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The 15th World Congress & Exhibition on Design & Health

From Typology to Transformation

Hospital Architecture in Saudi Arabia Under Vision 2030 and Future Directions

Ghaydaa Hemaidah · Alan Lewis
Imam Abdulrahman University · University of Manchester

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ROADMAP

01

The Question

Did Saudi Arabia follow the West's sequential path or something else?

02

Tracing the Typologies

A century of Saudi hospital typology, 1925–2016.

03

New Vision

Health clusters and changing patterns of hospital development.

04

Beyond the Building

Virtual and Health on the Go, and what it all means.

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Did Saudi Arabia follow the international script?

Pavilion
c.1860–1930

→

Monoblock
c.1930–1960s

→

Tower-on-Podium
c.1960s–

...or did something else happen?

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A BORROWED HISTORY

The International Hospitals Typology,

C.1860–1930

Pavilion



Source: Hughes, 2000

Driver: Miasma Theory
Ventilation as medicine : long, low wings spread apart for air and light.

C.1930–1960S

Monoblock



Source: Stones

Antibiotics loosen air's grip + steel and the elevator let the pavilion stack.

C.1960S–

Tower-on-Podium



Source: Hughes, 2000

Machine medicine : diagnostic floors on a podium, beds stacked above.

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OLD VISION

A Century of Saudi Hospitals

1925	First government hospital opens, Jeddah
1938	Oil Discovery
1950	Foundation of the Ministry of Health
1950–2016	Rapid expansion across Different Regions
2016	Announcement of the 2030 vision



وزارة الصحة
Ministry of Health

VISION رؤية 2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

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OLD VISION — IN PICTURES

Saudi Typologies, in Practice



Pavilion

Makkah , 1900s



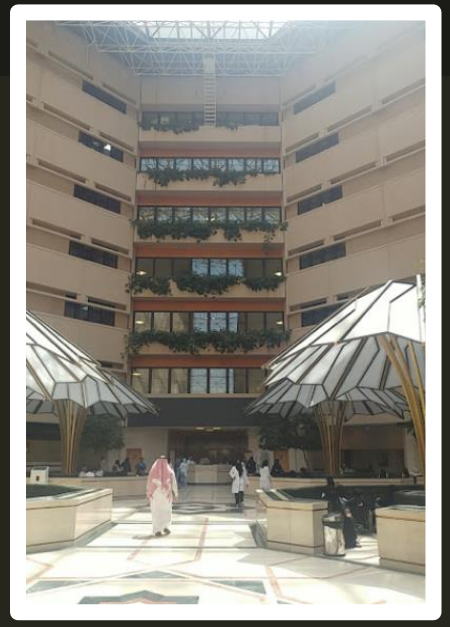
Monoblock

Riyadh, 1965



Towe—on-Podium

Al-Khobar, 1981



Atrium

Jeddah, 1996

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METHOD

The Study

32

government hospitals coded

3

Regions: Riyadh, Makkah, Eastern Province

8

indicators, scored 0 / 1 / 2

Form	Environmental Strategy	Evidence-Based Design	Interior Character

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METHOD

The Study

Group	Code	Indicator	Scale
A. Form	A1	Dominant massing typology	Pavilion / Monobloc / Tower-on-Podium / Campus / Hybrid
A. Form	A2	Vertical density	0–2 (Low-rise → High-rise)
C. Environmental Strategy	C1	Mechanised vs. passive systems	0–2 (Passive → Mechanical-dominant)
D. Evidence-Based Design	D1	Daylight & biophilic access	0–2 (Absent → Clearly present)
D. Evidence-Based Design	D2	Spatial flexibility	0–2 (Absent → Clearly present)
D. Evidence-Based Design	D3	Single-patient room proportion	0–2 (Mostly multi-bed → Mostly single-room)
E. Interior Character	E1	Institutional vs. hospitality atmosphere	0–2 (Institutional → Hospitality-like)
E. Interior Character	E2	Natural materials & motifs	0–2 (Absent → Clearly present)

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METHOD

The Study

Group
A. Form
A. Form
C. Environmental Strategy
D. Evidence-Base Design
D. Evidence-Base Design
D. Evidence-Base Design
E. Interior Character
E. Interior Character

	Hospital Name	City	Year	Bed Capacity	Affiliation	A1 - Massing Typology	A2 - Vertical Density	C1 - Environmental Strategy	D1 - Daylight/Biophilic Access	D2 - Spatial Flexibility	D3 - Single-Room Proportion	E1 - Institutional vs Hospitality	E2 - Natural Materials/Motifs
1	Al-Noor Specialist Hospital	Mecca	1983	500	Ministry of Health	MonoBlock	1	2	1	1	0	0	1
2	King Fahd University Hospital	Al-Khobar	1981	>400	Ministry of Education	Tower-on-Podium	2	2	1	2	1	0	0
3	King Abdulaziz University Hospital	Jeddah	1996	>1000	Ministry of Education	Atrium Hospital	2	2	2	1	1	1	1
4	King Faisal Specialist Hospital & Research Centre	Riyadh	1976	>2000	Other	Tower-on-Podium	2	2	2	2	2	1	1
5	King Khalid University Hospital	Riyadh	1982	1200	Ministry of Education	Multiblocks	1	2	1	2	1	0	1
6	King Fahad Specialist Hospital	Dammam	1999	370	Other	MonoBlock	1	2	1	1	1	1	1
7	King Abdulaziz Hospital -MHC - Alzaher	Mecca	1946	400	Ministry of Health	Stepped-Block	1	2	0.5	2	0	0	0
8	King Faisal Hospital - Alshisha	Mecca	1981	NA	Ministry of Health	Tower-on-Podium	2	2	0	1	0	0	0
9	Heraa General Hospital	Mecca	1984	500	Ministry of Health	Multiblocks	1	2	0	0	0	0	0
10	Ajyad General Hospital	Mecca	2009	52	Ministry of Health	Deep plan	0	2	0	0	0	0	0
11	Alhada Armed forced hospital	Taif	1980	415-469	Ministry of Defence	Tower-on-Podium	1	2	0	2	1	0	0
12	Security Forces Hospital-Makkah	Mecca	2013	250	Ministry of Interior	Tower-on-Podium	1	2	0.5	0	1	0	0
13	Prince Mansour Military Hospital	Taif	2007	100	Ministry of Defence	Multiblocks	1	2	2	1	1	2	2
14	King Faisal Medical Complex	Taif	2012	800	Ministry of Health	MonoBlock	1	2	0.5	1	1	0	0
15	King Abdulaziz Specialist Hospital	Taif	2001	520	Other	Tower-on-Podium	1	2	0	1	1	0	0
16	Dammam Medical Complex - Medical Tower	Dammam	1983 - 2007	400	Ministry of Health	Tower-on-Podium	1	2	0	1	0	0	0
17	Seha Virtual Hospital (SVH)	Riyadh	2022	NA	Ministry of Health	NA	NA	NA	NA	NA	NA	NA	NA
18	King Salman Specialist Hospital	Taif	2025	308	Ministry of Defence	Tower-on-Podium	2	2	2	2	1	2	2
19	Imam Abdulrahman Al Faisal Hospital	Dammam	2002	108	Ministry of National Guard	MonoBlock	0	2	0	0	1	0	0
21	King Abdullah Specialist Childrens Hospital	Riyadh	2015	600	Ministry of National Guard	Multiblocks	2	2	2	2	1	2	2
22	Specialized Hospital for Womens Health	Riyadh	2023	300	Ministry of National Guard	Tower-on-Podium	2	2	2	2	1	1	1
23	Prince Mohamed bin Abdulaziz Hospital	Riyadh	2013	500	Ministry of Health	Atrium Hospital	1	2	1	1	1	0	0
24	Al-Iman general hospital	Riyadh	1997-2018	400	Ministry of Health	MonoBlock, then Tower-	0	2	1	1	1	0	0
25	Dhahran General Hospital - Long Term Center	Dhahran	1955	66	Ministry of Health	MonoBlock	0	2	0	1	0	0	0
26	King Fahad Military Medical Complex	Dhahran	1989	350	Ministry of Defence	MonoBlock	1	2	0.5	1	1	0	1
27	Armed Forced Hospital - King Abdulaziz AirBase	Dhahran	1955-1980	200-300	Ministry of Defence	MonoBlock	0	2	0	1	1	0	0
28	Security Forces Hospital-Dammam	Dammam	2013	158	Ministry of Interior	Tower-on-Podium	1	2	1	0	1	2	2
29	King Fahad armed Forces Hospital	Jeddah	1975	558	Ministry of Defence	Multiblocks	2	2	0	2	1	2	2
30	Prince Sultan Military Hospital	Taif	1990	113	Ministry of Defence	Multiblocks	1	2	0	0	1	0	0
31	Security Forces Hospital	Riyadh	1972	678	Ministry of Interior	MonoBlock	1	2	0	2	1	1	1
32	King Abdullah Bin Abdulaziz University Hospital	Riyadh	2017	406	Ministry of Education	Megablock	2	2	2	2	2	2	2
33	King Abdulaziz University Hospital	Riyadh	1955	600	Ministry of Education	Atrium Hospital	2	2	0	2	1	0	0
34	Taakad Centers	Riyadh	2025	NA	Ministry of Health	Drive-Through cubicles	0	2	2	2	NA	1	1

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FINDING ONE

Parallel, Not Sequential

31%

Tower-on-Podium

31%

Monoblock

Both are tied as the most-frequent typologies in the dataset ،and both persist across **every era band.**The typologies the West separated by decades sit side by side in Saudi Arabia, across every generation of hospital built.

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FINDING TWO

The Climate Constant

100%

Mechanical-dominant environmental strategy, in every era from 1946 to 2025 — zero variation.

Climate, not period, is what actually holds constant across Saudi hospital design.

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THE SHIFT

To Patient-Centred Care





2010

the Ministry of Health introduced initiatives aimed at strengthening patient-centred care and empowering patient

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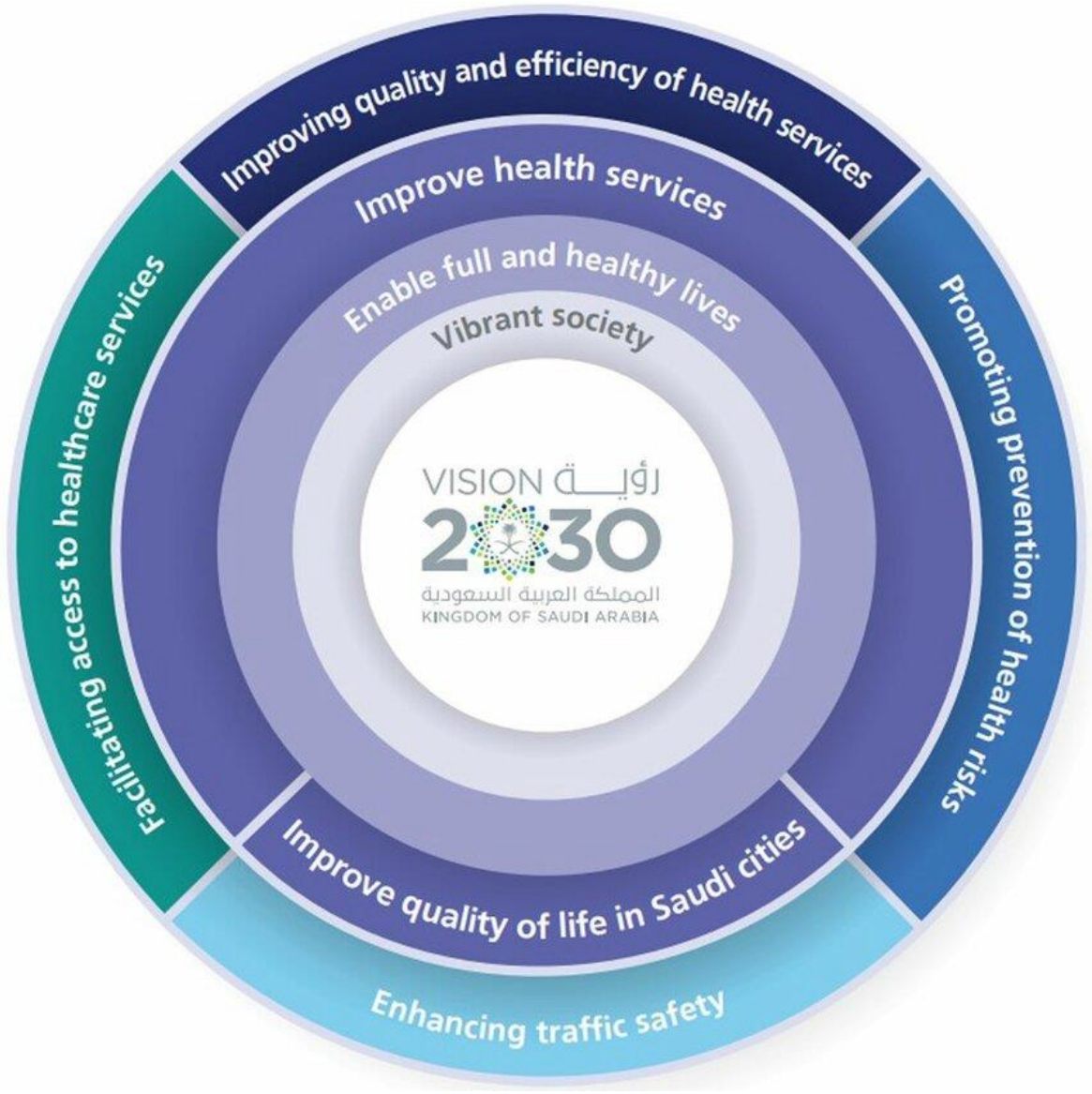
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NEW VISION

The 2030 Vision

2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

Vision 2030 is built around three main pillars, including a Vibrant Society, with a strong emphasis on healthy and fulfilling lives. This has shaped national efforts to make healthcare more accessible, higher quality, and increasingly focused on prevention.



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NEW VISION

Health Cluster

Riyadh First | Riyadh Second | Riyadh Third | Makkah | Jeddah First | Jeddah Second | Taif | Madinah | Qassim | Eastern | Al-Ahsa | Hafr Al-Batin | Asir | Tabuk | Hail | Northern Borders | Jazan | Najran | Al-Baha | **Al-Jouf**

20 regional health clusters nationwide
(Health Holding Company, 2026)

Replacing a centralised, ministry-run model with regional authorities that manage hospitals, primary care and public health together, under one roof, per region.

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NEW VISION

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THE COST OF TRANSFORMATION

What the Kingdom Is Spending on Health

$ 15.7B → $23.0B

MOH Budget 2016–2024

MoH budget, 2024

+46 %

growth in the MoH budget alone, 2020 → 2024

~10–11%

of the total national government budget

Source: MoH Statistical Yearbook 2024, Table 2-1

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A DECADE IN NUMBERS — QUANTITY

More Hospitals, More Beds, Many More Hands

510 → 516

hospitals, all sectors, 2020 → 2024

78,596 → 82,721

hospital beds, all sectors, 2020 → 2024

424K → 682K

health workforce, all sectors, 2017 → 2024 (+61%)

24.9 → 23.4 beds per 10,000 people, 2020 → 2024 is **falling**, not rising. Population is growing faster than bed capacity: quantity isn't the whole story.

Source: MoH Statistical Yearbook 2024, Tables 2-2, 2-17, 1-8

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A DECADE IN NUMBERS — QUALITY

Measuring Up: Accreditation and Design

CBAHI
المركز السعودي لاعتماد المنشآت الصحية
Saudi Central Board for Accreditation of Healthcare Institutions



of Saudi hospitals are now CBAHI-accredited

367 of 516 hospitals across all sectors

FROM OUR TYPOLOGY ANALYSIS

Greater daylight and biophilic access

Increased steadily across every era, with notable improvements in recent hospitals.

More hospitality character

After a dip mid-century, this increased roughly threefold from 2016 onward.

More use of natural materials

Also roughly tripled from 2016 onward.

Sources: MoH Statistical Yearbook 2024, Tables 2-58–60, 2-2; this paper's coded dataset, Table 5

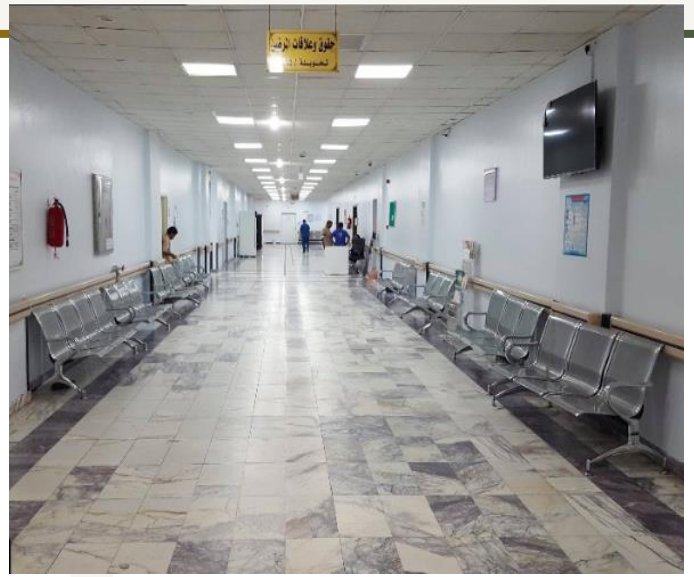
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A DECADE IN NUMBERS — QUALITY

Measuring Up: Accreditation and Design

Newer hospitals are moving away from the institutional, and toward environments that feel more human, supporting better care and experience.









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BEYOND THE BUILDING

When the Hospital Has No Building



Seha Virtual Hospital

Launched 2022 · ~600,000 users per year



Taakkad

Launched 2025 · drive-through preventive screening

9.3 million completed virtual appointments and consultations across MoH facilities nationwide, 2024 alone

MoH Statistical Yearbook 2024, Table 4-71

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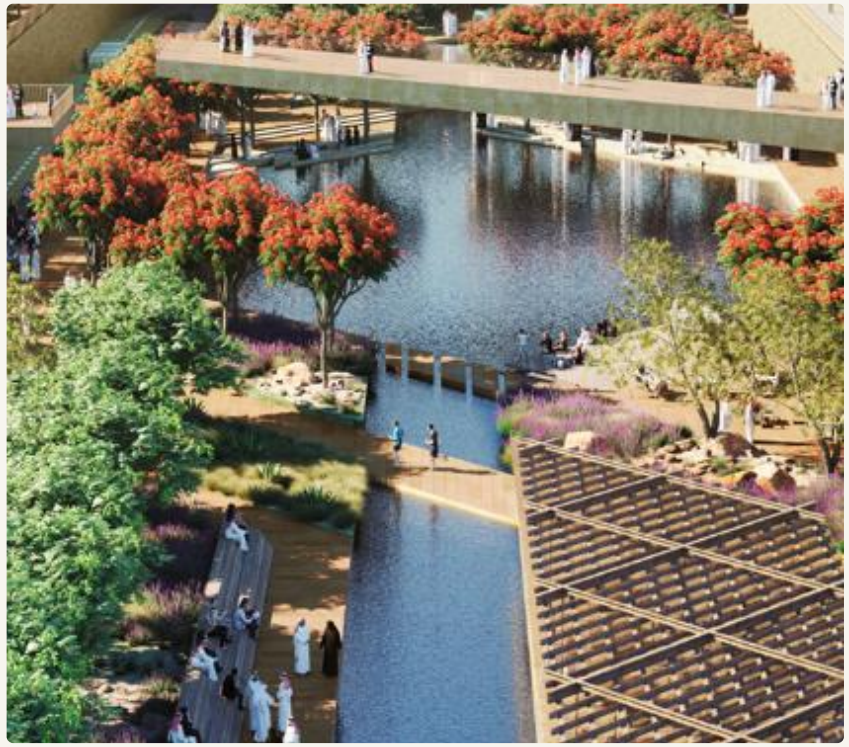
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DID IT STOP HERE?

Building Health Into the City

The Sport Boulevard









Vision 2030 didn't stop at the hospital door, it built health into the everyday city.

Source: Vision 2030; Royal Commission for Riyadh City

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Briefly

The New Face of Saudi Healthcare



From Building

→ **System**



From Ward

→ **Cluster**



From Visit

→ **Virtual**



From Hospital

→ **Anywhere**

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Thank You

Questions & Discussion

Dr Ghaydaa Hemaidah · Dr. Alan Lewis

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