

Glaucoma is shown by a progressive narrowing of the visual field. Glaucoma is due to an increase in intraocular pressure which damages the blood vessels supplying the retina. Glaucoma will continue until complete blindness occurs unless the intraocular pressure is reduced.

Diabetic retinopathy is a consequence of chronic diabetes mellitus and effectively destroys parts of the retina. The effect this has on visual capabilities depends on where on the retina the damage occurs and the rate at which it progresses.

These changes with age can be compensated, to some extent. The limited range of focus of the elderly can be overcome by the use of lenses. The tasks they have difficulty with can be redesigned to make them visually easier, usually by increasing the luminance contrast of the task details, making the task details bigger and using more saturated colours. Lighting can also be used to compensate for aging vision. The elderly benefit more from higher illuminances than do the young, but simply providing more light may not be enough. The light has to be provided in such a way that both disability and discomfort glare are carefully controlled and veiling reflections are avoided. Where elderly people are likely to be moving from a well-lit area to a dark area a transition zone with a gradually reducing illuminance is desirable.

People with low vision may or may not benefit from such changes in lighting depending on the specific cause of the low vision. However, there is one approach that is generally useful. This approach is to simplify the visual environment and to make its salient details more visible by attaching high luminance contrast to those details, and only to those details. Figure 2.20 shows an interior where this principle has been applied.

**Figure 2.20** Contrast in the visual environment

