



DAY

NIGHT





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Kazakhstan



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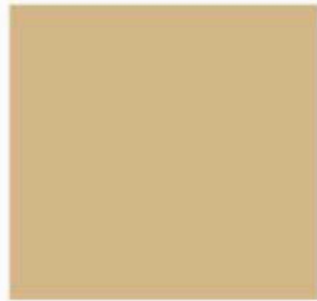
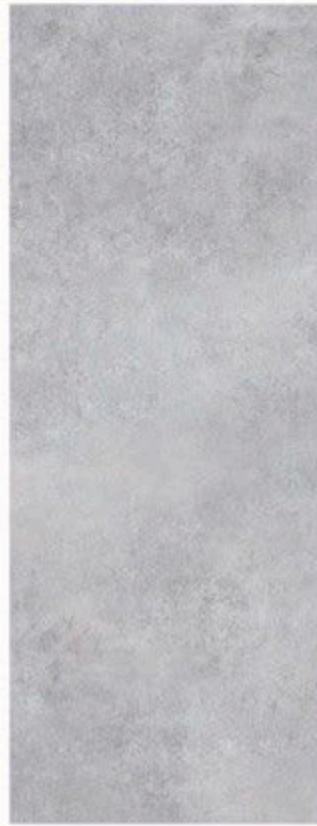


Shulmina Alexandra

Kazakhstan



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PANTONE
Cool Grey
6 C

PANTONE
Cool Gray
3 C

PANTONE
Cloud Dancer
11-4201

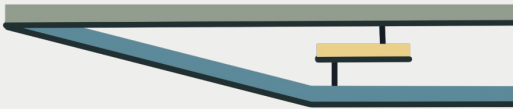
PANTONE
Cool Blue
14-4317

PANTONE
Taos Taupe
15-1119

PANTONE
Spinach Green
16-0439



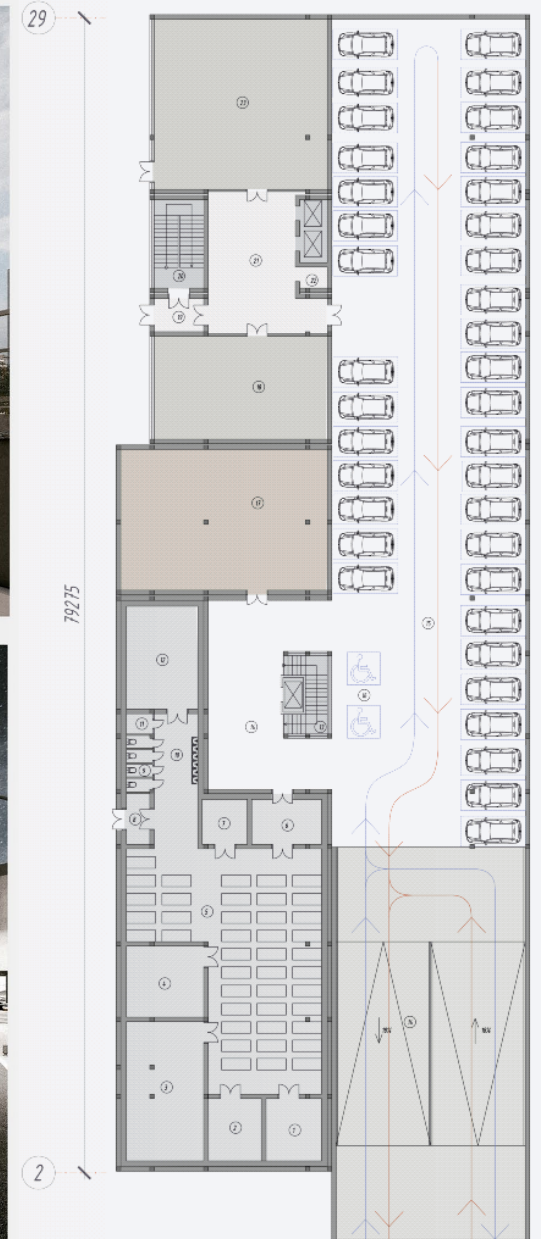
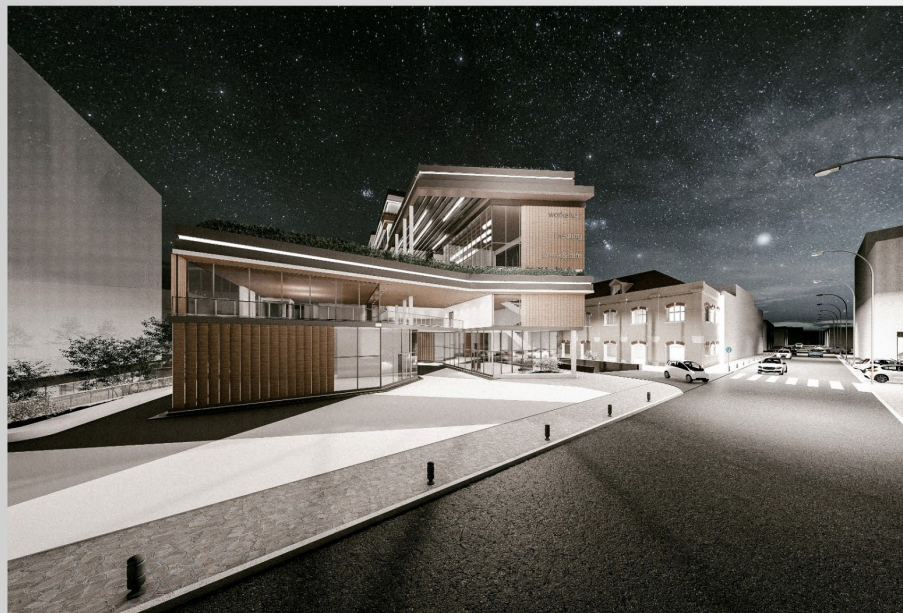
- 1st level
- 2nd level
- 3rd level



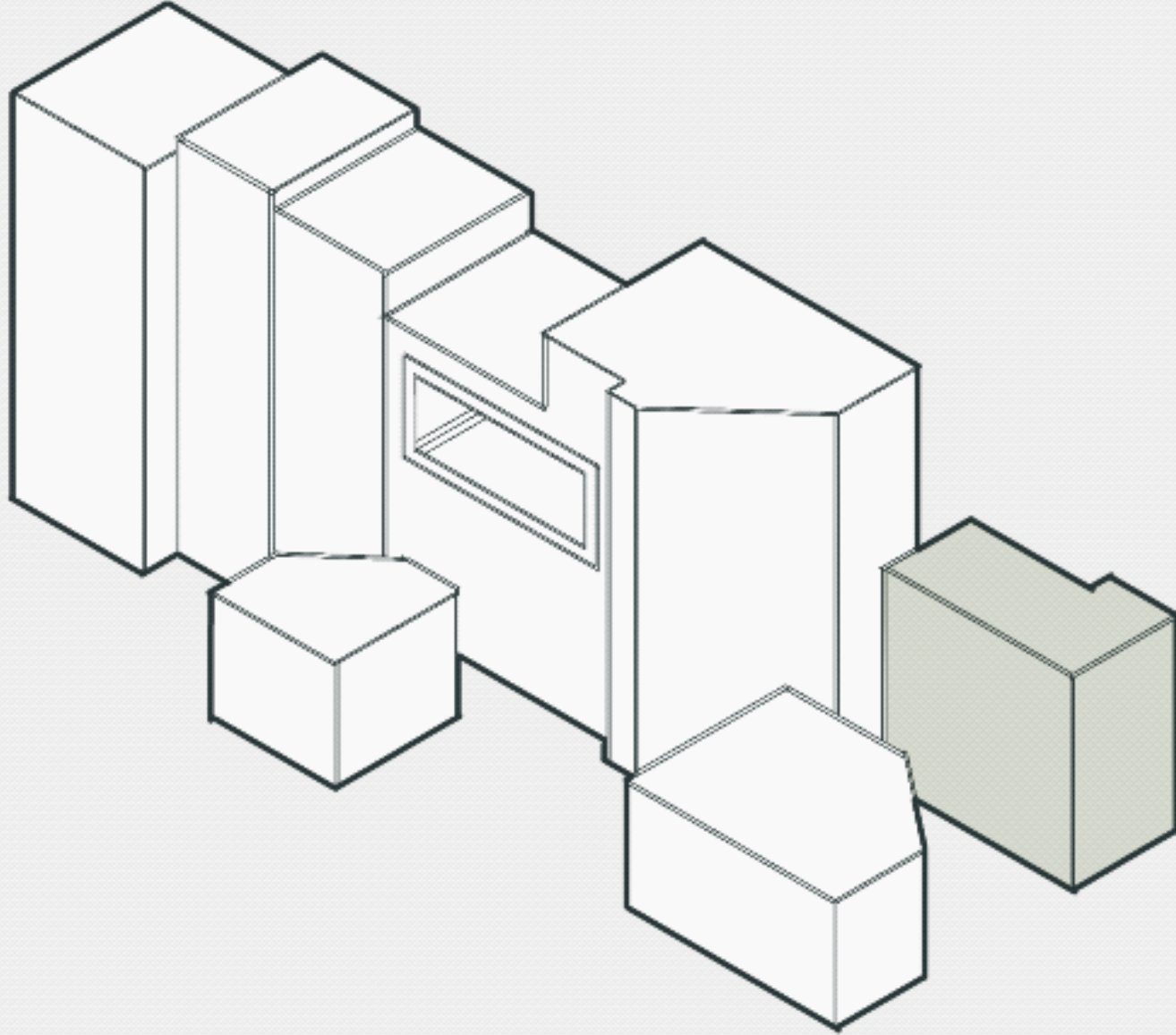


project visualization

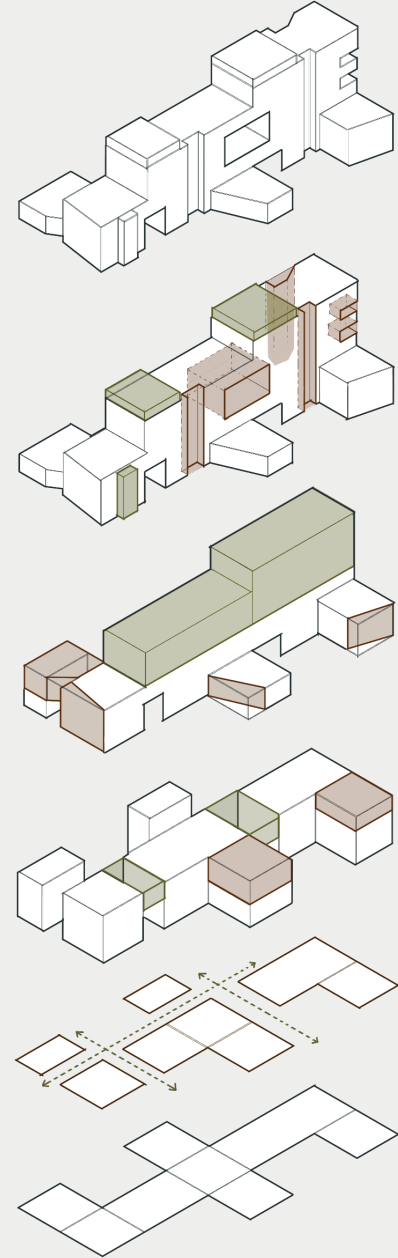
parking



blocking scheme



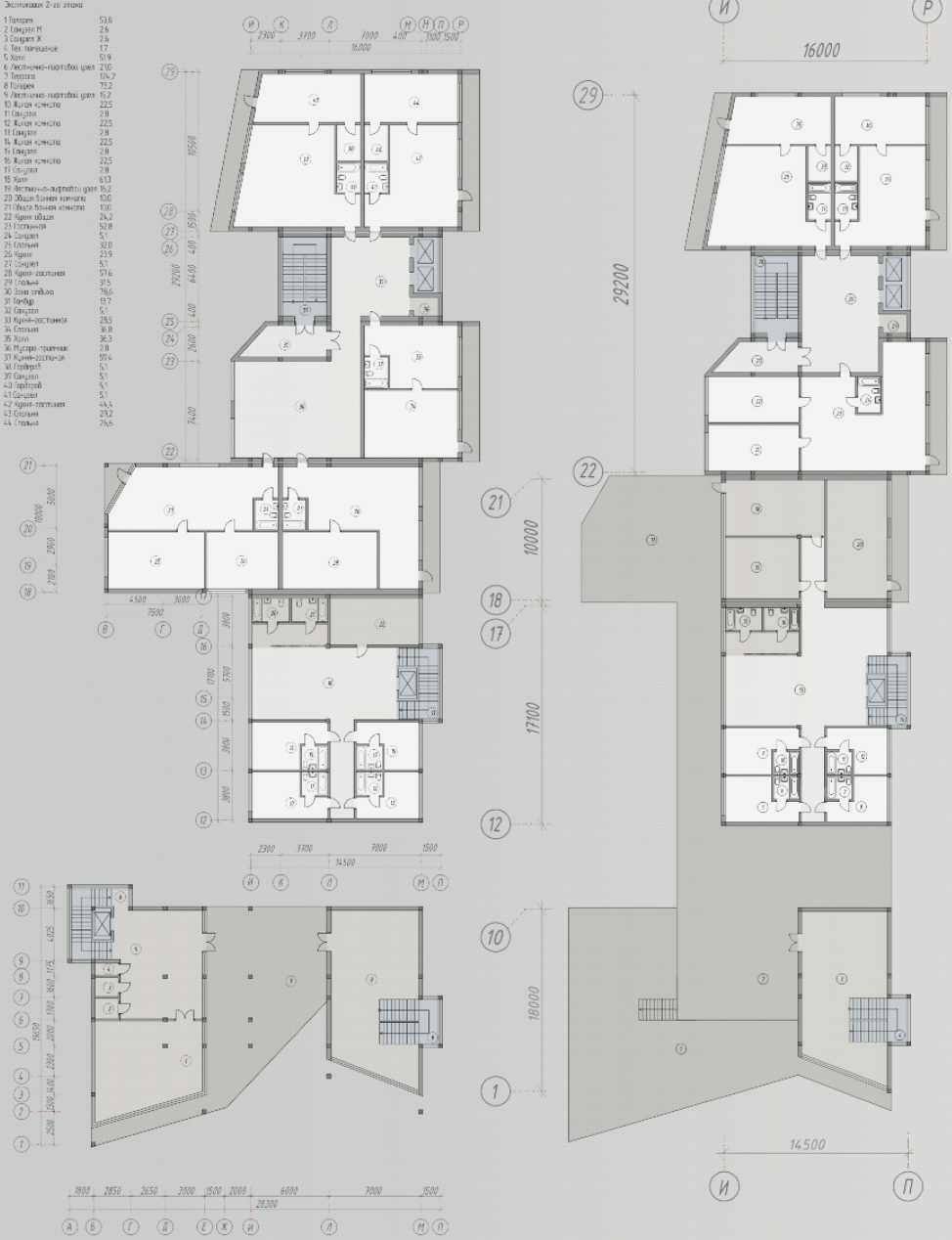
shaping scheme



80% private apartments

Экспликация 2-го этажа

- 1 Балкон 51,6
- 2 Спальня М 2,4
- 3 Спальня Х 2,4
- 4 Ван. помещение 17
- 5 Холл 51,9
- 6 Кухонно-приготов. щит 210
- 7 Гостиная 136,2
- 8 Балкон 73,2
- 9 Кухонно-приготов. щит 225
- 10 Кухня 28
- 11 Спальня 28
- 12 Кухня 222
- 13 Спальня 28
- 14 Кухня 222
- 15 Спальня 28
- 16 Кухня 222
- 17 Балкон 74
- 18 Холл 61,3
- 19 Кухонно-приготов. щит 163
- 20 Общ. зона кухни 100
- 21 Общ. зона кухни 100
- 22 Кухня общ. 49,2
- 23 Гостиная 52,8
- 24 Спальня 51
- 25 Гостиная 30,8
- 26 Холл 21,9
- 27 Спальня 51
- 28 Кухня общ. 78,6
- 29 Ванна 17,7
- 30 Спальня 51
- 31 Кухня общ. 80,8
- 32 Гостиная 36,3
- 33 Холл 28
- 34 Кухня общ. 92,4
- 35 Гостиная 51
- 36 Спальня 51
- 37 Холл 44,4
- 38 Кухня общ. 29,2
- 39 Гостиная 78,6



Скитом-126м2
Сс/у-51м2
Сквз-51м2



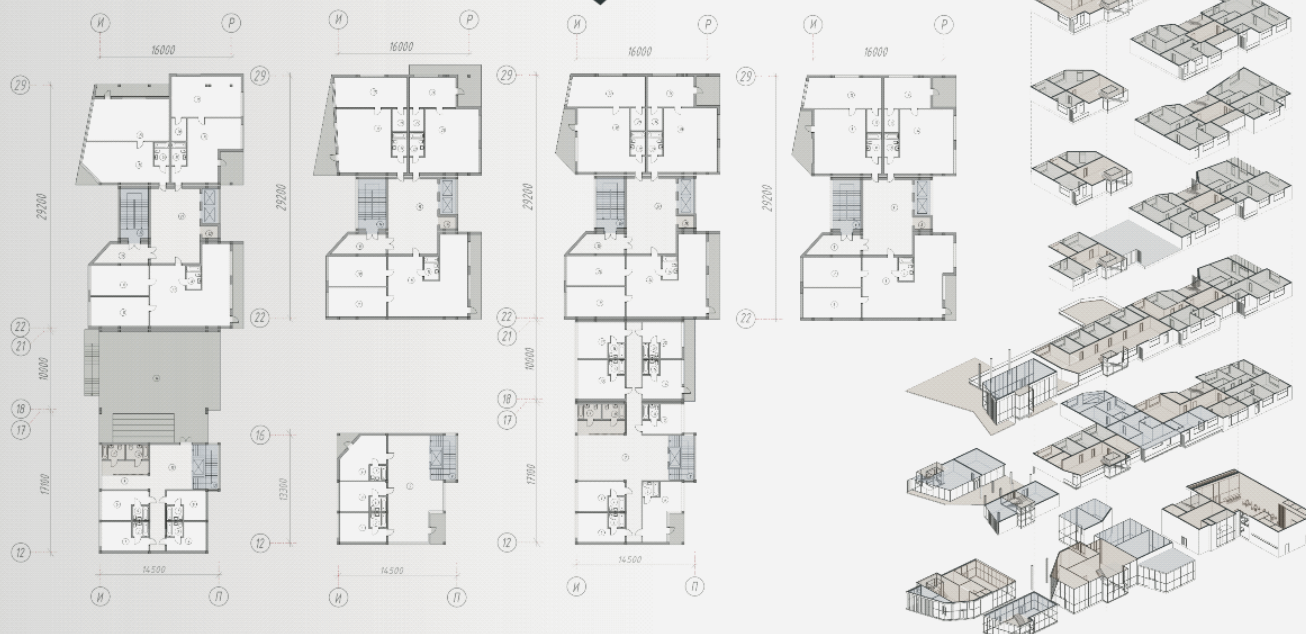
Скитом-88,6 м2
Сс/у-51 м2
Сквз-51 м2

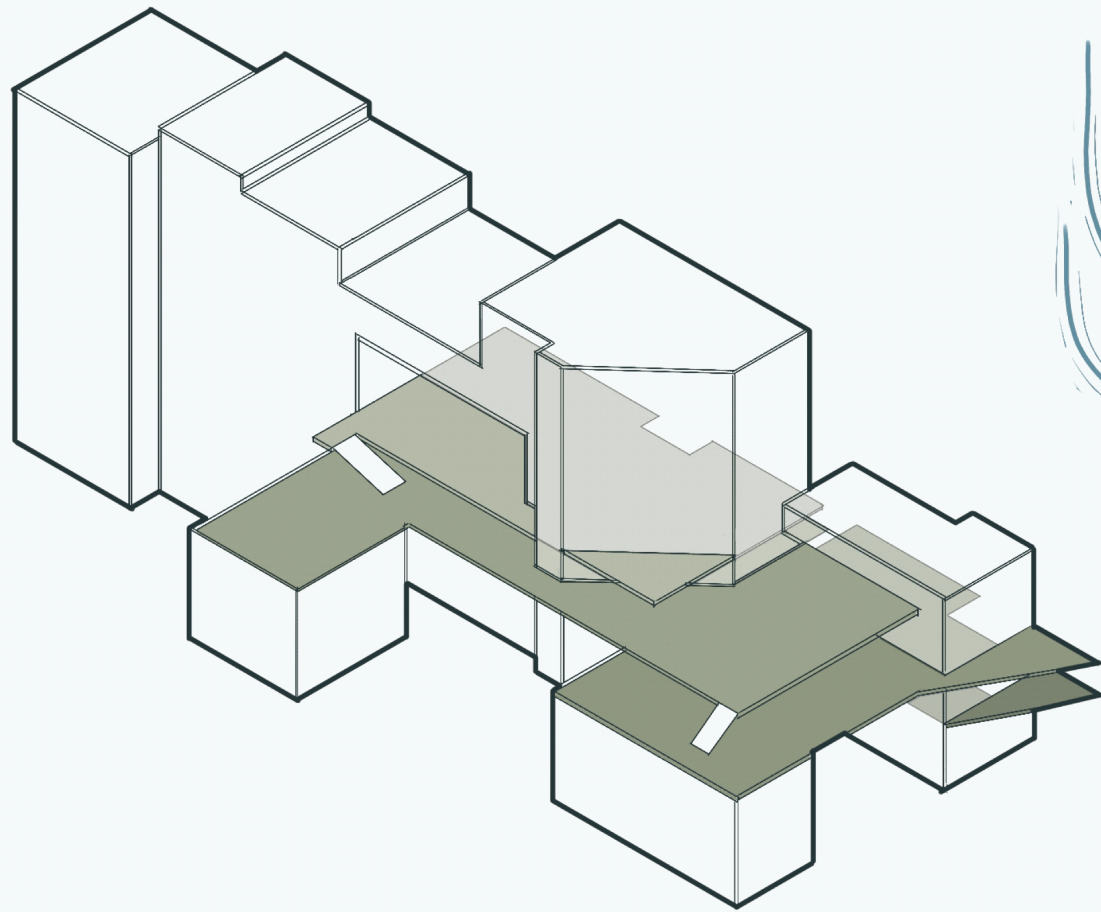


Скитом-26 м2
Сс/у-4 м2
Сквз-3 м2

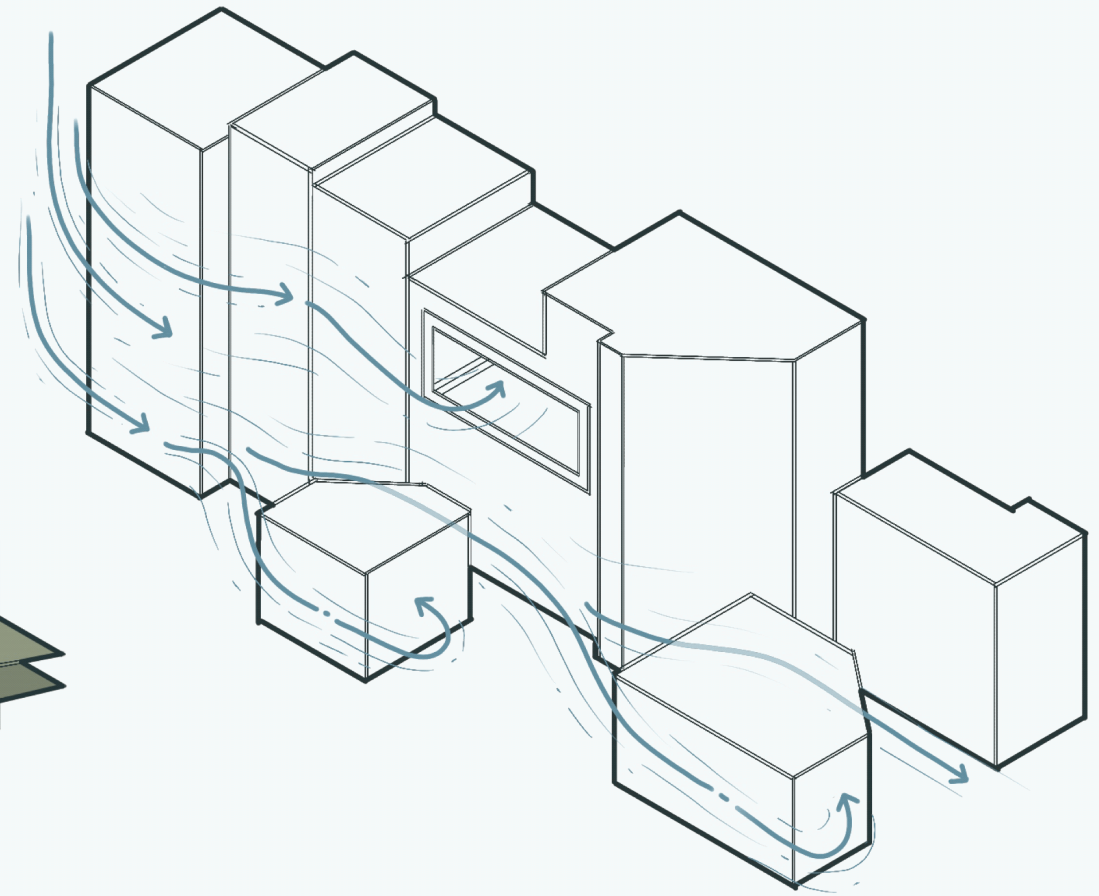


Скитом-24 м2
Сс/у-3 м2
Сквз-3 м2

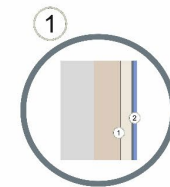
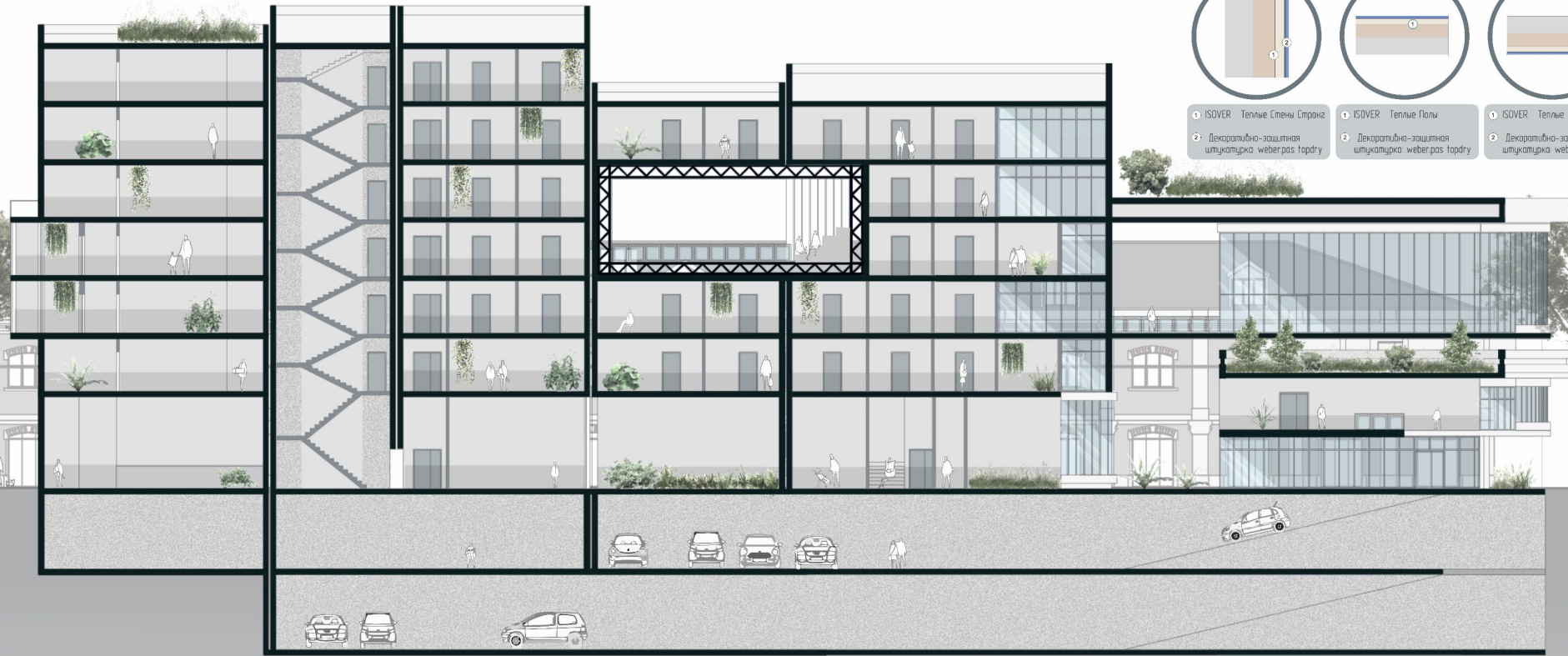




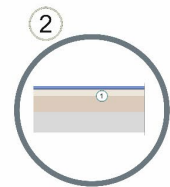
terrace scheme



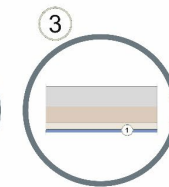
wind flow scheme



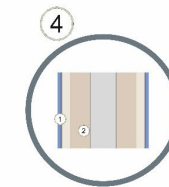
1 ISOVER Теплые Стены Странг
2 Декоративно-защитная штукатурка weber.pas topdry



1 ISOVER Теплые Полы
2 Декоративно-защитная штукатурка weber.pas topdry



1 ISOVER Теплые Стены Странг
2 Декоративно-защитная штукатурка weber.pas topdry



1 ISOVER Теплые Стены Странг
2 Декоративно-защитная штукатурка weber.pas topdry

ТЕПЛО- И ЗВУКОИЗОЛЯЦИОННЫЕ
ОБЛИЦОВКИ СТЕН И ПЕРЕГОРОДОК
ПОД ПОКРАСКУ

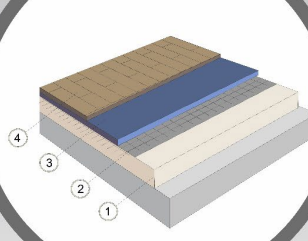
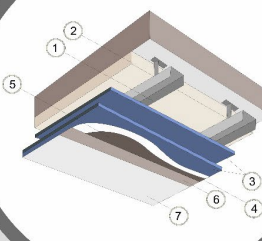
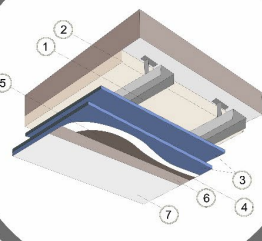
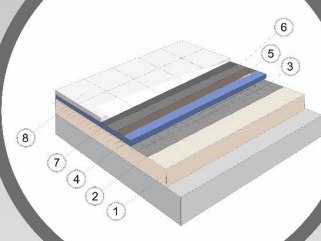
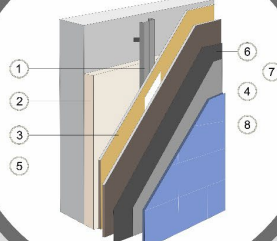
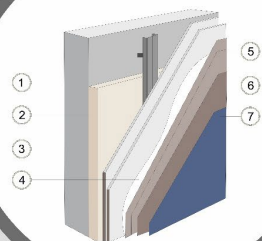
ТЕПЛО- И ЗВУКОИЗОЛЯЦИОННЫЕ
ОБЛИЦОВКИ СТЕН И ПЕРЕГОРОДОК
ПОД ПЛИТКУ

ТЕПЛО- И ЗВУКОИЗОЛЯЦИОННЫЕ
«ПЛАВАЮЩИЕ» ПОЛЫ
ПОД ПЛИТКУ

ЗВУКОИЗОЛЯЦИОННЫЕ
ПОДШИВНЫЕ ПОТОЛКИ
ПОД ПОКРАСКУ

ЗВУКОИЗОЛЯЦИОННЫЕ
ВЛАГОСТОЙКИЕ ПОДШИВНЫЕ ПОТОЛКИ
ПОД ПОКРАСКУ

ТЕПЛО- И ЗВУКОИЗОЛЯЦИОННЫЕ
«ПЛАВАЮЩИЕ» ПОЛЫ
ПОД ЛИНОЛЕУМ, ЛАМИНАТ ИЛИ ПАРКЕТ



Photovoltaic panels 30 degrees for shared spaces lighting for electrical car sharing

H Elevator is separated from bedrooms

S Energy efficient lighting system powered by photovoltaic panels

H High performance doors 0,73W\ (m2K)
F Windows 0,80W\ (m2K) R_w=40Db

F Heating and cooling floors

H Insulated walls and roof.
 U стены = 0,11 W/m2K
F U крыши = 0,11 W/m2K
 Insulated "Isover" - minimum cold bridges

F 80% apartments turned to south and have more than 2 hours southern sun exposure

F -Balconies + optional fabric canvas
S -Windows - canvas mounted inside

B Accesable cross ventilation

H Exterior galleries from north, east side help to reduce train and car noise

F Canopy- passive shading

F Green roof



Feel

Thermal comfort

See

Visual comfort

Hear

Acoustic comfort

Breathe

Indoor air quality



Sustainable sites



Water efficiency



Energy & atmosphere



Material & resources



Indoor



Water supply network

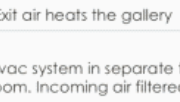
Gray water collector



Heat exchanger



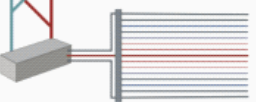
Heat exchanger



Heating network

F Exit air heats the gallery

F B H Hvac system in separate technical room. Incoming air filtered



Ground heat pump

Geothermal heating and cooling system

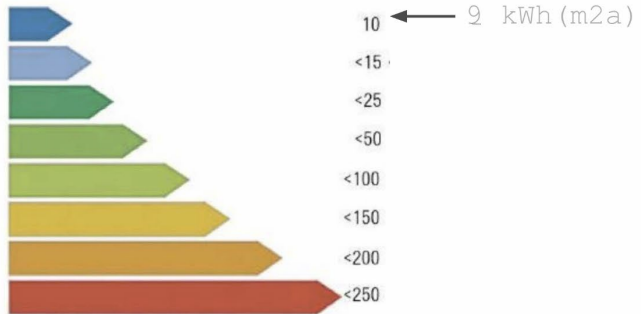
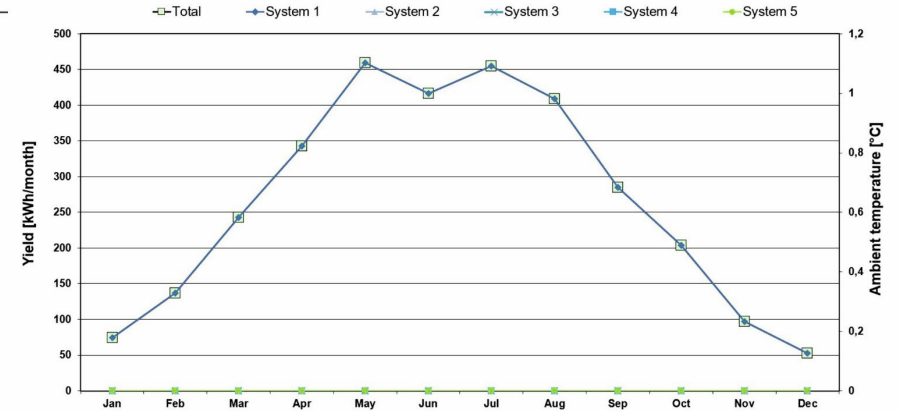


Heat demand:

Specific building characteristics with reference to the treated floor area

	Treated floor area m ²	2037,3
Space heating	Heating demand kWh/(m ² a)	9
	Heating load W/m ²	9
Space cooling	Cooling & dehum. demand kWh/(m ² a)	-
	Cooling load W/m ²	-
	Frequency of overheating (> 25 °C) %	4
	Frequency of excessively high humidity (> 12 g/kg) %	0
Airtightness	Pressurization test result n ₅₀ 1/h	0,6
Non-renewable Primary Energy (PE)	PE demand kWh/(m ² a)	
Primary Energy Renewable (PER)	PER demand kWh/(m ² a)	92
	Generation of renewable energy (in relation to projected kWh/(m ² a) building footprint area)	6

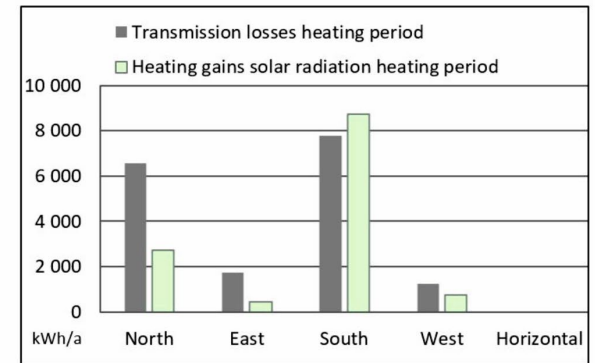
kWh/month from PV panels:



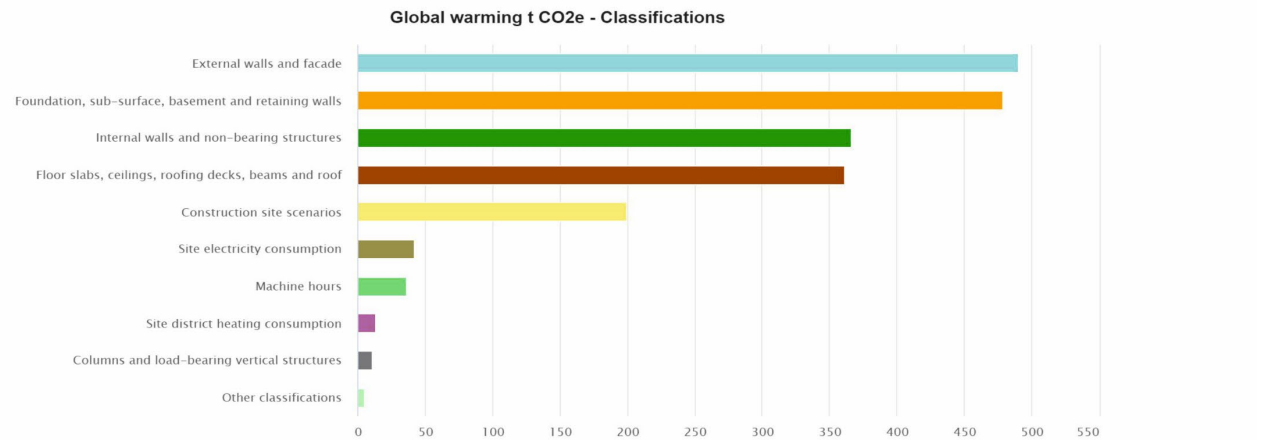
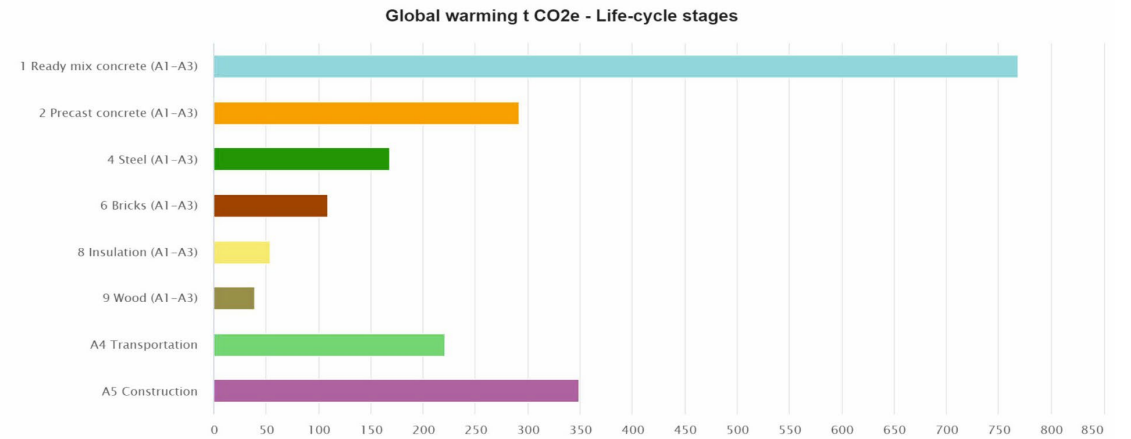
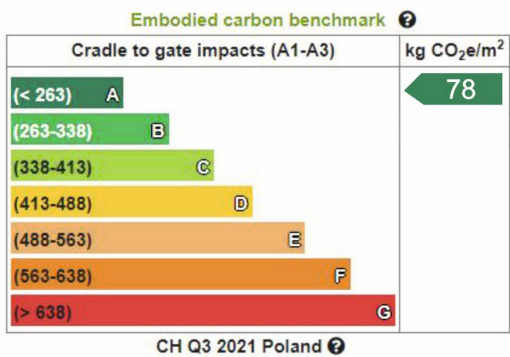
Glazing and shading impact:

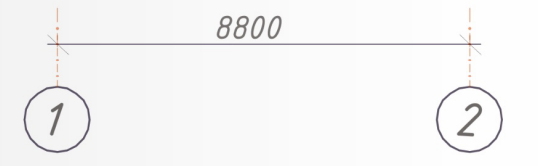
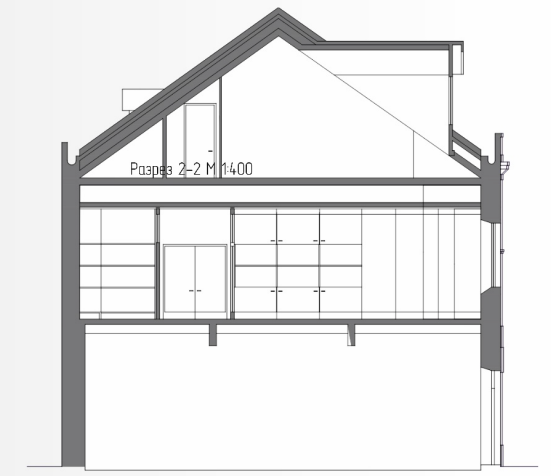
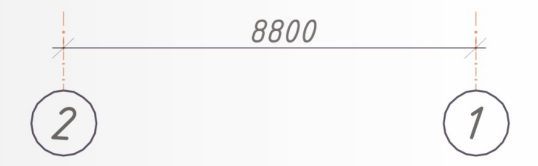
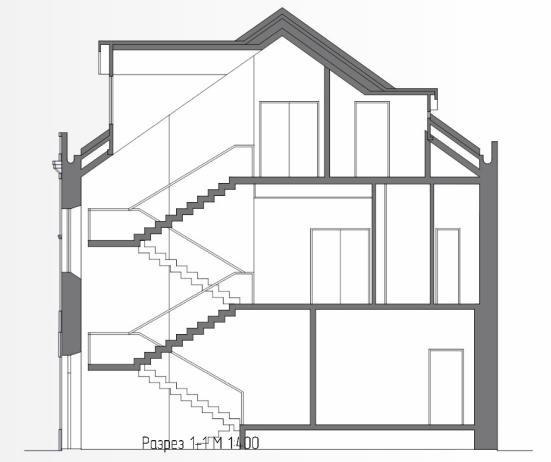
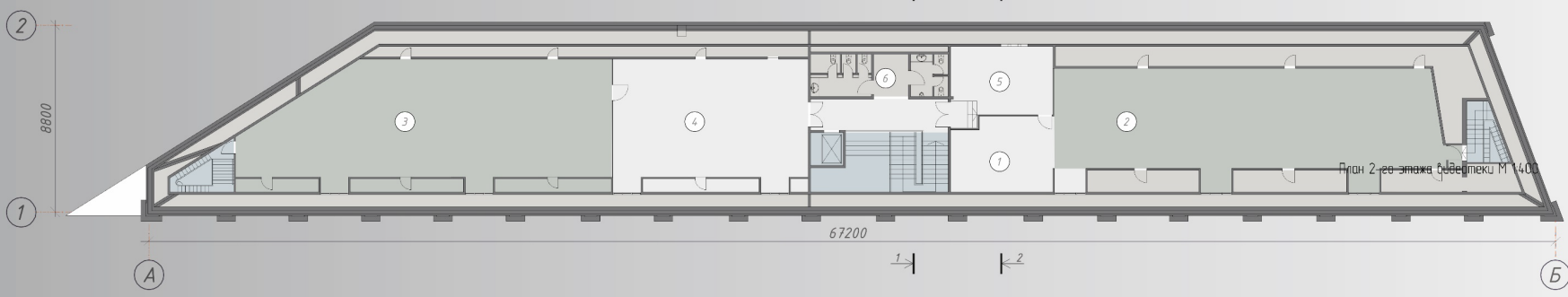
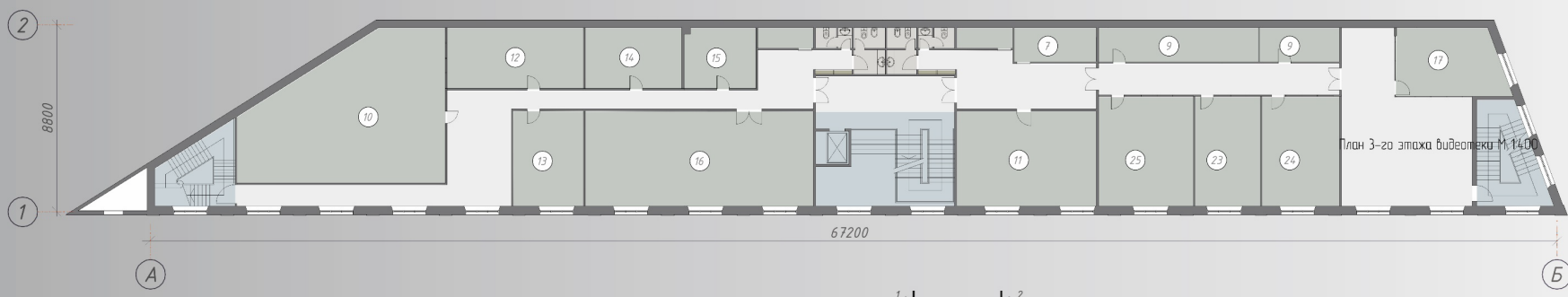
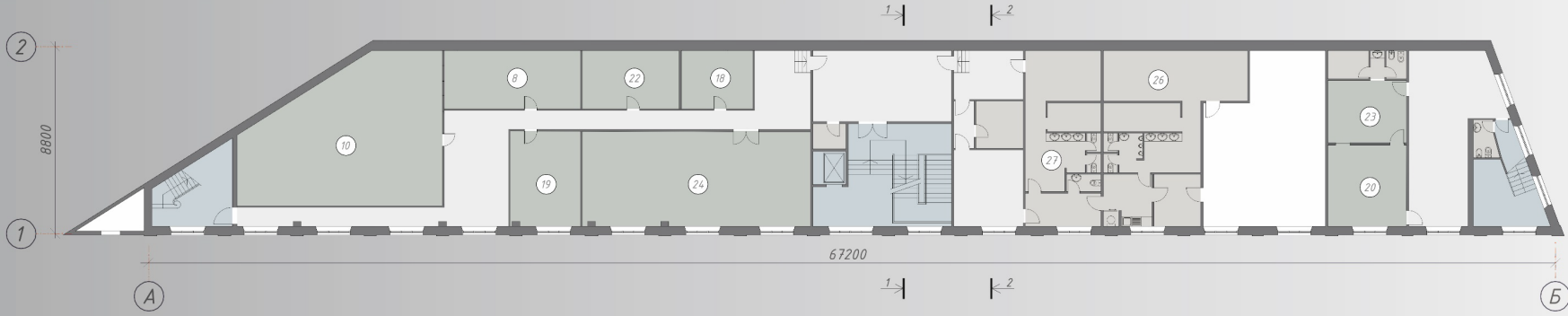
Orientation	Glazing area [m ²]	Reduction factor winter r _v	Reduction factor cooling r _{v,1}	Reduction factor cooling load r _{v,2}	Solar load [kWh/(m ² Glazing a)]
North	73,32	88%	95%	95%	129
East	15,56	45%	41%	30%	84
South	91,29	63%	49%	40%	173
West	11,41	58%	36%	26%	111
Horizontal	0,00	100%	100%	100%	0

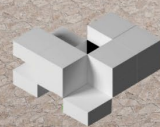
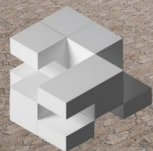
Solar impact:



Results:
specific heat demand = 9 kWh (m2a)









workshop
meeting
break/kiosk

hula hoop