Assessment Report for the Construction Management Program

Executive Summary

The annual assessment report provides the opportunity to review the state of the construction management program at Roger Williams University. This annual report covers the academic year beginning in August 2011 and ending in July 2012 (AY 11-12). Its focus is on the academic assessment through the year. Based on a review of the course reports as well as surveys and discussion with students and recent graduates, it is evident that the state of the program is strong.

The program faculty met on May 17, 2012 to review the AY 11-12 academic year and to discuss changes for next year. At this meeting we reviewed all published program outcomes and the metrics we are using to measure each. Reports were also made on our internship program, the CM Student Club, Sigma Lambda Chi (SLC) student association, RWU US Green Building (USGBC) Student Group, Capstone project, Senior exit surveys, Alumni Survey and the AC exam. The meeting agenda, and the reports made are attached to this assessment report.

Overall this was a strong year for the Construction Management program. Some of the hi-lights of the year are as follows:

Our second annual Alumni and Senior Banquet was held in May. At this event our Capstone
Project winners were announced and our graduating senior class (photo below) were
introduced to our program alumni.



• The student population dropped with the fall 2011 enrollment at 120 students less than the fall 2010 enrollment of 140. Freshman enrollment, however, is up over last year.

- Our three student competition teams won the trifecta this year. Our Commercial Building team won first, Design Build second, and Heavy Highway team third place.
- In the ASC Region 1 student competition. Our team's activities were financially supported by the Rhode Island AGC and the Construction Industries of Rhode Island.
- The CM Professional Advisory Board (CMPAB) awarded its second endowed scholarship to Eric Cabral. This award was made at a fall, CMPAB sponsored, social in Providence.
- A search was conducted for a construction management faculty and Dr. Amine Ghanem was hired. He will join the faculty starting with the spring 2013 semester.

1. Introduction

The Construction Management program was reaccredited by the ACCE in spring 2005. The First Year Interim Report was submitted in AY 2005-2006 and the Third Year Interim Report was submitted in AY 2007-2008. One published ACCE concern was outcomes assessment. In October 2006 the SECCM published a comprehensive Assessment Plan that detailed the assessment process for the school and each program. The Construction Management program has submitted annual assessment reports in compliance with this plan for AY 2005-2006, AY 2006-2007, AY 2007-2008, AY 2008-2009, 2009-2010, and 2010-2011. This report will address the 2011-2012 academic year.

Each year the program faculty reviews the instruments used to gather assessment data making the necessary adjustments to streamline the effort and to attain better information. Next, program faculty members use these data to measure our success in meeting our defined objectives and outcomes as they have been described in the SECCM Assessment Plan. Successes, failures and metric adjustments are discussed on an annual basis. Programmatic adjustments made in previous years are also assessed on an annual basis as well as changes that are implemented for the following year.

The generation of formal reports (written for the first time in AY 2006-2007) for the Internship program, Construction Management Student Club, and the Associate Constructor exam was continued this year. Starting this year separate reports for both the Sigma Lambda Chi (SLC) and US Green Building Council (USGBC) student organizations were created.

These reports, along with inputs from course transcripts, exit surveys, alumni surveys, capstone juror reports, student competition performance, course binders and advisory board communications were used to perform this annual assessment. The program faculty met on May 17th 2012 to discuss the above reports and to conduct this annual assessment. The agenda for this assessment meeting is included at Tab E. At this meeting program performance for AY 2011-2012 was assessed and adjustments in outcomes and metrics were made for coming year. Faculty also discussed ways to strengthen the Construction Management Student Club, the Internship and Externship programs, CM Capstone Project, and the Associate Constructor exam. All of the above topics are addressed further within the body of this report.

2. Analysis of Evaluation Instrument Data

Present

This assessment report considered both formal and informally gathered data. The formally gathered input information included transcript review, Senior Exit Survey results (Tab F), Senior Capstone Report (Tab G), Associate Constructor Report including exam performance (Tab H), CM Club and SLC reports (Tab I), and Internship Report (Tab J). Informal data included informal conversations between faculty and faculty, faculty and students and between faculty and industry. The Associated Schools of Construction student competition serves as an excellent assessment input – our student's work is formally assessed and scored by industry professionals.

Senior exit surveys were performed both objectively and subjectively. For the fourth time, the CM advisory board through the academic subcommittee coordinated our senior exit surveys. Two program alumni formed the panel, which met with all but graduating seniors. Seniors also filled out an objective survey. Both the written survey results and a report from the alumni panel can be found at Tab F.

For the second time, as recommended for the first time in our AY 2009-2010 assessment process, this year's three capstone projects were held in a competition format and with each focusing on a different project type. The projects were corporate sponsored and a SECCM alumnus coordinated each project. The capstone project winners were announced at our second annual CM Alumni and Senior banquet. Tab G provides additional detail on the Capstone Project.

Program faculty also gather input from professional associations such as AGC, ASC, CSI, ACCE and ASCE. At these meetings faculty stay abreast of changes in accreditation standards and construction education "best practices" as regularly reported at these venues. Both permanent and intern employers provided feedback to the faculty on student performance. Formal internship reports are particularly valuable. Professional Advisory Board members also provide valuable support and feedback to the faculty. Program faculty meet with the board each semester. (Tab K includes copies of our meeting minutes)

Within each course assessment report students are provided the opportunity to evaluate their accomplishment of course objectives. This information is used by instructors to modify courses from semester to semester. Faculty provide formal course reports after each semester and a summary of each course is reviewed and discussed with other faculty from the program. This discussion facilitates adjustment in course coverage and adjustments in the overall program.

Adjustments for Next Year

As suggested last year, our successful Alumni and Senior Banquet was held again and at that venue 27 Alumni were surveyed. See Tab L for our Alumni Survey results. This survey will be conducted at all future banquets. Additionally, all May 2008 graduates (four years since graduation) will be interviewed this year. This "four-year graduate" survey will be conducted every three years.

3. Program Assessment

The program educational objectives were first presented in that format for the 2007-2008 academic year. These objectives are shown in the table below.

Table 4.3-1 RWU Construction Management Program Educational Objectives

Objectives - Three to Five Years After Graduation, We Expect Our Graduates To:

- 1. Demonstrate exemplary technical knowledge and skills while achieving success as a practicing constructor and leader, and always displaying the highest standards of ethical conduct.
- 2. Value the concept of life-long learning and continue to grow intellectually while keeping informed of new concepts and developments in the construction process.
- 3. Advance the construction management profession by becoming actively involved in professional associations and societies, serving in professional and community volunteer positions, and acting as a role model for the future generation of constructors and the Roger Williams University Construction Management students.

Assessment of CM Program Educational Objectives

An Alumni Survey was conducted at our Alumni and Senior Banquet on May 4th. Twenty-seven surveys were conducted, a much larger sample size then the eight we received in 2009. As previously mentioned, an alumni survey will be conducted each year at this Banquet. This survey and faculty conversations with employers and graduates have been used to assess our stated program objectives.

1. Demonstrate exemplary technical knowledge and skills while achieving success as a practicing constructor and a leader, and always displaying the highest standards of ethical conduct.

In our alumni survey this objective scored highest, 4.37 out of 5. Our graduates have consistently excelled in all of the in-house management training programs the larger construction companies conduct. Also, quite a few of our graduates were promoted ahead of peers to advanced leadership positions. One company representative, and CM Advisory Board member, noted RWU retention as the highest of any school they hire from.

2. Value the concept of life-long learning and continue to grow intellectually while keeping informed of new concepts and developments in the construction process.

Our alumni scored this objective at 4.26 out of 5. Conversations with graduates and employers display a strong commitment from our graduates to attain advanced degrees, professional certifications and training. Graduate employers commented that our graduates display the ability to grasp new concepts and technologies well and also show a strong interest in teaching others.

3. Advance the construction management profession by becoming actively involved in professional associations and societies, serving in professional and community volunteer positions, and acting as a role model for the future generation of constructors and the Roger Williams University Construction Management students.

Our alumni scored this objective at 4.26 out of 5. Most of our graduates are members of professional associations. Alumni involvement on our CM Advisory Board and as members of our capstone review panel has grown. An alumni subcommittee has been formed by the CM Advisory Board which sponsored our second annual CM Alumni and Senior banquet on May 4th. The event was close to a sell out and was again held at the Bristol Yacht Club.



The event was organized by CM alumni and culminated a day filled with CM alumni program involvement. Alumni participated both as capstone project judges and volunteered to meet with all graduating seniors as part of the senior "exit survey" process.



Ron Simoneau of Shawmut Design and Construction, an active CM program supporter and CM Advisory Board member, was honored at this event.



Employers report that our graduates have demonstrated a willingness to become involved in community and professional organizations. Graduates have joined Habitat for Humanity, ACE Mentoring, United Way and Rebuilding MA to name a few. Our graduates have become active in AGC's young constructor program in MA, RI and CT. Graduates have also displayed a willingness to mentor others both outside and within their companies.

To better identify the interrelationship between the program educational objectives and the program outcomes, Table 4.3-1, is presented below.

Table 4.3-1 Program Educational Objectives linked to Construction Management Program Outcomes

☐ = Weak Relationship
☐ = Moderate Relationship
☐ = Strong Relationship

a – i Outcomes	Technical knowledge, success as a practicing constructor and leader, display the highest standards of ethical	Lifelong learning	Advance the construction management profession, service, role model, assist SECCM
a. an ability to apply knowledge of mathematics and science to typical Construction Management tasks			
b. effective research and problem solving skills applied to typical Construction Management tasks			
c. an ability to plan, organize and control a construction project			

a – i Outcomes	Technical knowledge, success as a practicing constructor and leader, display the highest standards of ethical	Lifelong learning	Advance the construction management profession, service, role model, assist SECCM
d. an ability to lead and/or function as a member of a team			
e. an understanding of professional and ethical responsibility			
f. an ability to communicate effectively			
g. the broad education necessary to understand the impact of construction in a global, economic, environmental, and societal context			
h. a recognition of the need for, and an ability to engage in lifelong learning			
i. a knowledge of contemporary issues			

Program graduates continue to stay involved with the construction management program as members of the advisory board, mentors to our competition teams, guest speakers and employers of our most recent graduates. All of these graduates speak highly of the education they received at Roger Williams University and, given the overall success they have had in their careers, it is evident that our graduates are attaining our program objectives.

Based on the anecdotal information collected from our graduates' employers as well as the feedback received from the graduates themselves, the program faculty members believe that the Program Educational Objectives are being satisfied. As alumni involvement grows the program continues to seek more and better ways to engage and learn about our program.

Assessment of CM Program Outcomes

In our assessment plan metrics were defined to assess each program outcome on an annual basis. The tables below outline each program outcome, defined metrics, and a summarization with comments as to whether or not the identified metric was met. The outcomes and metrics as defined in the table are what the faculty evaluated for the AY 11-12 academic year. However, as each outcome was evaluated, program faculty examine the outcomes and metrics and made adjustments to better evaluate program performance. The newly defined outcomes and metrics are located in at Appendix A and will be utilized for the AY 12-13 academic year.

Table 4.3-2 Outcome "a" Metrics

Outcome a: an ability to apply knowledge of mathematics and science to typical Construction Management tasks

Metrics Associated with Outcome a:	Where Measured	Met	Comments
CM student pass rate of the AC exam meets or exceeds the national average	AC Exam	Yes	RWU 63% National 58%
2. All graduating seniors report that they have achieved proficiency in the ability to apply knowledge of mathematics and science to solve construction problems. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Course Student Survey Student Exit Survey	Yes	Exit Survey = 4.00
 Faculty report adequate application of mathematics in construction coursework. 	Course Assessment Report	No	Faculty plan to implement fall freshmen tutorials in CNST 100 and 130
5. Alumni rate their preparation for the workplace proficient in the use of mathematics and science to solve construction management tasks. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Alumni Survey Employer Survey	Yes	Alumni Survey = 4.26

Table 4.3-3 Outcome "b" Metrics

Outcome b: effective research and problem solving skills applied to typical Construction Management tasks

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Metrics Associated with Outcome b:	Where Measured	Met	Comments
1. At least 50% of all CM courses will require research and problem solving skills.	Course Assessment Report	Yes	
2. At least 10% of all Construction Management seniors will participate in a competition where their ability to research and solve problems and will be externally judged and assessed.	Student Competitions	Yes	
3. Graduating seniors report that they have achieved proficiency in the ability to solve construction problems. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Student Exit Survey	No	3.86 – the survey question is not clear and will be rewritten next year.
4. Alumni rate their preparation for the workplace proficient in the area of research and problem solving. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Alumni Survey Employer Survey	Yes	Alumni Survey = 4.26

Table 4.3-4 Outcome "c" Metrics

Outcome c: an ability to plan, to organize and to control a construction project

Metrics Associated with Outcome c:	Where Measured	Met	Comments
1. 100% of Construction students participate in a Capstone Project Class that involves a semester long industry sponsored project that demonstrates their ability to successfully plan, organize and control a project.	Capstone Project Juror Evaluations Transcript Review	Yes	
2. Employment Interviewers rate applicants proficient for internship and permanent placement in the applicant's ability to plan, organize and control a construction project. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Employer Interview Survey	N/A	Faculty currently working with the Career Center to attain better employer interview feedback.
3. Employers rate proficient RWU Construction Management hires in their ability to plan, organize and control a construction project. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Employer Survey	N/A	

Table 4.3-5 Outcome "d" Metrics

Outcome d: an ability to lead and/or function as a member of a team

Metrics Associated with Outcome d:	Where Measured	Met	Comments
1. 100% of students participate as a team member as they complete their Capstone project. Each team member brings different construction experiences to the project.	Transcripts Capstone Project juror evaluations Course Assessment Report	Yes	
2. 100% of all Construction students will participate in the university CORE sequence and University Senior Integrative Experience.	Transcripts	Yes	
3. At least 50% of construction courses will give students the opportunity to work on collaborative team projects.	Course Assessment Report	Yes	
4. At least two student-led teams will participate in the Associated Schools of Construction Region 1 student competition	Student Competitions	Yes	
5. At least 75% of construction management students will have held a construction related summer position, internship or co-op, or construction management work study related position by the time of graduation.	Senior Exit Survey	No	69% per this year's senior exit survey. Though better than last year, does not meet our standard. A mandatory internship requirement is being considered.

Table 4.3-6 Outcome "e" Metrics

Outcome e: an understanding of professional and ethical responsibility

Metrics Associated with Outcome e:	Where Measured	Met	Comments
1. 75% of graduating seniors will sit for the AC exam.	AC Examination	Yes	Taking the AC1 exam was required for 2012 class
2. All students will develop and present a case that focuses on professional and ethical responsibility.	Course Assessment Report	Yes	
3. At least 25% of all construction management classes will address, and students will demonstrate an understanding of professional and ethical responsibility.	Course Student Surveys	Yes	

Table 4.3-7 Outcome "f" Metrics

Outcome f: an ability to communicate effectively

Metrics Associated with Outcome f	Where Measured	Met	Comments
1. At least 85% of all mentors and potential employers agree that graduating seniors possess the ability to communicate effectively.	Capstone Jury Graduate employer survey	Yes	
2. 100% of seniors will have the opportunity in construction classes to make an oral presentation at least twice a semester in their senior year.	Course Assessment Report	Yes	
3. 100% of all freshmen will have the opportunity to make an oral presentation in a construction class at least 2 times per year.	Course Assessment Report	Yes	
4. 100% of graduates will produce an acceptable senior capstone oral report as evaluated by external and internal review.	Capstone Jury	Yes	
5. At least 90% of alumni report that their RWU education has prepared them proficiently in communication skills for the workplace. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Alumni Survey	No	Alumni survey = 3.77

Table 4.3-8 Outcome "g" Metrics

Outcome g: the broad education necessary to understand the impact of construction in a global, economic, environmental, and societal context

Metrics Associated with Outcome g	Where Measured	Met	Comments
1. 100% of construction students fulfill the Multidisciplinary Core Education component as well as the Core Concentration component of study to include the Core Senior Seminar.	Transcripts	Yes	
2. At least 25% of construction courses address this outcome.	Course Assessment Report	Yes	
3. At least 1 guest speaker per semester will address the above outcome.	CM Club Report	Yes	
4. Graduating seniors rate themselves proficient with the broad education necessary to understand the impact of construction in a global, economic, environmental and societal context. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Senior Exit Survey	No	Exit survey = 3.55

Table 4.3-9 Outcome "h" Metrics

Outcome h: a recognition of the need for, and an ability to engage in lifelong learning

Metrics Associated with Outcome h	Where Measured	Met	Comments
1. 75% of graduating seniors will sit for the AC exam.	AC Exam Results	Yes	
2. At least 50% of CM students will be active members in the CM club.	CM Club Report	Yes	
3. Alumni indicate participation in professional training, professional societies or a graduate school since graduating from RWU. Adequate participation is defined as a mean and median score of 4 or above on a 5 point scale where 5 means participation achieved and 1 means participation not achieved.	Alumni Survey	Yes	Alumni Survey = 4.26
4. Graduating seniors rate their education as having increased their motivation to become lifelong learners. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Senior Exit Survey	Yes	Exit Survey = 4.14

Table 4.3-10 Outcome "i" Metrics

Outcome i: a knowledge of contemporary issues related to the construction industry

Metrics Associated with Outcome i	Where Measured	Met	Comments
1. All (100%) of construction students will be exposed to contemporary issues through the Multidisciplinary Core Education component as well as the Senior multidisciplinary Core course	Course Assessment Report	Yes	
2. At least 25% of construction courses will address this outcome.	Course Assessment Report	Yes	
3. Graduating seniors will rate themselves proficient in knowledge of contemporary issues Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Construction Student Exit Survey	No	Exit survey = 3.59
4. All (100%) of construction students will be exposed to contemporary issues through the Senior Seminar class.	Course Assessment Report	Yes	
5. All (100%) of construction students will participate in the Feinstein Service Learning Requirement of at least 5 hours in the surrounding community.	Transcripts	Yes	

4. Assessment of Previously Implemented Program Changes

There were no significant program changes implemented in the previous year to assess.

5. Discussion of Recommended Program Changes

As mentioned in Section 2 a number of formal reports were made this year which were reviewed and discussed be the faculty:

Internship Program

All agree that one of the most important things a student can do is secure at least one internship position while a student. Internship positions provide valuable experience improving learning and also better a student's employment opportunity. Our program target is for at least 75% of our students to hold at least one internship by graduation. Though we did better than last year (46%), only 69% of our graduating seniors reported having an internship.

Program faculty will continue to encourage students to seek an internship. This message will be delivered at the mandatory CM meeting next fall. Susan Caizzi will be asked to attend this meeting and provide additional encouragement. Additionally, Dr. Celik, Internship coordinator, will look for ways to reach and remind our students electronically. All felt that frequent reminders and encouragement will help participation. All felt that Internship participation should be made mandatory and this curriculum change will be sought by the faculty. See Tab J for Dr. Celik's complete Internship report.

Student Club activity: CM Club, Sigma Lambda Chi and USGC Student Chapter

As reported last year club advisement was split due to the increased activity of our student clubs. The CM club ran a spring and fall lecture series, managed elections for next year's officers, set up next year's competition teams, held a field trip and ran a fundraising activity. All club members were very supportive of fall and spring open house activities. The CM club also supported this year's three competition teams that won three awards. See the photo of our first place, commercial building team below. A copy of the Student Competition press release can be found at Tab M.



SLC had a good year, participating in a number of volunteer activities, creating a Facebook group and supporting the program at the RI Construction Days. They received the SLC International Best Fund Raising Award at the ASC International Conference. A major initiative set for next year is to better connect past SLC graduates with current and future SLC members.

USGBC continues to be a very popular and active Student Group. The group continues to hold a LEED-GA workshop for university students, employees, and industry professionals. Five students represented RWU at the Green Build Expo in Toronto and three students traveled and presented a paper with Dr. Celik at the ASC International conference in Birmingham, UK.

The Construction Management Club Reports can be found in Tab I.

Capstone Project

Like last year, projects were run in a competition format; students were given a choice on project type; all projects were corporate sponsored and headed by alumni. Additionally, the competition winners were recognized at our first annual Student Alumni dinner at the Bristol Harbor Yacht club. Program alumni conducted senior exit surveys in parallel with capstone presentations. Students who passed the AC exam received a 5% course bonus.

As was suggested last year, to provide more preparation time projects were introduced at the end of the fall semester. Other course requirements, for example research paper guidelines, were also announced allowing students to take advantage of the winter intercession period. This year's projects were also close in size and scope. Feedback from students, faculty and industry was very favorable. Next year's projects will be run the same, but only two projects since next year's class size is smaller.

Better internet connectivity and the delivery of the approved laptop cart and software should help student team performance.

The Capstone Project report is presented in Tab G.

Senior Exit Survey

At Tab F, are the results of our both our objective survey and qualitative survey conducted by two members of our Construction Management Professional Advisory Board (CMPAB). Key observations resulting from the surveys include:

- Facilities and Technology: An upgrade of SE 206, a better WiFi signal in SECCM, and better access to professional grade CM software was mentioned by the students.
- Students who held internships and externships and were active on our clubs and competition teams were doing the best securing employment.
- Subject areas noted for the consideration of additional coverage were BIM, heavy civil, plan reading, and sustainability.

Associate Constructor Exam and Review Course

Student participation and performance improved this year with RWU for the first time beating the national average. Students who did sit for and passed the exam received a 5% bonus in CNST 480 and their exam fee was reimbursed. The full AC Exam report is included at Tab H. Starting with the AY 12-13 catalog all CM students will be required to sit for the AC exam.

Program faculty all feel that students could score much better if the exam is taken seriously and the students prepare. Starting next year an "on line" mini preparatory exam will be prepared and given to sophomore students. All faculty agreed to work with Dr. Brunnhoeffer to prepare this exam. Faculty agree to continue to push the exam, and provide a 5% bonus in CNST 480 and exam reimbursement for those that pass.

Other Topics

Bill Thumm, Hensel Phelps Construction Company, has replaced Tom Comella as the chair of our CMPAB. Concurrent with Bill's appointment the board has embarked on a major strategic planning effort as the CMPAB continues to look for ways to strengthen and support the CM program. This year the CMPAB presented a second scholarship, conducted mock interviews, participated in senior exit surveys, supported student internship and externships, organized the Alumni and Senior banquet and supported student guest lecture and laboratory activities. Program enrollment remains a major challenge that the CMPAB plans to address starting this year.

6. MS in CM Assessment

The Master of Science in Construction Management (MS in CM) program was launched in the fall 2010 with a class of 12 students. The program was designed to be two years in length, 36 credits, with the students operating as a cohort and to incorporate both classroom and residential-workshop instruction.

Enrollment for the fall 2011 did not generate a full class necessitating the combination of the entering CM students with the 2010 cohort CM students and graduate architecture and historical preservation Masters students.

To address the enrollment issue, several of the courses will be offered on-line in a distance format in the upcoming academic year, 2012-2013. The objective is to encourage participation among potential students who could not attend classes in Providence.

Projected numbers are currently up for the fall 2012 cohort. As the program transitions to partial distance delivery, the program faculty are optimistic that with the move to distant delivery and an anticipated increased marketing effort that the program numbers will grow.