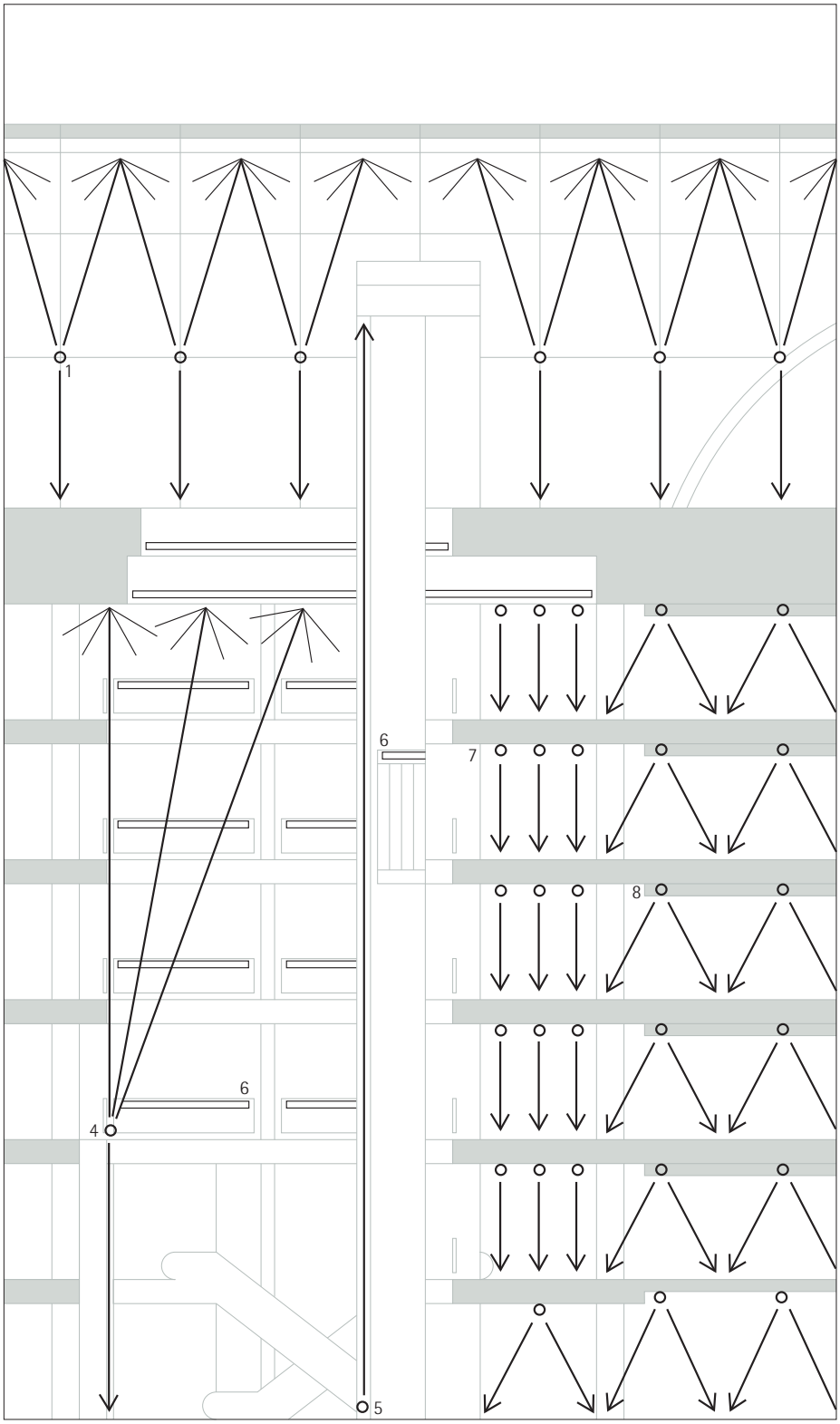

Development of a lighting concept for the atrium of a large department store. The representations show two vertical sections set at right angles to each other through the atrium with a central panoramic lift. The aim of a lighting concept is to determine the positions of the luminaires and the lighting quality, without defining luminaire types or illuminance levels.

The walkways leading from the individual sales floors to the lifts receive a curtain of light from the direct luminaires arranged closely together along the wall (7).

A series of recessed ceiling downlights (8) provide general lighting in the adjoining sales spaces.

Practical planning

Having completed the project analysis and developed a lighting concept the next phase entails practical planning: decisions regarding the lamps and luminaires to be used, the arrangement and installation of the luminaires, their control gear and the lighting control equipment required. A detailed design can be developed from a concept based primarily on lighting qualities, which will allow both illuminances and costs to be calculated to a reliable degree.

Similar to the earlier planning phases, it is also not possible at this stage in the planning process to stipulate a fixed or standard sequence of planning steps - it may be possible to decide on a lamp type at the beginning of a project, but it may equally not be possible until an advanced stage in the planning process; the lighting layout may be the consequence of the choice of a particular luminaire or, alternatively, the basis for the choice of luminaire. Lighting design should be regarded as a cyclical process, which always allows the solutions that have been developed to be aligned to the stated requirements.

3.3.1 Lamp selection

The choice of light sources has a decisive influence on the qualities of a lighting installation. This applies first and foremost to the technical aspects of the lighting; the costs for control gear that may be required, the possibility of incorporating a lighting control system and, above all, the operating costs for the lighting installation, depend almost entirely on the choice of lamps. It also applies similarly to the quality of light the lighting designer is aiming to achieve, e. g. the choice of luminous colour to create the atmosphere in specific spaces, the quality of colour rendering or the brilliance and modelling necessary for display lighting. The effect of the lighting does not depend solely on the decision to use a specific lamp type, however; it is the result of the correlation of lamp, luminaire and illuminated environment. Nevertheless, the majority of lighting qualities can only be achieved with the correct choice of light source. It is just as impossible to create accent lighting using fluorescent lamps as it is to obtain acceptable colour rendering under sodium lamps.

The decision to select a particular light source is therefore not to be taken lightly, but is dependent on the criteria defined by the required lighting effect and basic conditions pertaining to the project. From the wide range of lamp types available there will only be a limited number which will fulfil the specific requirements.

Wallwashers equipped with (from the top downwards) halogen lamps, metal halide lamps and compact fluorescent lamps: the same luminaire types with identical distribution characteristics produce different luminous flux, luminous colour and colour rendering qualities depending on the lamp used.