

National Association of Home Builders Residential Construction Management Competition Guidebook

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With today's universities, especially Cal Poly, stressing the concept of "Learn by Doing" to prepare students for successful careers, case competitions are gaining popularity and prestige amongst recruiters. By working well in team settings and showcasing one's knowledge in front of a panel of industry judges, case competitions give students great undergraduate experience and confidence once they begin their full-time careers. One of these case competitions is the National Association of Home Builders (NAHB) Residential Construction Management Competition (RCMC). The NAHB RCMC asks students to create a fully-encompassing development proposal on a real-world site located in the United States. This project is a guidebook consisting of means and methods for completing the NAHB RCMC that past competing teams found useful. The guidebook is broken down into 11 main sections beginning with technical advice for specific deliverables but also includes advice on how to properly format the deliverable and conduct the oral presentation. If used correctly, the guidebook will raise the bar and add prestige to the competition in the future.

Key Words: NAHB, Residential Construction Management Competition, case competition, guidebook, Learn by Doing

Introduction

Truly exemplifying the "Learn by Doing" motto, case competitions allow students to channel their inner-competitive spirit in a beneficial way for their careers. With the NAHB RCMC typically having 30-40 competing schools and being one of the largest development case competitions nationwide, it is sometimes difficult for schools to approach the problem if they haven't been exposed to it before. The two main deliverables of the competition are to: 1) create a 100-page development feasibility proposal on a plot of land assigned by the NAHB and 2) present your team's findings to a panel of industry judges in a 15-minute presentation with a 10-minute question and answer period. The four general sections of the development proposal are: 1) a comprehensive market analysis, 2) detailed site and product designs, 3) thorough budget and construction schedule, and 4) financial feasibility report. These sections get broken into further detail within the report and presentation but are the main elements for the competition.

Since Cal Poly's inaugural year in the competition in 2001, Cal Poly has placed top-five 12 of its 17 competing years. This guidebook is planned to be used as a national reference and will be available through the NAHB's website. Not only will the guidebook be used to help schools with the competition but it can also be used as a reference for any student who may be interested in pursuing a career in development. With other schools also placing historically well in the competition, the guidebook includes means and methods from a variety of universities including BYU, University of Denver, and Texas A&M. No formal guidebook has ever been released by the NAHB, making this project quite significant for the competition. Instead, each school has their own "tips and tricks" for working through the deliverables. With relatively little direction provided by the NAHB during the competition, it is quite easy for students and schools to approach the problem the wrong way if they are not careful.

Project Idea

With the NAHB RCMC completing its 27th annual competition with 35 schools in 2017, the event continues to gain prestige year-by-year. After historically being a top-placing school by finishing in the top-five over 70% of its

entries, Cal Poly was contacted to create a guidebook following the 2016 competition. Greg Zick, the Director of Student Chapters at the NAHB, had the idea of creating a resource that would be beneficial to all schools and help continue the education about residential construction at the highest degree possible. Schools who have competed in multiple years as well as advisors experienced with the competition tend to use an individual “guidebook” to pass down traditions and continue success. After working through the details of what the guidebook would entail and how it would best serve future students, Scott Kelting, Cal Poly’s NAHB advisor, proposed this project to students as a senior project. By creating a guidebook available to all students that incorporates the best-practices from top-competing schools, this guidebook will dramatically raise the competition’s bar.

Methodology

The objectives of this project are as follows:

- To collaborate with top-competing schools to create the best resource for future students.
- To benefit all students interested in residential construction by better preparing its future leaders.
- To educate students interested in learning more about the development industry and help them in choosing a career path.
- To record best practices from previous teams who have placed well in the NAHB RCMC.
- To highlight areas of focus for future students as they begin their NAHB RCMC careers.

The methodology for this paper is a project-based educational guidebook. The information gathered for the project were from three main resources: 1) past Cal Poly guidebooks, 2) collaboration with other universities, and 3) feedback from NAHB RCMC competition judges. Beginning with past Cal Poly guidebooks, Klay Adair, former Cal Poly student, created a similar project in 2009 for the use of future Cal Poly students. This served as a great resource when creating an up-to-date version for all competing schools. Collaboration with other schools was conducted towards the end of the 2016-2017 competition season. This timing was crucial as ideas were still fresh in everyone’s head and motivation to help future students was very strong. Lastly, judges a part of multiple previous competition panels did a thorough analysis of previous guidebook drafts to ensure the strategies of future students were aligned with actual industry practice.

Background Knowledge

For the NAHB RCMC to be utilized to its fullest ability, a competition must exist and students must be willing to participate. Every late August/early September, the NAHB releases a problem statement and various supporting materials. The problem statement is a one-page document that establishes the competition’s parameters including size, location, and any existing features of the site to be developed as well as general business terms regarding the selling price and closing date for purchase of the land and any financial obligations the development team may owe to the parent company. For example, the development team (the name for the competing student teams) may be obligated to meet a certain return metric through their proposal. For supporting materials, these vary every year from a full-site plan for a proposed planned-unit development (PUD) to a single site map where the student teams are responsible for their own site map and amenity make up. Student teams are then responsible for submitting a 100-page proposal by mid-December that will be judged based on a pre-determined grading rubric. The team’s finals score is based 80% on the written proposal and 20% on the quality of oral presentation given at the NAHB International Builders Show (IBS) located either in Las Vegas or Orlando, FL in January.

Creation of Guidebook

The greatest value added by the guidebook is that it covers all aspects of the competition from team formation and other pre-arrival tasks to the oral presentation. Every year, students have three months to complete the written proposal but find themselves working up to the deadline to complete the project. One main reason why this may be the case is that the teams aren't adequately prepared to begin the project when it's released. For example, team selection focused on students with an unfailing commitment as well as creation of sub-teams (small-focused groups within the team to help divide and conquer on main project deliverables), contacts with industry sponsors and a strict meeting schedule can all be established without any idea of what is in the problem statement.

One of the most crucial aspects of the guidebook according to the Director of Student Chapters at the NAHB and past competition judges is the Financial Analysis section. With most students involved with the competition having non-business backgrounds, the Financial Analysis section is sometimes overlooked even though it ties together all capital obligations of the project. One common mistake is that students don't always calculate the internal rate of return (IRR) correctly. To help prevent this issue in the future, Figure 1 is a sample IRR calculation with leverage that will help streamline the calculation process.

Unlevered						
Period:	0	1	2	3	4	5
Cash Flows from Operations	(50,000,000)	-	-	-	-	80,000,000
Net Cash Flows	(50,000,000)	-	-	-	-	80,000,000
Capital Required	50,000,000					
Total Revenues	80,000,000					
Total Project Debt	-					
Interest Expense	-					
IRR	9.86%					

Levered						
Period:	0	1	2	3	4	5
Cash Flows from Operations	(20,000,000)	-	-	-	-	50,000,000
Interest Payments		(400,000)	(400,000)	(400,000)	(400,000)	(400,000)
Net Cash Flows	(20,000,000)	(400,000)	(400,000)	(400,000)	(400,000)	49,600,000
Capital Required	50,000,000					
Total Revenues	80,000,000					
Total Project Debt	30,000,000					
Interest Expense	2,000,000					
IRR	18.69%					

Figure 1: Sample IRR calculation available within guidebook to help prevent calculation errors.

A major contributor to the technical advice given in the packet is the feedback received from other top universities including Texas A&M, Brigham Young University (BYU), and University of Denver. A commonality between these universities and Cal Poly is the importance of proper team selection. Dedicated students willing to put in the work are undoubtedly better team members than students with experience who believe they don't need to put in the effort to complete the proposal. As the main foundation for success in the NAHB RCMC, team selection can't be overstressed. One great point of advice added by University of Denver that wasn't an integral part of the other three contributing schools' advice was the importance of establishing a strong relationship with local Home Builders Associations (HBA). Active and continued involvement with such organizations can have great benefits to competing students and may be the difference between a top-five finish and not.

Finalization

After gathering feedback and creating the guidebook, the next step is making the resource available to future students. At the 2017 RCMC, the guidebook was presented at an educator's workshop, allowing professors to provide their feedback before the final draft was completed. A few weeks after the competition, the final guidebook was presented to the NAHB for further distribution. As of March 17, 2017, the guidebook is available on the NAHB RCMC's Four Year Programs website under the "Resources" tab.

New Knowledge

With the NAHB RCMC being a very iterative process, various strategies may be used to approach the problem. The new knowledge and value added through this guidebook is that past means and methods are now officially recorded. With the ability to reference such strategies, students will have greater confidence when approaching the competition in the years to come.

Results

With the guidebook released this year, its impact is yet to be determined although all feedback to this point has been positive. One main reviewer of it before being released to the NAHB was past competition judge Tom Hyde from Miller and Smith. Tom has been a judge for multiple years and was very enthusiastic about recording past means and methods associated with the competition as he sees many repeated mistakes year-to-year. With feedback from an array of credible sources, the guidebook ideally will aid in creating a better competition by raising the bar for all competing schools.

Another major impact the guidebook could have away from solely a resource for the RCMC is that it could help students better understand the development industry. As an industry known for being difficult to enter directly after college, being as knowledgeable and passionate as possible may be the difference between landing a job and just missing the cut. The development progression and strategies available in the guidebook do a great job of imitating real practices that this tool can even be used for much more than solely a competition.

Lessons Learned

The two main takeaways from pursuing a project such as this were: 1) an in-depth understanding of the development process and 2) the significance of case competitions for advancing the careers of college students. It's been said that if you can't fully explain a concept to a middle schooler then you don't fully grasp the concept. With the NAHB RCMC guidebook, complex and detailed concepts needed to be explained to ambitious university-level students willing to advance their careers. By writing detailed explanations of the development process as seen through the competition as well as general team building and leadership advice, this project allowed me to gain great understanding of the development and team building processes.

For those not a part of academia or involved in continued learning, it may be difficult to understand the great dedication professionals have for advancing the careers of the youth in their industry. For example, Tom Hyde, a five-time NAHB RCMC judge, along with four other dedicated professionals spend a great amount of their holiday time-off reviewing proposals submitted by the 30-40 competing teams every year. On top of this, Tom Hyde performed an in-depth review of the guidebook before being distributed to the NAHB to ensure it would be the highest quality resource available to future students. Aside from NAHB RCMC judges, educators at all competing universities allot countless hours towards ensuring their students success. This unwavering dedication has one purpose – ensuring today's students can become great leaders of tomorrow. This experience of creating a guidebook and being an active part of the competition gave me great pride in being a part of the real estate and development industry.

Conclusions

Being a part of student competitions makes one thankful for the experiences they had as their educational and professional careers tend to be impacted in a positive way. Perfection is nearly impossible to be achieved but through continued efforts and dedication towards improving, students continue to impress educators and industry members all while advancing their careers. As a piece of advice for future students and takeaway from my undergraduate career, it's critical to get involved with case competitions as they tend to be the best at preparing students for what will lie ahead in your career. Through creating a guidebook that motivates students to continue their involvement in competitions, it will be great to see the continued growth in students and the many success

stories that are created from them every year. Lastly with education as a team sport, one can't be thankful enough to educators and those who spend countless hours ensuring student success.

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