



2018 Residential Industry Survey Results

Survey data from 91 industry respondents obtained in May – June of 2018.

Results provided to NCBPA Member professionals and non-Member respondents.

Results Release Date: August 1, 2018

Thank you survey participants!

Wow, what an amazing response to our annual residential survey! While we aren't sharing the names of the 91 individuals that responded, I'd like to make sure that those persons know that we know who did and we thank you for your time and thought in taking the survey! This was a long one but received the most responses of any survey we've ever done. Thank you for your support!

The results of this survey will help NCBPA address the most pressing needs and opportunities our industry faces with your direct feedback. More importantly, we're sharing the raw results so that your business can benefit as well! We've removed information we deemed sensitive but comments that were both positive and negative about our industry remain – this feedback needs to be known!

Our analysis identified several items that NCBPA will focus on in the coming months that include:

- Developing a formal needs assessment for the wide-ranging but critically important topic of consumer education.
- Pushing forward with our existing Workforce Development activities using the recommendations you provided to us better recruit and retain workers.
- Identifying activities that improve code requirements, rebate opportunities and general perception of performance options in existing homes.
- Digging in further to our prior analysis of what new licensure requirements for insulation, crawlspace and other trades would offer our industry and consumers.
- Submitting a variety of code change proposals targeting new construction and retrofit code as early as the next quarterly code meeting taking place on September 11th.

One item that I'm thrilled to see reflected in the survey is your top three responses to question 6, which asked about your greatest concerns about the future of our industry. Workforce Development and Politics/Regulations tied for first with 13 responses each, followed by Consumer Education with 6. Perhaps it's coincidence, but these topics are three of the four found in [NCBPA's strategic plan](#) that our Board of Directors created in early 2017. NCBPA has been increasing our work in these areas ever since and we are excited to see that it remains aligned with your industry concerns.

We welcome your continued suggestions for how NCBPA can support our industry moving forward and hope that all respondents will continue to participate in our work, hopefully as a member professional! Not a member? Joining is quick and easy at www.BuildingNC.org.

Now, grab a big cup of something and make your way through the Executive Summary and the detailed responses that follow! As always, our staff is happy to address your questions and comments!

Very best regards,



D. Ryan Miller
Founder & Executive Director
North Carolina Building Performance Association

Response Summary

Provided here is a summary of responses prepared by NCBPA staff. The numbers below match to the question number provided in the survey. Scroll down to view for charts, graphs and individual comments for each question.

Industry Sentiments:

1. N/A – Contact information.
2. The largest respondent groups in order were: Home Energy Auditors or Raters, Product or Service Providers, and Builders or Developers in order. 91 individuals responded to the survey.
3. Respondents were most positive overall about the value of building performance work in the market and least positive about how policy impacts our industry.
4. To grow and prosper, respondents indicated that Workforce, Education and Money are needed.
5. Respondents provided a very wide variety of product and service providers that they purchase from. There were no clearly preferred suppliers indicating a wide market.
6. 52 respondents indicated a wide range of concerns about the future of the industry. The most popular responses included Workforce Development and Politics/Regulations with 13 responses each, followed by Consumer Education with 6 responses.
7. Respondents asked NCBPA to focus on lowering the costs of doing business through health and business insurance, workforce support and regulatory hurdles and costs.

Workforce Development:

8. There is a roughly 3 to 1 ratio of respondents that indicated they are having difficulty hiring both entry-level and experienced workers compared to those that are not.
9. 63% of respondents indicated that they plan to hire in the next 12 months and 29% in the next 3 years.
10. Current employee referrals is the most successful way to hire new employees, followed by targeting colleges or universities.
11. 21% of respondents indicated that the majority of their workers have 3 years or less experience.
12. Reasons for not hiring entry-level workers suggest an unqualified pool of applicants, with drug test failures, background check failures, lack of required education and transportation-related issues being the most prevalent issues, in order of most to least.
13. Reasons for not hiring more experienced workers include concerns with the amount of physical labor, a lack of career development opportunities and a lack of compensation/benefits, in order.
14. Positions that are the most difficult to hire include residential energy/performance crew members, traditional trade crew roles (HVAC, plumbing, etc.) and highly technical positions.
15. College degrees are most sought after by hiring companies, followed by “good character” and on-the-job experience
16. Interest in hiring an Apprentice yielded 2.8 out of 4, just below “some interest”.
17. Conferences, online self-paced courses and webinars are the most preferred methods of obtaining industry education.

Architects and Designers, Builders and Developers

18. Regarding high performance construction, these respondents are most comfortable with design elements and when to involve specialty contractors, and least comfortable with NC's new code requirements and which certifications to use.
19. A 1 to 1.5 day "Green Appraiser" training received strong support with a 3.4 out of 4 ranking.
20. 15 of 27 respondents indicated that they are comfortable with meeting NC's new code.
21. The value these trades place on industry certifications is highest with Home Energy Raters and HVAC Contractors. Crawlspace ranked the lowest of the available options.
22. 17 of 27 indicated that they have an internal quality control/quality assurance process.
23. The value these trades place on third-party verification received strong support with a 3.3 out of 4 ranking.
24. Builders (10 to 1) and Contractors (10 to 3) said that they support requiring third-party whole house air leakage testing (essentially a HERS Rating) in NC's code.
25. Respondents struggle the most with quality installation, knowledgeable subcontractors and obtaining a fair appraisal. They struggle the least with meeting code requirements, material selection and design.
26. Responses to the most common reasons for call-backs varied, with water or moisture issues, comfort issues and malfunctioning appliances/devices/equipment being the most common.
27. Just 5 of 23 respondents indicated their plans to use the new Energy Rating Index (ERI) option (a HERS Rating) for energy code compliance in the new code.
28. Educating high school students, providing strong entry-level training and providing continuing education opportunities were the most common methods to addressing the industry's shortage of skilled labor workers.
29. There was little consensus in responses regarding innovative products in the marketplace, potentially indicating a lack of available information and education of what may be available.
30. 10 of 25 respondents indicated that energy efficient, green and high performance certification programs result in higher prices for home sales.
31. A majority of respondents indicated that their customers are willing to pay 5 to 10% more for energy efficient, green and high performance upgrades.
32. 12 of 22 respondents indicated that they will likely incorporate solar PV, battery storage, EV charging and other forms of clean energy products/services in their homes in 2024, the start of NC's next residential code cycle.

Crawlspace

33. Respondents indicated some interest (3.0 out of 4) in a two-day crawlspace credentialing training workshop and program being offered in the state.
34. 11 of 25 respondents indicated that they have an internal quality control/quality assurance process.
35. 22 respondents indicated some value (3.0 out of 4) for third-party verification of their work.
36. Respondents indicated that quality installation, moisture management and proper use of insulation are the most challenging aspects of high performance crawlspace work. Material

selection, meeting code requirements and meeting program certification requirements were the least challenging.

37. Respondents indicated that new code could be improved by increasing requirements and standards for ventilation, air sealing and combustion safety.
38. Respondents indicated that existing code could be improved by increasing requirements and standards for HVAC systems and fireplaces and requiring contractors to pull permits.
39. Crawlspace contractors (5 to 1) and other contractors (8 to 3) favor requiring a permit when encapsulating vented crawlspaces.
40. Crawlspace contractors (7 to 1) and other contractors (6 to 4) favor a pathway to requiring crawlspace contractors to be licensed in the state.
41. Respondents indicated that a career pathway for crawlspace contractors should start with one year of energy audit and weatherization experience followed by a year of work in crawlspaces.

Section 6 - Insulation

42. Respondents indicated that fiberglass batt insulation is the most commonly-used type with roughly 40% higher usage than cellulose, spray foam, hard board and mineral wool.
43. 16 of 21 respondents indicated that they have some form of internal quality control/quality assurance process.
44. Respondents indicated strong support for third-party verification of their work with a 3.5 out of 4 ranking.
45. Specific problem areas and quality installation were the most challenging aspects of high performance insulation, with material selection being the least.
46. 18 of 20 respondents recommend that minimum code requirements be established for encapsulating attic spaces.
47. Increasing insulation and fresh air standards were suggested for new construction code requirements.
48. Insulation to current standards and replacing ductwork when older units are replaced were suggesting for existing construction code requirements.
49. Insulation contractors (6 to 0) and builders/others (7 to 4) favor a pathway for insulation contractors to be licensed in the coming years.

Home Energy Ratings

50. Interest varies significantly for Home Energy Raters looking to become ICC-certified in order to serve in a code official capacity.
51. 11 of 18 respondents plan to offer the Energy Rating Index (ERI) to their builder customers as part of the new energy code.
52. HERS Raters (13 to 3) favor a pathway to licensure in the coming years, while builder/other responses were split 2 to 2.
53. 17 of 23 respondents were aware of Duke Energy Progress' Residential New Construction Program.

54. Respondents suggest that HERS Raters should have experience in home construction before beginning their work at a rating business and recommend that they do not under value their role to their builder customers.

Whole Home Performance, Retrofits and Remodels

55. Increased consumer education and case studies were identified by respondents as priority needs to advance home performance.
56. Respondents recommend a variety of additions to existing code requirements that include lighting and insulation upgrades, energy/performance audits during time of sale, commissioning standards, solar PV, sealed crawlspaces and fresh air ventilation.
57. Respondents recommend a BPI certification and on-the-job experience as starting points for a career as a home performance contractor.

Heating, Ventilation and Air Conditioning (HVAC)

58. Respondents indicated that high efficiency traditional systems are the most widely-used, followed by code minimum traditional systems, mini-split systems and geothermal systems.
59. Respondents were very comfortable with high efficiency traditional systems, mostly comfortable with mini-split systems and somewhat comfortable with geothermal systems.
60. Brand preferences vary for geothermal systems.
61. Respondents rated their outlook for geothermal systems in our market between somewhat weak and neutral with a ranking of 2.7 out of 5.
62. 9 of 14 respondents indicated that they have an internal quality control/quality assurance process.
63. Respondents indicated strong value for third-party verification of their work with a ranking of 3.5 out of 4.
64. Respondents struggle the most with using geothermal systems and quality installation, and load calculations the least.
65. Respondents recommend third-party verification by BPI or RESNET-certified professionals be added to new construction code, particularly for duct system testing, and also recommend mandatory mechanical ventilation and secondary drains from mechanical equipment in crawls.
66. Respondents also recommend third-party verification for existing construction code as well as new ductwork, improved recognition of high efficiency fireplaces and stoves, mandatory mechanical ventilation and secondary drains for crawls.
67. 9 of 15 respondents support NCBPA evaluating an opportunity to become an ACCA Affiliated Chapter Organization to increase market support for HVAC companies and professionals.
68. HVAC contractors support changing code requirements to disallow themselves from testing their own duct systems, while builders/others supported this change 11 to 2.
69. All 5 HVAC contractor respondents support requiring a load calculation being submitted for review by a code official prior to obtaining a Certificate of Occupancy, and builders/others supported this change 7 to 3.
70. Respondents recommend a wide skillset and starting as a service technician for new professionals entering the high performance HVAC trades. Recommended skills include:

diverse technical background with building science focus, people and sales skills, strong understanding of business principles and financial management.

Products & Services

71. Respondents indicated that reaching target customers is the leading challenge they face followed by competitive pricing. Product availability and lack of technical product knowledge were ranked low, and distribution challenges were not identified as a challenge.
72. Respondents suggest that NCBPA increase its focus on workforce training for builders and contractors and consumer education.
73. Several companies provided contact information to NCBPA for discussing discount programs for association members – not shared here.



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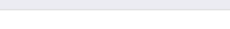
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Section 1 - Demographics

1) Contact information was provided by participants.





2) What is your company's primary/majority role in NC's residential building performance industry?

Answer	0%	100%	Number of Responses	Response Ratio
Architect or Designer			5	5.4%
Builder or Developer			8	8.7%
Consultant			3	3.2%
Crawlspace Contractor			1	1.0%
Home Energy Auditor or Rater			13	14.2%
HVAC Contractor			4	4.3%
Insulation Contractor			3	3.2%
Nonprofit, Association, Municipal or Government			5	5.4%
Product or Service Provider			10	10.9%
Weatherization Contractor or Agency			3	3.2%
Utility			2	2.1%
Other (View all)			9	9.8%
No Responses			25	27.4%
		Totals	91	100%

Section 2 - How are you feeling about our industry?

3) How positive do you feel right now about each of the following industry topics?

1 = Not positive at all , 2 = Not very positive , 3 = Neutral , 4 = Somewhat positive , 5 = Very positive

Answer	1	2	3	4	5	Number of Responses	Rating Score*
Workforce development - attracting new workers and retaining existing ones						53	3.0
Consumer education - knowledgeable home and building owners, builders, and operators						53	3.1
Policy and regulatory - a supportive business climate at the local and state level						53	2.8
Market valuation - the value of your company's work is recognized and valued in the market						53	3.5

Comments:

- Geothermal is no longer mentioned as a renewable when Energy Conferences are held, it appears that Solar and Wind has the limelight.
- Rating of homes seems to have taken a turn for the worse recently which I believe is a result of market conditions. Builders are focused on getting homes completed as fast as possible because of high demand. 3rd party ratings have become an added expense and often perceived as delaying construction and as long as they are meeting code requirements, then the home is good enough.
- Our politicians are one of the issues.
- Policy / regulatory - positive at the local level, truly horrible at the state level.
- We offer free home energy audits but it goes beyond that as we try to identify any existing or potential problems that lead to high energy costs for the consumer and make recommendations or offer solutions to remedy those problems.

4) One-word answer: What does your company need to grow and prosper?

The top three most popular responses were:

1. Workforce
2. Education
3. Money

5) If you know, please list 3 companies that your company purchases a majority of its materials, tools or equipment from. NCBPA will contact select companies to seek out discount programs on behalf of our members.

Responses:

- 84 Lumber
- ADO Products
- Alnor (testing equipment)
- AM Conservation Group
- Amazon
- American Cedar & Millwork

- Austin Company (insulation)
- Autodesk, Archicad, Dell
- Best distributors
- Bird Hardware and Bath
- Blevins
- BMC
- Builders First Source
- Cardinal Glass
- Carpenter Contractors of America
- CC Dickson
- Certainteed
- Delta Airlines
- E.W.Godwins
- Epting Supply
- Ferguson Supply
- Gemaire
- Home Depot
- Hunter Millwork (Silverline windows)
- ICC, ASHRAE, get a discount on code books!
- Insulating, Inc.
- J & R products
- Jennings Building Supply
- Johnstone
- Johnstone Supply
- Klein Tools
- Knauf Insulation
- Locust Lumber (Huber Zip and Advantech)
- Lowes
- Onset (data loggers)
- Performance Goods
- Re Michel
- Retrotec
- Service Partners
- Shealy Electrical Distributors
- Staples
- Sun Heating Supply
- Talberts Building Supply
- The Energy Conservatory
- Thermalstar (duct seal tape)

- Thermo Tape, Tape Guys in Arizona
- Trane
- TruTech Tools
- Tytan
- United Refrigeration
- Yandle-Witherspoon, American Standard

6) Short answer: What concerns you the most about the future of our industry?

Responses:

- Fair pricing for high performance homes
- The focus is on builders' costs rather than the long term operational cost for the homeowner. A purchasing agent is commanded to reduce costs rather than search for solutions. The other factor is the lack of understanding and proper enforcement of regulations and best practices to provide a comfortable yet affordable home.
- Creating adequate customer awareness of sustainability-related issues that can factor into their purchase decisions.
- Lack of education and poor contractors doing shoddy work.
- Republicans, rolling back of support for energy efficiency programs/research federally, and rollback of the policies that support Duke rebates in the state.
- Increase awareness of the need for high performance homes and products to support to the people who can make purchase decisions.
- Lack of Code requirements for testing/validation
- Allowing HVAC Contractors to Duct Test their own work and not requiring a third part Rater to test.
- Shortage of skilled workforce
- Labor
- The fact that we are 'heavy' on training, certifying, regulating, and not so much on actual jobs.
- Shortage of technicians and the desire to work in this field.
- political climate
- Monopolization of marketing control. ie: Amazon, Google, etc.
- Policies made by those without the proper knowledge.
- Artificial intelligence
- Its continued growth and client education
- Erroneous regulations & continued commoditization.
- People doing a poor job and making everyone else look bad.
- Sustainable training of subs. Real estate bubbles in urban areas.
- That is will be dominated by more progressive thinking foreign government supported companies.

- The North Carolina Home Builders Association not seeing the value of our industry. They are a strong lobbying organization and do not seem to understand the importance of the high building performance industry.
- Running out of work
- Implementing sustainable practices in remodeling situations.
- It seems quality inspections don't matter to builders anymore. You do the right thing and builders fire you for being "difficult to work with" instead of seeing value in quality work. Also, builders using a national model with only one trade. And of course, the market crash that will happen again at some point.
- Consistent quality among companies.
- Lack of critical thinking and education in new personnel
- The desire of our next generation of young people wanting to continue and take our trade through to prosperity and the pride of the trade
- Republican-controlled state senate that absolute despises energy efficiency
- Not including energy efficiency and renewable energy enough
- Burdensome government interference
- Making sure there are enough workers to meet the job demand
- Affordability
- The lack of consistency, enforcement, and urgency to do better and provide a better product to the consumer
- Workforce development to advanced building performance methods.
- It seems to be booming a little too fast right now. I think a recession is pretty scary.
- Unskilled labor including at the project manager level.
- People to fill positions as others retire out.
- Lack of new single family construction. Access to multifamily and commercial energy rating opportunities.
- Misinformation and false claims
- Politics
- the lobbying power of dumb residential builders.
- workforce shortage
- over regulation
- stormwater
- lack of educated and willing employees. Someone still has to get dirty.
- 6 year building code cycle hurts opportunity to educate builders and costs consumers \$\$\$
- Rising cost coupled with rising interest rates and lack of viable labor force and no improvement in site.
- Lack of renewables in predesign, present design, post design of new buildings everywhere.
- Training/keeping up to date with the most current information.
- Government (local, state and federal) that do not understand the importance of energy code, energy efficiency and the impact it has on new and existing buildings.

- Large Companies controlling the market

7) List any ideas you have for how NCBPA could support your company and others like it in lowering the cost of doing business. Please specify your business type in your comments.






Responses:

- Health insurance. Is doing a group possible?
- Encourage allies such as electric cooperatives and utilities to provide information relating to geothermal, how to get it (list of dealers), why it is needed. Point to any programs they have (rebates, pre or post inspections, etc). If there are no programs, the smaller electric cooperatives can at least offer listings of qualified geothermal contractors in their area and point to banks who have energy loans.
- Make codes clear and easy to understand and comply with.
- HVAC: Marketing initiatives. If we could pool our together and have a TV or radio ad we could all share and use. Like some of the Trane ads that have call ABC HVAC at the end.
- Equipment manufacturer. Outreach is always helpful through sharing and co-writing articles and videos.
- Educating homeowners on the importance of an educated architect and our role in designing a high performance building.
- Provide a unified NC voice relating to RESNET changes and their impact to our businesses. HERS Rating business
- Government support of apprenticeships for businesses that provide training. It takes time and is a drain to each new staff.
- I believe the NCBPA is on the right track in supporting the HERS Rater industry. Continue to lobby the NCHBA and NC legislation to educate and inform them that we can have an added value to the new home construction industry. As far as lowering cost, purchasing power for the few supplies required for Raters would be helpful.
- Cut pricing of materials
- My firm is involved in residential remodeling. Bottom line...it seems remodels take a bit of a back seat, with regard to perspective, when it comes to implementing sustainable practices in the industry. It is understandably easier to apply sustainable practice to new builds, but remodels really should be on an equal playing field when it comes to implementation and consideration. Given the quantity of the existing housing stock and their state, and given the inherent difficulty of applying sustainable practice to that stock, there should still be as much, if not more, energy and attention given to the 'remodeling' segment of our industry. Please understand that I recognize that some attention is given and remodeling is addressed to a degree, it's just that myself, and many others within the remodeling industry, feel more could be done to bring the remodeling segment more to the forefront, to make new builds and remodels equal in consideration with respect to regulation, laws, benefits.
- More cross promoting with sponsorship's and different events. You guys are great though and we are thankful for the partnership!

- Working with the Community College system to develop critical thinkers and industry entry-level personnel.
- Somehow Invest more time and resources to promote the trade. Maybe through trade high school development, for the young men and women not having a real desire for a college education after high school. I believe this could be a true life moment for these young people. And give all the trades a resource to help the schools, by offering a possible way for them to have a real chance for their future and prosperity. This would, I believe help to fill some of the shortfall of the lack of interest for the trades, as a whole.
- We are a HERS rating company. Honestly, it would be difficult to lower our cost of doing business since it is primarily driven by our labor costs. We don't have enough employees for this to be a major factor.
- Promote policy that promotes sustainable buildings
- Since we're an organization that helps advocate for energy efficiency, we just need to keep working with NCBPA and stay aligned on mission values/objectives
- Your company has been great promoting our products and solutions to the market, and we continuing to work on different ideas to expand and educate the market.
- We are such a small building company I'm not really sure what we could be helped with. Maybe just overall public awareness.
- Building Science Consulting for residential and commercial buildings. Lobby for universal healthcare. Otherwise our costs are reasonable.
- I am eager for the existence of North Carolina Technical Reference Manual for deemed savings measures so I can transition my grant-funded program towards a self-funded weatherization program supported through utility cost recovery money (aka rebates).
- put everything you can out there about how the value of the first dollar spent is peanuts compared to the long term dollars spent on a building or home. it isn't about how cheap the builder can build it, but how well it performs because you are the end user and a few dollars now is way cheaper than many more down the road
- speed review process for development
- reduce stormwater requirements
- Change hearts and minds on what we do. Promote the trades! Make people understand that comfort and efficiency can be one and the same, but you must understand comfort has a price tag, and make the buy in somehow.
- Let businesses know they need to build solar ready roofs for a carbon neutral future.
- Our insurance costs accounts for the majority of our costs of doing business. Lowering the insurance costs would help.

Section 3 - Workforce Development

8) Is your company having difficulty finding and retaining entry-level works related to building performance trades? What about for more experienced workers? Select all that apply.

Answer	0%	100%	Number of Responses	Response Ratio
Yes to entry-level workers			13	14.2%
No to entry-level workers			4	4.3%
Yes to more experienced workers			12	13.1%
No to more experienced workers			5	5.4%
Other (View all)			6	6.5%
No Responses			50	54.9%
		Totals	91	100%

Comments:

- The HVAC dealers I call on tell me it is hard to attract good service people who have good skills.
- Entry Level is easy. They don't usually want to stay. Installation folks seem to be easy. Service is hard to find.
- It doesn't let me select all that apply, but I would select "yes to entry level" AND "yes to more experienced workers"
- Not many experienced Raters to meet the demand of quality inspection or testing. this hinders our industry.
- We struggle to find good talent that are entry level and experienced. If we do find good talent, we struggle to keep them for a long time lately. It seems students out of college don't know what they want and decide to move West or are still trying to find themselves and we are just a stepping stone. We've been trying to be more strict with our search and find ways to provide value in staying with us. Most reasons aren't because they aren't happy with the company, they just want a life change
- In the Asheville area there is a low unemployment rate. Finding people to work in attics and crawlspaces is hard. Finding workers is one of our barriers to growth.
- Hard to find instructors for what the state will offer putting the burden on the industries who are not set up to train properly and effectively.
- You make this survey too long and won't let me use more than one answer per unit
- We have wanted to hire a summer intern for a few years, and have not had much luck finding someone to work over the Summer in this industry.
- WE do not have an issue, but our insulation contractors are having a major issue with labor, and more so in the framing industry
- I am a one person firm.
- It's hard to get helpers to stick around more than a couple of years. We even give good benefits and good pay. We haven't looked for more experienced help recently.
- We use volunteers and subcontract skilled labor.

- Need all levels, but techs are hard to come by.
- Our trades are able to hire the type, amount, or level of employee we need for the process to move at speed and cost the market will tolerate long term.
- Looking to grow but can't without experienced staff to cover a larger number of projects.

9) Do you plan on hiring new employees over the next 12 months? 3 years? 5 years?

Answer	0%	100%	Number of Responses	Response Ratio
No			10	24.3%
Yes - 12 months			26	63.4%
Yes - 3 years			12	29.2%
Yes - 5 years			7	17.0%
Other			0	0.0%
Totals			41	100%

Comments:

- Business is good and I am forecasting an increase in business.
- We will continue to hire as we continue to grow and expand to other markets. We would love to decrease our turnover (it's only been high recently) but we hope growth continues so we can help provide more jobs in our industry.
- Summer intern, primarily.
- Although more project management positions as opposed to building science positions.
- We will probably keep size of the company the same and just replace workers as needed.
- Possibly sooner.




10) Where does your company have the most success finding qualified employees?

Answer	0%	100%	Number of Responses	Response Ratio
Current employee referrals			16	44.4%
Online job site			4	11.1%
Your company's own website			7	19.4%
High schools			0	0.0%
Colleges or Universities			9	25.0%
Local job placement resources			3	8.3%
Other (View all)			10	27.7%
Totals			36	100%

Comments:

- These referrals are often construction managers that work for builders.
- App State is a great school for finding quality talent with a background in our industry. Local Colleges, LinkedIn, the NCBPA job board site, and referrals are where most of our employees come from.
- Had very good luck recruiting from the local community college.
- A listing there gets us lots of resumes.

11) About what percentage of your company's workforce is made up of entry-level workers (less than 3 years' experience)?









Answer	0%	100%	Number of Responses	Response Ratio
0%			9	9.8%
1 - 25%			19	20.8%
26 - 50%			5	5.4%
51 - 75%			3	3.2%
76 - 100%			1	1.0%
No Responses			52	57.1%
Totals			91	100%

Comments:

- I have remained a one person company due to a lack of qualified personnel for any expansion.
- Installation I have more qualified people. Service not so much. For example, install experience more than 3 years is more like 51 to 75. Service Technicians 1 to 25%.
- There's only 3 of us in the field. Our newest employee has been with us for 5 years.

12) Rank the largest barriers your company faces related to hiring entry-level employees.

1 = Largest Barrier

Answer	1	2	3	4	5	6	7	8	Number of Responses	Ranking Score*
Lack of required technical skills/certifications									26	2.9
Lack of basic career competencies									26	3.3
Failure to meet minimum education requirements									26	5.1
Drug test failure									26	6.9
Background check failure									26	5.8
Budget issues									26	4.7
Transportation-related issues									26	4.8
Finding eligible candidates to interview									26	2.5

Comments:

- We really don't have a problem finding people when we need them.
- Lack of the right personality for dealing with the public.
- Our biggest issue is keeping entry level employees for longer than 6 months to a year. As mentioned previously, they aren't really sure what they want to do with their lives which causes them to leave for various reasons, usually moving out of state.
- The few qualified applicants are so in demand that the cost for their positions is increasing dramatically and are not areas that can sustain that cost long term. A lot of those being hired may be the first cut when things slow down/stabilize as they are being paid above the reasonable value that can provide long term in the position in a more typical marketplace.

13) Rank the following barriers your company faces from biggest to smallest related to hiring more experienced employees. If something else, enter in the Comments.

1 = Biggest Barrier

Answer	1	2	3	4	Number of Responses	Ranking Score*
Compensation or benefits issues					28	2.4
Workplace conditions (physical labor requirements, etc.)					28	2.9
Finding eligible candidates to interview					28	1.9
Being able to offer professional growth opportunities					28	2.8

Comments:

- Experienced employees do come with a higher pay expectation that we may or may not have the budget for. Especially for an entry level type role which is difficult to pay a high level salary for when it isn't difficult work. Also finding candidates that are experienced that are interested in the position we are usually hiring for.

14) Select the general job roles your company has difficulty hiring for or retaining employees in. Select all that apply.

Answer	0%	100%	Number of Responses	Response Ratio
Residential energy/performance crew member			15	45.4%
Commercial energy/performance crew member			3	9.0%
Residential energy/performance crew lead/supervisor			6	18.1%
Commercial energy/performance crew lead/supervisor			2	6.0%
Sales or business development			4	12.1%
Advertising or marketing			1	3.0%
Office or administrative			1	3.0%
Design or planning			4	12.1%
Highly technical roles (advanced HVAC, automation, etc.)			7	21.2%
Traditional trades (HVAC, plumbing, electrical, carpentry etc.)			10	30.3%
Other (View all)			6	18.1%
Totals			33	100%

Comments:

- As a builder we sub-contract more work than we hire. But, have had trouble finding general labor positions and field supervisor positions--someone with carpentry experience who can supervise field work. I can generally train those people on the energy side. However, finding trades such as insulation that are reliably trained in grade I batt work is very hard. Finding HVAC trades that are Energy Star Certified and deliver reliable work--the same quality level every time--is hard.
- Mechanical trades appear to be the worst by far.

15) What credential or certification does your company value the most when hiring workers?

- College Degree (BA, BS, etc.)
- “Good character”
- On-the-job experience

Additional responses included:

- NATE, BPI RESNET HERS/RFI, AIA, CSI, Green Verifier, High School Diploma, Technical College Degree and others.

16) Rate your level of interest in hiring an Apprentice for a 1 - 3 year term through an established program, if one were to be made available to you.

1 = No Interest , 2 = Little Interest , 3 = Some Interest , 4 = Strong Interest


	1	2	3	4	Number of Responses	Rating Score*
					36	2.8

Comments:

- Love the idea, but it doesn't take 1-3 years for an apprentice to be competent in our line of work.
- Have discussed with a local C College.
- Tell me more :)
- Could be useful, but hesitant to train someone for 1-3 years, only to have them become competition after they leave.

17) Rank your preferred method for obtaining required or desired continuing education units or training.

1 = Most preferred

Answer	1	2	3	4	5	Number of Responses	Ranking Score*
Webinar						31	3.0
In-person classroom workshop						31	2.5
In-person field workshop/tour						31	2.8
Online self-paced course						31	3.2
Conference						31	3.5

Comments:

- Indifferent. I find all valuable depending on the learning style of attendee.
- Webinars and workshops are nice since they can be done in or near the office. Conferences are nice for the networking opportunities and getting all the learning units knocked out all at once.

Section 4 - Architects and Designers, Builders and Developers

18) What's your level of knowledge or comfort with the following design and/or planning topics related to energy efficient, green and high performance homes?

1 = None at all , 2 = Not very much , 3 = Neutral , 4 = A little , 5 = A lot

Answer	1	2	3	4	5	Number of Responses	Rating Score*
NC's new minimum code requirements starting Jan 1, 2019						28	3.2
Most popular or best certification programs to use						28	3.6
How to assess field effectiveness of your design elements						28	4.1
What design elements save the most energy or contribute to high performance/green						28	4.4
When to involve specialized contractors (HVAC, HERS Rater, etc.)						28	4.2

19) Rate your level of support for the development of a 1 - 1.5 day Green Appraiser training specific to NC that would, ideally, increase the number of certified Appraisers that are knowledgeable of energy efficient, green or high performance homes. (Note: Through the current 5 day national training program available, there are just 2 certified Green Appraisers in NC)

1 = No Support , 2 = Little Support , 3 = Some Support , 4 = Strong Support

Answer	1	2	3	4	Number of Responses	Rating Score*
					27	3.4

Comments:

- This would be great. It may not be as useful in urban areas where people are already doing some of this--rural areas where green is less common might benefit more--but still, really can't hurt.

20) Do you feel that your company is prepared to meet NC's new building and energy code requirements starting on January 1 of 2019?

Answer	0%	100%	Number of Responses	Response Ratio
Yes			15	16.4%
No			3	3.2%
What new code?			3	3.2%
Maybe			4	4.3%
Other (View all)			2	2.1%
No Responses			64	70.3%
Totals			91	100%

Comments:

- Whatever it will be we are already certified by EnergyStar.
- I haven't received the books yet. I'm not 100% sure about what changes will be implemented.
- I am concerned about losing RESCHECK as a compliance tool.
- Need a good summary of changes to the NC Commercial and Residential Code.

21) If you work with any of the following contractor types, please select how important you feel it is for those trades to have industry-recognized certifications or credentials.

1 = No Importance , 2 = Little Importance , 3 = Some Importance , 4 = Strong Importance

Answer	1	2	3	4	Number of Responses	Rating Score*
Crawlspace Contractor					26	3.2
Insulation Contractor					26	3.4
HVAC Contractor					27	3.8
Home Energy Rater					27	3.9
Home Performance Contractor					26	3.5

Comments:

- Our industry is lacking knowledge from various trades. We consistently train and still have issues with trades not knowing what they are doing. Turnover is a part of that I'm sure.
- Certifications don't seem to be the problem. It is ignorance and cutting corners. A certification program is not going to fix that.
- Most home performance contractors should also be licensed GC under the NC requirements. Crawlspace and insulation contractors are covered by the licensed GC on the project. GC license is required for all jobs over \$30,000 and permits required for all jobs over \$15,000.

22) Do you have an internal quality control and/or quality assurance process, program or dedicated staff?

Answer	0%	100%	Number of Responses	Response Ratio
Yes			17	18.6%
No			7	7.6%
Sort of			2	2.1%
Other (View all)			1	1.0%
No Responses			64	70.3%
Totals			91	100%

Comments:

- At our factory.
- Internal QC.
- I am that dedicated staff, that's why I have HERS certification though I am employed by a builder and don't do ratings myself. I inspect insulation, air sealing, and HVAC prior to the actual HRS Rater.
- No dedicated staff but process in place.

23) What value do you place on the role of a third-party verifier of parts of your work, such as a Home Energy Rater for insulation, HVAC and other energy and performance-related inspections?

1 = No Value , 2 = Little Value , 3 = Some Value , 4 = High Value






Answer	1	2	3	4	Number of Responses	Rating Score*
					28	3.3

Comments:

- I currently have BPI Certification however, I would be willing to pay a third party to test my work. For reasons, of non-biased, more convenient for us, and more consumer confidence.

- Even with our internal process, the third party is what gives clients, lenders, and appraisers additional assurance.
- They know very little about the impact high efficiency fireplaces & stoves can have on lowering home heating expense so do not have those appliances in their consciousness to recommend to meet client needs.
- It's what we do.











24) Do you support requiring third-party whole house air leakage testing (essentially, a full HERS rating along with duct testing) in a future version of NC's residential code?

Answer	0%	100%	Number of Responses	Response Ratio
Builder - Yes			10	10.9%
Builder - No			1	1.0%
Other Contractor - Yes			10	10.9%
Other Contractor - No			3	3.2%
Other (View all)			3	3.2%
No Responses			64	70.3%
Totals			91	100%

Comments:

- Yes I support 3rd part whole house air leakage testing.
- Absolutely, such a poor job is being done now. Most companies are marking a sheet for compliance without actually testing.
- I do support 3rd party testing.
- This will only work if code officials are trained to understand it's an option.
- Need to allow for less tight natural draft mid efficiency fireplaces.
- Absolutely.
- Do not want builder or other sub (ie insulation contractor) testing, needs to be third party. No foxes in the hen house.

25) What parts of energy efficient, green or high performance construction does your company struggle with?

Answer	0%	100%	Number of Responses	Response Ratio
Material selection			2	7.6%
Quality installation			15	57.6%
Moisture management			7	26.9%
Design			2	7.6%
Meeting code requirements			1	3.8%
Meeting program certification requirements			3	11.5%
Knowledgeable subcontractors			14	53.8%
Return on investment			9	34.6%
Obtaining a fair appraisal			14	53.8%
Other (View all)			1	3.8%
Totals			26	100%

Comments:

- We can model potential energy savings, but how much do various design decisions that lead to those savings cost?

- We disagree slightly with ventilation requirements on some of the certification programs. We are good with the Duke RNC rebate program though.

26) Of the energy and performance issues listed below, what do you believe to be the top cause of call-backs in the homes that you build?

Answer	0%	100%	Number of Responses	Response Ratio
Comfort issues			4	4.3%
Water or moisture issues			5	5.4%
High utility bills			1	1.0%
Malfunctioning appliances, devices or equipment			4	4.3%
User/operator error of thermostat, devices, etc.			3	3.2%
Other (View all)			6	6.5%
No Responses			67	73.6%
Totals			91	100%

Comments:

- Use of proper finishing materials.
- Mini splits are great or break all the time - which is it! And, humidity! How do you effectively manage it! Fresh air, how do you manage in conjunction with humidity?
- High efficiency fireplaces must be finished with recommended materials to avoid heat related reactions with certain materials.

27) Does your company plan to use the new Energy Rating Index (ERI) option (essentially a HERS Rating) to obtain energy code compliance when it becomes available in January?

Answer	0%	100%	Number of Responses	Response Ratio
Yes			5	5.4%
No			3	3.2%
Maybe			9	9.8%
What's an ERI?			4	4.3%
Other (View all)			2	2.1%
No Responses			67	73.6%
Totals			91	100%

28) What, if anything, is your company doing to address issues related to a lack of available skilled labor?

Responses:

- We provide training for HVAC service and installers, "GeoLink" training for designers of geothermal systems. We are working on online training for our dealers.
- I've been hiring, training, and promoting. A good majority get trained and leave for big city higher paying jobs.
- Training the individuals we hire
- We invest in lots of training for new inexperienced team members
- Trying to give our subs steady work and trying to hem our clients into sticking with standard things instead of custom things to make everyone's job easier. Trying to treat subs well by

getting good ones who hear our standards, can meet them, communicating well, and not shopping around once we get people who serve us well. Trying to offer training and feedback to batt subcontractors in particular, using both honey and vinegar but mostly honey to try to appreciate the heck out of them doing grade I after I've had to make them rip it out and do it again.

- Seeing about providing training to a more advanced level of entry level person to our industry.
- As a Rater, spending more time inspecting installs and working with trades to improve. This is costly in doing business and often hard to charge builders for this additional work.
- Continuous training for trades and internal training.
- Education and synergy with local schools
- We have dedicated fund and resources to trade schools and education
- So far we are ok. One of our partners is involved with a work force development committee at our local ABHBA.
- We conduct free workshops whenever possible to help educate
- Some local High School interaction to promote jobs that are available in the electric utility industry.
- self training
- Hiring multiple interns with little to no experience and training them. Last four hires have been interns out of two year tech programs that then turned to full time employees.
- Assisting Ryan and NCBPA with workforce development.





29) List any energy efficient, green or high performance features or products that your company sees as being innovative in the NC market.

Responses:

- Geothermal is a proven renewable energy product which on the long run offers the best savings. In addition, geothermal adds to durability, comfort, and even the health of the home owners. The loop will last over 100 years and typical geothermal equipment will last over 23 years.
- Newer High Performance glazings
- I like air sealing, crawl sealing, and VRF choices. Variable Refrigerant Flow.
- Nothing observed is "innovative." What exists is all practical and logical
- Solar
- Energy Star for Homes, Green Built NC Homes.
- Renaissance Rumford-www.renaissancefireplaces.com
- RSF Energy High Efficiency Woodburning Fireplaces
- Mendota High Efficiency Gas Fireplaces
- Ortal High Efficiency Gas Fireplaces
- Modern Wood or Gas Burning Stoves

- ventilation and humidity control. I think we do a poor job in understanding the V in HVAC. contractors and builders are not willing to design, install, and pay for proper whole house ventilation which had a huge impact on building performance.
- Save the Polar Bears! All the above.
- water saving toilets and fixtures, exterior foam insulation for walls like ZIP R wall
- We have several air sealing solutions, Buried ducts, and high performance walls
- Heat pump water heaters, ZIP system, too many to list.
- Possibly installing a charging station for electric cars on the property.
- all MaxLife products!!!



30) In your experience, do energy efficient, green or high performance home certification programs result in faster, easier or more profitable sales?

Answer	0%	100%	Number of Responses	Response Ratio
Yes			10	10.9%
No			3	3.2%
Maybe			8	8.7%
Other (View all)			4	4.3%
No Responses			66	72.5%
Totals			91	100%

Comments:

- It will gain traction once it becomes a cornerstone for the housing market.
- it's harder to answer that in the custom home sector than in the spec home sector. Yes, custom home clients still value green, but they tend to exert more control over how their dollars are spent and sometimes what they want to do doesn't line up with a certification and they care about what they want more than the certification. Still more try to rationalize out of paying for certification--but quite a few do admit to me that they regret it later if they do that.
- and in terms of comfort for efficient appliances and building methods.
- Only if marketed correctly. Big weakness in our industry.
- I hope so
- I should if you educate your sales staff correctly on how to sell the importance
- I think it depends on the market. In the city of Asheville, yes. In surrounding Buncombe county, less so.






31) Compared to traditional design, materials or construction techniques, generally speaking what percentage of additional cost do you feel your customers are willing to pay for upgrades to energy efficient, green or high performance?

Answer	0%	100%	Number of Responses	Response Ratio
Less than 5%			7	7.6%
5 to 10%			11	12.0%
11 to 15%			2	2.1%
16 to 20%			0	0.0%
More than 20%			1	1.0%
Other (View all)			2	2.1%
No Responses			68	74.7%
Totals			91	100%

Comments:

- Less than 5 would be ideal and up to 10 for a specific type of project and Owner.
- In general home buyers are willing to spend more money on design rather than energy efficiency. Sometimes we see that a homeowner will not question the expense of a marble floor, but complain strongly about the expense of an HVAC system (which is not seen).
- Really depends on the market segment--custom is going to have more people willing to spend whatever it take on something thy really want. And on the thing. Clients are very willing to pay double for a tankless gas water heater, for instance, but less so to pay extra for something they aren't able to see as well.
- Generally we don't give people a non- EE option. That said, people are often adding a large PV array to our homes adding 5% to the cost of the build. And they are paying more for our homes than a code built home. But now more than a normal high quality custom. It's just different.

32) Looking ahead, does your company plan to incorporate the wiring or installation of renewable energy systems (solar PV), electric vehicle charging stations or energy storage systems in your new homes by 2024, the start of NC's next code cycle?

Answer	0%	100%	Number of Responses	Response Ratio
Yes			8	8.7%
No			7	7.6%
Maybe			4	4.3%
Other (View all)			3	3.2%
No Responses			69	75.8%
Totals			91	100%

Comments:

- wish! It gets value engineered out of every project. Clients want them, just don't want to pay for them. And, I am still concerned about installing them on roofs - every roof penetration is an opportunity for a leak!
- We already do solar PV for clients who want it, and speak to many clients about their solar PV options. Clients sometimes ask for extra PV for EV charging but we haven't actually done one yet. In custom we do what clients ask for.
- Already do those things, though we could do better.

Section 5 - Crawlspace

33) NCBPA is currently developing a crawlspace professional credentialing program that will offer a two-day educational workshop and ongoing support. What do you anticipate your level of interest being, either for yourself or your staff, in participating in the program?


1 = No Interest , 2 = Little Interest , 3 = Some Interest , 4 = High Interest

	1	2	3	4	Number of Responses	Rating Score*
					27	3.0

Comments:

- Sign me up.
- Crawl space improvements are always at the top of the list.

34) Do you have an internal quality control and/or quality assurance process, program or dedicated staff?

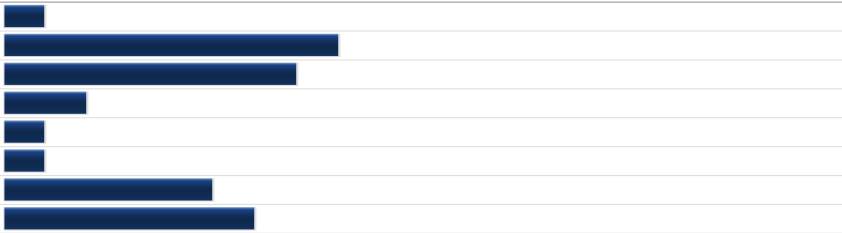
Answer	0%	100%	Number of Responses	Response Ratio
Yes			11	12.0%
No			7	7.6%
Sort of			4	4.3%
Other (View all)			3	3.2%
No Responses			66	72.5%
Totals			91	100%

35) What value do you place on the role of a third-party verifier of parts of your work, such as a Home Energy Rater for crawlspace inspections?

1 = No Value , 2 = Little Value , 3 = Some Value , 4 = High Value

	1	2	3	4	Number of Responses	Rating Score*
					22	3.0

36) What parts of energy efficient, green or high performance crawlspace contracting work does your company struggle with?

Answer	0%	100%	Number of Responses	Response Ratio
Material selection			1	5.0%
Quality installation			8	40.0%
Moisture management			7	35.0%
Termite inspection gap			2	10.0%
Meeting code requirements			1	5.0%
Meeting program certification requirements			1	5.0%
Proper use of insulation			5	25.0%
Other (View all)			6	30.0%
Totals			20	100%

Comments:

- Competition.

- We haven't done a crawlspace in a while, we've just ended up on slabs or basements in most previous builds. We currently don't have a dedicated sealed crawl contractor and would have to find one if we had a crawlspace job.
- There are many companies doing inferior installations.

37) What suggestions do you have for building or energy code changes in new homes?

Comments:

- Air exchanger systems as structures become more airtight.
- Minimum efficiency standards for gas burning appliances to reduce gas usage and therefore the negative environmental impact of fracking.
- Removal of rating penalties for biomass burning appliances. If we are going to ignore the environmental impact of release of the most potent greenhouse gas-methane from fracking, then we should be able to handle the minimal particulate emissions from today's advance burn technologies that have garnered positive reaction from EPA.
- Ventilation requirements and sealed crawl spaces should be code.
- Encapsulated crawlspace requirements.
- Minimum blower door requirements.
- Education is the key, and we are a resource to help educate the industry
- Add Blower Door test along with Duct Blaster Test. Also, Nest or Ecobee thermostats should be a standard item.

38) What suggestions do you have for building or energy code changes in existing homes?

Comments:

- Upgraded HVAC systems when replaced, additional attic insulation rebates.
- How do you deal with historic homes with no sheathing on the exterior wall (no air barrier) while maintaining the historic character.
- Improve insulation to standard
- Promote fireplace doors on open burning fireplaces as was once a part of the building code in NC. I wonder why it was eliminated?
- Encourage as possible old fireplace and stove change outs to new high efficiency wood or gas burning appliances.
- Minimum 15 SEER or 8.7 HSPF heat pumps in HVAC retro.
- Blower door tests required upon the sale of a home.
- Education and safety
- Add new thermostats.
- Requiring contractors to pull permits for crawlspace retrofits.






39) Do you support requiring a permit when retrofitting existing homes from vented to encapsulated crawl spaces?

Answer	0%	100%	Number of Responses	Response Ratio
Crawlspace Contractor - Yes			5	5.4%
Crawlspace Contractor - No			1	1.0%
Other Contractors - Yes			8	8.7%
Other Contractors - No			3	3.2%
Other (View all)			4	4.3%
No Responses			70	76.9%
Totals			91	100%

Comments:

- I think this would increase the cost and time to do this, which is already high enough to be a barrier to keep people from doing it when they should do it.
- Closed CS that I see are pretty good, I'm not sure that a code inspector would make that any better - certainly not more affordable.
- Yes whoever is doing the work.

40) Are you generally supportive of establishing a pathway over the coming years for crawlspace contractors to be licensed by a regulatory authority in the state?

Answer	0%	100%	Number of Responses	Response Ratio
Crawlspace Contractor - Yes			7	7.6%
Crawlspace Contractor - No			1	1.0%
Other Contractors - Yes			6	6.5%
Other Contractors - No			4	4.3%
Other (View all)			3	3.2%
No Responses			70	76.9%
Totals			91	100%

Comments:

- I'm unsure about this overall, but lean towards no.
- For sealed crawlspaces
- Should have GC license

41) If interested, describe the best case scenario you envision, or have experienced, for someone new coming into NC's crawlspace contracting industry and becoming an owner/operator of their own company over time. What does the ideal career path look like?

Comments:

- Energy Auditor Certification first
- One year of auditing experience and one-year of weatherization experience
- Then certification as crawlspace contractor
- At least a year working in a crawlspace.
- I believe besides being educated that you should have some level of experience of actually performing the work. A one year minimum.

Section 6 - Insulation

42) Rank the types of insulation that your company uses the most (by jobs or projects) in North Carolina homes.

Answer	1	2	3	4	5	Number of Responses	Ranking Score*
Cellulose						18	3.2
Fiberglass						18	1.9
Spray Foam						18	3.1
Hard Board						18	3.2
Mineral Wool						18	3.6

Comments:

- Fiberglass #1 In our units we offer Spray Foam in one single product line which is kept outdoors
- We use SPF in roof, fiberglass in walls, with XPS continuous insulation. We don't use cellulose or mineral wool.
- We do not do spray foam because of the off-gassing issues.
- WE only sell Mineral, Fiberglass, and XPS foam
- Mainly fiberglass for walls ceiling. Rigid foam for slabs and footers. Spray foam only if we have to. Don't use the rest much.
- Mostly SPF

43) Do you have an internal quality control and/or quality assurance process, program or dedicated staff?

Answer	0%	100%	Number of Responses	Response Ratio
Yes			10	10.9%
No			5	5.4%
Sort of			6	6.5%
Other			0	0.0%
No Responses			70	76.9%
Totals			91	100%

Comments:

- In our factory.
- As a HERS rater working for a builder, I am the internal quality control of the insulation work.

44) What value do you place on the role of a third-party verifier of parts of your work, such as a Home Energy Rater for insulation inspections?

Answer	1	2	3	4	Number of Responses	Rating Score*	
						20	3.5

Comments:

- We certify all houses to Energy Star, and use "this is an energy star house" as a way to hold insulation subcontractors accountable and offer training/guidance on grade I.
- With the Duke RNC program a HERS rating and inspection is very valuable. And it's a good practice. It also is good evidence for that builder energy efficient home tax credit.

45) What parts of energy efficient, green or high performance insulation does your company struggle with?

Answer	0%	100%	Number of Responses	Response Ratio
Material selection			1	5.5%
Quality installation			7	38.8%
Specific problem areas (foundation, crawl, corners, etc.)			8	44.4%
Knowing when to use manufacturer vs. other guidelines			4	22.2%
Meeting code requirements			3	16.6%
Meeting program certification requirements			2	11.1%
Other (View all)			4	22.2%
Totals			18	100%

Comments:

- If code requires r-30 roof, then how is 5" of open cell foam allowed as it is not R-30. Where does the code say that is allowed? Not saying it isn't the same performance, just want to know where the code says it is allowed.
- Not when it comes to insulation
- batt grade I quality.

46) Do you feel that minimum code requirements should be developed and implemented for closed attics in single family homes?

Answer	0%	100%	Number of Responses	Response Ratio
Yes			18	19.7%
No			0	0.0%
Maybe			0	0.0%
Other (View all)			2	2.1%
No Responses			71	78.0%
Totals			91	100%

Comments:

- We don't do spray foam but we are dealing with the mold and moisture that foamed attics create. Spray foamed attics need to be conditioned. Foam companies don't tell the homeowners that. Requirements would be good.
- There should be an air leakage standard for closed attic systems. I think a prudent company would elect to test but nobody I know does.
- There will be a difference needed between climate zones and coastal locations

47) What suggestions do you have for building or energy code changes in new homes?

Comments:





- Insulation to standards
- can supply air in sealed attics be allowed or even required by code? Right now it's a building science best practice but hard to do without getting building inspectors nervous.
- All attic areas should have a minimum of 14 inches of blown in insulation. This allows for settling.
- Also, I would like to see some form of induced fresh outside air into the HVAC system.

48) What suggestions do you have for building or energy code changes in existing homes?

Comments:

- Insulated to current standards
- Replace ductwork when HVAC unit is replaced if ductwork is more than 15 years old.

49) Are you generally supportive of establishing a pathway over the coming years for insulation contractors to be licensed by a regulatory authority in the state?

Answer	0%	100%	Number of Responses	Response Ratio
Insulation Contractor - Yes			6	6.5%
Insulation Contractor - No			0	0.0%
Builder or Other - Yes			7	7.6%
Builder or Other - No			4	4.3%
Other (View all)			2	2.1%
No Responses			72	79.1%
			Totals	91
				100%

Comments:

- Training is good, but I'm not sure how licensing helps accomplish that in the real world.

Section 7 - Home Energy Ratings

50) Are you interested in becoming ICC certified in order to perform energy code inspections as a subcontractor to code officials/municipalities?

Answer	0%	100%	Number of Responses	Response Ratio
Yes			10	10.9%
No			8	8.7%
Maybe			7	7.6%
Other (View all)			1	1.0%
No Responses			65	71.4%
Totals			91	100%

Comments:

- Potentially, depending on compensation. I don't hold out hope that it will pay well enough to take on.

51) Does your rating company plan to offer Energy Rating Index (ERI) services to builders seeking that option for energy code compliance when it becomes available in January?

Answer	0%	100%	Number of Responses	Response Ratio
Yes			7	7.6%
No			4	4.3%
Maybe			4	4.3%
What's an ERI?			2	2.1%
Other (View all)			1	1.0%
No Responses			72	79.1%
Totals			91	100%

Comments:

- I don't anticipate much interest, but we will offer it.
- Definitely.

52) Are you generally supportive of establishing a pathway over the coming years for Home Energy Raters to be licensed by a regulatory authority in the state?

Answer	0%	100%	Number of Responses	Response Ratio
HERS Rater - Yes			13	14.2%
HERS Rater - No			3	3.2%
Builder or Other - Yes			2	2.1%
Builder or Other - No			2	2.1%
Other (View all)			3	3.2%
No Responses			68	74.7%
Totals			91	100%

Comments:

- HERS Raters already have training requirements. I don't understand what state licensure adds to that except more cost and more hoops to jump through.

53) Are you aware of Duke Energy Progress' Residential New Construction rebate program available in the legacy Progress territory?

Answer	0%	100%	Number of Responses	Response Ratio
Yes			17	18.6%
No			6	6.5%
Other			0	0.0%
No Responses			68	74.7%
Totals			91	100%

Comments:

- Use it on ever job that is eligible.
- Oh yea!!
- LOVE this program. Hope it expands to all of Duke's territory.

54) If interested, describe the best-case scenario you envision, or have experienced, for someone new coming into NC's home energy rating industry and becoming an owner/operator of their own company over time. What does the ideal career path look like?

Comments:

- Do not under value what you do. The HERS rating industry is not a commodity like most other trades building new homes. Do not make this a race to the bottom in pricing.
- Working for a builder first, experiencing all the various phases of construction. Then, working for a HERS rating company both in the office and in the field, first assisting more experienced field people, then doing their own field inspections.

Section 8 - Whole Home Performance, Retrofits and Remodels

55) What support or resources do you feel is most needed for whole-home performance contractors to be more successful?

Comments:

- Funding and community education programs
- Minimal information about high efficiency fireplaces as I expect none exists currently.
- More education for consumers. Utility and government rebates like the solar industry gets.
- Right sizing of HVAC and proper ventilation
- reference materials
- case studies real world
- More customer knowledge, better trained and excited employees.

56) What suggestions do you have for building or energy code changes in existing homes?

Comments:

- Install new lighting and improve insulation to current standards
- Blower door/ energy audit required at the sale of the home.
- commissioning
- require PV as per California code
- Mandatory sealed crawl spaces when containing mechanical equipment.
- Require fresh air into all homes.
- Make them pull permits.

57) If interested, describe the best-case scenario you envision, or have experienced, for someone new coming into NC's home performance industry and becoming an owner/operator of their own company over time. What does the ideal career path look like?

Comments:

- On the job experience. BPI certification.
- train under several different trades and take your time.

Section 9 – Heating, Ventilation and Air Conditioning (HVAC)

58) How much of your company's business is comprised of the following types of HVAC systems?

1 = 0% , 2 = 1 - 25% , 3 = 26 - 50% , 4 = 51 - 75% , 5 = 76 - 100%

Answer	1	2	3	4	5	Number of Responses	Rating Score*
Code minimum traditional system (heat pump, furnace, etc.)						11	3.3
High efficiency traditional system						14	3.5
Geothermal system						12	1.7
Mini-split System						12	2.6

Comments:

- We used to be about 75% open loop geothermal using well water as heat source but started having lots of trouble both with wells and with the new geothermal units and inadequate tech support for them.

59) How comfortable are you working with the following types of HVAC systems?

1 = Not at all , 2 = Not very much , 3 = Somewhat , 4 = A little , 5 = Very comfortable

Answer	1	2	3	4	5	Number of Responses	Rating Score*
High efficiency traditional system						15	4.9
Geothermal system						16	3.4
Mini-split System						15	4.3

Comments:

- If there were an option for between "a little" and "very comfortable" for high efficiency traditional and mini-split I'd pick that. I'm not an HVAC contractor but I'm a building scientist working for a builder. I know a good bit, but man there is still so much to learn.

60) If geothermal is a part of your offerings, which brand do you prefer?

Comments:

- Varies.
- Bosch or Bryant.

61) Rate your outlook of North Carolina's geothermal HVAC market.

1 = Very weak , 2 = Somewhat weak , 3 = Neutral , 4 = Some opportunity , 5 = Lots of opportunity

	1	2	3	4	5	Number of Responses	Rating Score*
						15	2.7

Comments:

- It's great for very large homes. We don't build a lot of those.
- One development here- Olivette basically requires geothermal.

62) Do you have an internal quality control and/or quality assurance process, program or dedicated staff?

Answer	0%	100%	Number of Responses	Response Ratio
Yes			6	6.5%
No			5	5.4%
Sort of			3	3.2%
Other			0	0.0%
No Responses			77	84.6%
Totals			91	100%

63) What value do you place on the role of a third-party verifier of parts of your work, such as a Home Energy Rater for load calculations or duct testing?









1 = No Value , 2 = Little Value , 3 = Some Value , 4 = High Value

	1	2	3	4	Number of Responses	Rating Score*
					16	3.5

Comments:

- We do Energy Star on every home. That allows our HVAC contractor to do their own loads but with supervision--which is fine if they're confident in it--but has third party duct testing.
- We use a very small HVAC company (2 people) who are intimately familiar with our homes and have the loads nailed down without other help.

64) What parts of energy efficient, green or high performance HVAC design, install or service does your company struggle with?

Answer	0%	100%	Number of Responses	Response Ratio
Load calculations			1	7.6%
Quality installation			5	38.4%
Testing			2	15.3%
Product selection			0	0.0%
Meeting code requirements			3	23.0%
Meeting program certification requirements			3	23.0%
Using geothermal systems			6	46.1%
Using mini-split systems			2	15.3%
Other (View all)			2	15.3%
Totals			13	100%

Comments:

- We don't struggle with using mini-split systems per say, but I've learned that there is still a lot to learn about them. And getting reliability out of HVAC contractors (which relates to quality installation and meeting Energy Star requirement) can be tricky. When they're busy and send different crews out for each job, or even different crews out different days of the same job, it can require a lot of supervision to get consistency.

65) What suggestions do you have for building and energy code changes related to HVAC in new homes?

Comments:

- Third Party Verification
- The best systems available

- Mandatory mechanical ventilation.
- Require BPI or Resnet certified professional testing of duct and system etc.
- Secondary drains from equipment in crawls piped to exterior or secondary line safety required.

66) What suggestions do you have for building and energy code changes related to HVAC in existing homes?

Comments:

- Third Party Verification-- Also, companies be held accountable for selling equipment to unlicensed contractors.
- Improve to new insulated flexible ducting
- Acknowledging the impact that high efficiency fireplaces & stove contribute to heating needs and comfort.
- Mandatory mechanical ventilation.
- Require BPI or Resnet certified professional testing of duct and system etc.
- Secondary drains from equipment in crawls piped to exterior or secondary line safety required.

67) NCBPA is exploring an opportunity to become an ACCA Affiliated Chapter Organization to provide ACCA's education and policy resources to HVAC contractors in the state. If your company is not already a member of NCBPA, would this offering encourage you to join our association and participate in HVAC market development initiatives?

Answer	0%	100%	Number of Responses	Response Ratio
Yes			6	6.5%
No			4	4.3%
Maybe			3	3.2%
Other (View all)			2	2.1%
No Responses			76	83.5%
Totals			91	100%

Comments:

- I say yes even though I'm not an HVAC contractor because I feel like even I could benefit from some of that training. And it is hard to find ACCA certified HVAC contractors for Energy Star. If that were easier for them, there'd be more choices. More choices for me as a builder is a good thing.
- I am member of both and the marriage would be a good one!

68) Do you support changing the current residential code requirement that allows for HVAC Contractors to test their own duct leakage for new code to new language that requires an authorized third party to perform the testing?

Answer	0%	100%	Number of Responses	Response Ratio
HVAC Contractor - Yes			2	2.1%
HVAC Contractor - No			1	1.0%
Builder or Other - Yes			11	12.0%
Builder or Other - No			2	2.1%
Other			0	0.0%
No Responses			75	82.4%
Totals			91	100%

Comments:

- It's a must. It's not being completed currently. I mean the systems aren't being tested just checked off.
- I'm neutral, but lean towards yes.
- We'll keep getting a third party HERS rating either way but lets not drive cost up if we don't have to...
- I support the HVAC contractor testing their own only if they carry resnet or BPI BA certifications.

69) Do you support requiring residential HVAC load calculations to be submitted for inspection prior to obtaining a Certificate of Occupancy?

Answer	0%	100%	Number of Responses	Response Ratio
HVAC Contractor - Yes			5	5.4%
HVAC Contractor - No			0	0.0%
Builder or Other - Yes			7	7.6%
Builder or Other - No			3	3.2%
Other (View all)			1	1.0%
No Responses			75	82.4%
Totals			91	100%

Comments:

- I am torn. I think in theory this is a good idea, but don't see it working at all. I don't think building inspectors have the knowledge, and they're going to be leery to take on more responsibility. So they will just rubber stamp it. At CO, system already installed. The code technically requires HVAC calcs as part of permit set--though many jurisdictions don't enforce. I see other states enforcing that. That would be more effective, because before house is built, more useful to have.

70) If interested, please describe the best-case scenario you envision, or have experienced, for someone new coming into NC's HVAC industry and becoming an owner/operator of their own company over time. What does the ideal career path look like?

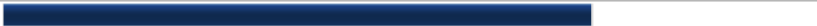




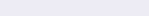
Comments:

- Technical background, people skills, strong understanding of business principles and cash flows. So, technical school. Sales training. 2 years of college for Business topics. Initial job as a service tech and grow from there to sales or business partnerships.

- If there were more training for building science for HVAC contractors, that would be really great.

Section 10 - Products & Services

71) What challenges do you face marketing and selling your products and services in our industry?

Answer	0%	100%	Number of Responses	Response Ratio
Reaching target customers			12	70.5%
Product availability			1	5.8%
Distribution challenges			0	0.0%
Competitive pricing			8	47.0%
Lack of technical product knowledge			1	5.8%
Other (View all)			3	17.6%
Totals			17	100%

Comments:

- Lack of public awareness.
- Side Job Bob.
- Lack of knowledge of products by specifiers such as Architects, Builders and increasingly Interior Designers.
- Making sure builders, developers, and architects understand the benefit of HERS ratings and green certifications.

72) Are there time or cost saving opportunities that NCBPA could support you on?

Comments:

- Training, educating, and advertising.
- Advertising to general public the benefits of energy upgrades and audits.
- Lunch and learns for builders new to HERS ratings, certifications, and financial incentives.

73) Would you be willing to offer purchase discounts or incentives to NCBPA member companies that buy, or would look to buy, from your company? If yes, please include your company name, your name and a phone number where we can reach you to discuss.

Comments:

- Several companies provided contact information to NCBPA – not shared here.