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TOR, Draft 2

VGBC-GCI Joint Training and Research Project: Sustainable CCA Building and Planning

<http://www.globalcollab.org/vietnam-green-building-council>

1. Background

Viet Nam is undergoing rapid economic development and a construction boom. It will continue to have sharply rising energy needs, which it intends to meet largely [through coal-powered facilities](#). Its building- and energy-related GHG emissions show no sign of abating--as it stands, they will continue their [dramatic rise](#).

Further, Viet Nam is one of the most [threatened nations on Earth](#) with regards to global climate change (GCC). Considering sea-level rise (SLR) in particular, the effects on Viet Nam may well be "catastrophic." Uncertainty surrounding the timing of such effects should not diminish the sense of urgency in facing them--many climate experts predict a contracting timeline for dramatic SLR, which may occur at a rate not seen for many millennia. [Effects already outpace predictions](#) only a few years old.

Mitigation of GHG emissions and climate change adaptation (CCA) are inextricably linked. To meet the significant near- and long-term challenges of GCC, Viet Nam must begin integrating sustainable CCA concepts into its building and infrastructure planning. This will require greater knowledge of current realities (i.e. planning mechanisms, energy baselines); research in such areas is crucial to effective action.

Viet Nam has proven an extremely adaptable nation in the past. With immediate, efficient action, it may treat challenges posed by GCC as opportunities for positive change. Yet it currently has no comprehensive programs to do so; urgency levels in key sectors (government, developers) remain low.

VGBC's goal is to help Viet Nam become a model for emerging economies--and a regional hub--with regards to sustainable CCA. VGBC will formulate relevant benchmarks in this area and train hundreds to thousands of engineers and architects over the next two years. Focused seminars will educate key sectors.

2. Project Objectives

- VGBC-GCI research and training collaboration speeds the development of sustainable/adaptive engineering and architecture in Viet Nam.
- Initial Phase I joint research projects produce peer-reviewed publications and funding from a range of institutions, allowing continuation and amplification.
- Enhanced mapping of current building and planning landscape in Viet Nam. This will include aspects such as planning mechanisms; building practices; socio-economic and vulnerability factors; sustainable CCA efforts and capacity deficits; consumption and cost baselines; and current/potential materials.
- Intensive training of Vietnamese researchers in Phase I produces a core group of equipped to train a secondary one (approximately 150 individuals) in relevant concepts and practices by July 2008.
- Participants aid in the development of relevant tools, such as software and the Viet Nam Sustainable Climate Change Adaptation Network (V-SCCAN) website.
- Near-term solutions for vulnerable and low-income communities emerge.

"Insist on the rights of humanity and nature to coexist in a healthy, supportive, diverse and sustainable condition"

--William McDonough & Michael Braungart, *The Hannover Principles* (1992)

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Viet Nam Green Building Council

18a Nguyen Bieu
Ba Dinh District
Hanoi, Vietnam

PHONE:
(+84) 936.210.984

FAX:
1.612.233.1225

E-MAIL:
vgbc.info@gmail.com

CONTACT:

Jalel Sager
Executive Director
jalel_sager@gmail.com

Tom Miller
Board Co-Chair
milltom@gmail.com

Global benefits can be achieved while addressing local issues of urban air quality, energy efficiency in buildings, solid waste management, water supply, water treatment, and urban mobility.

--Anthony Bigio

3. Deliverables

PHASE I: 12/15/07 -- 7/25/08

1. VGBC submits list of VN working group members and research topics (1/30/08)
2. VGBC and GCI-RMIT program leaders produce draft funding strategy (2/15)
3. VN working group posts summaries and updates of preliminary research on V-SCCAN. (3/10-4/10/08)
4. VN working group presents preliminary research in Melbourne. (4/14-4/21/08)
5. VN working group summarizes direction of future research, posting on V-SCCAN. (5/30/08)
6. VGBC and GCI-RMIT produce funding status report and draft Phase II funding strategy. (6/15/08)
7. Sustainable CCA training seminars in Hanoi and HCMC. (7/25/08)
8. Phase I research papers submitted to peer-reviewed journals. (7/25/08 or in time for 2008 publication)

4. Roles and Responsibilities

Viet Nam Green Building Council (Hanoi)

Organization created in 2005, composed of government officials, architects, planners, infrastructure specialists, builders, and economists. Dedicated to climate change mitigation and adaptation, with a focus on green building.

Project Team

Executive Director: Oversees project and participates in VN working group. Responsible for implementation and integration into VGBC programs.

Project Manager: Manages daily operations, project coordination, logistics, and communications.

V-SCCAN Manager: Responsible for project integration into VGBC sustainable adaptation website.

VGBC Technical Committee: Advises on research and participant selection. Facilitates research, secures venues for operations.

Global Cities Institute (RMIT); Nautilus Institute (Melbourne; San Francisco)

Provides initial funding, facilitates and participates in joint research and fundraising.

Hanoi Architectural University (Hanoi)

Vietnamese partner of VGBC. Along with Hanoi University of Civil Engineering and VN architecture/engineering associations, facilitates and enhances project.

Green Cities Fund, Inc. (Oakland, California)

California 501(c)(3) non-profit, parent organization of VGBC and fiscal administrator. Will disburse project funds to VGBC, dependant upon completion of deliverables.

5. Potential Research Foci

At commencement of Phase I, VGBC, VN working group, and GCI-RMIT program leaders will jointly determine which of the following research topics hold the most promise. Principals will select 2-5 foci for immediate implementation.

CLUSTER 1

1. Urban planning mechanisms and dynamics

- a. A study of the institutional and policy context of urban development in Viet Nam, with a focus on its two largest cities, Hanoi and HCMC.
- b. Subtopics: the changing relationship between city and national government; bureaucratic roles; CCA capacity/needs; housing and development policy with regards to equity, social, economic, and environmental goals.

2. GIS-based mapping of urban socio-economic landscape

- a. Gathering social and economic urban data with regards to aspects such as housing, location, and urban forms.
- b. Identifying social, economic, and geophysical vulnerabilities with respect to GCC.

CLUSTER 2

3. Developing sustainable CCA (green) building benchmarks

- a. Integrating CCA concepts into development of VGBC green building benchmarks. (Possible extension for regional adoption/training.)
- b. Subtopics: global green standards, modifications for tropical climates and developing economies, global CCA concepts, possible and probable GCC outcomes for Viet Nam over various timelines.

4. Establishing VN building baselines

- a. Collecting data on current site practices, materials, energy use, water use, and cost.
- b. Data currently unavailable, difficult to obtain, yet crucial to development of any sustainable CCA benchmarks.

5. Existing VN building software and needs

- a. Gauging existing building software in VN, especially with regards to energy modeling, BMS, and green building.
- b. Prioritizing software needs and exploring paths for development.

CLUSTER 3

6. Solar desalinization (low-energy water supply/treatment)

- a. Extending CARE (RMIT) work on solar desal, saltwater greenhouses, and other decentralized water infrastructure projects to Viet Nam.
- b. Initial scoping study gauges which technologies hold most potential for rapid, efficient integration into VN infrastructure.

7. Adaptive structures and practices

- a. Review of current global, and modern/traditional Vietnamese, methods of handling floods, storms, and moderating extreme temperatures.

VGBC Goals:

- **MITIGATE:**
Facilitate green building and other emissions-reducing measures in Viet Nam
- **EDUCATE:**
Educate key sectors on necessity of sustainable CCA building
- **ADAPT:**
Develop and implement built environment building strategies that address likely effects of global climate change

"I go to nature every day for inspiration in the day's work. I follow in building the principles which nature has used in its domain."

-Frank Lloyd Wright

6. Work Plan

Phase I -- VGBC-GCI Sust. CCA Research/Training Program (11/15/07-7/25/08)

1. *Identify participants and initial research projects.* VGBC technical committee, in three bi-monthly meetings, selects VN working group. Joint research topics are selected from above list for rolling implementation in consultation with representatives of GCI-RMIT climate change and infrastructure working groups. (12/7/07-1/26/08)
2. *Develop funding strategies for 2008/Phase II.* VGBC director and GCI-RMIT program leaders identify funding sources, devise strategies for collaboration continuation and expansion, and begin implementation. (12/07/07-4/14/08)
3. *Develop sustainable CCA training program.* VGBC tailors weeklong intensive training for VN working group, centered on April 16-17 green building and design seminar in Melbourne. (12/15-4/1)
4. *Preliminary research.* VN working group conducts initial research, data collection, and literature reviews. (12/7-4/15)
5. *VN researchers contribute to V-SCCAN website.* Working group summarizes research for Vietnamese and GCI-RMIT on V-SCCAN. (2/15-6/30)
6. *VN researchers visit Australia.* VN working group visits Melbourne for green building seminar and enhancement lectures, green building study tours, and research presentation and discussion with RMIT-GCI researchers. The last develops joint research follow-up and enhancement. (4/14-4/21)
7. *Assessment of funding status and strategic review.* VGBC director and GCI-RMIT program leaders discuss revisions to funding strategies and implementation plan for remainder of 2008. (4/14-4/21)
8. *Joint research determined.* VN working group and GCI-RMIT researchers finalize joint topics, begin working toward paper completion and submission to peer-reviewed journal. (4/22-5/15)
9. *Phase I midpoint report.* VGBC and VN working group summarize results of visit, direction of joint research. Published on V-SCCAN. (5/15)
10. *Fundraising implementation.* VGBC director and GCI-RMIT program leaders continue joint fundraising efforts. (4/22-7/25)
11. *Submission to scholarly journals.* Research teams submit initial papers. (7/25 or in time for 2008 publication)
12. *Sustainable CCA training:* VN working group prepares Vietnamese training seminars for secondary group (150) of building professionals. (4/25-7/25)

Phase II -- Project Continuation and Enhancement (August 2008-2010)

(Phase II activities dependent on additional funding and stakeholder agreement.)

1. *Individual project development and implementation.* (2008-2009)
2. *GCI-RMIT researchers follow-up study trip.* (Nov. 2008/Apr. 2009)
3. *Secondary VN group trains tertiary group.* (Oct. 2008)
4. *University project.* Participants apply sustainable/adaptive research to construction and curriculum development of private university (2008-2010)
5. *Local/regional training and teaching modules developed.* (2008-2009)
6. *RMIT-Viet Nam.* Research continues with GCI-Viet Nam. (2008-2009)

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CONTACT:

Jalel Sager
Executive Director
jalel_sager@gmail.com

Tom Miller
Board Co-Chair
milttom@gmail.com