


## King Hussein Business Park – Building Four

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**Renovation**

**Primary energy need :**  
kWhpe/m<sup>2</sup>.year  
(Calculation method : )

**ENERGY CONSUMPTION**

Energy Consumption Range (kWhpe/m <sup>2</sup> .year)	Grade
< 50	A
51 à 90	B
91 à 150	C
151 à 230	D
231 à 330	E
331 à 450	F
> 450	G

*Economical building* (A-E) | *Energy-intensive building* (F-G)

**Building Type :** Office building < 28m  
**Construction Year :** 2008  
**Delivery year :** 2019  
**Address 1 - street :** King Abdullah II Street, Building Four 11855 AMMAN, Other countries  
**Climate zone :** [Csa] Interior Mediterranean - Mild with dry, hot summer.

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**Net Floor Area :** 3 630 m<sup>2</sup>  
**Number of Work station :** 4 Work station

**Certifications :**



**Proposed by :**



### General information

The King Hussein Business Park (KHBP) is strategically located adjacent to one of Amman's busiest highways, offering easy access to downtown and other cities in the region. Situated in the heart of the business park, Building Four houses the management offices for KHBP as well as both local and international companies. These range from a local, family-owned insurance company to Arabia Weather to Oracle. Designed to offer world-class amenities and an amenable business environment, KHBP integrates open green space with mixed-use development that includes restaurant and retail space. The business complex offers office spaces that can employ over 4,000 people and is entirely walkable, with a bicycle and shuttle bus provided for faster transportation.

The four-story Building Four was retrofitted with green measures to improve its conservation of natural resources and CO2 emissions. The building has a skylight with higher thermal performance glass that brings natural daylight to the building's inner courtyard while controlling external glare to reduce energy use. Low-flow faucets and dual flush water closets control water consumption. These green features are expected to result in utility savings of over \$4,800 per month. In the renovation of the building, existing floor slabs, flooring, roof, walls and window frames were all repurposed.

Building Four was originally designed by Turkish architect Yuksel Holding and developed by the Business Park Company. KHBP is expected to expand in the near future to meet the growing needs of the business sector in Amman. King Hussein Business Park – Building Four has received final EDGE certification from GBCI.

## See more details about this project

<https://www.edgebuildings.com/projects/king-hussein-business-park-building-four/>

## Photo credit

Photos courtesy of the Business Park company

## Stakeholders

### Stakeholders

Function : Designer

Yuksel Insaat- Turkey

[www.yuksel.net/](http://www.yuksel.net/)

Original Design and Construction

Function : Investor

Business Park Company

info[at]businesspark-jo.com

[www.businesspark-jo.com](http://www.businesspark-jo.com)

Owner

Function : Environmental consultancy

Adaa sustainable development consultants & ETA-max- Jordan

[www.adaaconsultants.com/](http://www.adaaconsultants.com/)

Green Building Consultants, Green Building Certification Administration, EDGE Expert

## Energy

### Energy consumption

Breakdown for energy consumption : 15 kWh/m<sup>2</sup>/year : computers

14 kWh/m<sup>2</sup>/year : lighting

6 kWh/m<sup>2</sup>/year : other

3 kWh/m<sup>2</sup>/year : fan energy

20 kWh/m<sup>2</sup>/year : cooling energy

5 kWh/m<sup>2</sup>/year : heating energy

Initial consumption : 119,50 kWhpe/m<sup>2</sup>.year

### Envelope performance

More information :

Roof U-value: 0.45 W/m<sup>2</sup>.K

Wall U-value: 0.39 W/m<sup>2</sup>.K

Glass U-value: 2.9 W/m<sup>2</sup>.K

### Real final energy consumption

Final Energy : 63,53 kWhfe/m<sup>2</sup>.year

## Renewables & systems

### Systems

Heating system :

- Urban network

#### Cooling system :

- Urban network

#### Ventilation system :

- Natural ventilation
- Double flow

#### Renewable systems :

- No renewable energy systems

## Products

### Product

Reflective Paint for External Walls - Solar Reflectivity (albedo) of 0.54

External Shading Devices - Annual Average Shading Factor (AASF) of 0.34

Insulation of External Walls : U-value of 0.39

Higher Thermal Performance Glass : U- value of 2.9 W/m<sup>2</sup>.K and SHGC of 0.48

Variable Refrigerant Flow (VRF) System - COP of 3.46

Energy-Saving Light Bulbs - Internal Spaces

**Product category :** Table 'c21\_germany.innov\_category' doesn't exist SELECT one.innov\_category AS current,two.innov\_category AS parentFROM innov\_category AS oneINNER JOIN innov\_category AS two ON one.parent\_id = two.idWHERE one.state=1AND one.id = '14'

Low-Flow Faucets in All Bathrooms - 1.8 L/min

Dual Flush for Water Closets in All Bathrooms - 3 L/first flush and 6 L/second flush

Water-Efficient Urinals in All Other Bathrooms - 2 L/flush

Water-Efficient Faucets for Kitchen Sinks - 3.8 L/min

**Product category :** Table 'c21\_germany.innov\_category' doesn't exist SELECT one.innov\_category AS current,two.innov\_category AS parentFROM innov\_category AS oneINNER JOIN innov\_category AS two ON one.parent\_id = two.idWHERE one.state=1AND one.id = '9'

Re-Use of Existing Floorslab

Re-Use of Existing Roof

External walls : Re-Use of Existing Wall

Internal walls: Re-Use of Existing Wall / Plasterboards on Metal Studs

Flooring : Re-Use of Existing Flooring

Window Frames : Re-Use of Existing Window Frames

## Costs

### Energy bill

Forecasted energy bill/year : 60 660,00 €

Real energy cost/m<sup>2</sup> : 16.71

Real energy cost/Work station : 15165

## Health and comfort

### Water management

Consumption from water network : 3 051,36 m<sup>3</sup>

Water Consumption/m<sup>2</sup> : 0.84

Water Consumption/Work station : 762.84

5 kWh/m<sup>2</sup>/year :heating energy

20 kWh/m<sup>2</sup>/year : cooling energy

3 kWh/m<sup>2</sup>/year : fan energy

6 kWh/m<sup>2</sup>/year : other

14 kWh/m<sup>2</sup>/year : lighting

15 kWh/m<sup>2</sup>/year : computers

### Comfort

### Health & comfort :

This testimonial is from one of the tenant's whose company's headquarter office occupying the building's Ground Floor Level.

"We are very satisfied with being inside the KHBP as a prime location. It has ease of movement inside the campus, and it gives us the security needed in working 24/7. The environment of the building including outdoor views, thermal comfort, and the daylight is very work-friendly. The administration and availability is really something we love in KHBP and it helps us in saving our time." -Mohammed N. Al-Shaker, CEO ArabiaWeather Inc.

## Carbon

### GHG emissions

GHG in use : 37,74 KgCO<sub>2</sub>/m<sup>2</sup>/year

## Contest

### Reasons for participating in the competition(s)

**Energy** (47% energy savings): Reduced window to wall ratio, reflective paint for external walls, external shading devices, insulation for external walls, higher thermal performance glass, variable refrigerant volume cooling system and energy-saving lighting.

**Water** (44% water savings) : Low-flow faucets in bathrooms and kitchen sinks, dual-flush water closets and water-efficient urinals.

**Materials** (91% less embodied energy in materials) : Re-use of existing floor slabs, flooring, roof, walls and window frames, with new plasterboards on metal studs for internal walls.

### Building candidate in the category



Energy & Hot Climates



Users' Choice



