

In Brief

A global win for the Gold Coast's Pimpama Coomera water plan

The Gold Coast City Council has won the Global Grand Prize at the recent World Water Congress in Beijing for its Pimpama Coomera water plan, which is designed to deliver Australia's largest fully integrated sustainable water community.

One month after winning the Australia and South East Asia regional award, the Pimpama Coomera Master Plan won the headline prize for Planning in the International Water Association's Biannual Project Innovation Awards and was showcased to more than 4000 leading water industry researchers and practitioners at the Congress.

The engineering plan aims to save up to 84 per cent of drinking water through the use of Class A+ recycled water and rainwater. It also addresses stormwater management, using Water Sensitive Urban Design principles to reduce and filter run-off.

Gold Coast City Council Water Sustainability Committee Chair, Councillor Daphne McDonald, said, 'Under the Pimpama Coomera Master Plan, residents will use drinking water

for only about 16 per cent of their water needs, with rainwater, recycled water and water conservation making up the difference.

'Ultimately, rainwater, from mandatory rainwater tanks, would be used in bathrooms, laundry and hot water services, while recycled water, delivered into homes through separate "purple pipes", would be used for toilets and gardens.

'The engineering innovations have also extended onto footpaths and wastewater infrastructure design. Stormwater management will be improved through water sensitive urban design that will protect local waterways by reducing nutrient run-off.

'Design features, such as the use of grassed swales instead of gutters, not only help the environment, they look much more visually appealing.'

Councillor McDonald said the Pimpama Coomera Master Plan was the largest integrated urban water cycle management program undertaken in Australia, covering some 7000 hectares.



Purple taps will supply Class A+ recycled water to residents in the Pimpama Coomera region. Gold Coast City Council

'Capturing, managing and using water wisely is a world issue, and this win gives us the ability to share with the world one of the many innovative sustainable water solutions we have in place on the Gold Coast.'

NEW! Environmentally friendly insecticides

By targeting the chemistry of an insect's own hormones, CSIRO researchers – in collaboration with Australian Wool Innovation (AWI) Ltd – are developing a new class of insecticide that is pest-specific and produces no harmful environmental side effects.

Controlling insect pests safely is an important challenge for the 21st century. Over the past 40 years the total area of land under crops has changed little, yet output has trebled. Much of this has been accomplished by the use of chemical pesticides, which can affect a broad range of species and often have complications with residual toxicity.

Now a key to a safer insecticide has been found. An insect's hard exoskeleton or cuticle cannot expand as it grows, which means that it must be shed at certain moulting stages during the insect's normal life cycle. This process is controlled by ecdysone, an insect hormone that regulates



Targeted: the Australian sheep blowfly, *Lucilia cuprina*. CSIRO Entomology

gene activity during metamorphosis (development), reproduction and moulting.

CSIRO scientists have recently defined the structure of ecdysone receptors for certain insect pests. They are now using that information to design synthetic molecules to interact with these receptors to switch on the genes controlling growth and development at the wrong time, causing

the insects to moult prematurely and die.

By targeting the ecdysone receptor of a specific insect, scientists will design insecticides that will bind selectively to that receptor. As the receptor is absent in humans, mammals, birds and fish, toxicity will be focused on the targeted pest species allowing preservation of biodiversity.

The new insecticide will help to overcome resistance problems, as the target site is fundamental to the insect's life cycle. It is also more efficient and therefore will require lower application doses.

While the technology can be applied to all insect pests, the first application of this research is directed to environmentally friendly and safe control of sheep blowfly and body louse.

More information:

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