

**Konstantina Kalliakoudi**  
**Mechanical Engineer, M.Sc, LEED AP**  
**Energy modeler in Buildings**

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<p><b>Education</b></p>	<p><b>2007: Diploma of Mechanical engineering, National Technical University of Athens</b></p> <ul style="list-style-type: none"> <li>The studies lasted 10 semester</li> </ul> <p>Title of my diploma thesis “Software development of heat transfer in building with walls with Phase Change Materials- P.C.M”</p> <p><b>2009: Master in National Technical University of Athens: “Energy Production and Management”</b></p> <ul style="list-style-type: none"> <li>Title of my Master thesis: " Software development in Matlab for designating thermal and cooling building requirements based on the European standard ISO 13790:2008"</li> </ul>
<p><b>Award</b></p>	<p><b>2010: Thomaidio Award from National Technical University of Athens for publishing an original scientific paper</b></p>

<p><b>Professional experience</b></p>	<p><b>2021 – Today: Building Performance Analyst , LEED AP and Senior Mechanical MEP Design Engineer – Freelancer (www.savingenergy.gr):</b></p> <ul style="list-style-type: none"> <li>I am working as an freelancer mechanical engineer with main activities: Energy audits in grand scale businesses, Energy Inspections for Energy Performance Certificate, Energy Inspections in heating mechanical installations, Boiler Rooms, complete MEP Design for residential projects, energy modeling for LEED , LEED AP</li> </ul> <p><b>2018 – 2020 Building Performance Analyst , LEED AP and Senior Mechanical MEP Design Engineer at KHM company (www.khmoe.gr):</b></p> <ul style="list-style-type: none"> <li><b>Airport Terminal of Kastelli (Crete)- LEED AP Consultant and Energy modeler:</b> I worked on the LEED pre-assessment of the project in order to identify the best scorecard scenario to achieve the Silver certification. For each targeted credit I wrote the technical requirements for the Design team. I conducted the preliminary Energy modeling checking different solutions (Water Chillers, Heat Pumps etc), identifying the best <b>technoeconomical</b> solution. The final solution was modeled using eQuest combined exceptional calculations which leads to 12 points of the credit optimize energy performance</li> </ul>
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- **Vincent Moran Regional Hub – Outpatient Healthcare Building (Malta): LEED Consultant on behalf of the Owner:** I reviewed the LEED pre-assessment , the LEED documentation and the Energy modeling the LEED AP Consultant of the contractor prepared. I comment, did suggestions to improve, checked the documentation and collaborated with the LEED AP to achieve the Silver certification. (project still going on), so that everything is according USGBCI and Owner Requirements
- **Software development in excel:** For Hourly Energy Simulation for complex HVAC design in combination with specific BMS scenarios (hourly bin method).
- **MEP Design Engineer:** Participating in large scale buildings (Hospital “Ygeia”, Hotel Costa Navarino, Town Hall of Kalamata etc). I conducted the electric power distribution design, the electric Panel Calculations, the Energy Performance Study

**27/10/2014 – 2017: Senior Mechanical MEP Design Engineer specialized at Energy Sector in buildings at “YFANTIS ENGINEERING”:** I worked in the MEP Design of the following projects:

- **Trilogy** – (3 Towers in Limassol of Cyprus, mixed use: residential / offices, 70,000 m<sup>2</sup>, 82m maximum elevation): I conducted the Energy Efficiency Performance (EPC). Study with the regulations of Cyprus.
- **Limassol Marina: The Castle** (5 residential buildings in Cyprus,60 apartments, 9.850 m<sup>2</sup>): Design of sea water source heat pump for each apartment on a common geo exchange piping network. Design of apartment’s small plant rooms for HVAC & DHW.
- **Mixed use development in Abu Dhabi** (3 Towers, mixed use: residential/hotel, 280.000 m<sup>2</sup>): Calculation of building cooling loads using the software of HAP Carrier 4.91, design of HVAC and plumbing systems
- **Miraggio Thermal Spa Resort 5\*** (Hotel, 1000 bed, 32.500 m<sup>2</sup>): Design of HVAC system, of firefighting system, of plumbing system , Energy Performance Study

**2012 – 2014: Freelancer Mechanical Engineer MEP Design, Energy Inspector, Educator of engineers.** I performed energy inspections for EPC in residential and in commercial buildings (over 40.000 m<sup>2</sup>) and conducted the complete design of MEP installations for residential buildings. I taught at seminars for engineers over **600 hours** in topics related with energy saving. I collaborated with following seminar centers “seminar center of **Technical Chamber Of Greece**”, “Engineering Intelligence”, “**K2 Campus**”, “**Alpha CAD**”. Some seminar titles I taught was “**Applications with Air to water heat pumps – Design and Installation** ”, “**Energy management in buildings and industry**”, ” **Energy inspections in buildings**”, ” **Energy inspections in boilers**”, ” **Energy inspections in cooling and heating installations**”

**2009-2012: Junior Mechanical MEP Design Engineer at “ERGON EQUIPEMENT”:** I designed heating and cooling installations for buildings with integrated renewable energy sources, such as solar systems, geothermy, air to water heat pumps combined with floor heating. I also supervised the construction of mechanical installations.

	<p><b>2009: Mechanical Engineer External Associate Energy Inspector at the companies “EPTA Ltd” and “AEGIS Ltd”:</b> I performed energy inspections in a 21 municipal buildings in Attica. For each building I conducted an energy study (using EPA-NR software ) and proposed for each building specific energy saving measures. This project was running before the national regulations for buildings energy performance were issued. So my responsibility was to search and propose a Method for the energy calculations. I followed the monthly bin method as described at the European Standard “ISO 13790”.</p> <p><b>2007-2008: Junior Mechanical Engineer on site at the construction company “DOMOKAT S.A”</b> at the project “ construction of the bus depot of O.S.E”. This project consisted of six buildings (car workshops and office buildings). I worked as on site supervisor engineer of electromechanical installations. I was responsible a) to supervise the installation providing guidance to the installation crew, b) to order the necessary materials and equipment c) to conduct the as – build drawings</p> <p><b>2006: Trainee student at the company “IRIS –gmbh” at the town Lüneburg in Germany</b> within the European program IAESTE. My responsibly was to translate technical manuals for a vibration measuring instrument from English to German.</p>
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<p><b>Writing and publications</b></p>	<p>Member of the writing group of the Book with title "<b>Alternative heating technologies and energy saving</b>". The book is published by the greek pedagogical Institute for the second grade of the technical high school for the faculty: "Heating Installers".</p> <p>My article "<b>Geothermal heat pumps and biomass</b>" was posted in the magazine of Greek Mechanical and Electrical engineers Association “<b>Deltio</b>” in, issue 453, January – February 2013</p> <p><b>1/9/10- 30/10/10:</b> Member of the writing of the technical team of the technical instructions "<b>Specification of parameters for calculating the energy performance of buildings and to issue their energy performance certificate</b>” which was issued from the technical chamber of Greece</p> <p><b>14/6/2010-17/6/2010:</b> My paper “<b>Methodology for designating thermal and cooling building requirements based on the European standard ISO 13790: 2008</b>” was published in the conference proceedings "<b>ECOS 2010, 23rd International Conference on Efficiency, Cost, Optimization, Simulation of Energy Systems</b>" in section # 199, page (page) 215</p> <p><b>24/2/09-24/6/09:</b> Member of the writing team of the "<b>Regulations of Energy Performance of Buildings</b> " which were published at the governments newspaper number 407 on April 9, 2010</p>
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<b>Lectures in Workshops/ Conferences</b>	<p><b>13/12/2014:</b> I participated at the Workshop "<b>Alternative heating and energy saving technologies</b>". organized by the Greek Association of Mechanical and Electrical engineers. " The title of my lecture was: "<b>air to water heat pumps and geothermal heat pumps in central heating systems</b> "</p> <p><b>4/7/2014:</b> I participated in the Workshop "<b>low energy buildings</b>" organized by the Greek Association of Mechanical and Electrical engineers. The title of my lecture was:"<b>Geothermal heat pumps, cost, efficiency and applications</b>"</p> <p><b>27/6/2013:</b> I participated in the Workshop "<b>zero energy buildings</b>" organized by the technical chamber of Greece. The title of my lecture was:"<b>Saving energy using geothermy</b>"</p> <p><b>6/11/2012:</b> I participated in the Workshop "<b>saving energy in buildings</b>" organized by the Greek Association of Mechanical and Electrical engineers. The title of my lecture was: "<b>Geothermal heat pumps and Biomass</b> "</p> <p><b>3/02/2011–24/2/2011:</b> I participated in the Workshop “ <b>Studies for energy performance in buildings</b>” which was organized by technical chamber of Greece. The title of my lecture was: “ <b>Energy calculations using specialized software</b>”</p> <p><b>14/6/2010-17/6/2010:</b> I participated at the international conference “<b>ECOS 2010, 23rd International Conference on Efficiency, Cost, Optimization, Simulation of Energy Systems</b>” which was held in EPFL university of Lausanne. The title of my lecture was: “ <b>Methodology for designating thermal and cooling building requirements based on the European standard ISO 13790:2008</b>”.</p>
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<b>Computer Skills</b>	<p>MS OFFICE, Windows, Macos  <b>Design Software:</b> AUTOCAD 2D 2020, AUTOCAD MEP 3D  <b>Calculation Software:</b> 4M FINE, Viptool Engineering  <b>Software for energy calculations:</b> EPA-NR, TEE-KENAK, KENAKWIN 4M,  Software for EPC Cyprus  Software for energy simulations  HAP Carrier</p> <p><b>Programming:</b> Objective C, X-code, Matlab, fortran, python</p>
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<b>Foreign Languages</b>	<p><b>German:</b> Excellent knowledge. Kleines Deutsches Sprachdiplom - grade &lt;gut&gt;.  <b>English:</b> Excellent knowledge. Proficiency (Michigan).  <b>French:</b> Basic knowledge</p>
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