



Performance

The Royal Institute of British Architects, RIBA, have developed the 2030 Climate Challenge to help architects design within a climate conscious trajectory. This contains current benchmarks and targets for 2025 and 2030.

At ILEX we believe that we should take on this challenge and responsibility and so have designed the Blok to meet RIBA's 2030 criteria, for both commercial AND residential, today.

Thermal Comfort

ILEX Blok: Humidity-triggered mechanical ventilation maintains relative humidity (RH) close to optimal value. High thermal performance protects against temperature extremes. Large window area can provide solar gain to further reduce winter heating. Calculations by external experts (using PHPP software) show thermal comfort requires little heating (see *Running Costs* below) and the Blok suffers no overheating in the UK (over 25°C), even for south-facing orientation.

Impact: Up to 10% impact on performance. High temperatures lead to tiredness. Low temperatures cause discomfort.

RIBA Targets: Relative humidity (RH): 40-70%. Temperature: 25-28°C max for 1% of occupied hours. Minimum temperature for UK offices is 16°C but employers are required to ensure that working is conducted at a 'reasonable temperature', which doesn't require special clothing for comfort.

Air Quality

ILEX Blok: Mechanical heat recovery ventilation maintains CO₂ and VOC levels close to levels in the external environment.

Impact: 8-11% productivity improvements seen when buildings are well ventilated to ensure low concentrations of CO₂ and VOCs.

RIBA Target: CO₂ levels < 900 ppm, VOCs < 0.3 mg/m³.

Lighting

ILEX Blok: Light levels over 0.6% daylight average.

Impact: Productivity gains when workers are close to a window, with views outside and connection to nature the most significant factor. Office workers working with high levels of natural lighting sleep better (e.g. 46 minutes more in one study).

RIBA 2030 Target: Light levels over 0.2% daylight average. The ILEX Blok offers three times the natural light target level.

Noise

ILEX Blok: Advanced insulation system and triple-glazed windows ensures external noise levels are reduced significantly to bring focus to your work.

Impact: Office noise and chatter reduces worker productivity and happiness. Distracting noise creates a 66% drop in performance.

RIBA Target: Noise levels in focused offices below 35-40 dB LAeq,T

Embodied carbon

ILEX Blok: The embodied carbon in the ILEX Blok materials is less than 260 kgCO₂e/m² (using internal area).

Impact: A low level of embodied carbon means a low contribution to greenhouse gas emissions.

RIBA 2030 Targets: By 2030, embodied carbon less than 500 kgCO₂e/m² for commercial property and less than 300 kgCO₂e/m² for residential. The ILEX Blok meets both 2030 targets now.

Running costs

ILEX Blok: Independent calculations show the ILEX Blok requires 155kWh per year of energy to heat for the whole year - that's £19/yr (@ 12 pence/kWh) and less than 30 kWh/m²/yr using internal area.

Impact: Low energy use means low running costs and reduced impact on the environment.

RIBA 2030 Targets: By 2030, operational energy consumption less than 55 kWh/m²/yr for commercial property and less than 35 kWh/m²/yr for residential. The ILEX Blok meets both 2030 targets now.

Sources

Health, Wellbeing & Productivity in Offices. The next chapter for green building - World Green Building Council

https://www.worldgbc.org/sites/default/files/compressed_WorldGBC_Health_Wellbeing_Productivity_Full_Report_Dbl_Med_Res_Feb_2015.pdf

RIBA Climate Challenge 2030

<https://www.architecture.com/-/media/files/Climate-action/RIBA-2030-Climate-Challenge.pdf>

HSE

<https://www.hse.gov.uk/temperature/thermal/factors.htm>

BS 8233:2014

ILEX

ILEX Block Dedicated work space