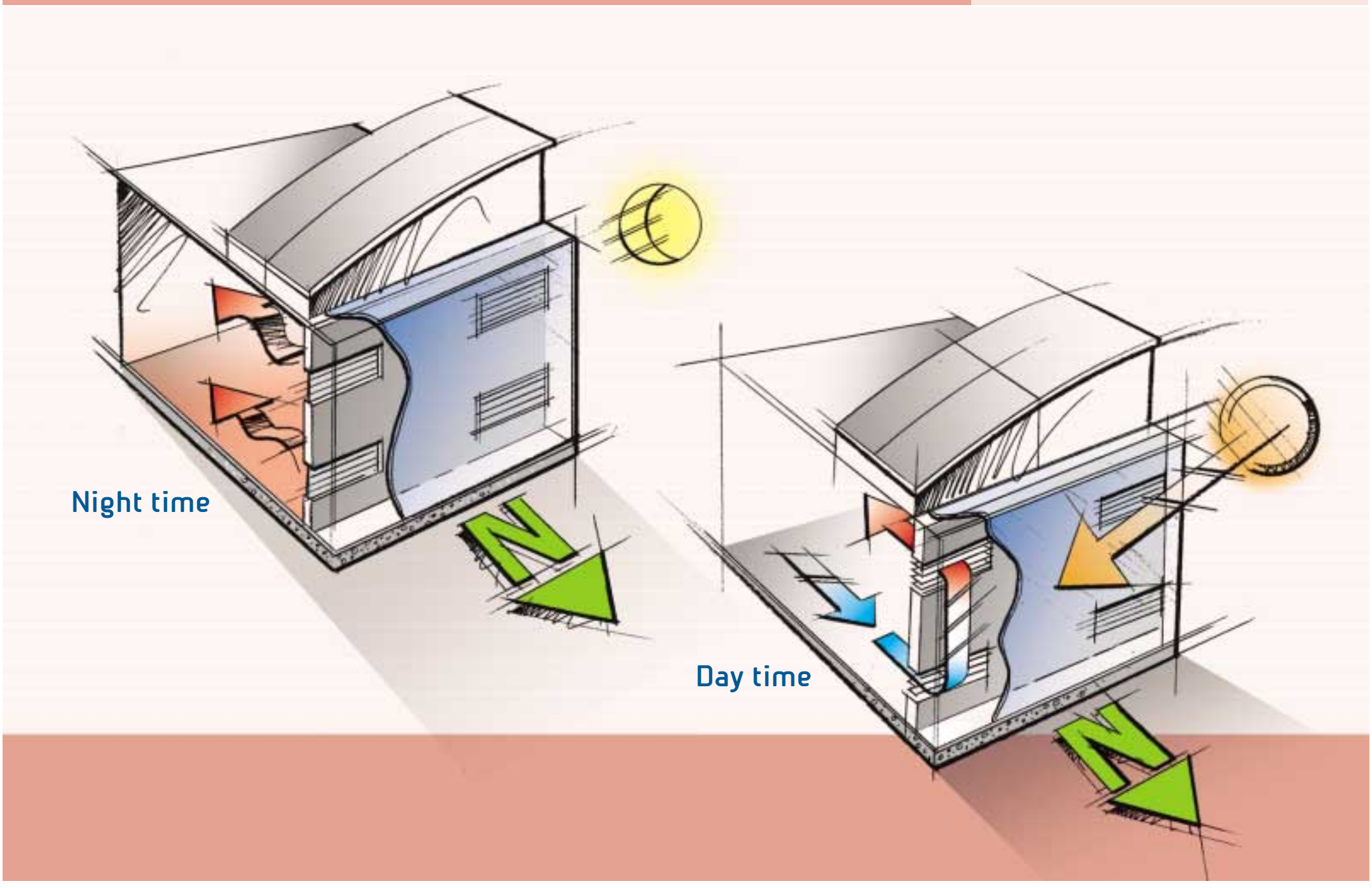
08 THERMAL STORAGE
› Trombe walls

heating



HOW IT WORKS

- A typical Trombe wall can form part of the building envelope and may incorporate thermal mass principles.
- It consists of a 20–40 cm thick masonry wall coated with a dark, heat-absorbing material.
- A single or double layer of glass is placed on the outer face away from the wall, with a small airspace between the wall and the glass.
- During the day solar radiation will heat the air trapped between the glass and the wall, and the wall itself will also heat up.
- Vents at the top and the base of the wall allow the heated air to circulate into the building.
- Once the wall heats up it too will radiate heat into the building.
- During the night heat that is stored in the thermal mass of the wall will radiate into the room.
- At night it is advisable to close the upper vent to prevent the loss of heat energy from the building.

HOW IT SAVES ENERGY

- Trombe walls save energy by complementing conventional heating. In an efficient building Trombe walls may even replace the need for conventional heating.

HOW IT IS INNOVATIVE

- Not widely used in Victoria.
- Integration with existing facilities not widely performed.

APPLICATION

- Trombe walls can be used wherever building heating is required providing that a suitable north-facing wall is available.
- In Victoria, consideration must be given to hot summer months. To avoid overheating it is important to provide shade over the glass collector and close both the upper and lower vents.

WHERE DEMONSTRATED

- The Jacob's Creek Visitor Centre, Barossa Valley, South Australia uses a natural ventilation system incorporating Trombe wall principles.