

Robert R. McCormick School of
Engineering and Applied Science
Northwestern University

McCormick

Northwestern Engineering

segal design institute

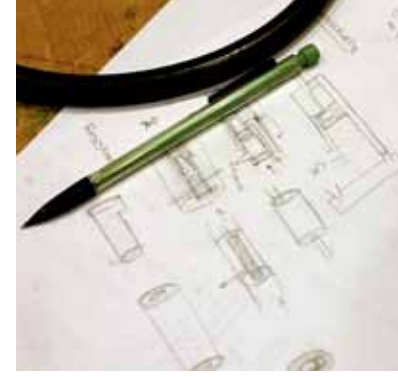


A young man with glasses and a dark sweater is working in a workshop. He is holding a large, white, curved object, possibly a model or a piece of equipment, with both hands. The object has several screws or fasteners along its edge. The background is slightly blurred, showing what appears to be a workshop or laboratory setting with various tools and equipment.

redefining design

“We see design thinking as a process that opens horizons and opens minds. It provides a pathway toward innovation.”

—Julio M. Ottino, Dean, Robert R. McCormick School of Engineering and Applied Science



REAL PROBLEMS CUT ACROSS DISCIPLINES

The narrow specialization that drove innovation in the 20th century increasingly falls short of the complex challenges we face in the 21st. Our interconnected world demands deep thinking in a variety of fields that can be synthesized in profound ways. At Northwestern University we believe that process is **design thinking**: a collaborative approach to problem solving that aptly frames problems and produces innovative, transformative results. Design thinking is a powerful tool that can be applied to all aspects of human endeavor — from cell phones to cell biology and from business plans to public policy.

The Segal Design Institute was founded at Northwestern University in 2007 to extend the value and power of design and design thinking in all fields. Our goal is a truly human-centered design: attuned to human abilities, desires, and needs as well as the practical realities of technology and organizations. To this end we draw on the expertise of people from a diversity of backgrounds and interests — within Northwestern and beyond — to arrive at critical insights that spur creative solutions. This approach puts a new spin on **e pluribus unum**: out of many viewpoints, an effective solution.



Two views of a sculpture by Tom Cohlma (MaDE 08) that sets the tone in the Ford Motor Company Engineering Design Center, home of the Segal Design Institute.

The Ford Motor Company Engineering Design Center

is the home of the Segal Design Institute. It received Silver Certification in the Leadership in Energy and Environmental Design Green Building Rating System (the first building at Northwestern to do so) and is the physical and virtual center for collaboration and design at Northwestern. It contains classrooms, offices, and conference rooms as well as a prototyping laboratory that includes machine tools, rapid prototyping equipment, and CAD stations.



The Segal Design Institute is at the center of **Northwestern University**, an institution renowned for its pioneering programs in nanotechnology, management, materials science, journalism, the arts, and more. The institute is part of the McCormick School of Engineering and Applied Science, is closely allied with the Kellogg School of Management, draws on faculty from the Judd A. and Marjorie Weinberg College of Arts and Sciences and the School of Education and Social Policy, and has ongoing collaborations with the Feinberg School of Medicine and the School of Communication. Our aim is to engage faculty and students throughout the University and to make design thinking a key part of the creation of knowledge and progress at Northwestern.



As a degree- and certificate-granting body within a major research university, the Segal Design Institute is uniquely placed to transform design education and the field of design thinking. We are committed to educating future leaders starting the first term that undergraduates arrive on campus and continuing through world-class postgraduate programs.

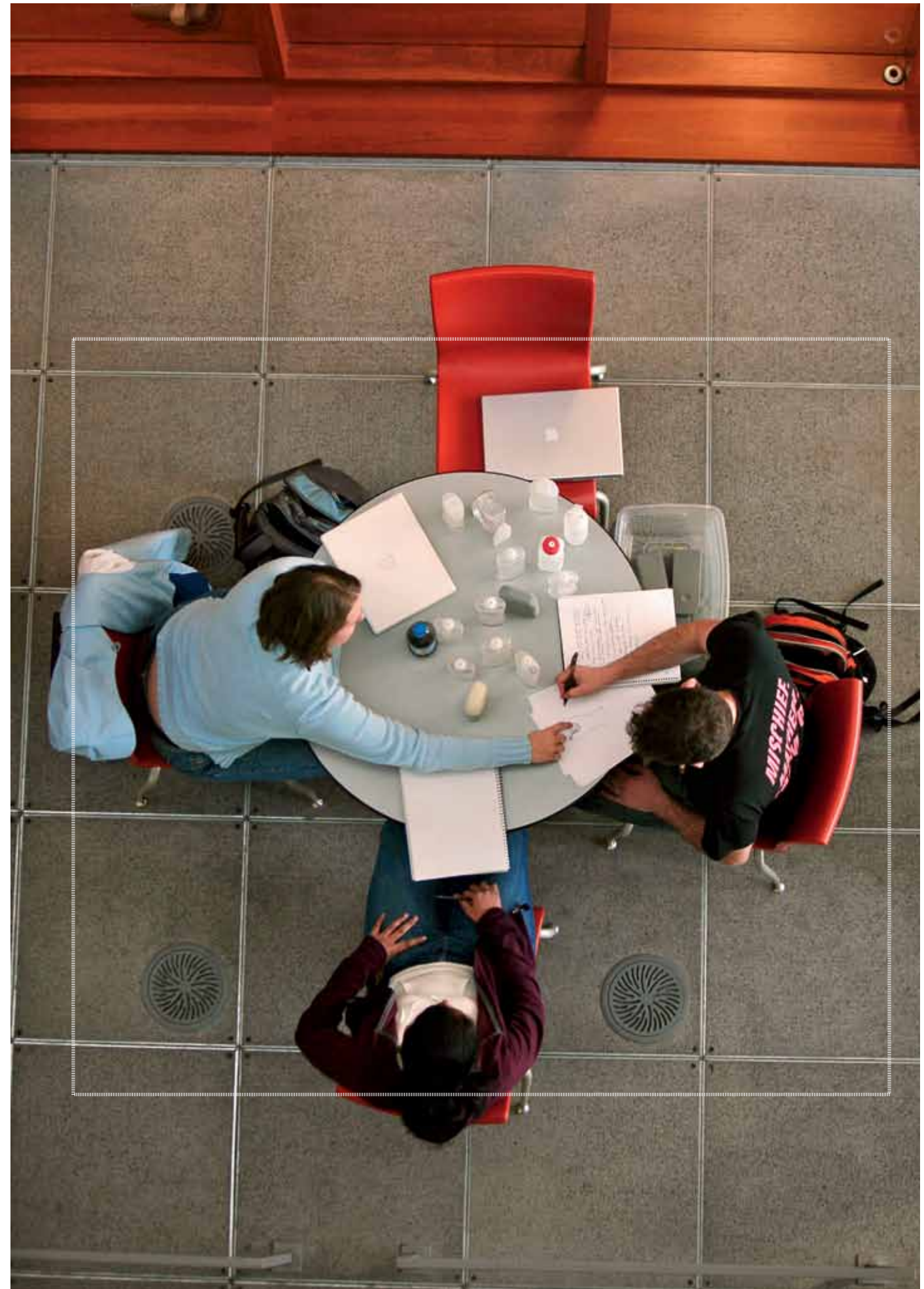
No other program in the country starts students solving design problems so early and extends the power of design thinking so broadly.

SEGAL DESIGN INSTITUTE ACADEMIC PROGRAMS

- **Engineering Design and Communication**, a required sequence of courses for all engineering undergraduates
- **the Certificate in Engineering Design Program**, a team-based undergraduate program focused on innovative engineering design; it can be combined with any engineering degree (and some nonengineering degrees)
- **the Manufacturing and Design Engineering Degree Program**, which educates undergraduate engineers in all aspects of product realization
- **the Master of Science in Engineering Design and Innovation Program**, a one- or two-year full-time graduate program that introduces engineers to design thinking

PROGRAMS AFFILIATED WITH THE SEGAL DESIGN INSTITUTE

- the Master of Product Development Program, a two-year part-time program that teaches product development professionals how to manage the design process
- the MMM Program, a two-year full-time management program in design and operations administered jointly by the Kellogg School of Management and the Segal Design Institute; students earn two degrees — an MBA and an MEM (master of engineering management)

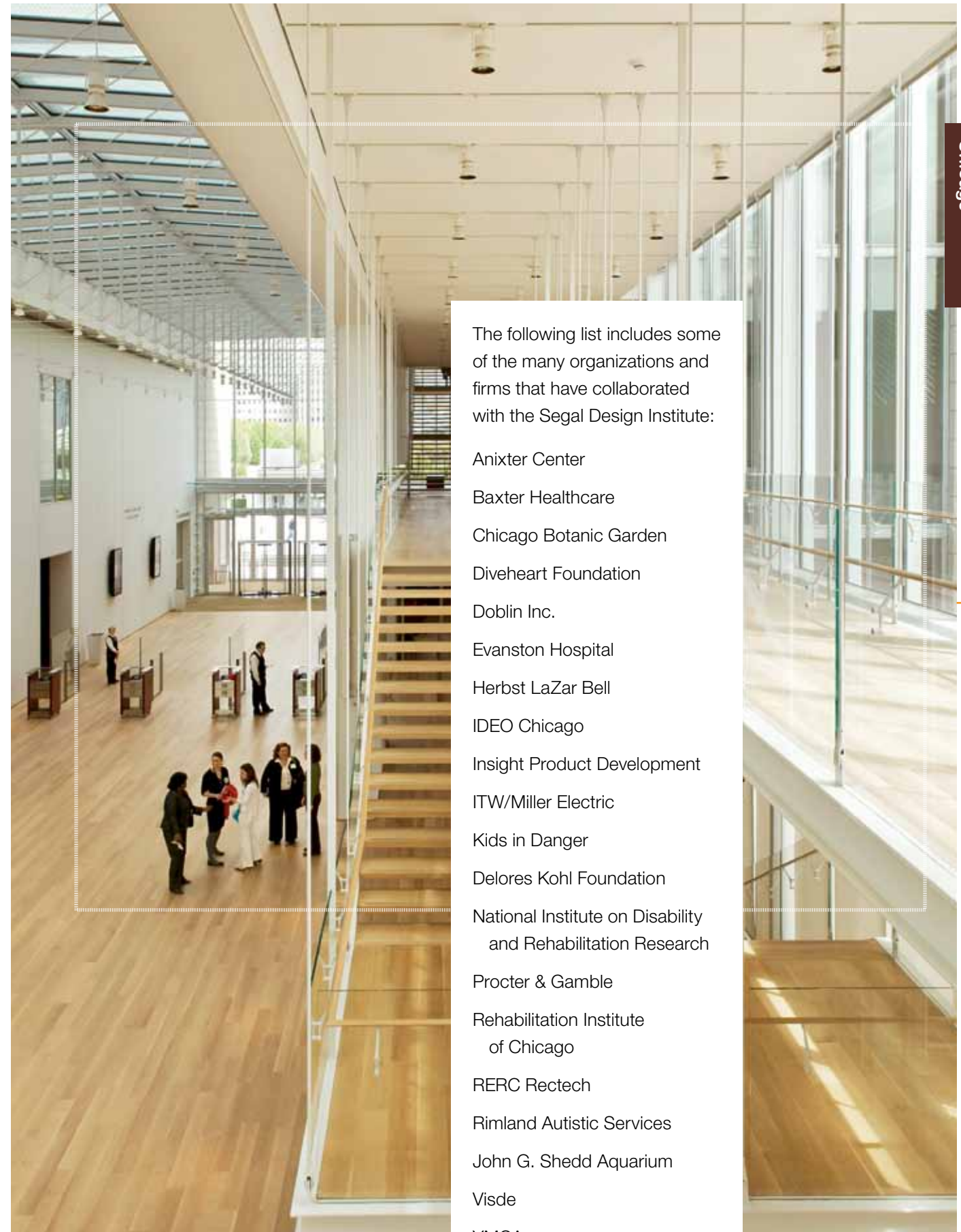


Chicago is an international metropolis with multiple complementary personalities — cultural capital, business mecca, political center, leader in green urban policy, transportation hub — and it is a community that celebrates the transformative power of design.

A case in point is the new Modern Wing of the Art Institute of Chicago (shown at right). This celebrated Renzo Piano–designed structure — itself a landmark of design — features galleries devoted to significant works of architecture and design. In its review of the new wing, the *New York Times* stated that these collections “outrank” those of the Museum of Modern Art. By raising these holdings to a level of prominence within the museum, the Art Institute has cemented Chicago’s status as a design leader, ensuring that our community will be at the center of ongoing discussions about design.

The Segal Design Institute is both a product of and contributor to this culture; the institute was named in recognition of a significant gift from Gordon and Carole Browe Segal, founders of Crate & Barrel. And the institute will play an increasingly influential role in the community, as its relationships with Chicago’s industrial and corporate partners, foundations, and academic and cultural institutions provide plentiful opportunities for projects, internships, and careers for our students.

The Segal Design Institute is an ideal place to study design, thanks to its setting. The birthplace of the skyscraper and home to Frank Lloyd Wright, Louis Sullivan, Daniel Burnham, Mies van der Rohe, and other giants of architecture, **Chicago** is one of the best-designed cities in the world.



The following list includes some of the many organizations and firms that have collaborated with the Segal Design Institute:

- Anixter Center
- Baxter Healthcare
- Chicago Botanic Garden
- Diveheart Foundation
- Doblin Inc.
- Evanston Hospital
- Herbst LaZar Bell
- IDEO Chicago
- Insight Product Development
- ITW/Miller Electric
- Kids in Danger
- Delores Kohl Foundation
- National Institute on Disability and Rehabilitation Research
- Procter & Gamble
- Rehabilitation Institute of Chicago
- RERC Rectech
- Rimland Autistic Services
- John G. Shedd Aquarium
- Visde
- YMCA

The Segal Design Institute sponsors a number of **outreach programs** each year. Open to the entire University community and the general public, these programs explore and demonstrate the power of design thinking. They include lectures by Segal Design Institute faculty and visiting professionals and scholars, engineering design project fairs in December and March, and the annual Design:Chicago seminar, an opportunity for Chicago-area design experts to gather and discuss the increasing prominence of design in the region.

In 2008–09 the **Segal Seminars** series featured design and engineering leaders and scholars from the University of British Columbia, Carnegie Mellon University, Northwestern’s Medill School of Journalism, Stanford University, Yale University, Bottega Veneta, IA Collaborative, and Mecaro speaking on such topics as haptics and by-wire transportation, exhibition design and national branding in post-war Japan, communicating through touch, the Spiral Magnus Wind Turbine, newspaper design, design research, prototyping, and changing conversations and expectations in health care. By sponsoring such programs, videotaping and archiving them, and sharing them via the web, the Segal Design Institute is a resource to and key participant in the national conversation about design and its transformative potential.

In addition to its formal offerings, the institute is an incubator for efforts to extend the power of design. One example is **Design for America** at Northwestern, a consortium of students from across campus who collaborate with community organizations and nonprofits to solve real-world challenges. The organization creates powerful solutions to societal problems based on human-centered insights and works with organizations to effect change in our communities.

The **leadership** of the Segal Design Institute consists of people from a wide range of fields — cognitive science, mechanical engineering, industrial engineering, graphic design — who are drawn to the power of design. The institute seeks the participation of similarly inquisitive students, faculty colleagues, and partners outside the University. Guided by the principles of human-centered design, we envision a community — based at Northwestern but extending far beyond it — that continually attracts new members to form a self-renewing core for the institute and the field of design thinking. Such a community would be more organism than organization, with the potential to transform the creation of knowledge and the education of leaders in unimagined ways.

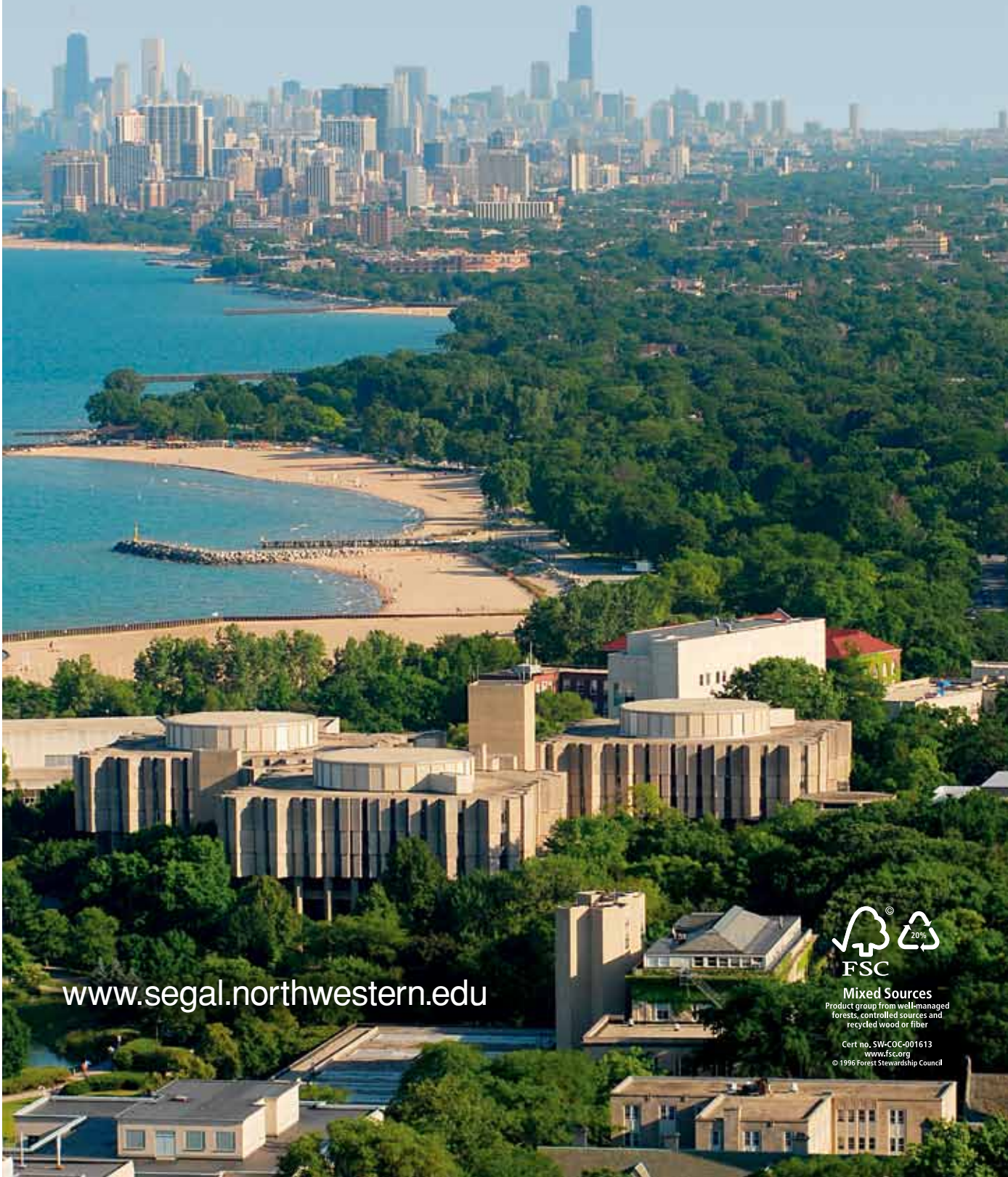


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Product group from well-managed
forests, controlled sources and
recycled wood or fiber.

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