

1. DESCRIPTION

KARIN DOM – A UNIVERSAL PEDAGOGIC PROTOTYPE

43,7% of children in Bulgaria face post-education risk of failure such as poverty, unemployment, social exclusion, dropouts, etc. Let alone special needs children which discrimination or prejudice becomes one of the biggest challenges that stagnates the development of equal environments in the other communities. The life of special needs children after pre-school seems to be when large proportion still think that they are different and should be separated.

The first questions came up “How should we see the special needs children? How does life work differently for them? Have we viewed them in a correct perception? Or have we never looked at their life beyond the school zone?”

The real issue relies on the lack of public knowledge about disabilities related behaviour that results in the marginalization of children. This hints that people fail to promote inclusion in society.

An as effort to minimize the establishment of parallel services, the new Karin Dom Centre is set up as an epitome for the future development of special schools. We create a place for special needs children to be excited to come play while avoiding a parallel service that draws the line between ‘normal’ & ‘special’.

The project looks beyond a mainstream set up of a school for special needs children. Bringing an additional value for the public community by encouraging participation within the building context rather than isolating the children in an ‘enclosed’ outdoor. This is done by introducing public activities/interaction in the playground without compromising the safety & security in the school environment.

Nature is the best sensory tool for learning. We must not forget that children learn by playing. Adults, children, students, workers, gardeners, neighbors can participate/play in the public playground.

The term ‘inclusive’ is reflected in a broader context with activities that connect all range of people to be in one single group regardless of their ‘abilities’.

People/children with disabilities rarely think of themselves as disabled. Being inside their shoes can teach us more and develop awareness to everyone.

2. BUDGET ESTIMATION

Gross Floor Area

- Basement : 610 sqm
- Ground Floor : 820 sqm
- First Floor : 630 sqm
- Second Floor : 460 sqm
- Total Area : 2520 sqm

CLT Timber Estimation: EUR 480 / sqm

Total Budget Estimation: 2520 x EUR 480 = EUR 1,209,600

3. LEED CERTIFICATION – LEED V4 for BD+C: NEW CONSTRUCTION (SCHOOL)



LEED v4 for BD+C: New Construction and Major Renovation
Project Checklist

Project Name: KARIN DOM FOUNDATION SCHOOL, VARNA – BULGARIA
Date: FEBRUARY 19, 2020

Y ? N



1	Credit	Integrative Process	1
14	0	0	16
Location and Transportation			
	Credit	LEED for Neighborhood Development Location	16
1	Credit	Sensitive Land Protection	1
	Credit	High Priority Site	2
5	Credit	Surrounding Density and Diverse Uses	5
5	Credit	Access to Quality Transit	5
1	Credit	Bicycle Facilities	1
1	Credit	Reduced Parking Footprint	1
1	Credit	Green Vehicles	1
10	0	0	10
Sustainable Sites			
	Prereq	Construction Activity Pollution Prevention	Required
1	Credit	Site Assessment	1
2	Credit	Site Development - Protect or Restore Habitat	2
1	Credit	Open Space	1
3	Credit	Rainwater Management	3
2	Credit	Heat Island Reduction	2
1	Credit	Light Pollution Reduction	1
2	7	0	11
Water Efficiency			
	Prereq	Outdoor Water Use Reduction	Required
	Prereq	Indoor Water Use Reduction	Required
	Prereq	Building-Level Water Metering	Required
2	Credit	Outdoor Water Use Reduction	2
6	Credit	Indoor Water Use Reduction	6
	Credit	Cooling Tower Water Use	2
1	Credit	Water Metering	1
29	3	0	33
Energy and Atmosphere			
	Prereq	Fundamental Commissioning and Verification	Required
	Prereq	Minimum Energy Performance	Required
	Prereq	Building-Level Energy Metering	Required
	Prereq	Fundamental Refrigerant Management	Required
6	Credit	Enhanced Commissioning	6
18	Credit	Optimize Energy Performance	18
1	Credit	Advanced Energy Metering	1
1	Credit	Demand Response	2
3	Credit	Renewable Energy Production	3
1	Credit	Enhanced Refrigerant Management	1
2	Credit	Green Power and Carbon Offsets	2

8	4	0	13
Materials and Resources			
	Prereq	Storage and Collection of Recyclables	Required
	Prereq	Construction and Demolition Waste Management Planning	Required
5	Credit	Building Life-Cycle Impact Reduction	5
1	Credit	DeclarationsBuilding Product Disclosure and Optimization - Environmental Product	2
2	Credit	DeclarationsBuilding Product Disclosure and Optimization - Environmental Product	2
2	Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
2	Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2	Credit	Construction and Demolition Waste Management	2
16	0	0	16
Indoor Environmental Quality			
	Prereq	Minimum Indoor Air Quality Performance	Required
	Prereq	Environmental Tobacco Smoke Control	Required
2	Credit	Enhanced Indoor Air Quality Strategies	2
3	Credit	Low-Emitting Materials	3
1	Credit	Construction Indoor Air Quality Management Plan	1
2	Credit	Indoor Air Quality Assessment	2
1	Credit	Thermal Comfort	1
2	Credit	Interior Lighting	2
3	Credit	Daylight	3
1	Credit	Quality Views	1
1	Credit	Acoustic Performance	1
6	0	0	6
Innovation			
5	Credit	Innovation	5
1	Credit	LEED Accredited Professional	1
0	0	0	4
Regional Priority			
	Credit	Regional Priority: Specific Credit	1
	Credit	Regional Priority: Specific Credit	1
	Credit	Regional Priority: Specific Credit	1
	Credit	Regional Priority: Specific Credit	1
85	14	0	110
TOTALS			

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

LOCATION AND TRANSPORTATION (LT) (10-14 points)

CREDIT: SENSITIVE LAND PROTECTION: Option 2. Avoidance of Sensitive Land

CREDIT: SURROUNDING DENSITY AND DIVERSE USES: Option 2. Diverse Uses

CREDIT: ACCESS TO QUALITY TRANSIT: Option 2. Pedestrian Access

CREDIT: BICYCLE FACILITIES: Provide at least one on-site shower with changing facility for the first 100 regular building occupants and one additional shower for every 150 regular building occupants thereafter, up to 999 regular building occupants.

- one additional shower for every 500 regular building occupants, for the additional 1,000 – 4,999 regular building occupants
- one additional shower for every 1,000 regular building occupants, for the additional 5,000 + regular building occupants

CREDIT: REDUCED PARKING FOOTPRINT: Option 1. No Off-Street Parking

CREDIT: ELECTRIC VEHICLES: Option 1. Electric Vehicle Charging (1 point)

Install electrical vehicle supply equipment (EVSE) in 2% of all parking spaces used by the project or at least two spaces, whichever is greater. Clearly identify and reserve these spaces for the sole use by plug-in electric vehicles.

SUSTAINABLE SITES (SS) (8-10 points)

CREDIT: SITE ASSESSMENT: Complete and document a site survey or assessment

CREDIT: PROTECT OR RESTORE HABITAT: Option 1. On-Site Restoration

CREDIT: OPEN SPACE: Provide outdoor space greater than or equal to 30% of the total site area (including building footprint).

25% of the minimum 30% total outdoor space requirement must be planted with two or more types of vegetation or have overhead vegetated canopy

CREDIT: RAINWATER MANAGEMENT: Treat run-off from pollutant-generating impervious surfaces (i.e. vehicle pavement, service courts, trash enclosures) using low-impact development (LID) practice.

CREDIT: HEAT ISLAND REDUCTION: Option 1. Nonroof and Roof, Vegetated Roof

Install a vegetated roof using native or adapted plant species.

CREDIT: LIGHT POLLUTION REDUCTION: Option 1. BUG Rating Method

CREDIT: SITE MASTER PLAN: The project must achieve at least four of the following six credits, using the associated calculation methods. The achieved credits must then be recalculated using the data from the master plan.

- SS Credit: Open Space
- SS Credit: Rainwater Management
- SS Credit: Heat Island Reduction
- SS Credit: Light Pollution Reduction

WATER EFFICIENCY (WE) (7-9 points)

CREDIT: OUTDOOR WATER USE REDUCTION: Option 2. Reduced Irrigation

CREDIT: INDOOR WATER USE REDUCTION: Further reduce fixture and fitting water use from the calculated baseline in WE Prerequisite Indoor Water Use Reduction.

CREDIT: COOLING TOWER AND PROCESS WATER USE: Option 2. No Cooling Tower (2 points)

CREDIT: WATER METERING: Install permanent water meters for two or more of the following water subsystems

ENERGY AND ATMOSPHERE (EA) (20-30 points)

CREDIT: ENHANCED COMMISSIONING: Option 1. Enhanced Systems Commissioning

CREDIT: OPTIMIZE ENERGY PERFORMANCE: Option 1. Energy Performance Compliance

CREDIT: ADVANCED ENERGY METERING: Install advanced energy metering for the following:

CREDIT: RENEWABLE ENERGY: Use on-site renewable energy systems, procure renewable energy from offsite sources, or offset the greenhouse gas emissions from all or a portion of the building's annual energy use.

CREDIT: ENHANCED REFRIGERANT MANAGEMENT: Option 1. No Refrigerants or Low-Impact Refrigerants

MATERIALS AND RESOURCES (MR) (10-12 points)

CREDIT: BUILDING LIFE-CYCLE IMPACT REDUCTION: Option 4. Whole-Building Life-Cycle Assessment

CREDIT: BUILDING PRODUCT DISCLOSURE AND OPTIMIZATION—ENVIRONMENTAL PRODUCT DECLARATIONS: Option 1. Environmental Product Declaration

CREDIT: BUILDING PRODUCT DISCLOSURE AND OPTIMIZATION – SOURCING OF RAW MATERIALS: Use products sourced from at least three different manufacturers that meet at least one of the responsible sourcing and extraction criteria below for at least 20%, by cost, of the total value of permanently installed building products in the project (1 point).

CREDIT: BUILDING PRODUCT DISCLOSURE AND OPTIMIZATION – MATERIAL INGREDIENTS: Option 1. Material Ingredient Reporting (1 point)

Use at least 20 different permanently installed products from at least five different manufacturers that use any of the following programs to demonstrate the chemical inventory of the product to at least 0.1% (1000

103

ppm). (10 different permanently installed products from at least three different manufacturers for CS and Warehouses & Distribution Centers)

CREDIT: CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT: Path 1. Divert 50% and Two Material Streams

INDOOR ENVIRONMENTAL QUALITY (EQ) (13-16 points)

CREDIT: ENHANCED INDOOR AIR QUALITY STRATEGIES: Option 1. Enhanced IAQ Strategies

CREDIT: LOW-EMITTING MATERIALS: Use materials on the building interior (everything within the waterproofing membrane) that meet the low-emitting

CREDIT: CONSTRUCTION INDOOR AIR QUALITY MANAGEMENT PLAN: Develop and implement an indoor air quality (IAQ) management plan for the construction and preoccupancy phases of the building. The plan must address all of the following.

During construction, meet or exceed all applicable recommended control measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 2nd edition, 2007, ANSI/SMACNA 008–2008, Chapter 3.

CREDIT: INDOOR AIR QUALITY ASSESSMENT: Option 1. Flush-Out (1 point)

Path 1. Before Occupancy

Install new filtration media and perform a building flush-out by supplying a total air volume of 14,000 cubic feet of outdoor air per square foot

CREDIT: THERMAL COMFORT: Option 1. ASHRAE Standard 55-2017

Design heating, ventilating, and air-conditioning (HVAC) systems and the building envelope to meet the requirements of ASHRAE Standard 55–2017, Thermal Comfort Conditions for Human Occupancy with errata or a local equivalent.

CREDIT: INTERIOR LIGHTING: Option 1. Lighting Control (1 point)

For at least 90% of individual occupant spaces, provide individual lighting controls that enable occupants to adjust the lighting to suit their individual tasks and preferences, with at least three lighting levels or scenes (on, off, midlevel). Midlevel is 30% to 70% of the maximum illumination level (not including daylight contributions).

CREDIT: DAYLIGHT: Option 2. Simulation: Illuminance Calculations

CREDIT: QUALITY VIEWS: Achieve a direct line of sight to the outdoors via vision glazing for 75% of all regularly occupied floor area.

View glazing in the contributing area must provide a clear image of the exterior, not obstructed by frits, fibers, patterned glazing, or added tints that distort color balance.

CREDIT: ACOUSTIC PERFORMANCE: HVAC Background noise

Achieve a background noise level of 35 dBA or less from heating, ventilating, and air-conditioning (HVAC) systems in classrooms and other core learning spaces. Follow the recommended methodologies and best practices for mechanical system noise control in ANSI Standard S12.60–2010, Part 1, Annex A.1; the 2015 ASHRAE Handbook—HVAC Applications, Chapter 48, Sound and Vibration Control, with errata; AHRI Standard 885–2008; or a local equivalent

IN CREDIT: LEED ACCREDITED PROFESSIONAL (1 Point)

Possibility for LEED POINTS 69-92 (Gold-Platinum)