



W4

Bioclimatic Refurbishment of Two School Buildings

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ZEREFOS TESSAS ARCHITECTS

Hosted by: LIOKAS S.A.
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Location

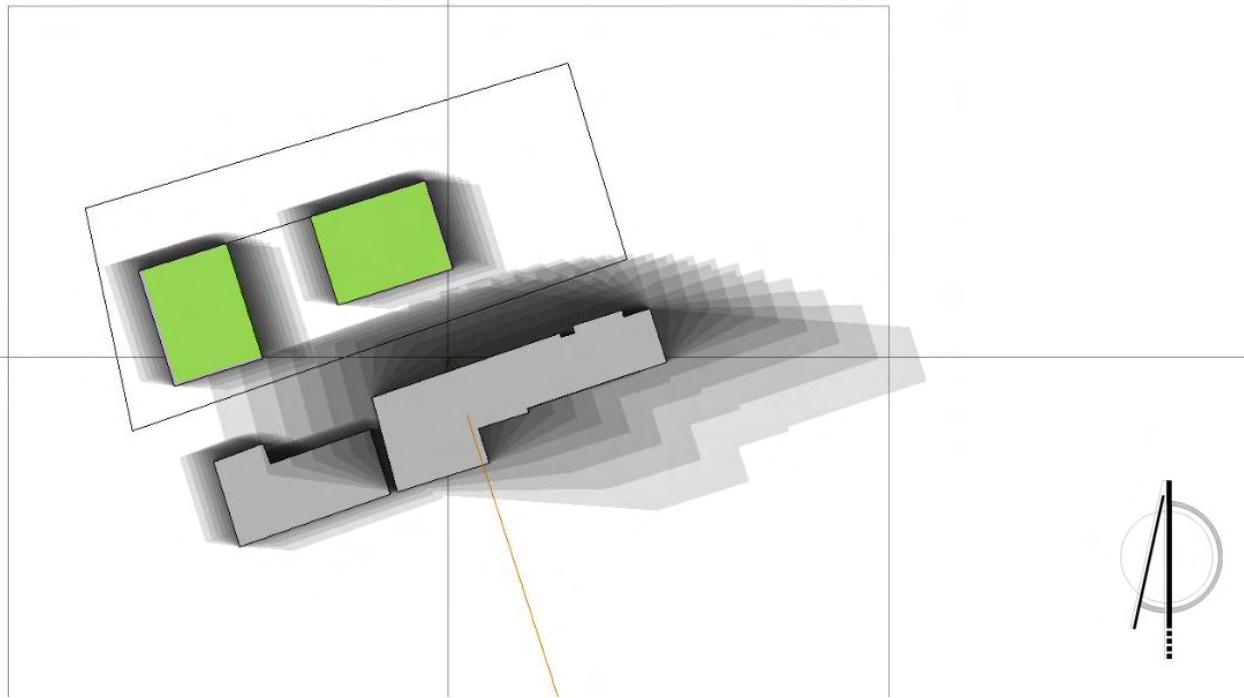


Existing school complex

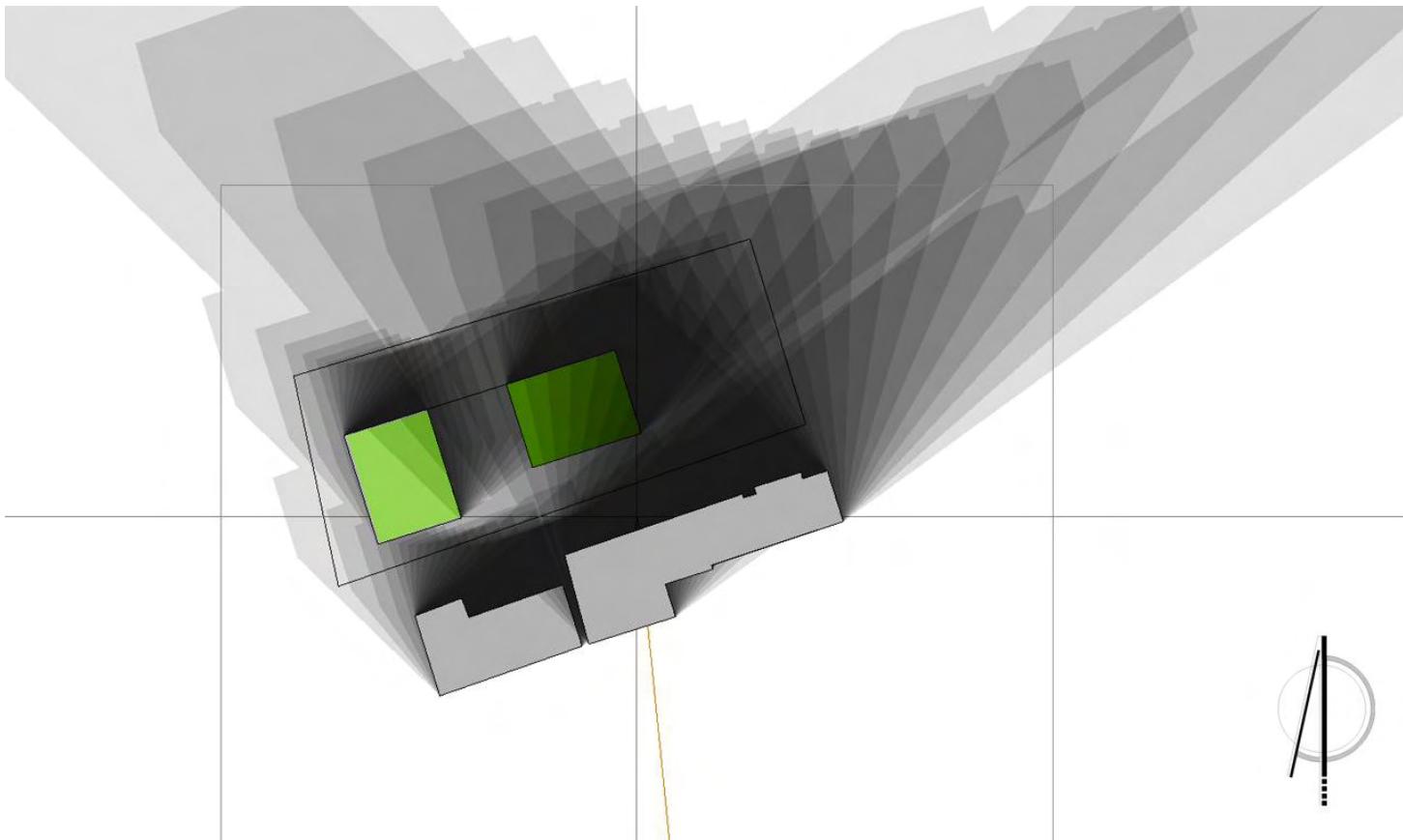
Existing school complex



Shading analysis 21st June



Shading analysis 21st December



Ground floor
Proposed
intervention

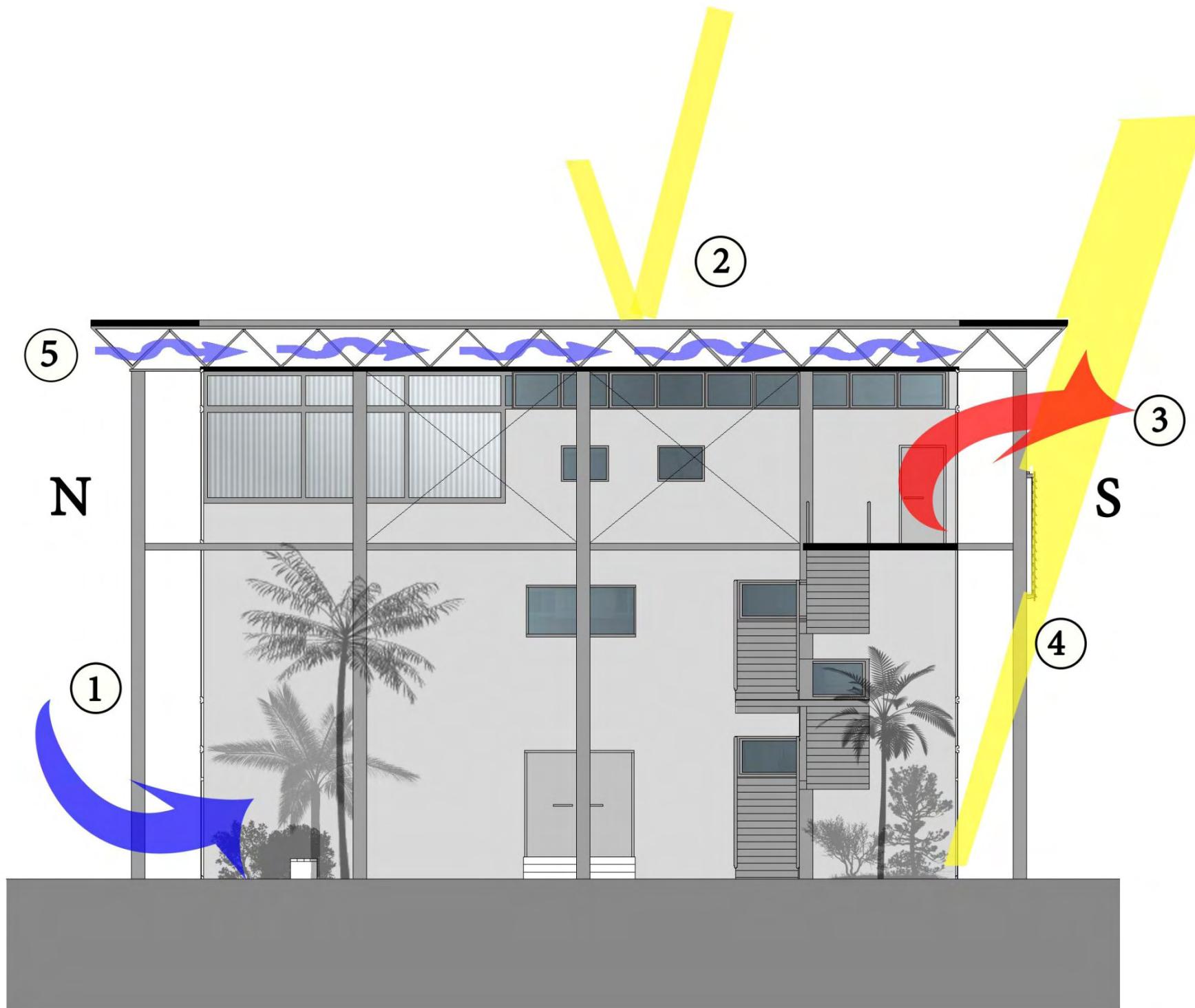


Second floor
Proposed
intervention





Summer function of atrium

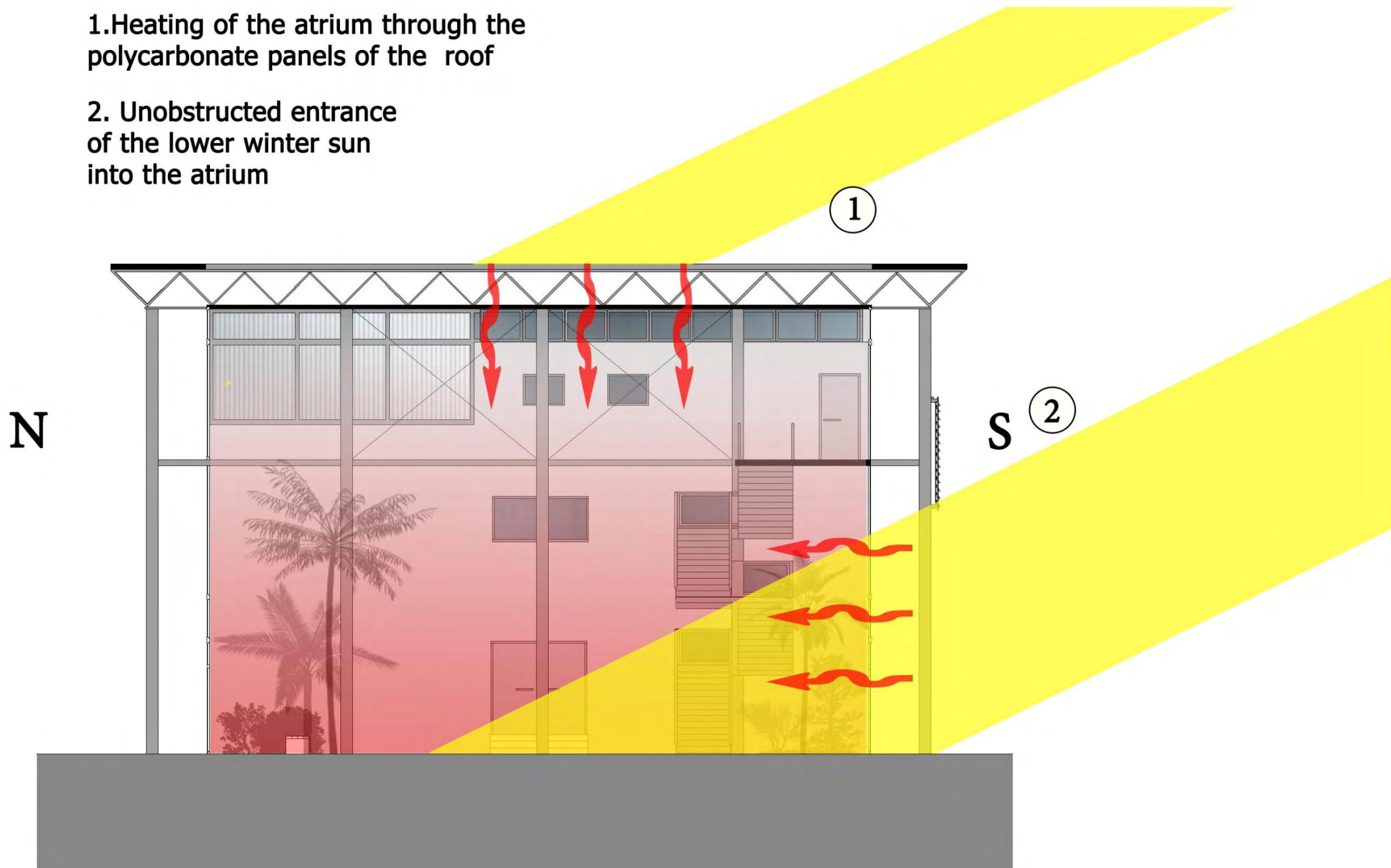


1. Flow of northern summer breeze, through openings
2. Reflection of the sun from the atrium's roof using shading devices
3. Exit of internal heat through high openings and cross-ventilation
4. Shading of southern facade by the roof overhang and the shading devices
5. Free air flow between the roofs

Winter function of atrium

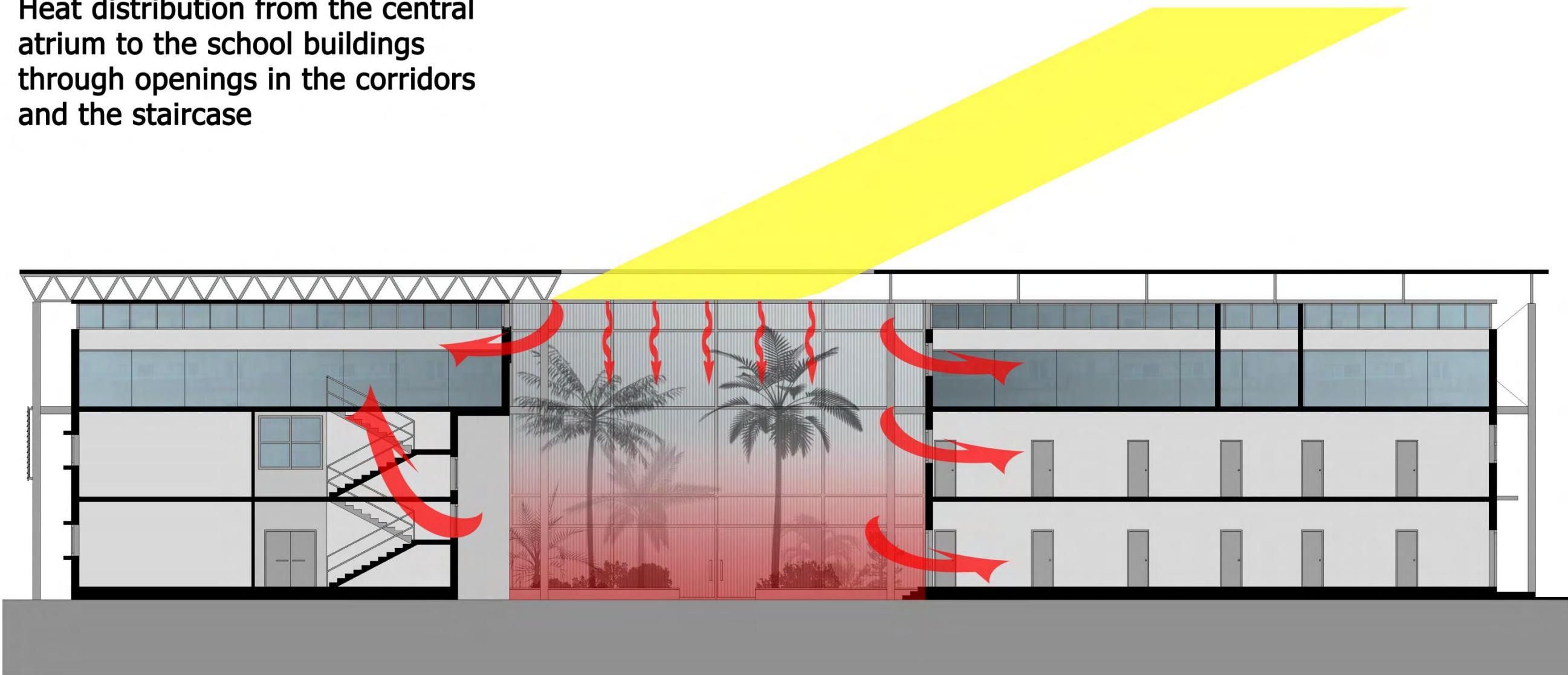
1. Heating of the atrium through the polycarbonate panels of the roof

2. Unobstructed entrance of the lower winter sun into the atrium



Longitudinal section

Heat distribution from the central atrium to the school buildings through openings in the corridors and the staircase



Transversal section

1. Incidence of solar radiation on photovoltaic panels
2. Green roof design

