بسم الله الرحمن الرحيم

University of Science & Technology

Architecture and Planning Department

First Year (2024-2025)

History and Theory of

architecture 1

# lecture 2

Weam Mohammed

# Architecture determinants

# Introduction

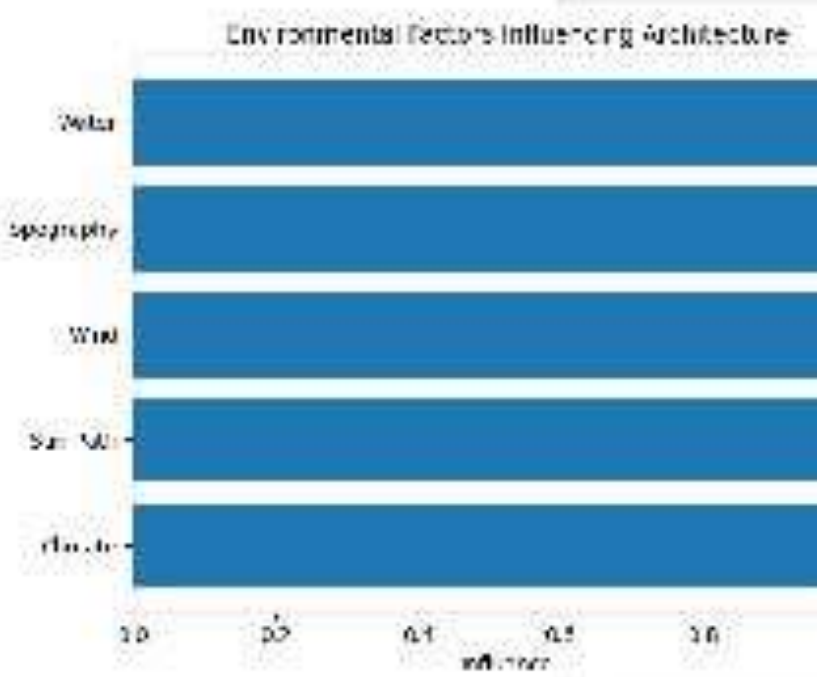
- Architecture is shaped by several determinants thati nfluence design decisions. The most important determinants include environmental, cultural, and political factors.

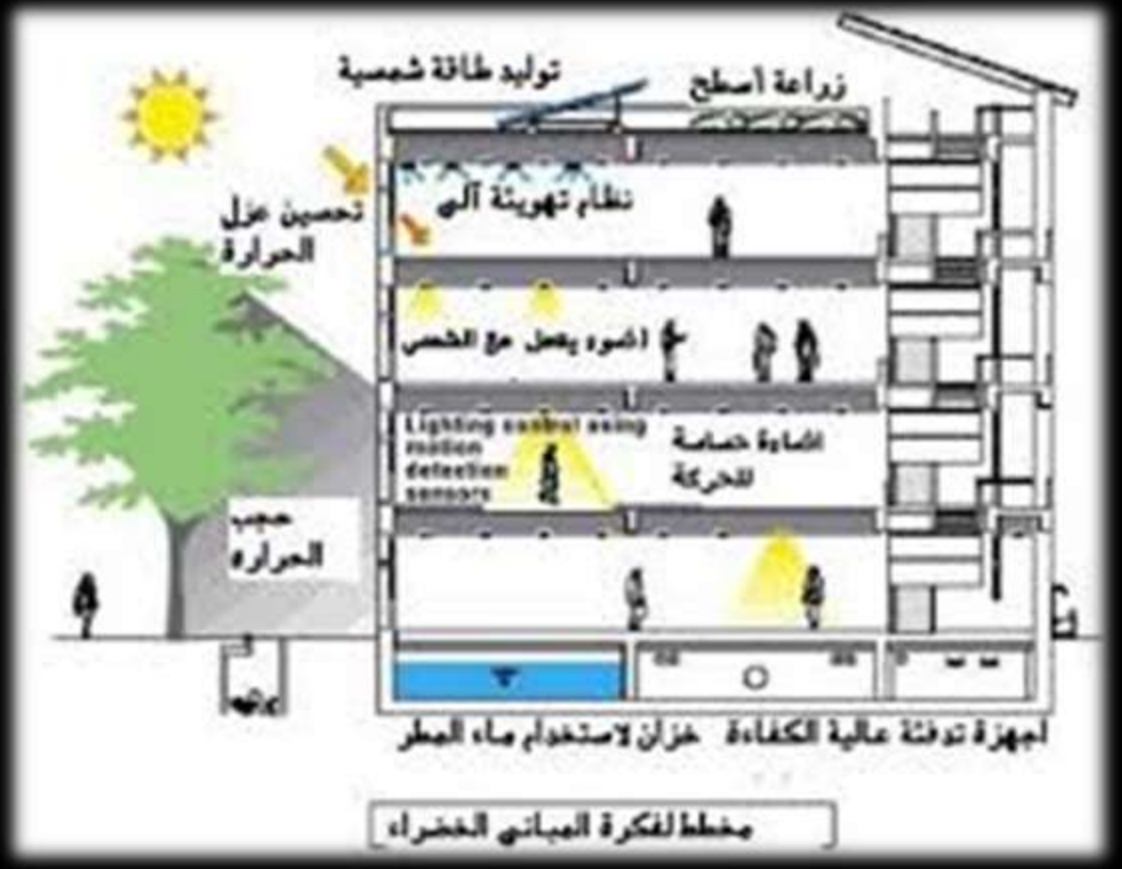


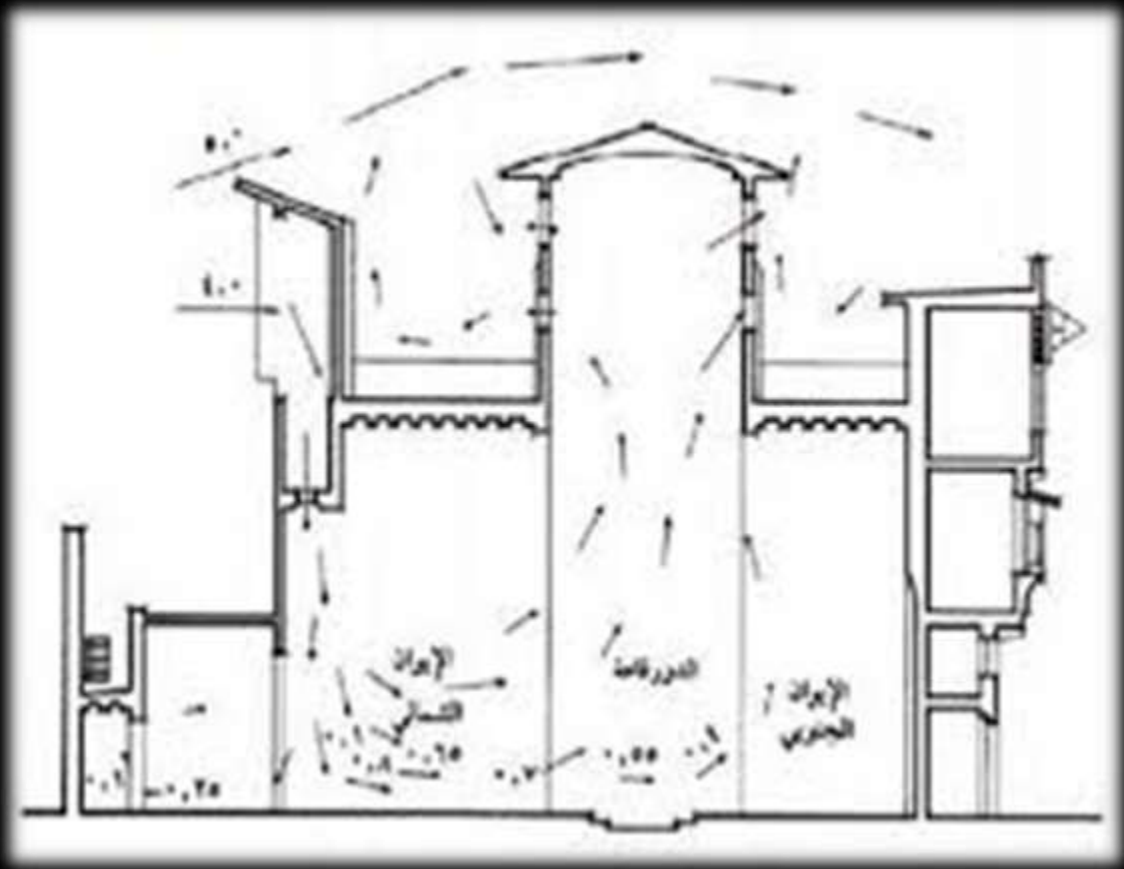


# Environmental Determinants

- • Climate (temperature, humidity, ra
- • Sun orientation and daylight
- • Wind direction and ventilation
- • Topography and landscape
- • Availability of natural resources

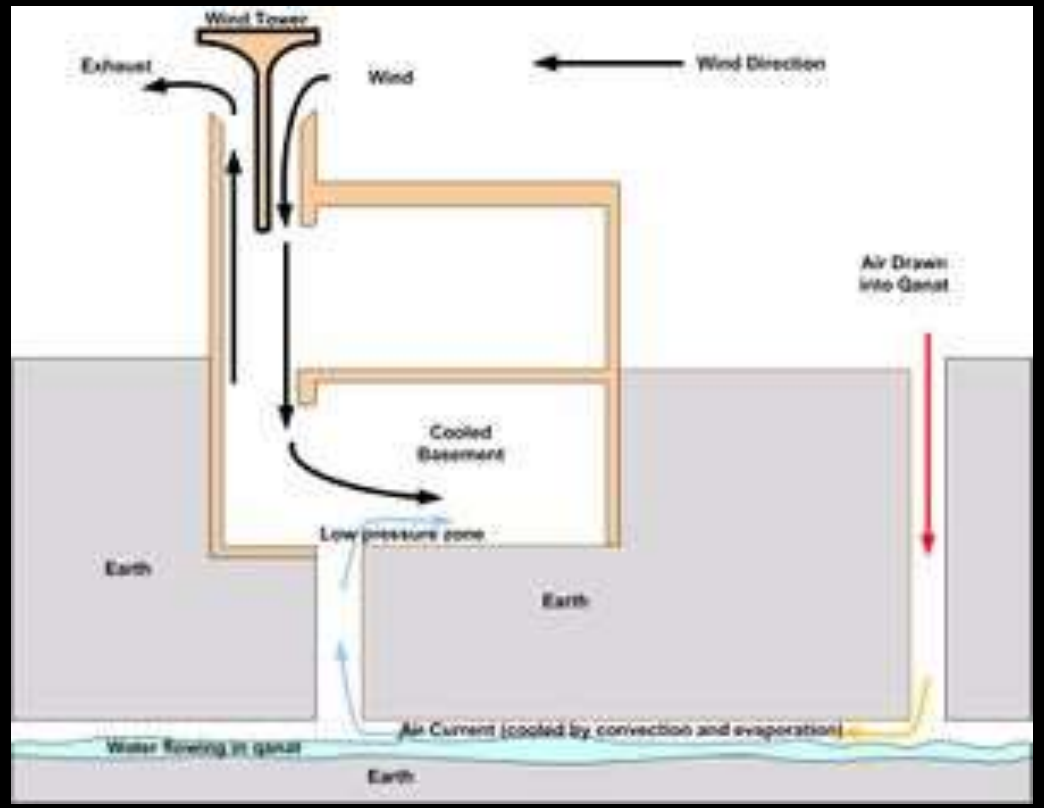


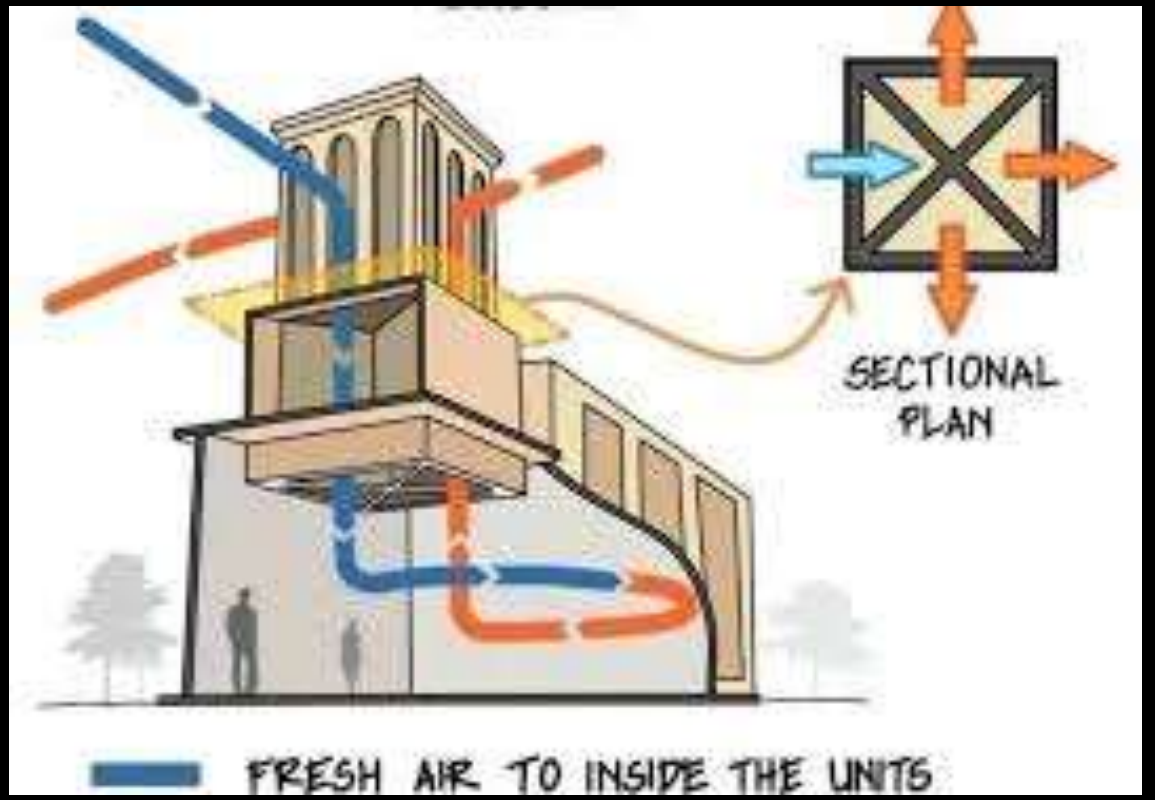

توليد طاقة شمسية
زراعة أسطح
تحسين عزل الحرارة
نظام تهوية آلي
اضواء يعمل مع الشمس
Lighting control using motion detection sensors
اضاءة حساسة للحركة
حجب الحرارة
أجهزة تدفئة عالية الكفاءة
خزان لاستخدام ماء المطر
مخطط لفكرة المباني الخضراء

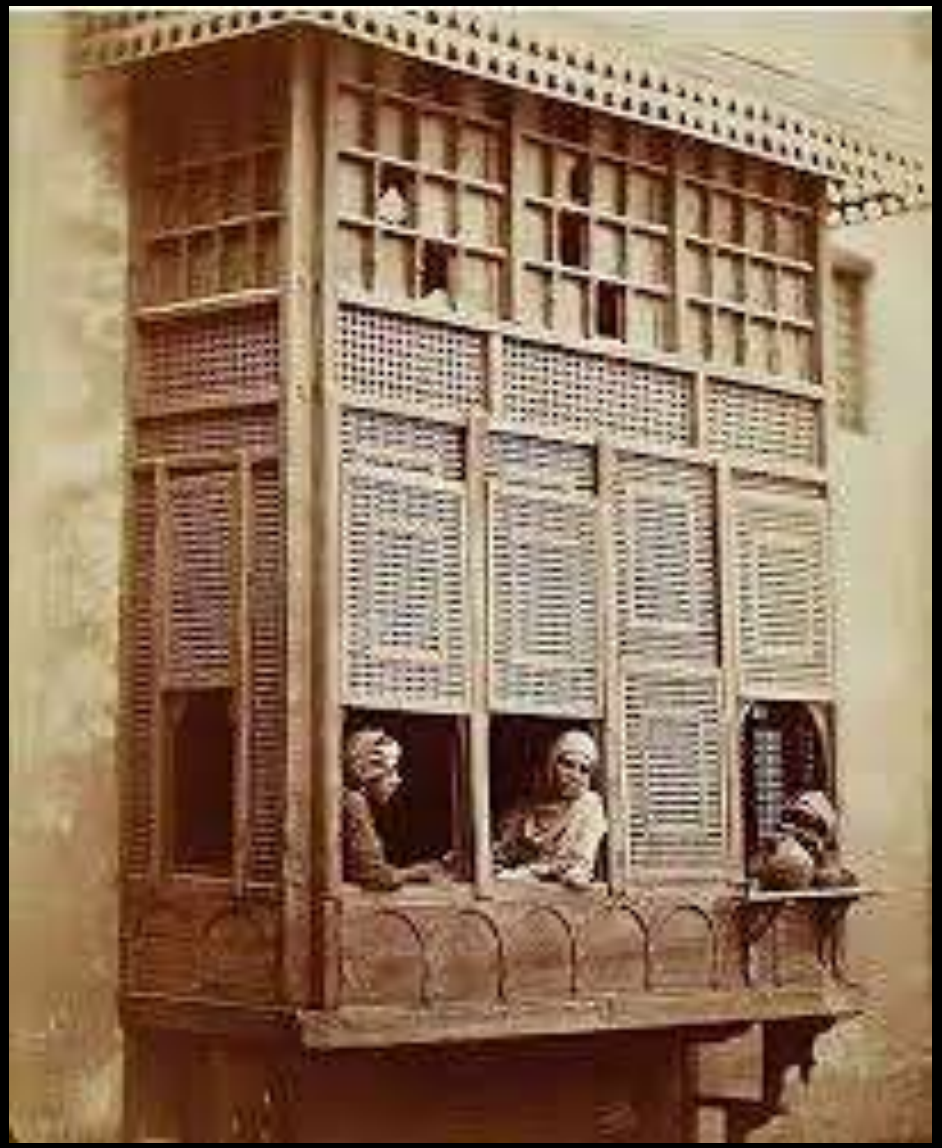

الإيوان الشمالي
الدورقاعة
الإيوان الجنوبي

# Environmental Design Responses

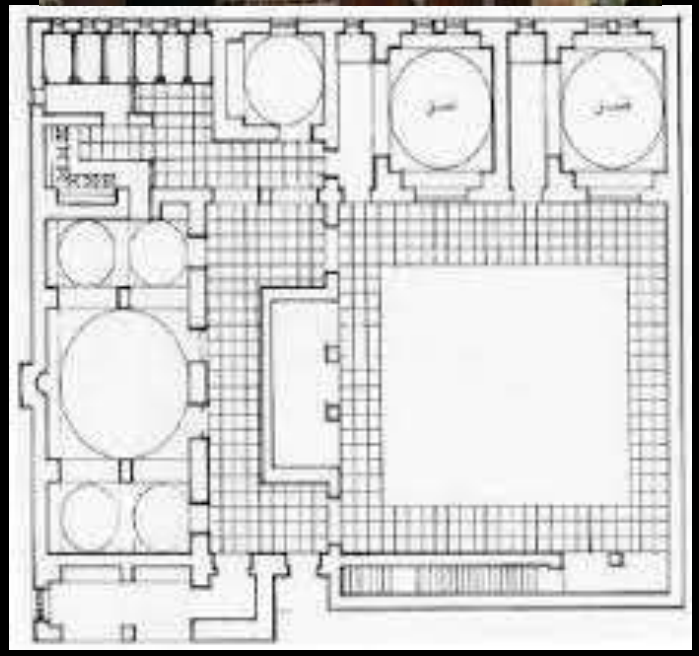
- • Building orientation for sun control
- • Natural ventilation strategies
- • Use ofl ocal materials
- • Shading devices and courtyards
- • Sustainable and energy-efficient design


Wind Tower
Exhaust
Wind
Wind Direction
Air Drawn into Qanat
Cooled Basement
Low pressure zone
Earth
Earth
Air Current (cooled by convection and evaporation)
Water flowing in qanat
Earth


SECTIONAL PLAN
FRESH AIR TO INSIDE THE UNITS

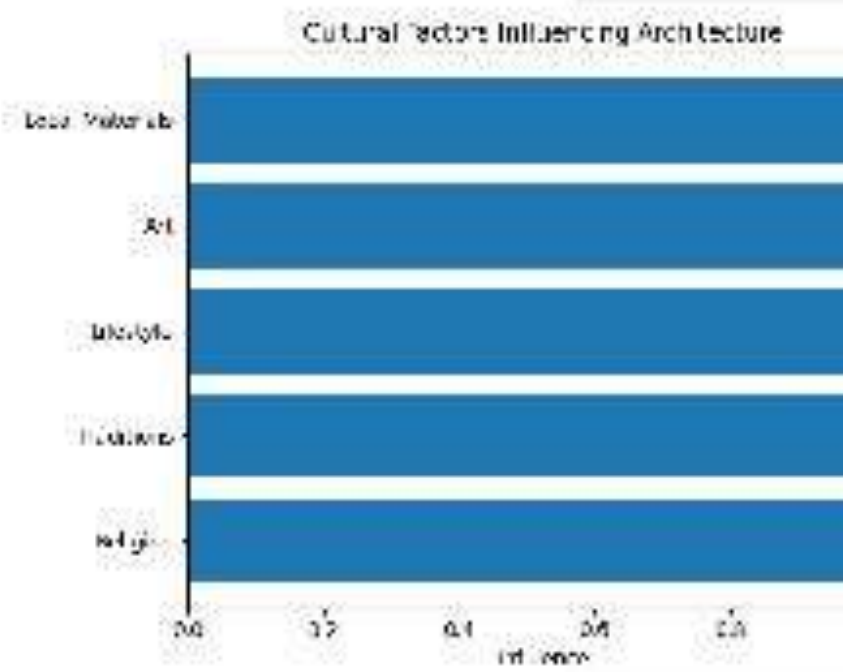






# Cultural Determinants

- • Social values and traditions
- • Religious beliefs
- • Lifestyle and daily activities
- • Local art and aesthetics
- • Historical heritage





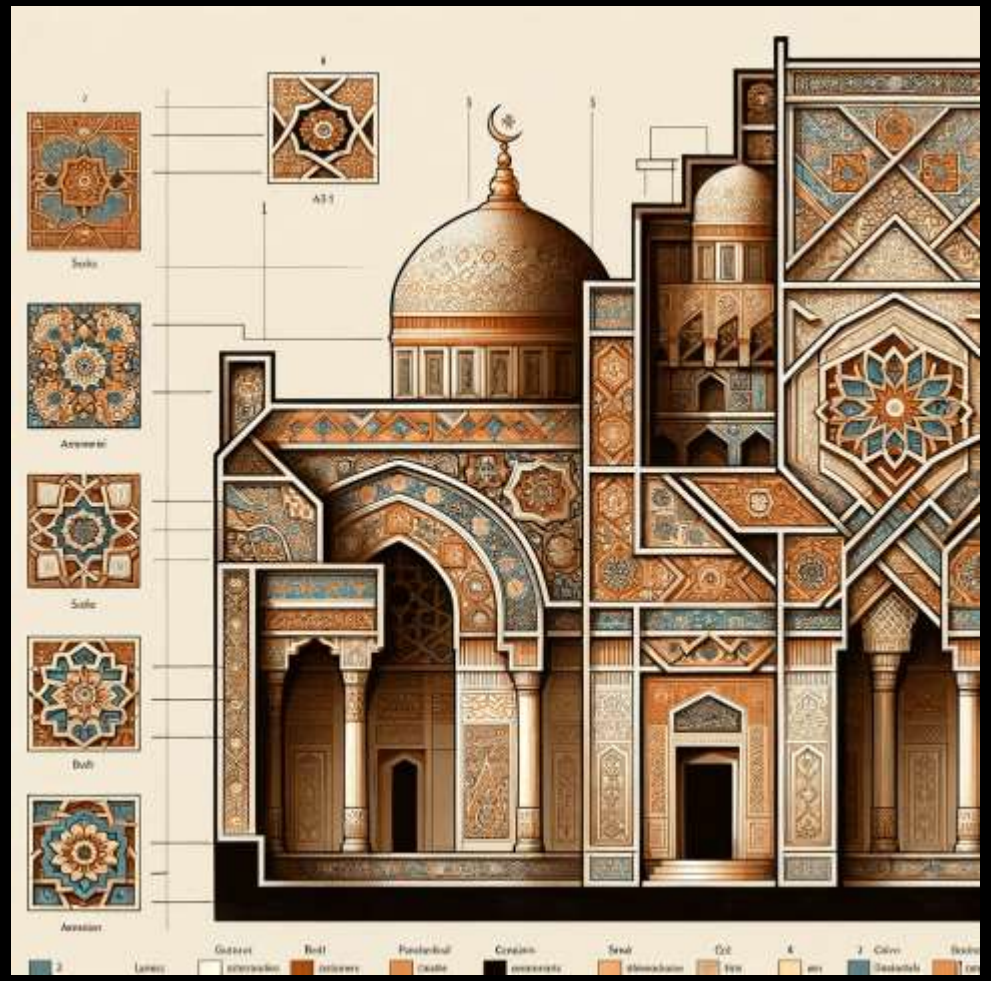


# Examples of Cultural Influence

- • Islamic architecture emphasizing courtyards and privacy
- • Traditional Sudanese and Middle Eastern houses
- • Use of decorative elements and patterns
- • Community-oriented spatial organization









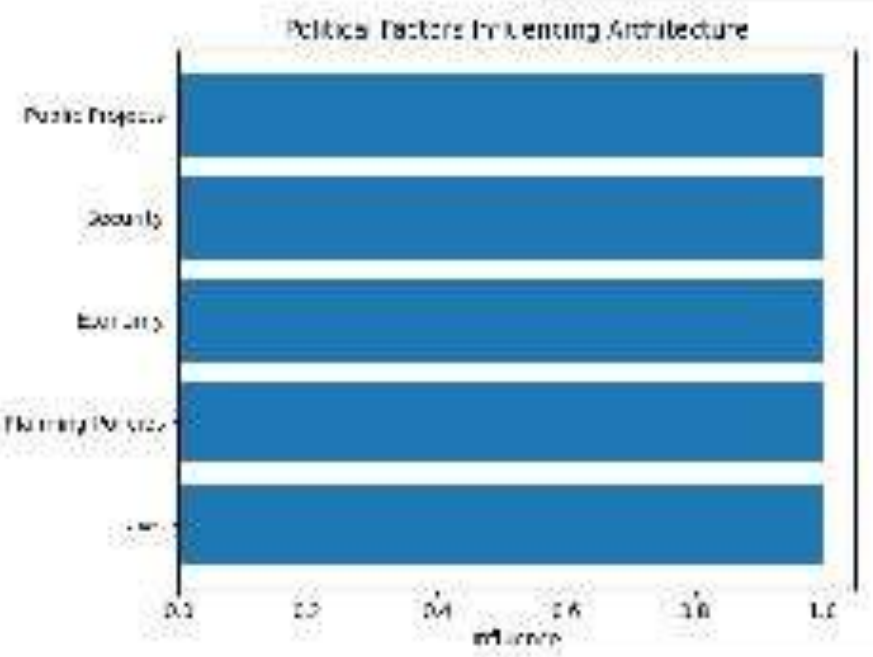






# Political Determinants

- • Government policies and building r
- • Urban planning strategies
- • Economic priorities oft he state
- • Infrastructure development
- • Public investmenti n architecture








المهندسخانـــة
مدرسة الهندسة الملكية



# Political Impact on Urban Form

- • Zoning laws and land use planning
- • Development of public buildings
- • Housing policies
- • Large national projects







# Conclusion

- Environmental, cultural, and political factors together shape architectural form and function. Understanding these determinants helps architects design buildings that respond to society and environment.