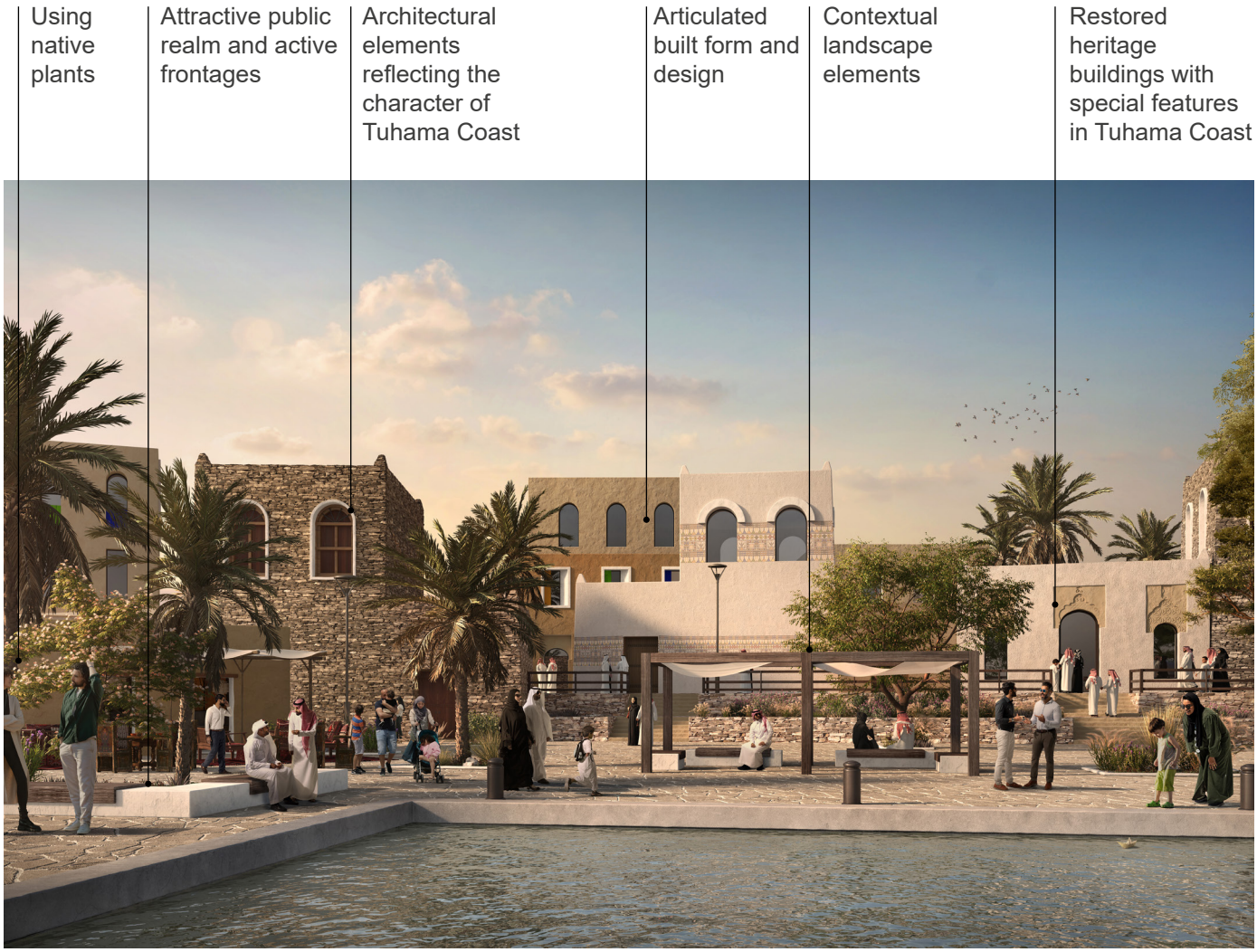


FIG. 79 Proposed view of plaza in Tuhama Coast village

The above illustrations are an example of a holistic vision for an old village center and a main street in the urban center in the Tuhama Coast, with displays a of attractive public realm, active frontages, restoration of heritage buildings, contemporary interpretation of contextual architecture elements, high standard architectural materials and finishes, a color palette reflecting the local context, use of local art and patterns, and the enhancement of natural features.

1 Whilst the materials and colors should be limited within the spectrum of the natural context of the Tuhama Coast, complimentary colors and contemporary patterns may be used to highlight destinations, routes and help reflect adjacent architectural elements.

2 Contemporary building massing should respond to the immediate context and to the history of the place fostering human scale.

3 Progression of privacy, from private to public in open space design, the relationship between spaces should be dependent on the local culture of the place.

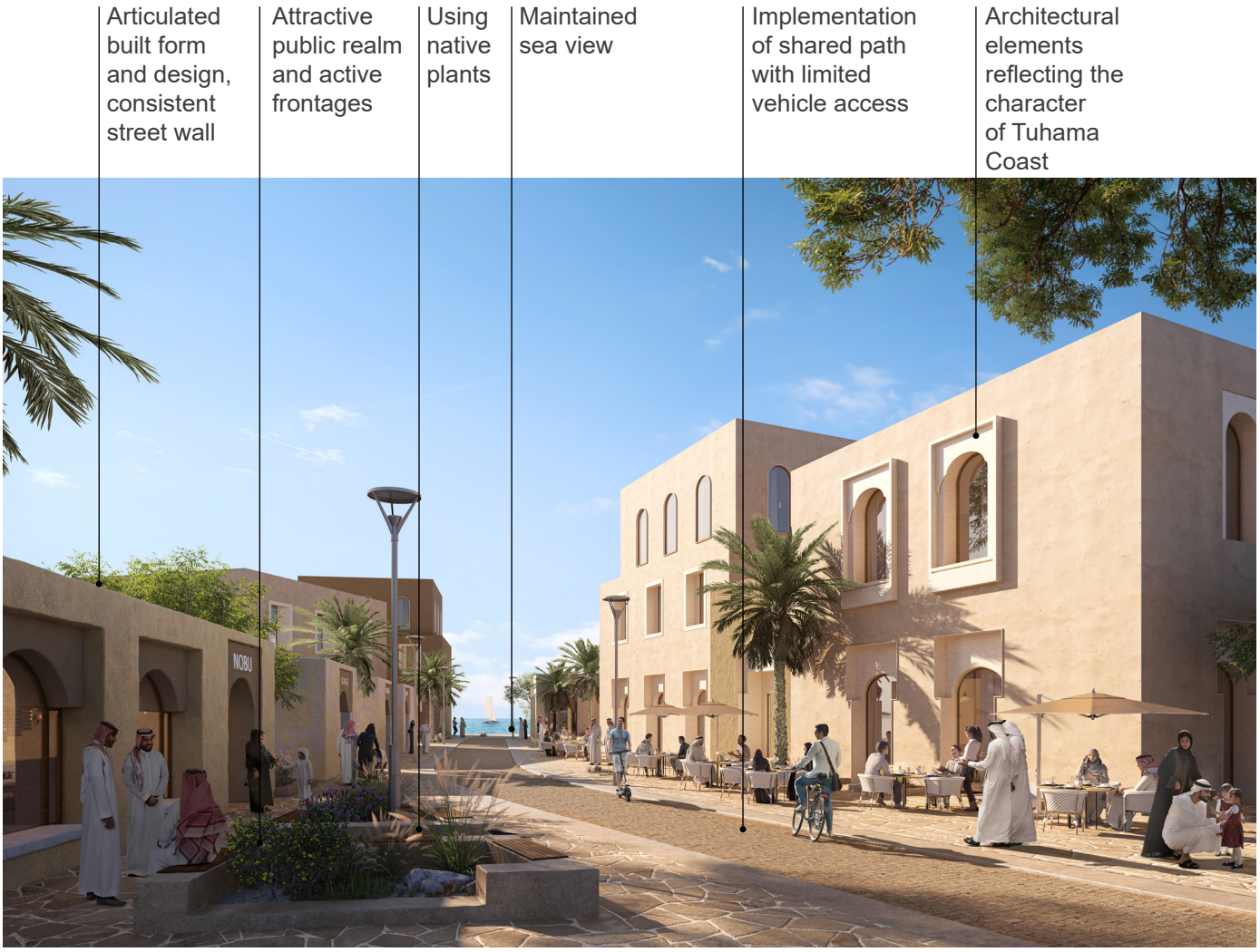


FIG. 80 Proposed view of local street in Tuhama Coast city center

4 Vegetation palettes in traditional zones to primarily reflect the contextual indigenous planting, including diversity, naturalistic arrangements, and coverage.

5 Hard paved areas should contribute to character and ensure functionality as well reflecting the material and color palette of the adjacent architecture and built form. Paving materials, unit size, textures and laying bond can express a contemporary or traditional design rationale and provide additional interest through variety and inclusion of art.

6 Primary paths may be accented with boulevard planting and trees, used to highlight destinations or points of interest and importance. Softscape design in contemporary urban areas shall be predominantly indigenous species with a percentage of ornamental planting to provide variety and interest.

The main aspiration in promoting a more contextual driven architectural character is to produce building form and spaces reflecting the learnings from tradition, enhancing the proper character of the place, and thus creating a sense of belonging.

Figure List

Image Sources