



ROB BUCKLEY

EDITOR

robertbuckley@geoconnexion.com

FACING REALITY

CLIMATE CHANGE IS ALREADY HERE AND WE ARE ALREADY HAVING TO DEAL WITH ITS CONSEQUENCES. BUT WE ALSO HAVE TO DO MORE TO AVOID REACHING THE POINT OF NO RETURN FOR THE EARTH

Over the past nine years that I've been editing *GeoConnexion International*, the number of articles that we've published about climate change has increased. Partly, that's down to awareness. As well as the various political discussions between countries around the world, there have been grass roots movements and demonstrations bringing the need for action on climate change into the spotlight.

But I think there's another factor at play, too: the simple fact that we're already having to deal with the impact of an already changing climate. From an increase in the number of natural disasters through the pressures on resources to changes in not just the way we live but to *where* we live, climate change is already transforming people's lives around the globe. Sometimes in unexpected ways.

On page 34 of this issue, Mary Jo Wagner speaks

to the California Department of Water Resources in the US to find out how climate change is resulting in surface subsidence – and how the department is addressing the issue. Also in this issue, on page 38, David Viner, Alasdair Smith and David Gold consider how geospatial data can help to optimise land use and mitigate climate change risk.

However, we need to reduce the amount of greenhouse gas emissions and transition to a world in which we emit a net zero amount (and perhaps even a negative amount, one day). Here, again, geospatial technologies and information will play an integral part. On page 18, we have a special supplement looking at just some of the approaches being adopted and developed to stop our planet becoming uninhabitable.

I hope you enjoy the issue.



PETER FITZGIBBON

EDITOR

peterfitzgibbon@geoconnexion.com

CONNECTING PEOPLE TO PLACES

THIS YEAR'S EVER-POPULAR GEOPLACE CONFERENCE HIGHLIGHTED THE VALUE OF ADDRESS DATA IN SUPPORTING THE NATION'S ECONOMIC AND SOCIAL WELLBEING

Organised as a virtual event and livestreamed to a 1,000-strong audience, the annual gathering of those involved in matching people to addressable places convened over two days in May.

A key talking point was the impact of Unique Property Reference Numbers (UPRNs) on driving efficiencies and service improvements in local government. That impact has grown since 2020 when their use was mandated as the public sector standard for referencing and sharing land and property information. The benefits of these unique identifiers were spelt out in a paper¹ published last year by GeoPlace (a partnership between the Local Government Association and Ordnance Survey (OS).

A growing number of businesses, not least in the residential property sector, are now eager to take advantage of those benefits and the challenge is to make UPRNs more accessible, useable and, above all, affordable. For while

their personal use is free via the GeoPlace FindMyAddress portal, their commercial use and sharing with third parties is currently prohibited without an AddressBase licence from OS.

Even so, real estate company Zoopla has embarked on migrating from its own property ID codes to UPRNs via an AddressBase Premium licence. Antje Bustamante, its Director of Data & Analytics, says the benefits of being able to access accurate address data are significant, with an increase in the quality of leads, faster conveyancing and a reduction in fall-throughs.

But with an AddressBase Premium licence ranging from £15,625 for a single-seat to £125,000 for unlimited seats², one wonders how many businesses will be encouraged to follow Zoopla's lead.

1. <https://static.geoplace.co.uk/downloads/Addressing-the-UK.pdf>
2. 2020 figures

Editorial:

Rob Buckley, Editor - GeoInternational
robertbuckley@geoconnexion.com

Peter FitzGibbon, Editor - GeoUK
peterfitzgibbon@geoconnexion.com
+44 (0) 1992 788249

Eric van Rees, News Editor
+34-958281507
ericvanrees@geoconnexion.com

Columnists:

GeoInternational

Louise Friis-Hansen, FIG
Daniel Katzer, Hinte Messe
Simon Chester, OGC

GeoUK

Mark Poveda, Modern Surveying

Publisher:

Micki Knight
Publishing & Marketing Director
+44 (0) 7801 907666
mickiknight@geoconnexion.com

Mailing Address & Subscription Enquires:

GeoConnexion Limited,
PO Box 282, Newmarket,
Suffolk, CB8 1HE, UK
info@geoconnexion.com
subscription@geoconnexion.com
www.geoconnexion.com

Design:

Lucy Carnell
AT Graphics Ltd
www.atgraphicsuk.com

GeoConnexion International

ISSN: 1476-8941 is published by GeoConnexion Limited
The Magazine publishes 4 Seasonal editions a year and
is fully protected by copyright. Nothing in it may be
reprinted or reproduced wholly or in any part without the
written permission of the editor.



CONTENTS

FEATURES

34. **A SHIFT IN GROUNDWATER PERSPECTIVE**
Interferometric synthetic aperture radar technology is bringing subsidence – and potentially stability – to the surface in California. Mary Jo Wagner explains how
38. **MAXIMISING LAND USE AND MINIMISING ITS IMPACT**
David Viner, Alasdair Smith and David Gold consider how geospatial data can help to optimise land use and mitigate climate change risk
40. **MIND THE TECHNOLOGY GAP**
Data management and collaboration can be challenging for surveyors and construction professionals around the world. GeoMax has attempted to overcome some of the issues with its X-PAD 365 software
42. **HIGH PRECISION 3D SURVEYING OF RESERVOIR LAKES**
Alexander Reiterer explains how a reservoir basin in Germany was completely surveyed in 3D using several mobile mapping techniques
45. **WALK AND MODERNISE**
Neil Slatcher reports on how LiDAR was used in India to map informal settlements in Bengaluru as part of a new phase of urbanisation
47. **WHAT ANTENNA SUITS YOUR GNSS APPLICATION?**
In the previous issue, Ken MacLeod looked at the factors you need to consider when picking an antenna. In this article, he describes the main characteristics of the broadcast GNSS signals, describes the key features of various antenna element types and suggests which type of antenna is suitable for a particular GNSS application
50. **HEATHROW'S THIRD RUNWAY TAKES FLIGHT**
Chris Thomson explores how, in a first-of-its-kind project, drone technology helped save significant time and money in 3D mapping at Heathrow Airport
52. **MARINE DATA: COSTS AND BENEFITS**
In reviewing a report from the Marine Environmental Data and Information Network (MEDIN), Dr Mike Osborne explains why it's never been so important to understand and manage your data
54. **PROTECTING YOUR POSITION**
Maria Simsky describes how GPS/GNSS receivers can be imbued with greater resilience against the growing threats of jamming and spoofing

57. **PUTTING COASTAL PERILS ON THE MAP**
With wave and storm damage to our coastline already costing more than £500 million annually, insurers, lenders, regulatory bodies, local authorities and others will welcome a new resource from the British Geological Survey
58. **TAKING PRODUCTION TO THE NEXT LEVEL**
Ordnance Survey has undergone its biggest behind-the-scenes change in data capture for a decade thanks to a new Geospatial Production Platform. David Jones explains how it has made its operation faster, more agile and more evolutionary than ever before
62. **BUILDING A FUTURE GEO SKILLS BASE**
By 2040, the global geospatial industry will be in crisis, facing an unprecedented skills shortage. Elaine Ball looks at the consequences of inaction and at some promising moves to tackle the situation

SPECIAL SUPPLEMENT - NET ZERO

18. **THE TRANSITION TO NET ZERO**
How geospatial information and technology can help to save the planet

NEWS AND EVENTS

6. **EMERGING TECHNOLOGY**
16. **ANNOUNCEMENTS**
17. **PRODUCT SHOWCASE**

REGULAR COLUMNS

3. **EDITORIAL**
30. **OGC UPDATE**
32. **FIG UPDATE**
56. **AGI NEWS**
60. **MODERN SURVEYING**
64. **OBSERVATIONS**

Cover: We need to stop emitting greenhouse gases. The geospatial industry can help (page 18)



Get full control over your construction data

MAGNET software suite

 Your Work Connected



MAGNET 7 – Construction is all about accurate data and how it flows between the field and office. Pair the Topcon highest accuracy field instruments with state of the art MAGNET software, managing project data more efficiently and collaborating in real time with all members of your project team.

Do you want to learn more? Visit topconpositioning.com/field-and-office-connected