SUNShINE
SAVE YOUR BUILDING
BY SAVING ENERGY

Deep renovation of multifamily residential buildings using Energy Performance Contracting

RENOVATION PLANS

SUMMARY REPORT

Project SUNShINE: Save your bUildiNg by SavINg Energy towards 202020m^2 of deeply renovated multifamily residential buildings. - Grant 649689

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More Information www.sharex.lv

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Funding for Future

Ekodoma

Salaspils Siltums

Eco.NRG

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1. INTRODUCTION

The project field manager is the person in charge of putting together a single building renovation plan, gathering information and documentation from the design and engineering teams. This development plan goes through a two-stage approval process. The design team approves the first draft plan during one of the progress review project workshops This document, which includes a detailed budget estimates, is sent for approval to ESCO management. The final budget estimates are double-checked for feasibility. The plan is then sent for approval to the building authority for construction permit. This task is complete once the municipal building department issues the construction permit.

This report provides a list of the design plans developed in SUNShINE and when applicable the approval date.

2. SUNSHINE DEVELOPMENT PLANS

As part of SUNShINE, **five** projects have been fully finalized and already under exploitation. Then, there are **two** projects, where a draft EPC contract has been presented to the apartment owners. At this stage, the ESCOs are marketing and negotiating their offers for convincing apartment owners. This negotiation is sometimes a lengthy process, where after a first negative answer a "*resting*" period of few months maybe necessary before re-opening the negotiation. Then there are 10 additional projects fully developed with design documentation approved by the construction boards. For the remaining buildings in the SUNShINE portfolio, the project design documentation is either waiting for approval at the construction board or is under preparation (See Table 2.1 for the list of buildings and status on renovation plans)

Table 2.1. Status on Renovation Plans

	Municipality	Address	Approval date of the detailed renovation plan	Project status	Likelihood of implementation (by next year)	Likelihood of implementation (by next 2 years)
1	Salaspils	7 Meža Street, Salaspils	22.06.2016	Completed	-	-
2	Salaspils	2 Daugavas Street	20.03.2017	Completed	-	-
3	Salaspils	1 Maskavas Street	30.05.2018	Completed	-	-
4	Riga	23 Bērzupes Street	25.05.2018	Completed	-	-
5	Dobele	14 Skolas Street	11.09.2017	Completed	-	-
6	Riga	Lielupes street 62	05.07.2018	Draft EPC	75%	90%
7	Līvāni	15 Lāčplēša street	11.09.2019	Draft EPC	75%	95%
8	Riga	Stirnu 36 Vesetas 25	N/A	Pre-EPC	45%	70%
9	Riga	36 Stirnu Street	N/A	Pre-EPC	50%	75%
10	Riga	38 Stirnu Street	N/A	Pre-EPC	50%	75%
11	Kadaga	9 Kadaga Street	N/A	Pre-EPC	50%	75%
12	Gulbene	8 Bišu Street	N/A	Pre-EPC	50%	75%
13	Dobele	24 Skolas Street	10.04.2017	Pre-EPC	50%	90%
14	Dobele	12 Muldavas Street	17.04.2017	Pre-EPC	50%	75%
15	Dobele	2 Meža Street	N/A	Pre-EPC	30%	95%
16	Dobele	52 Zaļā Street	N/A	Pre-EPC	20%	50%
17	Salaspils	6 Institūta Street	04.06.2019	Pre-EPC	30%	80%
18	Salaspils	17 Miera Street	20.05.2016	Pre-EPC	0%	45%
19	Salaspils	19 Miera Street	16.11.2016	Pre-EPC	0%	45%
20	Salaspils	3 Vītola Street	18.05.2018	Pre-EPC	30%	80%
21	Salaspils	16/5 Miera Street	N/A	Pre-EPC	0%	45%
22	Salaspils	22 Miera Street	N/A	Pre-EPC	0%	45%
23	Salaspils	7/1 Dienvidu Str.	N/A	Pre-EPC	30%	80%
24	Salaspils	2 Lazdu Street	N/A	Pre-EPC	30%	80%
25	Salaspils	3 Enerģētiķu Str.	N/A	Pre-EPC	30%	80%
26	Salaspils	7/2 Skolas Street	N/A	Pre-EPC	30%	80%
27	Salaspils	7A Meža Street	N/A	Pre-EPC	0%	45%
28	Līvāni	128 Rīgas street	6.03.2019	Pre-EPC	60%	85%
29	Līvāni	6 Vecticībnieku street	17.05.2019	Pre-EPC	60%	85%
30	Līvāni	37 Rīgas street	5.02.2019	Pre-EPC	60%	85%
31	Līvāni	8 Kurzemes street	15.03.2019	Pre-EPC	60%	85%

N/A – Technical projects are ready or under preparation but not approved yet by the municipal construction board.

The whole renovation plan and technical documentation consists of several documents: energy audit, technical and structural survey, architectural design and HVAC designs (See figure 2.1)

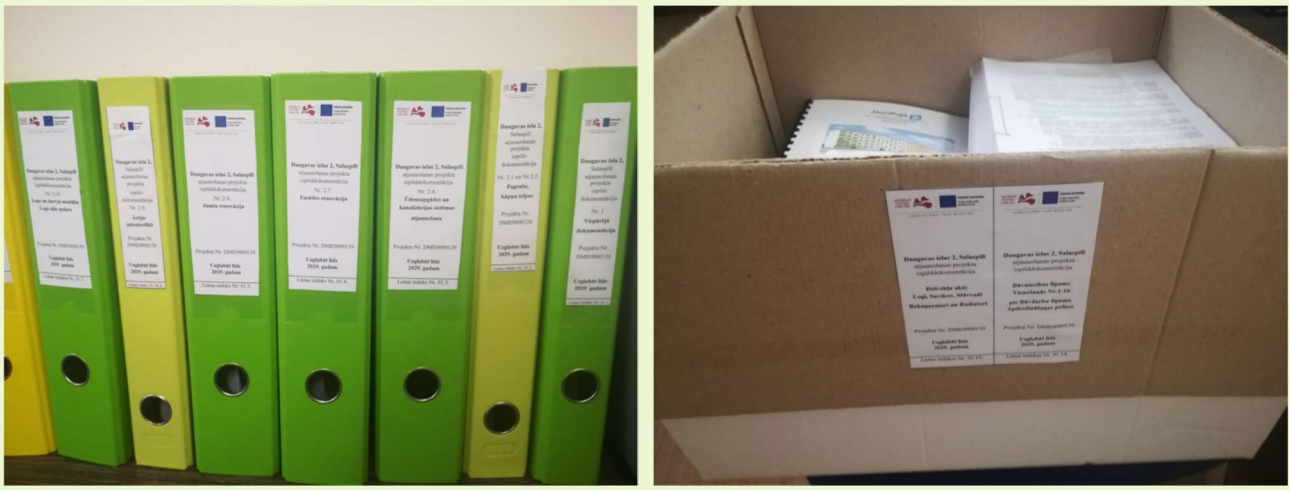


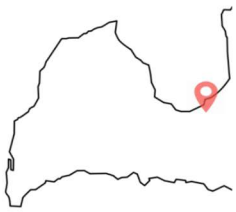
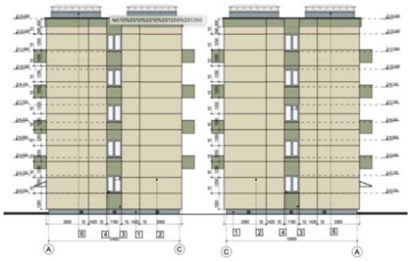
Figure 1. Example of technical documentation for one building (2 Daugavas Street, Salaspils).

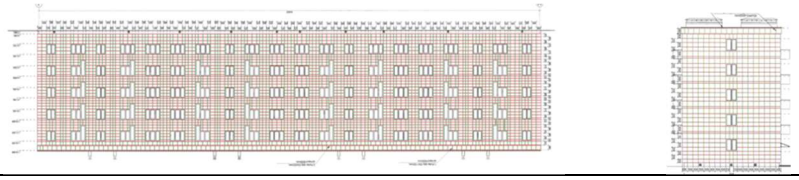
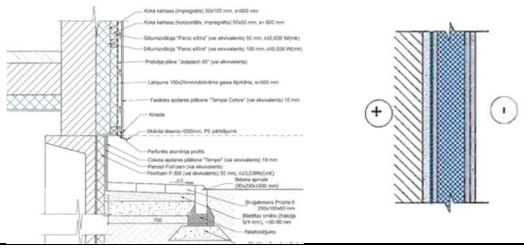
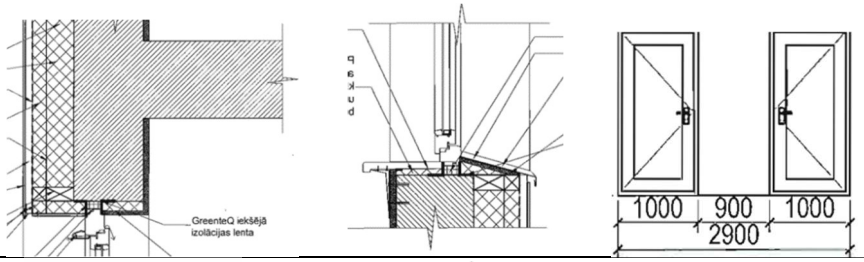
3. EXAMPLES OF LAYOUT OF TECHNICAL PROJECTS

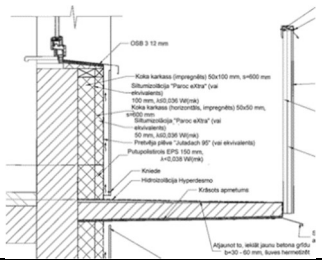
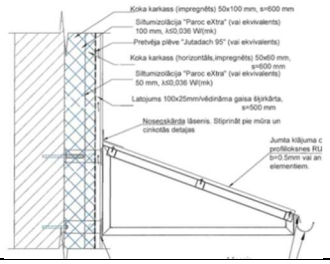
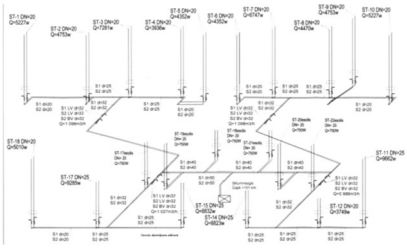
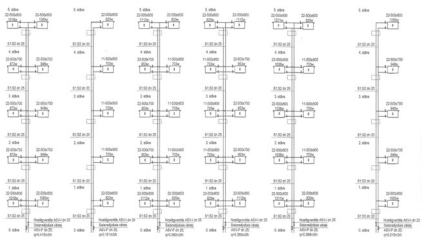
In the following sections, as an example of detailed technical design, one case study from each project partner engaged in project development is shown. Every partner in SUNShINE has closely cooperated and followed up the quality and details in projects, to ensure high quality of the documentation and optimum solutions for the projects.

COMPREHENSIVE BUILDING ENERGY RENOVATION IN RIGA

Technical project developed by RenEsco

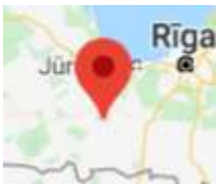
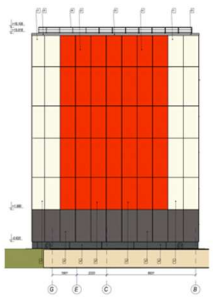
One of the building in Riga, 23 Berzupes Street		Designs
	**Building type:** 467 series **Floors:** 5 **Staircases:** 5 **Total area:** 3433 m² **Households:** 60 **Year of construction:** 1970	

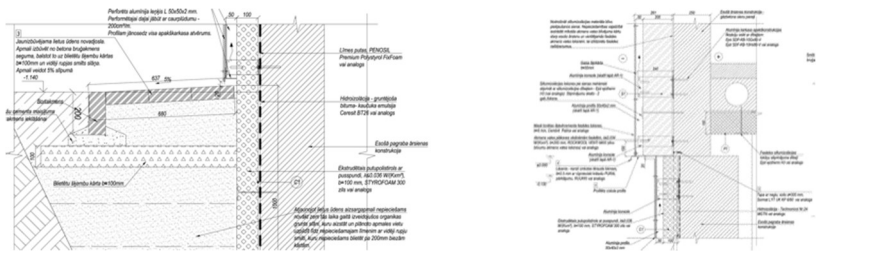
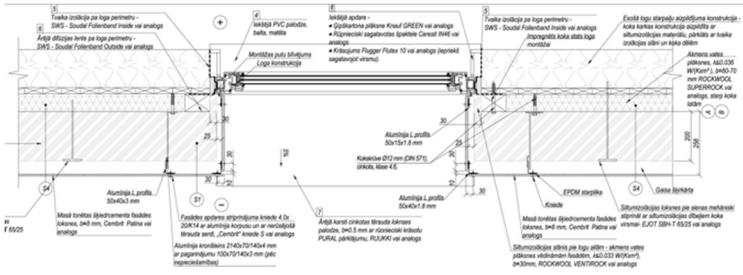
Designs		
▪ Thermal insulation of all building envelope (ventilated façade with vertical wooden frame) with 100mm and 50mm rock wool insulation plates ▪ λ ≤ 0.036 W/mK		
▪ Hydro insulation of base and insulation with extracted foam polystyrene 50mm λ ≤ 0.038 W/mK		
▪ Replacement of original wooden windows to triple glazed windows with U-value 1,1 W/m²K ▪ Replacement of original metal doors to new insulated doors with U-value 1,8 W/m²K		
▪ Roof insulation with 200mm thick insulation layer ▪ Basement ceiling insulation with 100mm thick insulation layer		

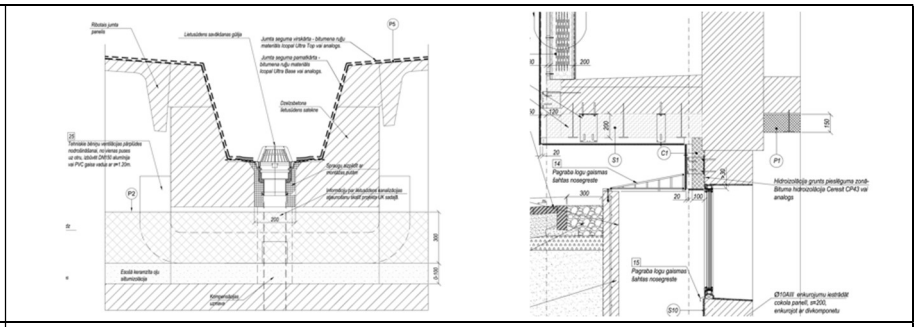
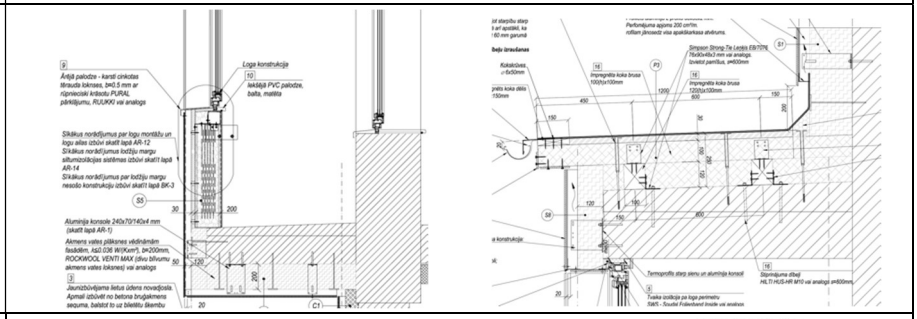
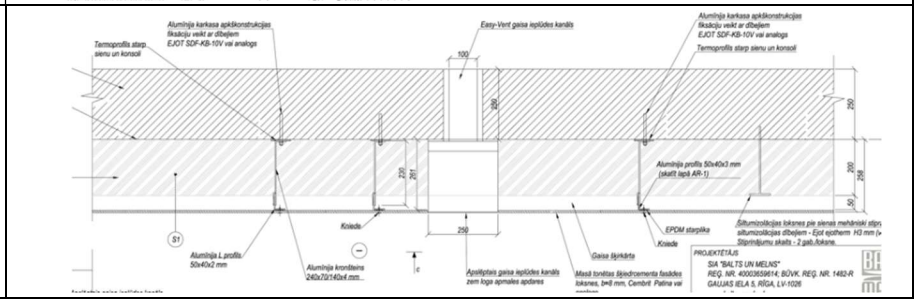
▪ Structural improvements (balcony slabs reinforcement, roof cover and drainage, etc.)		 
▪ New heating and hot water system and ventilation system repairs		 

COMPREHENSIVE BUILDING ENERGY RENOVATION IN DOBELE

Technical project developed by eco.NRG

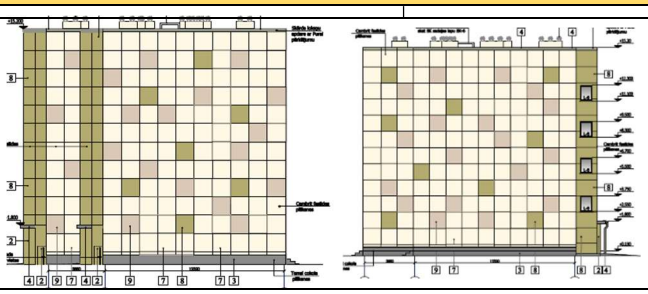
One of the building in Dobele, Skolas 14		Designs
	**Building type:** 103 series **Floors:** 5 **Staircases:** 5 **Total area:** 4848 m² **Households:** 70 **Year of construction:** 1976	

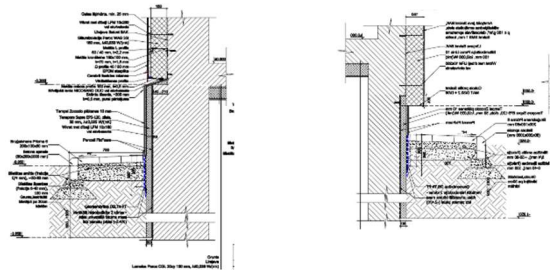
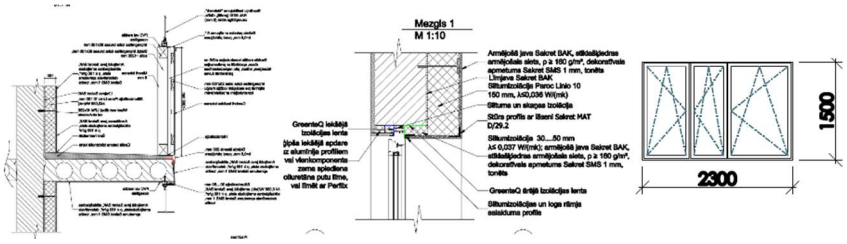
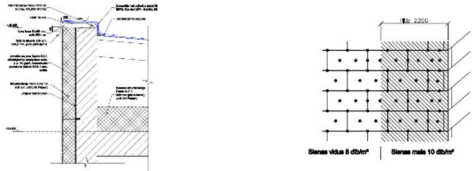
Designs		
▪ Thermal insulation of all building envelope (ventilated façade with vertical aluminium frame) with 200mm rock wool insulation plates ▪ λ ≤ 0.036 W/mK		
▪ Hydro insulation of base and insulation with extracted foam polystyrene 100mm ▪ λ ≤ 0.038 W/mK		
▪ Replacement of original wooden windows to triple glazed windows with U-value 1,1 W/m²K ▪ Replacement of original metal doors to new insulated doors with U-value 1,8 W/m²K		

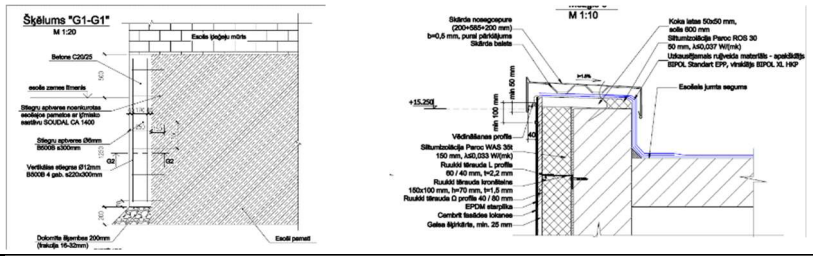
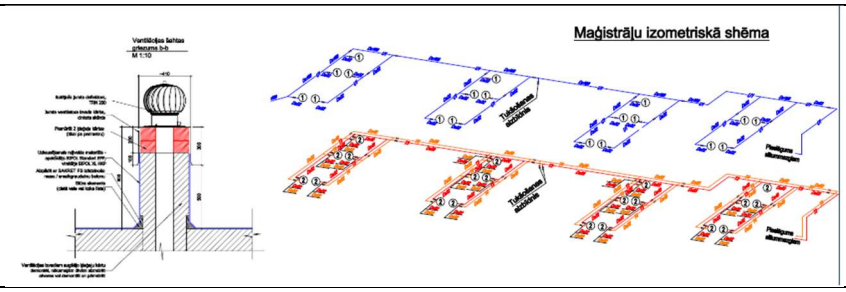
▪ Attic insulation with 300mm thick insulation layer ▪ Basement ceiling insulation with 150mm thick insulation layer		
▪ Enclosed and glazed balconies, roof cover and drainage reconstruction		
▪ New heating and hot water system and new fresh air supply system		

COMPREHENSIVE BUILDING ENERGY RENOVATION IN SALASPILS

Technical project developed by Salaspils Siltums

One of the building in Salaspils, Meza 7		Designs
	Building type: 103 series **Floors:** 5 **Staircases:** 4 **Total area:** 3073 m² **Households:** 48 **Year of construction:** 1982	

Designs		
▪ Thermal insulation of all building envelope with 150mm (façade), 100mm (in loggias) and 50mm (pilasters) rock wool insulation plates with decorative plastering ▪ λ ≤ 0.036 W/mK		
▪ Hydro insulation of base and insulation with extracted foam polystyrene 50mm λ ≤ 0.039 W/mK		
▪ Replacement of original wooden windows to triple glazed windows with U-value 1,0 W/m²K ▪ Replacement of original metal doors to new insulated doors with U-value 1,8 W/m²K ▪ Installation of frameless sliding loggias glazing		
▪ Attic insulation with 300mm thick ecowool insulation layer ▪ Basement ceiling insulation with 100mm thick insulation layer		

▪ Structural improvements (basement reinforcement, roof cover and drainage, etc.)		
▪ New heating and hot water system and ventilation system repairs		

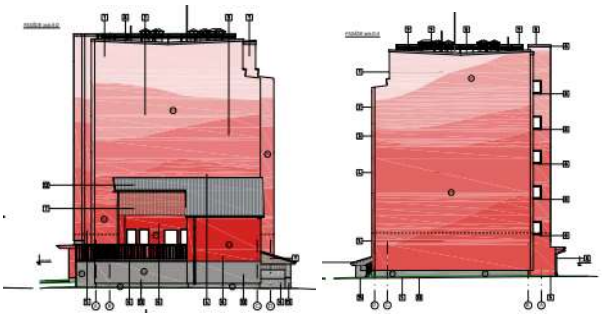
COMPREHENSIVE BUILDING ENERGY RENOVATION IN LĪVĀNI

Technical project developed by ESEB

One of the building in Līvāni, Rīgas street 128

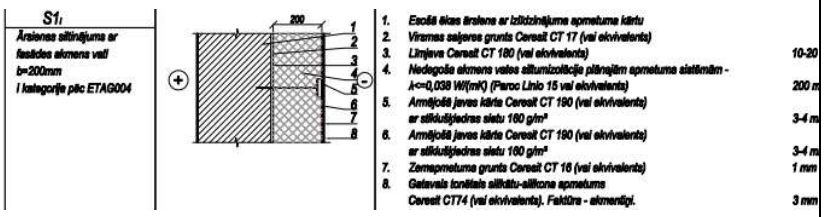
Building type: 1122 series
Floors: 5
Staircases: 4
Total area: 3764 m²
Households: 51
Year of construction: 1960

Designs

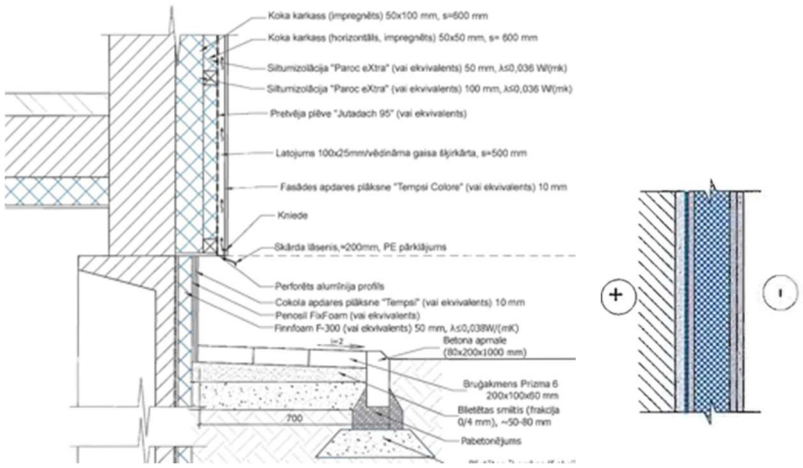


Designs

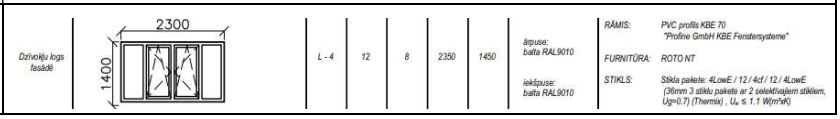
- Thermal insulation of all building envelope (with vertical wooden frame) with 200 mm and 50 mm rock wool insulation plates
- λ ≤ 0.038 W/mK

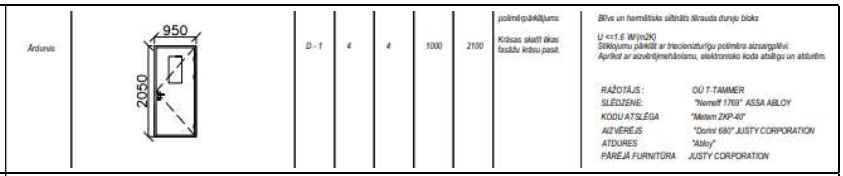
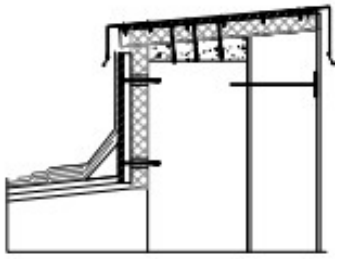
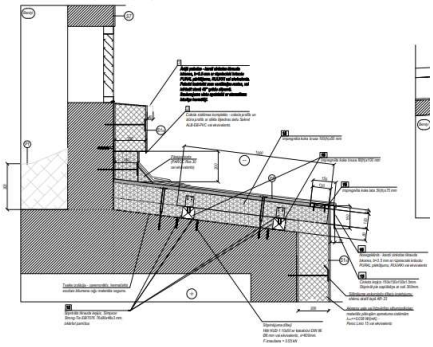
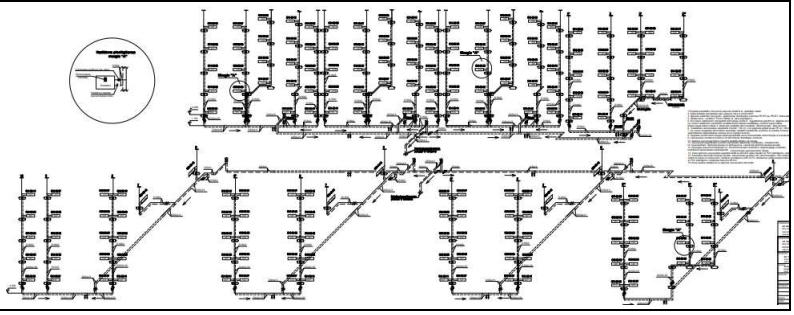


- Hydro insulation of base and insulation with extracted foam polystyrene 40mm λ ≤ 0.036 W/mK



- Replacement of original wooden windows to triple glazed windows with U-value 1,1 W/m²K



▪ Replacement of original metal doors to new insulated doors with U-value 1,6 W/m²K		
▪ Roof insulation with 300mm thick insulation layer ▪ Basement ceiling insulation with 200mm thick insulation layer		
▪ Structural improvements (balcony slabs reinforcement, roof cover and drainage, etc.)		
▪ New heating and hot water system and ventilation system repairs