Interreg CENTRAL EUROPE
European Union European Regional Development Fund

BOOSTEE-CE

DELIVERABLE T1.3.3

D.T1.3.3 – Estimation of heating losses from thermal data / PA5

03/2020

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A.T1.3 Estimation of PV potential and heating losses

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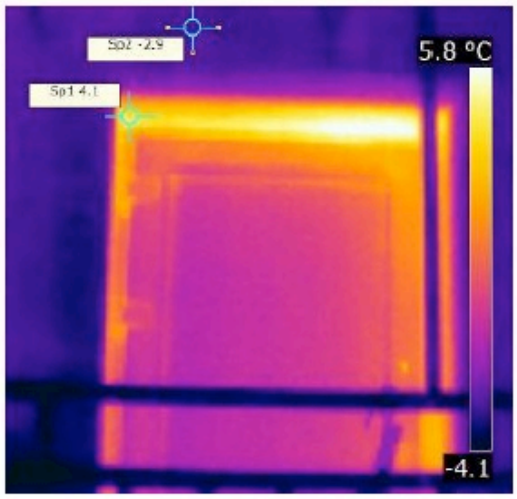
1. Introduction and aims

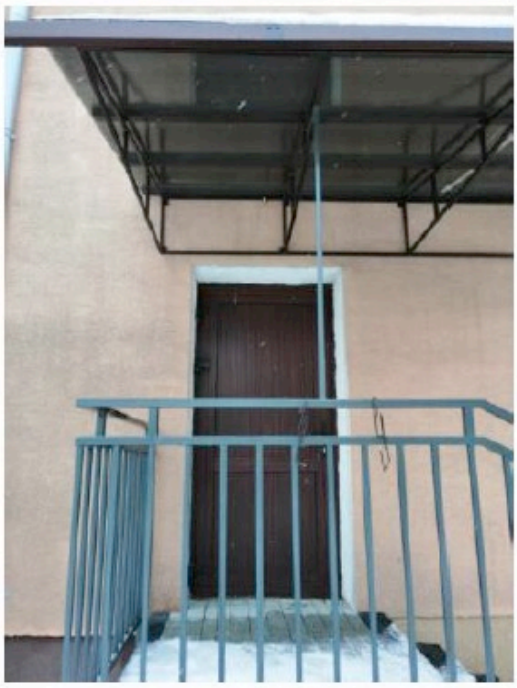
The deliverable T1.3.3 belongs to the activities related to estimation of PV potential and heating losses (A.T1.3). In particular for each Pilot Action, a report has been created reporting some information gathered from onsite thermal acquisitions or data owned by local energy agencies. The overall idea is to report the heating loss situation in the pilot buildings and, if possible, the improvement after the investment activities. According to Application Form, the quantification of D.T1.3.3 is 7 but we created 8 documents corresponding to the 8 locations of the Pilot Actions (one cross-border). The various deliverables reports information and graphical results of thermal analyses in all PAs with (public or internal) and without investments. In this latter case, despite the lack of investment, thermal and energetic analyses were performed in any case to provide useful material to the local municipalities and inform them of possible energy efficiency actions they could undertake to improve the energy performance of buildings.
In the following section the activities related to PA5 in Plonsk, Poland (PP13) are reported.

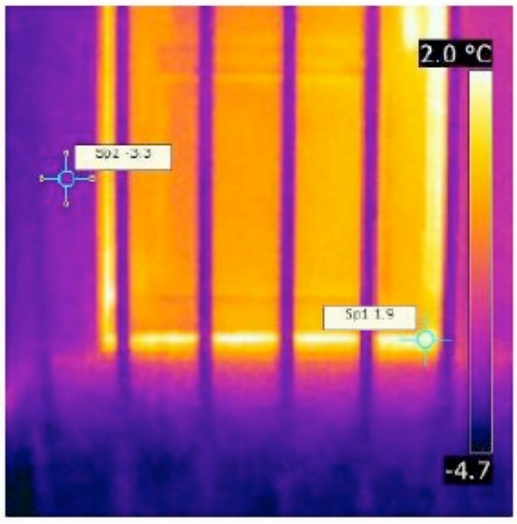
2. Thermal acquisitions in the BOOSTEE-CE pilot action #5

In the following tables, we report the acquired thermal data with some metadata and comments, to facilitate comprehension and understanding of the situation in the building of the Public School no. 1 in Płońsk, Poland.

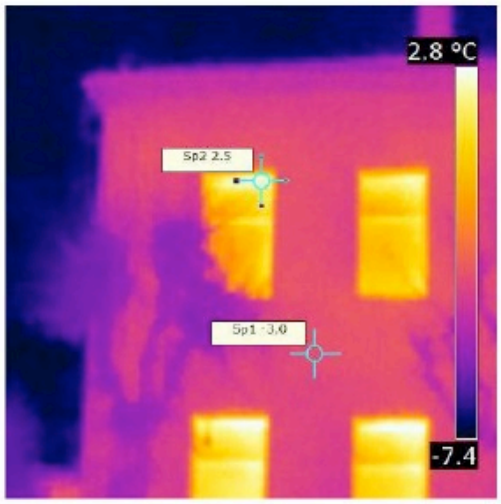
Acquisition date	09.01.2019
Time and ext. temperature	7:00, from -4 to -2 deg
Distance from building [m]	10-20
Type of building	Public school
Owner	Municipality of Płońsk
Description of the composition of the outer wall	Ceramic full brick
Heat transfer coefficientfor external wall [W/m2K]	0,318
Heat transfer coefficient- windows [W/m2K]	2,3
Energy consumption (heating) [GJ/year]	820,68
Type of energy source	gas boiler
Annual utility energy demand EU [kWh/m2/year]	106

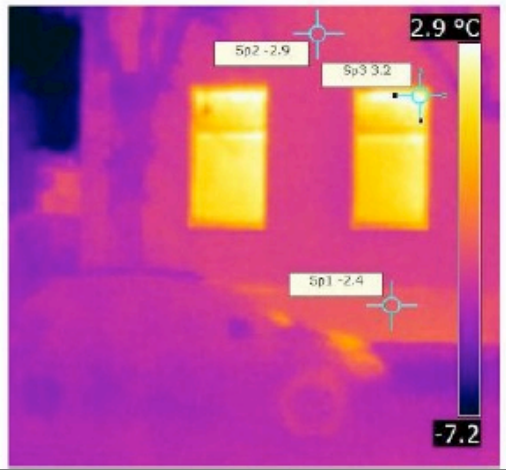




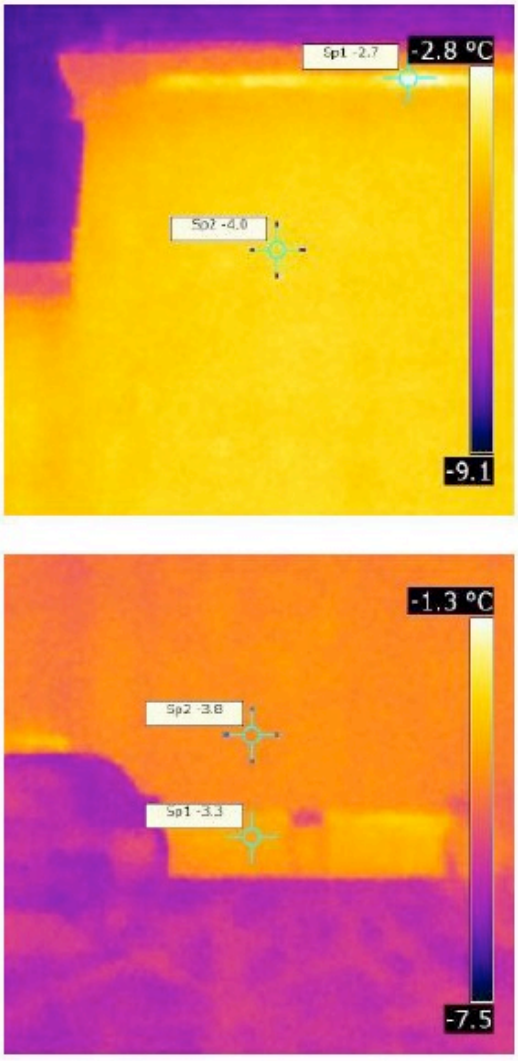


The thermal images show incorrectly adjusted exterior door leaf. In the upper and lower parts of the door an elevated temperature can be seen.

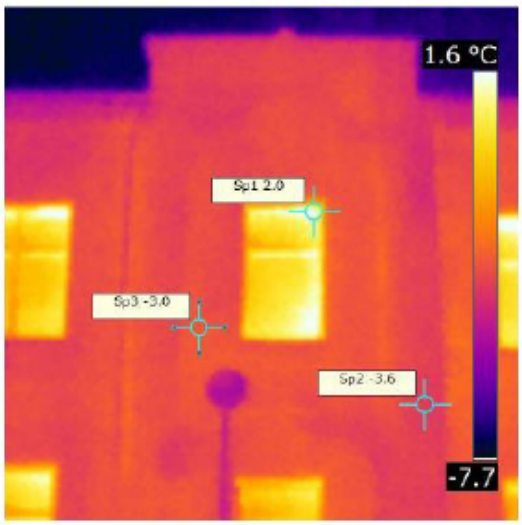


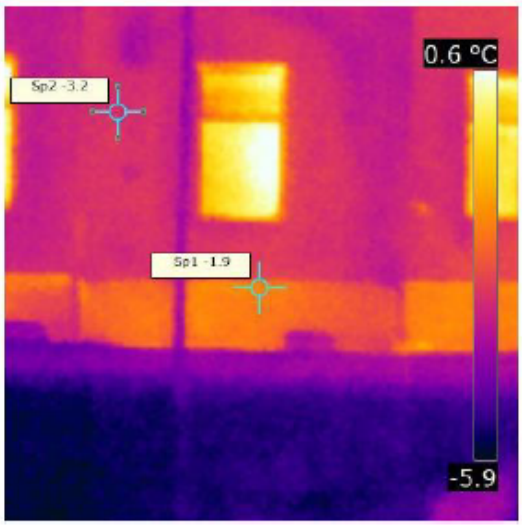


- Temperature distribution does not show irregularities
- Temperatures on the surface of external walls only slightly differ from each other, which indicates the continuity of the insulation layer



- The upper thermogram shows an increase in temperature under the eaves of the flat roof
- This indicates the occurrence of a linear thermal bridge





- Temperature distribution does not show irregularities
- There are no apparent places of discontinuity in the insulation layers
- The surface temperature of the plinth wall has a slightly higher temperature - this is related to the different emissivity of the material used for finishing