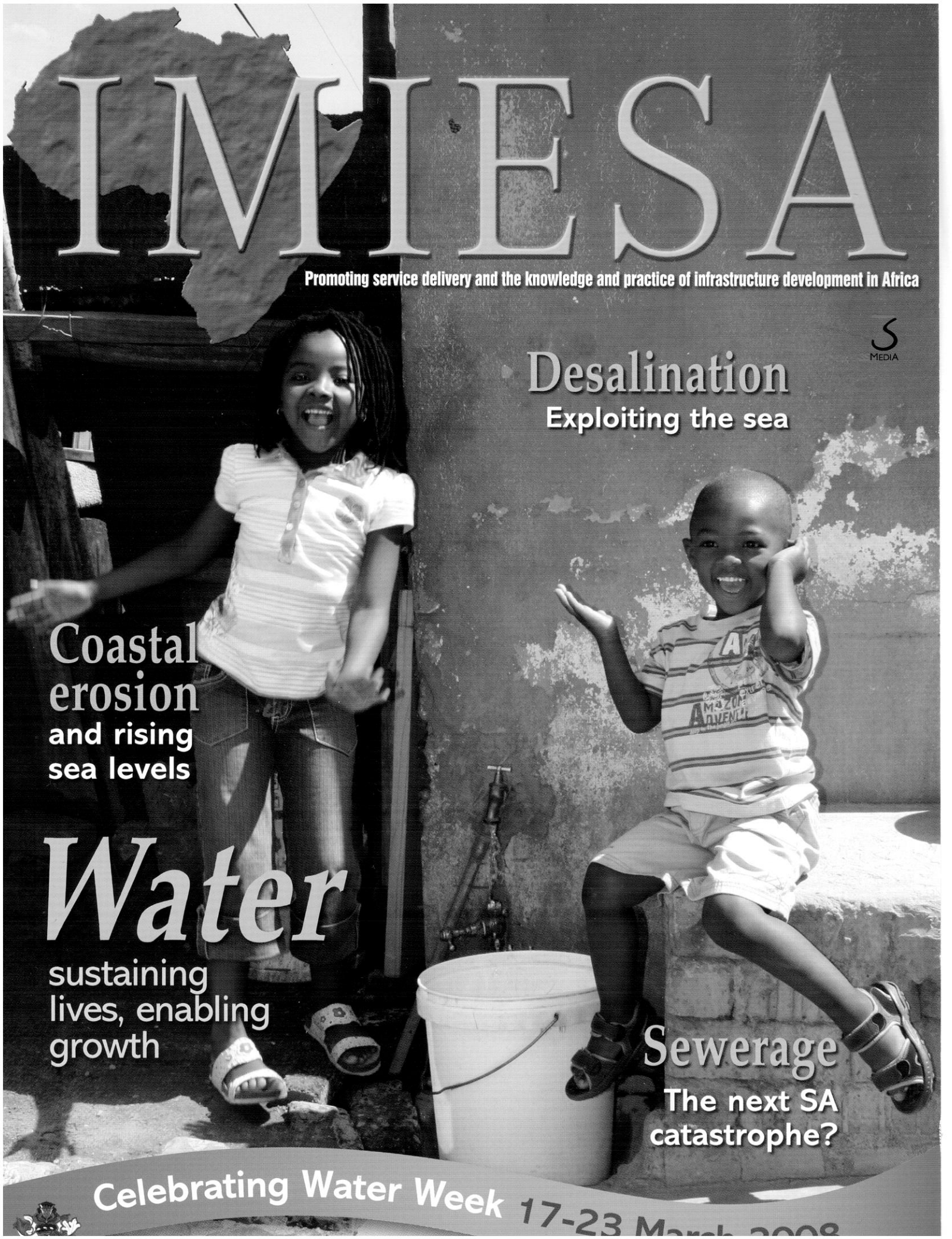
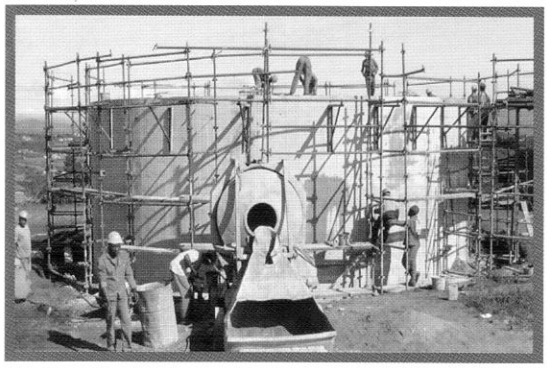

IMIESA
Promoting service delivery and the knowledge and practice of infrastructure development in Africa
S MEDIA
Desalination
Exploiting the sea
Coastal erosion
and rising sea levels
Water
sustaining lives, enabling growth
Sewerage
The next SA catastrophe?
Celebrating Water Week 17-23 March 2008

Engineering & Management

Relevance | Integrity | Knowledge | Innovation | Service

Municipal Infrastructure



BKS is a market-leader and an environmentally sensitive, globally competitive company that offers cutting edge services and improves living standards by providing a wide range of integrated engineering and management services to

Water Supply
- Source development and treatment of water
- Pump stations and reservoirs
- Bulk and reticulation pipelines
- Rural water supply
- Distribution network modelling
- Water demand and leakage management
- Cost recovery initiatives
- Operation and maintenance

Sanitation and Sewerage
- Conveyance and treatment of wastewater
- Sewage pump stations
- Reticulation, collectors and outfall sewers
- Solid waste management
- Appropriate technology in rural areas
- Community environmental health

Roads and Stormwater
- Gravel and surfaced roads
- Bridges and culverts
- Stormwater control structures
- Parking areas and taxi ranks

Buildings and Township Development
- Housing development and rental stock
- Hospitals and clinics
- Hostel upgrading and policies
- Property identification and transfer
- Sports facilities
- Schools and shopping centres
- Industrial and residential townships
- Bulk and wet services

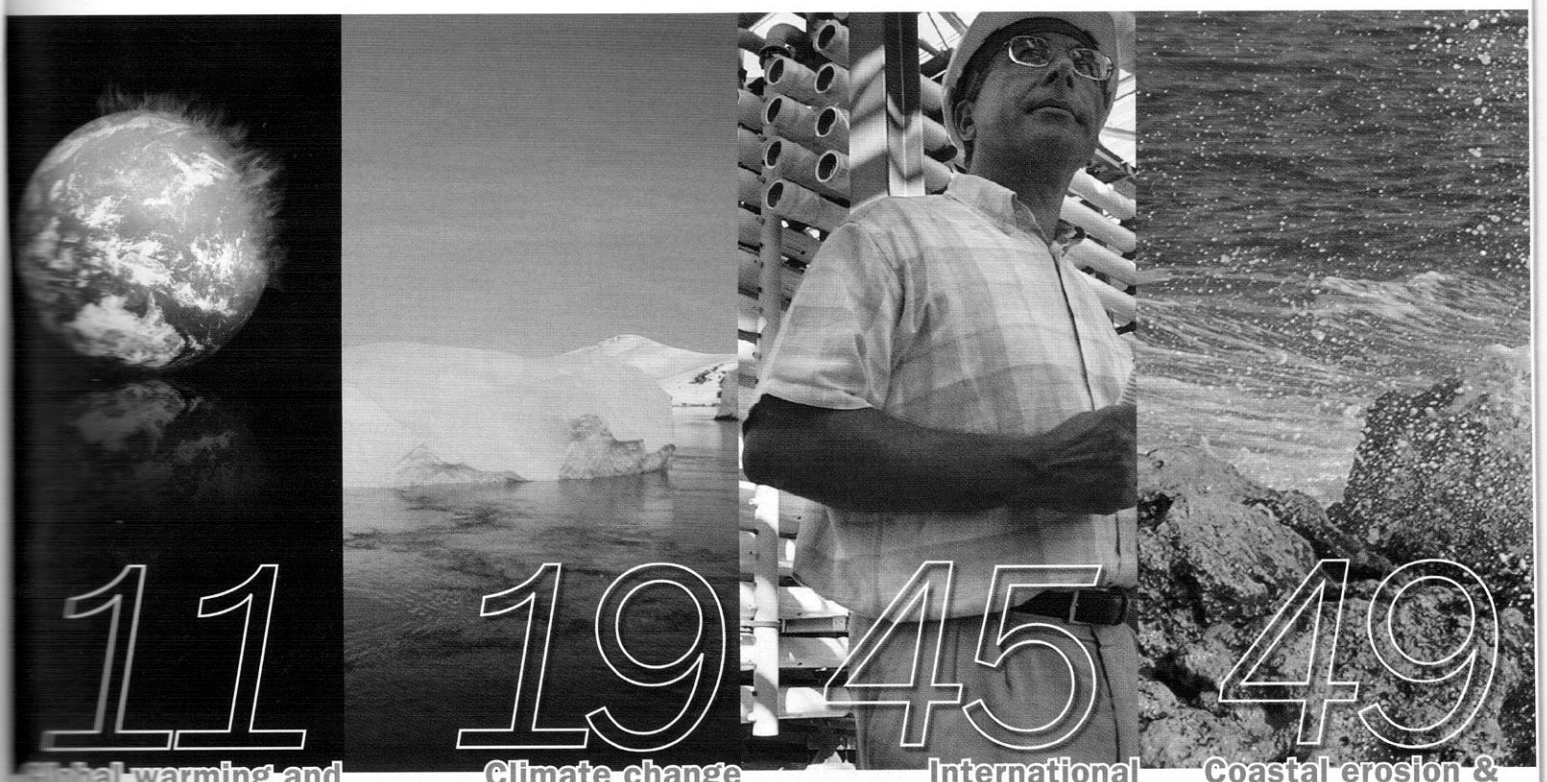
Institutional and Social Development
- Capacity building and training
- Environmental health programme management
- Local economic development
- Public communication strategies
- Social impact assessment and scoping
- Community participation
- Stakeholder participation and liaison

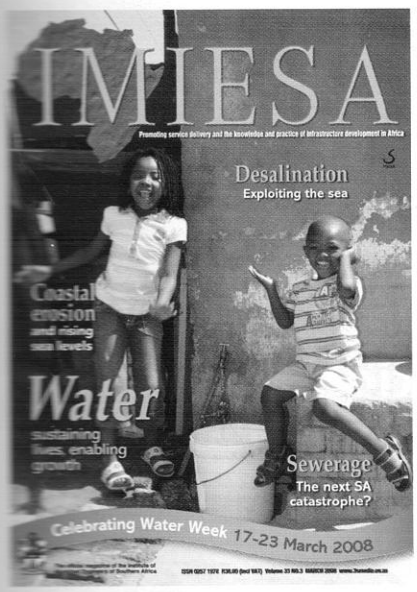
Studies and Master Plans
- Environmental impact assessments
- Evaluations and investigations
- Privatisation and corporatisation plans
- Master plans
- Feasibility studies
- Business plans

Project and Programme Management
- Public private partnerships and strategic partnerships
- Municipal management and services partnerships
- Project and contract management services
- Application for funds
- Fund management services

Contents

volume 33 no 3
MARCH 2008





"Water is crucial to sustaining South Africa's social and economic development. Every South African needs to conserve water, regarding it as a precious resource."

Cover photo by Tony Stone. Cover design by Hayley Moore

Cover story

Water

Wastewater

Insight

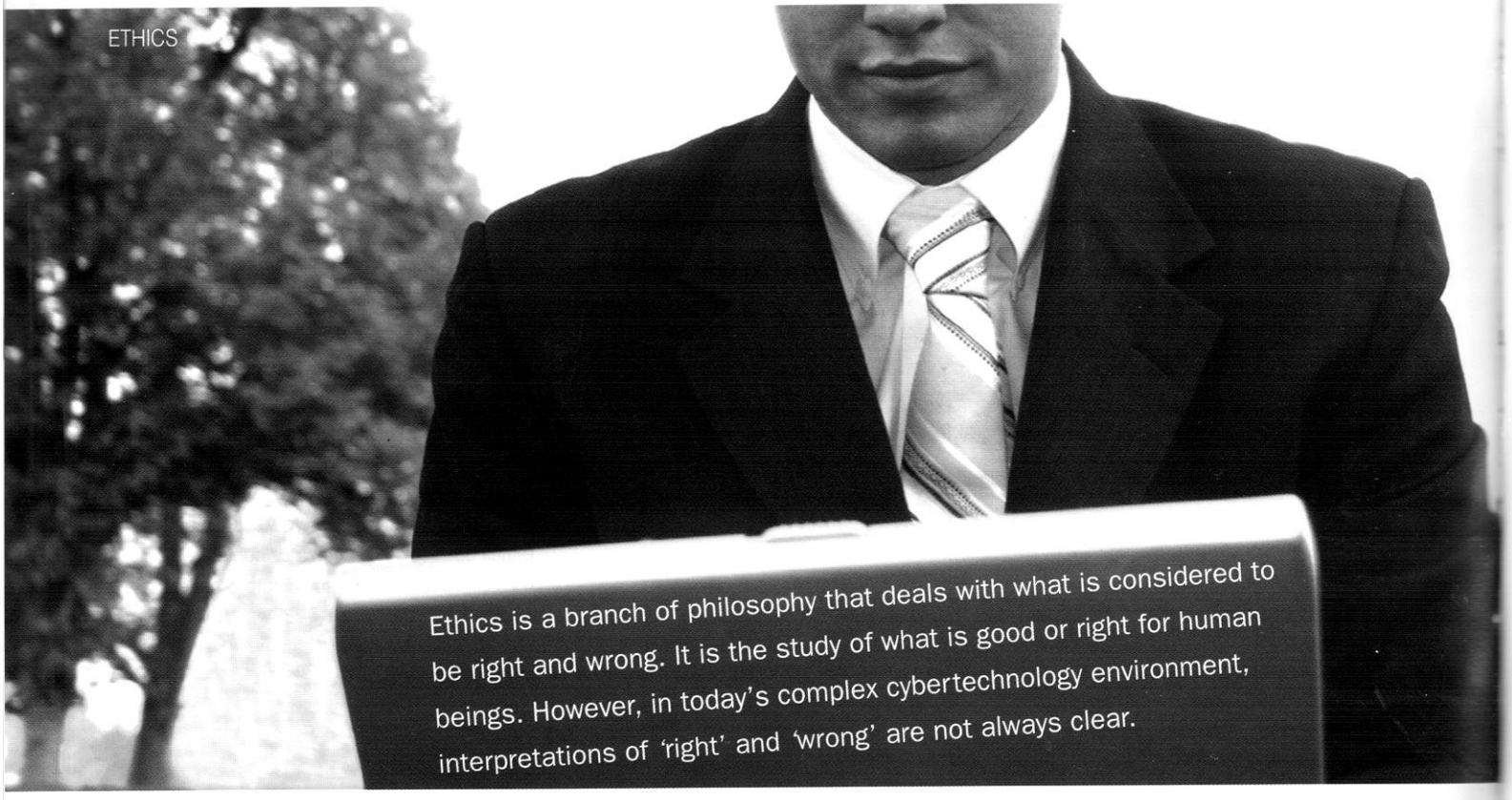
Coastal Erosion

Resevoirs

Consulting

Ethics

Regulars



Ethics is a branch of philosophy that deals with what is considered to be right and wrong. It is the study of what is good or right for human beings. However, in today's complex cybertechnology environment, interpretations of 'right' and 'wrong' are not always clear.

Ethics, cybertechnology and a code of cyber ethics

by Udo Richard Averweg

Our moral actions should be in accordance with pre-established rules or codes. Many organisations develop their own codes for employee conduct and ethical behaviour. A code of ethics is a collection of principles intended as a guide for employees of an organisation. The diversity of information and communication technology (ICT) applications in municipal engineering organisations and the increased use of ICT have created a variety of ethical issues in the cybertechnology environment.

Cybertechnology

Referring to a wide range of computing and communication devices, cybertechnology comprises that from stand-alone computers to 'connected' or networked, computing and ICT. Networked devices can be directly connected to the Internet, or to the other devices through one or more privately owned computer networks. In turn, those networks include local area networks (LANs) and wide area networks (WANs). The Internet, and LANs and WANs are perhaps the most common and well-known examples of cybertechnology.

Cyberethics

This refers to the study of moral, legal and social issues involving cybertechnology. Some researchers use the term 'computer ethics' to describe the field that examines moral ethics pertaining to ICT. With concerns regarding the involved ethical issues (the Internet in particular), one researcher (Langford, 2000) uses the term 'Internet ethics' instead. It is felt by the author that ethical issues are neither limited to the Internet, nor to computing machines as they also include privately owned computer networks and ICT. Hence, for the purpose of this article, the relatively new term 'cyberethics' is used to capture some of the wide range of moral issues involving cybertechnology.

It is suggested that 'cyberethics' is a more accurate term than either 'Internet ethics' or 'computer ethics', for two reasons:

- The term 'computer ethics' can connote ethical issues construed as pertaining to stand-alone or 'unconnected' computers. However, with the advent of networked systems, a computer system may nowadays be thought of more accurately as a new kind of medium as opposed to a machine
- The term 'computer ethics' may suggest a field of study that is exclusively concerned with ethical issues involving ICT professionals. The field of cyberethics is not linked to an analysis of moral issues that affect only these professionals.

Cyberethics can be understood as a branch of applied ethics. For example, "may an employee copy someone else's software for his/her own personal use and distribute it"? Or "may an employee download

music/video from the Internet for personal use and distribute it"? 'Right' actions are those that it is useful to praise, 'wrong' actions are those that it is useful to blame. The 'right' ethical answer may or may not be the answer that is prescribed by law. In fact, depending on the ethical assumptions made, the two may on occasion be in conflict. The challenge is to make essential ethical decision making explicit, so as to make it better. Although tailor-made codes of conduct will not be sufficient in themselves, they should be viewed as an integral part of incorporating ethics management with the broader management environment in municipal engineering organisations.

Codes of conduct and of ethics

A professional code of conduct is often designed to motivate members of an association/organisation to behave in certain ways. It inspires, guides, educates and disciplines the members (Tavani, 2004). For example, in the Computer Society of South Africa's (CSSA) Code of Conduct, a professional CSSA member "should not engage in any illegal activities, including copyright or patent violations". If a member contravenes the CSSA's Code of Conduct, the society's disciplinary regulations set out the procedures to be followed.

Codes of ethics provide guidance and advice for individual members when they are faced with situations that are morally complex.

The acceptance of a code of conduct is a central part of being an engineering professional. The values of codes are often overstated: on their own and unaccompanied by the appropriate habits, expectations and sanctions, codes of conduct are of little value. Furthermore, the appropriate basis for a code of conduct is often equally misunderstood: what legitimises a code is not stakeholder consent, but ethical content. Nevertheless, codes of conduct can be extremely useful. By explicitly communicating corporate purposes regarding controversial matters (such as private Internet usage) and by clarifying which stakeholder expectations are legitimate, a codes of conduct can eliminate ignorance as an excuse. Additionally, such a code can be an effective tool for sharpening business accountability and for improving corporate governance in municipal engineering organisations.

Codes should not simply reflect the prevailing values or culture of an organisation. For example, when the existing culture is less than perfect, enshrining it in a code merely reinforces bad practice – what it prescribes must be better than the existing norm.

A code of conduct is not a survey of employees' ethical attitudes. It is meant to express, for example, an organisation's fundamental aims and values, and it is the duty of the organisation to state what are those aims and values. It sets out what constitutes ethical conduct for the organisation and its validity depends solely on the correctness of both the values and principles it expresses – not on employee agreement. Ideally, stakeholders (that is employees in a municipal engineering organisation) will share the values embodied in the code. However, if they do not, it is the stakeholders that should be changed and not the code.

Codes of ethics have limitations because of their nature to generalise acceptable behaviour – despite the variations in social and ethical values which may exist in different communities. Ethical codes are valuable for raising awareness of ethical issues and clarifying what is acceptable behaviour in a variety of circumstances. Codes of ethics involve the formalisation of some rules and expected actions. Violation of a code of ethics may, for example, lead to the termination of employment – such a procedure should exist in an organisation's disciplinary procedures. Those are some of the challenges associated with the formulation and adoption of a code of cyberethics within an organisation to support ethical practices in the workplace.

Code of cyberethics

Detailed below is suggested practical methodology for formulating a code of cyberethics for a municipal engineering organisation:

- disseminate a validated ethics statement survey instrument (see extract in Table 1) to employees who have Internet access accounts
- analyse, both qualitatively and quantitatively, the responses received for the survey questionnaires. From the scored responses, themes, patterns and trends can be synthesised
- draft a proposed code of cyberethics based on the following:
  - the organisation's vision and mission
  - moral and social values that the organisation wants reflected on all its activities
  - values that reflect characteristics of the organisation's approach to achieving its mission, paying particular attention to cybertechnology situations that appear to be genuinely problematic
- present the proposed code to the organisation's board of directors, for ratification and adoption
- utilise an appropriate and effective communication mechanism to distribute the adopted code to the organisation's employees

PLEASE INDICATE YOUR LEVEL OF AGREEMENT/DISAGREEMENT WITH THE FOLLOWING INFORMATION AND COMMUNICATION TECHNOLOGY-RELATED STATEMENT				
I may copy someone else's software for my own personal use				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Please tick any of the following factors that affected your answer (you may tick more than one)				
I believe that the potential harm done to others would be minimal				
I believe that most view this activity as acceptable				
I believe that any harm that would take place would be to people I do not know				
I believe the number of people harmed would be minimal				
I believe that negative effects of this action would occur a very long time from now				
I believe that the potential harm done to others would be high				
I believe that most view this activity as wrong				
I believe that any harm that would take place would be to people I know				
I believe the number of people harmed would be high				
I believe that negative effects of this action would occur very soon				

Table 1. Extract of ethics statement survey for employees
(Acknowledgement: This extract is an adapted version of the Ethics Statement Survey by Alan Peslak, Penn State University, Dunmore, PA, USA. Replicated 5 November 2007, from http://wsistdevel.sn.psu.edu/ist/arp14/eths1/webform1.aspx)

- regarding breach of the code, the organisation's standard disciplinary procedures should be followed.
- code of cyberethics should form part of an organisation's conditions of service.

Research by McCabe et al. (1996) found the existence of a corporate code of ethics was associated with significantly lower levels of self-reported unethical behaviour in the workplace. Ethics is not just about codes – the code is only a small element of the entire process. Since a municipal engineering organisation is not only about documents, but also about employees and structures, one needs to ensure that both the employees and structures, within which people operate, support ethical practices. Clearly, the principle of an action under consider becomes the basis for everyone's actions within the organisation. Furthermore, all the organisation's employees will be willing to live in a society as defined by an adopted code of cyberethics.

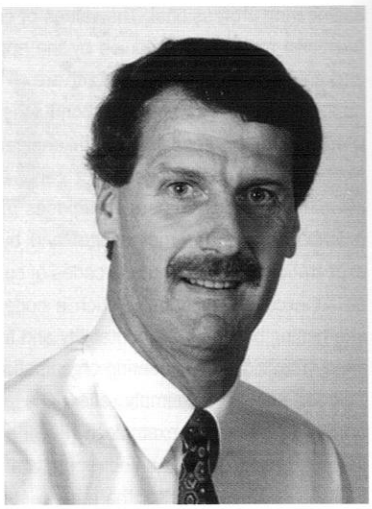
Concluding remarks

Cleek and Leonard (1998) state that "emphasis should be placed on how the codes are communicated, enforced and used, as a basis for strengthening the culture of the organisation". McClenahen (1999) suggests that "being consistent in policies and actions, rewarding ethical conduct, treating employees fairly and providing better executive leadership" work best to reduce unethical conduct.

Effectively communicating the code of cyberethics to employees can help an organisation eliminate situations where employees dispute that they have not been made aware of corporate expectations regarding, for example, private Internet usage.

A statement of core values and a code of cyberethics that is successfully communicated and reinforced by strong management support, should assist municipal engineering organisations in maintaining an environment conducive to ethical decision making on what is considered to be right and wrong in the cybertechnology environment. 35

* *Udo Richard Averweg is an IT research analyst at eThekwini Municipality, Durban. He has worked in the IT industry since 1979, holds three Masters degrees and is a professional member of the Computer Society of South Africa. Averweg's publications are on decision support systems management, executive information systems, knowledge management and Intranets.*



SUGGESTED FURTHER READINGS

- Cleek. M and Leonard. S, April 1998. Can Corporate Codes of Ethics Influence Behavior? *Journal of Business Ethics*, p619 to 630.
- Langford. D (ed.) 2000. *Internet Ethics*, St Martin's Press.
- McCabe. D, Klebe Trevino. L and Butterfield. J, 1996. The Influence of Collegiate and Corporate Codes of Conduct on Ethics-Related Behavior in the Workplace, *Business Ethics Quarterly*. 6(4), p461 to 470.
- McClenahen. J, 1 March 1999. Your Employees Know Better, *Industry Week*. p12 to 13.
- Tavani. HT, 2004. *Ethics and Technology: Ethical Issues in an Age of Information and Communication Technology*. John Wiley & Sons.