



Energy constructions that care for energy, people, the environment

**Constructions
Audits**



The Company

Thelcon is a dynamically expanding technical-construction company specialized in energy and environmental systems for buildings and industries.

Founded in 1999, the company has completed over 20 years of constant progress in the building's sector. Thelcon's staff have over two decades worth of experience in energy design and conservation. The company has offered its services to organizations with internationally recognized expertise in the national and interna-

tional energy sector, such as the European Union, NTUA, RAE, and more.

The company has a thorough specialization in designing energy control and automation systems (BEMS), and installations in large buildings and national branch networks. Technical projects have been commissioned and successfully completed for a variety of leading groups of private companies, such as Mytilineos S.A., Piraeus Bank Group, AB Vasilopoulos, DELTA, and more.

Preparing for future building services and needs Thelcon has developed an energy monitoring software for buildings and industries, working towards the optimization of energy consumption and cost conservation.

Supporters



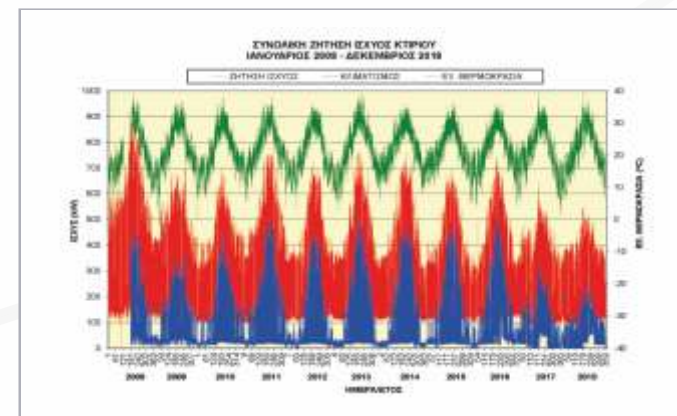


Activities

The company has completed successfully a number of major technical, energy and environmental projects commissioned by leading companies. The implementation objective of these projects is the increased energy efficiency, optimal achieved environmental conditions and the lowest possible environmental impact.

Objectives / Activities

- Studies - Reports
- Energy audits and control
- Specialized commissions
- Software development



Specialization

Energy audits & monitoring

- Bioclimatic design
- Lighting
- Air-conditioning - Heating
- Cogeneration
- Renewable energy

Control Systems (BEMS)

- Design
- Construction
- Maintenance
- Evaluation
- Improvement proposals



Energy Monitoring Software

Thelsoft

Thelsoft is an intelligent web application for monitoring, processing and projecting the consumption of energy and water, the temperature and air quality, and other environmental data of an establishment.

What Thelsoft offers:

- Optimization of consumptions and operation conditions
- Ensuring the proper operation of controlled systems
- Cost reduction





Energy audits for Malls - Shopping Centres of Lamda Development

Energy analysis for the shopping centres in Athens and Thessaloniki:

- > The Mall Athens
- > Golden Hall
- > Mediterranean Cosmos

The projects for the shopping centres (75.000 – 175.000 m²) include:

- Recording and analysis of electromechanical equipment and energy consumption, calculation of KPI's
- Energy conservation proposals with thorough financial documentation for lighting, air-conditioning and ventilation operations, energy interventions on the buildings' outer shells and control-monitoring systems.



Energy interventions in industrial units of DELTA

Energy audits for the 8 production plants in Aghios Stefanos, Tavros, Sindos, Plati Imathias, Elassona, Lamia and milk collection facilities. Overall installed power: 35 MW_e and 85 MW_{th}.

The projects include:

- Recording and analysis of electromechanical equipment and energy consumption, calculation of energy indicators (KPI's) and baselines
- Improvement proposals for control and operation systems

Investment projects for interventions on electric motors, cooling systems, heat recovery etc., and insuring the successful completion of the projects.





Reconstruction – Energy Upgrade of the Piraeus Bank «ETVA» building

- Energy upgrade of the lighting, air-conditioning & ventilation, electric supply and water management systems for the building on Leof. Syggrou 87
- Implementation study for the electro-mechanical systems and oversight of the complete reconstruction
- Installation of energy control system (BEMS) and energy monitoring
- Enrollment in, and reception of the 2006 European Greenlight Award
- 2010 European Greenbuilding Award for best energy renovation.



Complete reconstruction of Hotel Kastri Domotel

- Preparation of all the electro-mechanical studies for the complete reconstruction of the Hotel (total area of 6.000 m²) and the Educational Centre
- Energy upgrade of the building's outer shell, as well as of the lighting, air-conditioning & ventilation, electric supply and control systems of the building
- Use of new energy efficient air conditioning technologies with heat recovery for economical production of hot water
- Installation of energy control system (BEMS) and energy monitoring for the Educational Centre and the Hotel.





Energy advisor of Piraeus Bank Group

- Energy analysis for the 30 office buildings and 700 branches (estimated total area 340,000 m²) in use by the Bank (2007-2018)
- Development of specialized software analyzing energy consumptions
- Nationwide inspections and energy conservation proposals for buildings and operations
- Evaluation of the implementation of energy conservation interventions
- Preparation of periodic and annual reports based on the obtained results with proposals for further optimizations.



Energy Audits for Multinational Companies

Performed on the departments (7.500 – 25.000 m²) of multinational companies in Greece.

- Recording and analysis of the electro-mechanical equipment and break-down of energy consumptions
- Calculation of energy indicators, baselines and KPI's
- Energy conservation proposals with thorough financial documentation. Analysis of improvement measures for lighting and air-conditioning, interventions on the building's outer shell, installation of photovoltaics and control systems for energy monitoring.





Energy audit of Building Stock in Commercial Branches

Analysis of the branches for the nationwide branch network for AB Vassilopoulos (~300 branches) and Goody's | Everest (~180 branches), Flocafe, La Pasteria, Olympus Plaza, and more.

- Recording, analysis of electromechanical equipment, and break-down of energy consumptions
- Calculation of energy indicators, baselines and KPI's
- Economic and technical proposal for energy conservation regarding interventions for lighting, air-conditioning & ventilation, cooling – freezing systems optimization, installation of photovoltaics, and energy monitoring and control systems.



Energy Audits for Industries

Energy analysis of the industries:

- > NIKAS, food industry
- > ARIVIA, non-dairy cheese
- > ELPEN, pharmaceutical
- > FDL Group, storage for dry load, cooling and refrigeration
- > KORONAKIS, wires & ropes

Calculation of energy indicators (KPI's) and baselines.

Proposals for the improvement of the operation of industrial cooling, air-conditioning, lighting systems, and installation of energy metering and recording systems.





Energy audits and interventions for the Vodafone network

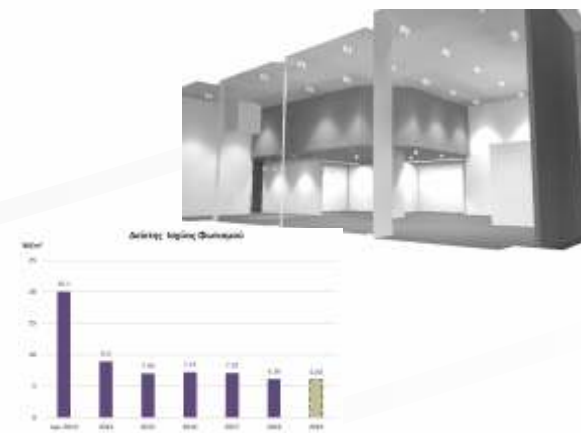
Energy projects implemented since 2004, some of which include:

- Energy audits for the 2,900 Vodafone facilities. Consumption analysis, KPI's calculations and energy conservation proposals
- Development of monitoring software for metering and analyzing electric power bills of 1,100 base stations nationwide
- Evaluation of the photovoltaic systems installation project for 104 base stations with cost-benefit data reports
- Technical and economic analysis for the installation of free cooling systems at Vodafone's base stations.



Low Energy Consumption Lighting Design Studies

- Lighting studies conducted in office buildings with a combined total surface of over 180,000 m²
- Emphasis on visual comfort and low energy consumption
- Lighting studies conducted according to the international and national standards EN 12464-1 & T.O.T.E.E. 20701-1/2017
- Exclusive use of certified luminaires, selected based on the highest standards for the Greek and European market
- Reduction of the installed lighting power from 22 W/m² in 2014 to 5 W/m² in 2019.





Construction and operation of a Photovoltaic park

- Study, installation and operation of a photovoltaic park with an output power of 100 kWp in Porto Rafti, Attica
- The park consists of 400 photovoltaic polycrystalline panels and 5 AC inverters
- The annual produced electric power is approximately 160 MWh
- The photovoltaic park is owned by Thelcon.



Installation of industrial cogeneration station for DELTA SA

Preliminary audits and feasibility studies, and issuance of necessary production, installation and operation licenses for an industrial 2-machine cogeneration station, totaling 2 MWe, at DELTASA industrial unit in Aghios Stefanos.

- Supply and installment specification for project realization
- Conversion of fuel oil to natural gas
- Supervision of project completion
- Installation of monitoring system for the operational energy analysis
- Energy administrator for the CHP unit.





Energy Supervisor for the Regulatory Authority of Energy (RAE) HQ

Energy monitoring, outer shell analysis and electromechanical systems for the building on Peiraios Str. 132 in 2010.

- Design and oversight of the building's proper maintenance
- Commissioning of the electromechanical systems
- Remote measurement and analysis of the operational energy consumptions data
- Proposals for conservation and efficient energy usage.



Energy Audit for Ethniki Asfalistiki SA HQ

- Technical and economic analysis for the operation of the heating, cooling and lighting systems of the building (70,000 m²). Additional installation of building control systems for the pumps, air quality and heat retrieval
- Proposal submission for European Funds and enrolment in the GreenLight program.



Our projects - International



Energy specifications and labeling for air-conditioning – Nigeria

- Project with international collaboration, co-financed by the German Institute of Collaboration (GIZ) and the European Union (EU)
- Establishment of minimum energy performance standards for air-conditioners that are imported into or produced in Nigeria
- Design of label that indicates the energy classification of air-conditioners
- Development of pioneering evaluation laboratory for air-conditioning units
- Raising consumer awareness regarding the purchase of energy efficient air-conditioners, aiming at an overall energy conservation in Nigeria.



Energy conservation in cooling and air-conditioning in the tertiary industry sector – Seychelles

- Energy monitoring in tuna processing industries, food warehouses, 5* Hotel and hypermarket
- Economic and technical improvement proposals for cooling equipment and air-conditioning facilities
- Extrapolation of the energy consumption data results and conservation opportunities to a national level in Seychelles
- Strategic planning for energy conservation in the tertiary industry sector.





Construction of air-conditioning system in a thermoelectrical plant in Sahara Desert – Algiers

- Construction of a 1,600 kW air-conditioning system, water supply and drainage system in administration and support buildings
- The system includes VRF units, air ducts, piping, insulation, etc. The natural gas plant, located in Hassi Rmel, Algiers, has an installed capacity of 3x200 MW
- Project in collaboration with Mytilineos SA.



Promotion of RES and energy conservation – Zambia

- Analysis of the energy status in the building sector in Zambia. Discussions with local agents
- Proposals for the promotion of energy conservation in the building sector
- The proposals were submitted to the European Union and regard the outer shells, lighting, energy monitoring of large facilities, energy labelling of devices and training of engineers and users.





Building Energy Management Systems (BEMS)



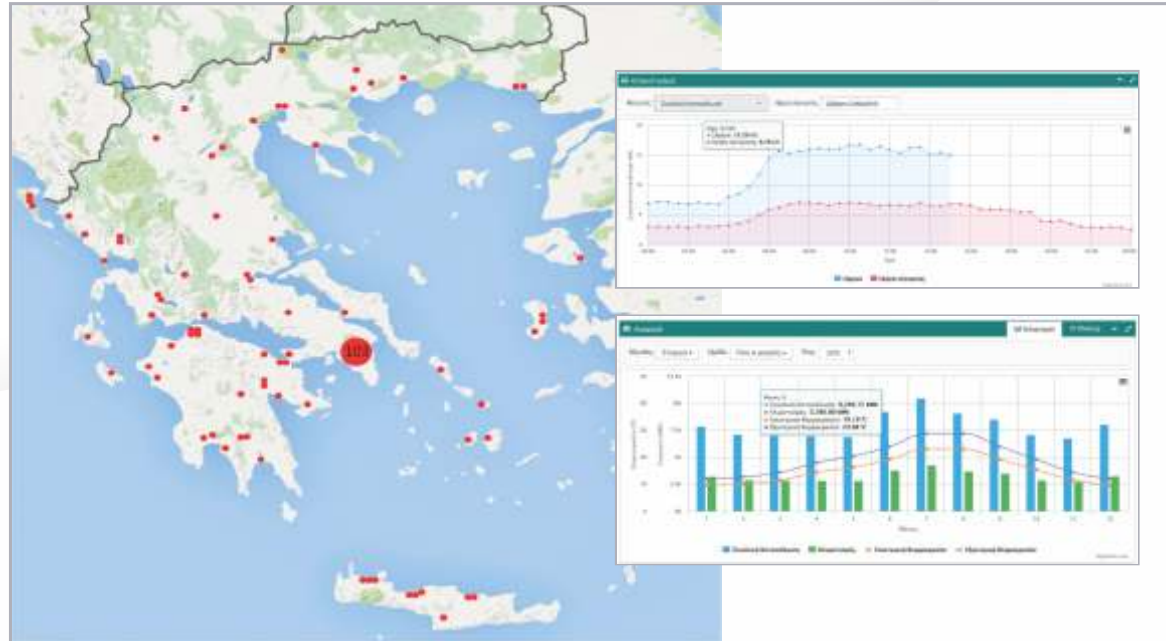
NTUA, Energy monitoring of the 22 buildings on campus, 50 monitors



Office building, Syggrou Str. 87
Overall area 19,200 m², 1,000 control points



General Attica Police Department, Athens - 30,000 m²



Complete control of 200 branches nationwide of Pireaus Bank using Thelsoft



Domotel - Educational Centre and Hotel
16,000 m², 1,400 control points



Shopping Centre Attica - City Link, Athens
65,000 m², 2,000 control points



Building Energy Management Systems (BEMS)



Office building, Mesogeion Str. 109 - 111 - 1,900 m²



Museum Network Piraeus Bank Group Cultural Foundation, GreenBuilding Monitors



IKEA, Ioannina - 5,000 m²



Office building, Holargos - 1,500 m².



'Skilitsio' Hospital, Chios



National Bank of Greece office buildings, nationwide - 4,000 m², 1,000 control points



Hellenic American Union, Headquarters & Test Centre, Athens



Hotel Helona Resort (Belvedere) - Kos



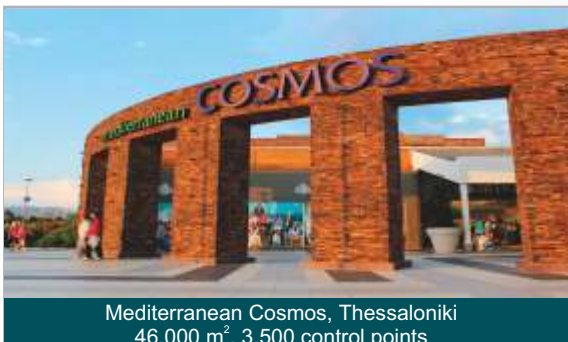
Office building, Vas. Sofias 94 - 7,800 m²



Building Energy Management Systems (BEMS)



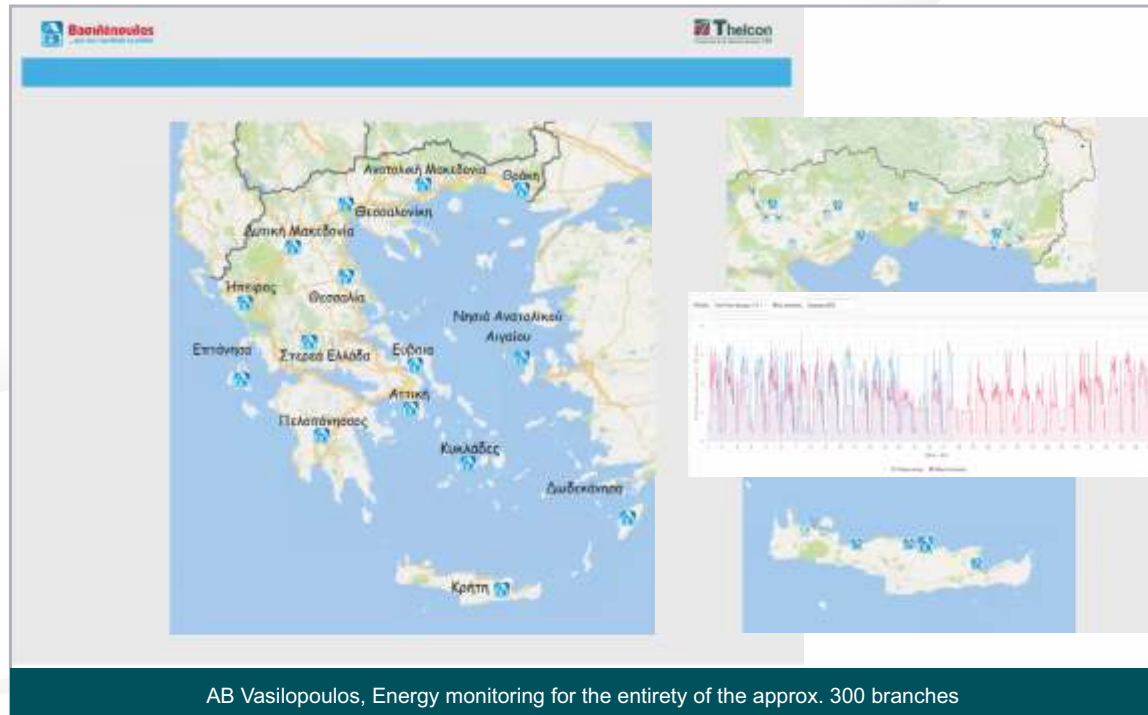
Fidas Industry, Athens - 12,000 m²



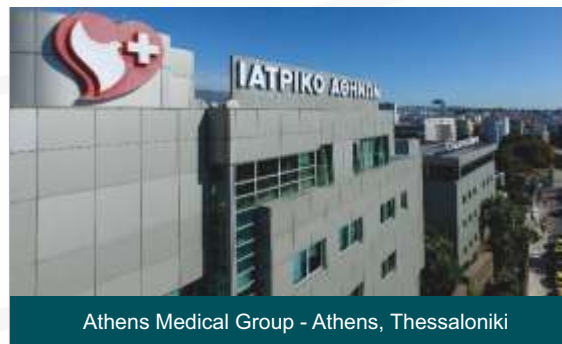
Mediterranean Cosmos, Thessaloniki
46,000 m², 3,500 control points



Pfizer Pharmaceutical, Headquarters, Athens



AB Vasilopoulos, Energy monitoring for the entirety of the approx. 300 branches



Athens Medical Group - Athens, Thessaloniki



Mytilineos SA, Headquarters - 2,000 control points
with full control of geothermal system



Customers - Collaborators





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