

Sourcing Regionally: Local Building Materials and their Re-Use, Saudi Arabia



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Agenda



- Context:
 - AIUla
 - Royal Commission for AlUla
 - Policies for building materials
- Local Building Materials Strategy:
Impact Assessment & Circular Economy:
 - LBM Strategy
 - Experience: Synergies of IA and CE





CONTEXT

Where in the world is AlUla?



A land of outstanding heritage: History

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A land of outstanding heritage: Nature

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A land of outstanding heritage: Culture



Royal Commission for AlUla (RCU)

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“We will turn AlUla County into a living museum,
creating memories that visitors will share with the world...
Heritage is the main asset of AlUla.”

Crown Prince Mohammed bin Salman bin Abdulaziz

Balancing Preservation & Growth



Phase 1:

Build a luxury brand 2018 – 2023

250,000 visits per year
by end of phase

1,050 hospitality room keys

From **hyper-luxury** and
luxury sectors

Major new **tourism, infrastructure**
offerings and **development**



Phase 2:

Unlock full value proposition 2024 –
2030

1.2 million visits per year by end of phase

5,500 hospitality room keys

From **hyper-luxury**
to **upscale** sectors

Iconic **resorts** and new **heritage** discoveries



Phase 3:

Grow capacity 2030 – 2035

2 million visits per year by end of phase

9,400 hospitality room keys

From **hyper-luxury** to
midscale sectors

Continuous **enhancement** and
expansion to meet demand

Balancing Preservation & Growth

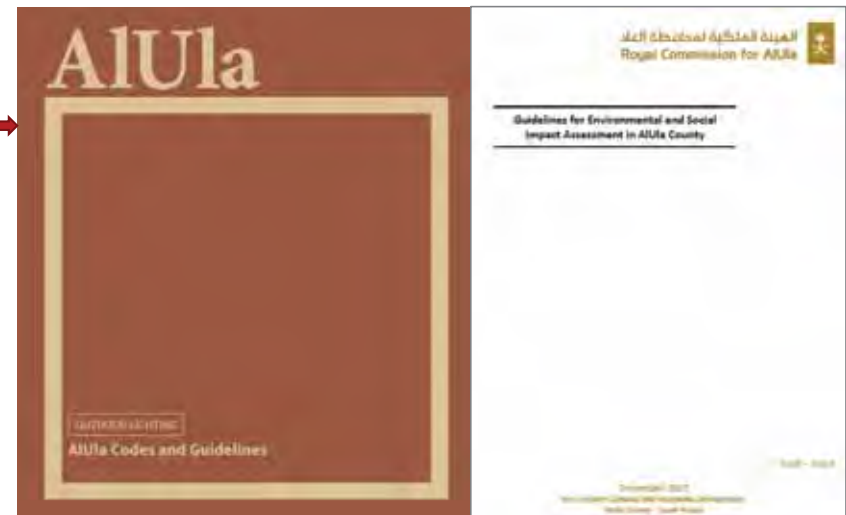
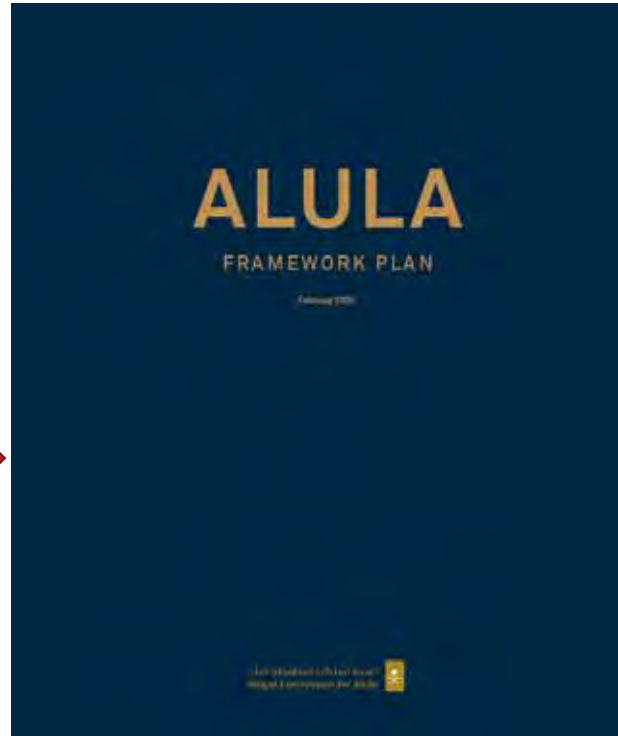


ALULA VISION

THE CHARTER

FRAMEWORK PLAN
AND GUIDELINES

MASTERPLANS/
PROJECTS



Promoting Green Building Certification



- All RCU Projects must be certified to Mostadam Diamond or LEED Gold.
- Credits awarded for:
 - Purchase of materials supporting **local economy**
 - Purchase **local materials** that **reduce transportation impacts**
 - **Reducing reliance on virgin materials** and optimizing **efficiency** in construction
 - Reducing impacts of construction and demolition waste by **reducing, reusing and recycling**.

Promoting circular economy



PRINCIPLE 11

DESIGN SAFE & HEALTHY ENVIRONMENTS WITHIN THE CIRCULAR ECONOMY

RCU will pursue Cradle to Cradle inspired solutions in the development of places, products, and systems at AlUla. This will ensure that safe and healthy materials flow within the Circular Economy in continuous biological and technical cycles of use, recovery, and reuse. In AlUla, we aspire towards creating positive and regenerative impacts by following the three main tenets of *Cradle to Cradle*: Eliminate the concept of waste; Rely on renewable energy sources; And celebrate diversity. By following these foundational concepts through all levels of development, we can achieve profound positive effects, not only on the health of the AlUla communities, but also on the region and the wider world. Furthermore, to protect AlUla's cultural and natural resources, new developments, and all those who engage with and experience, RCU will adopt strategies that address the interdependence of materials at all scales of ecological, social, and economic health. These solutions will not only have environmental benefits, they will create long-term opportunities for new business models, stimulate the economy, and increase the quality of life for all.

Proof Points:

- Develop Local Materials Guidelines (Halm & Earth)
- Sandstone Quarry
- Resource Management Park

Objectives

- 11.1 To procure safe and healthy products and services that produce environmental and social benefits throughout AlUla Core Heritage Areas
- 11.2 To engage AlUla's communities in the new tourist economy with consideration for the long-term impacts of all policies and actions
- 11.3 To lead in the definition of new economic development opportunities that will secure AlUla's leadership in the circular economy
- 11.4 To create a carbon positive region that integrates agriculture, regenerative land management practices, and urban design supporting the transformation of negative fugitive carbon into positive durable and living carbons
- 11.5 To repurpose 100% of the materials entering AlUla as productive inputs for future circular material systems
- 11.6 To establish specifications and purchasing procedures for buildings and grounds products
- 11.7 To model innovative systems for recycling and composting
- 11.8 To contribute to the local, national, and global dialogue by informing new policies and practices

Promoting Local Building Materials



Policy 7.11

Context Sensitive Development

All new buildings and structures within AlUla should be designed to a high standard and to contribute to the development of a particular architectural character across AlUla that resonates with its natural and cultural heritage. Development that accords with the design guidance promoted by and deriving from this policy will be supported.

The Framework Plan presents guidance on the following architectural elements, adherence to which must be demonstrated in development proposals:

- Architectural Continuity, Consistency and Diversity
- Preferred Building Typologies
- Materials, Finishes, Colours and Textures
- Local Materials

Carbon footprint

Net Zero Carbon Strategy



- Operationalize the NZC strategy in 2022 (project charters, steering model for each project,...)
 - Allocate needed budgets
 - Develop & implement a carbon accounting tool
 - Approve the org. setup to rollout projects

Local Building Materials



- Develop the local building materials supply chain (opening of quarries, trainings to local entrepreneurs, architects,...) – a key condition to achieve carbon neutral buildings targets

Policy 7.12

Quarries

The RCU will restrict the development of new quarries and the expansion of existing quarries unless the following criteria are met.

Quarries will be restricted within defined Protected Areas and within proximity to Heritage Protection Zones. Any new or existing quarry development must comply with the location and mitigation criteria established herein.

- There is a demonstrated need for material extraction to meet the local building needs of AlUla that cannot be met by existing local quarries.
- The planned quarry or expansion is supported by sufficient landscape buffering and mitigation measures to avoid noise, dust and visual impacts on the surrounding area.
- A long-term strategy for restoration and regeneration of the landscape is proposed from the outset.
- Proposals are supported by existing means of access or routes that do not have adverse landscape or environmental impacts.
- The operation of the quarry demonstrates that it has no adverse heritage or archaeological impacts.
- Proposals are supported by a detailed Environmental Impact Assessment as part of the development management process.

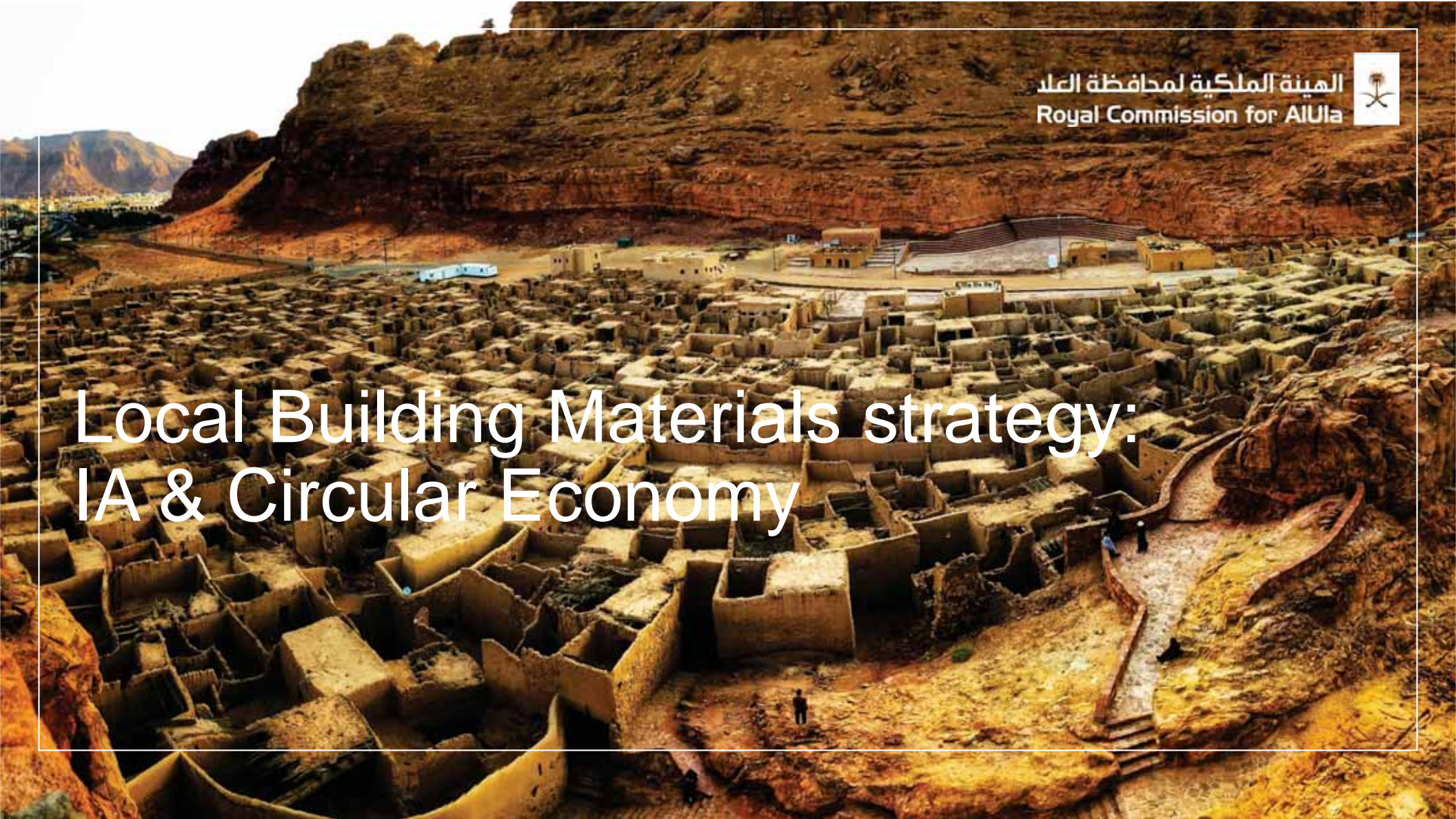
Summary



- Large scale and fast based development
- Enabling policies/ tools for responsible development
- Sustainability drivers for specific building materials
- An area of outstanding significance
-challenges and opportunities



Local Building Materials strategy: IA & Circular Economy



Local Building Materials (LBM)



Stones



Mud Bricks



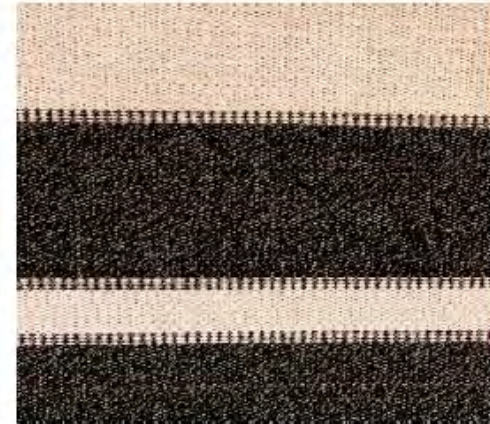
Rammed Earth



Palm Trunks

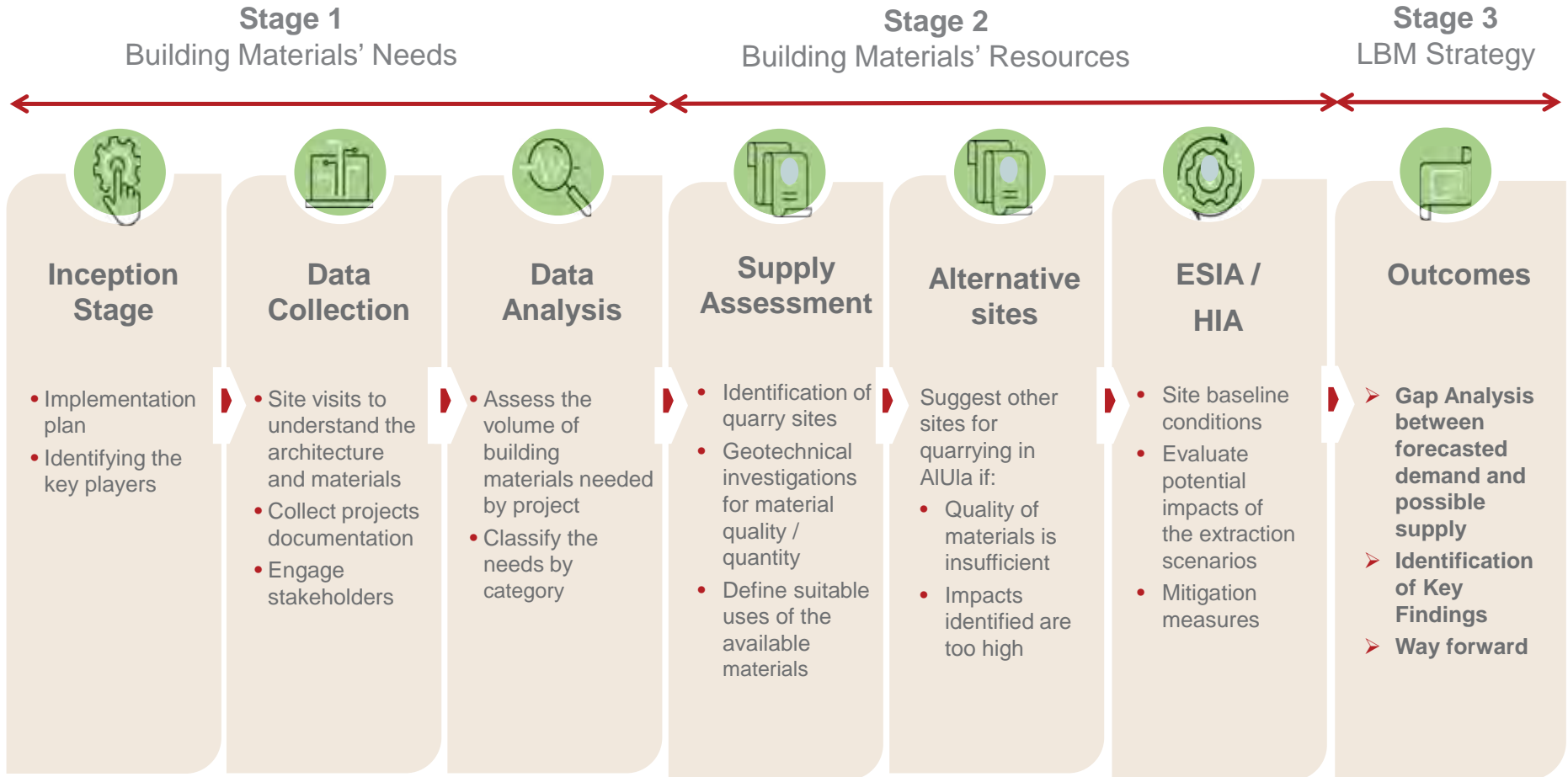


Palm Fronds

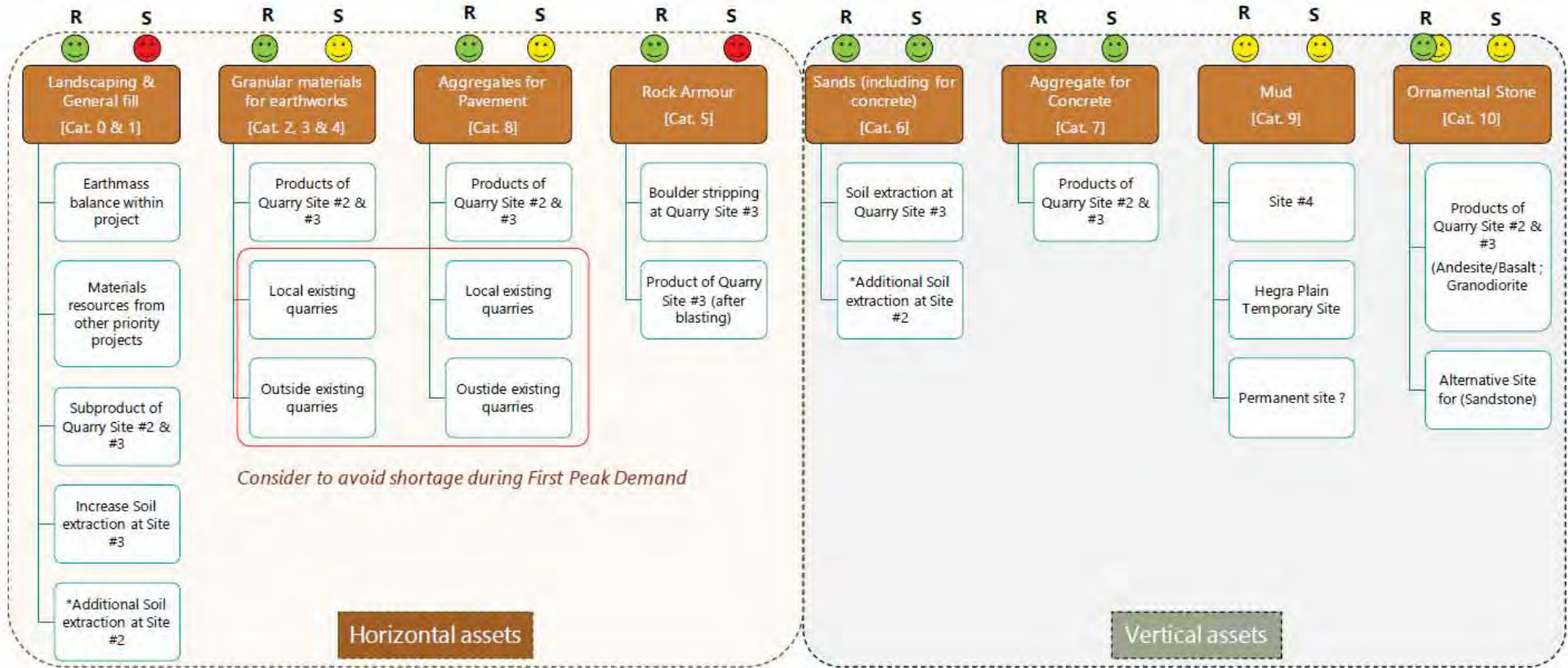


Goat Hair Fabric

Developing a LBM strategy



Gap analysis and strategy



Ancient graffiti!



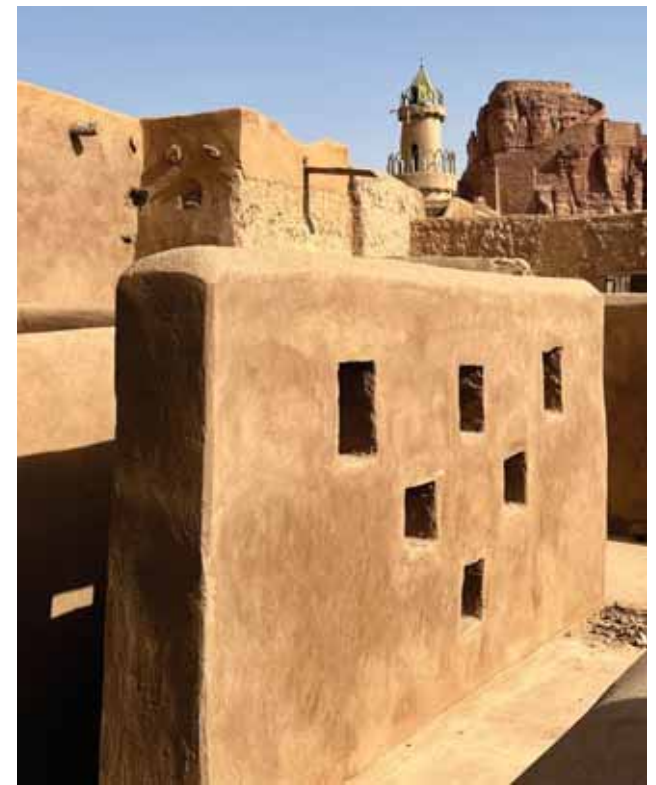
Strategy – The what?



With careful planning and management we can meet demand

- Use existing quarries
- Open new quarries
- Repurpose 'waste' materials within and between projects
- Design for the materials that will be available
- Reduce the pace of the development schedule
- Tradition and innovation in materials:
 - Sandstone blocks
 - KAUST and concrete
 - Earthen architecture...

Earthen architecture show case



Strategy – The how?

- Develop circular economy platform:
 - **Online:** summarize needs and resources across all projects
 - **Physical:**
 - Stockpile locations/ maintenance
 - Impact assessment
- Ministry of Mineral Resources & Mining Agreement
- Pilots and experimentation
- Embed CE in the ESIA process to secure action:
 - Framework Principles
 - Mitigation and management plans
- Collaboration, communication and clear actions

Experience: Synergies between IA & CE



- Circular Economy is a business imperative
- Strategic and systems approaches needed
- Enabling policies required to support CE
- ESIA can be a good tool for implementing CE approaches
- Impacts and CE opportunities context specific, but we can learn from others: Be creative and collaborate

It's surprisingly hard finding sand in the desert!

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Let's continue the conversation!

Post questions and comments in the IAIA23 app.



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