Trapping the tropics

Joseph Paxton's Great Conservatory and other glasshouses

Learning resource presentation: KS2

DEVONSHIRE EDUCATIONAL TRUST

Tropical plants

During the 19th century people became interested in collecting and growing tropical plants such as:

Ferns

Water lilies

Orchids

Bananas

Tropical plants

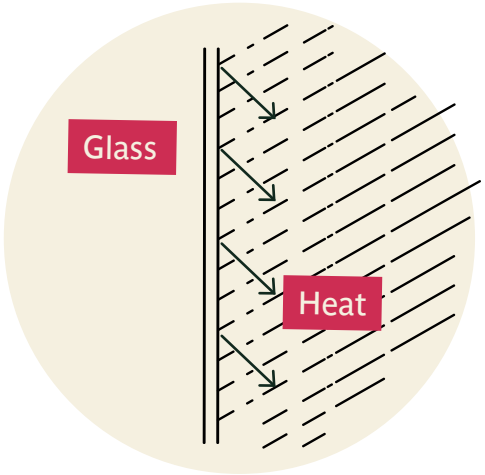
Tropical plants need sunlight, warmth and moisture to survive.

England is not a hot and sunny country so glasshouses were built to help these plants grow.

At Chatsworth Joseph Paxton built 20 different glasshouses.

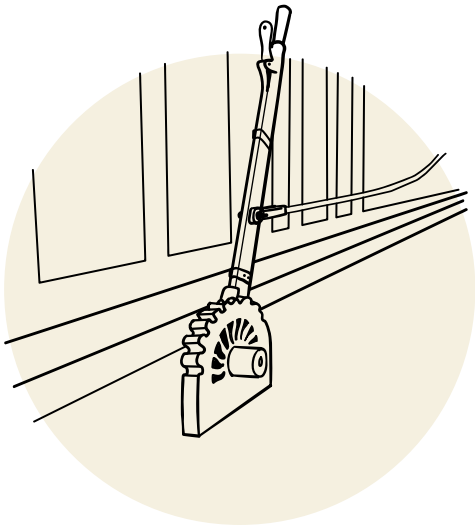
How does a glasshouse work?

Light passes through the glass walls of the greenhouse and is converted into heat.



The heat cannot escape back through the glass and so becomes trapped in the greenhouse.

The trapped heat warms the air inside the greenhouse and the air becomes hot and humid. This helps the tropical plants to grow.



If the greenhouse becomes too hot vents can be opened to cool it down.

How were glasshouses built?

Joseph Paxton built his glasshouses using glass, timber and iron.

He wanted his glasshouses to have as much glass as possible.

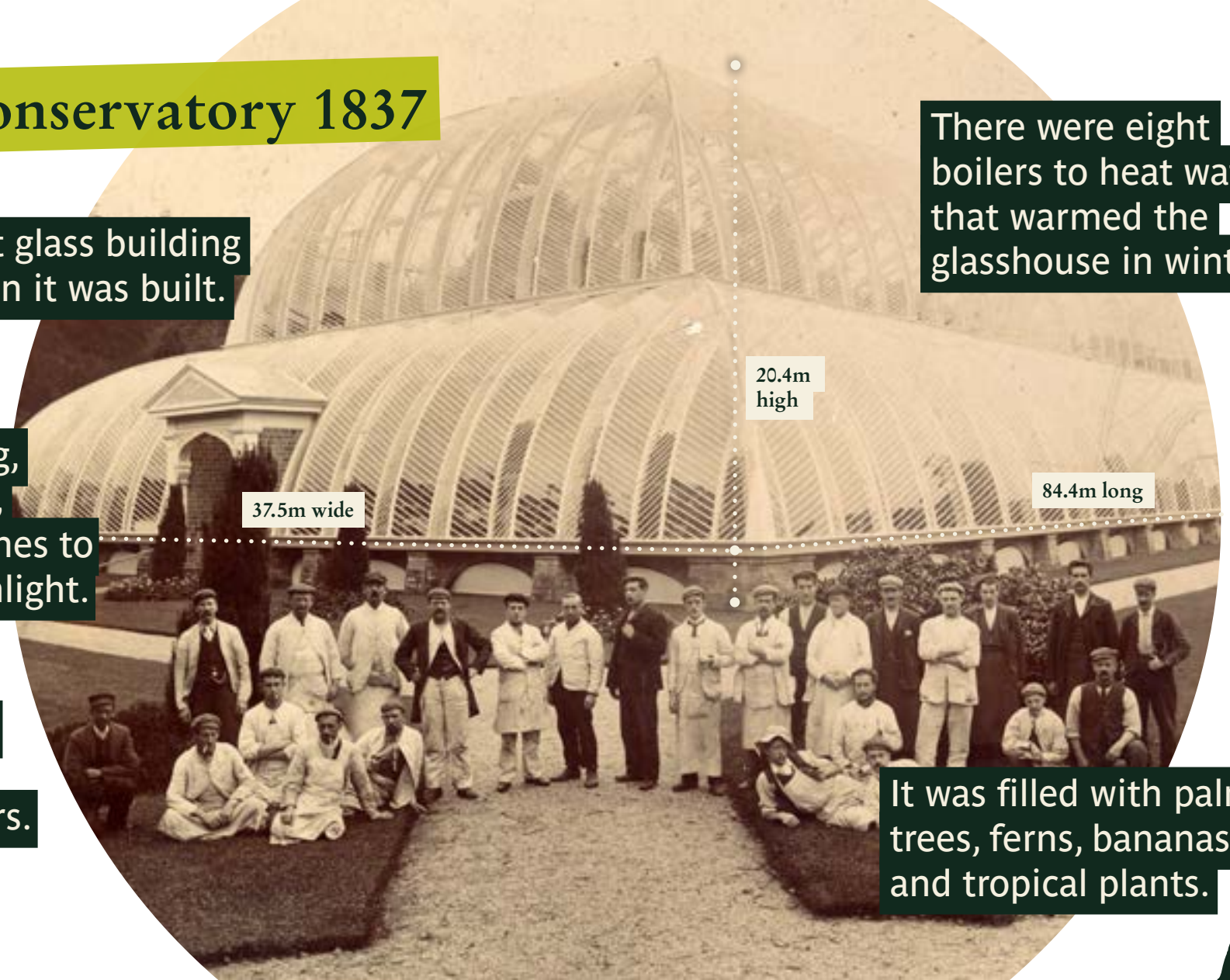
More glass = more sunlight captured = more warmth

The Great Conservatory 1837

It was the largest glass building in the world when it was built.

The roof was sloping, with a double curve, and angled glass panes to catch maximum sunlight.

An underground railway brought coal to the boilers.



There were eight boilers to heat water that warmed the glasshouse in winter.

It was filled with palm trees, ferns, bananas and tropical plants.