



NEW AGE: Construction of the Condor Tower on St Georges Terrace has illustrated an alternative to traditional demolish and rebuilding redevelopment techniques. **Photo: Grant Currall**

Condor thinks outside the box

■ Dan Wilkie

AN innovative 'piggy-back' style construction technique at a St Georges Terrace apartment tower has taken out the top prize in the 2010 WA Engineering Excellence Awards.

Construction of the Condor Tower, overseen by engineering consultants Pritchard Francis, involved adding 18 storeys to an existing abandoned 10-storey building on St Georges Terrace.

The 'piggy-back' construction method required custom engineering solutions, which resulted from four years of research at the University of Western Australia.

The tower topped out at 100 metres and incorporates an underground carpark, two commercial floors and 152 apartments across 25 floors.

Pritchard Francis structural project leader Anthony Sims said the piggy-back construction was a cost- and time-effective alternative to demolishing the existing structure and rebuilding on the site.

Because of the load requirements involved in adding 18 extra

storeys, Mr Sims said Pritchard Francis controlled the entire design process for the Condor Tower.

"We guided the architect and the client into what they could and could not do," he said.

"Because it was so structurally defined, the focus was on us to achieve a workable structural solution"

Mr Sims said as the Engineering Excellence award raised awareness of the construction technique, it would become more prevalent in the residential construction sector.

"As far as we are aware, this is the only structure of its type in the world," Mr Sims told *WA Business News*.

"It does take the right type of building, it does take the right type of client and it really does depend on what type of building you are going to turn it into afterwards.

"We're actually looking at another building already in the city, where a client is looking at extending the height of the original building to three times its original height."

According to Mr Sims, the tech-

nique was more suited to residential apartment projects than commercial offices.

"When you're dealing with residential apartments you have large shared walls that separate your occupants, which lends itself to this sort of structure," he said.

"If you required a big open floor plate, this is problematic because you've got to carry some of these large loads down the building."

Mr Sims said the biggest challenge throughout the project was strengthening the existing foundations to support the additional floors.

"Normally when you are dealing with towers you would generally build a raft, which is basically just a very thick footing under the structure," Mr Sims said.

"Usually for something of this height you would build a raft two metres thick, but because we were dealing with an existing building we couldn't achieve this without undermining all the existing footings.

"We ended up with a partially piled raft, which was about 1.4 metres deep, this worked out perfectly for our design."