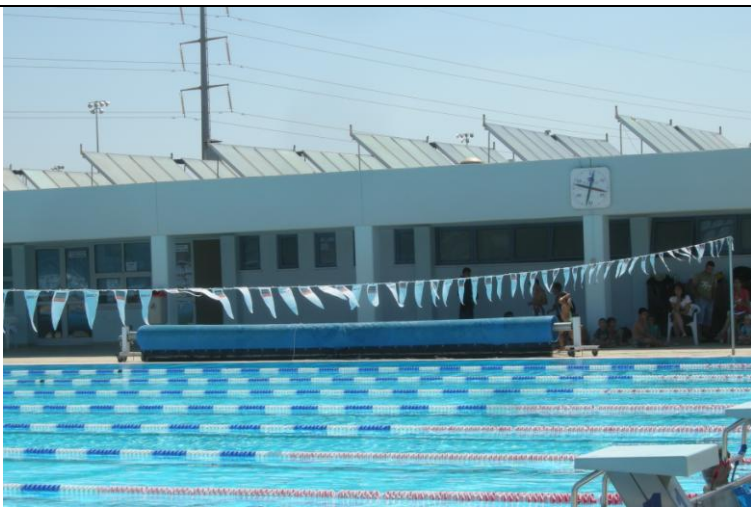


BUILDING GOOD PRACTICE

Olympic Swimming Pool – Geroskipou Municipality, Cyprus

| GENERAL INFORMATION | |
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| Name of the public building renovation: | Olympic Swimming Pool of Geroskipou Municipality “Tassos Papadopoulos “ |
| Building Good Practice number (example BGP n°3 – Cyprus Energy Agency) | kWh saved = 460.000 per year |
| Sub-group | Sport Facilities |
| Description | <div data-bbox="304 779 683 1308" data-label="Text"> <p>Photo</p> </div>  |
| Address | Athletic Centre of Geroskipou Municipality |
| Public sector contractor | Geroskipou Municipality |
| Architect | Ioakem & Loizias |
| Engineering consulting | Architects - Consultants - Engineers |
| Date of construction | May, 2004 |
| Legal aspects (e.g.: protected property) | Property of Geroskipou Municipality |
| Date of renovation | 2008 |
| Nature of the work (short description) | <p>The Olympic Swimming Pool of Geroskipou Municipality “Tassos Papadopoulos” was constructed in 2004. During the construction thermal insulation of the building was used. However no measures for efficient heating /cooling were taken into account during the original design.</p> <p>In 2008 solar panels and geothermal heat pumps were installed for pool water heating, as the heating of the pool was demanding</p> |

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| | | <p>large diesel consumption.</p> <p>The Olympic Swimming Pool of Geroskipou Municipality hosts the Yacht Club of Paphos, Cyprus Sports Organization also uses the facilities for conducting international and pancyprian swimming competitions, as well as for water polo.</p> <p>International or national competitions are hosted for both summer and winter months.</p> |
| | Budget and financing sources | <p>80%EU funding – 20% own resources</p> <p>INTERREG III “Greece –Cyprus”, 82.000€ in 2008</p> <p>MEDA Water programme financed by the European Union ADIRA project “Autonomous Desalination system concepts for sea water and brackish water In Rural Areas with renewable energies”, 50.000€ in 2008</p> |

| AVAILABLE RESULTS | |
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| What were the big problems (in terms of energy efficiency) to tackle? | The big problem was the high cost involved for heating the swimming pool water during the winter period. This was done exclusively by heating diesel. |
| Has this building been already analysed and certified? | The building has not been certified yet. |
| What are the key innovative energy efficiency measures undertaken through the renovation? | <p>In 2008 two energy efficiency measures took place in order to reduce energy consumption.</p> <p>The first was related with the installation of solar panels and the second with the installation of geothermal heat pumps (GHP), for reducing energy consumption for pool water heating.</p> <p>Insulation of the building (existing)</p> <p>10cm brick – 5cm thermal insulation -10 cm brick.</p> <p>Double glazing.</p> <p>Heating of the swimming pool water</p> <p>Installation of geothermal heat pumps and solar panels.</p> <p>Lighting (existing)</p> <p>Energy efficient compact florescent lamps</p> |
| What are the measurable improvements in terms of energy efficiency in electricity and heating (kWh saved)? | Before the installation of solar panels and geothermal heat pumps, the diesel consumption for water heating was 130.000-140.000 lt diesel/year (2005), after the measures the diesel consumption was reduced by 30-40.000lt diesel/year (20% |

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| <ul style="list-style-type: none"> • kWh saved, kWh before/after, kWh given in the studies/real kWh) • carbonated energy kWh substituted by REN • kg CO2 saved | <p>reduction) as the consumption after the installation was 100.000-110.000lt diesel/year (2009).</p> <ul style="list-style-type: none"> • kWh saved = 460.000 per year • CO₂ saved = 150ton per year |
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| ENERGY EFFICIENT MEASURES | |
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| Energy efficient measures of the building envelope | No such measures have taken during the renovation as the building has already been thermal insulated. |
| Energy efficient measures of the heating system | <p>The heating system which operated with conventional fuels was replaced with solar panels and geothermal heat pumps.</p> <p><u>Details on the renewable heating of the pool</u></p> <p>Geothermal Heat Pumps: 50kW_{th}, COP geothermal system 4.25 Annual operation hours: 6500h.</p> <p>Solar Panels:</p> <ul style="list-style-type: none"> • 50 solar panels X 2m²/each = 100m² total area • Total energy per m² of solar panel 600kWh/m² • 5 m³ thermal tank |
| Energy efficient measures of monitoring energy | No energy efficiency measures for energy monitoring have been taken. |
| Energy efficient measures regarding behaviour | No measures for energy efficiency in behaviour have been taken. |
| Stakeholders' involvement in the energy efficient measures | The relevant stakeholders have been informed through meetings. |
| Others? | The swimming pool during the night is covered in order to keep water temperature at satisfactory levels and save energy. |

| SUSTAINABILITY OF THE RENOVATION | |
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| Design and choice of sustainable materials? | By the time of construction the usual contraction materials for buildings in Cyprus were used. By the date of construction the EPBD directive was not in force in Cyprus. |
| Sustainable building site management? (sorting waste, water...) | Geroskipou Municipality participates in recycling programme, however on the sport centre do not appropriate recycle bins. |
| Application of a valuation method | No |

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| <p>(BREAM? HQE? Others?)</p> <p>Carrying out consultation process with dwellers? Concerted choice on the work program? Which external partners?</p> | |
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| BUILDING MAINTENANCE: life of the building after the renovation | |
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| <p>Is the building object of an energy monitoring? Is there a responsible manager?</p> | <p>There is a responsible manager.</p> |
| <p>Who is in charge of the maintenance of the heating system of the building?</p> | <p>For the heating system of the building there is responsible mechanical engineer.</p> |
| <p>Who is in charge of the day to day energy management?</p> | <p>Responsible manager is Mr Costas Anastasiades who belongs in the permanent staff of Geroskipou Municipality</p> |
| <p>Are there some specific measures to raise energy awareness and to implicate users in energy efficiency?</p> | <p>No, there aren't any specific measures to raise energy awareness and to implicate users in energy efficiency, but is indented to be done through Cyprus Sports Organization and the Cyprus Energy Agency.</p> |

| FUNDING | |
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| <p>What financing plan?</p> | <p>The measures were funded through European funds (80%)</p> |
| <p>Innovative or specific aspects in the method of financing (European funds or loan, energy performance contract,...)</p> | <p>European funds INTERREG "Greece –Cyprus", 82.000€ ADIRA, 50.000€</p> |
| <p>What is the balanced budget for each stakeholder</p> <ul style="list-style-type: none"> • Energy costs for tenant before /after • Increase in the rent | <p>N/A</p> |
| <p>Is there any specific economical indicators (payback time on investment, global cost, ...)</p> | <p>According to the records, the payback was 4 years.</p> |

| TRANSFERABILITY | |
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| <p>Transferable aspects according to the partner in charge of this example of good practice</p> | <p>The energy upgrade works would be directly transferable to a similar construction however the climatic conditions should be similar.</p> <p>N/A</p> |

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| | The application of funding from such programmes would be directly transferable. |
| Transferable aspects according to all the partners of Serpente project | The other partners will analyse and validate these good practices. During the process of validation the partners will take on the role of auditors because they will assess and improve the effectiveness and portability of good practices in their context. |
| | The validation process will promote a systemic approach in local competent public administrations. Moreover, this process of selection and validation is a peer review and entails the mutual role of experts and auditors depending on typology of buildings and partner's expertise. |

| SOURCES | |
|---------------------|---|
| Publications | Press Releases, Media |
| Website | www.geroskipou-municipality.com |
| Interviews | Mr. Costas Anastasiades – Manager of the Olympic Swimming Pool of Geroskipou Municipality “Tassos Papadopoulos” |