Enhancing Visual and Structural Quality in Historic Jeddah's Al-Balad District

Abstract

Historic Jeddah (Al-Balad) is a UNESCO World Heritage site renowned for its distinctive Hejazi architecture and cultural legacy. Over time, however, modern intrusions such as exposed electrical wires, unsightly utility boxes, uneven pavements, and ad hoc renovations have detracted from the visual integrity of this old quarter. This paper examines Al-Balad's historical significance and current challenges, and proposes architectural and urban design solutions to enhance its visual and structural quality. These include undergrounding electrical utilities, concealing necessary wiring within sympathetic design elements, implementing accessible infrastructure, unifying pavement and storefront aesthetics through guidelines, and adopting sustainable practices in restoration. Case studies from other heritage sites (Edinburgh, Bruges, and Barcelona) demonstrate how managing visual clutter and improving accessibility can revitalize historic districts without compromising authenticity. The findings underscore that improving the "eye-level" environment is crucial for preserving Al-Balad's character, improving public safety, and enriching visitor experience. A set of recommendations is provided for ongoing maintenance, community engagement, and integration of modern technology to ensure the long-term preservation and livability of Historic Jeddah.

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1. Introduction

Historic Jeddah, locally known as Al-Balad, is the oldest core of Jeddah and a site of exceptional cultural value. Founded in the 7th century CE as a port for Indian Ocean trade and as the sea gateway for Muslim pilgrims to Mecca, Al-Balad flourished into a cosmopolitan urban center.[1] Its distinctive urban fabric – from coral-stone merchant houses with ornate wooden lattice windows (rawasheen) to labyrinthine souks – reflects a blend of Red Sea coastal construction and influences carried by traders and pilgrims from Asia, Africa, and the Middle East.[1][2]

In 2014, Historic Jeddah was inscribed as a UNESCO World Heritage Site in recognition of its "Outstanding Universal Value" as a multicultural trade and pilgrimage city and as an outstanding example of the Red Sea architectural tradition.[1][3] This inscription affirmed Al-Balad's significance and galvanized efforts to safeguard its architectural heritage and unique identity.

However, the district has also faced cycles of expansion, neglect, and uncoordinated modernization. In the 16th century, a defensive wall was built after Portuguese attacks, only to be demolished in 1947 as Jeddah expanded during the first oil boom.[3] Rapid

urbanization, combined with weak regulation for much of the 20th century, led to building decay, ad hoc infrastructural additions, and intrusive modern elements that compromised the historic character. An early nomination to UNESCO in 2008 was rejected on conservation and management grounds, which pushed authorities to develop a more serious heritage strategy.[3]

This research focuses on enhancing the **visual and structural quality** of Historic Jeddah by identifying elements that undermine Al-Balad's historic ambiance – exposed cabling, disorderly utilities, uneven walkways, and accessibility gaps – and proposing feasible design interventions to mitigate them. By drawing on field observation, existing literature on urban heritage conservation, and comparative case studies, the paper outlines a roadmap to balance **historic preservation** with thoughtful modernization.

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2. Historical and Cultural Background of Al-Balad

2.1 Heritage value and urban evolution

For centuries, Al-Balad served as the commercial and cultural heart of Jeddah. As the official port of entry for Hajj pilgrims from 647 CE onwards, Jeddah evolved into a thriving multiethnic hub where goods, people, and ideas converged.[1][2] This cosmopolitan legacy is evident in Al-Balad's architecture and urban form. Historic houses – some rising five or six stories – were built from coral stone and timber, with structural and decorative influences spanning the Red Sea and beyond.[2][4] The hallmark rawasheen, carved from imported hardwoods, provided privacy, shade, and cross-ventilation, and became a visual signature of Jeddah's old city.[4]

Narrow lanes, interconnected courtyards, and compact plots reflect a dense urban morphology optimized for climate and social life. For centuries, Al-Balad was enclosed by a defensive wall punctuated by gates, emphasizing its role as a self-contained urban core.[3] With the advent of the oil era, Jeddah's expansion beyond the walls led to the wall's demolition and to a gradual shift of economic gravity northwards.

2.2 Cultural, commercial, and demographic dimensions

Culturally, Al-Balad has long been a **melting pot**. Pilgrims and traders from the Arabian Peninsula, Africa, the Indian subcontinent, and Southeast Asia settled in the district, introducing diverse customs, cuisines, and crafts.[2] Traditional life revolved around mosques, souks, and majlis spaces for storytelling, coffee rituals, and community deliberation. Many of these practices survive today and are being deliberately revived

through festivals, cultural programs, and adaptive reuse of historic buildings as museums, galleries, and cultural centers.[5]

Economically, Al-Balad's role has shifted from trade to heritage tourism and services, particularly after UNESCO inscription. Restoration programs and cultural events have increased visitor numbers and attracted public and private investment.[5][6] Adaptive reuse of merchant houses as boutique hotels, cafés, and exhibition venues has become a key mechanism to finance preservation while keeping the district active.

Demographically, the historic center experienced a loss of affluent residents in the mid-late 20th century as wealthier families moved to newer suburbs, while lower-income migrant communities remained in deteriorating housing stock.[7] This out-migration, combined with inadequate maintenance, accelerated decay. Current development plans seek to re-attract residents and businesses, but must balance gentrification pressures with the need to preserve Al-Balad's social diversity and living character.

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3. Problem Statement and Objectives

Despite visible progress since 2014, Historic Jeddah continues to suffer from *micro-scale* issues that cumulatively undermine its historic integrity:

- Visual clutter from exposed wires, cables, and utility boxes on building facades.
- Uneven, patchwork pavements and shopfront alterations that disregard context.
- Limited accessibility for people with disabilities and elderly visitors.
- Environmental wear exacerbated by coastal climate and past neglect.
- Fragmented or uncoordinated approaches to small-scale interventions.

These issues impact not only aesthetics but also safety, inclusivity, and residents' quality of life. They also weaken the impression of Al-Balad as a well-managed World Heritage site.

The primary objectives of this research are therefore to:

1. **Document and categorize** the visual and structural intrusions present at eye level in key streets and spaces of Al-Balad.
2. **Assess their impact** on the historic fabric, visitor experience, and safety.
3. **Propose a set of design and policy interventions** to mitigate these issues while respecting authenticity.

4. **Relate Al-Balad's challenges to international best practices** in comparable historic districts.

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4. Methodology

This research adopts a **qualitative, case-study–oriented methodology** combining:

1. **Field observation and photographic survey**
   A structured walking survey of selected streets and nodes in Al-Balad documented instances of:
   - Exposed and tangled wiring.
   - Decrepit utility boxes and ad hoc installations.
   - Pavement conditions and accessibility barriers.
   - Shopfront treatments and signage.
2. **Literature and policy review**
   Key sources included:
   - UNESCO's nomination dossier and Statement of Outstanding Universal Value for Historic Jeddah.[1][3]
   - Saudi heritage conservation policy documents and national heritage law.[3][5]
   - Academic studies on urban conservation in historic Jeddah.[6]
   - Research on visual pollution and its psychological and spatial impacts.[8][9]
   - International case studies of heritage districts (Edinburgh, Bruges, Barcelona).[10][11]
3. **Comparative analysis**
   Lessons from other World Heritage cities were analyzed with respect to:
   - Utility undergrounding and visual clutter management.
   - Shopfront and signage regulations in historic cores.
   - Accessibility strategies in heritage environments.

The result is a set of **context-specific recommendations** tailored to Al-Balad's legal, climatic, and socio-cultural conditions.

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5. Existing Challenges in Al-Balad

5.1 Fragmented restoration and weak enforcement

For decades, the absence of robust regulations and enforcement allowed unauthorized alterations in Al-Balad. Property owners replaced traditional wooden windows with aluminum frames, installed conspicuous AC units on facades, and added makeshift canopies and signage with little oversight. Although new laws and management plans were introduced around the time of UNESCO inscription, the legacy of these interventions is still visible.[3][6]

5.2 Visual pollution and safety hazards

Visual pollution at eye level is among the most noticeable problems. Typical scenes include:

- Clusters of cables and wires draped haphazardly across streets or running chaotically along facades.
- Open or rusted electrical boxes, sometimes with exposed wiring accessible to passersby.
- Overly bright or oversized commercial signs disrupting historic sightlines.

These elements disrupt the readability of the architecture and create a sense of disorganization. They also pose real safety hazards; previous reports from Jeddah have linked exposed power cables to injuries and fires, particularly affecting children in dense urban neighborhoods.[12]

5.3 Pavement conditions and accessibility gaps

Pavements in Al-Balad are often inconsistent in material, level, and quality. Patches of concrete, tiles, and asphalt coexist, creating tripping hazards and complicating wheelchair or stroller use. Elevated thresholds, random steps, and narrow passages further restrict accessibility.

While some flagship sites (such as Naseef House) now have ramps or gentler approaches, these are not yet part of a continuous, district-wide accessible network. Compared with leading accessible heritage destinations, Al-Balad remains challenging for visitors with mobility or sensory impairments.[10]

5.4 Environmental stress and material decay

Jeddah's hot, humid, and salty coastal climate accelerates decay of coral stone, plaster, and wood.[4] When combined with poor maintenance and incompatible repair materials (e.g., cement mortars), this leads to cracking, spalling, and biological growth on facades. Environmental stress interacts with the above visual intrusions: for example, poorly fixed cables and boxes accelerate surface deterioration and trap moisture.

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6. Architectural and Urban Design Solutions

6.1 Upgrading electrical and utility systems

Undergrounding utilities.
The most effective way to reduce visual clutter from wires and cables is to relocate electrical and communication lines into underground conduits. International experience shows that burial of overhead lines improves scenic quality, reliability, and safety.[13] In Al-Balad, a phased program can:

- Install shared underground ducts in main streets and alleys.
- Consolidate transformers and major switchgear into a few discreet substations or vaults at the periphery.
- Use manholes and junction boxes designed with neutral covers that blend into pavements.

Standardizing and concealing boxes.
For meters and smaller control panels that must remain accessible at street level, a heritage design code should specify:

- Standard dimensions, locations, and finishes.
- Use of plastered or wooden enclosures colored to match facades.
- Preferably, grouping of multiple meters in shared cabinets for clusters of small properties.

This approach both **reduces visual noise** and facilitates maintenance.

6.2 Managing wires and cables on facades

Camouflaging necessary runs.
Where small stretches of wiring must remain on building exteriors (e.g., final connections), they should be:

- Routed along corners, cornices, or behind decorative faux beams imitating traditional timber members.
- Painted in the same color as the substrate.
- Enclosed in slim conduits that follow architectural lines.

Removing redundant wiring.
A one-time "wire audit" should identify and remove obsolete cables (e.g., inactive telecom lines). Remaining active circuits must comply with modern safety codes, using weather-resistant insulation and proper load sizing to reduce fire risk.

Community reporting mechanisms (hotline or app) can encourage residents and shopkeepers to flag newly exposed or unsafe wires for prompt intervention.

6.3 Enhancing accessibility and walkability

Inspired by best practices in cities like Barcelona,[10][11] Al-Balad can pursue:

- **Continuous, wheelchair-friendly routes** paved with even, slip-resistant stone or brick, including curb cuts at intersections.
- **Ramps and, where feasible, discreet lifts** at key public buildings and main pedestrian routes, designed to be reversible and visually compatible.
- **Accessible facilities** such as toilets, clear signage, and nearby designated parking spots at district entrances.
- **Interpretive aids**: tactile maps, 3D models of key buildings (e.g., a Roshan facade), audio guides, and staff trained to assist visitors with disabilities.

These interventions should be concentrated along a clearly mapped **"heritage accessibility trail"** that connects major attractions.

6.4 Harmonizing pavements and shopfronts

To restore visual coherence:

- Adopt a **limited palette of traditional-looking paving materials**, applied consistently across the district.
- Issue a **shopfront and signage manual** that regulates size, color, lighting, and placement of signs, favoring wooden or metal signs with restrained typography and avoiding neon or oversized plastic elements.

- Encourage or subsidize the **removal of incongruous claddings** and the restoration of original thresholds, doors, and display openings.
- Introduce historically inspired street furniture (benches, waste bins, lighting) designed to blend into the setting.

Examples from Edinburgh and Bruges show that such regulatory frameworks effectively reduce visual pollution and reinforce historic character.[10][11]

6.5 Integrating sustainable practices

Sustainability can be embedded in Al-Balad's upgrades through:

- **Discreet solar installations** on flat roofs or hidden surfaces to power street lighting and some building loads.
- **Efficient LED lighting** with warm color temperatures and motion controls to reduce energy use while preserving ambiance.
- **Appropriate repair materials** (lime-based mortars, compatible stone, seasoned hardwood) to ensure durable, breathable repairs that extend building lifespans.[6]
- Improved **waste management and recycling** infrastructure designed to be visually unobtrusive.

Such measures align with broader sustainability objectives and reduce the long-term cost of conservation.

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7. Comparative Case Studies

7.1 Edinburgh Old Town, Scotland

Edinburgh addressed visual clutter in its medieval core by undergrounding utilities in key streets, adopting strict signage guidelines, and standardizing street furniture.[10] These strategies significantly improved the legibility of the historic fabric, demonstrating the value of coordinated public realm design.

7.2 Historic Centre of Bruges, Belgium

Bruges enforces rigorous control over commercial signage and has implemented innovative infrastructural solutions like an underground beer pipeline to reduce surface traffic and visual disruption in its UNESCO-listed center.[11] The city illustrates how

creative infrastructure planning can reconcile commercial activity with heritage preservation.

7.3 Accessible heritage in Barcelona, Spain

Barcelona has made many of its historic sites, including the Sagrada Família and the Gothic Quarter, accessible through ramps, lifts, tactile models, and specialized tours, while maintaining their historic appearance.[10][11] These efforts demonstrate that accessibility upgrades can enhance inclusivity without compromising authenticity.

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8. Conclusion and Recommendations

Addressing visual and structural challenges in Historic Jeddah's Al-Balad is essential to preserving its cultural heritage and delivering a high-quality visitor and resident experience. The research highlights how pervasive but often overlooked elements – exposed wiring, disordered utilities, inconsistent pavements, and limited accessibility – collectively erode the district's historic character, and at times compromise safety.

By implementing a coordinated program that includes utility undergrounding, facade decluttering, accessible route design, shopfront harmonization, and sustainable restoration practices, Al-Balad can significantly enhance its **"eye-level" environment** while respecting authenticity. International case studies confirm that such measures are technically feasible and culturally accepted when guided by clear policies and community engagement.

The paper recommends:

1. Establishing a **Heritage Public Realm Code** for Al-Balad covering utilities, pavements, signage, and street furniture.
2. Launching a phased **Utility Undergrounding and Facade Cleanup Program** with dedicated funding.
3. Designing and implementing a **District Accessibility Plan**, including an accessible visitors' trail and core facilities.
4. Embedding **sustainability and high-quality materials** into all restoration projects.
5. Creating an ongoing **monitoring and maintenance framework** with community participation.

If implemented, these actions will help ensure that Al-Balad remains a living, resilient, and beautiful historic district – one that honours its past while fully engaging with the urban and social realities of the 21st century.

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