



MUNICIPALITY OF
PILEA-HORTIATIS

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**TECHNICAL DESCRIPTION OF THE DRILLING SYSTEM AND ITS
MONITORING INSTALLED IN THE 1ST HIGH SCHOOL OF PILEA -
THESSALONIKI**



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TECHNICAL DESCRIPTION OF THE DRILLING SYSTEM AND ITS MONITORING



1. INSTALLATION OF A DRILLING SYSTEM AT THE 1ST HIGH SCHOOL OF PILEA

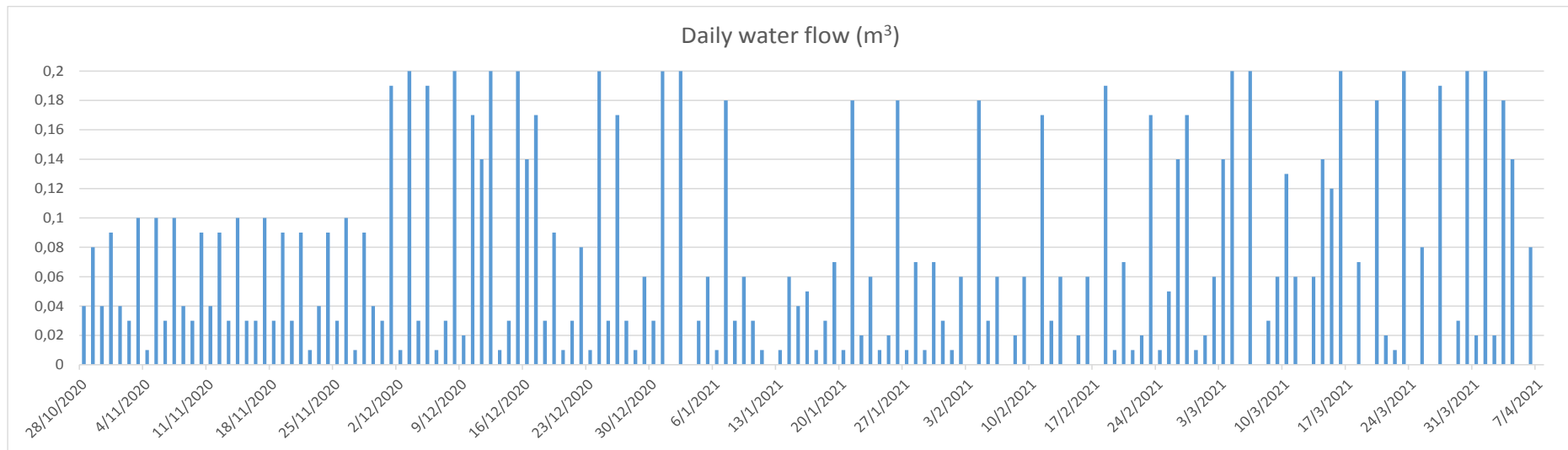
The project is about the installation of a drilling system at the 1st High School of Pilea. It is located in the east side of Thessaloniki, at the Municipality of Pilea-Hortiatis. At first, the drilled water was supposed to be used for toilet flushing and irrigation of school's plants but after the microbiological analysis, its use for toilet flushing was abandoned. Four plastic, water tanks of five hundred liters capacity each are used, while two multistage pumps are responsible for water distribution. As for the monitoring of the installation, recording equipment is installed in order to provide helpful data such as average energy consumption per cubic meter or per day or total energy consumption and total water flow.

2. MONITORING – MEASURED DATA

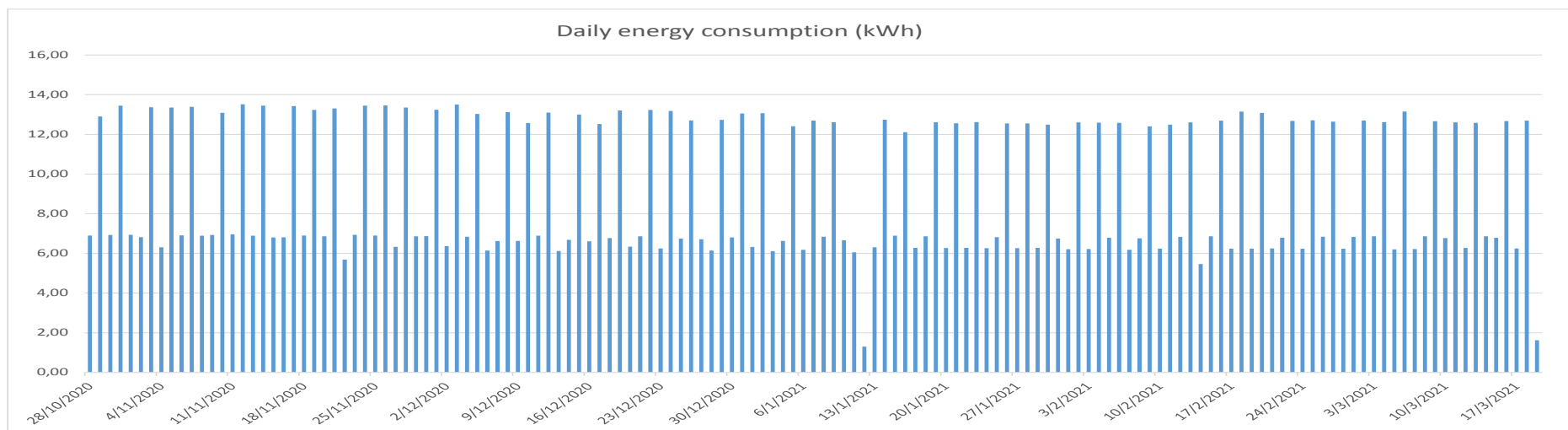
The recording equipment that is installed, measures the following:

- Temperature 1 (drilling network) (°C)
- Temperature 2 (nearby storage tanks) (°C)
- Energy consumption (kWh)
- Water consumption (m³)

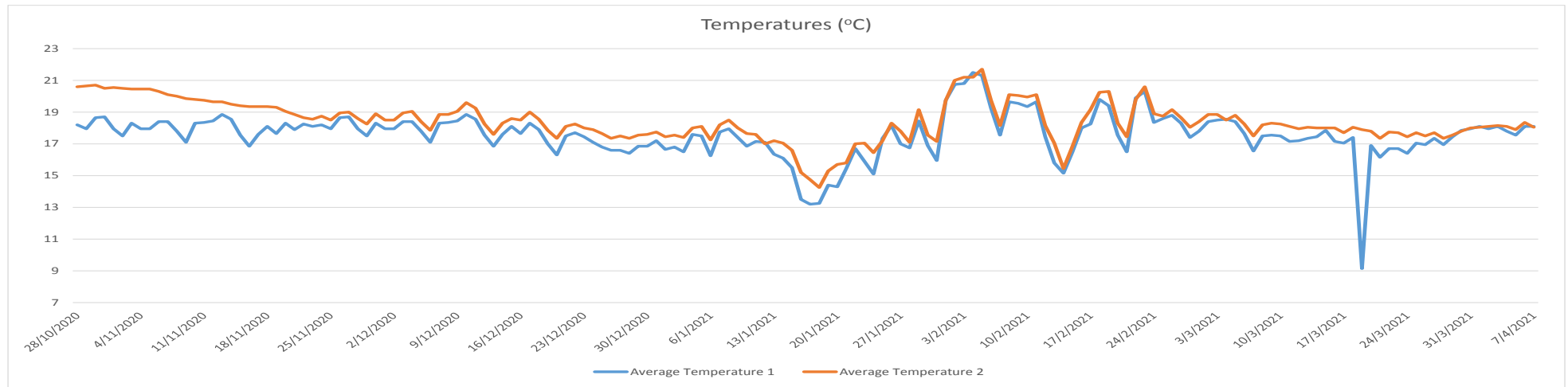
The following diagrams and the table containing useful values such as average energy consumption per m³ or per day, total consumption etc for the period between 26/10/2020-6/4/2021 are created from the extracted data:



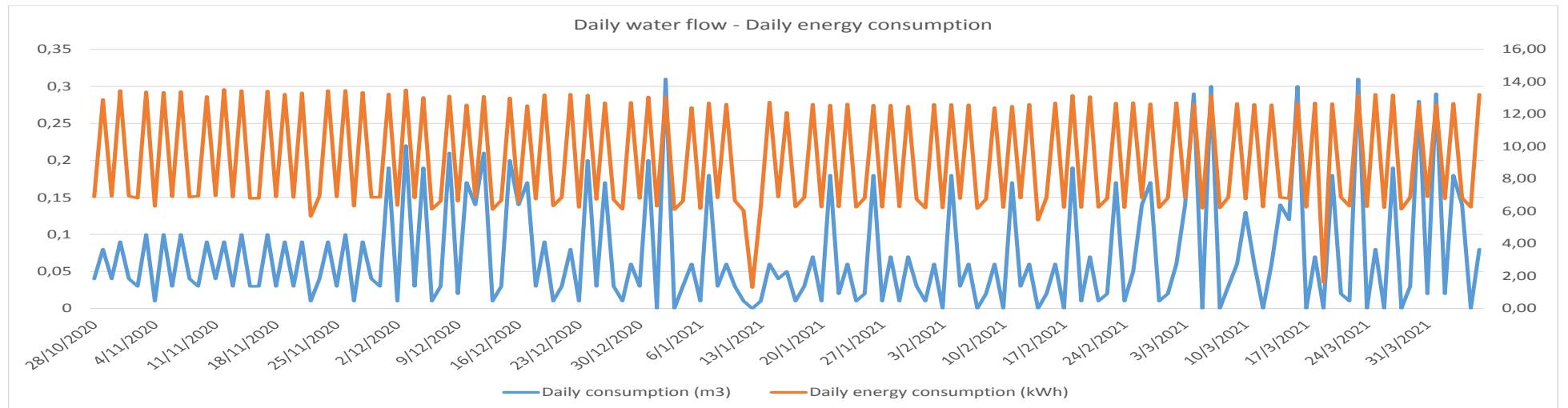
Picture 1: Daily water flow (26/10/20-6/4/21)



Picture 2: Daily energy consumption (26/10/20-6/4/21)



Picture 3: Temperature registration (26/10/20-6/4/21)



Picture 4: Daily water flow – Daily energy consumption (26/10/20-6/4/21)



Table 1: Monitoring data

Data			
<i>Days (total)</i>	162	<i>Average energy consumption/m³</i>	
<i>Min consumption (kWh)</i>	354,60	238,96	kWh/m ³
<i>Max consumption (kWh)</i>	1853,78	<i>Average energy consumption/day</i>	
<i>Min water flow (m³)</i>	4,76	9,12	kWh/day
<i>Max water flow (m³)</i>	16,61	<i>Average water flow/day</i>	
		0,07	m ³ /day
Total			
<i>Total consumption (kWh)</i>	1499,18	kwh/m ³ /day	0,78
<i>Total water flow (m³)</i>	11,85		