Shatt Al-Arab University

Sustainable Development Goals

11 SUSTAINABLE CITIES AND COMMUNITIES

Shatt Al-Arab University


جامعة شط العرب
كلية شط العرب الجامعة

Introduction:

The policy followed at Shatt Al-Arab University allows achieving a set of goals for creating and developing sustainable cities and local communities, as the university is a micro-community in which there is a large group of individuals, including students, service, administrative and teaching staff, who represent a sample of society.

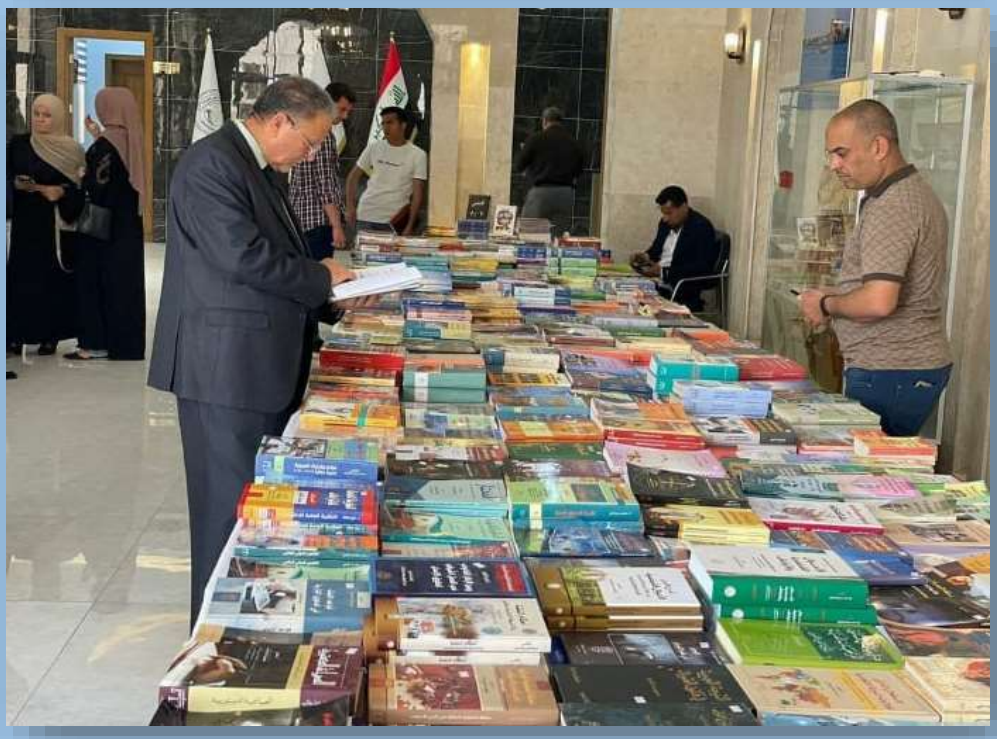
The basic element in the university community is the student. Therefore, the university seeks to create an ideal environment in which the appropriate requirements for academic education based on sound foundations are met, taking into account a set of requirements for achieving the goals of sustainable societies and conveying the university's vision outside its halls through the student himself.

Public access to buildings:

Shatt al-Arab University provides public access to the university buildings for free. It also provides other free services through its advanced buildings and halls to support government institutions in various fields, as happens in the ministerial examinations of the Ministry of Education.

Public access to libraries:

The university provides public access to the university library upon request. It also allows graduate students to benefit from solid scientific sources and use the reading room. While there are many book fairs held in the university's corridors.



Priority for movement on campus:

The university gives special attention to providing wide and comfortable corridors that provide free and smooth movement of students and visitors arriving to the university.

Planning and Development - Standards of New Buildings:

The university has a special interest in developing university buildings by introducing a set of sustainable building standards, such as thermal insulation, lighting, ventilation, and using materials that have the ability to withstand the environment in new buildings. The buildings are designed within modern architectural designs, which provide a comfortable and enjoyable atmosphere for students and visitors.

Rebuilding abandoned building:

During the recent plan to modernize the university buildings, some old abandoned building sites were removed and other modern buildings were constructed in their place to suit the university's urban development.

Providing green spaces:

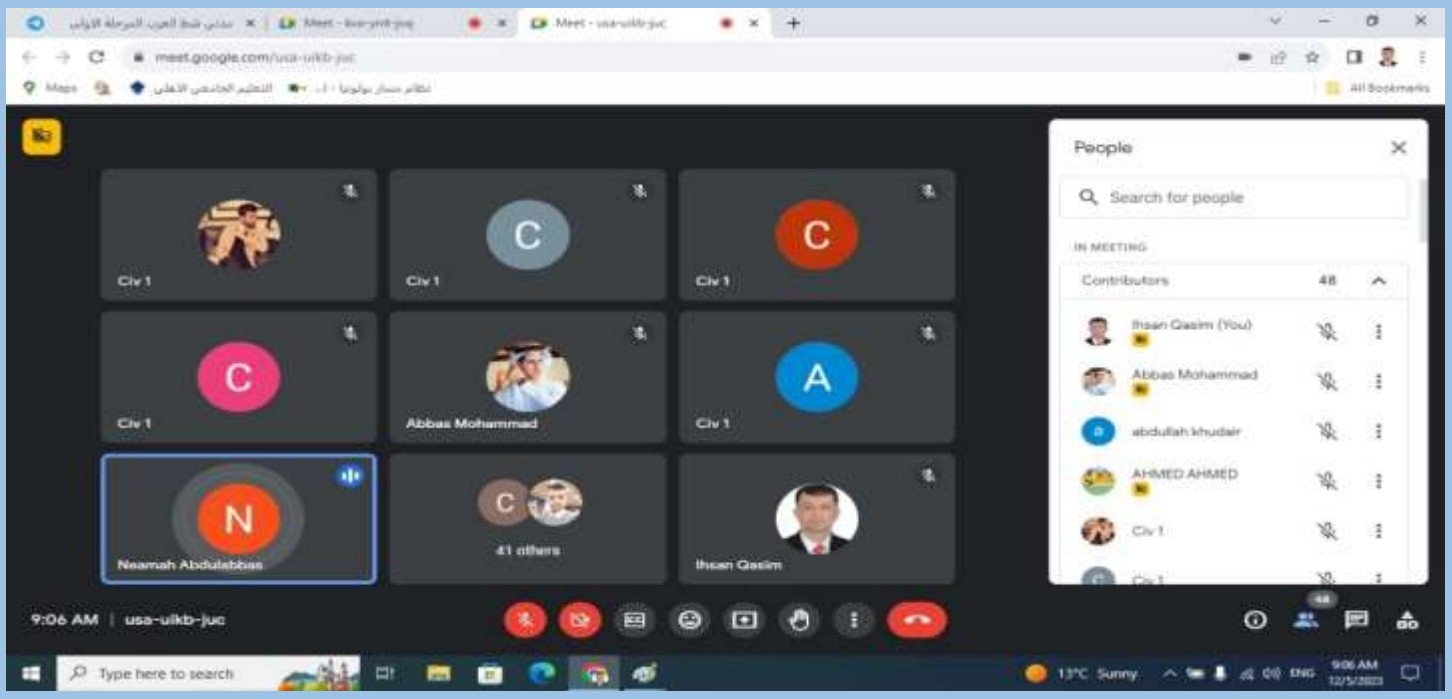
Since its establishment, the university has been keen to provide sufficient green spaces for students' comfort. There are suitable green spaces and seating areas for students in the college, which adds elegance to the buildings of modern architectural style.

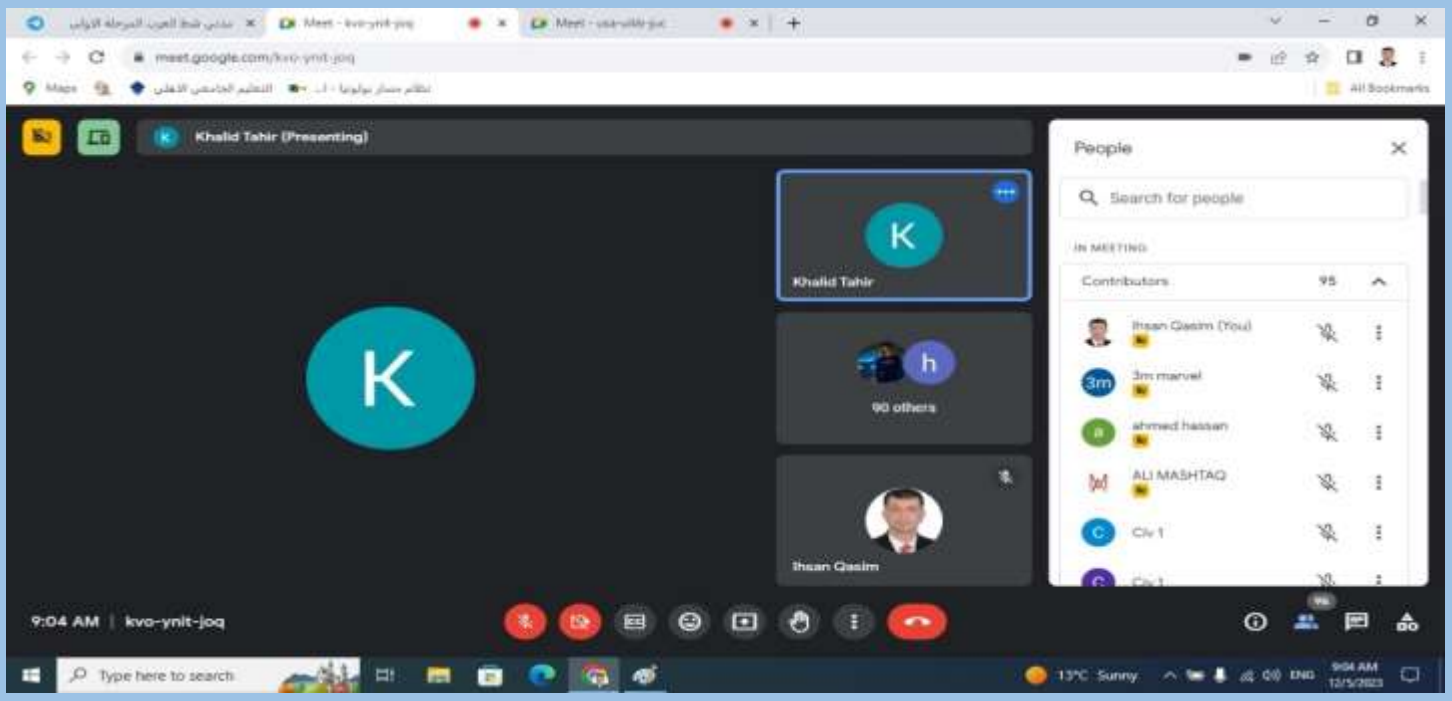
The university's contribution to holding various heritage festivals on various occasions:

Since its establishment, the university has been keen to pay widespread attention to holding scientific and heritage festivals within the university, as well as participating in festivals held outside it.

The university allows students and professors to communicate remotely and provide electronic lectures:

In compliance with the instructions of the Ministry of Higher Education and Scientific Research and in line with the requirements of modern distance teaching, the university has placed electronic lectures within the curriculum for all colleges and for all stages.





Construction of new buildings:

As a result of the increasing demand of students to study at the university, and opening of new departments there. The university has constructed integrated buildings within the modern architectural style in its new location.

Scientific research on sustainable cities and communities:

A study on selecting waste landfill sites using analytical hierarchy and geographic information systems: (a case study in Al-Zubair district - Basra - Iraq).

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Landfill site selection using analytical hierarchy process and GIS: a case study in Al-Zubair district, Basrah, Iraq

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Abstract

Al-Zubair district is located in the southwestern part of Basrah governorate and is considered the largest region administratively. Due to the rapid urbanization, rapid population growth, high waste productivity, and inexistence of landfills in Al-Zubair district, a sanitary landfill is needed to accommodate the produced solid waste and avoid any potential environmental problems. Hence, this study has been conducted to propose the best location for the sanitary landfill in Al-Zubair district and solve the waste problem scientifically, thus, a total of nine influencing criteria were adopted (water surface, agricultural lands, residential area, soil types, slope, roads, railways, power lines, and the oil fields) then processed using the Geographical Information System (GIS) to generate the map of suitability index and find the most candidate sites for the landfill based on the weights of criteria that derived from the Analytical Hierarchy Process (AHP) method. This study expected that the cumulative volume of solid waste through (2025-2050) would be about 18658259 m^3, requiring a landfill's area of at least 9.33 km^2 to accommodate this volume. The most suitable candidate site for landfill was identified in the middle of Al-Zubair district with an area of 124.63 km^2 in a way safe enough from the restricted zones of all criteria reducing the aesthetic destruction, physical pollution, travel time, construction cost and demonstrating the ability to accommodate the cumulative solid waste even after 2050 sustainably. The prior advantages of the proposed landfill's location would benefit the solid waste management in the study area effectively and efficiently.

Keywords: *Al-Zubair district, Analytical Hierarchy Process (AHP), Geographic Information System (GIS), Multi-Criteria Decision Making (MCDM), Sanitary Landfill.*

1. Introduction

Globally, the disposal of solid waste from the municipal is becoming a serious problem causing dangerous effects on the public health and environmental field [1-2]. Nowadays, this problem has become worse, especially in the developing countries, due to increasing in the industrial activities, rapid population growth, socio-economic growth, and uncontrolled migration, all the previous factors caused unplanned rapid urbanization [3], thus, the produced solid waste amount globally reached up to 3 million tons per day [4], of which more than 70 % from the low and middle-income countries like Iraq [5]. The intelligent management of solid waste resources involves various treatment methods like waste reduction, reusing, use in energy generation, recycling, and waste incineration. Despite the efficiency of the above methods, the sanitary landfill is still the most common, simpler, easier, and cheaper than other methods, however, the residual of other methods still needs to be exposed revealing the importance of sanitary landfills in any way [1, 6].

It is considered very complicated and time-consuming when it comes to the right location of the landfill because the decision-making needs to be interconnected with various fields of knowledge represented by social, political, environmental, geological, topological, technical, economic, and engineering parameters defined by criteria, as well as, the decision making relies on the governmental regulations, funding, land availability, general awareness about the environmental policies, public health regulations, and the population density [5-7].

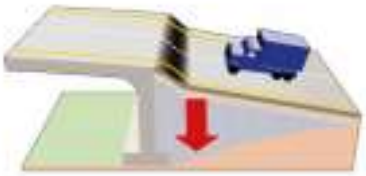
According to the diversity of criteria in the landfill site selection process, the Geographical Information System (GIS) is used to deal with the layers of criteria spatially because of its ability to manage a huge volume of data with time and cost-efficiency [5, 7]. Multi-Criteria problems require Multi-Criteria Decision Making (MCDM) processes to evaluate each available alternative and solve the problem based on the logical-mathematical concepts, the MCDM involves a lot of methods like the Analytical Network Process (ANP) [8], Best Worst Method (BWM) [9], Simple Multi-Attribute Rating Technique (SMART)

Scientific study on sustainable cities and communities:

Causes, and methods of mitigation of bridge approaches in Basra.

هبوط مقتربات الجسور في البصرة
الأسباب وطرق التخفيف

Settlement of Bridge Approaches in Basrah
Causes and Mitigation Methods



دراسة مقدمة الى مديرية طرق وجسور البصرة

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2024

Paragraph name	Action
Public access to buildings	✓
Public access to libraries	✓
Priority for movement on campus:	✓
Planning and development – standards for new buildings	✓
Rebuilding abandoned buildings	✓
Organizing various heritage and scientific festivals	✓
Providing green spaces	✓
Working/communicating remotely	✓
Construction of new buildings	✓
Scientific research	✓
Scientific study	✓