



**LANDFORM  
DESIGN  
INSTITUTE**

# Landform Design Quarterly

## Spreading the word on landform design

The principles of landform design are gaining traction with major mining organizations worldwide thanks partly to members of the Landform Design Institute (LDI), who are contributing chapters to new manuals, guides, and handbooks.

Gord McKenna, LDI chair, and David Williams, a member of the Technical Advisory Panel, have begun writing chapters on landform design and tailings facilities for a new tailings handbook from the Society for Mining, Metallurgy & Exploration (SME). McKenna is also helping prepare definitions of landforms related to dam delicensing for the Canadian Dam Association (CDA) and recently contributed to an International Organization for Standardization (ISO) book on a framework for mine closure that is in the final review stage.

**CDA**  **ACB**

**ICMM**

**ISO** International Organization for Standardization

**PRI** Principles for Responsible Investment

**SME**

Society for Mining, Metallurgy & Exploration

**UNEP** United Nations Environment Programme

McKenna and Dirk Van Zyl, also a member of the Technical Advisory Panel, have completed a chapter on landform design for tailings facilities for a new global industry standard on tailings management being produced by the International Council on Mining & Metals (ICMM), United Nations Environment Programme (UNEP) and Principles for Responsible Investment (PRI).

“These publications will help spread the word on the principles and objectives of the Institute,” said McKenna. “We are already making headway in helping practitioners learn how to design tailings facilities for closure from the very beginning, or to adapt designs for tailings landforms now under construction. We’re glad to be supporting these global initiatives.”

## Institute prepares to launch membership drive

The LDI will soon be accepting new members to help fulfill its mandate of making landform design routine worldwide by 2030. Individual (\$90) and student (\$10) memberships will be available online at [landformdesign.com](http://landformdesign.com).

In addition to networking opportunities at virtual and in-person events, membership benefits include access to a members directory and publications library, landform

design tools and checklists, introductory lectures, and a case-history database.

All members will gain immediate access to a planned series of discussion papers and technical reports, as well as upcoming landform design and reclamation textbooks. They will receive regular alerts for podcasts, events, and publications. Corporate memberships, which include one individual membership, will also be available

for \$5,000 (all figures in Canadian dollars). Corporate members will receive access to online and in-person university course materials and see their logo displayed on Institute communications.

The LDI is also pursuing relationships with companies willing to formally sponsor the organization. Watch your inbox for an invitation to join the LDI in the coming weeks.

## Making landform design routine worldwide

The Landform Design Institute is dedicated to creating and supporting a community of landform design practitioners. Its intention is to help their teams design and build truly sustainable mining landscapes. Its mission is to make landform design routine in the mining industry worldwide by 2030.



## Mines falling well short of land reclamation goals

Despite good intention and billions of dollars spent, mining companies, mine managers, regulators, and local communities are falling short when it comes to making reclaimed mine lands safe, stable, and useful in a timely manner.

That's one of some 150 "gaps" the LDI Board has identified across 10 different subject areas in an assessment carried out this spring comparing the current state of practice in mining and landform design against what has been promised for mine reclamation.

While the gap analysis is a work in

progress, the evidence gathered so far shows that a transformational change is required to deliver on the promises of mining — in short, to facilitate sustainable mining.

"There's already a lot of good guidance out there dating back over 15 years on what needs to be done, but there's been a major lack of uptake, mainly because of prevailing attitudes and a lack of recognition of just how important this work really is to the bottom line of every mine," says LDI Board Member June Pollard.

"This means we need to be advocates who provide how-to guides and case

histories that offer guidance on bridging the gap between what is promised and what is delivered, empowering mines, regulators, and local communities to work together for real change."

In search of obstacles to making landform design routine, the Board spent the spring reviewing research on mine closure and reclamation, including publications from the International Commission on Large Dams (ICOLD), International Network for Acid Prevention (INAP), International Council on Mining & Metals (ICMM), and various Australian government publications.

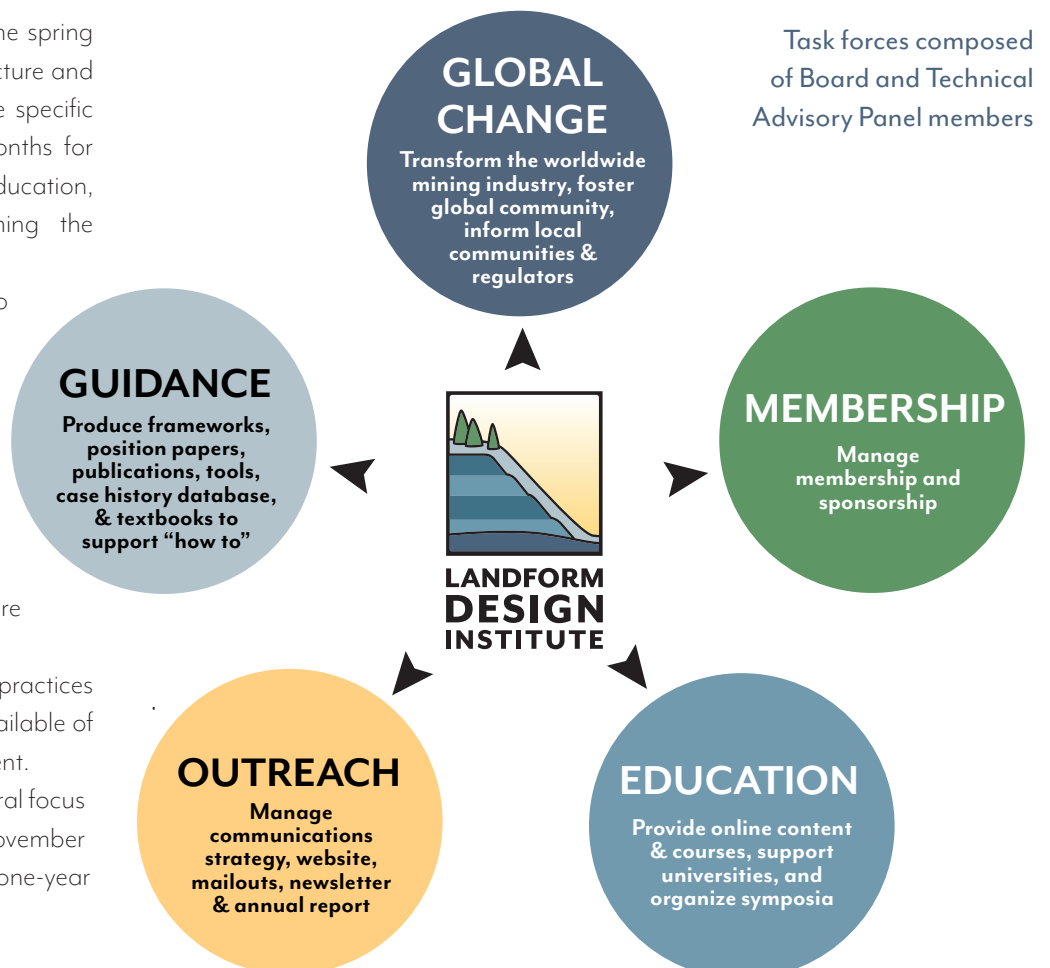
## Refining governance and establishing task forces

Members of the LDI Board spent the spring refining the Institute's governance structure and strategic planning, resolving to create specific project task forces in the coming months for key areas, including membership, education, outreach, guidance, and transforming the industry.

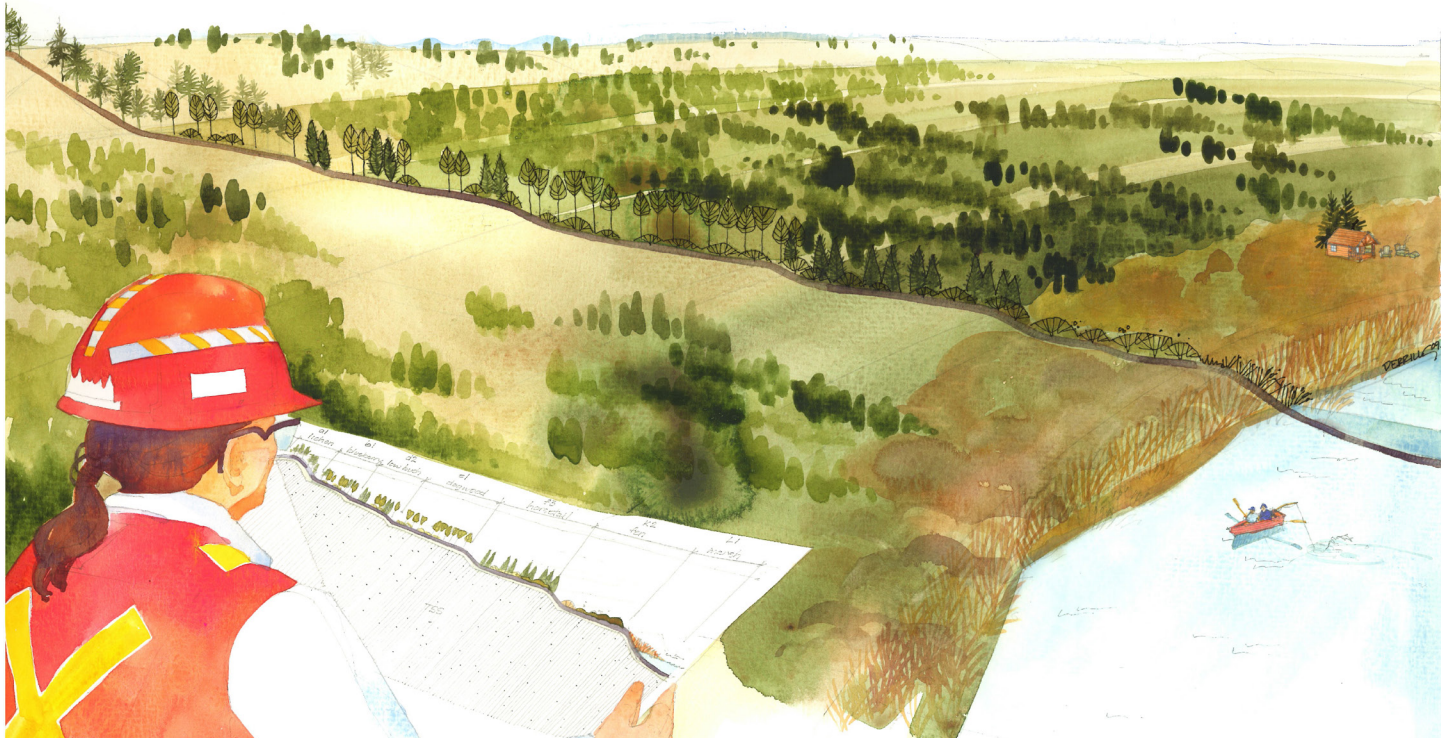
Foremost, the Institute needs to provide formal definitions for landform design and related concepts such as design scales, landform service life, landform evolution, timeframes, terms of closure, and what qualifies as relinquishment. The current state of practice also needs to be better described, as do acceptable closure practices.

The Board's consensus is that current practices are falling short; few examples are available of successful mine closure or relinquishment.

The results of this work will be a central focus of a position paper, due for release November 15, shortly after the September 30 LDI one-year anniversary (see page 3).



# Position paper to make a call to action



The LDI is producing a new position paper as a call to action on landform design, with a scheduled release of November 15, shortly after the September 30 one-year anniversary of the Institute. With the working title of ***Landform Design for Sustainable Mine Reclamation***, the paper is being written by a team of LDI experts, with illustrations by Derrill Shuttleworth.

The position paper will call for the global mining community to rally around a set of common goals in support of landform design and responsible mining. It will describe the current state of mine reclamation, identify relevant gaps and solutions, explore areas of potential synergy with related

international initiatives, and set out a vision for where the mining industry needs to be in 10 years to be consistently achieving successful mine reclamation.

Examples include establishing a multi-disciplinary team, undertaking responsible governance, engaging local communities, recognizing that landforms work at scales (regional, landscape, landform, and element), and acknowledging that mining has phases that all require equal attention (pre-mining, design, construction, operation and progressive reclamation, decommissioning and aftercare).

Providing details of LDI objectives, the paper will be updated after a year, and then every two years.



## Toward sustainable mining

The mining industry needs to engage in a real dialogue on how to achieve the “seemingly impossible” task of bringing about truly sustainable mining, says a book to be released this fall by LDI board members Gord McKenna and Rob Abbott.

The authors are putting the finishing touches on ***The Future of Mining***, a seminal look at the challenges and opportunities facing an industry that is increasingly criticized for its detrimental impacts on the environment and local communities. The book will lay out in detail the seven elements of truly sustainable mining, from engaging communities to enhancing, rather than degrading, the environment.

# Get ready to subscribe to the new LDI podcast

The LDI podcast **Getting Closure** will soon begin appearing on Apple Podcasts, Spotify, and other platforms, allowing the insights of seasoned experts on landform design and responsible mine closure to reach global audiences.

Upcoming episodes include two discussions hosted by LDI Board Member Mike O’Kane, the first with Corinne Unger, an Australia-based PhD student who specializes in mine rehabilitation and closure planning. Unger has undertaken extensive research projects on abandoned mine rehabilitation and post-mining land use in Austria, Germany, the UK, and Canada.



For the fourth episode, O’Kane will interview LDI board member Lois Boxill, global manager for tailings and land reclamation projects at

BASF in Calgary.

Recently, O’Kane hosted the second podcast by interviewing Mark Logsdon, a geochemist and mineralogy specialist based in California who has worked on some 250 mining projects during a career spanning almost 50 years.

All episodes are also available for streaming or downloading on the LDI website.

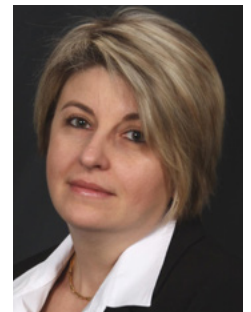


The LDI’s Mike O’Kane (left) and veteran geochemist Mark Logsdon in the field — years before they would record an LDI podcast.

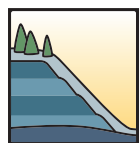
## Doina Priscu joins Technical Advisory Panel

The LDI is pleased to announce that Doina Priscu, a registered professional engineer with more than 25 years of experience, has agreed to join the LDI’s Technical Advisory Panel. Priscu is the principal engineer for mining environment with Priscu and Associates in West Vancouver. Previously she was the acting director of regulatory approvals and mine closure for Teck Resources.

Starting her career as a consultant in Bucharest, Romania, she moved to Canada and worked for the federal Department of Natural Resources, and then went on to work for the Province of Manitoba, AMEC, Anglo America, Golder Associates, and Gecamin. She also served as an adjunct professor focused on sustainable mining and mine closure for Pontificia Universidad Catolica de Valparaiso in Chile.



Doina Priscu



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