



Issue 28

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Building a more sustainable future

ArcGIS is playing a revolutionary role at the heart of one of the most ambitious building projects ever undertaken. In the middle of a desert, thousands of people, billions of dollars, advanced technologies and years of effort are focused on a single vision: the creation of the world's first entirely carbon-neutral, zero-waste city.

Located in Abu Dhabi, Masdar City will be a clean technology research hub that is both carbon neutral and will strive to be entirely self-sufficient for all energy needs. It will cover five and a half square kilometres and will be home to 50,000 people, 1,500 businesses and around 40,000 daily commuters. In almost all aspects of its design, build and operation, this is a revolutionary city – and it is making revolutionary use of GIS.

From the outset of this colossal project, GIS has played a key role in determining the optimum design of the city, taking into account human and physical geography, sun angles, wind patterns, street widths and building density. The engineering and construction consultancy CH2M HILL is responsible for managing the project, and teams throughout the organisation are now using ESRI ArcGIS solutions in a myriad of innovative ways.

Given the enormous scale of the project, CH2M HILL needs to carefully track costs and cash flow, as well as any environmental infractions. The Masdar GIS team has used ArcGIS to build a unique 6D GIS model that depicts the construction costs, carbon emissions and the schedule of the planned build in 3D. Each month, the team then uses

this model to create Google Earth Pro mash-ups that illustrate project progress and convey complex information very clearly to top executives.

CH2M HILL is also using ArcGIS to help it plan routes for a revolutionary form of driverless, pedestrian transport that runs on batteries, charged with clean solar power. The solution is being used to test predicted walk times between the stations, to make sure that this new transportation system will meet the needs of thousands of people, while minimising any impact on the environment.

When the city is fully operational, ArcGIS will continue to play a key role in the city's future. The solution will be integrated with a Computerised Maintenance Management System (CMMS), which will automatically generate work orders and lead to paperless processes. In addition, ArcGIS will be employed to help the city's management team analyse resource use and the carbon balance within every room of every building.

Shannon McElvaney, site control and GIS manager for CH2M HILL says: "Building a city like this has never been done before – and ESRI ArcGIS is proving to be an absolutely critical tool."

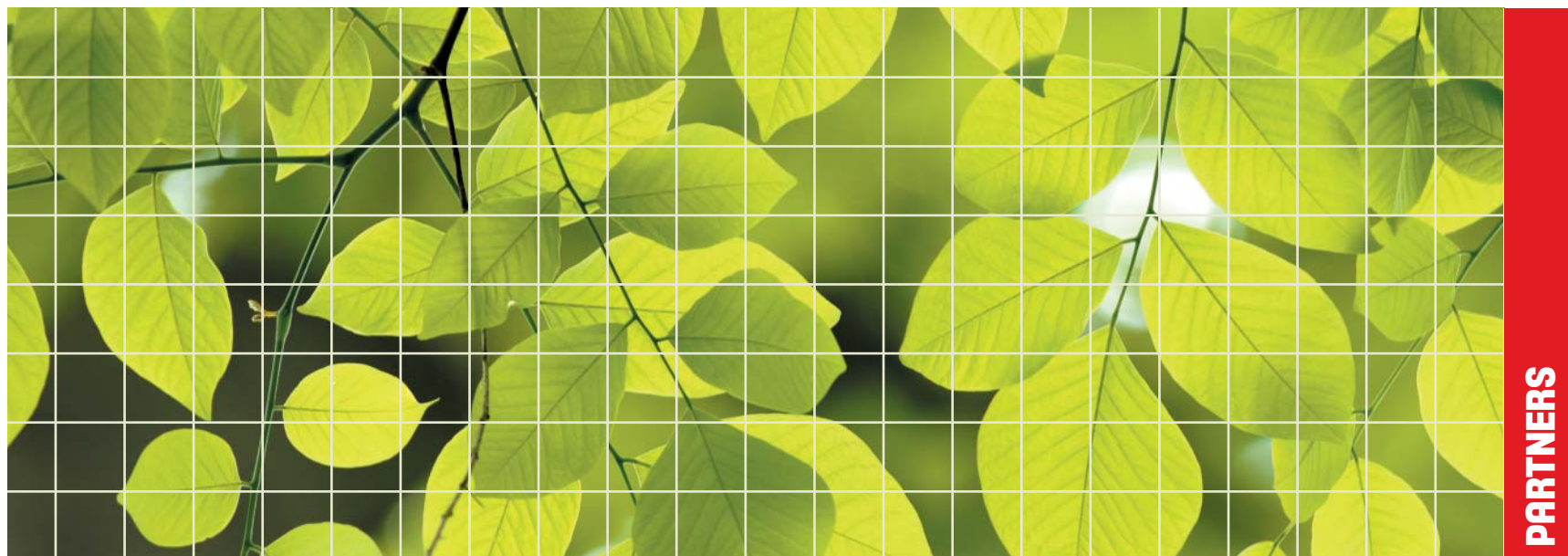


Have you registered yet?

ESRI (UK)'s Annual Conference takes place on Monday 10th May and Tuesday 11th May 2010 at the Hilton London Metropole. Called 'Shaping Your Vision', the event offers inspirational keynote speeches, updates on ESRI technology, industry presentations, a partner exhibition and a conference party.

Visit www.shapingyourvision.co.uk to register now!

For further information turn to page 16.



The wise approach to managing trees

ESRI (UK) partner Robin Forestry Surveys Ltd has developed a complete data information system for the strategic management of trees. Called **Tree Wise**, the solution enables landowners to easily maintain a full inventory of all their trees, including inspection histories, work status, enquiries and incidents.

In recent years, there have been a number of regrettable incidents when trees have caused damage, injuries and even death. Under current legislation, landowners – including local authorities – have a duty of care to monitor the condition of trees on their land, assess the risks and carry out regular inspections. For those organisations that are responsible for hundreds of trees, many

miles apart, this can be an enormous challenge.

Tree Wise has been developed for landowners by Robin Forestry Surveys to greatly simplify the management of trees. It is easy to use and caters for full inspections and any unscheduled visits that may be necessary in response to unplanned incidents. The solution takes into

account the size of hazards, the proximity to people, the likelihood of failure and other factors to give an individual risk rating for every individual tree, group of trees or wood.

Data on trees can be captured in the field using hand-held units, GPS and laser technology and transferred directly back to Tree Wise, an ESRI ArcGIS-based solution. Tree Wise then accumulates a complete record and audit trail of all trees and their individual and collective histories. The data can be analysed in Tree Wise and exported into detailed reports. It can also be integrated into Job Management Systems and used to provide a quicker response to tree-related enquiries from members of the public.

For more information, contact Jaqs@robinsurveys.co.uk or visit: www.robinsurveys.co.uk.

Added insight from satellite and airborne imagery

Growing numbers of UK businesses are incorporating image analysis into their ArcGIS applications, using a solution developed by ESRI partner ITT Visual Information Systems.

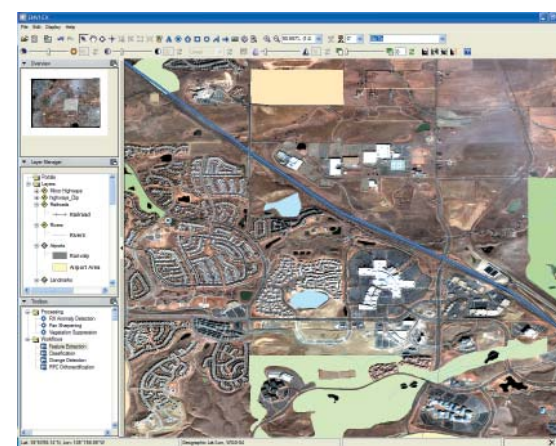
Satellite and airborne images can provide more than just a pretty background for a GIS application. They are also a unique source of valuable information, which can be used to complement and update existing vector data in a wide range of different GIS applications. Aerial images can, for example, be used to show how coastlines have eroded over time, analyse and plan urban developments, or classify large geographic areas.

The analysis of satellite and airborne images used to be a very complex and difficult task for GIS professionals to perform – but that is no longer the case.

Through its partnership with ESRI, ITT Visual Information Systems now enables GIS professionals

to easily analyse and unlock the value that lies in imagery. Its ENVI EX image processing and analysis solution is tightly integrated with ArcGIS and has an easy to use interface. Users can easily examine images and then exchange data and files between the two solutions with simple drag and drop methods that preserve the style, symbology, vectors and layer information.

To make it particularly easy for GIS professionals to use, ENVI EX includes a range of integral workflows that quickly guide users through advanced image processing tasks. These workflows include: tying an image to its geographic coordinate for accuracy in mapping; extracting features of interest from a large geographic area; detecting change in a region



An ESRI ArcGIS layer in ENVI EX with all the symbology preserved.

by comparing different images; classifying land cover; and finding anomalous features in an area.

To find out more and see a demonstration of ENVI EX, visit ITT Visual Information Systems at the exhibition that accompanies the ESRI (UK) Annual Conference on 10 May and 11 May 2010 in London. Alternatively, visit www.ittvis.com.