AL WAKRA PSYCHIATRIC HOSPITAL

Concept Design

MAAP Architects, Sydney
Makower Architects, London & Qatar
AECOM, Qatar

MUNGO SMITH
Director, Medical Architecture Australasia Pacific (MAAP), Australia
European HealthcareDesignCongressLondon 2016
Tuesday 28th June 2016
Concept Design Competition for a New Psychiatric Hospital at Al Wakra

Client: Hamad Medical Corporation & Private Engineering Office of Emir (PEO)

**Competition Brief**
- Facilities for Acute and Forensic Inpatients
- Drug and Alcohol Unit
- Outpatient Suites
- Therapy
- Pharmacy
- Education and Training
- Facilities Management

**Metrics**
- Site Area: 80,000m²
- 160 Beds (expandable to 208)
- 30,000m² Accommodation over 3 levels
- 45,000m² Gardens over 3 levels
- 6,000m² Recreational space
- 750 Car Parking Spaces in Basement

**Budget**
- 500 Million Qatari Riyals
- $160 Million AUD

**Competition Teams**
- Stantec (London/USA/Canada)
- RTKL (USA/Qatar/London)
- Perkins Eastman (USA)
- MAAP (Australia)
- Atkins (London/ME)

**Stipulation**
Unique design for this brief
Key Challenges

Understanding Islamic culture and mental health care in Qatar
Extreme climate
Minimal context - exposed suburban site
Flexibility- gender, acuity, optimising functionality, expansion

Competition Response

Create a protective residential scale setting, balancing need for privacy and safety, embedded with gardens, using familiar architecture and urban form responsive to local climate.
The Vision – Design Approach

Predominant Western Concept

- Secularity
- Care-dominated service
- Medicine reduced to symptom reduction
- Bad relations
- Constant surveillance

Aspirations

- Person-Centredness
- Cultural appropriateness
- Embracing of Islam
- Genuinely therapeutic
- Very sustainable
- Engaging patient experience
- Legible
- Flexible & Future-proof
- Quality working environment
- Supports high staff morale
- A coherent civic presence
- High aesthetic value

Al Wakra Concept

- Privacy
- Religiosity
- Care
- Best medical practice
- 21st century best science
- Love of animals
- Good relations
- Thermal comfort
01 | The Vision – Design Response
Design Response – Site Location
Doha, Qatar Climate Graph (Altitude: 10 m)

- **Precipitation (mm)**
- **Min Temp (°C)**
- **Max Temp (°C)**
- **Average Temp (°C)**
- **Daylength (Hours)**
- **Relative Humidity (%)**

**Graph Key:****
- Green bars represent precipitation.
- Blue line represents minimum temperature.
- Red line represents maximum temperature.
- Pink line represents average temperature.
- Grey line represents daylength.
- Black line represents relative humidity.

**Graph Details:**
- The graph shows monthly variations in temperature, precipitation, and daylength from January to December.
- Each month's values are indicated at the bottom of the graph:
  - Jan: 13.2°, 17.1°, 16.1°, 6.7°, 2.8°, 0.0°, 0.0°, 0.0°, 0.0°, 0.0°, 11.5°, 10.3°, 10.5°
  - Feb: 11.3°, 11.3°, 12.8°, 12.7°, 13.4°, 13.3°, 13.6°, 13.0°, 12.3°, 11.5°, 10.3°, 10.5°

**Environmental Strategies:**
- **Temperature reduction in gardens.
- Clean air exchange.
- Dusty air filtration.
- Vegetation as an air filter.
- Development that creates its own microclimate.
- Controlling the microclimate.
The oasis in the desert (eastern arid climates).

The clearing in the forest (western temperate climates).

The modern urban landscape requires both oasis and clearing.
Urban Response – Design Approach
Traditional response. Closely packed courtyard houses and narrow streets. Flexing between small single units or multiple units combined.

Suburban development uses the centre of the plot with no physical connection to adjoining buildings results in loss of privacy and inability to mitigate extreme climate.

Alternative approach revives traditional spatial structure.
The courtyard is developed into a repeating module that allows connectivity with adjoining elements. A tiling system based on different infill options and using square (orthogonal) geometry.
Urban Response – Design Approach
Organisational grid  Setting up the site  Access & expansion
A clinical reconfiguration of the original Functional Brief showing key uses
Clinical Response – Detailed Bed Arrangements
Clinical Response - Clinical Layout, Central Spine
04 | Building Design - Physical Model
1 ENTRANCE FORECOURT - DATE PALM GROVE
2 CENTRAL ATRIUM - INDOOR PUBLIC SPACE
3 SOUK - OUTDOOR PUBLIC SPACE
4 ACTIVITY SPACES - ANIMALS, GARDENING, HORSES
5 ASPIRE HILL - WALKING, WANDERING, LOOKOUT, VIEWS
6 EXTERNAL LANDSCAPE BUFFER - PLANTERS
7 INTERNAL LANDSCAPE BUFFER - COURTYARDS
8 LIWAN HOUSE COURTYARD
9 PRIVATE PATIENT COURTYARD
10 LIGHTWELLS TO BASEMENT LEVEL

ASPIRE HILL ACCESS AND POINTS OF INTEREST

PERIMETER WALL WITH PLANTING BUFFER
GRASSY FLAT AREA FOR EASY ACCESS
LUNING ARENA
HORSES STABLES
EASY STREET LINK
GENTLE 1 IN 30 SLOPE LEADING TO SUMMIT CEREMONIAL SPACE - LINK TO SOUK & PUBLIC SPACES
FALCONRY
LOOKOUT / SUMMIT OF ASPIRE HILL
EASY STREET LINK
COVERED AREAS AND LOOK-OUTS
VEGETABLE GARDENS
AVAIRY / BIRD WATCHING
SPORTS FIELDS

05 | Landscape Design - Layout and Planning
The House + Fereej - Courtyard and Bedrooms
Architectural Expression - Streetscape,
07 | Architectural Expression - Key Concepts
07 | Architectural Expression - Aerial View,
Final thoughts

Is there relevance to other contexts?

• Designing with climate – extending the seasons and moderating microclimate
• Cultural sensitivity in a multi-cultural society
• Inclusive design with minorities in mind
• Challenging the panopticon plan & obsession with lines of sight as proxy for safety
• Expanding space, the range of settings and affordances available to inpatients

Questions