Oval Offices in Cologne, Germany ● Sauerbruch & Hutton + Transsolar

105 kWh/m² (33.3 kBtu/ft²)
Oval Offices in Cologne, Germany  ● Sauerbruch & Hutton  + Transsolar
Oval Offices in Cologne, Germany • Sauerbruch & Hutton + Transsolar
The facades consist of full-height windows and fixed panels of insulated, double-glazed units. Occupants can open windows for ventilation and vertical, finlike glass louvers provide shade. They are computer-operated but can be manually overridden by control panels in each office.
Oval Offices in Cologne, Germany  •  Sauerbruch & Hutton  +  Transsolar
Oval Offices in Cologne, Germany  ●  Sauerbruch & Hutton  +  Transsolar
Oval Offices in Cologne, Germany  ●  Sauerbruch & Hutton  +  Transsolar

2010: €78M ($250/ft²)
Capricorn Haus Office in Dusseldorf, Germany • Gatermann + Schossig

43 kWh/m² (13.6 kBtu/ft²)
Capricorn Haus Office in Dusseldorf, Germany  ●  Gatermann + Schossig
Capricorn Haus Office in Dusseldorf, Germany • Gatermann + Schossig
Capricorn Haus Office in Dusseldorf, Germany  •  Gatermann + Schossig
Capricorn Haus Office in Dusseldorf, Germany  ●  Gatermann + Schossig
Capricorn Haus Office in Dusseldorf, Germany • Gatermann + Schossig

Raico “Shuffle” Framing
Capricorn Haus Office in Dusseldorf, Germany • Gatermann + Schossig
Capricorn Haus Office in Dusseldorf, Germany  ●  Gatermann + Schossig

2006: €57M ($265/ft²)
Elithis Tower in Dijon, France • Arte Charpentier Architectes

Net Positive Energy
Elithis Tower in Dijon, France • Arte Charpentier Architectes
Elithis Tower in Dijon, France  •  Arte Charpentier Architectes
Elithis Tower in Dijon, France • Arte Charpentier Architectes
<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Window U-value</td>
<td>1.1 W/(m² K)</td>
</tr>
<tr>
<td>Window g-value</td>
<td>0.4</td>
</tr>
<tr>
<td>Exterior wall U-value</td>
<td>0.32 W/(m² K)</td>
</tr>
<tr>
<td>Base floor U-value</td>
<td>0.39 W/(m² K)</td>
</tr>
<tr>
<td>Roof U-value</td>
<td>0.22 W/(m² K)</td>
</tr>
</tbody>
</table>

Design outdoor temperature for heating: -11°C

Design outdoor temperature and RH for cooling: 32°C / 38%

Heating degree days (base temperature): 2,650 Degree days (base 18°C)

Elithis Tower in Dijon, France  ●  Arte Charpentier Architectes
Elithis Tower in Dijon, France  •  Arte Charpentier Architectes
Elithis Tower in Dijon, France  ●  Arte Charpentier Architectes