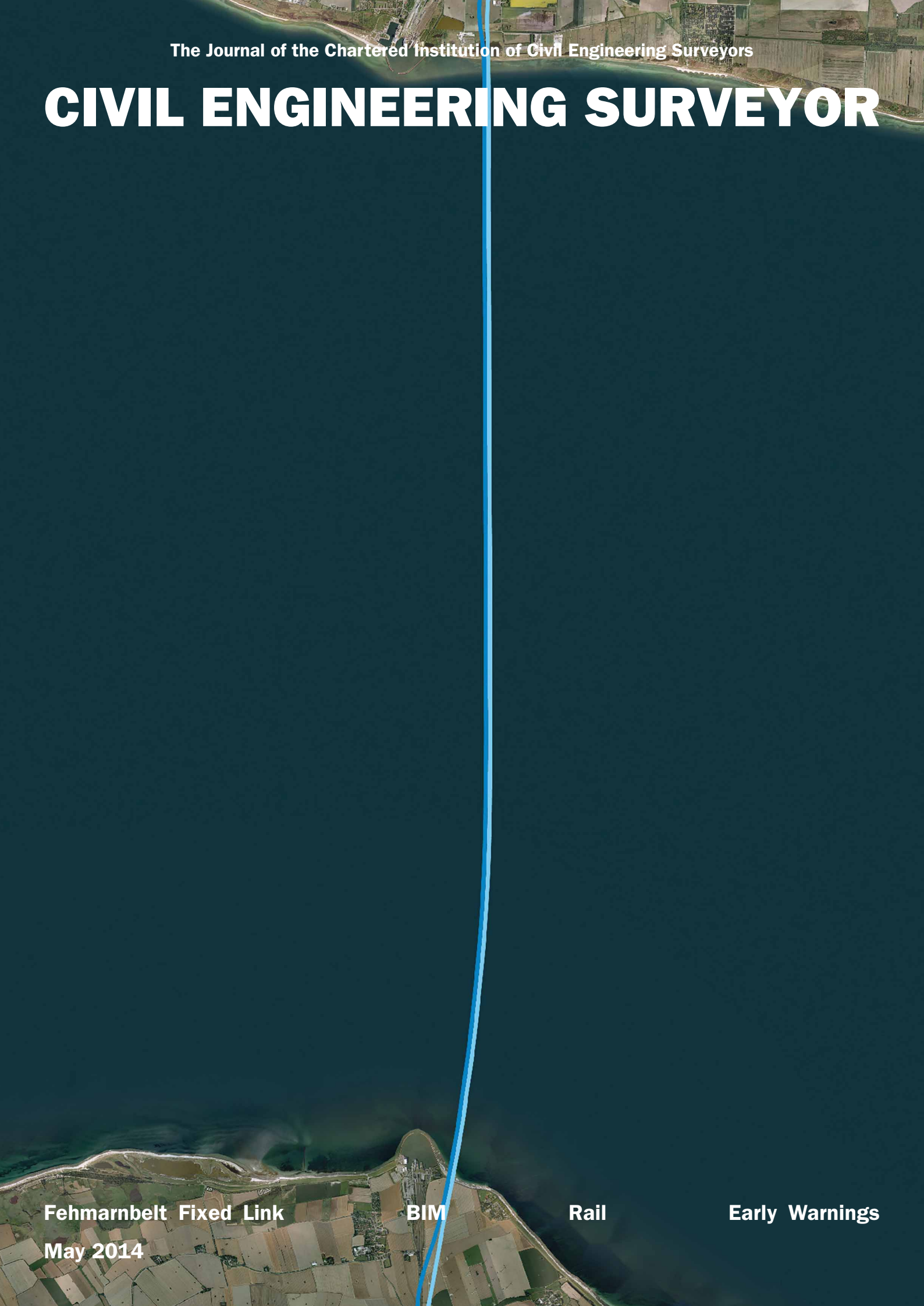

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PAS 128

What you need to know about the new utility survey specification

Ian Bush, Peter Barker, John Robinson and Nick Zembillas, PAS 128 Drafting Panel

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Why do we need an industry-wide underground utility specification?

THE PAS 128 specification for underground utility detection, verification and location is currently undergoing final minor edits ready for release to the British Standards Institution for design and publishing. Here, as drafting panel members, we explain what you need to know about the new utility survey specification and its overall aim to improve asset information amongst stakeholders.

What are the current industry problems and shortcomings?

As the demand on the nation's infrastructure continues to grow, and the need to replace and/or maintain our existing utilities increases, it is essential we have accurate information on the location of our underground utilities.

The accurate detection, identification, verification and location of utility assets have always been difficult tasks, subject to interpretation and inaccuracies. Not having sufficient or reliable information leads to:

- Risk to the safety of workers and to the public.
- Abortive and unnecessary work.
- Damage to third party assets.
- Inefficient design solutions.
- Negative economic impact.

Inaccurate, incomplete and/or out-of-date information on the existence and location of utility assets reduces the ability of those involved in new or rehabilitation works to make informed decisions. This lack of reliable information during design and construction activities can result in costly conflicts, delays, utility service disruptions, redesigns, personal injuries and even loss of life.

Accurate and complete recording of utility assets enables asset owners to better plan their own works. Furthermore, sharing this information with others working near their apparatus reduces the risk of third-party damage and its consequential impacts, as well as ensuring the safety of operatives and the public. Both government and the utilities industry widely accept that more efficient sharing of accurate asset information amongst stakeholders will reduce these costs significantly and be of immense benefit.

The methodologies and specifications for the detection of underground utilities have grown organically over a period of roughly 30 years to a point where a multi-geophysical approach is now common. As new technologies have become available these have been generally embraced by utility detection, and mapping and subsurface utility engineering practitioners are eager to improve their own accuracies and competencies.

A national robust specification for the detection of underground utilities has not been available until now. Practitioners recommend their own independent processes (many to a high level), but these are often not quantifiable or leave clients confused as to what each company can offer and what is right for a particular project. Clients also receive multiple tenders all claiming to undertake a utility survey, however, what each company offers could potentially be quite different in monetary, meticulousness and competency terms.

In addition, a recent industry survey suggests that there is a lack of understanding of the technical limitations of current technology and survey

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techniques available, leading to a miscomprehension that a utility survey is somehow an X-ray of the ground. This is not the case and a measure of confidence in the results has, until now, not been available. In many cases, this has led to projects progressing to construction phase with underspecified, incomplete or inaccurate utility survey data. As a result, there is some industry mistrust/lack of confidence and all round confusion.

The aims and scope of PAS 128

This publicly available specification (PAS) was sponsored by the Institution of Civil Engineers and facilitated by BSI Standards Limited. It will be published under licence from the British Standards Institution. The PAS process brings together key stakeholders to collaboratively produce a fast-track standard in order to fulfil an immediate need in industry. A BSI-endorsed PAS has all the functionality of (and may be considered for further development as) a British Standard, or constitute part of the UK input into the development of a European or international standard.

PAS 128 is not to be regarded as a British Standard. It will be withdrawn upon publication of its content in, or as, a British Standard. PAS 128 is a specification (not a guide or code of practice) and will be available for purchase from BSI. It is aimed at the survey practitioner to allow the utility survey industry to specify their services to a recognised level as set out in the document. This will instantly create an industry recognised level of methodology, accuracy and accountability previously unseen.

PAS 128 is intended to promote the use and drive the advancement of utility records during the planning, design, construction and operation of utility infrastructure. It takes a hierarchical approach to the survey methods used to undertake desktop utility records searches, detection, verification and location of utilities for differing stages and complexity of design and construction projects. It recognises how an increase in accuracy and certainty around results inevitably means an increase in effort, cost and timescale to deliver those results. The specification will provide fair competition, easier bid evaluation, consistent levels of service and raise survey standards. Consequently, it is hoped that PAS 128 will reduce construction costs and improve risk management and health and safety.

In creating PAS 128, we have taken into consideration the development of other similar work, such as guidelines and standards undertaken in the USA, Canada and, more recently, Australia. Independent research by the Federal Highway Agency in the USA (with the similar specification ASCE38-02) also suggests that there is added value to construction projects with the use of such a specification, resulting in a return on investment of $4.67 to $1.00.

Industry consultation

Industry wide consultation on a workable specification is vital. PAS 128 has been drafted and revised by a panel of experts. It was further reviewed by a steering group

comprising survey practitioners, subsurface utility engineering practitioners, utility owners, institutions, trade associations, government agencies, academia, buyers of services, and the construction and consulting industry. In the summer of 2013, a draft of PAS 128 was made available for public comment via the BSI website and widely publicised to allow as many individuals and organisations to comment. The industry interest in this draft was unprecedented. The steering group reviewed the public comments and discussions were held on how to resolve the issues raised. As a result of these discussions, the final draft of PAS 128 has been prepared to reflect the decisions made by the steering group members and has undergone its last review.

Where are we now?

At the time of publishing this article, PAS 128 is undergoing final minor edits and will be released to BSI for design and publishing. The expected publication date is 30 June 2014. Industry buy in of this standard is vital to allow PAS 128 to become the standard specification for quality utility detection/mapping location and verification surveys.

What Next?

PAS 128 has sparked interest within the utility detection industry that was previously unseen. For far too long this important survey discipline has not been recognised for the crucial level of information that it produces.

Industry 'buy in' of this standard is vital to allow PAS 128 to become the standard specification for quality utility detection and mapping location and verification surveys.

The Survey Association (TSA), which is represented on the steering group, produced the *Essential Guide to Utility Surveys - Detailed guidance notes for specifying a utility survey*. This document is recommended for everyone associated in utility mapping and it is expected to be revised post PAS 128 publication so that the two documents complement each other. In particular, it is intended that the revised TSA guide will address how clients can use PAS 128 to prepare tender documents suitable for their requirements as well as how practitioners should interpret PAS 128 to ensure high quality utility surveys are delivered at the right price.

ICE, TSA and the Utility Mapping Association are researching avenues to create company and individual accreditation for PAS 128 compliance, training and certification, which will mean that in future we should have not just a verifiable specification, but also qualifications and accreditation for all. This can only enhance the industry as a whole; increasing efficiency, competency and accuracy, and becoming nationally recognised as the professional industry that it is and an integral part of any project. Time, education and experience of the application of PAS 128 will lead to more effective planning and safer execution of street works and utility based activities.

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