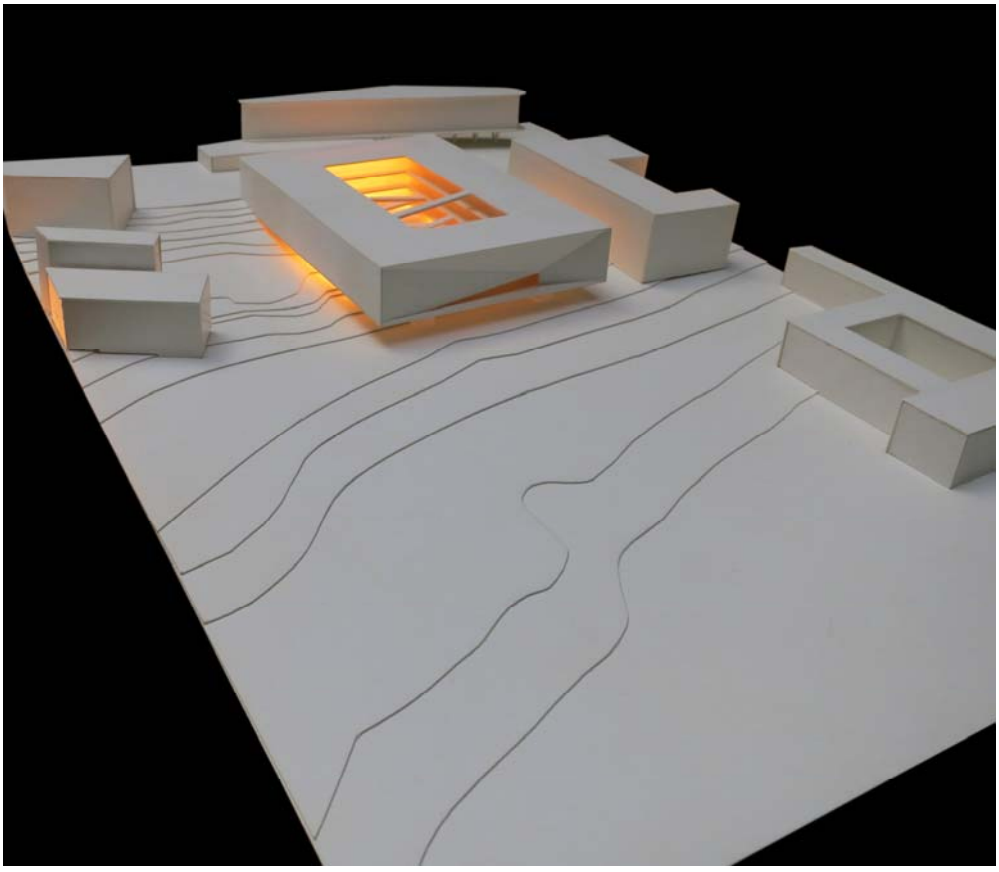


MEDICAL SCHOOL AND HEALTH SCIENCES BUILDING NIKOS K. SHAKOLAS.

11013

UNIVERSITY OF CHIPRE.

Architectural description

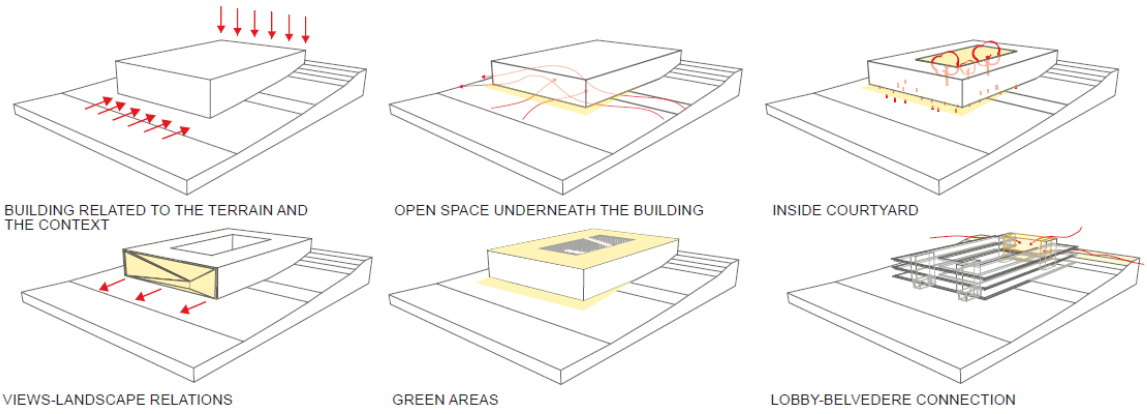
We make the proposal of an Architecture associated to permanence, not to variation and change. We believe that the site can be transformed through the insertion of a learning and science building over the new Masterplan and the existing lanscape, and furthermore we expect the urban and green spaces to be part of the building, and not so much to build a new enclosed façade to the streets.

We believe that it is necessary to take the maximum capability of the site, and using the building concept to create a new Place. On that sense we understand our architectural concept as a simple equation: the balance between enclosing, making a place and defining its limits on one hand, and on the other the capacity of the proposed space to give shelter and to hold a program with the the need to support optimal medical care and medical practice, to protect and improve the health of the people, to educate and train new high-level medical doctors and to contribute in improving the standards of the existing medical centres and practices.

Mass, void, lanscape, light, material...The sort of perception of architecture that we are proposing bears mainly on these timeless values.

The architecture proposed for the new Medical school building tries to reflect the contemporary life and therefore to express the autonomy of architecture with a the maximum care over the spatial context. It's been conceived as an architecture that connects the urban structures in the vicinity and the natural lanscape.

Our building aims to provide easy functionality for teaching, research and communal activities. But the aim of the building is also to cultivate other synergies and create a welcoming and aesthetically attractive architecture that will be a quiet and and unpretentious landmark on the University campus which will inspire and stimulate students, faculty, visitors and staff. A new building, harmoniously integrated into the surrounding natural and built environment, which gives great importance to the comfort of the people who is going to use it.



Our proposal works as a single building, but negotiates with the environment in two ways. On one hand, we propose a volume that holds an internal surprise, a courtyard which contains a piece of forest and is adapted to the topography. An space to increase the spacial quality and to give the users the possibility of having a part of nature inside the building. The built volume around the courtyard bears the internal uses of the building, the facade is built with local prefabricated element as a continous

lattice to protect the building from solar radiation. On the other hand, the main lobby is located towards the interior of the building in a close relation to the public Belvedere creating a natural flow of people from outside to inside the building, and allowing the pedestrian street to penetrate inside the building. The new building is incorporated into the urban context considering the surrounding lanscape. We also create an external lobby or square under the building, taking into account the physical topography the buildings fly over this space generating a covered area to hold different activities (outdoor classes, exhibitions, students meetings, etc).

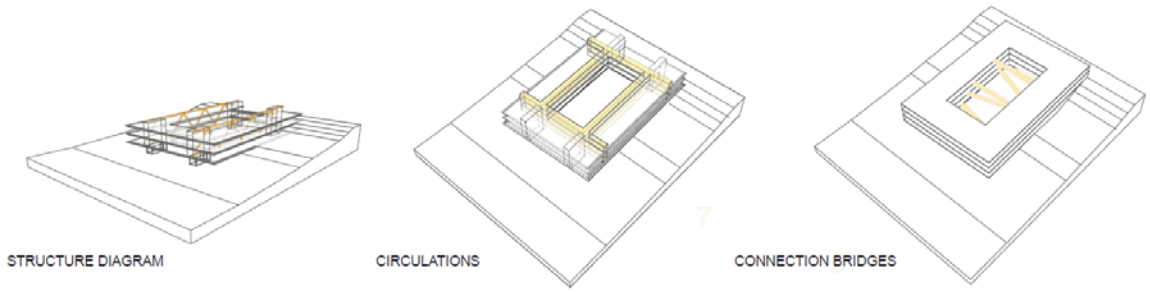
This covered open space supports the relation with the neighboring buildings and the adjacent open spaces, creating routes to connect with the adjoining building facilities of the Department of Biological Sciences and the building facilities of the Engineering School

The internal courtyard is a part of lanscape integrated in the building providing the users a new concept of teaching centre where the green areas are part of the building to create an unique atmosphere. It allows physical and visual connectivity amongst the different areas of the building.

The courtyard and the covered square have a mix of larger open social spaces and tiered seating areas. External spaces have to be shaded to create a pleasant environment, and this is done not only by the placement of the building and connection bridges but also by the introduction of carefully selected trees.

The designed internal circulations incorporate pedestrian desire lines arround the courtyard which connect through the vertical cores the arrival of user with the buildings entrance to the lobby. The external walls to the corridors around the courtyard are largely glazed, and therefore, naturally lit protected from solar gain by vertical louvres.

The building is proposed as a programtic carpet which allows internal flexibility and growth capacity, to respond successfully to unpredictable changes in medicine, manpower, patterns of disease, science and technology, need and demand, ecological environment, etc. Flexibilty and adaptability to potential changes are main concepts used to improve the characteristics of the proposed building.



The main entrances to each area will be from the central lobby in direct connection to the pedestrian Belvedere. Users will converge in this space encouraging interaction and creating a focal point for all areas and for the internal courtyard. Secondary entrances from the North square will create links with the rest of the campus. The open space (courtyard) at the centre of the building allows for good air movement and daylight penetration.

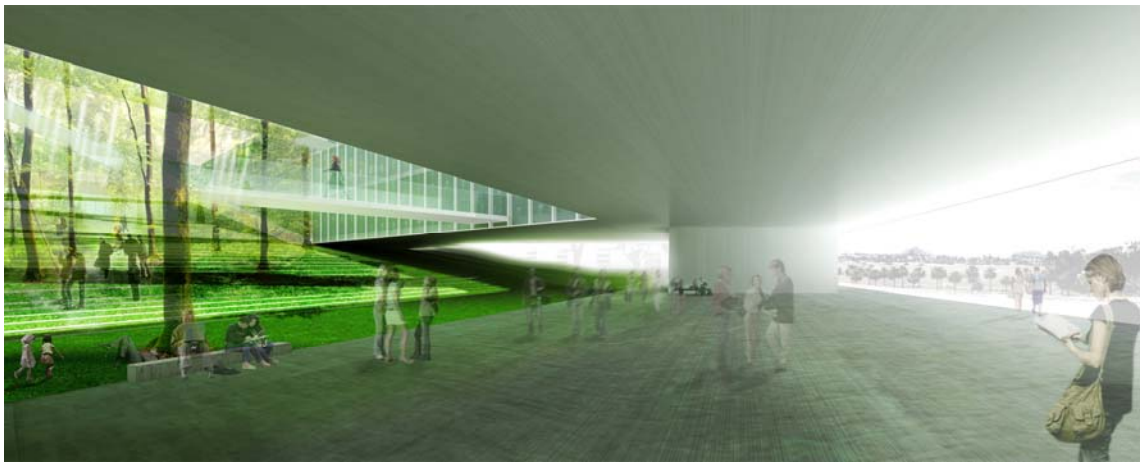
The new building tries to take advantage of important sight lines and views between the Campus and its surroundings, in relation to this the north façade is slightly folded to allow the cladding system for opening up views of the Aronas Mountain and the Athalassa Forest

The deanery and adminitration areas are located in the first floor, teaching areas and teaching laboratories are located in the ground floor, with direct access from the lobby. Research laboratories lies on the semi-basement, using the topography to provide natural light to the spaces that requires day light and ventilation. Technical facilities, storage and parking areas are located in the basement, with easy service access for materials and cars from the North-East road.

There are four vertical cores in the building which houses the public and private communications, and also is the main structural support of the building, using big depth truss elements to buid the main structure of the building.

All elevations have horizontal and vertical shading to control a range of sun angles using a prefabricated element which size changes depending on the roientation . This cladding builds a vibrating façade giving the appearance of a continuous building that is only changed in the North façade.

We propose a green roof in relation to the green concept of the building and also to improve the energy performance and to provide the users with another external space to enjoy the views of the sourrounding landscape.



Sustainability

One of the aims of this project is maximising passive design to reduce energy, water consumption, and pollutants from the building development. The objective of the energy strategy is to reduce the CO2 emissions from the proposed development and the use of finite, non-renewable resources (fossil fuels, grid electricity). This can be attained passively, through a proper bioclimatic design and through the use of renewable energy resources.

Careful consideration has been given to controlling solar gains. The facades facing South, East and west have a cladding system made with prefabricated elments to control mid-season and summer solar heat gains. The facades facing north make maximum use the north light using large windows and through good design need for artificial lighting has been minimised.

Solar power photovoltaics (150 m2) and solar hot water systems (100 m2) have been planned to be located on the roof, to give support to the needs of electrics and hot water demands of the building (Solar thermal panels will provide at least 50% of the annual energy to heat the domestic hot water for the building).

Energy Performance

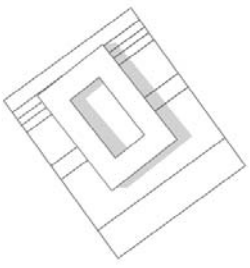
A Zero-energy building is proposed. To achieve that we use the design process of the building to enable the reduction in a building's energy consumption and also to use resources more efficiently and reduce the building's negative impact on the environment. This Project combines time tested passive solar, or artificial conditioning, principles that work with the on-site assets. Sunlight and solar heat, prevailing breezes, and the cool of the earth below a building, provide daylighting and stable indoor temperatures with minimum mechanical mean.

Building Insulation

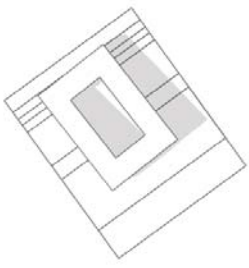
Building Insulation is a very important factor to achieving a health and comfort for its occupants. A right Insulation reduces unwanted heat loss or gain and can decrease the energy demands of heating and cooling systems, and also reduce the level of sound from the exterior enviroment. It is proposed to use an specific software to enable a highly efficient superinsulation system in order to reduce heat loss (and gain) by using much higher levels of insulation and airtightness than normal.

Health and Comfort

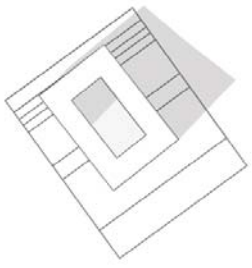
The establishment of good working conditions for the users working and provide a healthy and comfortable internal environment to enable users fulfill their daily missions in a productive way is a primary objective of the project. The building is designed to deal with the high summer temperatures and sunlight using sustainable solutions. Focus has been given on the orientation of the façades to ensure that solar gains can easily be controlled.



SHADOWS STUDY 21 JUNE 15:00



SUN PATH 23 SEPTEMBER/21 MARCH 15:00



SUN PATH 21 DECEMBER 15:00

- Winter: In cold conditions, the main aim is to reduce heat flow out of the building. The components of the building envelope - windows, doors, roofs, walls, and air infiltration barriers - are the most important sources of heat loss. Losses will be reduced by good weatherisation, bulk insulation, and minimising the amount of non-insulative (particularly non-solar facing) glazing.

- Summer: In hot conditions, the greatest source of heat energy is solar radiation increasing the heat transfer through the building envelope. Solar gain is reduced by adequate shading from the sun (lattice) and using high levels of insulation. Passive solar Design is used to avoid high solar radiation on the building and to take advantage of the prevailing breezes.

To reduce energy consumption, ground source heat will be used for heating and cooling. The groundwater, typically at 18°C, will be used directly for cooling in the building without the need for an electric chiller for the majority of the year.

Ecology

We propose ecological sustainability through bioclimatic design (minimizing the consumption of energy that is not derived from renewable sources, minimizing emission of CO2, anti-heat provisions and water saving). To highlight the ecological values of the Site, we propose a building that embraces the green lanscape. The building is designed to create and sustain mutually beneficial relationships with all of the elements of the local ecology. The local geology of the site is defined by the soil type, substrata, local land use, and water patterns of the site and its surroundings. The proposal have taken in account local climate, which is made up of the weather patterns, wind patterns, solar patterns, and pollution patterns for the site and its surroundings.

Water Management

We propose to control rain, grey and ground water as one of the most important factors to designing a durable building. The method for controlling rainwater is by ensuring that water is effectively drained down and out of the building. Rainwater harvesting is proposed to use a scheme’s catchment for the capture and storage of rainwater for reuse. Greywater recycling is used to capture, treatment, storage and reuse of waste water. A drainage system is proposed in the surrounding of the building to manage the rainwater discharge.

ARCHITECTURAL PROPOSAL – PANELS

- **Panel 1:** Concept and Layout Drawing. Scale 1:500
- **Panel 2:** Floor Plan Level +134.30. Scale 1:200
- **Panel 3:** Floor Plan Level +137.50. Scale 1:200
- **Panel 4:** Floor Plan Level +141.00. Scale 1:200
- **Panel 5:** Floor Plan Level +144.50. Scale 1:200
- **Panel 6:** Sections – Elevations – Roof plan. Scale 1:200