

# The Green Road of the University of Zanjan to Sustainable Development



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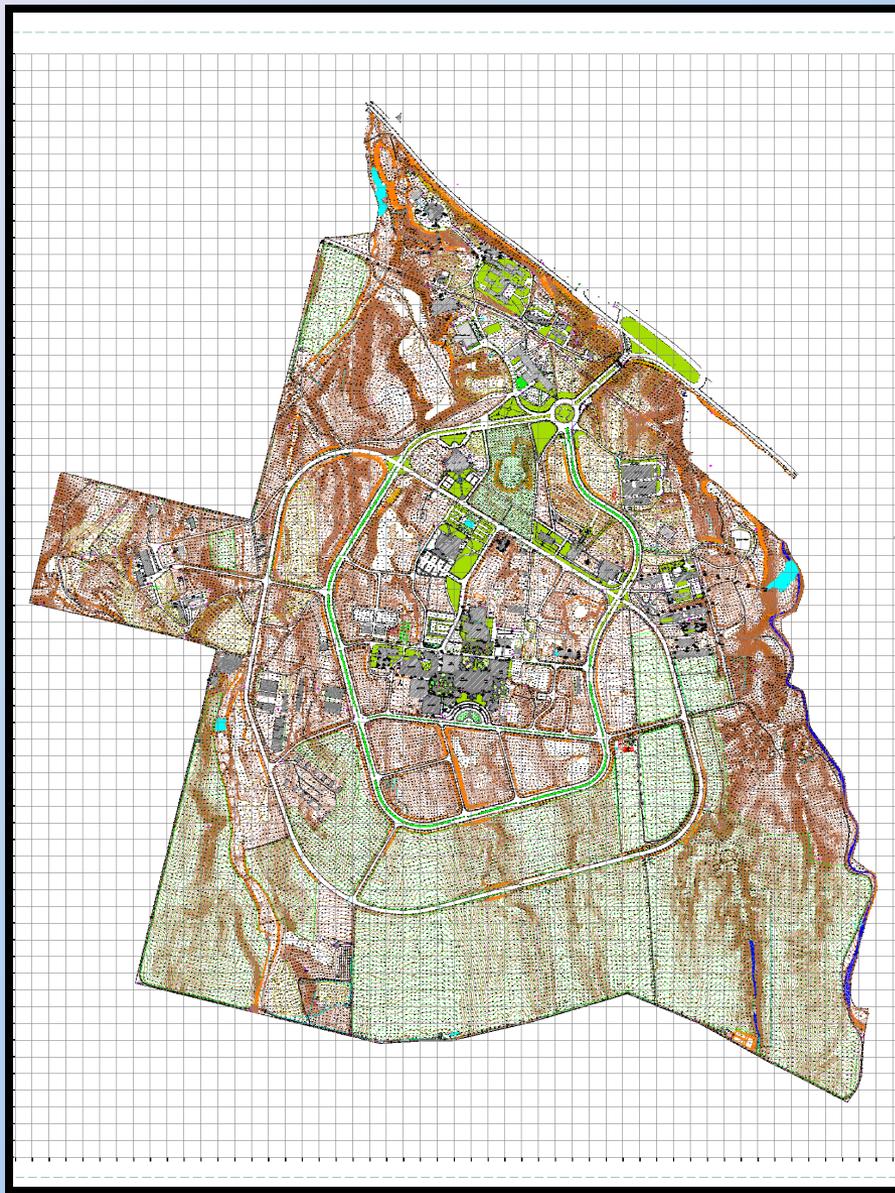
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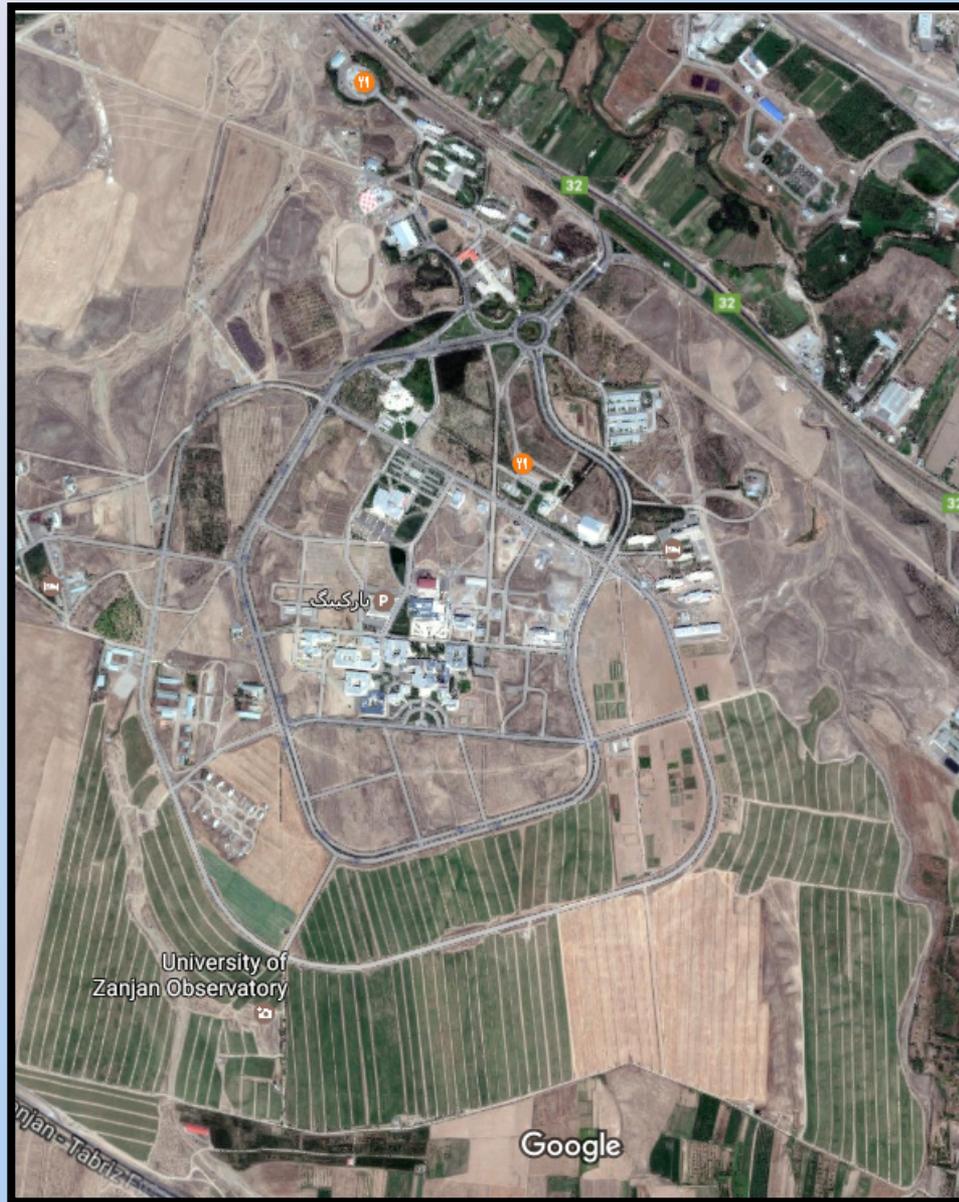
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# Introduction

- The University of Zanjan, Iran, is a public university with one of the largest sites in the country. The nearly 400 hectares site creates opportunities and also imposes challenges to the management system.
- The Administrative and Financial Affairs Vice Presidency Department is responsible for managing the most challenging interactions with the local environment, the university organization as well as the outside world.
- The Design and Construction Management Office coordinates the direct environmental interrelations of new university developments and the existing buildings and landscape.
- Considering national economic complexities during last couple of years, a massive process of new developments has been carried out at the university, which included design and construction of nearly 100,000 square meters of new buildings. These developments comprise a number of student accommodations, restaurants, schools, laboratories and the university pool.



**Figure 1- University of Zanjan Topography**



**Figure 2- University of Zanjaan Ariel view**

# Green Management Strategies

It is now obvious that the life on Earth is changing by the effects of global warming. It is also scientifically clear that these effects are mainly because of human activities. Increasing heat waves and long term droughts are just some of these dangerous effects.

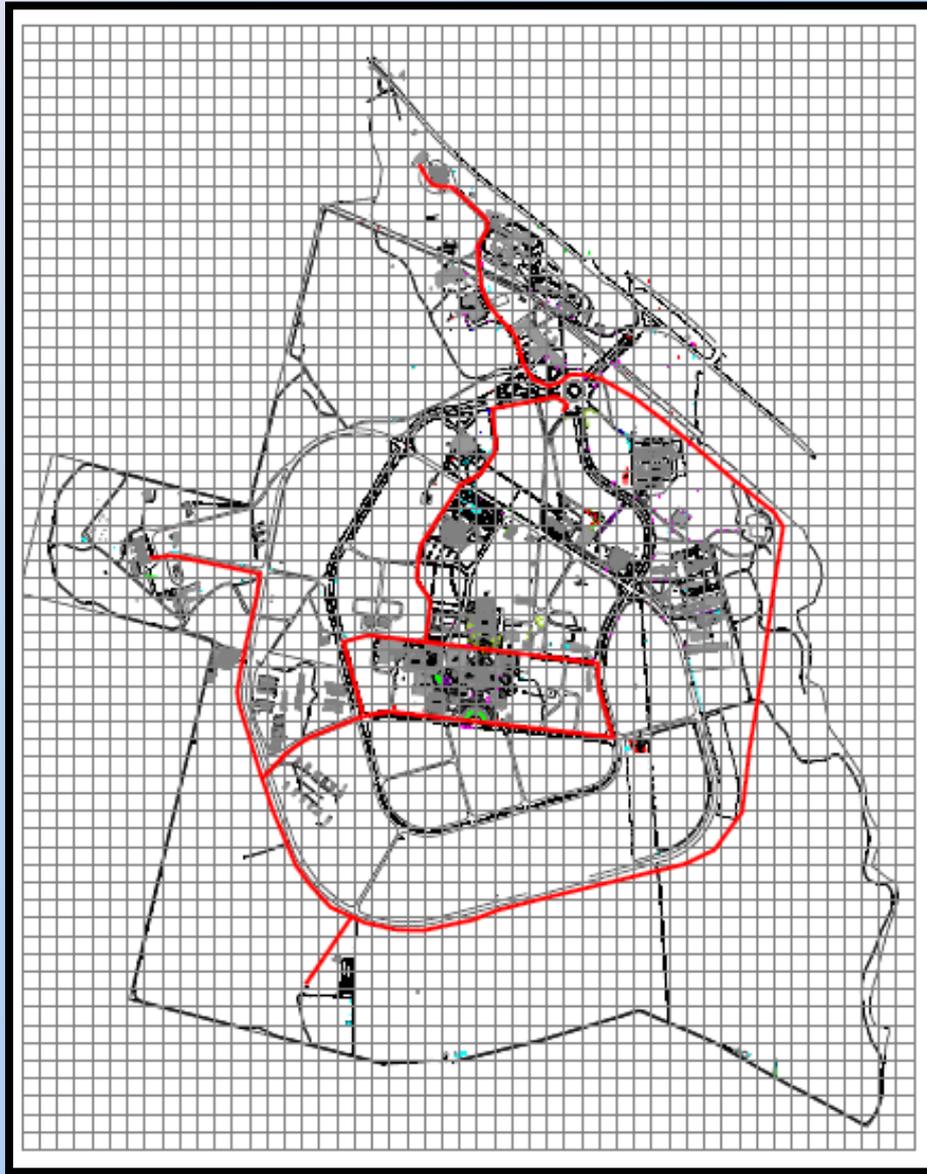
The future forecasts of the climatic conditions prepared by statistical projections show that the living situation on the planet would get harsh and even uncontrollable, if immediate and adequate actions are not planned and executed in an international level.

This important global program needs social evolution in all continents. It is believed that universities and the academic society can and should play a major role to pave the way to evolve the local communities, regional traditions and national culture as they also have an international obligation to prepare world population in the adaptation and mitigation process.

# Green Management Strategies

The application of 'green management strategies' helps to overcome the new and various environmental challenges, mainly caused by climate change and the changing lifestyles. The range of these challenges involves increasing yearly droughts to rising car park requests by private car owners. In addition, lack of sufficient funds and timely resources limits the prospects of responding to rising requests (for energy, clean water and efficient infrastructure) and tackling the effects of the changing climate.

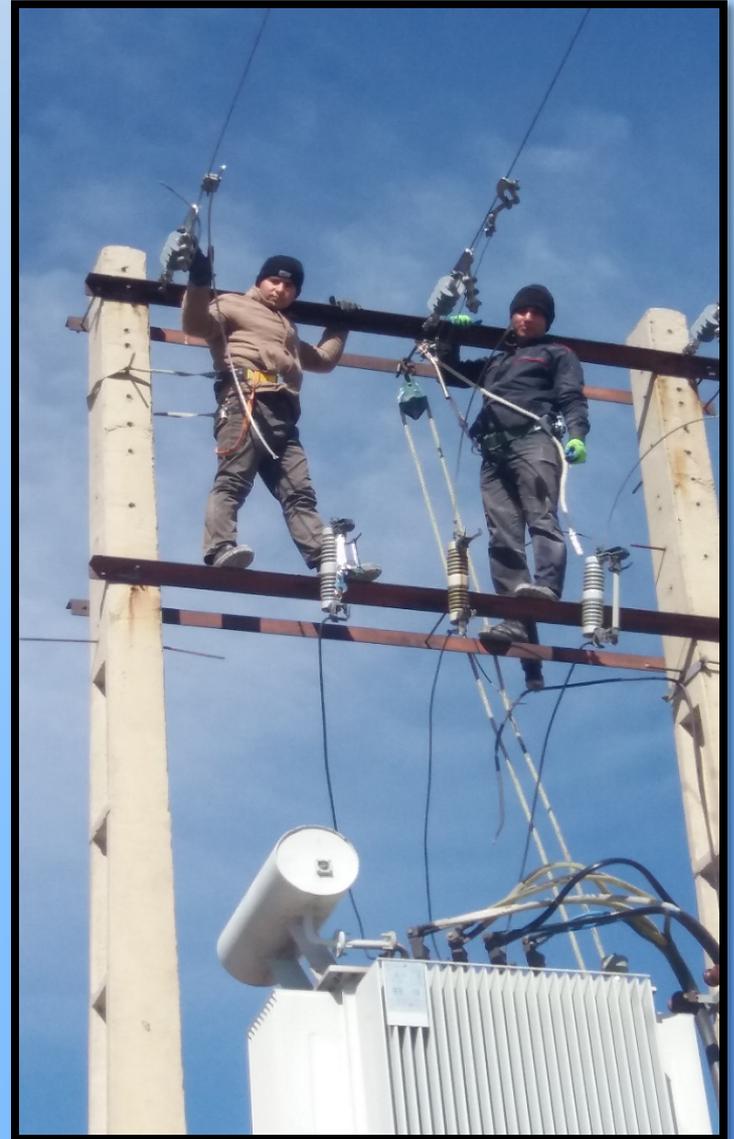




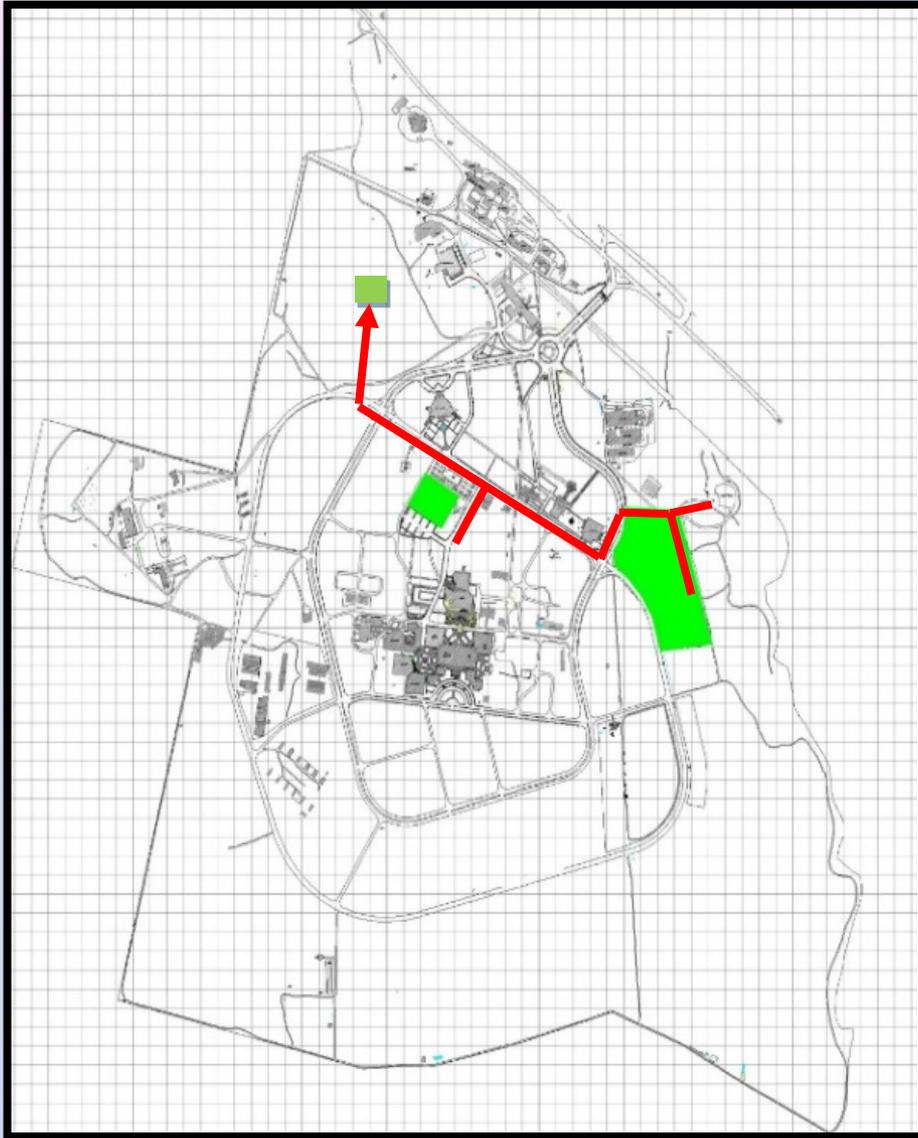
**Figure 4- University of Zanzibar Internal Water Network**

# The practical measures of the process at the university include:

- Recovering the energy efficiency by improving the thermal insulation of existing buildings
- Considering architectural technologies in the design and construction process of new developments aiming passive energy savings
- Applying modern HVAC systems for building services, which has improved energy efficiency
- Adjustments of the internal electricity grid of the university and the main feeder post,
- Adjustments of the internal water network, irrigation grid and sewage systems of the university, in order to reduce environmental impacts of human activities.
- Modification of natural gas pressure-reducing and metering station,
- Modernising refined water and sewage systems during a long-term plan.



**Figure 5- University Power Grid**



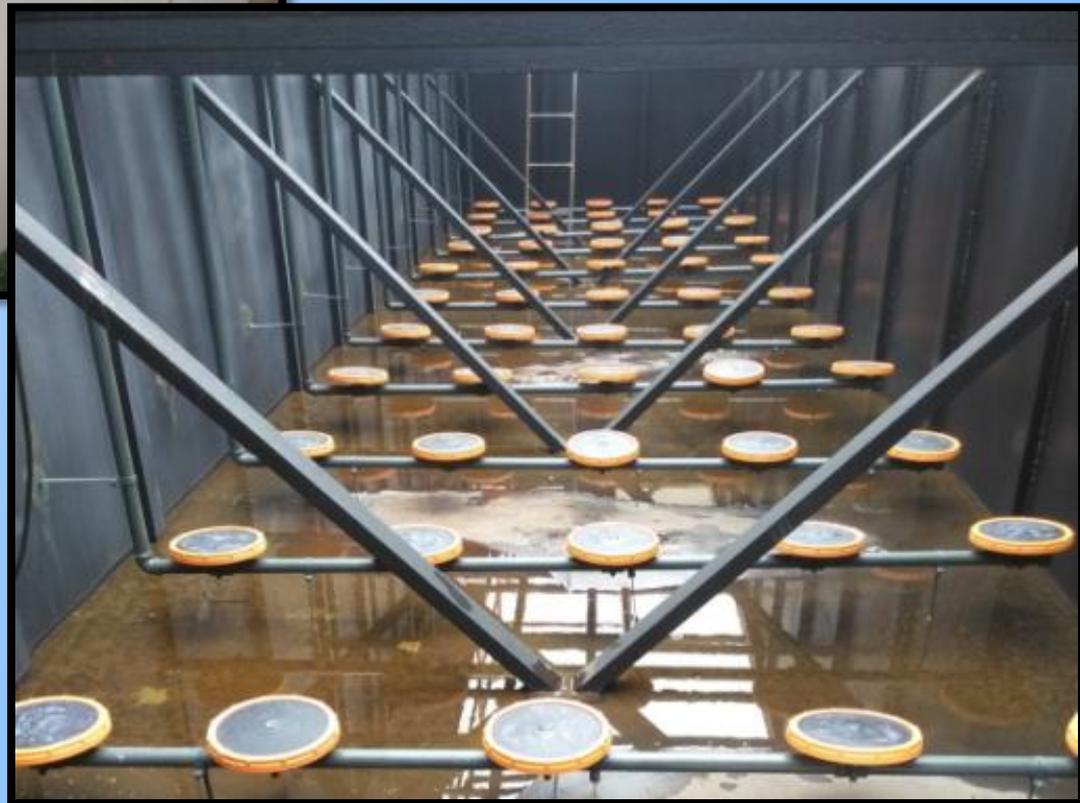
**Figure 6- University Sewage 1st Line and a Typical Prefab Concrete Manhole and Sewage Pipe**



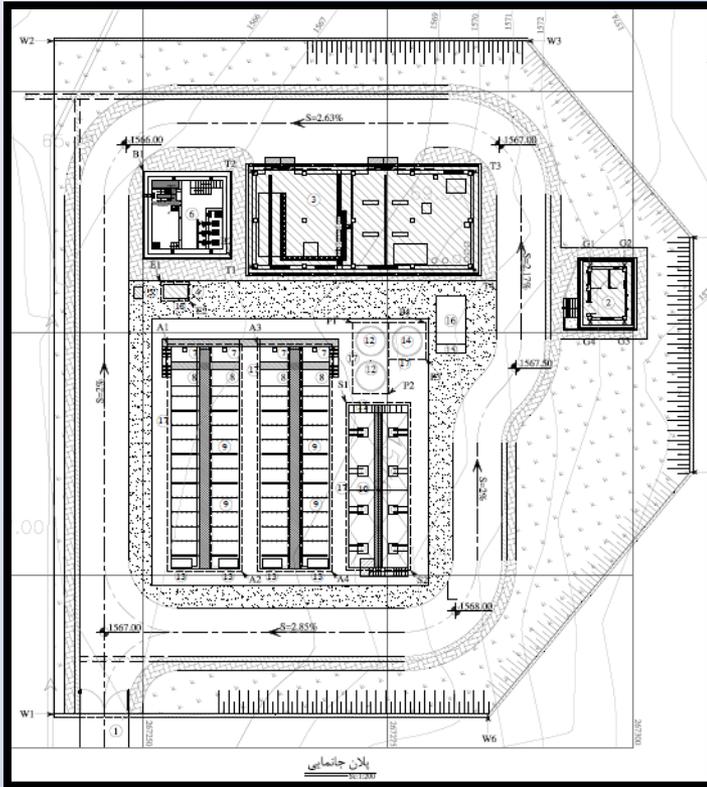
**Figure 7- University PV Plant**



**Figure 8- Package Treatment Plant Dormitory for Men**



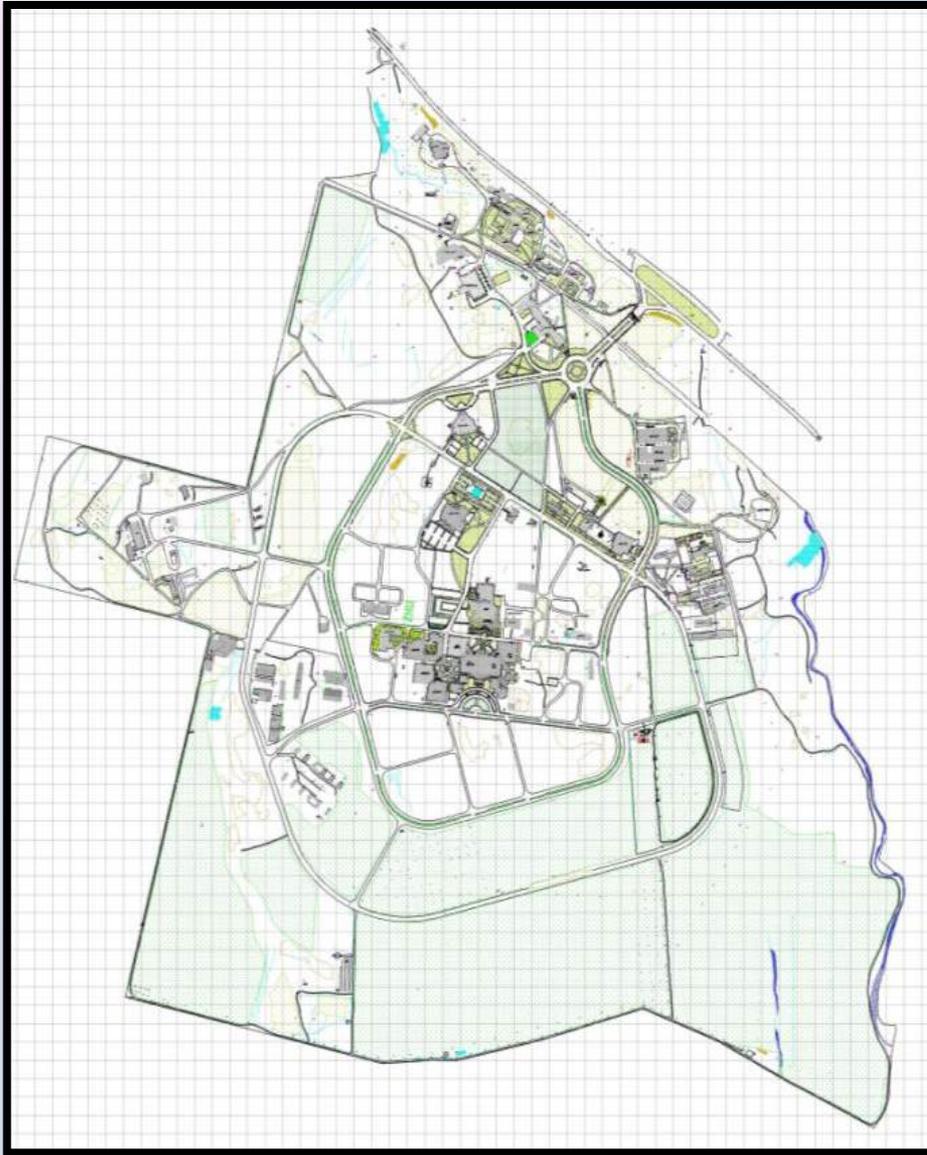
**Figure 9- Package Treatment Plant Dormitory for Men**



**Figure 10- Site and Refinery Package Plan Dormitory for Sisters**



**Figure 11- Thermal Insulation in Buildings University**



**Figure 12- Green Zones University**



**Figure 13- Green Zones University**



**Figure 14- University biodiversity**

# Geographic Information System

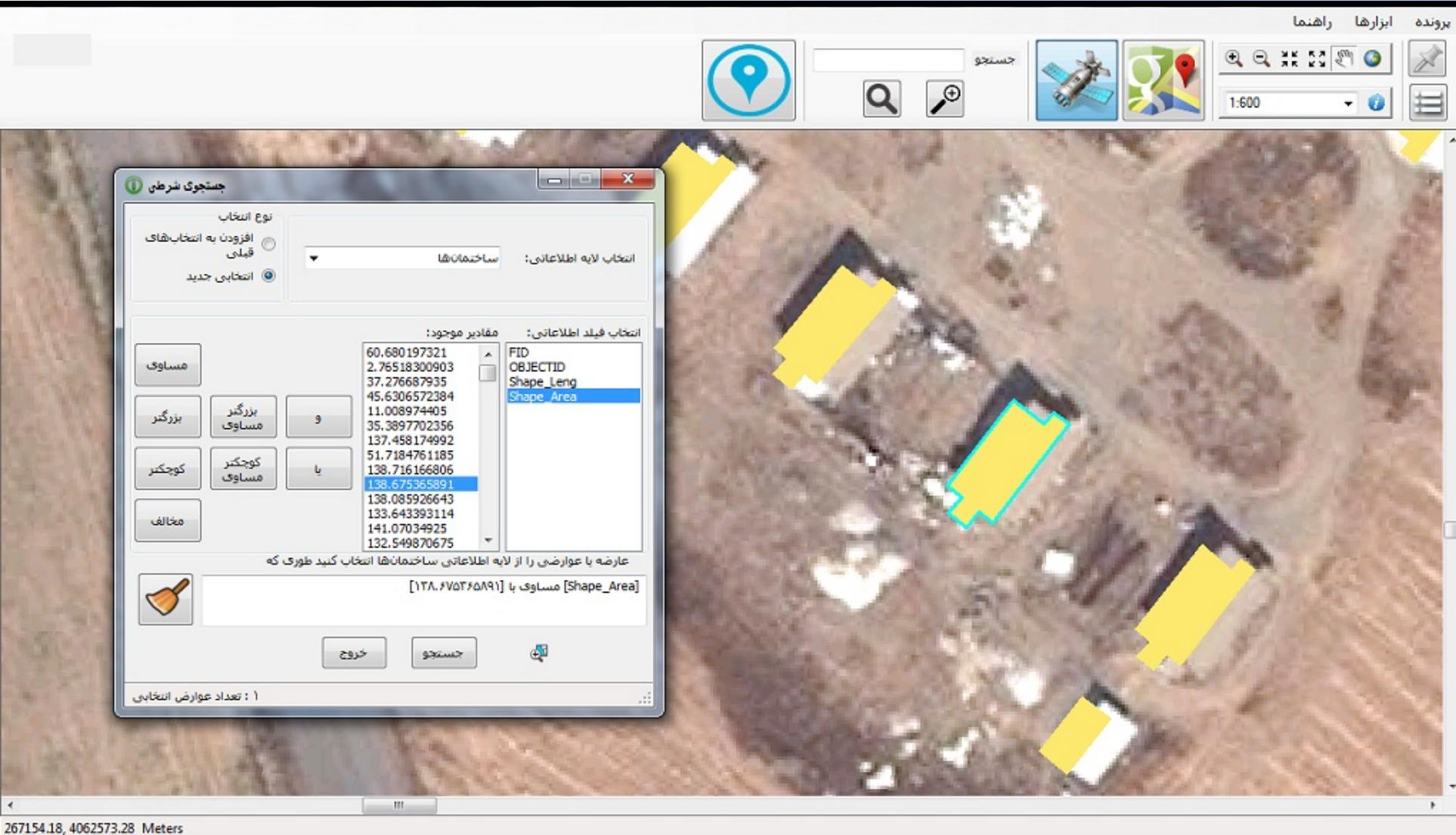


Figure 15- University GIS

## **Conclusion: Green Culture**

The green management strategy, in addition to its administrative process and physical effects, covers a whole range of cultural engagements and educational activities to increase social awareness and common sensitivity. The academic society including professors, students, officers and visitors need to know more about the importance of the environment and limitations of natural resources. For the long-term goals of the sustainable development to be achieved, this trend should be spread out as common-knowledge, not only for academia, but also for the public. Therefore, the concepts of green development are going to be more general rather than professional, to make them a non-renounceable part of social culture.

Universities play a decisive role in this significant cultural movement. Their sites are naturally models for the urban environment. For this obvious reason, the University of Zanjan is working jointly with the Iranian Ministry of Power to build up an eco-park as a research-educational park for professionals and the public. To realize the Sustainable Development Goals set by the UN for 2030 in a local level, the university must remodel and renovate its managerial procedures as well as its physical and cultural landscape, to affect the local region, which is working hard towards it.