



## Welcome

...to the **June 2011** issue of the **Dirt Digger**.

It's been another action-packed six months for us, with many new customers coming on board.

In this issue we will look at:

- **Announcement: 2012 User Conference**
- **The upcoming V10 release**
- **New premises (and staff) for our UK office**
- **Case study: Mount Lindesay Highway**
- **12d Model and ADAC**

We look forward to hearing any feedback you might have about this exciting issue of The Dirt Digger.

Regards,

**Dr Lee Gregory**

Managing Director

[lee.gregory@12d.com](mailto:lee.gregory@12d.com)

**Mr Alan Gray**

Technical Director

[alan.gray@12d.com](mailto:alan.gray@12d.com)

## 12d Model International User Conference 2012

Our next 12d Model User Conference will be held on Sunday 29th, Monday 30th and Tuesday 31st July 2012.

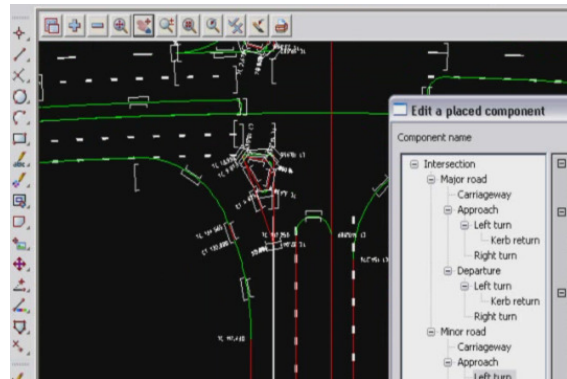
The venue will again be Brisbane Convention and Exhibition Centre (BCEC), but this time we will be able to hold our event in the exciting new 'BCEC Grey Street' section, on the Boulevard Level. We are very pleased to be able to utilise this newly built area, especially as its larger size will allow for the projected jump in numbers for this Conference.

Further details will follow, but we wanted to take this opportunity to ask our users to reserve these dates for next year. We would love to see as many of you there as possible.

## V10 is on its way!

The highly anticipated 12d Model 10 is being rolled out this year.

V10 includes many new features and enhancements to existing options to make your civil design and surveying even more efficient and cost effective.



An exciting new feature is Components, which brings "drag and drop" to complex geometric design. Components quickly generate dynamic parametric objects (DPOs) for roundabouts, intersections, channelised rural intersections, turning lanes, bus bays, exit ramps and cul-de-sacs. Components use the new unique 12d feature Offset Transitions to accurately model paralleled spirals.

Standard component libraries are supplied in V10, plus users can easily build their own component libraries. An example of an Intersection Component in action can be found on our web site at <http://www.12d.com/aus/v10-videos/>

Interactive GIS support using FDO and WMS means supported GIS systems can be interrogated and updated live from 12d Model, and the aerial photos being used in 12d Model can be obtained live from an image server.

Timelines have been added to Visualisation so that

moving objects such as cars, trains, planes or construction sequences can be incorporated. New cameras and an enhanced orbit allow greater control of perspective views, and plan view navigation of perspective cameras.

12d drainage has been enhanced in its analysis, results and "as built" modelling. Pumps have been added to the dynamic analysis along with a dynamic profile view to observe flood waves moving through the section view. Rectangular manholes with user defined pipe connection points, combined with manhole and pipe thicknesses, will allow accurate modelling for both construction setout and "as built" surveys.

The power of 2d flood modelling is now in 12d with the new TUFLOW Interface. Surface flows are modelled with water flowing across a grid tin and into the 12d Dynamic Drainage pipe/culvert system. The module includes the TUFLOW Control File Editor (with all the commands and options at your finger tips), the String Properties Editor and 12d's new Grid Tin. The Grid Tin is used to assemble the surface elevations and present the modelling results in plan and perspective view as they change with time.

12d Pickup now joins a greatly enhanced 12d Setout to make 12d Field a complete field solution for surveyors.

Chains are now interactive, and sharing enhancements include shares of shares and master lists.

These are just a few of the enhancements in V10.

Free 'What's New in V10' seminars will be announced on our web site and via email - see you there!

## 12d UK - exciting news!

To better support our ever-growing customer base in the EMEA (Europe/Middle East/Africa) region, 12d UK's London office has moved to Hammersmith.

The region's 12d users will be assisted by our new 12d Training/Support staff member, Matthew Monk. Matthew has 8 years' experience with both civil design and drainage.

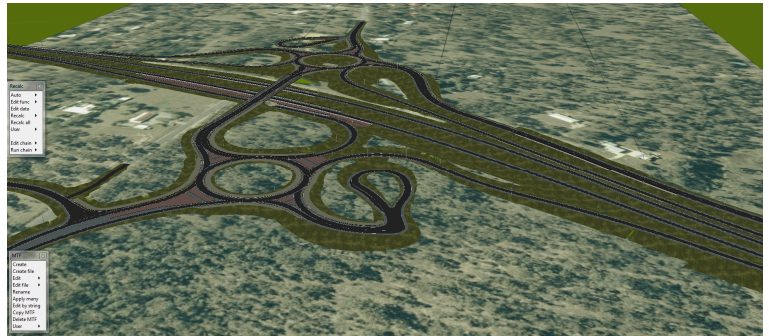
Everyone at 12d is very excited to welcome Matthew to our global 12d staff network.

If you work in the EMEA region, feel free to contact Matthew on [matthew.monk@12d.co.uk](mailto:matthew.monk@12d.co.uk) for support and/or to arrange a training session in your office soon!

## Mount Lindesay Highway

AECOM is currently working on the upgrade of the Mount Lindesay Highway for the Queensland Department of Transport and Main Roads (TMR). This exciting project is taking place in Munruben, South East Queensland, approximately 35km south of Brisbane, and is part of the overall upgrade of the highway.

Mount Lindesay Highway serves an area that extends from Browns Plains through Beaudesert to the NSW border - a regional growth area in South East Queensland. The highway is a vital transport link and, in its current configuration, will not be able to meet the projected growth demands for the region, or maintain a safe passage for both local and long distance traffic.



The AECOM project was split into two stages for the detailed design and construction:

- The first stage is a new grade separated interchange with Chambers Flat Road and Crowson Lane.
- The second stage is duplicating the existing two lane, undivided highway between Rosia Road and Chambers Flat Road, to tie into the Stage 1 works. This involves upgrading the highway to four lanes, with the provision for six lanes.

The detailed design finished in July 2010, and construction of Stage 1 was started earlier this year, with works scheduled to finish in mid to late 2012.

The concepts and detailed designs were all produced using 12d Model.

Super alignments modelled the complex interrelated geometry associated with the interchange components, and chains were used to control all design processes including the export of drawing data used to generate over 500 drawings needed to document the stage 1 and 2 designs, and design visualisations.

Where the existing highway was being upgraded, the use of the existing pavements was maximised by widening them and implementing overlays wherever the geometric constraints of the design speed allowed. Several tools within 12d simplified this process, resulting in a very efficient and cost-effective design.



Provision has been made for pedestrians and cyclists at the interchange by providing a connection across the highway. In addition, the design incorporates public transport facilities at the interchange away from the highway, which also increases safety for patrons.

As a design tool the use of 12d speed tables on the primary control alignments simplified the application of superelevation and provided the basis of the road surface which was then modified as required by the designer.

The drainage design for the project was also carried out in 12d and directly integrated via model and tin sharing to ensure the drainage designers were always working with the most up-to-date road design data.

This also allowed drainage checks to be carried out on the alignment model and provide feedback where alterations to the geometry could provide a more efficient drainage design.

The ability to create visualisations of the design by incorporating 12d visualisation techniques with chains allowed for design amendments to be automated and the visualisation outputs automatically updated. The level of detail resulting from this technique was sufficient for the task, without needing external visualisation resources and the delay that this inevitably involves.

Design visualisations showing the completed project were provided to TMR directly from 12d Model for use in consultation with the public. They were developed to provide insights on any visual impacts the completed works would have on the current landscape.

These proved vital in assisting the public to appreciate the limited impact the completed works would have on the current environment, and helped to smooth the public consultation process.

Although the detail design drawings are the verified and certified record of the design, the 12d electronic model has been provided to TMR for their records and will be provided to the contractor to aid in the construction of the works.

## 12d Model and ADAC

ADAC (Asset Design and As Constructed) is a Queensland local government and Institute of Public Works initiative to develop standards and a transfer format (ADAC XML) for recording assets.

12d Solutions has been involved with ADAC-XML since its inception, with 12d's goal being to integrate the ADAC process into the full cycle from Design to Construction, Construction to As-built, and then be available for future designs.

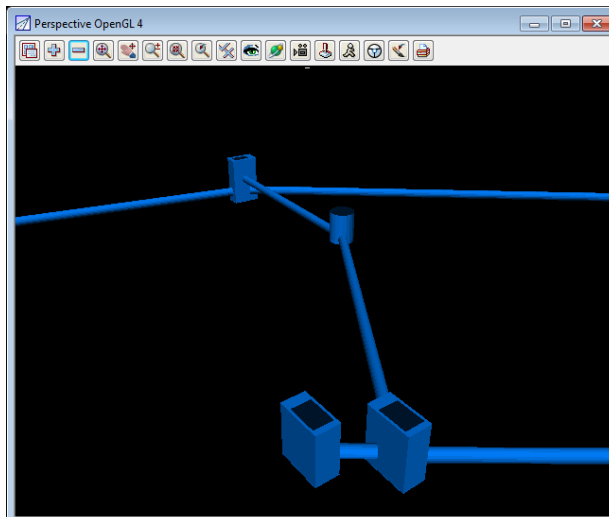
This work flow integration is crucial to achieving the full benefits from ADAC otherwise ADAC becomes little more than a manual data collection exercise, performed at extra expense, after the as-built surveys are done.

Because 12d Model is a parametric object based system, most of the ADAC data is part of standard 12d objects such as pits, pipes, surfaces and design strings, and their associated meta data.

For future design work, existing ADAC data can be read in by 12d Model and used to automatically construct 3d models for all the existing data.

Once a new design is finalised, 12d Model can write out ADAC data for a Council to use, or to pass on as 3d electronic data for construction.

In the field, 12d Model can be used to set out the design, and also collect the as-constructed data for conformance checks and to produce the final ADAC XML files to be submitted to Council.



### SALES & SUPPORT

#### AUSTRALIA

##### NSW, ACT & SA

Extra Dimension Solutions

[admin@exds.com.au](mailto:admin@exds.com.au)

Ph. (02) 9452 6771 (Sales)

(02) 9453 9449 (Support)

##### WA - Design

Critical Image/12d WA

[criticalimage@bigpond.com](mailto:criticalimage@bigpond.com)

Ph. 0411 601 066 (Sales)

(08) 9574 6816 (Support)

##### WA - Survey

12d Solutions

[graham.wirth@12d.com](mailto:graham.wirth@12d.com)

Ph. (02) 9970 7117

(Sales & Support)

##### VIC & TAS

12d Victoria

[vic12d@gmail.com](mailto:vic12d@gmail.com)

Ph. (03) 9530 2753

(Sales & Support)

##### QLD & NT

12d Queensland

[qld.sales@12d.com](mailto:qld.sales@12d.com)

Ph. (02) 9970 7117 (Sales)

(07) 3040 3000 (Support)

##### UK, EUROPE, MIDDLE

#### EAST & AFRICA

12d UK

[sales@12d.co.uk](mailto:sales@12d.co.uk)

[support@12d.co.uk](mailto:support@12d.co.uk)

Ph. +44 (0) 845 051 0372

(Sales & Support)

#### NEW ZEALAND

12d NZ

[lane@12d.co.nz](mailto:lane@12d.co.nz)

Ph. +64 27 477 7787

(Sales)

+64 4 564 3288 (Support)

#### ASIA

12d Asia

[phil.davies@12d.com.sg](mailto:phil.davies@12d.com.sg)

Ph. +65 9026 0402

(Sales & Support)

#### JAPAN

Forum8

[anita@forum8.co.jp](mailto:anita@forum8.co.jp)

Ph. +61 2 9130 1448

(Sales)

#### MALAYSIA - Design

Astasoft

[caru@astasoft.com.my](mailto:caru@astasoft.com.my)

Ph. +60 3 8075 6133

(Sales)

#### FIJI

Lukemine Enterprises

[lukemine@connect.com.fj](mailto:lukemine@connect.com.fj)

Ph. +679 337 0858 (Sales)

#### OTHER REGIONS

12d Solutions

[info@12d.com](mailto:info@12d.com)

## Welcome Aboard to our New Licences and Upgrades from...

A & C Surveys - NZ  
 AAM Group - WA  
 Abigroup - NSW, Qld, Vic  
 Acor Baseline Consultants - NSW, Qld  
 Acor Consultants - NSW  
 ADG Engineers - Qld  
 ADW Johnson - NSW  
 AECOM - NSW, Qld, WA, NZ; Middle East  
 Airport Consultancy Group - Qld  
 Al Futtaim Carillion - UAE  
 Al Ula - UAE  
 Alan Little - NSW  
 Alcan Engineering - Qld  
 Alluvium Consulting - Qld  
 Applied Environmental Services - NZ  
 Arup - NSW, Qld, Vic  
 Aspect Infrastructure Design - UK  
 Aurecon Group - Qld, WA, NZ  
 Aurum Survey Consultants - NZ  
 Ausenco - Qld  
 Auspacific Engineers - Qld  
 Auspat Australia - NSW  
 AWJ Earthmoving - NSW  
 AWT Survey - NSW  
 Ayson & Partners - NZ  
 B T W South - NZ  
 Baker Rossow Consulting Engineers - Qld  
 Barlow Gregg VDM - Qld  
 Barwon Water - Vic  
 Bass Coast Shire Council - Vic  
 Batu Tiga Quarry - Malaysia  
 BC Currey (Surveys) - Qld  
 BCL Surveyors - NZ  
 Beasley and Burgess Surveyors - NZ  
 Beca Infrastructure - NZ  
 Belloero Constructions - Qld  
 Bereza Civil Surveys - ACT  
 Beveridge Williams - Vic  
 BG & E Consulting Engineers - WA  
 Birch Surveyors - NZ  
 Blacktown City Council - NSW  
 Bland and Howarth - NZ  
 Bligh Tanner - Qld  
 Bloxam Burnett & Olliver - NZ  
 BMD Group - NSW, Qld  
 BMT WBM - Qld  
 Bolte Civil - NSW  
 Boulder Planning (Otago) - NZ  
 BPA Engineering - WA  
 Brazier Motti - Qld  
 Breese Pitt Dixon - Vic  
 Broadland Consulting Surveyors - Qld  
 Brock & Associates - Qld  
 Brown Consulting - NSW, Qld, Vic  
 Bruce Pearce - Qld  
 BT Ryan & Associates - NSW  
 Bundaberg Regional Council - Qld  
 Burchill VDM - Qld  
 Burns and Roe Worley - NSW  
 Buro Happold - London, Glasgow  
 C & M Consulting Engineers - NSW  
 Cairns Regional Council - Qld  
 Calder Projects - Qld  
 Calibre Projects - WA  
 Calibre Rail - Qld, WA  
 Canmap Hawley - NZ  
 Cardno - NSW, Qld, Vic, WA, NZ  
 Cato Bolam Consultants - NZ  
 CH2M Hill - NSW  
 Cheal Consultants - Fielding, Taupo (NZ)  
 China Railway 1st Group Fiji - Fiji  
 Christchurch City Council - NZ  
 CIP (Commercial Industrial Property) - NSW  
 City Survey - UAE  
 City2Surf Drafting - Vic  
 Civil Dimensions - Qld  
 CLC Consulting Group - NZ  
 Coffs Harbour City Council - NSW  
 Combined Group - UAE  
 Concept3 - NZ  
 Cook Shire Council - Qld  
 Cossill and Webley - WA  
 Cottrell Cameron and Steen Surveys - Qld  
 CPG - Vic; NZ  
 Cross Geomatics - Qld  
 CTC Surveys - NZ  
 Cumbria County Council - UK  
 Custom Spatial Solutions - SA  
 Dalton Consulting Engineers - Vic  
 Damien Cranage - Vic  
 Daracon Group - NSW  
 David Harrop - Vic  
 Davis Ogilvie & Partners - NZ  
 de Martin and Gasparini - NSW  
 Decmil Australia - WA  
 Definium - Qld  
 Demeyne Aviation - ACT  
 Department of Military Works - UAE  
 Department of National Roads - Fiji  
 Department of Transport and Main Roads - Brisbane, Cairns, Nerang, Rockhampton (Qld)  
 Dinas PSDA Prop Sumber - Indonesia  
 DKS Consulting - Qld  
 Downer EDi Works - WA  
 Downes Survey Group - Qld  
 DPI - Construction Division NT - NT  
 DTEI - SA  
 Dubai Municipality - UAE  
 Dubbo City Council - NSW  
 Dutco Construction - UAE  
 e2 Environmental - NZ  
 Earl Covington & Associates - Qld  
 Emerson Stewart - WA  
 Emengy - Qld  
 Engineering Geology - NZ  
 Engineering Surveys - SA  
 Ertech - WA  
 ESO Surveyors - NSW  
 Etec Consultants - WA  
 Farr Engineers Associates - Qld  
 Fletcher Construction Company - NZ  
 Forbes-Brown Civil - NZ  
 Fredriksen MacLean & Associates - Qld  
 GCA - NSW  
 GEO Image Services - NSW  
 GeoMatrix Surveys - NZ  
 George Bourne & Associates - NT  
 GHD - Qld  
 Gladstone Regional Council - Qld  
 Glenfield Junction Joint Venture - NSW  
 GM-CCS - Qld  
 Gold Coast City Council - Qld  
 GPR Consulting - Vic  
 Graeme Wylde - NZ  
 GRD Minproc - WA  
 Greenhill Engineers - SA  
 GTA Consultants - Vic  
 HAALD Engineering - Qld  
 Haigh Consultants - NZ  
 Halcrow - Qld  
 Halls Fripp Surveying - Qld  
 Hard and Forester - NSW  
 Harrison Grierson - Auckland, Parnell (NZ)  
 Hatch Associates - Qld  
 Hawker Moss Surveyors - WA  
 Headland Survey - NZ  
 Henwood Consulting Engineers - Qld  
 Higgins Contractors - NZ  
 Highland Infrastructure Group - Qld  
 Hopper Construction - NZ  
 HSV Land Surveys - Qld  
 Hume Highway Woomargama Alliance - NSW  
 Hyder - NSW, Qld; Middle East i-civil consulting - WA  
 Indesco Consulting Engineers - ACT  
 Ipswich City Council - Qld  
 JDB Civil Solutions - Qld  
 Jean-Frederic Schwartz - Qld  
 John Craven & Associates - NZ  
 Jones Flint and Pike - Qld  
 K R Stubbs - NSW  
 KADK - Qld  
 Kellogg Brown and Root - Qld, WA  
 Kemuncak Teknik - Malaysia  
 Khansaheb Civil Engineering - UAE  
 Kingston Surveys - WA  
 KLM Spatial - Vic  
 Koon Kim Construction - Malaysia  
 Kristoffer Yau - UK  
 Laing O'Rourke (BMC) - Hunter Valley (NSW)  
 Lambert and Rehbein - Qld, Vic  
 Land and Marine Surveying - NZ  
 Land Dimensions - NZ  
 Land Information New Zealand - NZ  
 Land Surveys No Problems Just Solutions - Qld, WA  
 LandLink - NZ  
 Landmark Consulting - Qld  
 LandTeam Australia - NSW  
 LBS Engineers - Solomon Islands  
 LCJ Engineers - Qld  
 Leighton Abigroup JV - Qld  
 Leighton Contractors - NSW; NZ  
 Lewis Glassick - Qld  
 Link Management - ACT  
 Local Government Engineering Services - NSW  
 Locom Australia - Qld  
 Logan City Council - Qld  
 Lustot - NSW  
 Lycopodium Engineering - WA  
 Lynton Surveys - NSW  
 McConnell Dowell - Qld, SA, Vic; NZ  
 MacDonald International - NSW  
 McDowall Affleck - WA  
 Mackay Regional Council - Qld  
 Magnum Surveys - WA  
 Mashal Engineering - Afghanistan  
 Matteo Ascenzo Design Enterprises - Vic  
 Matthew Cole - WA  
 MC(Komo)JV - Qld  
 MEB Construction - Malaysia  
 Melbourne Water - Vic  
 Millar | Merrigan - Vic  
 Mine Survey Services - WA  
 Minstaff Survey - Qld  
 MLEI Consulting Engineers - SA  
 Monteath and Powys - NSW  
 Moreton Bay Regional Council - Qld  
 Morris Contractors - NZ  
 Mortons Urban Solutions - Qld  
 Mount Isa City Council - Qld  
 MSES - NSW  
 MTEC Consultants - NZ  
 Multi Surveying - NSW  
 MWH - Qld; NZ  
 Nakheel - UAE  
 Newell Engineering Group - Qld  
 Northern Gateway Alliance - NZ  
 NTCADS - Vic  
 Ogilvie RG & Associates - NZ  
 Opus - Qld  
 OSD Pipelines - WA  
 Ostwald Bros Civil - Qld  
 Pacific Survey - NSW  
 Palanga & Associates - PNG  
 Parsons Brinckerhoff - NSW, Qld, Vic, WA; Johannesburg  
 Paterson Pitts Partners - NZ  
 PDM Surveys - Qld  
 Phoenix AG - Vic  
 Pirie Surveying - NZ  
 Precision Enterprises - WA  
 Probuild Civil - Qld  
 Project Services - Qld  
 ProSurv - NSW, Qld  
 PT Daehae Rodamas - Indonesia  
 PT Kideco Jaya Agung - Indonesia  
 PT Pama Persada Nusantara - Indonesia  
 PT Tapteng Anugrah Sawit - Indonesia  
 Pulver Cooper and Blackley - NSW  
 Quality Roading and Services (Wairoa) - NZ  
 Queensland Rail - Qld  
 Quintec Survey Solutions - NSW  
 Rangitikei District Council - NZ  
 Ray Hedges - NZ  
 Reeds Consulting - Vic  
 Reyburn and Bryant - NZ  
 RHM Consulting Engineers - NSW  
 Rio Tinto - WA  
 Road Builder (M) - Malaysia  
 Roads and Traffic Authority - NSW  
 Robert Bird Group - Qld  
 Robson Civil Projects - NSW  
 Rock Australia - WA  
 Rowen Meyer & Associates - Qld  
 RPC - NZ  
 RPS - Brisbane, Gold Coast, Newcastle, Sunshine Coast  
 RPS Aquaterra - WA  
 RTN Drafting Services - Vic  
 Saunders Havill Group - Qld  
 Schlencker Mapping - Qld  
 Sedgman - Qld  
 SEMF - Qld  
 Shankland Cox - UAE  
 Sheehy & Partners - Qld  
 Sinclair Knight Merz - NSW, Qld, SA, Vic, WA, NZ; UK  
 SKS Surveys - SA  
 Smart Projects - NZ  
 SMEC - NSW, Qld, Vic, WA; Hong Kong  
 SNC-Lavalin - Qld; Indonesia  
 Soheil Hazini - Qld  
 South Burnett Regional Council - Qld  
 Southern Land CKL - NZ  
 STP Consultants - Qld  
 Sunshine Coast Regional Council - Qld  
 Survey Dynamics - WA  
 Survey Gisborne - NZ  
 Survey Image Solutions - Papua New Guinea  
 Survey North - WA  
 Survey of Pakistan - Pakistan  
 Surveying The Bay - NZ  
 Swanhaven - NSW  
 Sydney Water - NSW  
 Terraco - Vic  
 Terrane Engineering Civil Consultants - Qld  
 TGM Group - Vic  
 The LandPlan Group - Vic  
 Thiess - NSW, Qld, WA; Indonesia  
 Thiess - Hinze Dam Alliance - Qld  
 Thompson McRobert Edgeloe - WA  
 Tincon - NSW  
 TMK Consulting Engineers - SA  
 Tomlinson and Carruthers Surveyors - NZ  
 Tonkin and Taylor Group - NZ  
 Toowoomba Regional Council - Qld  
 Townsville City Council - Qld  
 Tracksure - NSW  
 UDP Consulting Engineers - Qld  
 United Water - SA  
 UNO Management - NT  
 Urban Design and Management - Vic  
 URS - NSW, Qld, Vic; NZ  
 VDM Group - Qld, WA; Vietnam  
 VEKTA - NSW, WA  
 Venner Family Trust - NSW  
 Waimakariri District Council - NZ  
 Wallbridge and Gilbert - SA  
 Water Technology - Qld, Vic  
 Waterman Group - UK  
 Watsons - Vic  
 Wave Engineering - Qld, WA  
 Weller Surveying - NZ  
 Western Downs Regional Council - Qld  
 Wharehine Group - NZ  
 Whelans Survey and Mapping Group - WA  
 Whitsunday Regional Council - Qld  
 Wigley and Roberts - NZ  
 Wintec - NZ  
 Wollongong City Council - NSW  
 Wood and Grieve - WA  
 Wood and Jepsen Consultants - Fiji  
 Wood & Partners - NZ  
 Woodside Energy - WA  
 WorleyParsons - NSW, Qld, Vic, WA; Qatar  
 Wyong Shire Council - NSW  
 Yeats Consulting - Qld  
 Zorn Surveying - NZ