INTERVIEW WITH EMAN ATIF AL SHBAIL, THE ROYAL SCIENTIFIC SOCIETY

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Position and organisation
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JORDAN

"The BEEP project will contribute to the creation of an open and competitive digital market for construction and foster greater collaboration between the public and private sectors".

Eman Atif Al Shbail

What is the main role of your organisation in the BEEP project?

The Royal Scientific Society - National Energy Research Center (RSS/NERC) is responsible for the "capitalization" of the BEEP project, which aims at delivering a common strategy to deploy the pilot activities implemented during the BEEP project and guidelines to provide tools to reach the objectives set by the common strategy.

Which pilot building has been chosen as a case study in Jordan and why?

In coordination with Greater Karak Municipality, RSS/NERC has chosen the "Guests House" as the case study building for the project in Jordan. The building was constructed more than 100 years ago and used as a municipal building. In the mid-19th century, a new, larger

building was constructed to be used as the main municipal building, while the old one (the case study) is used to accommodate guests of the municipality and to hold events and other activities open to the public.

Old façade of the pilot building: back view

New façade of the pilot building: front view

What retrofitting scenarios are envisaged for the case study?

The actions planned for each scenario were chosen based on their respective cost and time/effort needed. The short-term scenario had minor adjustments that are simple and quick to implement. The middle-term scenario included a window and lighting fixture retrofit that would correspond to a payback period of less than 20 years. The long-term scenario includes major building fabric changes that requires the biggest investment with the most of amount of time to finish incorporating these changes.

Parameters	**Existing building**	**Short Term**	**Middle Term**	**Long Term**
Total Primary Energy [kWh/annual]	*7753*	*4962*	*5272*	*1318*
Total Primary Energy [kWh/m^{2}annual]	*38.80*	*24.81*	*26.3*	*6.59*
Primary Energy consumption percentage reduction		*%36*	*%32*	*%83*

Final Energy use per energy source [kWh/m^{2}annual]				
Parameters	**Existing building**	**Short Term**	**Middle Term**	**Long Term**
1. Electricity	*38.8*	*24.81*	*26.3*	*6.59*
Final Energy use and production from Renewable Energy Sources (RES)				
Parameters	**Existing building**	**Short Term**	**Middle Term**	**Long Term**
Photovoltaics [kWh$_{el}$/annual]]	*0*	*0*	*0*	*6280*
Total Energy Production from RES (normalized to electrical energy) kWh/annual		*0*	*0*	*6280*
Overall Investment Cost [€]		*1680*	*5600*	*17220*
Energy cost [€]	*1003.04*	*/*	*/*	*/*
Average annual Energy cost over the project's life span (30 years) [€/annual]	*/*	*642*	*682*	*171*
Simple payback time [year]	*/*	*4.6*	*17.4*	*21*
Payback time [year]	*/*	*4.9*	*17.9*	*21*

What opportunities does the BEEP project offer to your region?

The BEEP project has shed a bright light on the importance of using Building Information Modelling (BIM) to improve the energy efficiency of heritage buildings, as well as the potential for energy cost savings when applied to public sector buildings. This project, if implemented on a large scale in the country, will have an extraordinary effect on improving the energy performance of buildings and reducing energy bills.

What results of the BEEP project would you highlight?

The BEEP project will contribute to the creation of an open and competitive digital market for construction and foster greater collaboration between the public and private sectors.

The project will also promote the market introduction of building information modelling in the public sector as a strategic element and the adoption of an aligned framework for its introduction in the built environment and the construction sector.

How will your organisation exploit the results of BEEP after the end of the project?

Several actions are planned by RSS in Jordan to effectively disseminate the main results of the BEEP project, including the following:

- Contact relevant stakeholders in the sector and discuss the results obtained in order to agree on a feasible implementation in our region.
- Lobby relevant government agencies and decision makers to introduce BIM as a requirement for new and/or existing buildings.
- Exploit the results of the project for application in other contexts and situations.
- Use effective channels to engage stakeholders and potential users through networks and platforms, such as our organization's website and other social channels such as Twitter, Facebook and LinkedIn.
- Disseminate the results of the BEEP project during workshops and seminars of other relevant projects.

THE TEAM

Royal Scientific Society - National Energy Research Center (RSS/NERC): BEEP partner

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The Royal Scientific Society (RSS) is the largest applied research institution, consultancy, and technical support service provider in Jordan, and is a regional leader in the fields of science and technology.

The National Energy Research Center (NERC) is part of the Royal Scientific Society (RSS) and was established in Amman for the purposes of research, development, training in the fields of new and renewable energy and raising the standards of energy use in the different sectors and to promote the utilization of renewable energy in Jordan.

NERC is specialized in promoting energy efficiency and conservation practices in Jordan and the Middle East countries and has trained many private and public sector professionals in this area. NERC is strongly involved in projects within EU programs dealing with the development of new energy efficiency technologies and techniques as well as know-how transfer. With regards to the services provided to third parties, NERC carries out techno economic feasibility studies, building energy design studies, energy audits, monitoring and measurements, as well as performance measurements and certification of buildings & products.

Campus of the Royal Scientific Society (RSS) / National Energy Research Center (NERC), 2013.

COLOPHON

About the BEEP project:

BEEP project aims at strengthening the use of Building Information Modelling (BIM) to enhance energy efficiency in buildings. The testing of this emerging technology on built heritage will be performed to demonstrate its scalability to the entire building stock. The project will provide public administrations with a powerful method for the energy rehabilitation of public buildings to be supported with private funds through the Energy Performance Contracting (EPC). The project main outcome will be an innovative methodology based on the integration of emerging technologies tested on 9 heritage public buildings located in Italy, Spain, Cyprus, Jordan, Palestine, Lebanon, and Egypt.

The BEEP project, which started in September 2019, has a duration of three years, and counts with a total budget of € 1,934,184.51 of which 90% is funded by the EU under the ENI CBC Med Programme.

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