

## **Treatments of Heritage Architecture and its challenges towards facing Climate Change in the Cosmopolitan Alexandria city**

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### **Abstract:**

PRESERVING THE ARCHITECTURAL HERITAGE IN ALEXANDRIA GOVERNORATE, EGYPT, IS NECESSARY TO SAFEGUARD THE CITY'S CULTURAL IDENTITY AND HISTORY. THE CITY OF ALEXANDRIA HAS RECENTLY EXPERIENCED CLIMATE CHANGES THAT HAVE HAD A NOTICEABLE IMPACT, PARTICULARLY DUE TO ITS COASTAL LOCATION. CLIMATE CHANGE HAS BECOME A VERY IMPORTANT AND CONCERNING ISSUE THAT THREATENS THE CITY'S FUTURE. ALEXANDRIA IS HOME TO NUMEROUS HERITAGE BUILDINGS, SOME OF WHICH DATE BACK TO ANCIENT TIMES. HOWEVER, THESE BUILDINGS ARE AT RISK OF DAMAGE AND DESTRUCTION DUE TO THE EFFECTS OF CLIMATE CHANGE, SUCH AS RISING SEA LEVELS, SEVERE WEATHER PHENOMENA, HEAVY RAINFALL, AND INCREASED HUMIDITY AND IN RESPONSE TO THIS THREAT, PLANS ARE BEING MADE TO UTILIZE HERITAGE ARCHITECTURE, INCLUDING THE DEVELOPMENT OF A COMPREHENSIVE DATABASE FOR HISTORICAL STRUCTURES AND THE RESTORATION OF THE INTERIOR ARCHITECTURE OF MUSEUMS AND MONUMENTS AND IMPLEMENTING ADAPTIVE MEASURES LIKE WATERPROOFING AND STRUCTURAL REINFORCEMENT. ADDITIONALLY, THE CITY IS EXPLORING THE USE OF INNOVATIVE DIGITAL TECHNOLOGIES SUCH AS SCANNING , 3D PRINTING, AND ADOPTING SUSTAINABLE METHODS AND STRATEGIES TO MITIGATE THE IMPACT OF CLIMATE CHANGE ON HERITAGE BUILDINGS. HOWEVER, THERE ARE STILL CHALLENGES, INCLUDING THE HIGH COST OF RESTORATION, THE NEED FOR CONTINUOUS MAINTENANCE TO ENSURE THE LONGEVITY OF THESE STRUCTURES , AND THE CHALLENGE OF STRIKING A BALANCE BETWEEN THE NEED TO PROTECT ITS HERITAGE AND THE REQUIREMENTS OF MODERN DEVELOPMENT AND CIVILIZATION THROUGH THE IMPLEMENTATION OF ADAPTIVE MEASURES AND THE USE OF NEW TECHNOLOGIES FOR ADAPTIVE BUILDING MATERIALS.

### **KEYWORDS:**

COSMOPOLITAN ALEXANDRIA - WATERPROOFING MATERIALS - SUSTAINABLE STRATEGIES .