



LEVEL PEGGING: Tourists Jacko Nelson, 14, (left) and Chris Spratt, 14, on the leaning boardwalk alongside Park Rd at Noosa. Picture: John

Boardwalk tilt at Pisa history

Alex Dickinson

REVOLUTIONARY technology used to save the Leaning Tower of Pisa will stop Noosa's famous Park Rd from sliding into the ocean.

Sunshine Coast Regional Council has approved the advanced micro-piling method to prevent the road connecting Hastings St and the Noosa National Park from sliding towards the beach.

The road has had long-running ground water problems, which have caused movement in the sandy soil underlayer.

Cracks have started to appear and the boardwalk is warping due to landslip.

Sunshine Coast Council project co-ordinator Paul West said stabilising the road would involve an Australia-first method of drilling hollow steel micro-piles, injected with cement, at angles into the earth underneath.

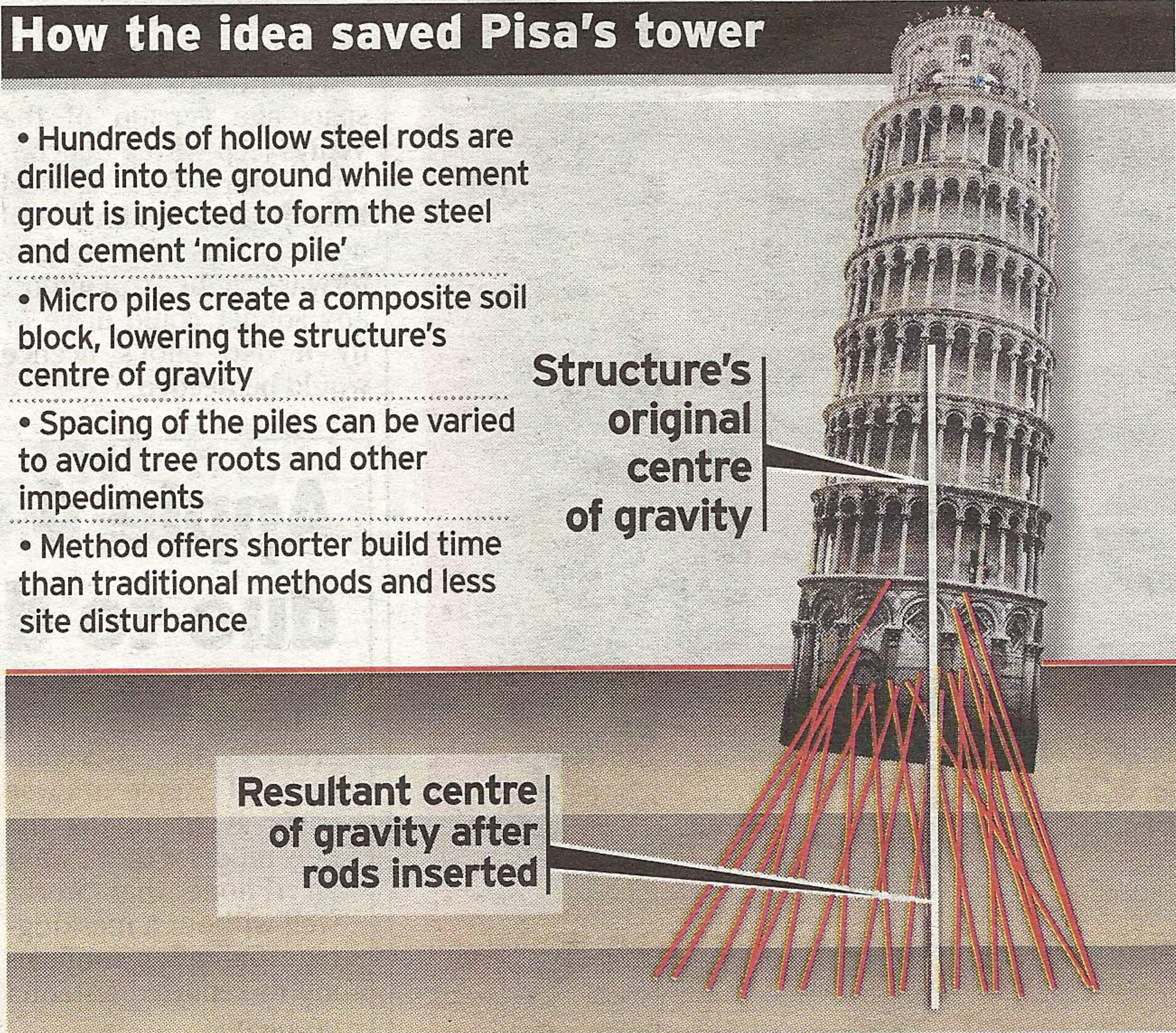
"The way that they are drilled into the ground creates almost like a dam-wall effect - it's like a reinforced earth structure that supports the road," Mr West said.

X-ray machines would make sure the micro-piles missed tree roots.

The method was used to rescue Italy's famous landmark in Pisa by creating a reinforced block of earth at the base of the tower.

How the idea saved Pisa's tower

- Hundreds of hollow steel rods are drilled into the ground while cement grout is injected to form the steel and cement 'micro pile'
- Micro piles create a composite soil block, lowering the structure's centre of gravity
- Spacing of the piles can be varied to avoid tree roots and other impediments
- Method offers shorter build time than traditional methods and less site disturbance



"They were able to lower the centre of gravity of the tower and, like a boat, if it has a lower centre of gravity it becomes more stable," Mr West said.

Also driving the project was the small risk of a landslide at Noosa.

"We investigated the (worst-case scenario) using methods that came out of the Thredbo landslide," Mr West said.

"What came out of that

was the consequences of someone being there if it did slip were just too high for us to ignore.

"A significant slip and the road would end up on the beach for sure."

More than one million residents and tourists visit the Noosa National Park every year, entering mostly from Park Rd.

Problems on the road began in 1989 when a 50m stretch dropped about 500mm during an ex-

tended period of wet weather. In 1992 the same stretch dropped again and the road was closed.

There has been no other major slippage since remedial work in the early '90s but the continuing "creep of the soil" has resulted in cracks.

One lane will remain open on Park Rd during construction works, which are expected to take 14 weeks beginning in early August.

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Stafford	3856 00
Toombul	3260 77
Toowong	3720 80