ISLAMIC UNIVERSITY OF LEBANON

REPORT ON SDG 17

PARTNERSHIP FOR THE GOAL

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SDG 17 - PARTNERSHIP FOR THE GOAL

INTRODUCTION

The Sustainable Development Goals, SDGs, represent basic principles to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. They were gestated at the United Nations Conference on Sustainable Development, held in Rio de Janeiro in 2012, replacing the Millennium Development Goals (MDG, 2000), to create a set of global goals related to environmental, political and political challenges. economic conditions that our world faces. They were launched in January 2016 and will guide the policies and funding of the United Nations Development Program (UNDP) for the next 15 years.

The United Nations Development Program works with governments to integrate the SDGs into their national development plans and policies, and this in turn has led to the need to implement a new agenda to promote Sustainable Development, Agenda 2030. Agenda 2030, is a new tool for sustainable development, which aims to end poverty, promote prosperity and well-being for all people, in addition to protecting the environment by 2030.

More and more institutions are auditing their situation with respect to the SDGs to lay the foundations of the new agenda, Agenda 2030. Those most committed and more aware of this international need will be the best positioned to carry out necessary improvements in the current management model and infrastructures with technical and financial assistance from the United Nations Development Program.

Within these institutions are the universities, where the relationship between the SDGs and the universities can be seen as mutually beneficial and necessary for both parties. On the one hand, anticipating offering training on the SDGs is a way of demonstrating the institution's ability to adapt to these changing circumstances, and on the other, funding entities and sponsors are allocating more and more aid to meeting the Goals.

Sustainable Development Goal 17 "Partnerships for the goals" refers to the need for cross-sector and cross -country collaboration in pursuit of all the goals by the year 2030. SDG 17 is a vision for improved and more equitable trade, as well as coordinated investment initiatives to promote sustainable development across borders. It is about strengthening and streamlining cooperation between nation-states, both developed and developing, using the SDGs as a shared framework and a shared vision for defining that collaborative way forward.

At the Islamic University of Lebanon, we have a strong belief that in order for our country to develop sustainably, we have to abide by and follow these SDGs where people will enjoy a better life as well as a higher standard of living. The Islamic University has already implemented many of the requirements of the SDGs and is much willing and able to implement the remaining and incorporate it in its programs and policies.

At the end, it is extremely important to note that we need as human beings living on earth to live happily and with dignity by partnering together. All of us have to have the ultimate respect and

appreciation of each other's rights; the human right. However, to be able to enjoy that and develop our lives, many elements have to be taken with great consideration. We need as humans living on this planet to care for each other by providing assistance to the less fortunate ones. And what could be better to assist than a collaborative and joint effort among all countries under the United Nations umbrella. This is the reason behind the SDGs: Sustainable Development Goals.

We, countries of the world, need to assist in preventing hunger, stressing the importance of sustainable and drinkable water, being ready to face climate change, protecting life under water and on land, respecting the order of law, treating each other equally and without discrimination, continuously and relentlessly working on looking out for other sources of affordable and clean energy, sustaining city life without having to continuously run away to the suburbs, preserving justice among us all through a good and fair judicial system, consuming and producing responsibly, stressing innovation and creativity, promoting decent jobs and good work environments without any human trafficking or child labor or money laundering, promoting good health and well-being, making education affordable and reflective of the job market demand and assuring each other of zero tolerance for hunger.

When all of these are implemented then the world will be a much better place to live. The quality as well as the standard of living of people will be better leading to a decrease in the gap between the rich and the poor. There will be more respect for the human rights, lesser crime and extremism and finally peace will prevail.

SDG 6 – CLEAN WATER AND SANITATION

A clean and constant supply of drinking water is essential to every community. People in large cities frequently drink water that comes from surface water sources such as lakes, rivers and reservoirs. Water and sanitation is one of the primary drivers of public health. Worldwide, millions die every year from diseases attributed to unsafe water supply.

In our university IUL, and when designing the Execution plans for the university campus in Wardanieh, the geographical and environmental elements surrounding the project site were taken into consideration. The buildings were concentrated in a way that is compatible with the local construction law and the project was equipped with four separate networks to serve the project as follows:

1- An internal network of drinking water that is distributed to all buildings
2- A network to collect rainwater from the roofs of buildings
3- A rainwater collection network from roads and ground spaces
4- A network for Waste water and a treatment station (septic tank)

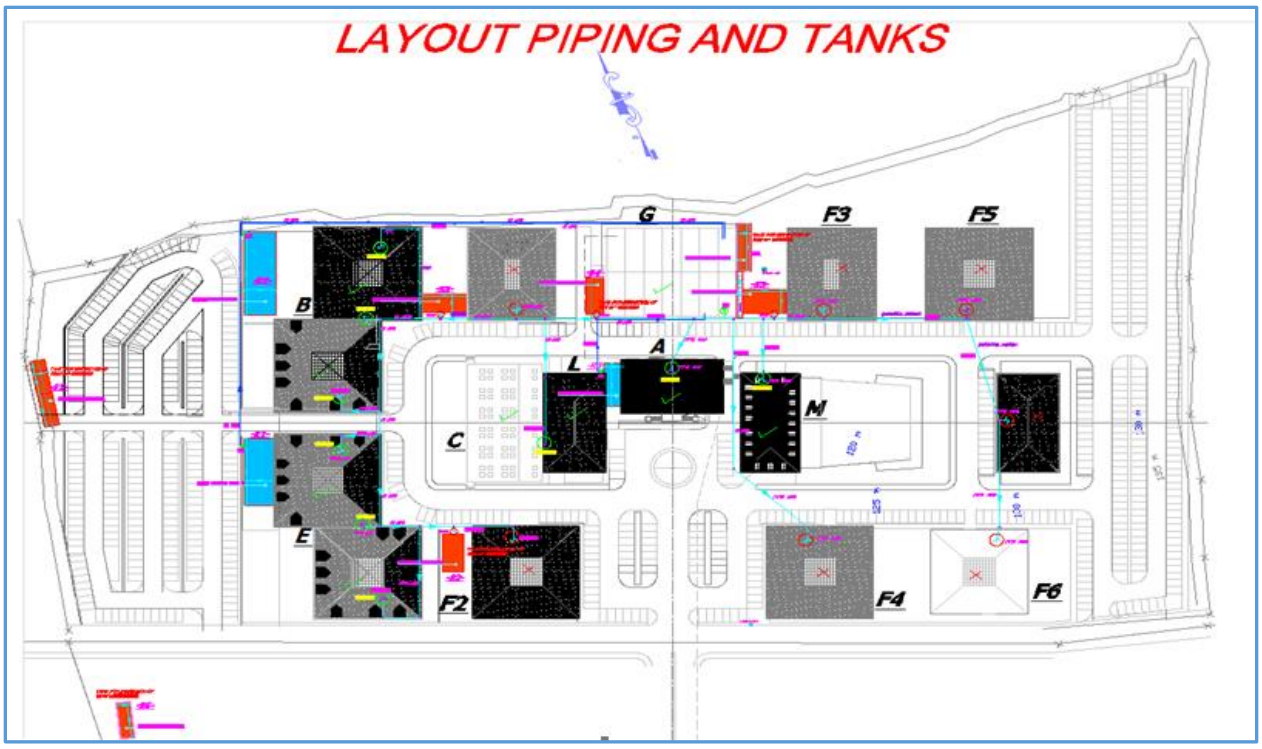

Figure 1. Showing the 7 tanks (from S1to S7) for irrigation (red) and four tanks for roof rain water (blue)

IUL and clean water and sanitation:

Drinking water

The university buildings are located in an area known for the scarcity of drinking water sources and its source is the water company affiliated with the Ministry of Energy and Water. Accordingly, a special network has been developed that starts from the main line and is distributed over the upper tanks in each building. In addition, all floors are provided with distribution points for drinking water continuously to serve students and university staff.

The total value of the quantity of water used in the Wardanieh campus is estimated at about 4888 m3, distributed between the water use, and its value is estimated at about 3488 m3, of which 2907 m3 originate from rain water and 581 m3 from the wells in the campus. The irrigation water is about 1400 m3.

The university relies at a rate of 20% of the estimated water expenditure, which is equivalent to 581 m3, on the water of the wells in the campus, which are treated for use as drinking water for students and employees at a rate of 70%, equivalent to 407 m3, and the water of the company affiliated to the Ministry of Energy and Water at a rate of 30%, which is equivalent to 174 m3.

Since the first source is not sufficient to serve the university throughout the year, artesian wells have been developed to cover the shortage of drinking water, especially in the summer season, as the consumption rate for each student is at a rate of 15/20 liters per day and it has been verified that it is suitable for use with treatment at a rate of 1ppm using ultraviolet radiation.

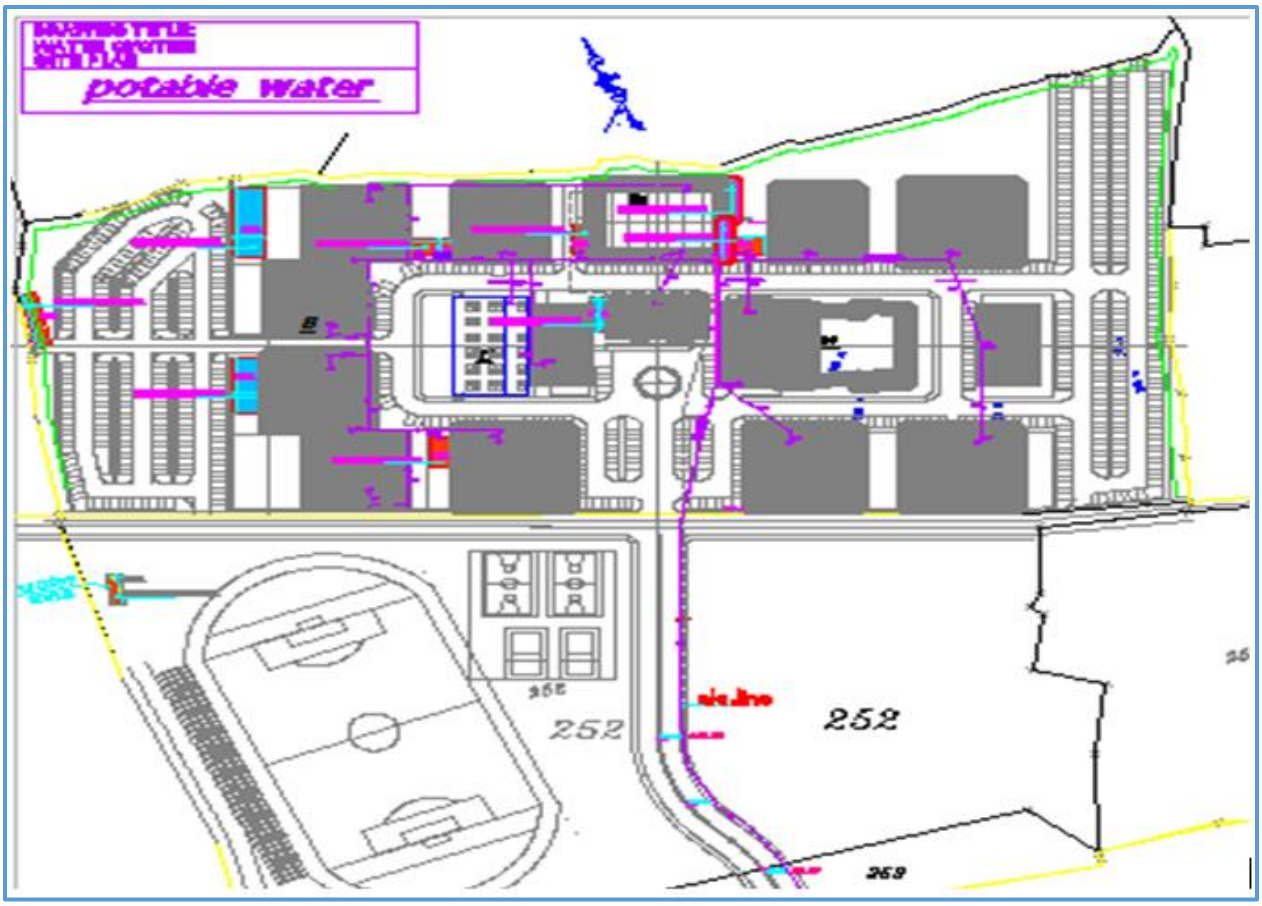

Figure 2. Drinking Water distribution

Rain water from the roads

The project is equipped by seven ground tanks with a water collection system from the roads. The collected water is used in the irrigation system of the agricultural lands surrounding the project.

Ground tanks (from R1 to R4 in blue color) with total capacity of approximately 2907m^3 (Table 1) were built distributed over the entire project. Ceilings were designed diagonally to collect water and deliver it to the tanks separately (Figure 3).

Table 1. Ground tanks

Number	Capacity(m^3)
R1	**813**
R2	**1450**
R3	**394**
R4	**250**

The project is equipped with seven ground tanks (Figure 3, 4) with a capacity of 1400 m^3 with a water collection system from the roads... The collected water is used in the irrigation system of the agricultural lands surrounding the project.

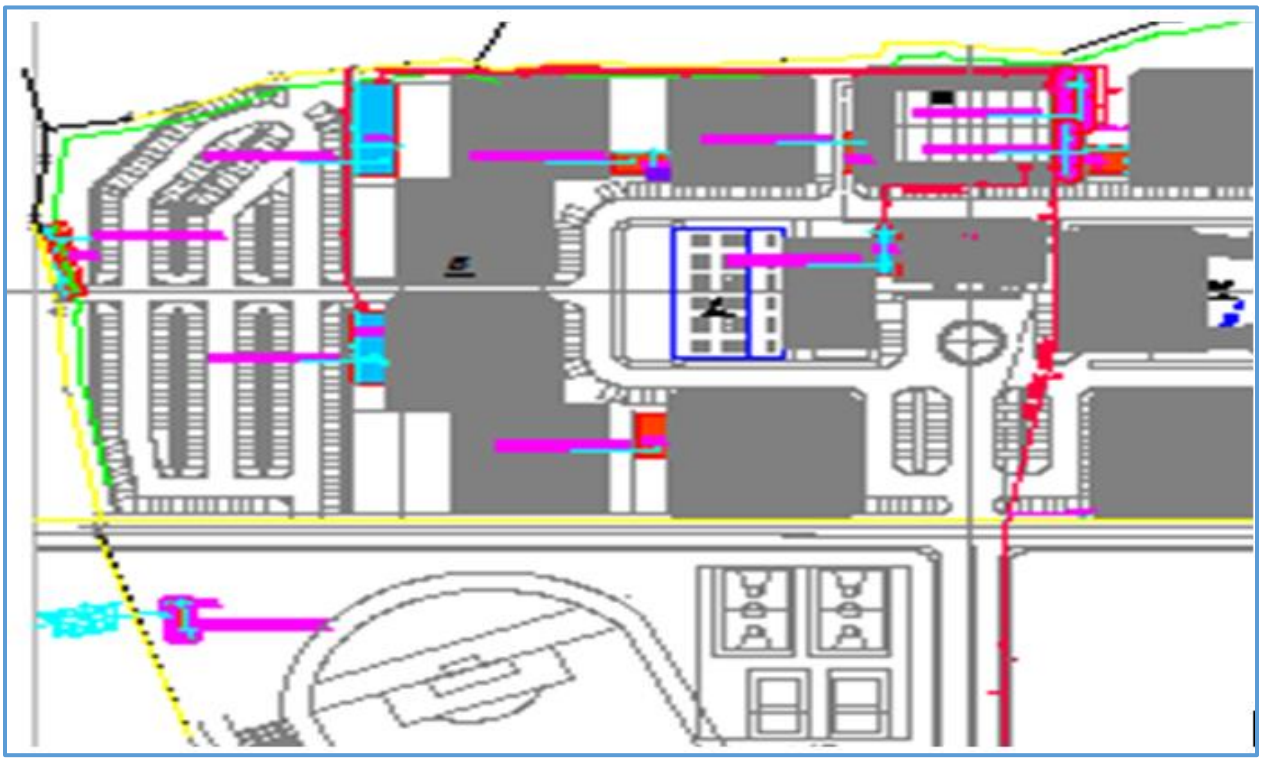

Figure 3. Tanks of roof Rain Water (blue color) and street rain Water (red color).

Figure 4. Tanks of street and garden rain Water

Rain water from roofs and balconies

It is collected in lower tanks distributed throughout the project, which work as sedimentation ponds as well. Then the water is drawn into the main upper tank, and from it is drawn into the upper tanks of all buildings after being treated with ultraviolet radiation. The total amount of water reaches 2907 m3 (Figure 5).

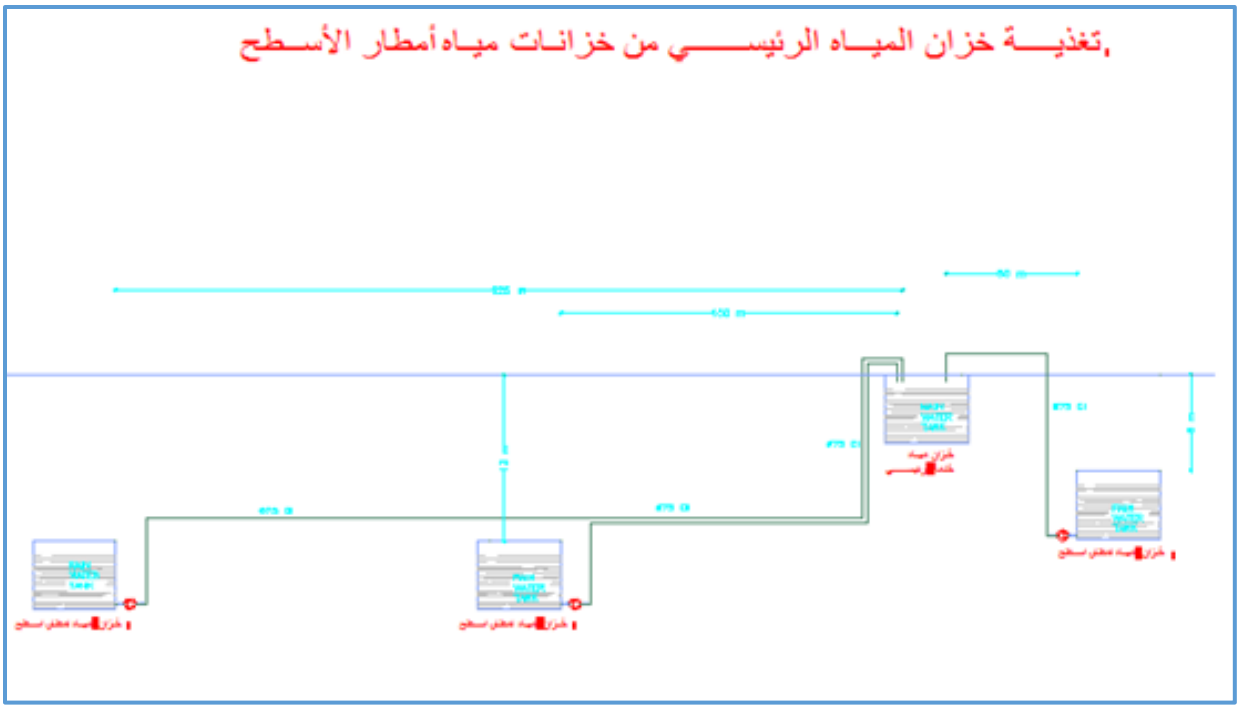

Figure 5.Supply of roof Rain Water Tanks diagram

Campus population

The Wardanieh Campus includes the College of Engineering and the College of Business Administration, which accommodates 900 students annually, with the presence of the general library building, the administration building and student services, in addition to the staff and members of the teaching staff estimated at about 250 people.

Drainage system

In the campus, each building has been equipped with separate bathrooms for men and women, as well as equipped with washbasins and the necessary cleaning materials for each wash. The bathrooms were distributed on all floors. A kitchen on each floor is used to serve the Staff. The bathrooms were connected by a network of pipes with manholes reaching the treatment and sedimentation plant.

Rain water from roofs and balconies

The rain water is collected in lower tanks distributed throughout the campus. These tanks work as sedimentation ponds as well. Then the water is drawn into the main upper tank, and then to the upper tanks of all buildings after being treated with ultraviolet radiation.

Wastewater

The wastewater from the bathrooms and kitchens is collected by pipes to the sedimentation and treatment basins located at the outskirts of the campus, and after the sedimentation stage, the wastewater is discharged into the public piping network of the Ministry of Works. The waste in

sedimentation basins, it is transported periodically throughout the year for treatment outside the compound.

Rain water

The rainwater that is produced from the roads and landscapes is used in the permanent drip irrigation system to irrigate the trees and plants inside the campus, especially during the summer days.

Safety Infrastructure Installation.

The architectural maps of the campus were drawn up and all the requirements needed by the project, which have a relationship to the surrounding environment, were developed and studied, including the lack of a source for use and drinking water, and the absence of an infrastructure that would meet the needs of the buildings included in the project. Accordingly, the infrastructure was equipped with the development of four networks as follows:

1- An internal network of drinking water that is distributed to all buildings
2- A network to collect rainwater from the roofs of buildings
3- A rainwater collection network from roads and ground spaces
4- A network for Waste water and a treatment station (septic tank)

Application of building standards to minimize water usage

Each of the project buildings has been equipped with separate bathrooms for men and women, as well as equipped with washbasins and the necessary cleaning materials for each wash. The bathrooms were distributed on all floors (Figure 6).

The efficiency of water use increases greatly by ensuring controlled withdrawal operations by the presence of valves at all exits on the network with constant maintenance of the pipes. The used water network and tanks have also been provided with an automatic control system (Figure 7) to fill the tanks and monitor the daily intake movement.

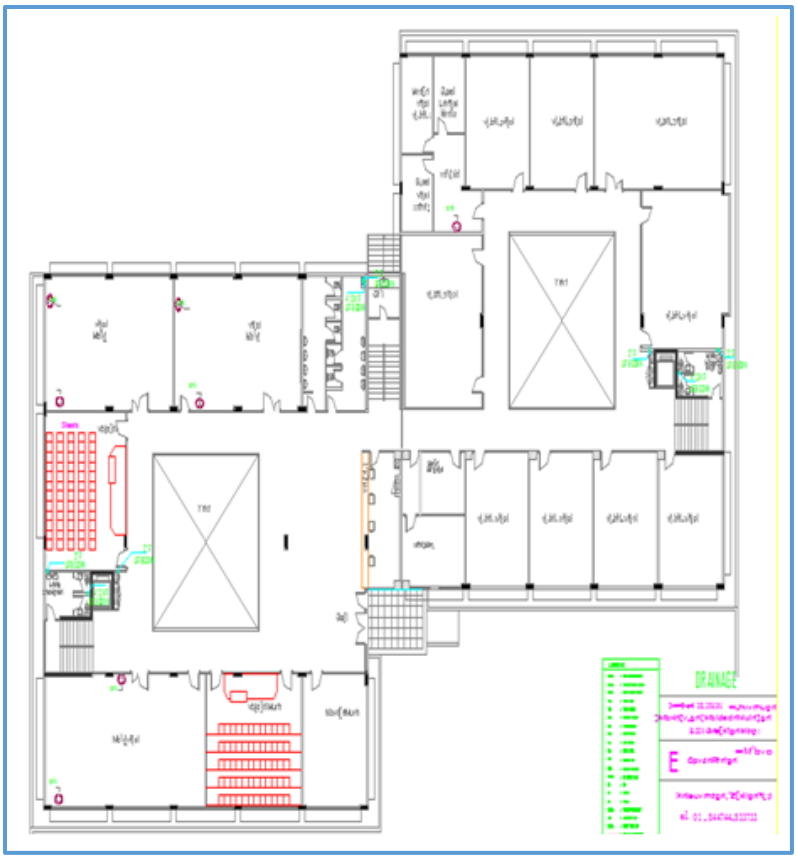

Figure 6. Typical Floor

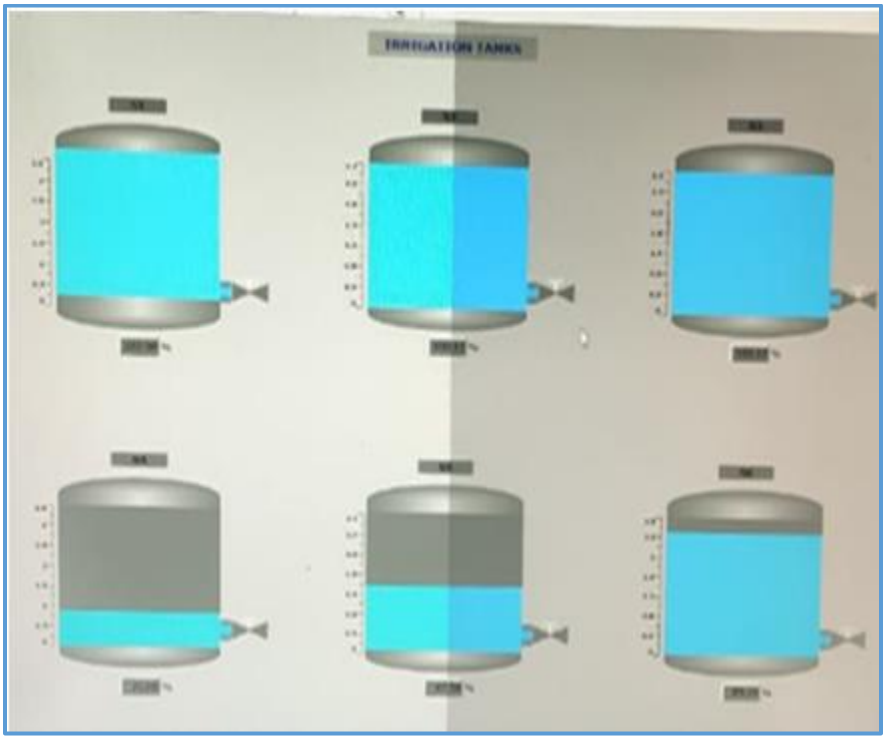

Figure 7. Control system of the water supply

Planting landscapes to minimize water usage

After completing the study of maps and determining the areas allocated to buildings and thus green spaces, the university administration proceeded to work on afforestation of the areas surrounding the project with cypress, pine and trees that do not require continuous irrigation works. The irrigation system was also introduced to the point on green spaces close to the buildings.

The rainwater that is produced from the roads and landscapes has been used in the permanent drip irrigation system to irrigate the trees and plantings inside the campus, especially during the summer days (Figure 8).

Figure 8. Irrigation system from street rain water tanks

Volume of water used in the university

The total volume of water used in the campus during the school year, which includes water use, drinking water, and water used for agriculture is estimated at about 4888 m3, distributed between the water use, and its value is estimated at about 3488 m3, of which 2907 m3 are a source of rain water and 581 m3 as a source from the wells in the campus. The irrigation water is about 1400 m3.

The total volume of water Reused is about 4307 m3as follows:

- Rain water from roofs and balconies: Ground tanks (from R1 to R4) with total capacity of approximately 2907m3 used as a potable water.
- Rain water from the roads: The project is equipped with seven ground tanks with capacity of 1400 m3 used for the irrigation system.

The university has adopted the teaching programs of the College of Engineering, Department of Civil and Surveying Engineering, by setting up special teaching requirements that have to do with water management, irrigation methods, and ways to complete the infrastructure. The university has worked to interact with the surrounding area to convince the parents and students to enroll and participate in the educational process. The following courses related to the water management implemented in the university are:

Roads and other networks /sanitary /hydrology /Hydraulics/ Geology/Irrigation

Water conservation:

The project depends on rain water in the main form as an alternative to the water received from the Ministry of Energy at a rate of 80% of use. Noting that the water of wells is not used except in days of scarcity, allowing the rest of the surrounding areas to benefit from the surplus water available.

The university secures from its sources water for the agricultural areas surrounding the campus, (Figure 9) in agreement and coordination with the municipality and the owners of neighboring properties.

Figure 9. Agricultural areas surrounding the campus

Sustainable water extraction technologies:

The efficiency of water use increases greatly by ensuring controlled withdrawal operations by the presence of valves at all exits on the network with constant maintenance of the pipes. The used water network and tanks have also been provided with an automatic control system.

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The university secures from its sources water for the agricultural areas surrounding the campus, (Figure 9) in agreement and coordination with the municipality and the owners of neighboring properties.

Conclusion and future perspectives:

Water resources, such as lakes, rivers and reservoirs, are essential for every community. Water and sanitation is one of the primary issues for public health. The use of rainwater after treatment

reduces the need for other resources. The efficiency of water use increases greatly by ensuring controlled withdrawal operations by the presence of valves at all exits on the network with constant maintenance of the pipes.