

## BUILDING DESIGN AND SUSTAINABILITY

Our proposal takes the form of an elegant folded volume which rests upon a set of ground floor plinths, following the urban grid of the neighbouring buildings. The orientation of the roof is based on the annual solar angles, which creates a 90° twist to maximise the amount of natural daylight.

The interiors are calming, muted and filled with diffused light, which floods the spaces through a number of windows, skylights and the centrally positioned atrium, helping visitors wayfind intuitively. All spaces are flexible, adaptable and accessible by people with reduced mobility, with rooms that meet the current needs but allow for easy future adaptations.

The approach to the building meets the need for secure and accessible drop off and pick-up whilst maintaining an open public-facing frontage. The landscape caters to a wide range of play and sensory therapeutic activities, whilst reinforcing biodiversity and the green buffer by preserving 92% of all the existing trees on site. There is also a secure basement level carpark accessed via a ramp.

The design has been pre-assessed to meet BREEAM Excellent standard and incorporates many "Passivhaus" design principles in order to minimise negative environmental impacts and ensure an efficient use of energy and resources.

The exterior is clad in channel glass, timber battens (sourced from the trees cut down on site), but mostly with natural cork panels. The natural cork facade fits in with the neutral colours of the urban and natural surroundings and respond to elevated environmental requirements. Very economically priced, cork combines thermal and sound insulation, water and rot resistance, strength, durability, recyclability and aesthetic properties, which makes it an excellent natural material. The cork oak tree is peeled every 7 years without damaging the tree itself. The granulate used for the cork facade panels is a waste product of the bottle cork production and can be sourced locally. The facade panels are manufactured by adding heat and pressure, thus releasing the cork resin which clues the granulate together. With no additives nor adhesives, it is an all natural and extremely sustainable material.

The underground level is constructed from rammed and in-situ concrete. The three above ground levels are built using timber frame construction. Wood fiber and cellulose insulation complement the sustainable wall and facade structure. Room climate control is ensured by moisture-absorbing materials such as natural cork, wood or gypsum board surfaces with diffusion-free coatings. This avoids a complex ventilation system and generates a pleasant room climate naturally.

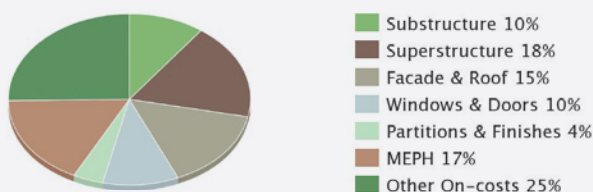
Energy wise, the building will be connected to the municipal electrical grid but will be almost self-sufficient through thermal mass active floors, a gas reuse heating aggregate and roof-integrated photovoltaics.

The scheme is designed to fully comply with the current legislation of the Republic of Bulgaria.

## FINANCIAL ESTIMATES

Creating a high quality sustainable building that meets users' functional needs and achieves value for money was our key goal, and the proposal is designed to be of the total implementation value of EUR 1,348,500 excl VAT.

This is a feasibility costs estimate for the new Karin Dom building proposal. Please take note of our key financial assumptions and exclusions:



## 1. DESIGN ECONOMICS, KEY ASSUMPTIONS AND FLOOR AREAS

<b>PRODUCT / SPECIFICATION</b>	
Product / Specification	: New build school building : BREEAM Excellent standard
<b>AREAS</b>	
Underground GIA	: 600m <sup>2</sup>
Above ground GIA	: 1,800m <sup>2</sup>
Landscape	: 865m <sup>2</sup>
<b>NR OF FLOORS</b>	
Nr of flrs (Overall, incl. roof)	: 5
Nr of flrs (Above ground, incl. roof)	: 4
Nr of flrs (Below ground)	: 1
<b>FLOOR HEIGHTS</b>	
Basement - Clear	: 2.65m
Basement - Floor to floor	: 2.95m
Ground - Clear	: 3.5m
Ground - Floor to floor	: 3.8m
First - Clear	: 3.2m
First - Floor to Floor	: 3.5m
Second - Clear	: 2.95m* minimum (where ceiling is flat)
Second - Floor to Floor	: 3.25m
Roof - Pitch depth	: 3.25m
<b>SUPERSTRUCTURE</b>	
Substructure	: Concrete (in-situ and rammed)
Superstructure	: Timber frame
Standard Elements	: Yes
Fire Protection	: 90 mins
<b>FOUNDATION SOLUTION</b>	
Foundation Solution	: Rammed / in-situ concrete stepped footings + retaining wall
<b>FACADES</b>	
Channel Glass	: 685m <sup>2</sup>
Cork	: 1,270m <sup>2</sup>
Timber Battens*	: 250m <sup>2</sup>
<b>ROOF</b>	
Cork	: 680m <sup>2</sup>
Pavers	: 56m <sup>2</sup>
<b>MEPH</b>	
Product / Specification	: Standard
Swimming Pool	: Concrete structure & tiled finish + associated tanks & pumps
Lift	: 800kg capacity
<b>PARKING</b>	
Nr of Car parking spaces	: 20
Nr of bicycle parking spaces	: 5

## 2. CONSTRUCTION COST MODEL (CURRENT DAY FIXED PRICE)

PRE-CONSTRUCTION	AREA	EUR/M	EUR TOTAL
Technical Documentation	: Included		100,000
Enabling works	: Included		9,000
<b>CONSTRUCTION</b>			
Excavation	: 1,315m <sup>3</sup>		25,850
Foundations	: 682m <sup>2</sup>		55,000
Substructure	: 600m <sup>2</sup>	75	45,000
Superstructure	: 1,800m <sup>2</sup>	134.85	242,730
Cladding	: 2,205m <sup>2</sup>	72.68	160,275
Roofing	: 736m <sup>2</sup>	57.06	42,000
Partitions	: Included		54,850
Doors and Windows	: Included		100,000
MEPH	: Included		229,245
Finishes	: Included		93,940
<b>EXTERNAL WORKS</b>			
Landscaping	: 865m <sup>2</sup>	-	50,610
Utilities	: Included		
<b>TOTAL COST</b>			
Fixed price inflation construction period	: Included		
Fixed price inflation to start on site	: Excluded		
<b>TOTAL CURRENT DAY FIXED PRICE : GIA</b>			
	2400M	561.88	1,348,500

## 3. BASIS, ASSUMPTIONS AND EXCLUSIONS

Assumed one main contract for all works based on a two stage fixed lump sum;  
 Assumed construction in one continuous phase;  
 Excludes specialist professional team (other than architect), third party and statutory fees;  
 Excludes works outside site domain;  
 Excludes removal of asbestos, contaminated material or abnormal ground conditions;  
 Excludes inflation prior to commencement on site;  
 Excludes VAT and other statutory payments;  
 Excludes special architectural coordination for exposed services (eg. special ductwork for visual effect).