



color outside the lines

Karin dom

To color outside the lines is an idiom that means to not follow the rules, to think creatively, to behave in an unconventional manner. The image invoked by the idiom color outside the lines is of a child who does not fill in the pictures in a coloring book in a conventional manner. So is our project, it aims to go outside the “standard lines” and design an environment suitable for the needs of children that don’t fit in the box.

Color outside the lines



Not
everyone fits
in the box



The main tasks the project solves are:

- *ACCESSIBILITY* - This is achieved by making the building volume simple and linear, which gives us the chance to make a clean scheme with good connections; no thresholds for comfortable wheelchair access; easy to navigate and well-marked areas with pictograms.

- *SAFETY AND SECURITY* - All common areas are designed with the thought of children safety; spaces are with a simple shape and give good visibility at all times. There are no sharp edges or unsupervised access to stairs, the railings are all with vertical details with little space in-between, to prevent climbing and other accidents. Fire safety is also considered.

Emergency exits are adapted for use by people with reduced mobility.

- *SUSTAINABILITY* – We have implemented a high quality design in all aspects of the project - social, economic and ecological.

Building is designed to meet all sustainable construction requirements. In the design we have used maximum natural light as possible. We have implemented light wells, roof windows and light emitting partitions. We have used sustainable and ecofriendly materials where possible. Most materials will be locally sourced to reduce carbon footprint further. The sloped roofs are with 41 degree angle which makes the perfect for installing photovoltaic panels.

- *FLEXIBILITY AND ADAPTABILITY* - The design takes in consideration not only the current needs of its occupants, but also implements the idea of future needs. Space and furniture are modular and can easily be rearranged and fit most future requirements. The building is designed to accommodate a ceiling hoist system in any space it might be needed. All common areas are equipped with wall rails with adjustable high.

- *HEALTH AND COMFORT* pleasant spaces with respect to all needs for thermal comfort; ventilation and hygiene

The design is based on exceptional thermal comfort, there are no thermal bridge in the construction. The building exceeds passive house standards and complies to class A+ according to Bulgarian law. We have implemented daylight and comprehensive light control with automated blinds. Cutting edge energy efficiency with heat recovery ventilation and exclusive indoor air quality, building is airtight. We have achieved a high level of energy efficiency.

- *SENSORY AWARENESS* - The environment is designed with soothing pastel colors, simple design, no reflective surfaces and no strong direct light. We have also implemented high quality acoustic panels in the ceilings to reduce noise levels in the environment. The result is a calm and homey atmosphere in which the children feel safe.

The building proposal implements all the given functionalities and meets all set requirements.

The shape of the construction is based on the principle of simplicity and functionality. Set in the environment, it corresponds well with the existing structures, mimicking the sloped roofs of the two dormitories, but with a more modern approach. The exterior of the building both blends and stands out in its settlement. Colors and shapes are quiet, they don't shout out, but do make an impression.

Color pallet is monochrome combined with light wood colors. Materials are:

- gray colored corrugated metal - on the roofs and part of the facades;
- white rendering - contrasting with the gray and simplifying the look;
- light wood - giving a warm and homey vibe, it is also used in the interior of the building;
- white bricks - inspired by Karin Dom's logo, we have used them to accent the main entrance.

We have strived to preserve as many trees as possible. The new landscape also includes playgrounds with wheelchair access, special swings, raised sand box, raised beds for plants, sensory path, a lot of recreation areas. The access to the yard is restricted by a fence and provides safety for the children.

Access for pedestrians and cars is via Prilep Str. We have provided a safe car free yard for children to play and feel safe.

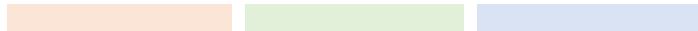
Pedestrians and cars entering the plot through separate gates at the northwest corner. Here we have provided a safe and accessible sidewalk leading to the main entrance and the yard. Here we have provided bicycle parking and 2 places for car parking for disabled people. Also, a place for temporary parking in front of the main entrance. Main parking is on the underground level, accessed by a ramp on the northeast side of the building. Underground level is connected to all levels with 2 elevators suitable for wheelchair users and staircase.

Building structure

Building construction consist of traditional for the region concrete slabs and columns. According to PHI Passive House standards, we provide superinsulation - stone wool shell with energy efficient PVC window frames Rehau Geneo PHZ, Alluminium Curtain wall Etem E85. Glazing is Saint-Gobain Glass - SGG PLANITHERM ULTRA N (4-/14/4/14/:4 Ar 90%) with Swisspacer Ultimate. For the exterior of the building we have chosen Lindab SRP Max metal cladding with 30 years anticorrosion coating, which is not only durable, but also gives a distinct look to some facades and the sloping roofs.

Structure has 4 floors and 1 underground level. Building consists of 3 volumes. Two main bodies (A and B) with sloping roofs connected with a smaller volume with flat roof. The middle part contains all the vertical communications, washrooms and toilets, recreation areas and provides light throughout the building with its atrium, which continues through all

- Floor area on the underground floor 602m²
- Gross floor area on the above-ground level: (including terrain level) 2231m²
- Total landscaped area within the plot and the building - 738,54 m² (30,14% of total plot area - 2450m²)
- Number of parking spaces in the underground parking - 21



Zones by level:

3,40 - total area of 602 m²

U1 - PARKING - 513 m² - 21 parking spaces, of which 2 parking spaces for people with disabilities.

Light height is 2.60 meters. Height allows access of a minibus.

Accessible via ramp on northeast side of the plot.

the levels and is lit by the curtain wall facing southwest and 3 skylights (by Velux).

Volume A has an extended ground floor to accommodate the medical center, pool area and main entrance.

Underground level is connected to the ground floor of the building and the reception desk, with 2 elevators and stairs.

U2 - STORAGE AND HEATING/ VENTILATION ROOM - Area: 66 m²

N - SERVER ROOM(S) Area: 6 m²

0,00 - total area of 750 m²

BUILDING A

I - MEDICAL CENTER Total area: 60 m² Has separate entrance

- I1 - Doctor's office - Area: 12 m²

- I2 - Waiting room - Area: 13,50 m²

- I3 - Hazardous waste premises - Area: 3 m²

- I4 - Manipulation room - Area: 11 m²

- I5 - Electrotherapy facilities - Area: 17 m²

E - HYDROTHERAPY UNIT - total area: 192,75 m²

- E1 - Swimming pool for individual and group therapy - Area: 126,22 m²

- E2 - Changing rooms + disabled toilet - Area: 37,25 m²

- E3 - Baby gym/ toddler room - Area: 15,14 m²

A - RECEPTION - total area: 120 m²

- A1 - Reception

- A2 - Play area for children

- A3 - Waiting area

- A4 - Conversation nook for parents and therapists

- A5 - Coat hanger for visitors

B - TOY LIBRARY - area: 25,47 m²

BUILDING B

D - MONTESSORI CENTER - total area: 205 m²

- D1 - Dressing vestibule Area: 19,50 m²

- D2 - Room for Group Activities Area: 65,77 m²

- D3 - Room for group activities for children with special needs Area: 42,13 m²

- D4 - Bedroom for children to rest Area: 40 m²

- D5 - Separate toilet for children Area: 14,63 m².

- D6 Kitchenette Area: 15,25 m²

+ 3,50 - total area of 550m²

BUILDING A

C - PHYSIOTHERAPY - total area: 200 m² - height: 3,50 m

- C1 - Main physiotherapy room -area: 94,70 m²

- C2 - Rebound Therapy Room - area: 41,58 m²

- C3 - Occupational therapy room - area: 23 m²

- C4 - Physiotherapy storage - area: 16 m²

Additional waiting area(16 m²) with a couch and lockers for children in physiotherapy.

BUILDING B

J - TRAINING CENTER - total area: 245 m²

- J1 - Seminar hall - Area: 113,54 m²

- J2 - Toilets to the visitor halls - area: 13 m²

- J3 - Kitchenette for preparing coffee breaks Area: 10,49 m²

- J4 - Coffee break area – atrium space to be used for coffee break and recreation - Area: 40 m².

- J5 - Storage to the Training center - Area: 14,7 m²

- J6 - Office for training team Area: 32,63 m²

Additional waiting area(23 m2) with seating and lockers for people in training.

+ 7,30 - total area of 550 m2

BUILDING A

F - CENTER FOR DIAGNOSTICS AND THERAPY - total area: 224 m2(not including H2 and H8)

Note: H2 and H8 rooms for individual work are on next floor. It is quieter on the level and the atmosphere is calm and homey.

- F1 - Multisensory room - area: 30,88 m2
- F3 - Diagnostic room - area: 24,73 m2
- F4 - Auxiliary room - area: 10,28 m2
- F5 - Music therapy room - area: 18,77 m2
- F6 - Art therapy room - area: 16 m2.
- F7 - Staff room - area: 30 m2
- F9 - Sensorimotor room - area: 30,73 m2

BUILDING B

F10 – Demonstration kitchen - area: 23,78 m2

G - EARLY INTERVENTION CENTER - area: 54,22 m2

- G1 – Early intervention team room - area: 29,51 m2
- G2 - Family counseling room - Area: 22,84 m2

H - CENTER FOR FAMILY-MEDIATED INTERVENTION - area: 100 m2

- H1 - Vestibule - area: 15,73 m2
- H2 - Small+ Room - Area: 45,56 m2
- H3 - Room of Rainbow group - area: 35,77 m2
- H4 - Auxiliary room - area: 12,43 m2

+ 10,80 - total area of 450 m2 + 70 m2 green roof

BUILDING A

F2 - Rooms for individual work - area: 62 m2 (3 premises x 14 m2 and 1 x 22 m2)

F8 - Room for individual work with parents - area: 13,09 m2

K3 - Meeting room and group activities with parents/ volunteers - area: 40 m2

L2 - Staff dressing room - area: 30 m2

BUILDING B

K - ADMINISTRATION - total area: 154,60 m²

- K1 - Accountancy area: 16,56 m²

- K2 - Development team office - area: 21,80 m²

- K4 - Director's office - area: 55 m².

- K5 - Management office - area: 21,25 m²

L1 - Staff lunchroom - area: 31,67 m²

M - green roof 70 m²

Roof

Building A and B have sloping roofs with 40 degrees angle, specifically selected to accommodate photovoltaic panels at optimal angle without

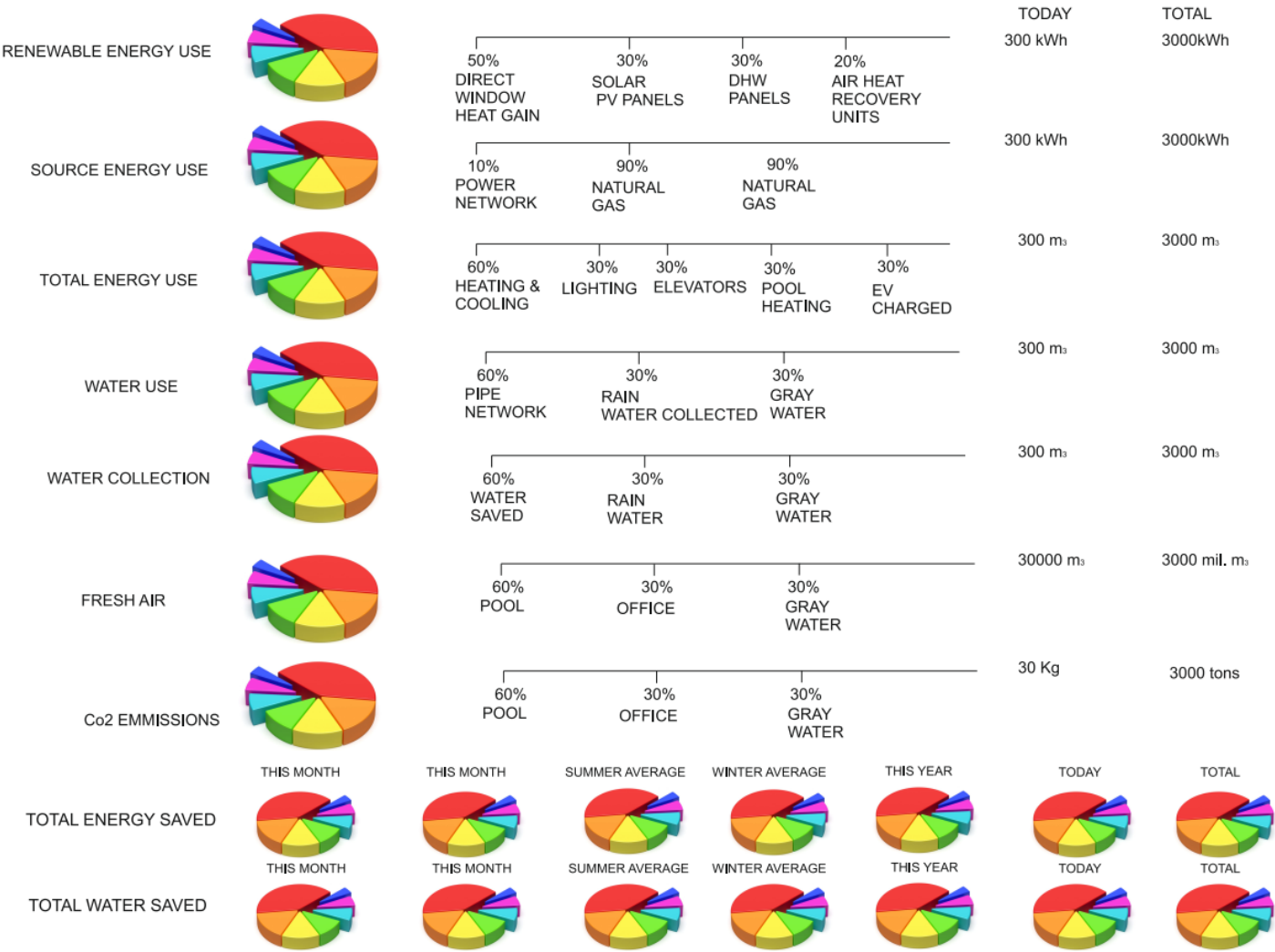
the need for additional structures. The corridors on the last floor are lit using light wells. Most of the rooms have sky light chosen from the Velux portfolio.

The middle section of the building is with flat roof, it also accommodates the green roof.

The medical center and pool area also have flat roofs. Over the pool we have decided to put 3 skylights providing natural light and ventilation, if needed.

Note: On each floor there are 3 toilets with sinks + 1 toilet for disabled people; recreation areas; technical room for ventilation and other installations.

All the information of the systems functioning in the building will be displayed on a screen in the lobby, this way everybody can understand how efficient it is via *Interactive building sustainability explanation charts and information system*.



Based on the projects specifications we expect the following:

Expected Green Building Certification system levels:		
System	Realistic according to budget	Optimistic
LEED v4	Silver	Gold
DGNB	Bronze	Silver
BREEAM	Very good	Exellent
Passive House Institute	Passive house Classic	Passive house Plus



Based on the project specifications we have calculated the possible LEED points.



LEED v4 for BD+C: Schools

Project Checklist

Project Name:

Date:

Y ? N



Credit Integrative Process 1

0 8 4 Location and Transportation 15

0	8	4	Credit	LEED for Neighborhood Development Location	15
		0	Credit	Sensitive Land Protection	1
		0	Credit	High Priority Site	2
3	2		Credit	Surrounding Density and Diverse Uses	5
2	1		Credit	Access to Quality Transit	4
1	1		Credit	Bicycle Facilities	1
1	0		Credit	Reduced Parking Footprint	1
1	0		Credit	Green Vehicles	1

0 5 5 Sustainable Sites 12

Y			Prereq	Construction Activity Pollution Prevention	Required
Y			Prereq	Environmental Site Assessment	Required
		0	Credit	Site Assessment	1
		0	Credit	Site Development - Protect or Restore Habitat	2
		1	Credit	Open Space	1
		1	Credit	Rainwater Management	3
2	1		Credit	Heat Island Reduction	2
1	1		Credit	Light Pollution Reduction	1
1	1		Credit	Site Master Plan	1
1	0		Credit	Joint Use of Facilities	1

0 10 7 Water Efficiency 12

Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
2	1		Credit	Outdoor Water Use Reduction	2
7	5		Credit	Indoor Water Use Reduction	7
		0	Credit	Cooling Tower Water Use	2
1	1		Credit	Water Metering	1

0 29 # Energy and Atmosphere 31

Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
5	2		Credit	Enhanced Commissioning	6
16	12		Credit	Optimize Energy Performance	16
1	1		Credit	Advanced Energy Metering	1
1	0		Credit	Demand Response	2
3	1		Credit	Renewable Energy Production	3
1	1		Credit	Enhanced Refrigerant Management	1
2	1		Credit	Green Power and Carbon Offsets	2

0 11 6 Materials and Resources 13

Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
3	2		Credit	Building Life-Cycle Impact Reduction	5
2	1		Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
2	1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
2	1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2	1		Credit	Construction and Demolition Waste Management	2

0 14 8 Indoor Environmental Quality 16

Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
Y			Prereq	Minimum Acoustic Performance	Required
2	1		Credit	Enhanced Indoor Air Quality Strategies	2
1	0		Credit	Low-Emitting Materials	3
1	1		Credit	Construction Indoor Air Quality Management Plan	1
2	1		Credit	Indoor Air Quality Assessment	2
1	1		Credit	Thermal Comfort	1
2	1		Credit	Interior Lighting	2
3	2		Credit	Daylight	3
1	0		Credit	Quality Views	1
1	1		Credit	Acoustic Performance	1

0 0 1 Innovation 6

			Credit	Innovation	5
		1	Credit	LEED Accredited Professional	1

0 0 0 Regional Priority 4

			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1

0 77 49 TOTALS Possible Points: 110

Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110

PRELIMINARY COST CALCULATIONS

description			price	constr cost	TOTAL
HVAC Heating/Cooling and DWH systems					
Gas engine heat pump & hydromodule 35kW (10HP)	pcs.	1	22 496,84 €	639,11 €	23 135,96 €
Gas boiler 50kW	pcs.	1	1 738,39 €	76,69 €	1 815,09 €
Buffer tank	pcs.	1	562,42 €	61,36 €	623,78 €
Hydraulic separator for gas condensed boiler	pcs.	1	107,37 €	30,68 €	138,05 €
DHW 800l two circuits	pcs.	1	613,55 €	61,36 €	674,91 €
DHW Solar panel 2.3m2 Flat	pcs.	10	347,68 €	40,90 €	3 885,82 €
pumps and equipment	pcs.	1	1 789,52 €	153,39 €	1 942,91 €
floor heating equipment	pcs.	1	10 481,48 €	1 789,52 €	12 271,01 €
ground heat exchanger	pcs.	1	511,29 €	230,08 €	741,37 €
pine network	pcs.	1	2 556,46 €	613,55 €	3 170,01 €
others	pcs.	1	2 556,46 €	511,29 €	3 067,75 €
fasteners & fixings	pcs.	1	409,03 €	306,78 €	715,81 €
HVAC Ventilation equipment and air duct systems					
Central HRV Unit / recuperator L=2400m3/h <i>* Passive house Intitute certified</i>	pcs.	1	11 248,42 €	178,95 €	11 427,37 €
Pool HRV Unit / recuperator L=2400m3/h <i>* Passive house Institute certified</i>	pcs.	1	9 407,77 €	127,82 €	9 535,59 €
Primary heat exchanger ventilation	pcs.	1	715,81 €	40,90 €	756,71 €
Secondary heat exchanger ventilation	pcs.	1	715,81 €	40,90 €	756,71 €
heat exchanger pool HRV Unit	pcs.	1	613,55 €	40,90 €	654,45 €
Insulated air duct network	m2	500	18,41 €	6,14 €	12 271,01 €
air diffusers & etc	pcs.	1	4 090,34 €	409,03 €	4 499,37 €
others	pcs.	1	1 533,88 €	255,65 €	1 789,52 €
fasteners & fixings	pcs.	1	409,03 €	306,78 €	715,81 €
ELECTRICAL					
Park lighting	pcs.	1			7 669,38 €

facade lighting	pcs.	1			1 738,39 €
external / plot power connection	pcs.	1			3 579,04 €
fire alarm system (Fire detection and fire alarm systems)	pcs.	1			9 203,25 €
voice alarm systems	pcs.	1			4 090,34 €
LAN, TV, optics, WiFi zone, Server, Software	pcs.	1			15 338,76 €
security alarm equipment	pcs.	1			4 090,34 €
CCTV	pcs.	1			5 112,92 €
Access control	pcs.	1			9 203,25 €
AC Power instalations	pcs.	1			61 355,03 €
lightning protection system	pcs.	1			4 090,34 €
PV Panel & invertor & etc systems	pcs.	1			25 564,59 €
EV charging station	pcs.	1			3 067,75 €
PLUMBING					
Plumbing & sewage system	m2	2831		20,00 €	56 620,00 €
Rainwater collector system	pcs.	1			6 135,50 €
Watertreatment plant	pcs.	1			6 135,50 €
Graywater supply system	pcs.	1			3 067,75 €
INDOOR POOL EQUIPMENT					
Pool filter system	pcs.	1			1 022,58 €
pumps and aecessories	pcs.	1			1 278,23 €
light	pcs.	1			511,29 €
water diffusers	pcs.	1			409,03 €
automation	pcs.	1			613,55 €
water distribution system	pcs.	1			1 278,23 €
INDOOR POOL CONSTRUCTION					
pool raw construction works		1			12 407,35 €
Pool stair & railnig					1 533,88 €
other equipment and accessories					1 789,52 €

glass ceramic finish tiles	pcs.	1			2 556,46 €
hydroinsulations pool	pcs.	1			2 147,43 €
CONSTRUCTION COSTS					
core construction costs	m2	2831	160,00 €		452 960,00 €
FAÇADE, shell, foudations and roof insulation	m2	3200			92 000,00 €
VELUX CVP 073	pcs	6	1 472,01 €		8 832,06 €
VELUX TWF	pcs	6	293,99 €		1 763,96 €
VELUX GPL 3066	pcs	24	717,85 €		17 228,49 €
VELUX GPL 3066	pcs	3	560,89 €		1 682,66 €
LINDAB SRP Max, 30 years corrosion free, incuding rainline water collection system	m2	1129	32,00 €		36 128,00 €
ETEM E85 curtain wall / LowE/w/LowE + 90% Argon + Swisspacer Ultimate	m2	162	120,00 €		19 440,00 €
REHAU Geneo PHZ Windows LowE/w/LowE + 90% Argon + Swisspacer Ultimate	m2	426	120,00 €		51 120,00 €
Warema 90 External blinds with Metostation and automation	m2	480	223,80 €		107 424,00 €
Furniture and other equipment	pcs	1			65 000,00 €
Flooring and paintings	pcs	1			50 000,00 €
Elevators	pcs	2	13 560,00 €		27 120,00 €
Landscaping incl. ramp, fence, park and garden and green roof	pcs	1			46 000,00 €
Green Roof insulation & root membrane	m2	75	30,00 €		2 250,00 €
Others/ not listed shell construction & finishings	m2	2831	44,00 €		124 564,00 €
Gren Building Certification system costs	pcs	1			10 000,00 €
				TOTAL EXCL VAT	1 449 711,84 €