



## Eden to blossom in desert



On barren desert in Saudi Arabia, engineers and scientists are to build a stately pleasure dome to house the 'garden of ages'.

It will re-create the 400-million-year-old history of our planet's plants, trees and flowers.

The dome - near Riyadh - will cover more than 24 acres and become the world's largest indoor garden. Plants from key botanical epochs will be grown and displayed in seven sections inside two interlocking, crescent-shaped enclosures. The project - run on renewable energy and using a minimum of water - is intended to revitalise tourism.

"Visitors will journey through time - from the *Devonian* period 410 million years ago, through eras like the *Carboniferous* to the *Pliocene* and the present day" - said the dome's designer, Nick Sweet of architects, Barton Willmore. "There will even be a Jurassic Park - but, without dinosaurs.

"Essentially, we are going to take a single piece of land and show how it has been transformed - as plants have evolved and diversified throughout Earth's history - and some of those changes have been dramatic. This part of Saudi Arabia may be parched and burning hot today - the temperature was 54°C last week - but there were times when rivers flowed and cool forests flourished here. Visitors will be able to experience all of that."

Designing an ambitious venture - such as the *King Abdullah International Gardens* - has not been easy, however. Keeping the gardens' various eco-systems cool in the blistering Saudi summer heat has been a major headache. "We cannot just stick-in a huge air conditioner to pump in vast amounts of cold air" - Sweet said. "The running costs would be huge and it would send out the wrong ecological message.

"Instead, we have built especially high domes. At some points, they will reach more than 120ft. Hot air will rise to the top and trap cool air at the bottom. We will then need relatively modest amounts of air-conditioning to cool the gardens at ground level."

Each of the seven environments inside the £100m building - which will become the world's largest Teflon construction - will be powered by renewable sources - mainly solar and wind - while water will be stored in underground reservoirs beneath the domes.

"Visitors will start their floral time-walk at the *Devonian* period - 410 million years ago" - said Dr Paul Kenrick, a paleobotanist at the Natural History Museum, London and the project's scientific adviser. "In those days, no plants grew above knee-height. So, we will use mosses and lichens and grow them on rocks round huge artificial geysers ...



"... After that" - he added - "visitors will experience the *Carboniferous* period, the Jurassic Park consisting of light woods of coniferous trees, the *Cretaceous* era - when the first flowers flourished, the *Zenozoic* age when the first grasses appeared and, finally, the *Pliocene* epoch, with riverbeds and light woodland.

"The last section is simple" - he said. "That will be called the garden of choices. Visitors will see how our planet might end up - burnt and scorched or cool and moist - depending on the way we respond to the challenge of climate change."

