

المركز الاول بمسابقة تصاميم ابداعية للمساكن الخضراء JO Green

فاز طلاب جامعة فيلادلفيا بالمركز الاول بمسابقة تصاميم ابداعية للمساكن الخضراء (JO Green) حيث تستهدف المسابقة فئة الشباب من طلبة البكالوريوس في التخصصات الهندسية لتحفيزهم نحو العمل كفرق متكاملة التخصصات لإيجاد حلول مبتكرة للقضايا والتحديات التي يواجهها الأردن في مجال الطاقة والمياه والبيئة والاقتصاد والتغير المناخي والتي ترتبط بتصميم المباني واستخدامها لترسيخ ثقافة المباني الخضراء. شارك قسم هندسة العمارة ممثلاً بالطلاب محمود فواز ومعتز النجار تحت اشراف م.مليكة الظاهر وم.صفاء النعيمي وم.نور القرم وم.هديل القضاة.

حيث فاز بالجائزة الأولى وقيمتها 2000 دينار الفريق المكون من الطلبة معتز راغب النجار / هندسة عمارة من جامعة فيلادلفيا، والطالب محمود فواز أبو قزازه / هندسة عمارة من جامعة فيلادلفيا، والطالب سامي دقماق /هندسة مدنية من جامعة فيلادلفيا والطالب أحمد حجارة / هندسة ميكانيك من جامعة فيلادلفيا.

وقد تم تقييم تصاميم المشاريع المشاركة في المسابقة من قبل فريق تحكيم مستقل من الخبراء ووفقاً لمعايير دليل المباني الخضراء الأردني منها الابتكار والإبداع والاستدامة وتكامل الحلول والجدوى الاقتصادية.



GREEN DEVELOPMENT CENTER

Site Analysis

Location : the site is located in alkhatabyehh village, madaba, Jordan 1780 m from madaba city center. the site can be reached from ...st.
Site area = 1496 m²

Climate Analysis

Temperature, **Humidity**, **Sun hours**, **Rainfall**, **Wind Frequency**, **Wind Speed**

Sustainability

Sustainable architecture lays the foundation for a better future. The average consumption of energy has significantly increased since 1990 70% off annual green house gas emissions are accounted to energy sources. Residences Alone are responsible for 10 of That Sustainable Architecture. Employs A series of techniques that seek to minimize our impact on the planet

ECONOMICS, **ECOLOGY**, **POLITICS**, **CULTURE**

CIRCLES OF SUSTAINABILITY

Monthly Wind Roses

Sustainable Approach

Sustainability

Environmental Sustainability, **Social Sustainability**, **Economic Sustainability**

Building Elements

Site and Landscape, **Water**, **Shade & Shadow Study**, **Modeling**

Concept

1- Choose the shape because its compact shape to lose minimum amount of energy

2- Define a global open court yard if it brings the closest to the highest possible level

3- Wind effect is carving the pure mass model so that shape as the natural vents rise can equalize of gases

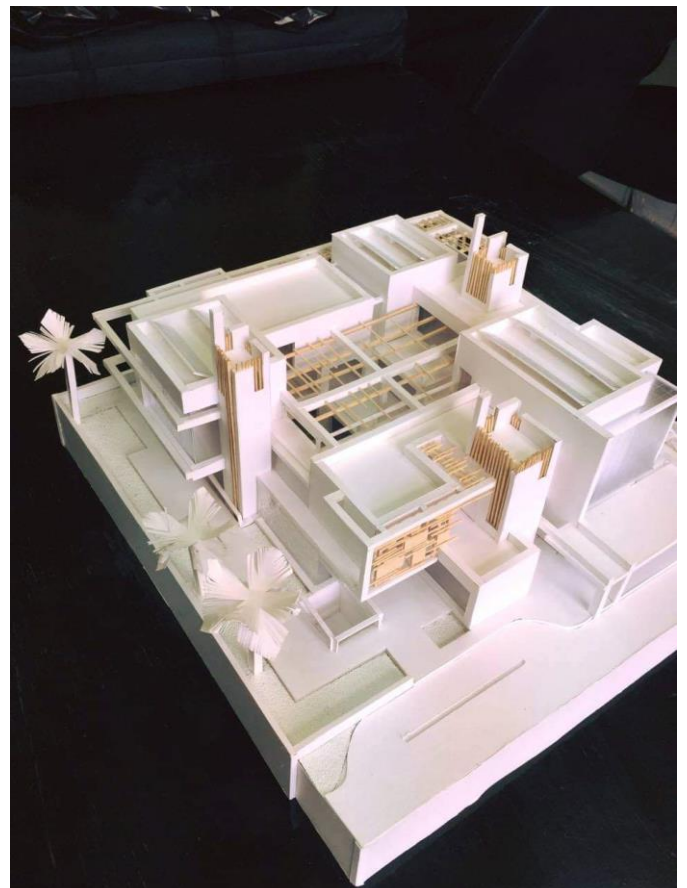
4- View the view out from the window that connect with the world outside it provides the identification which for rooms already mentioned, allows us to transcend the time of day, changes in the weather, daylight and seasons.

5- Sun light effect make some ventilation on masses heights, which leads to avoid unequal air with other to make changes in pressure

6- Change geometry the natural change from day to night less bright sunlight to dark and cloudy or rainy days. The mass division and capacity for change, leading to the ability to adapt or high response of the day in interior. Change is as the knowledge day lighting, the human body has a capacity for adaptation, particularly in room, and it need to reverse the response.

7- Health to study the qualitative and quantitative aspects of daylight, including explicit rules to guess whether an interior is well lit. Poor lighting can affect human health, body designed or poorly maintained lighting can cause stress and lead to various form of complaint, eye discomfort, etc. or posture

8- Orientation the aim is to ensure the maximum availability of useful natural light and sunlight to the interior. Select a specific orientation for a particular use of room



Elevations

Project Systems

Green Building

The building is designed to be a green building. It features a variety of sustainable features, including a green roof, rainwater harvesting, and energy-efficient lighting. The building is also designed to be a net-zero energy building, meaning it produces as much energy as it consumes.

Energy Performance

The building's energy performance is optimized through a variety of measures, including high-performance glazing, energy-efficient lighting, and a green roof. The building is designed to achieve a LEED Platinum certification.

Water Conservation

The building features a variety of water-saving measures, including low-flow fixtures, rainwater harvesting, and a gray water recycling system. The building is designed to reduce its water consumption by 50% compared to a conventional building.

Indoor Air Quality

The building is designed to provide a high-quality indoor environment. It features a variety of measures, including low-VOC materials, mechanical ventilation with heat recovery, and a green roof. The building is designed to achieve a WELL Platinum certification.

Green Roof Details

The green roof is designed to provide a variety of benefits, including improved energy efficiency, reduced stormwater runoff, and enhanced air quality. The roof is covered with a variety of plants, including sedum and grasses.

Water Recycling

The building features a gray water recycling system that captures water from showers, sinks, and washing machines. This water is then treated and reused for irrigation and toilet flushing. The system is designed to reduce the building's water consumption by 30%.

Energy Harvesting

The building features a variety of energy-saving measures, including solar panels, energy-efficient lighting, and a green roof. The building is designed to reduce its energy consumption by 50% compared to a conventional building.

Green Building Summary

The building is designed to be a green building. It features a variety of sustainable features, including a green roof, rainwater harvesting, and energy-efficient lighting. The building is also designed to be a net-zero energy building, meaning it produces as much energy as it consumes.

Plans

Sections

Ground floor plan 1:100

Section A-A 1:100

Section B-B 1:100

Section C-C 1:100

Gray water detail

Wind Catcher section in winter

The sections illustrate the building's internal structure and systems. Section A-A shows the vertical circulation and the green roof. Section B-B shows the horizontal circulation and the gray water recycling system. Section C-C shows the building's facade and the wind catcher system. The gray water detail shows how water from showers and sinks is captured, treated, and reused. The wind catcher section in winter shows how the building's design captures and distributes warm air during the cold months.

