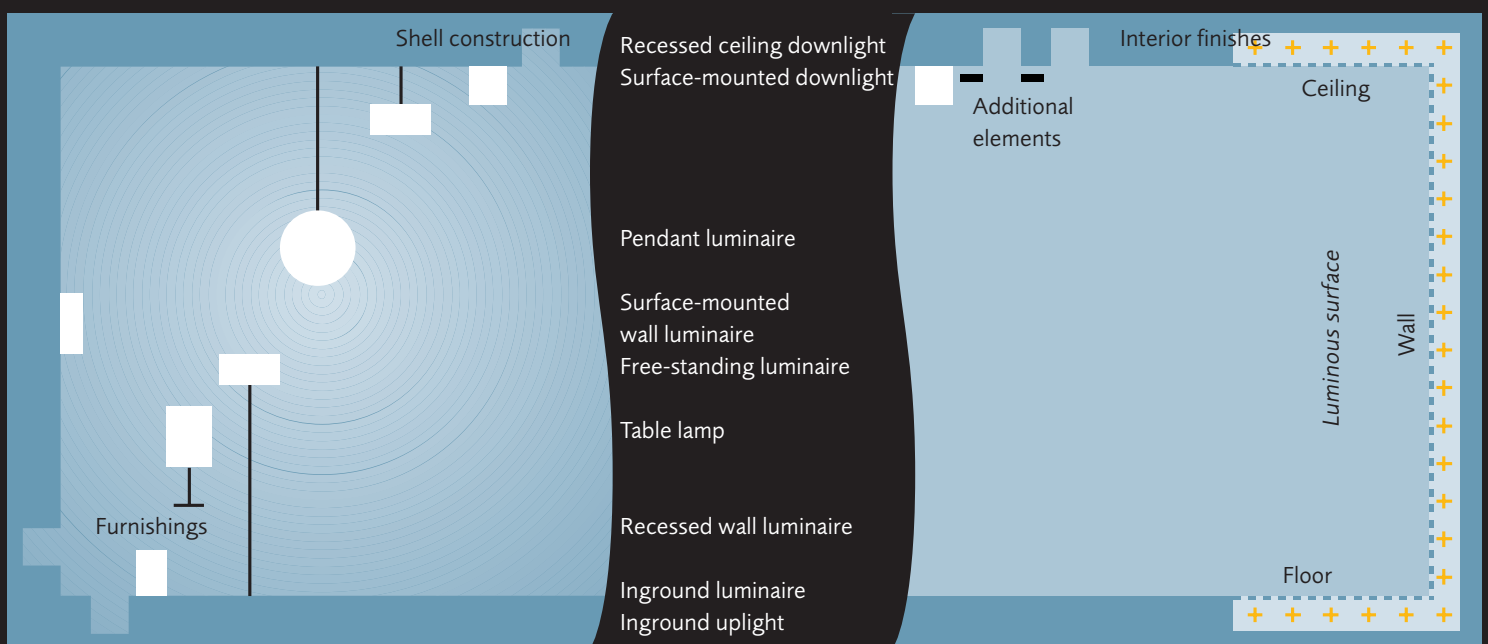
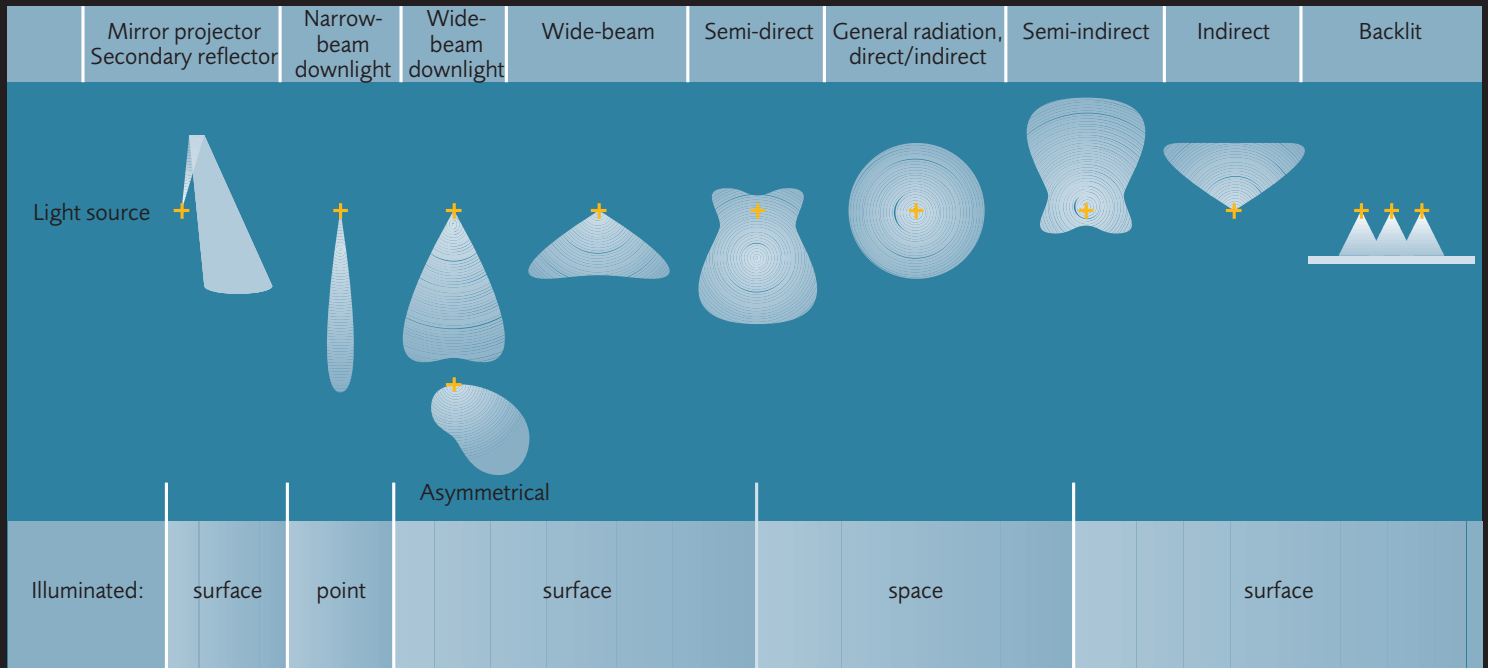


Series (3):

Luminaires as mediators between light and space



Short preface

When a lamp is not able to meet all required or desired light distribution functions on its own, the luminaire acts as the medium between the light source and the space.

A luminaire may not be required if:

- ⇒ the light source is sufficiently minimalised
- ⇒ visible technology is an aspect of the lighting design
- ⇒ high luminance contrast is an aspect of the lighting design.

But the lamp has to be connected to the mains for it to operate: the lamp base is fitted into the lamp holder, or socket.

The lamp holder is therefore the last indispensable part of the luminaire.

Luminaires combine all the requirements for distributing electric light into a space, but they do not generate light. They comprise:

- ⇒ electrical engineering and electronics
- ⇒ protection for the light source, users and materials
- ⇒ design.

There are very many different types of lamps and luminaires available. The lighting designer must have a profound knowledge of both to be able to practise effectively.

Controlling luminous flux...

...using mirrored elements, prisms, louvres, light distribution curves in polar coordinates.

The most important quality of a luminaire is the way it controls luminous flux. This is expressed in light distribution curves. The lighting designer needs light distribution curves in the initial design phase. This is portrayed in diagrammatic form in PLD no. 30 under the title of "Photometric qualities in a space". Light distribution curves also have enormous value in the communication sense, because they combine exact measurements and a diagrammatic rendering, addressing the needs of engineers and designers and allowing them to communicate.

Position in the space

The position a luminaire in a space is dependent on one of two factors:

- ⇒ either the luminaire represents a light source or a design object in the space,
- ⇒ or it is required to illuminate a specific object or surface.

In the second instance, the position of the luminaire may play a part in decision-making at the initial structural building phase. Lighting design is most likely to be successful, if treated as an integral part of the architectural design. When a solid wall receives lightweight cladding, this can be backlit to create an extensive luminous surface. Light may be transmitted through the wall surface (translucence). When illuminated frontally, light is bounced off the wall (reflection).

Some luminaires fit into neither category: some recessed spotlights can be equipped with screens or ring louvres subsequent to installation. The light source is then no longer visible when the luminaire is viewed from a distance. Only the light effect is visible.

In the next issue we will deal with the different ways a space, or parts of a space, can be illuminated. A lighting effect is produced when the light interacts with a surface. The luminaire is the means and the lighting effect is the aim of the lighting design.