

# Building Codes for Climate Resilience:

## A partnership between Academia, Industry and Governing Agencies



# Industry Trends

- Dynamic growth of construction sector nationally and globally in the next 15 years
  - \$1,333.5 billion total national spending for 2016
  - \$17.5 trillion total global market by 2030
- With an annual value of \$900 billion, the construction industry in U.S. is identified as a significant sector of the Nation's economy
- Construction / Building sector workforce Shortages
- Increase demand on **Energy & Water** Infrastructures

# Anticipated Outcome

- Changes in design and construction practices due to technological advancements
- Impact on energy and water resources infrastructures emerging from current regional environmental and economic factors
- Workforce shortages for strong Green Market sector
- Increased awareness and participation by Communities

# Academia's Role and Response:

## LEAD SUSTAINABILITY AND INNOVATION INITIATIVES:

- Applied research projects in partnership with industry leaders and governing agencies
- Adaptation of new technology into codes

## EDUCATION:

- Certificate and Degree Programs comprised of strategically assembled and sequenced courses in direct response to industry needs
- Active engagement in community education

# Innovations Ready for Deployment:

## SEACRETE®

Seawater-mixed concrete:



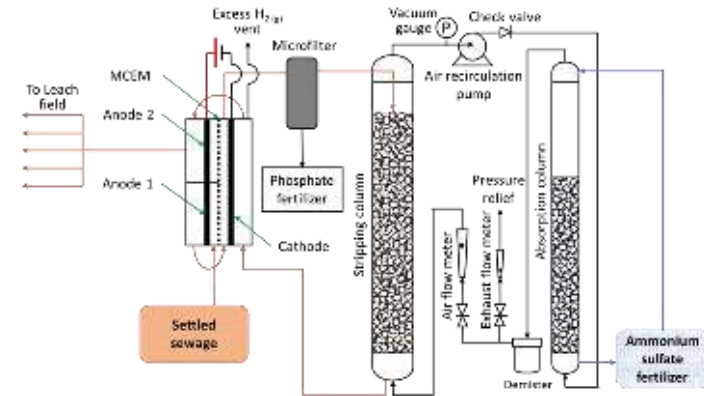
## Virtual Flow Meter

- Staging of pumps, fans, chillers
- Testing / Balancing & Commissioning
- HVAC fault detection
- Energy management & metering



Mini-converter prototype

## Nutrient Recovery - Septic System Retrofit



## UM-NSF Net Zero Water

- 100% water and energy recycle
- Energy-positive
- Cost equal to new conventional water + wastewater

# UNIVERSITY OF ~~GREEN~~ PROFESSIONAL BUILDING SKILLS ~~TRAINING~~ CERTIFICATE

Learn leading-edge sustainability practices that  
**reduce energy, water use and waste.**

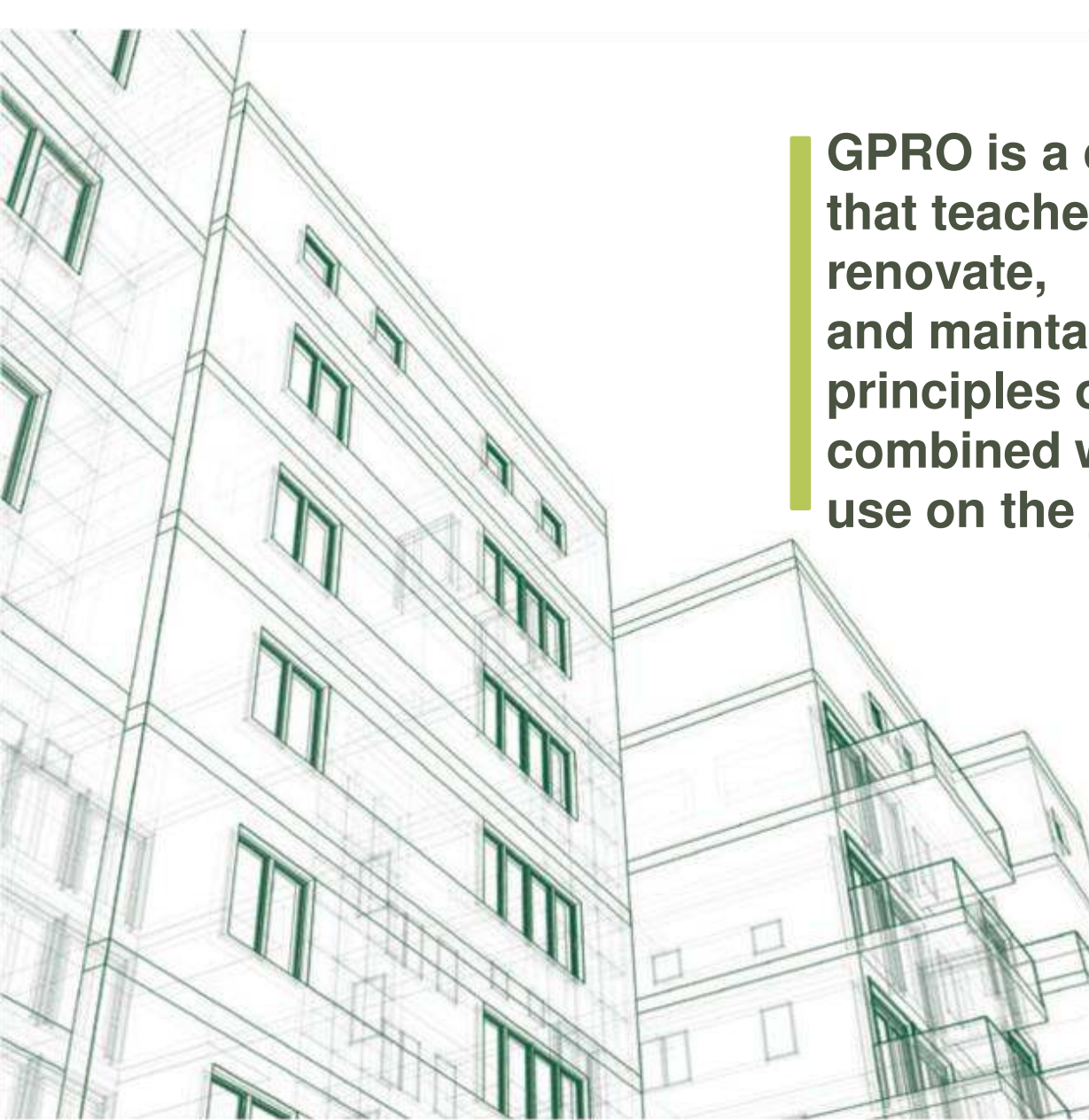
UNIVERSITY OF MIAMI  
DIVISION of CONTINUING  
& INTERNATIONAL  
EDUCATION



COLLEGE of ENGINEERING  
MASTER of SCIENCE  
CONSTRUCTION MANAGEMENT  
PROGRAM

urban  
green





**GPRO is a comprehensive program that teaches the people who build, renovate, and maintain buildings the principles of sustainability, combined with techniques they can use on the job the very next day.**

UNIVERSITY OF MIAMI

COLLEGE of ENGINEERING

MASTER of SCIENCE CONSTRUCTION MANAGEMENT PROGRAM



*Transforming Lives Through Education, Research, Innovation and Service*

The University of Miami Green Professional Building skills Training (GPRO) Certificate Program is customized for the climate and regional needs of South Florida.

Program participants will learn to use building metrics to reduce operating costs, improve occupancy rates, and raise tenant satisfaction.

**The University of Miami  
is the only authorized  
institution in the state  
of Florida to offer the  
GPRO  
Certificate Program.**



# Participants will develop expertise in:

- Improving the building envelope for a healthier building
- Reducing water usage
- Increasing cooling and heating system efficiency
- Managing lighting for minimum energy use with maximum quality
- Reducing waste
- Operational and property resilience



\*To be eligible to take the GPRO exam, participants must attend all instructional hours.

UNIVERSITY OF MIAMI

COLLEGE of ENGINEERING

MASTER of SCIENCE CONSTRUCTION MANAGEMENT PROGRAM



*Transforming Lives Through Education, Research, Innovation and Service*



**REDUCE**  
38 million  
gallons  
of water  
consumption



**PREVENT**  
1 million  
metric tons of  
air pollution



**SAVE**  
\$200 million  
in energy  
& water bills



**EFFICIENCY**  
Increase awareness  
of building efficiency  
and data-driven  
decision making

**In Miami-Dade County, on average buildings waste 30% of the energy and water they consume due to inefficient equipment and operations.**

**Buildings are the second greatest source of climate pollution in Miami-Dade County.**

*-Miami-Dade County Research*



# Building Efficiency and Miami-Dade County



## Urban Green Council

In collaboration with the Urban Green Council in an effort to transform buildings for a sustainable future.



## University of Miami

In partnership with the Division of Continuing & International Education and the College of Engineering's Master of Science in Construction Management Program.



## Miami-Dade County

Designed to align with the County's building Efficiency 305 Program.

UNIVERSITY OF MIAMI  
DIVISION of CONTINUING  
& INTERNATIONAL  
EDUCATION



COLLEGE of ENGINEERING  
MASTER of SCIENCE  
CONSTRUCTION MANAGEMENT  
PROGRAM



Each participant who successfully completes the GPRO program will earn:

**1** GPRO Credential

**2** Certificate of Completion

**3** 12 Continuing Education Credits (CEUs)

**4** One “GPRO Professional” Digital Badge

**5** One Graduate Academic Credit

# Who should enroll in this program?

- General contractors and sub-contractors working on LEED projects
- Real estate owners and developers
- Property and facility managers
- Building superintendents
- High-rise operators
- Construction professionals
- Engineers
- Architects
- Sustainability managers
- Real estate appraisers and inspectors
- Government officials
- Financial professionals involved with funding improvement projects
- College students entering the building and construction industry



# Upcoming GPRO

**Program**  
Limited seats are  
available for both  
**Sessions**  
Register today  
to reserve your space.

## WEEKDAY OPTION

Starts: 4/23/2019 Ends: 5/1/2019  
Meets on: Tuesdays, Wednesdays, and  
Thursday  
Time: 6 p.m. – 9 p.m.  
Total Sessions: five

## WEEKEND OPTION

Starts: 4/27/2019 Ends: 4/28/2019  
Meets on: Saturday and Sunday  
Time: 8 a.m. – 5 p.m.  
Total Sessions: two

Training is available for groups and corporate organizations.  
Please contact an enrollment advisor to learn more.

Ways to register  
for the GPRO Program:

## ONLINE

[www.continue.miami.edu/GPRO](http://www.continue.miami.edu/GPRO)

## PHONE

Call (305) 284-4000

## HAVE QUESTIONS?

Our enrollment advisors can answer any questions or schedule a meeting to discuss your goals.