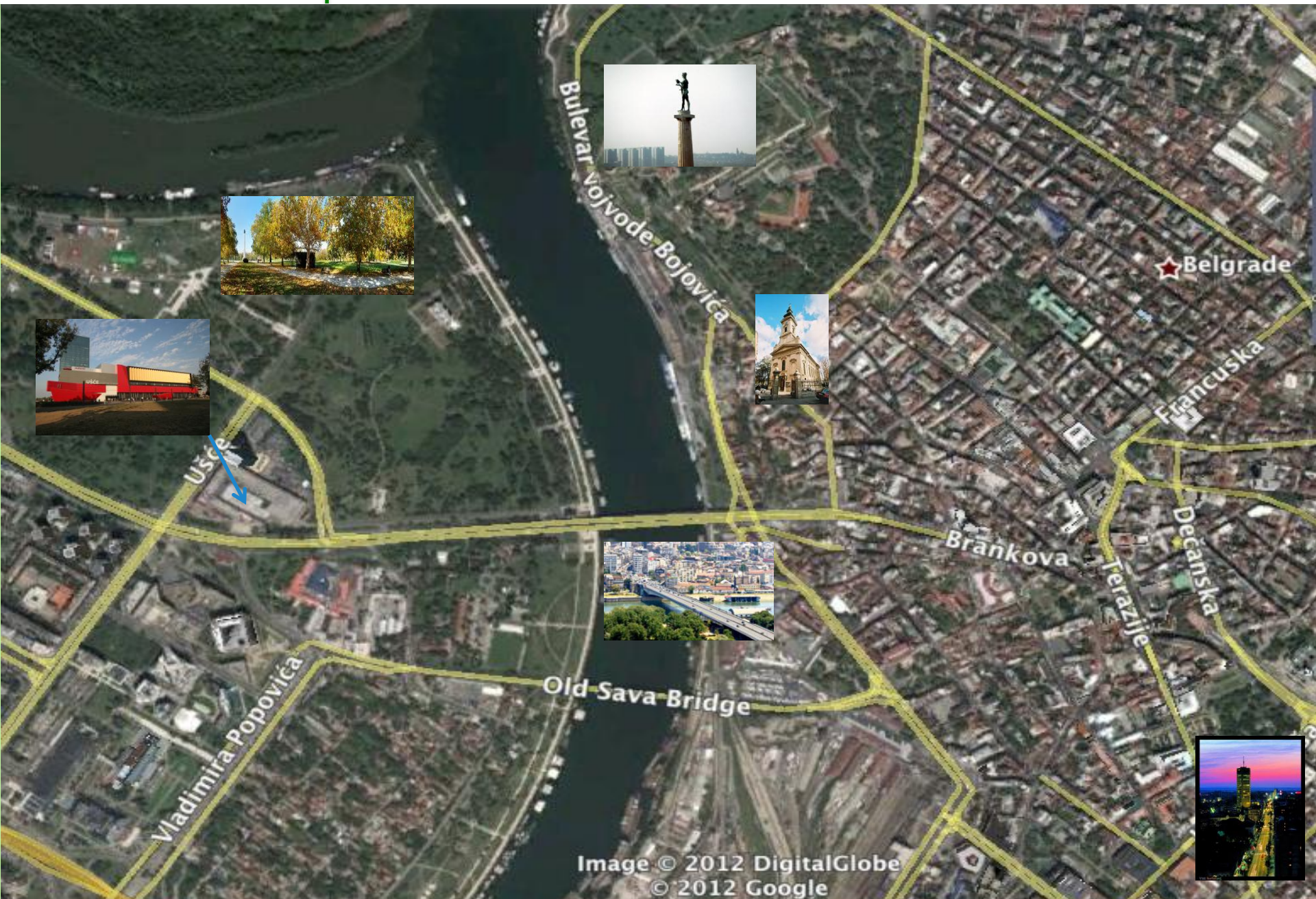


Project Brief

- To design an extension to Ušće shopping center
- Fulfill a need that currently is not provided for
- Energy evaluation using BIM technology from ArchiCAD

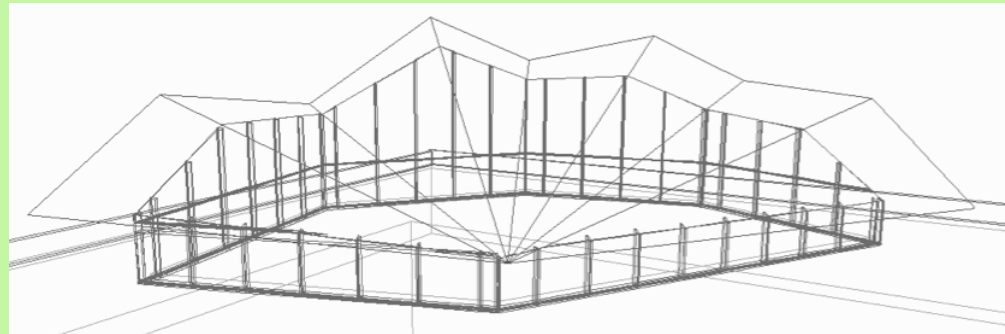


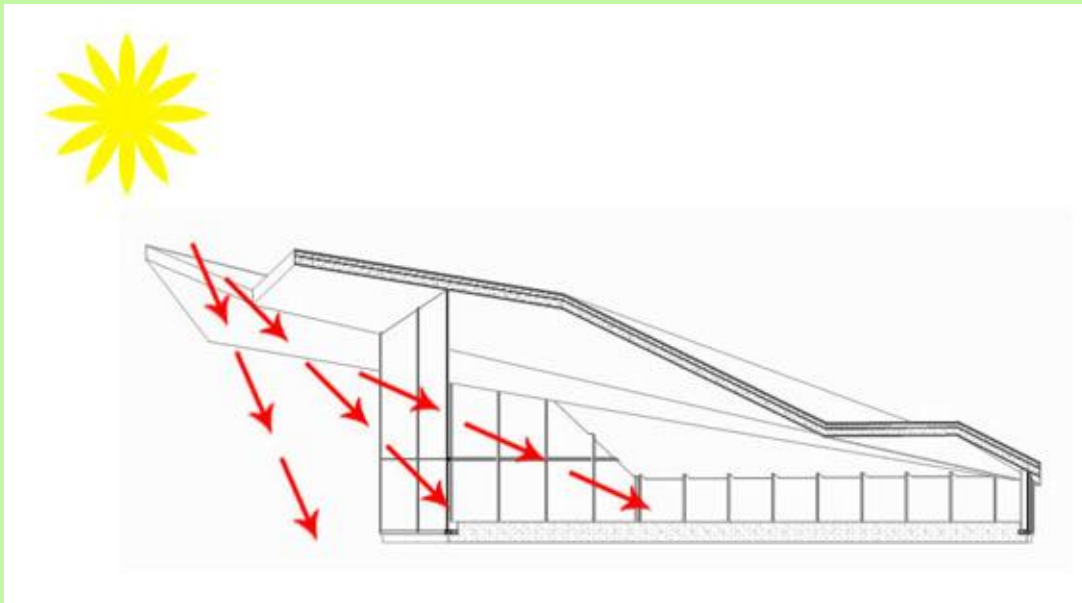


EcoEye - A Wider View

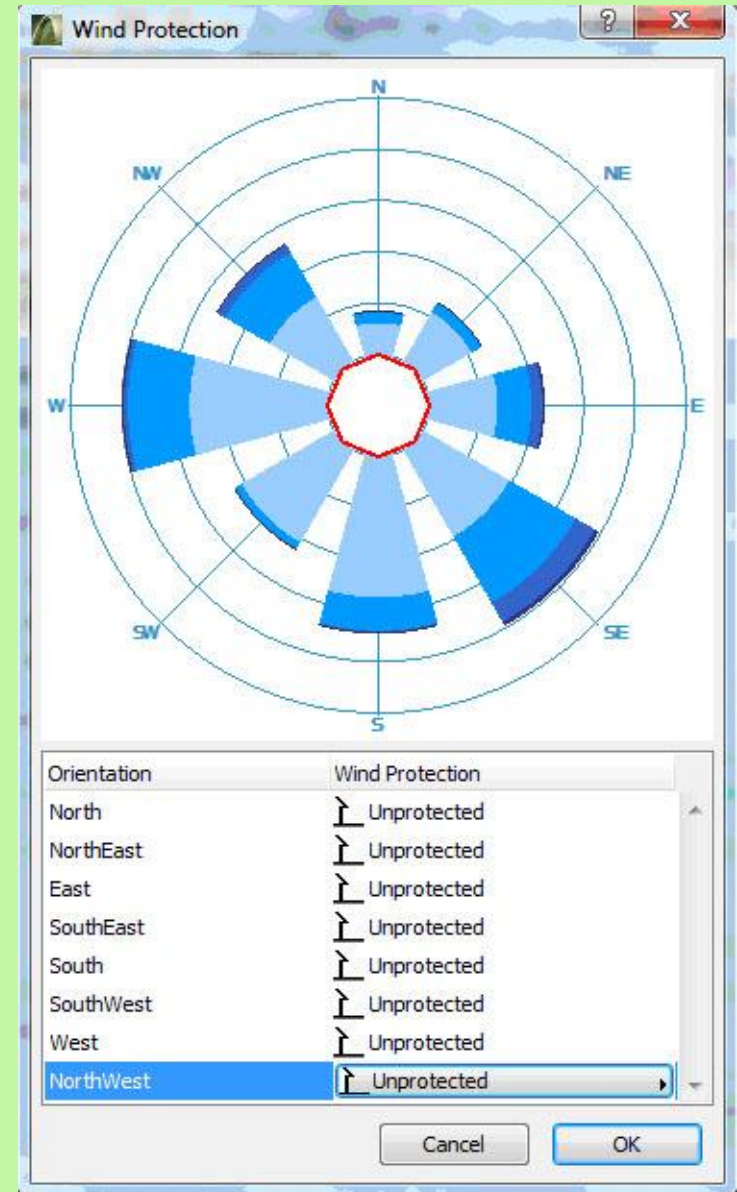
The 'wider' connection
results in a confluence of:

- Environmental
- Cultural •Social

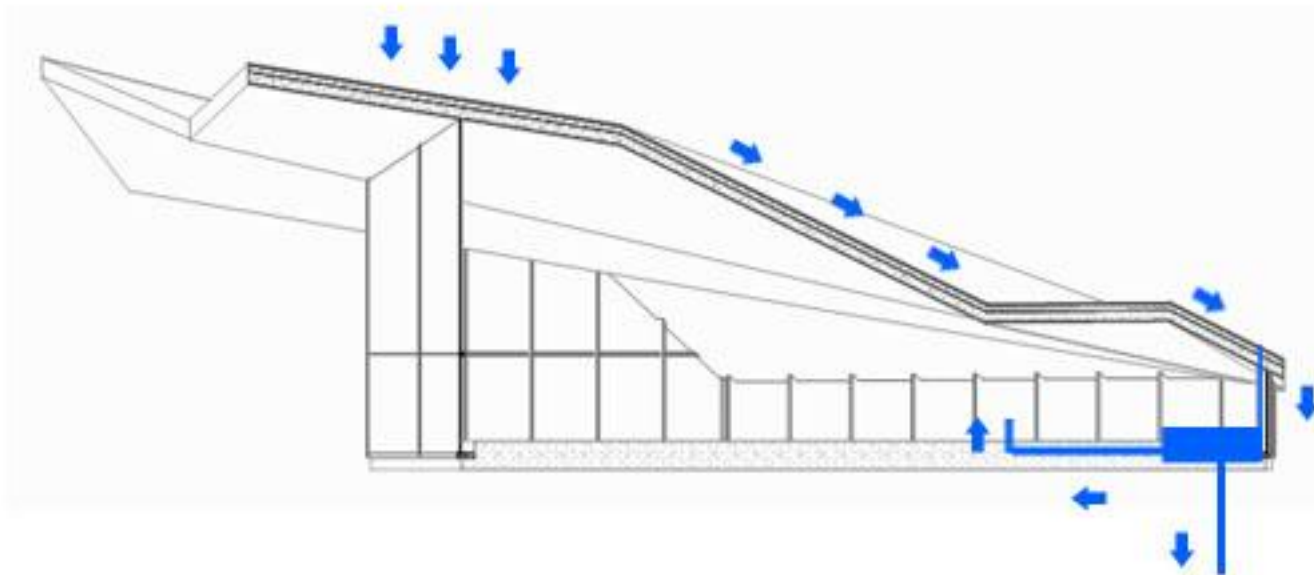


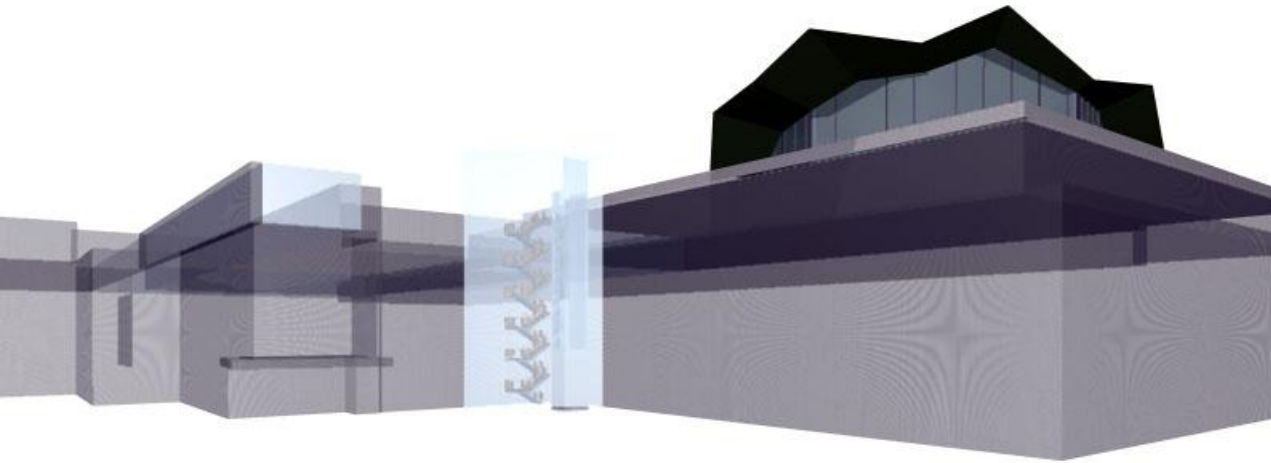


- Orientation
- Form
- Maximise viewing potential
- Why unprotected?



- Green roof
- Water retention
- Rainwater harvesting
- Photovoltaic solar panels





Key Values

General Project Data

Location: Belgrade
 Primary Operation Profile: Other habitab... (80%)
 Evaluation Date: 11/30/2012 12:57 AM

Building Geometry Data

Gross Floor Area: **330.28** m²
 Building Shell Area: **640.88** m²
 Ventilated Volume: **1354.04** m³
 Glazing Ratio: **32** %

Building Shell Performance Data

Air Leakage: **2.06** ACH
 Outer Heat Capacity: - J/m²K

Heat Transfer Coefficients





U value [W/m²K]
 Building Shell Average: **0.50**
 Floors: **1.50 - 1.50**
 External: **0.30 - 1.00**
 Underground: -
 Openings: **0.60 - 1.19**

Specific Annual Demands

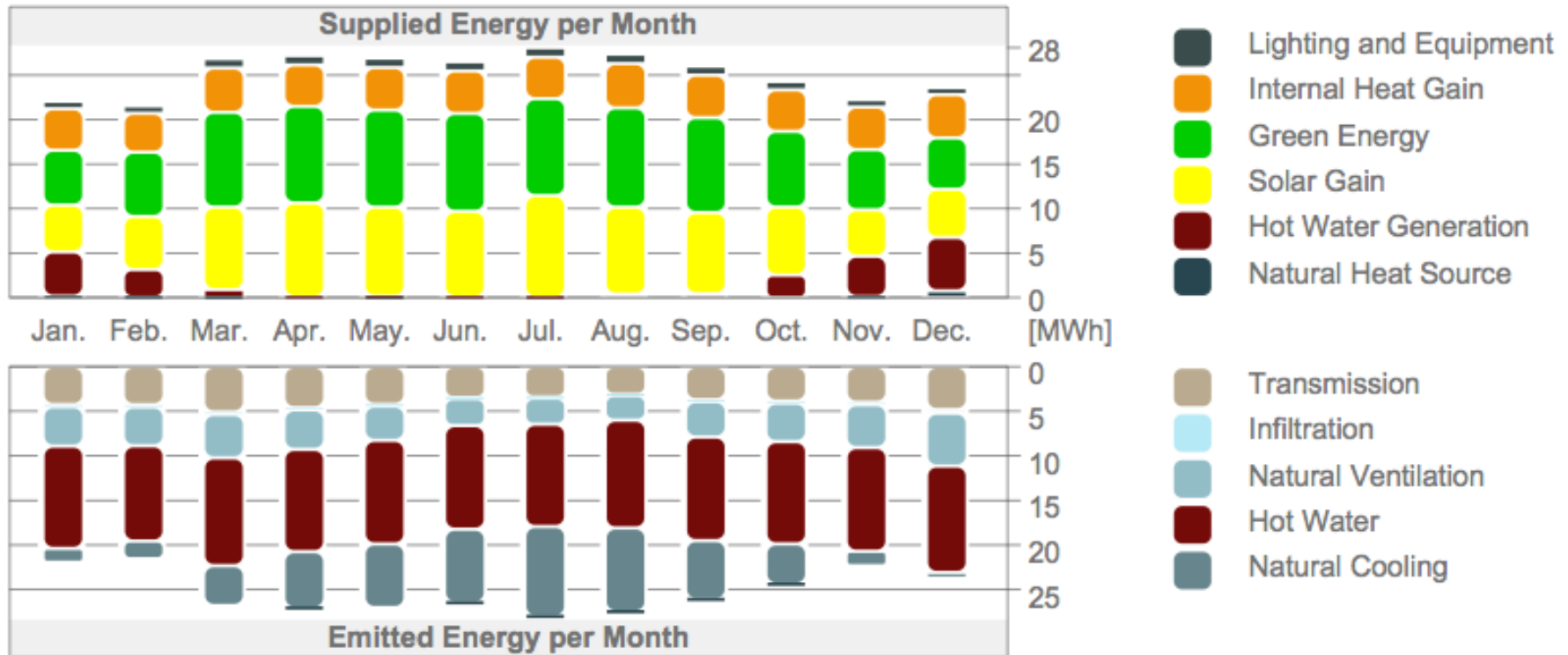
Net Heating Energy: **3.90** kWh/m²a
 Net Cooling Energy: **196.45** kWh/m²a
 Total Net Energy: **200.35** kWh/m²a

Energy Consumption: **656.26** kWh/m²a
 Fuel Consumption: **108.68** kWh/m²a
 Primary Energy: **188.43** kWh/m²a
 Operation Cost: **2638.16** RSD/m²a
 CO₂ Emission: **22.08** kg/m²a

Energy Consumption by Sources

| Source Type | Energy | | | CO ₂ Emission |
|-------------|---|-------------------|---------------|--------------------------|
| | Source Name | Quantity kWh/a | Cost RSD/a | |
| Renewable |  Solar Collector | 110632 | NA | 0 |
| |  Environment | 63526 | | 0 |
| Fossil |  Natural Gas | 23036 | 760211 | 4975 |
| Secondary |  Electricity | 11530 | 78869 | 2046 |
| Total: | | 208726 | 839081 | 7022* |

Monthly Energy Balance



- Ušće shopping center has a unique vantage point
- The EcoEye structure can fulfill various social, cultural and environmental aspects
- The software is very effective in the conceptual design phase
- Based on the initial analysis, the structure is fairly efficient, though input values have significant impact
- For further analysis, a more detailed project development and more precise inputs would be required

Thank You



Questions?

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Nataša Lučić