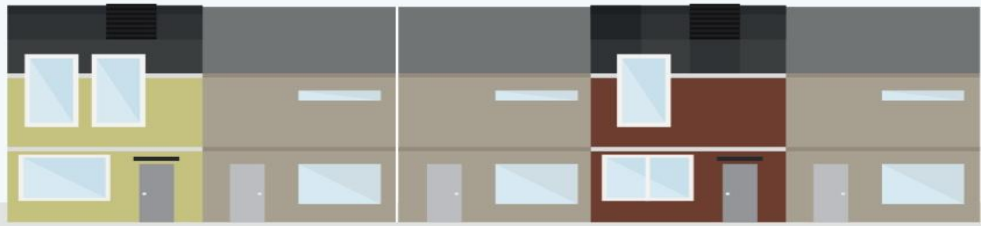
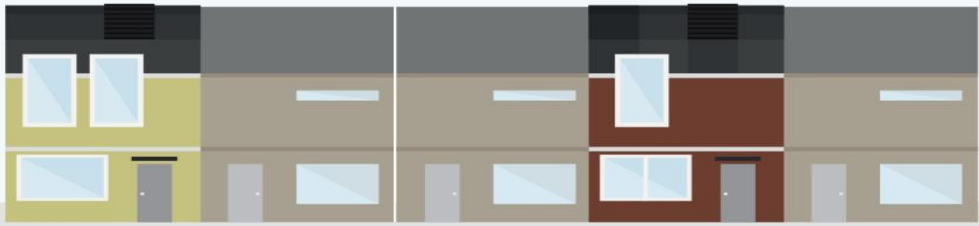
MORE — CONNECT



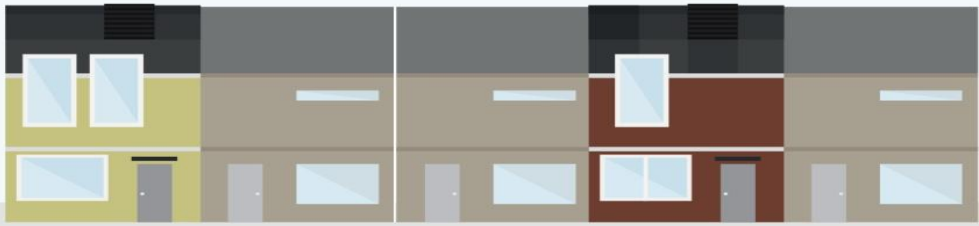
LATVIAN CASE BUILDING

Dr.sc.ing. Anatolijs Borodinecs



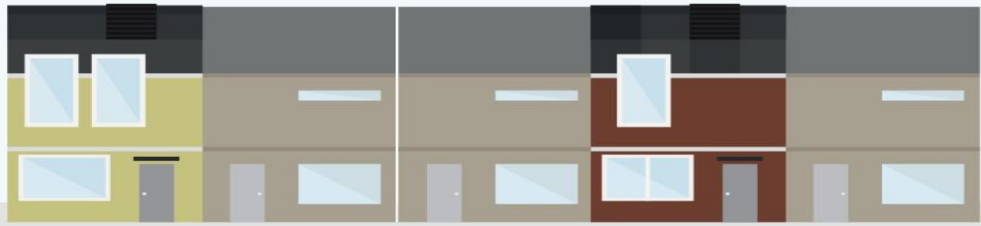
LOCATION

- Saules iela 4a;
- City of Cesis;
- 57°18'21.32"Z 25°17'44.29"A;
- Heating season – 208 days;
- Heating season temperature – (-1,1°C);

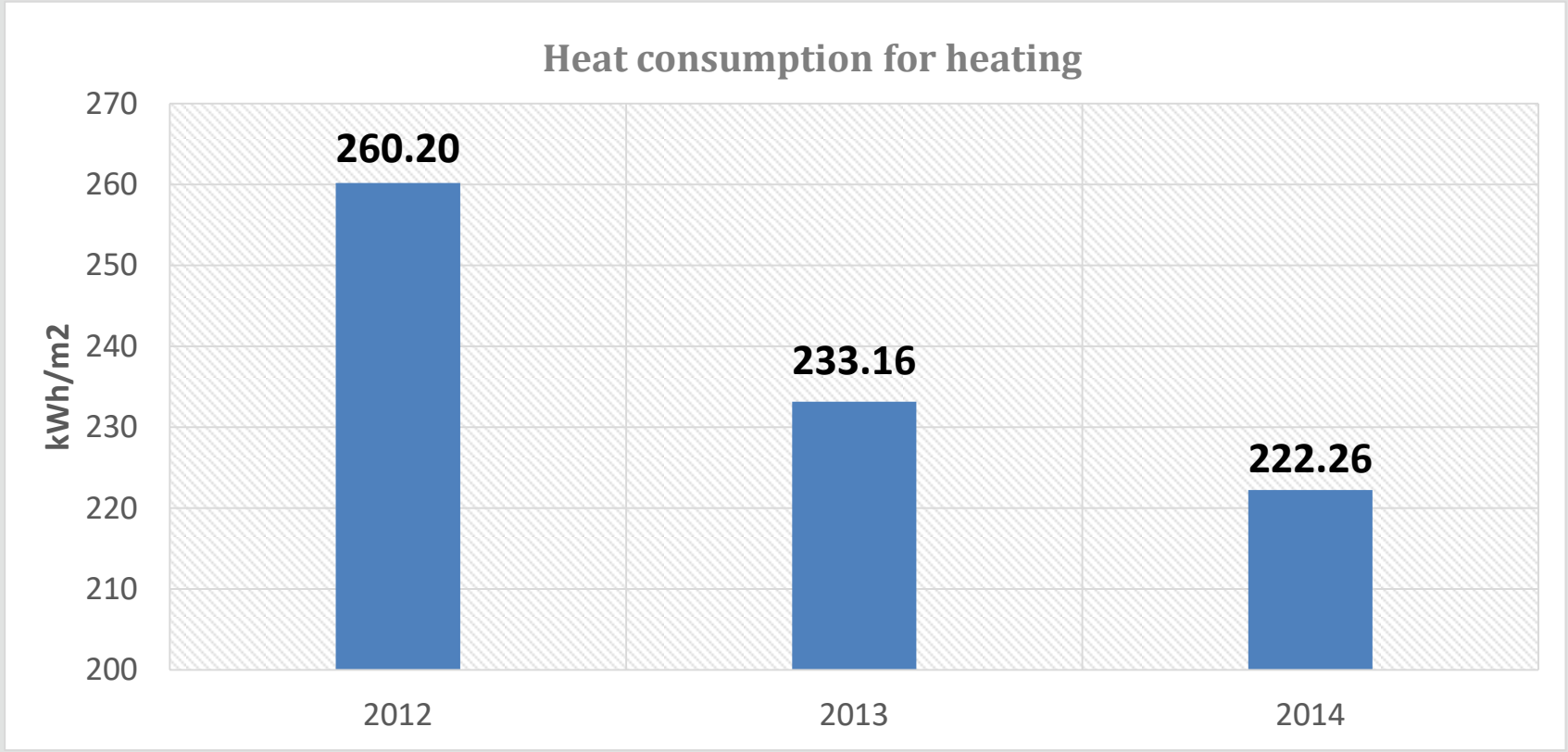


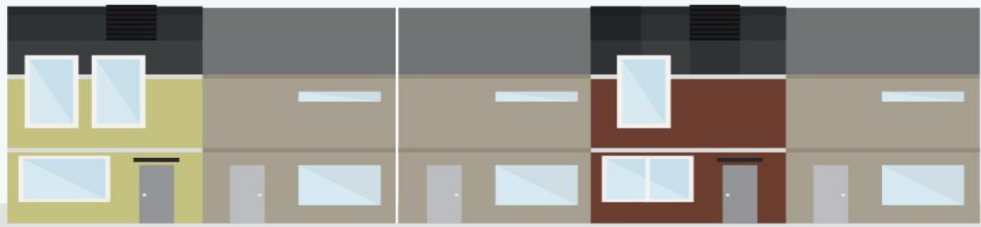
BUILDING

- Typical soviet building;
- Silicate brick building;
- Widely constructed in suburban and remote areas;
- Limited possibilities to apply for EU funds due to building size;
- Extra construction costs due to building remote location;
- Area – 559 m^2;



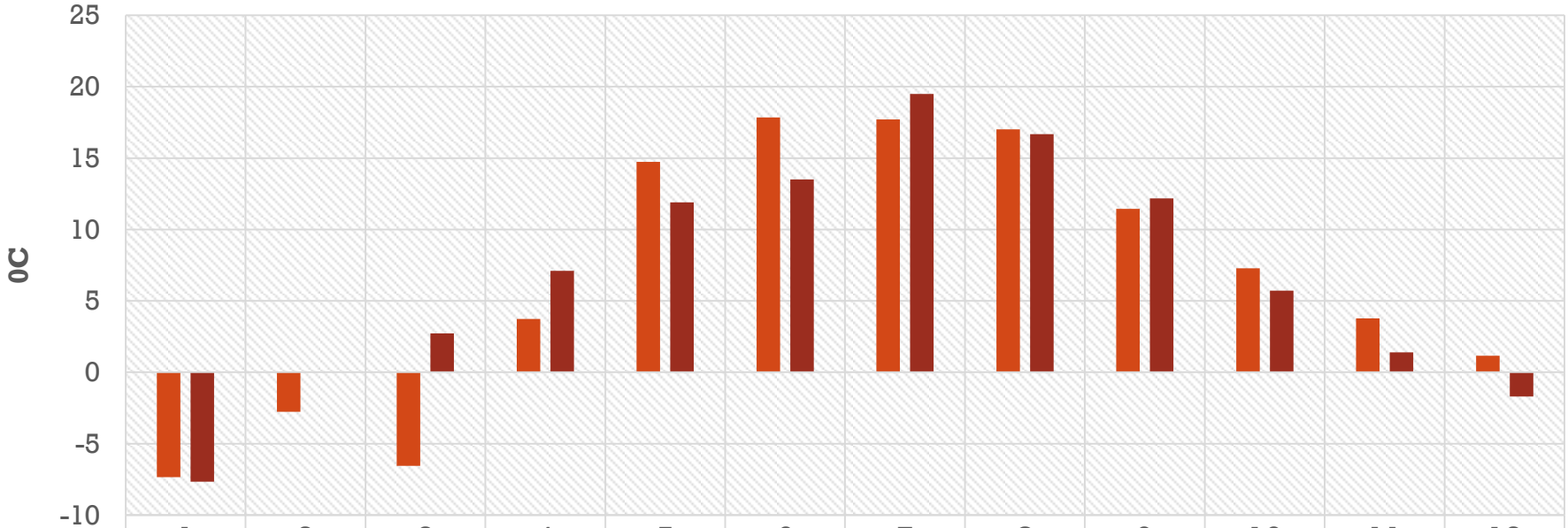
HEAT CONSUMPTION



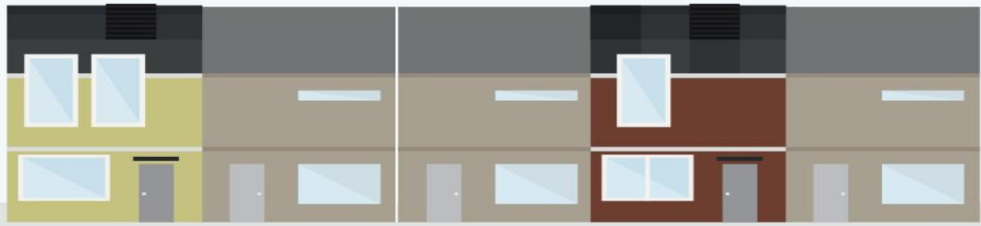


CLIMATE

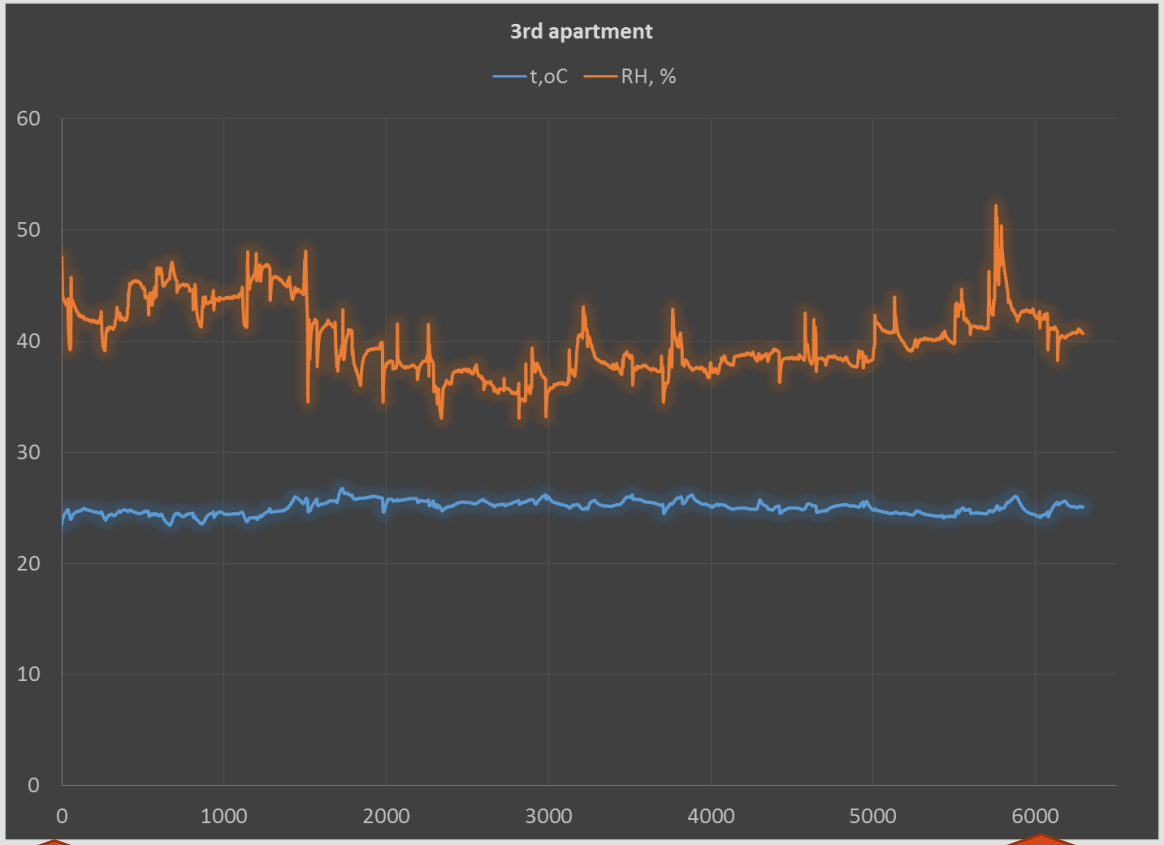
Monthly Average Temperatures



	1	2	3	4	5	6	7	8	9	10	11	12
2013	-7.35	-2.77	-6.56	3.74	14.74	17.85	17.71	17.01	11.44	7.29	3.77	1.16
2014	-7.67	0	2.72	7.1	11.9	13.5	19.49	16.68	12.17	5.71	1.4	-1.7

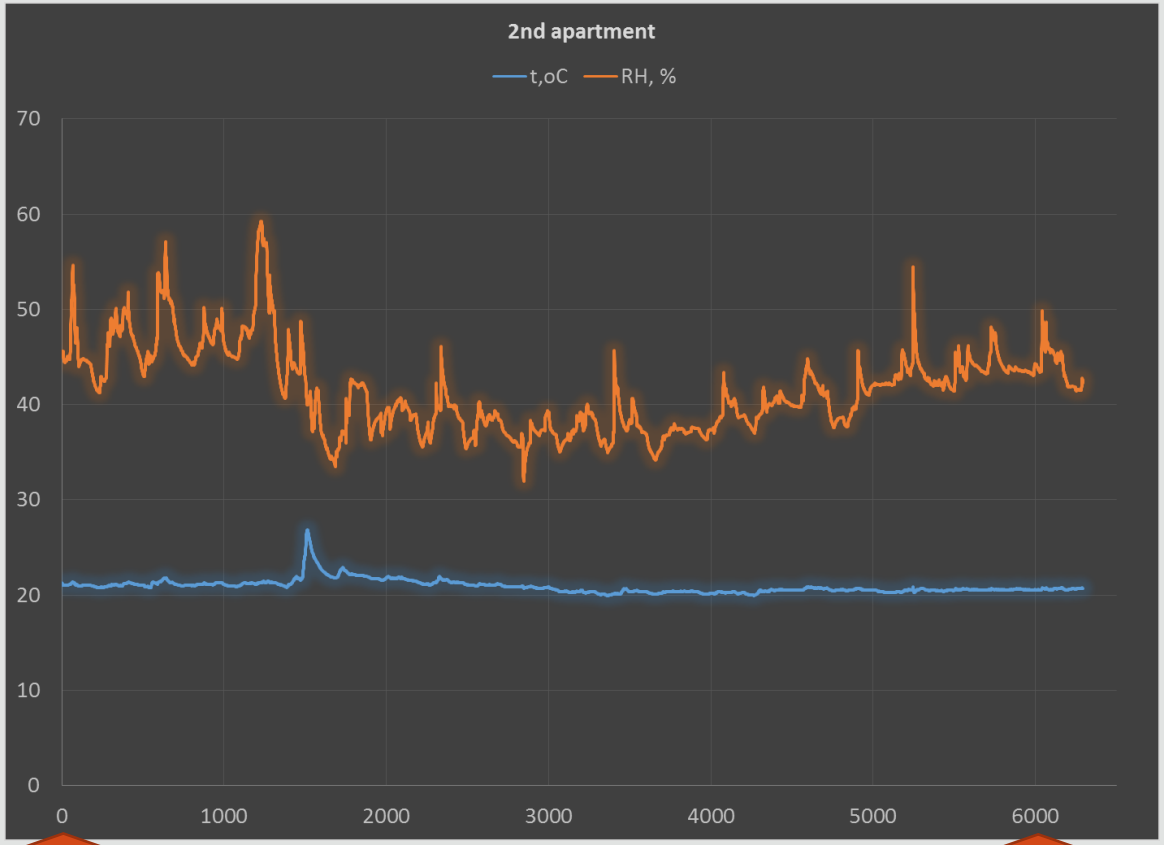


IAQ MEASUREMENT BEFORE RENOVATION



November 16,2015

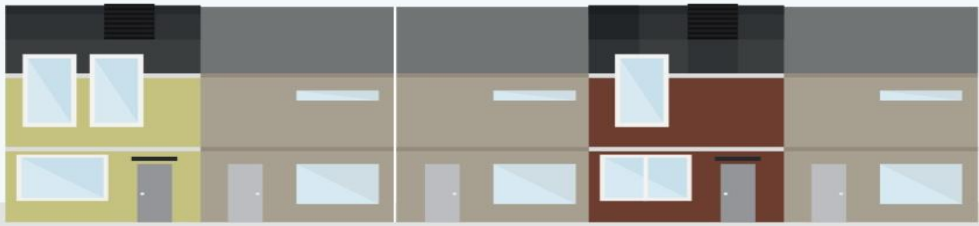
December 8,2015



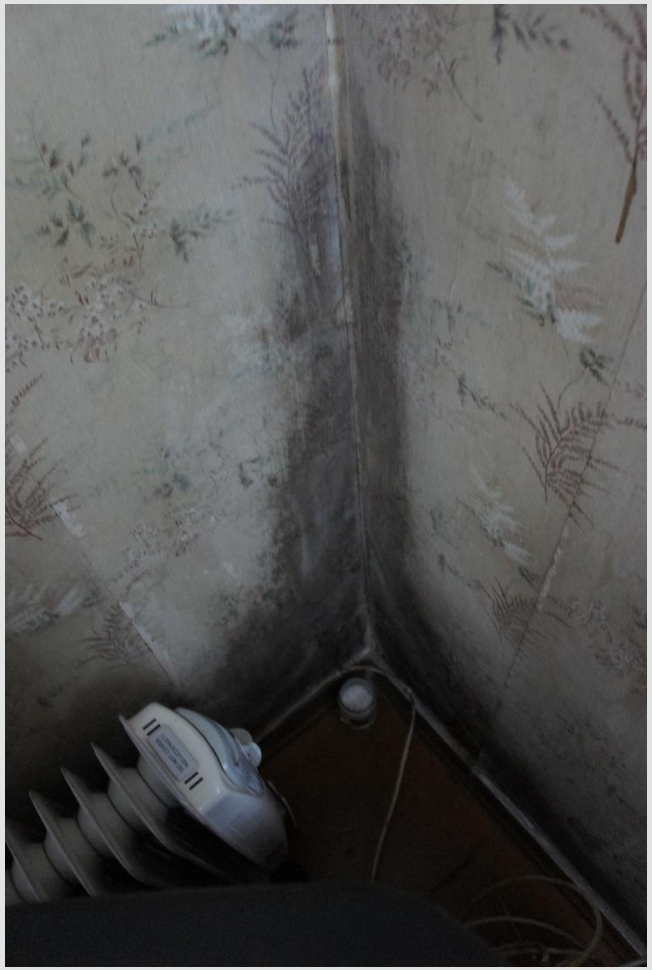
November 16,2015

November 16,2015

MORE — CONNECT

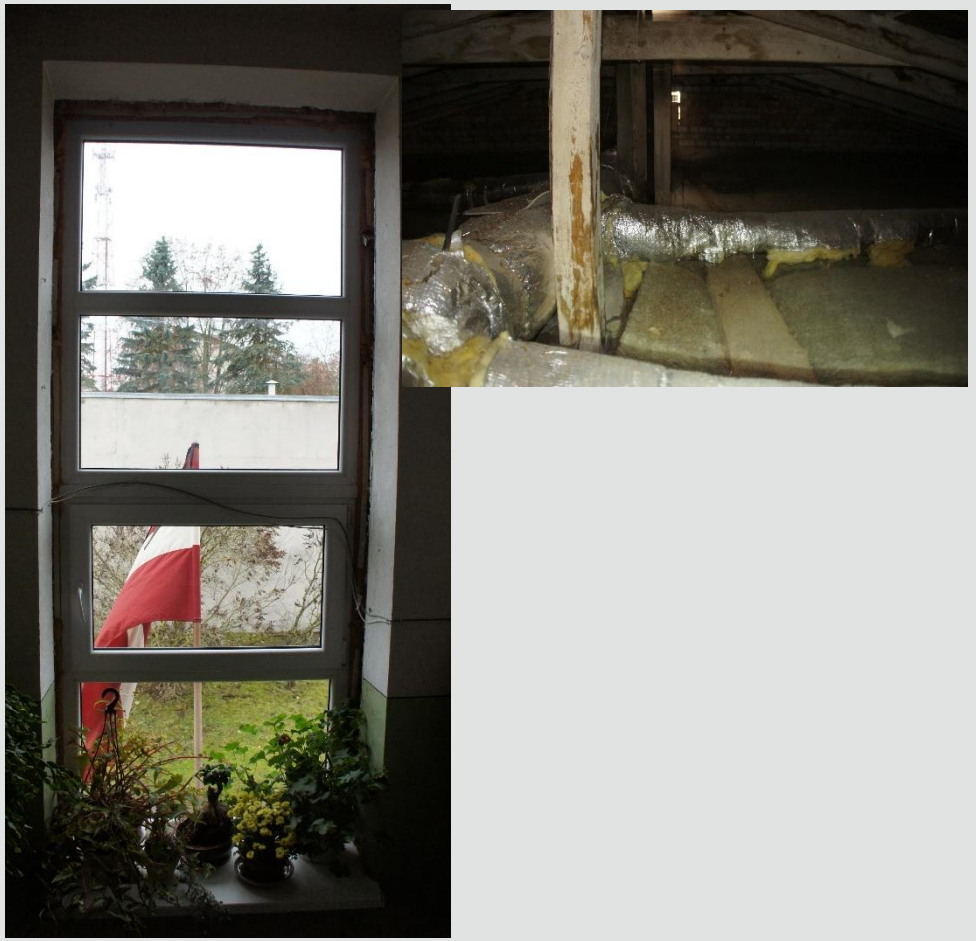


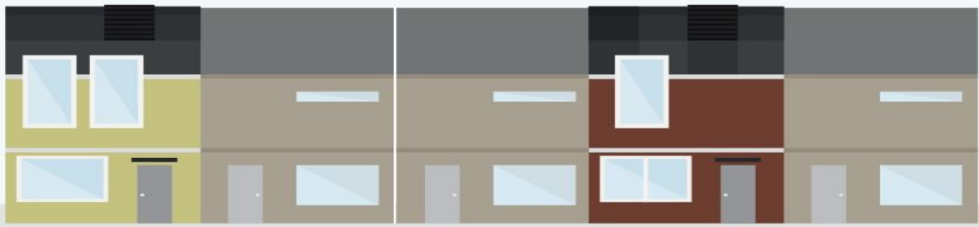
MOLD



CONSTRUCTIVE DEFECTS

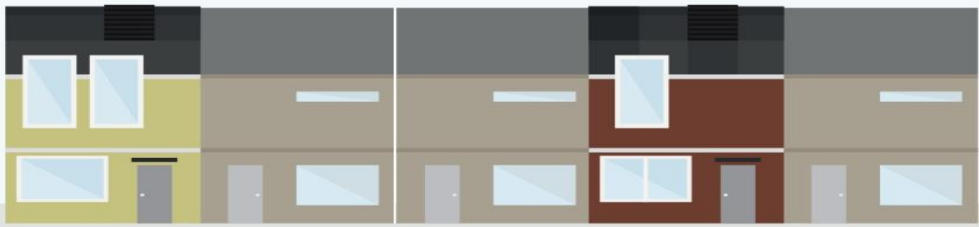
CONSTRUCTION QUALITY



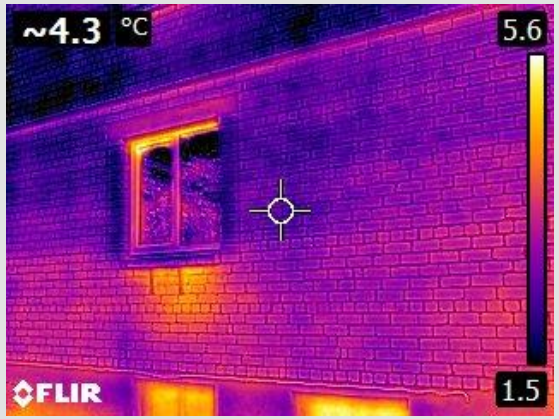


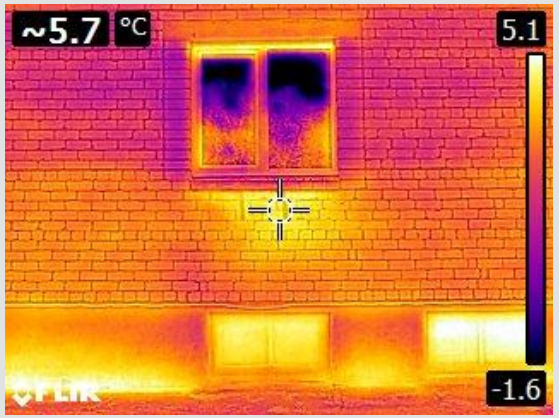
BUILDING AUDIT

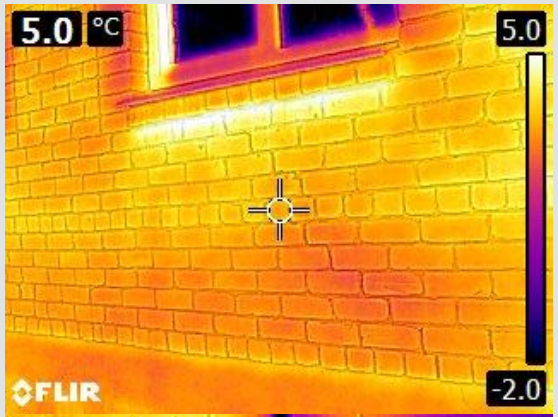
- IAQ measurements;
- Thermal imaging;
- Blower-door test;
- 3D scanning

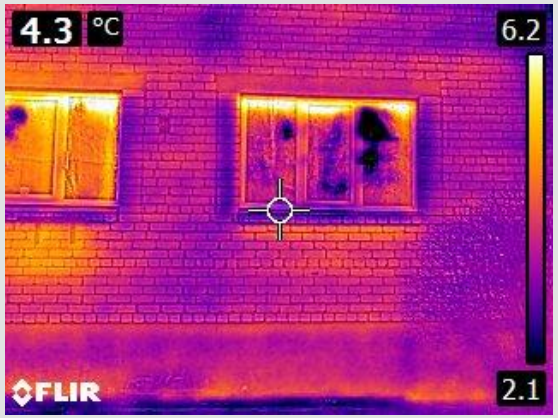


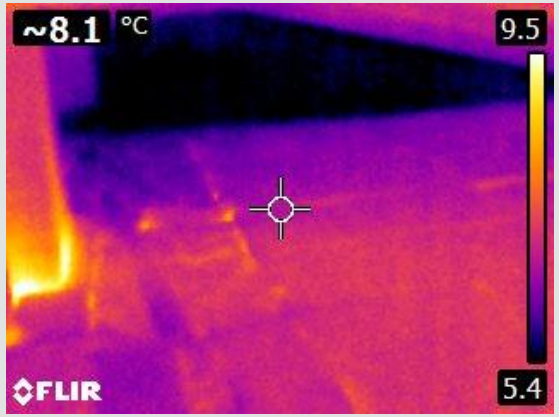
THERMAL IMAGING

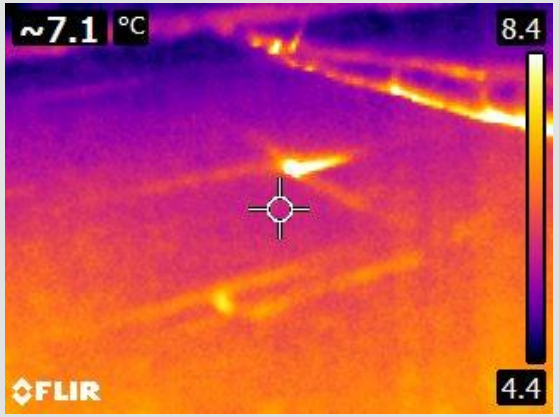


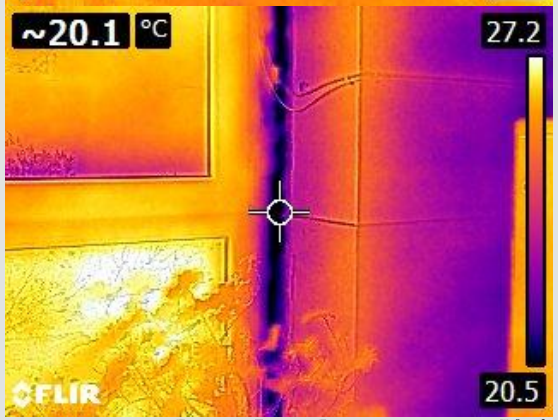




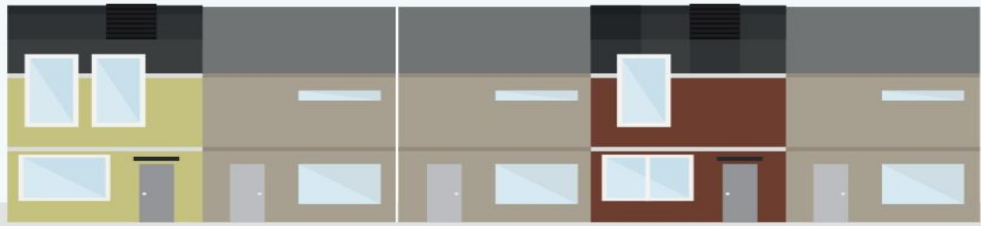


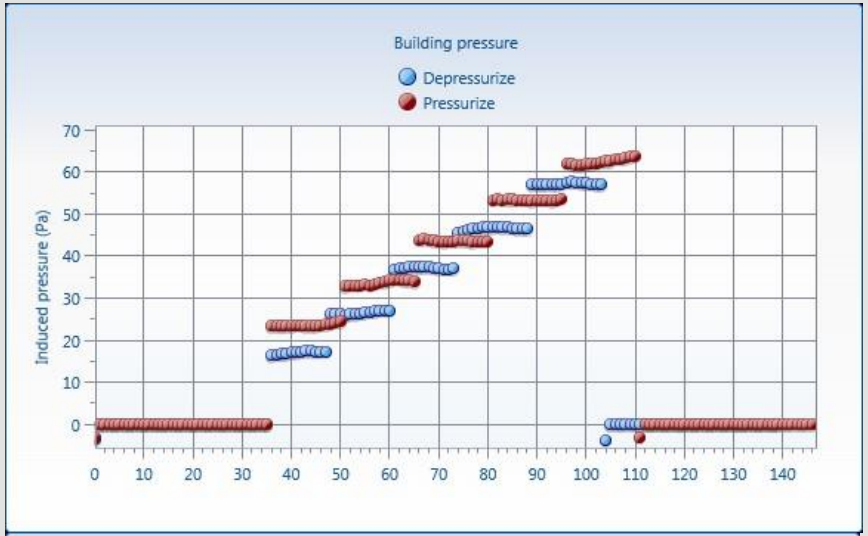
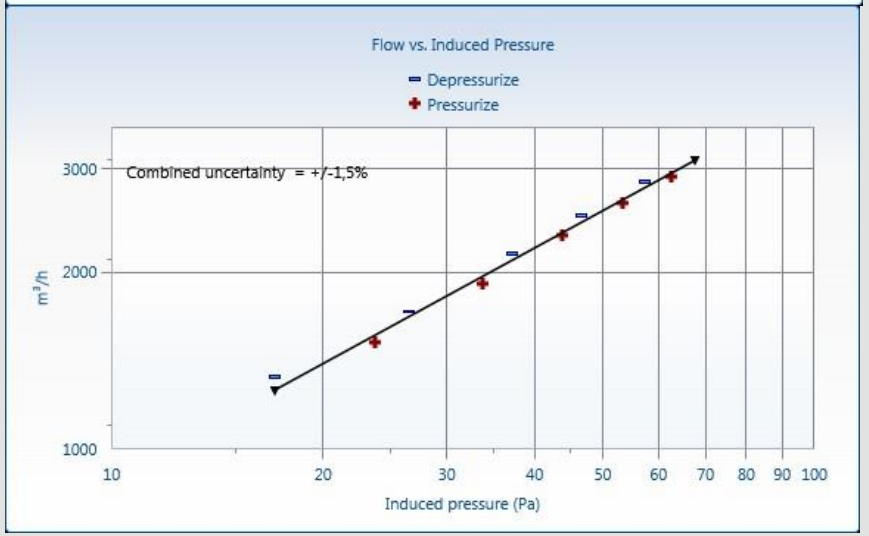






Done on December 8, 2015. Indoor air temperature +22°C, outdoor +3°C. Will be repeated under better conditions



AIR TIGHTNESS

Results	
Air flow at 50 Pa, V_{50} [m³/h]	2550
Air changes at 50 Pa, n_{50} [/h]	4,40
Permeability at 50 Pa, q_{50} [m³/h/m²]	4,803
Specific leakage at 50 Pa, w_{50} [m³/h/m²]	11,808
Effective leakage area at 50 Pa, A_L [cm²]	777,5
Equivalent leakage area at 50 Pa, A_L [cm²]	1275
Normalized Leakage Area [cm²/m²]:	1,464