

# the ZEROprize™

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zerofootprint™

**THE ZEROprize™** → Zerofootprint is offering the ZEROprize™ to the design team who can take an older concrete high-rise structure\* and, using re-skinning along with other retrofitting technologies, reduce its carbon, water, and energy footprint to net zero while also maintaining the highest architectural design standards. To secure the ZEROprize™, a candidate building will be required to have a net zero footprint for one year.

**PRIZE CONTEXT** → North America's existing building infrastructure accounts for up to 40% of all greenhouse gases produced in the United States and Canada. In cities that figure can surpass 65%. Older buildings while structurally sound often waste precious energy and are a major source of the greenhouse gas emissions polluting our cities. These buildings serve an important role and perform too well to demolish, but not well enough to remain as they are. What is the answer to this unsustainable condition? Together, modern re-skinning and retrofitting technologies offer a solution.

The purpose of the ZEROprize™ is to stimulate market-disrupting improvements in the design and development of retrofitting and re-skinning technologies (We use the term re-skinning as a shorthand for a holistic retrofit). These are the newly evolving technologies and building systems that improve the energy efficiency, sustainability, and livability of older buildings. Upgrading our existing inventory of high carbon footprint and water wasting buildings will reinvent our cities and make them more livable.

**WHY OFFER THE ZEROprize™?** → The objective of the ZEROprize™ is to stimulate global interest in new building technologies, an area that the media tends to underreport, and accelerate innovation in a critical industrial sector. Through its website, the ZEROprize™ will provide building owners everywhere with quantitative information explaining how green, retrofitting technologies can reduce energy demand, clean our cities, and save them money.

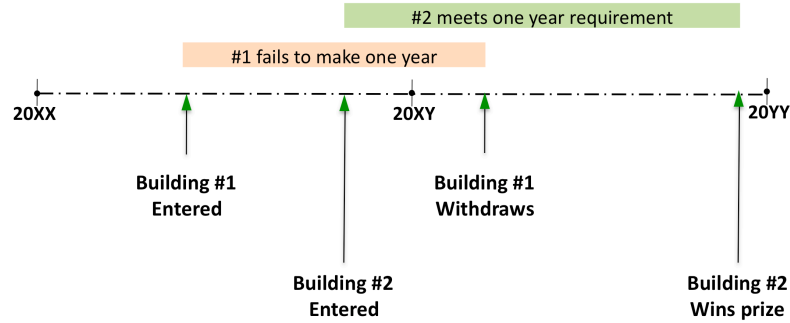
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\*The buildings must be of reinforced concrete construction, be built between 1945 and 1990, and must have a minimum of 150 units or 150,000 square feet of floor space. All the energy required to power household amenities, cool, heat, and light the building must be provided on a net zero basis. Possible onsite energy systems can include wind, solar, bio-fuel cells (from occupant produced organic waste), hydrogen cells, etc. Energy must be produced by devices located within the building and its nearby property, and cannot be powered by fuel brought to the building. The building can contribute excess energy to the grid and, when necessary, access an equivalent amount, but no more.

Building intelligence technologies like communications, systems monitoring, Internet connections, fire alarms, etc. can have continuous access to emergency power from external sources for safety and back-up reasons. The building can be connected to the municipal water supply for fire protection and fresh water, but an equivalent amount must be provided in gray water and/or rainwater.

FIGURE 1

### The ZEROprize Timeline



### SUBMISSION GUIDELINES FOR ENTRIES

→ The ZEROprize™ submissions can be submitted at any time as long as the prize remains available. Submissions should be emailed to [zeroprize@zerofootprint.net](mailto:zeroprize@zerofootprint.net)

Please include the following materials with the application:

1. A 1,000 word description of the overall project including location, building age, construction type, date the project was completed, etc.
2. A 500 word description of who the client is and their objectives for the project.
3. A 500 word description of the design and engineering teams and their prior work.
4. A detailed breakdown of the building's environmental footprint prior to the re-skinning and retrofitting process.
5. LEED Certifications / Triple Bottom Line analysis if applicable.
6. Engineering analysis specifying desired environmental footprint performance for the post-retrofitted building, and also detailing what systems will be used to achieve those targets.
7. Return on Investment analysis detailing the project payback schedule (Note that the retrofitting costs have to be amortizable over a period of not greater than 20 years and be paid for by the energy and water savings realized by the retrofit).
8. A description of how the critical technologies used in the project are replicable on a global scale.
9. A description of how the building uses "smart" technologies to help achieve its environmental footprint goals.

**10. A minimum of 10 and a maximum of 20 photos in .JPG format, each having a file size of no more than 1 megabyte. If higher resolution images are required Zerofootprint will ask for them separately.**

## THE ZEROprize™ TIMELINE

→ Eligible buildings can be submitted at any time. To win the ZEROprize™ a building will be monitored for a period of one year after the submission is approved. If the building performs to specifications while satisfying the other competition criteria, the project team will be awarded the ZEROprize™. The winning team will be part of a global promotional campaign celebrating the design.

## THE TRAVELLING EXHIBITION

→ A travelling exhibition is planned to promote the winning ZEROprize™ design. The exhibition will contain construction materials, designs, images and other materials pertaining to retrofitting technologies used in the project. We know that there are hundreds of thousands of existing buildings worldwide that need retrofitting, and the exhibition will showcase solutions that represent state-of-the-art practices in the field.

## WEBSITE

→ The competition website is a critical part of the competition. It will provide an exhaustive repository for competition and re-skinning information, while also ensuring that the competition has a global reach.

## THE JURY

→ The ZEROprize™ jury is comprised of leading experts in architecture, building sciences, technology, and sustainability. The entire judging process will be conducted using Internet technologies so as to minimize the carbon footprint of this competition.

## JURY MEMBERS

### Thomas Auer

- Masters in Process Engineering, University of Stuttgart
- Partner and Managing Director of Transsolar GmbH building energy design consultancy
- Visiting lecturer at Yale School of Architecture

### Andrew Bowerbank

- Diploma (Hon.) in Industrial Design, Humber College; B Ed, University of Western Ontario
- Executive Director of the World Green Building Council
- EnerQuality Corporation and the Ontario Home Builders Association's "Leader of the Year," 2007

### George Baird

- MA (Hon.), Harvard; B Arch (Hon.), University of Toronto
- Dean, Faculty of Architecture, Landscape & Design and Professor of Architecture, University of Toronto
- Partner, Baird Sampson Neuert Architects

- Recipient of the Toronto Arts Foundation's Architecture & Design Award, 1992; the Ontario Association of Architects' da Vinci Medal, 2000; & the Canadian Governor-General's Award for Architecture, 1994

#### **Stefan Behnisch**

- BA in Philosophy, Hochschule der Jesuiten, Munich; Architecture Diploma, University of Karlsruhe; BDA; CIMA; Economics, Ludwig Maximillians University
- Principal Partner Behnisch Studio East, Inc. architecture firm
- "Environmental Champion Award" by Interiors & Sources Magazine, USA, 2004
- Commission recipient for the new Allston Science Complex at Harvard University, 2009
- Visiting professor at Yale School of Architecture, 2005 & 2006

#### **Fiona Cousins**

- B MA (Hons), MSt, CEng, MCIBSE, PE
- Principal in the New York office of ARUP, and leader of the sustainability team.
- ASHRAE NY Woman of the Year, 2007
- Member of the Urban Green Building Council, New York
- Taught engineering and sustainability at Columbia and Yale

#### **Judith DiMaio**

- BA in Art, Bennington College; B Arch, Cornell University; Graduate School of Design, Harvard
- Dean of NY School of Architecture & Design
- Awarded the Rome prize in Architecture, 1978

#### **Rick Huijbregts**

- Masters (Real Estate Development & Project Management), Delft University; PhD Harvard
- Director of Real Estate Solutions for Emerging Markets, Cisco Canada
- Executive Director of the Center for Design Informatics at Harvard Design School, 2001-2004

#### **Edward Mazria**

- B Arch, Pratt Institute
- Author of the 'bible' of solar design, The Passive Solar Energy Book
- Developed and issued the 2030 Challenge, a strategy to dramatically reduce global GHG emissions and fossil-fuel consumption by the year 2030
- Recipient of AIA Design Innovation Award, the American Solar Energy Society's Pioneer Award, & the National Wildlife Federation's National Conservation Achievement Award, 2008

#### **William McDonough**

- BA, Dartmouth College; MFA; M Arch, Yale University
- World-renowned Architect, Designer, Author; and Winner of three U.S. presidential awards
- Time magazine 1999 'Hero for the Planet' & 2007 "Hero of the Environment"
- Recipient of the US Presidential Award for Sustainable Development, 1996
- Co-author of "Cradle to Cradle: Remaking the Way We Make Things," 2002

**COMPETITION  
COMMITTEE OF  
ADVISORS**

→ The competition is supported by world-renowned green leaders and innovators, including:

**Margaret Atwood**, Canadian Writer, Poet, Environmentalist and Activist

**Philip Beesley**, MRAIC OAA B.Arch. Dip. Tech. B.F.A., School of Architecture,  
University of Waterloo

**Rob Bennett**, President & CEO, Nova Scotia Power

**Shirley Blumberg**, OAA, FRAIC, AIA, Founding Partner KPMB

**Andrew Bowerbank**, Executive Director, World Green Building Council

**Edward Burtynsky**, Canadian Photographer, artist and environmentalist

**Geoff Cape**, Executive Director, Evergreen

**David Daniels**, Principal, Daniels Capital Group

**Sara Diamond**, President, Ontario College of Art and Design

**Gordon Feller**, CEO, Urban Age Institute

**Luigi Ferrara**, Director of the School of Design, George Brown College and  
Chairman of the Architectural Literacy Forum

**Sherwin Gormly**, Water Process Research, NASA Ames Research Centre

**Alan Greenberg**, Director, Minto Urban Communities

**David Hughes**, President of Pathways to Education Canada; Ex President &  
CEO of Habitat for Humanity Canada

**Bill Hutchison**, Advisor, Waterfront Toronto

**John Kubassek**, Founder and CEO, Engineered Assemblies

**Mary MacDonald**, Senior Advisor- Climate Change, City of Toronto Mayor's  
Office

**Andrei Marcu**, Advisor, Climate Change and Emissions Trading, Bennett  
Jones LLP

**Roger Martin**, Dean, Rotman School of Management, University of Toronto

**Ajon Moriyama**, Partner, Moriyama & Teshima Architects

**Frank Mruk**, AIA, RIBA, LEED Accredited, Associate Dean School of  
Architecture & Design, New York Institute of Technology

**David Naylor**, President, University of Toronto

**Joe Phillips**, Health & Science Practice Leader, Skidmore, Owings, Merrill, LLP

**Andrew Pride**, Vice-President, Minto Energy Management

**Jon Rowland**, Principal, Jon Rowland Urban Design

**Donald Schmitt**, Principal, Diamond & Schmitt Architects

**Graeme Stewart**, Designer, ERA Architects

**Alastair J. S. Summerlee**, President and Vice Chancellor, University of Guelph

**Antony Wood/Jan Klerks**, Council on Tall Buildings and Urban Habitat

## HOW YOU CAN HELP

→ The ZEROprize™ is the first undertaking of its kind. There are many ways interested parties can contribute to support this collaborative leadership effort. We ask individuals and organizations to enter their buildings into the competition, help spread the word of the competition, engage their professional networks of architects, designers and engineers, provide services in kind, and offer sponsorship.

## BECOME AN EVENT SPONSOR OR PARTNER

→ For more information on how you can participate or contribute to the ZEROprize™ competition, contact Robert Ouellette at +1 416.365.7557, ext. 160 or email [zeroprize@zerofootprint.net](mailto:zeroprize@zerofootprint.net).

## RELATED DOCUMENTS

→ To access related documents, please visit: <http://www.thezeroprize.com/>

- Let's Make our Buildings as Smart as our Cars
- New Skin, New Hope for Old Buildings
- The Re-Skinning Award
- How Governments Should Fund Retrofits

## ABOUT ZEROFOOTPRINT

→ Zerofootprint is a socially responsible enterprise whose mission is to apply technology, design and risk management to the massive reduction of our environmental footprint. We operate both in the for-profit and charitable domains through two entities, Zerofootprint Software and Zerofootprint Foundation using shared technology.