

National Construction Forum: Actions to Impacts

**National Academy of Construction
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Executive Summary

In December 2013, the National Academy of Construction hosted its Third National Construction Forum in Washington, DC. Attendees of the event included NAC members and non-members from various groups including academia and industry. In total there were 22 attendees over the day and a half event. The mission for the event was to continue the progress made by NAC since the last Forum held in November 2011, developing actionable steps in the workstream areas of Industry Image, workforce development and industry best practices. Significant progress has occurred in all three areas since the last NCF.

This report gives an overview of the discussions and value information shared among attendees. Presentations given by invited industry members on the topics of industry image and workforce development are detailed in this publication along with workstream findings and action items for progress. A path forward for the three workstreams is outlined.

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1. INTRODUCTION

This document describes the National Academy of Construction's (NAC)¹ ongoing work to develop a forum for addressing the pressing needs of the construction industry. It provides a summary of the Third National Construction Forum (NCF) meeting that took place at the DoubleTree Hilton in Crystal City, VA on Tuesday December 10th and Wednesday December 11th, 2013. The purpose of the NCF Forum was to summarize the progress made and identify steps to the further progress of the three NCF sponsored workstreams: Image, Workforce Development and Best Practices.

The NCF vision is to identify and promote awareness of industry issues, ultimately driving "improved efficiency and effectiveness of the capital project process" through integrating the efforts of key organizations. The Third NCF was critical to continuing the vision of the group.

The **propose products** of the Third NCF:

- Detailed implementation plans complete with expected impacts and delivery timing commitments for the current workstreams:
 - Image
 - Workforce Development
 - Best Practices
- List of potential new workstreams
- List of potential additional Forum participants

The NCF's Core Steering Team² sees the NCF mission as convening periodic workshops and other working groups to identify major issues impeding the development and deployment of work force and capital project best practices, and facilitating the formation and execution of work streams to resolve these issues. The genesis and history of NCF is given in Appendix C.

The Purpose of the National Construction Forum is to provide a significant national voice for the engineering, design and construction industry to help drive positive change.

Attendees

The attendees at the 2013 Forum included individuals from industry companies, associations, government organizations and universities; some are NAC members, others not. A total of 22 individuals attended the forum (detailed contact information is given in Appendix D). While well attended, due to inclement weather, the number of attendees for the forum was less than anticipated. Even so, the interaction and contributions of attendees were impactful to the progression of the workstreams.

Welcome, Safety and Introductions

The forum began with a mixer event to welcome attendees on Tuesday evening, which was followed by group dinner. The night continued with presentations. After a safety topic discussion, the NCF mission, meeting goals/products and workstream status updates were given: Don Whyte (Workforce Development), Neil Eldin (Image) and Roberta Bosfield (Best

¹ For more information on NAC, see Appendix A.

² The NCF Core Steering Team is listed in Appendix B.

Practices). These presentations gave context to the information presented by after dinner speakers and set the stage for the second day's work. The night concluded with presentations from Tim Johnson from the TJC Group (Workforce Development in Louisiana), Charlie Drevna from American Fuel & Petrochemical Manufacturers (AFPM) (Oil and Natural Gas Industry Image) and Ashley Baker from CURT ("Go Build" Alabama Initiative).

Tim Johnson's presentation (note: due to a conflict Eddie Risponse was unable to attend the forum and Tim ably presented in his stead) shed light on the Louisiana's approach to its craft labor workforce shortage. Tim highlighted the important steps the state is taking to develop the craft labor workforce. Specifically, the state identified its target number of skilled craft labor needed (83,000 craft personnel by 2016 for \$60 billion of projected work). It seeks to create a standardized education system for craft training. Tim also shared the importance of procuring federal and particularly state funding for the continuance of the effort to develop and educate the craft workforce in Louisiana. Louisiana government officials have been very supportive of this initiative.

Charlie Drevna of AFPM gave a presentation on his organization's challenge to revamp its industry image. Once known as the National Petroleum Refinery Association (NPRA), AFPM is an association that is comprised of coal, oil and petrochemical companies. Through the years, this industry sector has had a negative public image. Charlie described how through a change in name, organization vision and an effective marketing campaign, AFPM was able take control of its image. Charlie's presentation stressed the importance of proactive image management and "defining your image before others do".

Ashley Baker's presentation highlighted the "Go Build" initiative in the state of Alabama³. As part of the Alabama Workforce Development Initiative (AWDI), the state invested in a campaign called "Go Build" to increase interest and improve the image of careers in the construction industry. Through focus groups, they found that there were perceived negative images concerning health impacts and financial impacts for prospective workers in the construction industry in the state. To increase interest in the construction industry and change perceptions, he indicated that stakeholder collaboration (schools, industry and government), sustained funding (government and industry), and long term exposure (marketing campaigns, particularly the spots with Mike Rowe) were the keys to success of the program. The "Go Build" initiative is now being rolled out nationally as a mechanism to help interested States in their quest to improve craft labor numbers in local markets. The NAC hopes to work with the National "Go Build" Committee and to recruit NAC state-by-state leaders to expand "Go Build".

It was evident from the conversations after dinner that significant work is being performed in the USA focused on the three identified workstreams. NCF is in a position to positively influence adaptation and improvement on a number of fronts.

³ "Go Build" is an industry image enhancement program focused on recruiting people to the construction industry. Ashley Baker and others started "Go Build Alabama" six years ago and other states are contemplating doing the same. "Go Build" is a state-by-state undertaking, not national, as it relies on unique state-by-state funding models.

2. WORKSTREAM BREAKOUTS AND DISCUSSION

The full day session on Wednesday started with breakfast and informal discussion among attendees. The meeting officially started with a safety moment and review of the proposed schedule. The scheduled agenda for Wednesday mainly focused on the three workstreams (Best Practices, Image and Workforce Development).

After reviewing the forum framework and goals, more detailed presentations on the three on-going workstreams were given by Don Whyte (Workforce Development), Neil Eldin (Image) and Roberta Bosfield (Best Practices); each presented the purpose, findings from past activities and discussion themes anticipated for the breakout sessions. After each workstream presented, there was a lively discussion on potential ways that each effort could approach and close gaps. These themes were continued into the breakout sessions.

The forum split into three groups for the workstream breakout sessions. The breakout sessions started at 10 am and continued until 2 pm, stopping for a lunch break. The results from the breakout sessions are detailed later in this section.

The leaders of each session were identified and attendees were able to choose their preferred breakout session. The Workforce Development session was lead by Don Whyte. Neil Eldin led the breakout for the Image workstream. The Best Practice breakout session was co-led by Wayne Crew and Edd Gibson. Once the breakout sessions were completed, each workstream reported the progress made in the sessions.

A) Workforce Development

<p style="text-align: center;">Problem Statement: For more than twenty years, the construction industry has recognized the emerging and growing shortages of skilled craft workers, but the broad industry-wide support needed to solve the problem has not been obtained. The issue will intensify in the coming years as the industry recovers</p>
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The workforce group first began with addressing its problem statement. For more than twenty years, the North American construction industry has recognized the emerging and growing shortages of skilled craft professionals but there is not an industry-wide solution to increase the “pipeline” of entry level/new workers. There is a “skills shortage or gap” due to the lack of an industry-wide solution to increase training and retention of incumbent craft professionals. Also, owners and contractors are not broadly committed to workforce development. In addition, there is a similar issue with management and engineer workforce attraction, education and retention.

During the breakout session the workstream participants agreed that front line management and engineer education and training are issues that need to be addressed, as there is likely to be shortages in these areas as well. To address the development of front line management and engineer development the workstream group recommends that an additional workstream team be created to address this similar but different issue. A new workstream was recommended because this topic is outside of the workforce scope, which is focused on recruitment, training and retention of craft labor.

The topic of image enhancement was also discussed during the breakout session, as it is difficult to differentiate this issue from workforce development. The breakout group did note that workforce development is very closely coupled with the Image workstream.

The group identified three key points regarding workforce development:

- 1) Owner commitment to only work with contractors who are committed to craft workforce development
- 2) Support efforts to promote a reemphasis of career and technical education in our schools
- 3) Embrace Technology and Innovation.

The workforce development workstream had completed two main milestones and identified steps to continue the momentum since the last NCF: 1) the completion of a comprehensive white paper on the industry craft workforce; 2) the development of executive briefs, based on the white paper, for the industry. The Workforce group recognizes the need for an NAC distribution system of the briefs to enhance industry impact. *To continue the momentum, the workstream members propose that an advocacy strategy on workforce issues needs to be developed in conjunction with NAC. Also successful industry initiatives that have been identified should be promoted by the workstream.*

Ideally the state of the workforce development initiative would be industry-wide support for craft professional development that narrows or eliminates the skills gap in the industry. Ultimately, through industry-wide support, the valuable benefits (to the country and economy) of a strong craft workforce would be realized.

During the breakout session, the group discussed reasons why owners and contractors have not invested equally in workforce development. One reason identified is the long work weeks (number of work hours) that are currently expected of employees. A group member asked “how does a company develop or train individuals during 60 to 70 hour work weeks?” It is difficult to train when time is limited. The group also recognized that commitment to training is an investment that not all contractors or owners have the monetary resources to commit. Perhaps companies can look at workforce development strategies based on the various contract methods to improve the issue. The positive progress made by CURT and NCCER on the development of a pre-qualification tool, called the Contractor’s Workforce Development Assessment (CWDA), was addressed in the breakout session as well. This tool was developed to evaluate a contractor’s commitment to workforce development and the quality of their program.

The breakout group discussed the importance and need for advocacy to educate the industry on the lack of workforce development. For example, based on recent surveys only 20 percent of owners understand the problem that the industry faces regarding workforce development. For effective advocacy, the right audiences need to be targeted and should be involved in addressing this issue. The message of workforce development should be distributed through multiple types of media (e.g., white paper, video, online) to reach multiple audiences.

Workforce development efforts are mainly local or regional in nature. NCF needs to be a proponent of the workforce development activities currently ongoing nationally, with the NAC taking a leading role in pushing for improvement through the efforts of its members.

The group ended the breakout session with a discussion on the possibility of surveying owners. Specifically, the survey could query owners about their workforce development practices. This information could be shared with the contractors and other industry members.

Breakout Members

Monica Starnes
Bill O'Brien
Liz Elvin
Randy Walker
Don Whyte

B) Image

Problem Statement:
People generally perceive the industry to be dirty, difficult, dangerous, low-paying, unglamorous, and low-tech. Further, they expressed their awareness of a public opinion that construction is a narrow and compartmentalized industry, a necessary evil to get infrastructure built, and an invisible process, the products and benefits of which are taken for granted.

The Image workstream group began the breakout session with a general discussion of its problem statement, which focuses on the construction industry's difficulty in maintaining a positive outside image. Reasons why the industry's image is suffering were covered in the discussion, after which the group identified action items to help tackle the problem.

In particular, the image of the industry from the youth perspective is somewhat negative. For today's youth, the monetary incentives and title designation are not sufficient to encourage one to join the industry. There is a desire that their professional choice would enable a "game change" in areas they are personally concerned such as: civil justice, environmental sustainability, and/or new technologies. Compensation needs to be better aligned with value delivered and there is a desire to build a lasting legacy. "Team" and "teaming" are "key" words the industry should incorporate to attract today's potential workers.

The group did recognize the need for professional communications to help get the most impact among the target groups. Specifically, the effective marketing plan example of the "Go Build" campaign was discussed. The "Go Build" campaign has been successful in delivering its message to its current market. This strategy could be followed by NAC to continue the improvement of the industry image. The breakout group suggested that the NAC share image

change approaches among other organizations that are also improving industry image such as "Go Build", the Architecture/Construction/Engineering (ACE) Mentor programs, and Skills USA.

The "manual" and "non-manual" job designation in the industry and its negative impact on industry image was also discussed; the group thought a major effort should be taken to overcome this semantic designation. The industry should gravitate towards the use of "professional degrees" or "certifications" as a way to enhance the perspective of craft careers in the industry. The skilled craft labor force needs to be considered as much of a professional track and should be referred to as such. With this change, the industry could attract people from the various resource pools, such as ex-military, women and career re-starters.

The cyclic workload nature of the industry is seen as a major issue. At times, the cyclic nature of the industry hurts the industry image; however, the group suggested that workforce development during slow cycles can be a solution for the industry. The CURT Workforce Development program is one example that could be a positive solution.

Information on groups such as the military and younger professionals that are entering the profession should be highlighted as positive industry examples. These groups currently in the workforce should be used as visible advocates and examples for attracting and retaining industry hires. In discussions, the group recognized that social media is a powerful communication tool that needs to be used more effectively to assist in this regard. The pathway to success in this area is a progression from image, to recruiting, to skills development. Image needs to be a subject of continuous improvement as the industry moves forward.

Before ending the breakout session, the group discussed specific steps that it would take to move its goals forward. The specific steps to push the image initiative forward are the following:

1. Maintain a continuous effort pursuing image enhancement by:
 - a) Engaging other organizations with ongoing image campaigns.
 - a. Integrate and push "Go Build" and "Build Your Future" (should be done immediately).
 - b. Involve school counselors (summer exposure positions, participate in associations/conferences).
 - b) Focusing on industry professionalism (career focused position descriptions).
 - a. Rebrand titles/positions
 - b. Change compensation approaches
 - c) Developing and communicating construction pathways to prosperity.
 - a. Use professional media/communications firms
 - b. Develop construction related applications and games.
2. Find funding for an image initiative (immediate future).

Industry image is a multifaceted issue. There are immediate actions available for image improvement; in addition, long-term issues such as the impact of contractor ethics can have a significant impact on industry image.

Upon concluding the breakout session, the group acknowledged that the image discussion is multifaceted. The workstream is focused on immediate actions for image improvement; in addition, it also did discuss long-term issues such as the impact of contractor ethics on industry image.

The ideal image of construction included being perceived as a more professional, higher-tech, and innovative industry. The industry should promote itself as a custodian of society, and as a builder of the society's future. The industry should position itself as an enabler and magnifier of modern life and an engine of the economy.

Breakout Members

Neil Eldin
Jimmy Slaughter
Jim Porter
Mark Casso
Ashley Baker
Tim Johnson
Diane Green
Michael Bellaman
J. J. Suarez

C) Best Practices

Problem Statement:
Not all best practices (BPs) are applicable to every project, project type, or organization, and they are not universally applied within individual organizations. Across the industry, the terminology for best practices is not universal.

The Best Practice workstream is driven by the mission of “increasing the use of best practices in the construction industry”. With the increased usage of best practices, the performance of the construction industry as a whole could improve. Since the fall of 2012, research has been conducted on the industry’s reception of an open repository for best practices. Critical steps to create and manage a repository were explored through a number of structured interviews with owner and contractor companies in the industry. A Delphi study was developed to explore the topics of best practice definition, best practice identification, repository structure, information granularity and repository interest in the construction industry. A feasibility white paper is currently being developed that will summarize these issues into recommendations for a path forward.

The overall mission of the best practice open repository is to provide a central location for industry best practices. In creating this open repository, the NAC could potentially contribute

significantly to industry education (perhaps at multiple career levels); combat knowledge attrition in the industry (retiring workforce) and promote thought leadership.

The Best Practice breakout session began with a brief overview the workstream progress to date and the purpose of the workstream. Overall, the purpose of the workstream is to promote the increased usage of best practices in the industry, which in turn, would increase the performance of the industry. During the breakout session, the group focused on the *creation* of the open repository.

Business Model of Open Repository

Breakout session members agreed that the NAC should act as an honest broker and have the repository tied to the organization. There should be a NAC standing committee to push the movement forward and oversee the startup of the repository. Currently, improvements are being made to the NAC website. Jan Tuchman suggested that the NAC could be proactive and include a webpage on the site that describes the best practice open repository. The webpage also could list associations that the NAC recommends as resources or references for the industry.

The group did acknowledge the need for an in-depth business model that projects potential revenue and costs (e.g., technology, creation/management team, development) to assess the potential of this idea. Funding is imperative to the startup of the repository and ultimately the funding source for the repository will have a strong influence on its final structure.

Funding for Open Repository

It is essential to show the value (demand drivers) of the repository before startup funding is sought. In addition, before seeking funding, the full cost of the repository needs to be estimated. It is important to show a demand for the open repository because industry demand will attract funding. Ultimately, two rounds for funding need to be procured: 1) startup and 2) operating funds. Potential revenue streams explored for operations of the open repository were: advertising, promoted articles (“pay to play”) and industry association sponsorship. A feature that the open repository should have is a “what’s new” section (similar to CII’s website) to promote users to explore new best practices and other developments.

Granularity – Breadth and Depth of Information & Industry Participants

The consensus of the group was that the information in the repository will not focus on residential construction but instead on large global, complex construction projects (e.g., commercial, industrial, manufacturing, transportation). JD Slaughter suggested the repository should first start with safety as a best practice. The reason behind the suggestion was that it could be easier to find subject matter experts (SMEs) to write articles on the topic. Regarding SMEs, credential validation is essential to ensure trustworthiness of open repository by users. It was decided that early in the process the focus on the repository structure should be limited. The information should flow organically when first starting. Once the information flows in the repository, the information structure can be “fine tuned.”

An input template for SMEs should be created to guide the input process. A basic template could include: 1) Best practice topic; 2) Project phase; 3) Links for resources; and 4) Value added write-up. When completed, the best practices should add value to the end user yet be brand neutral.

The ideal outcome of this effort would be the consistent use of best practices across the industry. The industry's current epidemic of underutilization of best practices is related to and exacerbated by the lack of a single quality source for locating them.

Path Forward

Before ending, session members agreed to a specific path forward for progress on the open repository:

1. Develop a recommendation letter to NAC on Open Repository path forward
 - a. Finalize the feasibility study, which should precede the recommendation letter (Q1 2014).
 - b. Draft a letter from the NCF recommending that NAC sponsors the Best Practice effort (because it is neutral party). Jim Porter and Jimmy Slaughter to follow up with NAC in March or April 2014.
2. Based on feedback from NAC, establish a Steering Committee for the repository (made up of NAC members/industry association leaders.) (Q2 & Q3 2014)
 - a. Goals/Task include:
 - Establish purpose, mission, business model, and repository specifications.
 - Locate startup (seed) funding
 - Develop framework/boundaries
 - Recruit subject matter experts
 - Establish technical specs
 - Produce demonstration and test (safety, front end planning, or other)
 - Revise
 - Deploy/Populate
 - Monitor
3. Seek additional funding for long term maintenance (Date: TBD)
4. Re-Assess the repository (Date: TBD) with a decision to continue or not

Breakout Members

Stu Anderson
Roberta Bosfield
Donald Brown
Wayne Crew
Edd Gibson
JD Slaughter
Jan Tuchman

3. FUTURE WORKSTREAMS

After the breakout sessions and breakout session updates, forum attendees were asked to share their thoughts on future NCF workstreams. These new workstream could be related to current focus topics or a completely new topic. In total, three new workstreams were suggested. Two of the workstreams were discussed in-depth; there was limited discussion on the third workstream, industry productivity, and no path forward was established for it. The two suggested workstreams that garnered the most discussion are detailed below.

Wayne Crew suggested a new workstream focused on the recent increase of low frequency/high impact incidents, “near misses”, and fatalities in the industry. Wayne commented that among CII member organizations, the number of high impact incidents and fatalities on projects have increased. Organizations should have strong safety plans in place to address these high impact events. During the discussion, Randy Walker, mentioned that the number of minor accidents on a project is sometimes a good predictor of fatal incidents and this should be examined as well. In the end, it was agreed that this thrust should be referred to the NAC Safety Committee for review and direction. (Note: the NAC Safety Committee has already taken up this suggested workstream.)

Another suggested workstream, by Edd Gibson, was to focus on the future Construction Engineering and Management program pipeline. From highs in 2008, the enrollment of four-year, professional construction engineering/management degree programs has decreased in the United States. Edd mentioned that it is estimated that at least one third (1/3) of construction supervisors/managers are retiring and leaving the industry in the next five years. Due to the decreased enrollment in four year degrees over the last five years and this upcoming exodus from the industry to retirement, there will be a severe shortage of graduates in the pipeline to replace those both leaving the industry and also to cover growth. There is a well-known craft labor shortage in the industry; however, the shortage of construction managers should be a large concern as well. With the construction industry upswing, organizations will be forced to hire unprepared construction managers. Subtopics of 4-year program teaching topics, supervisor/project manager training and “Go Build Your Future” collaboration were discussed as issues that play into addressing this concern. The discussion on this workstream concluded but the final decision to pursue was not reached.

4. WORKSTREAMS PATH FORWARD SUMMARY

As the meeting came to a close, Jim Porter reflected on the progress NCF members have made since the last forum in 2011. One participant mentioned that the NCF was at a critical juncture and the momentum for action must continue in order to accomplish goals that the NCF initially set: the improvement of workforce development and industry image, along with increasing industry best practices usage. To continue the momentum, immediate steps of the workstreams include:

1. **Workforce Development** – Continuance of industry workforce development advocacy and exploration of conducting an owner survey. Work to widely publish the workforce development white papers through the NAC web site and other venues.
2. **Industry Image** – Foster engagement of industry organizations that are also addressing industry image. Specifically, the NCF workstream should pursue the following:
 - a. Work with the NAC to take an active role in supporting of the National “Go Build” Committee and initiative.
 - b. Work with NAC to provide assistance/leadership/advocacy in establishing state-by-state “Go Build” initiatives. Each state will have its own strategy, highly dependent on the political climate.
 - c. Work in conjunction with the National “Go Build” Committee to help foster alliances between current members of NCF and with other organizations to create a more robust implementation environment. Two examples outside NCF include:
 - i. AFPM (American Fuel and Petrochemical Manufacturers)
 - ii. The Business Roundtable, both the National and local chapters.

Note: The National “Go Build” Committee is already working with the ABC, AGC and labor unions. The NAC Construction Forum Image Workstream will need to be strengthened, both in numbers and leadership to accomplish the above goals.

3. **Best Practices** – Complete the Delphi study and publish a white paper outlining completed research and the feasibility of the open repository for best practices; ultimately this effort will share findings and recommendations on the creation of open repository for best practices in conjunction with the NAC.

Conclusion

Before adjournment, Jimmy Slaughter and J.D. Slaughter were recognized for their generosity in sponsoring the meeting. Attendees thanked both of them for their continued support of the NCF over the years. In his response, Jimmy said that the NAC and NCF are important to the improvement of the industry and he will continue to support the efforts.

The Fourth NCF was briefly discussed; the date and further details will be determined. It was mentioned that the Northeast location should be avoided during winter months due to the possibility of inclement weather, as winter weather prohibited the attendance of a number of individuals at the 2013 meeting. It was also acknowledged that the session should stay away from holidays.

In closing, Jim Porter reiterated the important progress made by the group since its inception and thanked all the participants at the Third NCF for their outstanding contributions and commitment.

APPENDIX A – NATIONAL ACADEMY OF CONSTRUCTION

National Academy of Construction Mission

The mission of the National Academy of Construction is to recognize and honor distinguished achievement in the American construction industry and to make that reservoir of experience available for service to the nation.

National Academy of Construction Purpose

1. Provide recognition to past and present industry leaders for their personal contribution to the engineering and construction industry.
2. Establish a body of engineering and construction industry leaders who are available for advice and service.
3. Establish and administer an awards program to provide recognition to individuals who have made notable contributions to the industry.
4. Provide for a linkage between active INDUSTRY participants and person who have left active employment.
5. Provide for a linkage between active industry participants and persons who have left active employment.

For more information, see <http://www.naocon.org/>

APPENDIX B – GENESIS AND HISTORY OF NCF

The creation of the forum was first discussed within NAC in 2007. A core steering team was formed and met periodically over a two-year period to plan the effort. The consensus on the forum's vision and mission was that it should identify the most important issues facing the national engineering, design, and construction (EDC) industry (owners, contractors, financiers) and leverage the synergy that exists within the industry to tackle these issues. The intent is to do this without asking any single group to change what it does. Rather, the NAC would like to act as a neutral broker to help the industry as a whole leverage what each group does. In this way, the NCF can emerge as an industry voice. The purpose is to be the national voice (which is currently missing), to integrate efforts, to reduce redundancy, and to drive improved efficiency and effectiveness. During the course of the steering committee meetings, the design for the inaugural NCF workshop was developed, including the meeting process, forum vision and mission, and meeting agenda.

The 105 members of the NAC met at its annual conference in late October of 2009 and discussed the forum; the membership was enthusiastic about its chance to change the industry. They were honored to be able to facilitate NCF meetings since the forum is comprised of so many remarkable individuals from all parts of the industry. There is no NAC staff to do this work, only volunteers stepping up to make it a reality. The number of people attending made the inaugural meeting interesting and exciting. Members of National Academy of Construction and others (the "Steering Team") instrumental in developing and organizing the inaugural forum are given in Appendix C.

The first National Construction Forum was held on November 1 and 2, 2009. Twenty-seven participants represented 15 national EDC organizations, also included owners, designers, contractors and academics in total representing 25 employers. The results were published in NAC Publication 2010-1. Highlights of the meeting included alignment and consensus that the NCF is a good idea and NAC is an excellent organization to serve as a neutral broker in this effort. The meeting produced a list of issues that need to be addressed collectively as an industry and a path forward, including an "evergreening" process. Subsequently, a Leadership Team was formed and met in September 2010 in Houston, TX. Four consensus work streams were pared to three and actions assigned to move the process forward.

The Second NCF was planned and conducted in November 2011 again in Washington DC. Detailed workstream plans were developed for the three workstreams and action plans developed. The results of this NCF are detailed in NAC Publication 2012-1. In the intervening time, these action teams have continued to work issues leading up to the Third NCF in 2013

APPENDIX C – NCF CORE STEERING TEAM

- Jim Porter (NAC) Co-Leader
- Jimmy Slaughter (NAC) Co-Leader
- JJ Suarez (NAC/CIRT)
- Ray Topping (FIATECH)
- Wayne Crew (CII)
- Greg Sizemore (CURT)
- Edd Gibson (NAC)
- Don Whyte (NCCER)
- Chuck Thomsen (CMAA)
- Neil Eldin (U of Houston)
- Jorge Vanegas (At Large)
- Liz Elvin (AGC)
- John Mihm (At Large)
- Jan Tuchman (ENR)

APPENDIX D – MEETING AGENDA

Tuesday, December 10th

- 5:30 PM Mixer
- 6:00 Dinner
- 6:40 Welcome/Safety Moment – Jim Porter
- 6:45 Agenda/ Purpose/Products
- 6:55 Forum History
- 7:05 Workstream Descriptions
 - Workforce - Don Whyte
 - Best Practices - Wayne Crew/Roberta Bosfield
 - Image - Neil Eldin
- 7:15 Work Force - Eddie Rispone (Tim Johnson presented in his place)
- 7:45 Image - Charlie Drevna (AFPM)
- 8:15 “Go Build” – Ashley Baker
- 8:45 Closing Discussion
- 9:00 Adjourn

Wednesday, December 11th

- 7:00AM Breakfast
- 7:45 Welcome/Safety Moment
- 7:50 Agenda/Purpose/Products
- 8:00 Forum Framework
- Workstream Current Status
 - 8:15 Workforce Development
 - 8:45 Image
 - 9:15 Best Practices
- 9:45 Break
- 10:00 Break-Outs
 - Workforce Development – Don Whyte
 - Image – Neil Eldin
 - Best Practices – Wayne Crew/Edd Gibson
- 12:00PM Lunch
- 12:30 Continue Break-Outs
- 2:00 Break
- 2:15 Report Outs
 - Workforce Development – Don Whyte
 - Image – Neil Eldin
 - Best Practices –Edd Gibson
- 3:00 Workstreams Implications/Path forward
- 4:00 Potential Future Workstreams/Path forward
- 5:00 Adjourn

*Facilitators – Neil Eldin, Don Whyte and Edd Gibson

APPENDIX E – NCF ATTENDEES
December 10-11th, 2013

Associations and Other Entities

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