



News from
12d Solutions



The Dirt Digger



Welcome

...to the **December 2017** issue of the **Dirt Digger**. It's hard to believe how quickly this year has passed! This edition will feature:

- **Product Updates**
- **Two new 12d training courses - BIM and ARR 2016**
- **12d NZ in Fiji and the Pacific Islands**
- **12d Resellers of the Year**
- **Case Study: BIM**
- **ARR 2016**
- **12d Sydney offices - holiday closure dates**
- **Civil BIM update**
- **12d International Conference 2018**

We look forward to hearing any [feedback](#) or news you might have.

Regards,

Dr Lee Gregory
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Mr Alan Gray
Technical Director
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Product updates

12d Model 12 continues to evolve with support for Australian Rainfall and Runoff 2016, IFC 2x3 Import (Open BIM) and DWG 2018 import now ready for release. In fact, due to rapidly changing industry needs, these features which were to be saved for 12d Model 14 have now been included in 12d Model 12!

To upskill our users, new courses on ARR 2016 and BIM will be offered early in 2018 - [register your interest](#) today!

12d Model 14 is well under way and will be released at next year's 12d International Conference! Those fond of counting may note from this that we are not releasing a 12d Model 13...

Our 12d Synergy developers have been putting the finishing touches onto Version 4, with a beta version about to roll out!

Our 12d Synergy team just keeps expanding...after the addition of Andres Bedoya helping with sales in New Zealand a few months ago, James' team expanded further to include Florence Joseph helping with technical support...and the Sydney team is currently welcoming a new dedicated support member - Carolina Bardalez!

Major projects using 12d Synergy include: Gateway South Consortium Darlington Upgrade, Ipswich Motorway Rocklea to Darra, Perth Metro, and West Gate Tunnel. New clients include: BBO, BG&E, GHD, Salini Impregilo, Tonkin & Taylor, and Veris.



BIM and ARR 2016 courses

From early 2018, we'll be adding two new training courses - BIM and ARR 2016 - into our already extensive suite of training on offer! Stay tuned for more details...or [enquire](#).

Bula, 12d NZ!

To give our Fiji and Pacific Islands customers and prospects more training and support, 12d NZ will be conducting training courses across that region throughout 2018 and beyond.

Lane Irwin and his team at 12d NZ have also taken over sales and email/phone support for the Fiji and Pacific Islands region. Feedback so far has already been positive, and the team enjoyed their recent visits immensely!



Resellers of the Year

Well, just look at that...the ExDS team, responsible for sales, support and training in NSW, ACT & SA, have taken out the prize for 12d Model Reseller of the Year again! Keep up the good work! This is becoming our very own 'State of Origin', only with NSW stealing the title from Qld and guarding it closely these past couple of years...who will take the title next year?

And as for 12d Synergy...James Irwin and his New Zealand team did it again—12d Synergy Reseller of the Year for Financial Year 2017! Well done, Kiwis...but don't rest on your laurels, because other regions are pumping out sales and hoping to topple you from the top of the ladder next year! Thanks to all our wonderful customers in all regions!



Reflections on BIM from across the Tasman

Recently, Sam Cech of Tatrás Consulting in New Zealand spoke to 12d Solutions about BIM, and also of his ambitious goal to find a way to manipulate 3d objects created in 12d Model software, or those imported from Revit or other 3rd party packages.

“Being able to import 3d objects into 12d Model is a great feature – it enhances the visualisation capabilities and brings BIM tools into Civil software, closing the data exchange loop,” Sam told us.

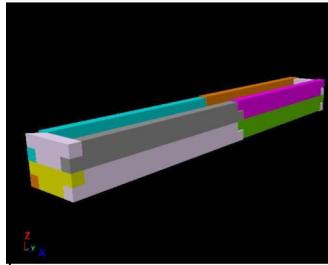
“BIM civil design is very much here,” said Sam. *“We’ve been helping clients utilise assemblies of BIM objects in their Road and Drainage design. 12d Model Roding Snippets are brilliant tools to improve productivity, and generate BIM objects for volume calculations and 3D Visualisation. Well-developed Snippets make the design process faster by giving users choices of standardised elements and generating unique trimeshes from individualised user inputs without the need to manually code hundreds of lines. These BIM objects are used to automate drafting to a level of detail traditionally achievable only by manual means. We have also developed macros for the automated import of BIM objects/trimeshes along linear features such as street lighting, fences and guard rail posts used in 3D views to achieve more realistic visualisation and perform 3D clash detection with 12d Model’s advanced clash detection tools.”*

The innovative example Sam used to find a solution to his issue of how to manipulate 3d objects created in 12d Model software, or those imported from Revit or other 3rd party packages, was inspired by a recent gardening project: Creating a garden box from macrocarpa sleepers with interlocked pieces of timber on a sloped retaining wall. The end cuts had to be designed at a specific angle. To verify the dimensions of each piece of timber, a trimesh object was created inside 12d Model. The results were passed on to a master carpenter to cut the sleepers to the exact shape.

Sam’s idea to solve the issues within this project was to introduce a macro in 12d Model that would be able to use the standard Translate, Rotate and Transform commands in a specific way.

Early in the development of this solution, it became apparent that general trimesh objects would be easier to manipulate if they had a user defined axis around which he could rotate and shift these objects. To this effect, Sam created a system of object axes using trimesh points or custom positions on the trimesh and stored these as attributes on the trimeshes to be manipulated.

Once each trimesh object has an axis, it is much easier to translate and rotate the objects. The User



12d Model



The real thing

can then clearly understand and anticipate the result of each command within this macro.

Tatrás Consulting used this macro to shift entire trimesh assemblies for bridges into a position at the end of their road design.

Of Trimeshes, Sam declared, *“[They] take 12d Model beyond its traditional precise Civil applications to a world of realistic combined civil and structural visualisation, with absolute precision.”*

ARR 2016 and 12d Model

ARR 2016 (Australian Rainfall and Runoff) has updated its hydrology for Climate Change, and 12d Model 12 C1k is ready for the change!

Rainfall intensities are changing as well as the rainfall patterns. ‘Storm bursts’ are now more common headlines in the news.

For ARR 2016, the new rainfall intensities and patterns are downloaded from the Australian Bureau of Meteorology (BOM) and the ARR Data Hub so you are always using the most up to date intensities.

Also for ARR 2016 there are now ten rainfall patterns for each storm duration instead of the one rainfall pattern used in ARR 1987.

The ten rainfall patterns reflect not only the importance of peak water levels but also have different timings.

The timing of the rainfall in the storm can be extremely important in evacuations planning - a slow-rising storm to a high water level may not have as great an impact on evacuation as a fast-rising storm with a lower water level.

Adjustments for ‘effective’ impervious areas are also suggested in ARR 2016.

We will be running [ARR 2016 courses](#) from early 2018 to bring interested users up-to-date with the new standard and how it is implemented in 12d Model 12.

Holiday Season Closure - Sydney

As yet another big year draws rapidly to a close, it’s time for our Sydney offices to take a short break! We’ll close from the afternoon of Friday 22nd December 2017, and re-open the morning of Tuesday 2nd January 2018. Jump on the [User Forum](#) in the break!

Civil BIM and 12d Model

As many of you would be aware, Building Information Modelling (BIM) is fast becoming essential on all projects. The Queensland Government now has an Open BIM policy and will be continuously improving their BIM capabilities for all projects, both Civil and Structures, from now through to 2023.

To date, most of the BIM standards have only been for vertical buildings and not civil works, but 12d Solutions and the Queensland Department of Transport and Main Roads (TMR) have been active participants in extending the Open BIM standards for Industry Foundation Classes (IFCs) to the Civil area.

As part of this process, Dr Lee Gregory from 12d Solutions attended the buildingSMART International (bSI) Standards Summit in London (in Oct/Nov) where the Open BIM IFC standards for IFC Alignment, IFC Roads, IFC Rail, IFC Tunnels and IFC Bridges were being formulated and discussed. 12d Solutions and TMR are also participating in the buildingSMART IFC Alignment Pilot Project, which is defining and testing in 12d Model, the new IFC elements for Alignments and Tins that are being added to the Open BIM Standards.

To help everyone come to grips with Civil BIM, 12d will be running BIM courses in early 2018 where users will get hands on experience in reading and writing Open BIM data using 12d Model. [Enquire](#) today!

12d International Conference 2018

Registrations are already rolling in! And an exciting announcement...Position Magazine/Spatial Source is on board again as a Media Partner! Stay tuned for news of other sponsors coming on board soon...[Register](#) today!

At this 3-day Conference, 12d Solutions will be highlighting the new features in 12d Model 14 and 12d Synergy 4, and more! We will continue the popular 'Birds of a Feather' breakout sessions on Design, Surveying, Three Waters, and 12d Synergy.

This event will be an invaluable learning and networking experience for users of 12d products and other industry professionals, in all areas of civil design, surveying and construction, and data management and project collaboration.

The 12d International Innovation Awards (\$17K prize pool!) will be presented at the Conference Dinner - [contact](#) 12d Solutions for more details on entering.

The 12d International Conference offers:

- A great opportunity to increase your 12d Model/12d Synergy skills
- The ability to interact with the developers of 12d products
- The chance to network with, and learn from, other 12d users

Pricing

The Full Conference Package for \$800 +GST includes:

- Welcome Event (Add Guest for \$95 +GST)
- Conference Dinner* (Add Guest for \$200 +GST)
- 3 Full Days of Conference Main Sessions
- Conference 'Birds of a Feather' Sessions
- Morning/Afternoon Tea Breaks and Lunches
- 12d Polo Shirt and Other Goodies!

*Includes 12d International Innovation Awards 2018 Ceremony

Day passes also available - [contact](#) us for details. Please note we can now accept credit card payments online for this event.

Dates Sunday 29th, Monday 30th and Tuesday 31st July 2018

Venue Brisbane Convention and Exhibition Centre (BCEC) – Boulevard Level

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OTHER REGIONS

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

12d Model

101 Group Dynamic Management – Malaysia
 360 Surveying – NSW
 3D Data Guidance – NSW
 AA Surveys – Qld
 AB Panevezio Keliai – Lithuania
 Acciona Infrastructure – NSW
 Acor Consultants – NSW
 Active Survey – NZ
 AD Design and Consulting – Vic
 Adamson Shaw – NZ
 Advantage Civil – WA
 AECOM Australia – NSW, Qld, WA
 Aerodrome Management Services – WA
 Affinity Surveys – NSW
 Al Sahraa Group – UAE
 Alexander and Symonds – SA
 Alliance Surveying – WA
 Alta Projects – Qld
 API Management – WA
 AR & Associates – NZ
 Arcadis – NSW, Qld, WA; Middle East
 Ardma Surveying – NSW
 Armstrong Survey and Land Development – NZ
 Arup – NSW, Qld
 Astute Surveying – NSW
 Auckland Surveyors – NZ
 Auspat Australia – NSW
 BA Surveys – SA
 Bay of Plenty Regional Council – NZ
 BCS Consulting Engineers – Vic
 Beca – NZ
 Benchmark Engineering Surveys – NSW
 Benchmark Surveys – WA
 Bennett + Bennett – Qld
 Beyond – NZ
 BG & E Consulting Engineers – NSW, Qld, Vic, WA
 BGC Contracting – NSW
 Bonacci Group – NSW
 Boundary Consultants – NZ
 Bouygues Construction – NSW
 Brisbane City Council – Qld
 Brookfield Rail – WA
 BTW Company – NZ
 CADS Survey – WA
 Calculated Surveys – SA
 Calibre – NSW, Qld, WA
 Candor3 – NZ
 Canterbury Bankstown Council – NZ
 Capital Consulting Engineers – NSW
 Cardno – ACT, NSW, Qld, Vic, NZ
 Cato Bolam Consultants – NZ
 CCL Construction Contracting – NZ
 Central Highlands Regional Council – Qld
 Central Surveys – NZ
 Centurion Survey – NSW
 Changda International New Zealand – NZ
 Charters Towers Regional Council – Qld
 Cheal Consultants – NZ
 Chris O'Brien & Company – Vic
 City of Fremantle – WA
 City of Charles Sturt – SA
 City of Gold Coast – Qld
 Civil Technology – WA
 CivilCE – Qld
 Civilex – Vic
 CivilPlan Consultants – NZ
 CivilSurv – NSW
 CivilTEC – NZ
 Civix – NZ
 CKL Surveys – NZ
 Clark Fortune McDonald & Associates – NZ
 CML Consulting – Qld
 Cogswell Surveys – NZ
 Construction Survey 2010 – NZ
 Consurv – NZ
 CPB Contractors – NSW, Qld; NZ
 CSM Surveys – NZ
 D and C Civil – Qld
 DA Surveying – NSW
 Dalton Consulting Engineers – Vic
 Daryl Baynes – Belgium
 Datacom New Zealand – NZ
 David Fossett – Qld
 Dempsey Wood – NZ
 Department of Infrastructure NT – NT
 Department of Primary Industries and Mines – Thailand
 Dept of Transport & Main Roads – Qld
 Dixon Homes – Qld
 Dixon Surveying – NSW
 Downer EDI Works – NZ
 DPU KAB. TEGAL – Indonesia

DTS Group QLD – Qld
 Dubbo Regional Council – NSW
 Duncan Brown – Vic
 Dungog Shire Council – NSW
 Eire Constructions – NSW
 Element IMF – NZ
 Elite Survey – NSW
 Empire Engineering – Qld
 Engineering Surveys – SA
 ESO Surveyors – NSW
 Federation Council – NSW
 Ferrovial York JV – NSW
 Fifth Generation Mining – Qld
 FJA Consulting Engineers – NSW
 Flat Out Surveying – Vic
 Fletcher Construction Company – NZ
 Fluor Australia – WA
 FORM Engineers – Vic
 Fortesque Metals Group – WA
 Fulton Hogan Group – NSW
 Fyfe – NSW, SA
 GCA – NSW
 GEO Image Services – NSW
 Geo-Metric Surveying – NSW, Qld
 Geochelle – WA
 Geolyse – NSW
 George Bourne & Associates – Qld
 Geoworks – NZ
 GHD Services – NSW, Qld
 GMD-CCS – Qld
 GW Surveyors – Qld
 Halls Frupp Surveying – Qld
 Harrison Grierson – NZ
 Harrison Infrastructure Group – Qld
 Hawkesbury City Council – NSW
 Heading & Associates – NSW
 Henry and Hymas – NSW
 Hibiscus Contractors – NZ
 Higher College of Technology – Oman
 Horizon Surveys – WA
 Hume Cement – Malaysia
 Hume City Council – Vic
 Integral Surveys – NSW
 ISRA University Jordan – Jordan
 J Morrison and KA Morrison – NSW
 J R Land Development – NZ
 J. Wyndham Prince – NSW
 JAC Civil – Qld
 JAC Surveyors – Vic
 Jacobs Group – NSW, Qld, Vic, WA
 JDSI – WA
 JHA Consulting Engineers – NSW
 JJ Barber Holdings – NZ
 JMC – NZ
 John Holland – Vic
 Jon Hammond – Qld
 Jones and Stanger – NZ
 Joshua Thomas Surveying – NZ
 K F Engineering – Vic
 KBS Survey – NSW, Qld
 Kellogg Brown and Root – Qld, WA
 King and Campbell – NSW
 Klohn Crippen Berger – Qld
 Kopi Engineering – NZ
 Laing O'Rourke – WA
 Land Focus – WA
 Land Surveys No Problems Just Solutions – NSW, Vic, WA
 Landforming to Perfection – Vic
 LandLink – NZ
 Landmark Consulting – Qld
 Landmark Surveys – NSW
 Lands and Survey – NZ
 LCJ Engineers – Qld
 LD & S – NZ
 LD Eng – Vic
 Lee Civil – Qld
 Lend Lease Bouygues JV NCX – NSW
 Lend Lease Engineering – NSW, Qld, Vic
 Liverpool City Council – NSW
 Locaters – NSW
 LOM Engineering – WA
 Lonergan Surveying – ACT
 Lucid Consulting – WA
 Lycopodium Minerals – WA
 Lynton Surveys – NSW
 Lysaght Consultants – NZ
 MAAS Group Properties – NSW
 MACCA – Qld
 McCaffrey Engineering Consultants – NZ
 McConnell Dowell – NZ
 McFlynn Surveying – NZ
 McKinlay Surveyors – NZ
 Macro Consulting Surveyors – NSW
 Main Constructions – Qld
 Marcon Infrastructure Group – Vic
 Marshall Scott Surveyors – NSW

Mathew Saxon Comley – WA
 Mayer Brown – UK
 MCG Drafting – NSW
 Megex Civil – NSW
 Menai Civil – NSW
 MG Solutions – NZ
 Mieszko Mackiewicz – NSW
 Milestone Survey – Qld
 Millar Merrigan – Vic
 MinStaff Survey – Qld
 MJ Snow Sole Trader – NZ
 MLEI Consulting Engineers – SA
 Moreton Bay Regional Council – Qld
 Morphum Environmental – NZ
 Mott MacDonald – NSW
 Murphy Surveys – UK
 Murray & Associates – Qld
 Napier City Council – NZ
 National Airports Corporation – PNG
 NCTIR Alliance – NZ
 Neilly Group – Qld
 Nelson City Council – NZ
 North Surveys – Qld
 North Western Surveys – NSW
 NorthGroup Consulting – Qld
 Northrop Engineers – NSW
 Nottingham University – UK
 Nova Surveys – Qld
 Onyx Projects – WA
 Opus – Qld; NZ
 Orion Consulting Engineers – NSW
 Pacific Survey – NSW
 Paterson Pitts Partners – NZ
 peakURBAN – Qld
 Pensar – Qld
 PH and KE Gow – WA
 Philadelphia University – Jordan
 Pinnacle Engineering Group – Qld
 Pirie Surveying – NZ
 PLANIT Engineering – NSW
 Port Macquarie-Hastings Council – NSW
 Precise Positioning Solutions – Qld
 Premise Group Services – Qld
 Proform Civil – WA
 ProSurv – Qld
 PT Indominico Mandiri – Indonesia
 PT Madhani Talatah Nusantara – Indonesia
 PT Pama Persada Nusantara – Indonesia
 PT PLN (Persero) Unit Induk Pembangunan JBTB I – Indonesia
 PT PLN Pikitring – Indonesia
 Q H & M Birt – Qld
 Queensland Rail – Qld
 R2 Consulting – NZ
 Raster Co. – NZ
 Ray Surveys – ACT
 Reaplite Industry – Malaysia
 Regional Management Group – Vic
 Reyburn and Bryant – NZ
 Rhelm – NSW
 Rio Tinto – WA
 Rivland Surveyors – NSW
 RJS Dynamic Systems – WA
 Road and Civil Surveys – NSW
 Roads and Maritime Services – NSW
 RPS – NSW, Qld
 Salini Impregilo (NRW JV) – WA
 SCIRT – NZ
 SCP Consulting – NSW
 Seymour Whyte – Qld
 Shadforth's Civil Contractors – Qld
 Shire of Broome – WA
 Sirius Consolidated – NSW
 SKS Surveys – SA
 SMEC – NSW, Qld, WA
 Spiire – Vic
 SportEng – Vic
 Spyve Surveying Solutions – NSW
 Staig and Smith – NZ
 Stewart Surveying – NZ
 Sunshine Coast Council – Qld
 Sunshine Coast Drawing Office – Qld
 Sunstate Engineering Surveys – Qld
 Sure Search – NSW
 Survey 3D – NSW, Qld
 Survey Dynamics – WA
 Survey Dynamics Group – Qld
 Surveying The Bay – NZ
 Sustainability Workshop – NSW
 Tatra Consulting – NZ
 Tetra Consulting – Qld
 Teunese zand en grint – Netherlands
 TGM Group – Vic
 Thomas Consultants – NZ
 Titan Solutions – NZ
 Titus Consulting Engineers – NZ
 TOD Consulting Engineers – Qld

Tomkinson Group – Vic
 Tomlinson & Carruthers Surveyors – NZ
 Tonkin and Taylor Group – NZ
 Tonkin Consulting – SA
 Toowoomba Regional Council – Qld
 Total Construction Surveyors – NZ
 Total Property Developments – Vic
 Transport Canberra and City Services Directorate – ACT
 TriCAD Design – NSW
 Triple Star Management – NZ
 TSS Total Surveying Solutions – NSW
 Turnbull Engineering – NSW
 Ullman and Nolan Consulting – Qld
 University of Jordan – Jordan
 Utec Solutions – NSW
 Valmec Australia – WA
 van der Meer Consulting – NSW, Vic
 Vector Survey – Vic
 Ventia – NZ
 Veris Australia – NSW
 Vertex Surveying – NSW
 Verve Projects – Vic
 VFT Engineering Surveyors – NSW
 Vision Surveys – Qld
 Vusa Dube – Vic
 Wallbridge Gilbert Aztec – SA
 Waste Management NZ – NZ
 Waterman Infrastructure and Environment – UK
 WBHO Infrastructure – Vic
 Waller Surveying (2016) – NZ
 Whelans Survey and Mapping – WA
 Wilson Contractors – NZ
 WMG Engineering Surveyors – NSW
 Wollongong City Council – NSW
 Wood and Grieve – Qld, WA
 Wood and Jepsen Consultants – NZ
 Wood & Partners – NZ
 WorleyParsons – Qld, WA
 WSP Australia – NSW, Qld
 WW Surveys – Qld
 Wyndham City Council – Vic
 Xeros Kendall – NSW
 Yeats Consulting – Qld
 Yeomans Survey Solutions – NZ
 Zenviron – NSW
 Zorn Surveying – NZ

12d Synergy

Access – NZ
 AECOM Australia – Qld
 Aurecon – Qld
 BBO – NZ
 Bennett + Bennett – Qld
 Beveridge Williams – Vic
 BG & E – Qld
 Bouygues Construction Australia – NSW
 Candor3 – NZ
 Cardno – Qld; NZ
 Cato Bolam Consultants – NZ
 Cheal – NZ
 CPB Contractors – NSW
 Dalton Consulting Engineers – Vic
 Dempsey Wood Civil – NZ
 Engineering Solutions – Qld
 Flanagan Consulting Group – Vic
 Fulton Hogan – SA
 GHD – Qld; NZ
 GM Civil + Construction Surveying – Qld
 Harrison Grierson – NZ
 Harrison Infrastructure Group – Qld
 Jacobs Group – NSW
 LandLink – NZ
 LDEng – Vic
 Locaters – NSW
 McCaffrey Engineering Consultants – NZ
 McKay Knarston – NZ
 McKenzie & Co. – NZ
 Mount Messenger Alliance – NZ
 North Canterbury Transport Infrastructure Recovery (NCTIR) – NZ
 Pitt and Sherry – Tas
 Projex Partners – Qld
 Salini Impregilo – WA
 SMEC Australia – Vic
 Southern Land – NZ
 Terraco – Vic
 Tonkin and Taylor – NZ
 Transmission Gully – NZ
 Veris – Qld
 Watsons – Vic
 Wood & Partners – NZ
 WSP – Qld

