WHAT IS LG7?
FACTS & FIGURES

- Founding year: 1912
- Legal form: GmbH & Co. KG (limited liability company)
- Consolidated annual turnover 2015: 600 million euros
- Global employees: > 5,000
- Business partners and subsidiaries: 34 and 12
- Service subsidiaries: > 50 countries
MAY I INTRODUCE MYSELF

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BSI and ISO TC
WHAT IS LG7?
Lighting for the built environment

LG7: Offices
PREVIOUS EDITION OF LG7

Lighting Guide 7: Office lighting
Skype HQ
GIA Equation
WHAT IS THE TASK?
## Correct Levels for the Task

### Table 2.30  Offices

<table>
<thead>
<tr>
<th>Ref No.</th>
<th>Type of area, task or activity</th>
<th>$E_{co}$ / lx</th>
<th>$UGR_L$</th>
<th>$U_o$</th>
<th>$R_a$</th>
<th>Specific requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.30.1</td>
<td>Filing, copying, etc</td>
<td>300</td>
<td>19</td>
<td>0.40</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>2.30.2</td>
<td>Writing, typing, reading, data processing</td>
<td>500</td>
<td>19</td>
<td>0.60</td>
<td>80</td>
<td>DSE work, see 2.1.9</td>
</tr>
<tr>
<td>2.30.3</td>
<td>Technical drawing</td>
<td>750</td>
<td>16</td>
<td>0.70</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>2.30.4</td>
<td>CAD work stations</td>
<td>500</td>
<td>19</td>
<td>0.60</td>
<td>80</td>
<td>DSE work, see 2.1.9</td>
</tr>
<tr>
<td>2.30.5</td>
<td>Conference and meeting rooms</td>
<td>500</td>
<td>19</td>
<td>0.60</td>
<td>80</td>
<td>Lighting should be controllable</td>
</tr>
<tr>
<td>2.30.6</td>
<td>Reception desk</td>
<td>300</td>
<td>22</td>
<td>0.60</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>2.30.7</td>
<td>Archives</td>
<td>200</td>
<td>25</td>
<td>0.40</td>
<td>80</td>
<td>For filing, the vertical surfaces are especially important</td>
</tr>
</tbody>
</table>
LIGHTING THE TASK

HOWEVER THERE ARE MORE ASPECTS WE MUST CONSIDER

Example of illumination of desk area

- Task area: $\bar{E}_{av} \geq 500\text{lx}$, $U_0 \geq 0.60/0.70$
- Surrounding area: $\bar{E}_{av} \geq 300\text{lx}$, $U_0 \geq 0.40$
- Background area (if necessary): $\bar{E}_{av} \geq 100\text{lx}$, $U_0 \geq 0.10$

Diagram:
- Task area: 1.60m x 0.80m, min. 0.50m
- Surrounding area: min. 3m
- Background area (if necessary): min. 3m

Example of illumination of desk area
VERTICAL SURFACES
CYLINDRICAL ILLUMINANCE
Table 6.2 Luminance limits

<table>
<thead>
<tr>
<th>Screen high state luminance</th>
<th>High luminance screen (L &gt; 200 cd/m²)</th>
<th>Medium luminance screen (L &lt; 200 cd/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case A (positive polarity and normal requirements concerning colour and detail of the displayed information as used in office, education, etc.)</td>
<td>&lt;3000 cd/m²</td>
<td>&lt;1500 cd/m²</td>
</tr>
<tr>
<td>Case B (negative polarity and/or higher requirements concerning colour and detail of the displayed information as used for CAD, colour inspection, etc.)</td>
<td>&lt;1500 cd/m²</td>
<td>&lt;1000 cd/m²</td>
</tr>
</tbody>
</table>
LIGHTING CONTROLS
**ENERGY USE**

Luminaire Lumens per circuit watt

Lighting Energy Numeric Indicator - LENI

\[
\frac{\text{Daytime} + \text{night time} + \text{parasitic loads}}{\text{Floor area of the building}} = \text{kWh/m}^2
\]
OTHER INFLUENCING FACTORS

THE ARCHITECT
OTHER INFLUENCING FACTORS

THE INTERIOR DESIGNER
### OTHER INFLUENCING FACTORS

#### ENGINEERS

**Table 7.1 Typical operating temperatures of common lighting sources and chilled services**

<table>
<thead>
<tr>
<th>Component</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCU air supply</td>
<td>Typically 6–8 °C below the ambient temperature in the space to be cooled</td>
</tr>
<tr>
<td>Chilled beam surface temperature</td>
<td>Typically 14–18 °C</td>
</tr>
<tr>
<td>T5 lamp optimum operating</td>
<td>Typically 35 °C around the lamp</td>
</tr>
<tr>
<td>temperature</td>
<td></td>
</tr>
<tr>
<td>T8 lamp optimum operating</td>
<td>Typically 25 °C around the lamp</td>
</tr>
<tr>
<td>temperature</td>
<td></td>
</tr>
<tr>
<td>LED optimum operating</td>
<td>Typically 25 °C</td>
</tr>
<tr>
<td>temperature</td>
<td></td>
</tr>
</tbody>
</table>
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THE SPEC OFFICE

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ALBERT BRIDGE HOUSE

FOSTER + PARTNERS
Lighting Guide 6: The exterior environment

Lighting for the built environment

LU7: Offices

Lighting for the built environment

LU8: Lighting for Education
PREVIOUS EDITION OF LG6

- Published in 1992
PUBLISHED IN 2016

STRUCTURE OF THE NEW LG6


• General techniques – Landscapes, facades, open areas such as car parks, security lighting, Roadways.

• Specific applications

• Appendix, Bibliography etc
ADDITIONS

Vision
ADDITIONS

Masterplans and Nightscape strategies
ADDITIONS

Software and visualisations
ADDITIONS

Off Grid and PV systems
ADDITIONS

Media facades
ADDITIONS

Building Facades

Heritage to modern + individual features
ADDITIONS

Ecological and environmental issues
ADDITIONS

Equipment for Extreme Environments
ADDITIONS

LEDs

- Not mentioned at all in the 1992 Guide.
- Forms a large part of the Luminaires & Equipment chapter.
And much more
THANK YOU FOR YOUR ATTENTION