5.0 All-Tech Construction, Inc.

“...I think our company has always had a reputation for being the best at what we do in our market. We had achieved a record year in sales and profitability, but we also noticed some trends like our service calls that are increasing disproportionately. We felt that size and volume were creating problems.” Jalsa Urubshurow, President, All-tech Carpentry Contractors


On February 1, 2001, All-tech Carpentry Contractors became one of the first three framing contractors to be certified by the NAHB Research Center, Inc.

5.1 Company Profile

<table>
<thead>
<tr>
<th>Area served</th>
<th>New Jersey, New York, and Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of homes</td>
<td>Multi- and single-family homes, $175,000 to more than $1,000,000</td>
</tr>
<tr>
<td>Services</td>
<td>Carpentry contractor</td>
</tr>
<tr>
<td>Workforce</td>
<td>70 employees, 400–500 carpenters in contracted crews organized by phases of framing</td>
</tr>
<tr>
<td>Other</td>
<td>All crews are independent contractors, Stick-built construction</td>
</tr>
</tbody>
</table>

5.2 Benefits and Results

“We’re already feeling the success. We’ve had dramatically improved customer relations.” Jalsa Urubshurow, All-tech Carpentry Contractors

The NAHB Research Center, Inc., measured and analyzed business performance before and then one year after installation of the quality assurance system. The following areas showed significant improvements:
Warranty Callback Reduction

All-tech Carpentry Contractors has experienced a 60 percent reduction in warranty callbacks. The warranty items per home were tabulated for one year before implementation of the quality system and for the year after the quality system became operational.

Prevention of Quality Problems

Detailed framing inspections revealed a reduction in observed quality problems. Before implementation of the quality system, the project team made a detailed framing inspection of two homes. From the observations, the team identified a baseline of the ten most important quality issues.

One year after implementation, only two of the ten baseline quality issues were observed during detailed framing inspections of two homes in the same community. Eight of the ten original quality issues were not observed.

Builder field inspection records confirm a reduction of the ten baseline quality issues. The NAHB Research Center, Inc., reviewed the builder’s framing inspection records for seven homes in the same community. The builder inspections observed only one of the baseline quality issue in two homes. None of the other nine quality issues was evident.

The same builder’s corporate quality assurance specialists performed independent inspections of 16 homes in the same community over a period of three weeks. Only one of the original ten quality issues appeared in one home. None of the other nine quality issues was evident.

Improved Productivity

Despite escalating regional labor carpenter costs, contract pricing on renewed bids and profitability remained at current levels. In comparison, most recent U.S. Department of Labor\textsuperscript{11} cost data for carpenter labor increased by more than 7 percent.

Company management cites improved labor productivity as the main reason for cost containment. Productivity improvements have offset rising labor costs as well as any additional costs of operating the quality system.

**Builder Satisfaction**

Overall, builder satisfaction survey ratings rose from an average rating of 72 points in 1999 to 86 points in August 2000.

“One of our large customers does composite surveys...they’ll survey several projects that we’re on and come up with a composite score. Their evaluation of us had dropped before our involvement in the quality initiative with the NAHB Research Center...we had dropped into the mid-70s. This past winter we received 97 percent after we were involved in this program. It was a dramatic change.” Jalsa Urubshurow, All-tech Carpentry Contractors

K. Hovnanian, a large national home builder, awarded its 2000 Excellence Award to All-tech Carpentry Contractors for outstanding achievement.

All-tech Carpentry Contractors also received the SGS Communities 1999 Preferred Contractor Award for commitment to quality, delivery, and overall exceptional performance. SGS Communities is a New Jersey division of D.R. Horton, a national builder.

Pulte Delaware Valley Division awarded All-tech Carpentry Contractors its 1999 Contractor-of-the-Year Award. Pulte Corporation is a large national builder.

“We have seen significant improvement from our builder surveys, and our reputation for building a quality house has grown. I now have national home builders pursuing me, and I feel the program has definitely given me a competitive edge.”

Jalsa Urubshurow, All-tech Carpentry Contractors
“We’ve got really great, wonderful people. That’s how we were able to get to where we are in our market. I think that’s a common factor when I look around and see other successful framers and people who do what we do. It’s the people. It always is. A lot of companies, I think, forget that.” Jalsa Urubshurow, All-tech Carpentry Contractors

There has been more training of field personnel in the last year than ever before. Recent hotspot topics include

- framing details for top plate breaks in bearing walls;
- glue and nail decking for flush girders in TJI floor systems;
- vertical full sheets for exterior corner sheathing;
- tape measuring of the first row of roof sheathing; and
- 12-inch minimum bearing for double rim board over basement windows.

“The full effect of the quality program has yet to be realized. Since the certification program was completed on February 1, 2001, it is an ongoing process for which the benefits should continue to grow for us as a company and our builder clients.” Jalsa Urubshurow, All-tech Carpentry Contractors
5.3 Implementation of the Quality System

Before implementation of the system, All-tech Carpentry Contractors performed many of the activities required by the quality system. Therefore, implementation focused on formalizing the activities, performing them on a regular basis, and documenting results.

To establish the quality assurance system, the All-tech Carpentry Contractors operations manager and vice president of operations, K. Hovnanian (builder), and the NAHB Research Center, Inc., collaborated to provide a detailed quality plan.

A two-person team led the implementation of the quality assurance system. The operations manager adapted the system to the specific needs of the company. The vice president of operations was appointed as the company quality representative and led implementation of the system in field operations.

Appointment of a Quality Representative

Overall, the responsibilities of the quality representative did not change substantially. He was responsible for the quality of field operations and was a chief decision maker on field quality issues. He performed job audits on a regular basis as part of his normal duties. Now, field review observations are recorded on a form, whereas they were not documented before system implementation.

“We had an operations manager who actually was an ISO 9000 auditor, so that was very helpful. He joined us before this initiative. It is kind of interesting that that happened—it was a coincidence. We had hired this gentleman to be a manager of our operations; this initiative came along so we were able to let him focus on it. Plus one of our vice presidents of operations was assigned to the quality control project to take ownership of our involvement…. So here was a gentleman who knew operations; knew the system; was familiar with ISO 9000, coupled with our 25-year veteran of the industry who kind of led this into the field.”

Jalsa Urubshurow, All-tech Carpentry Contractors
Quality Statement

Among the first activities was formulation of a company quality statement that articulated the importance of quality to the organization and outlined the quality responsibilities of all employees.

The company president introduced the quality policy to area supervisors at a weekly production meeting. The area supervisors then reviewed the quality policy with each field crew at a weekly toolbox talk. The reviews brought together employees as well as independent contractors. Copies of the quality policy were inserted into the pay envelopes of all employees and included with payments to all independent contractors.

Alltech, Inc. Quality Statement

Alltech, Inc.’s quality statement is to be an innovative industry leader, totally committed to customer satisfaction, employee satisfaction, integrity and teamwork. We are committed to the workmanship quality, performance, and durability of all constructed products and strive to build all our homes defect free. To this end, we pledge:

- Compliance with applicable construction codes, regulations, safety requirements, and good workmanship practices.
- Contract requirements will be fulfilled in their entirety.
- All crews will work under the direction of an on-site qualified Supervisor.
- QA system policies and procedures will be followed at all times.
- Continual improvement toward the prevention of defects.

Quality is everyone’s responsibility. All employees have a personal responsibility to ensure their own safety and the safety of others. All employees have a personal responsibility for the quality of their work and to:

- Use only approved materials and construction procedures.
- Materials or equipment must be in good condition.
- Prevent potential problems that may adversely affect safety or quality.
- Stop work if conditions are unsafe.

Supervisors are responsible to ensure that:

- Employees are capable of performing assigned tasks.
- Work activities comply with approved materials.
- Only approved materials and equipment are used.
- Job inspection records accurately record job activity.
- Each job meets good workmanship practices, contract, code, regulatory, and quality system requirements.
- The builder is notified of any unresolved nonconformance remaining at the completion of the job.

____________________  ______________________
President               Quality Representative
____________________  ______________________
Date                    Date
Lists of Qualified Crew Foremen

It was common practice to assign crews to specific phases of framing based on demonstrated capabilities. The process was formalized by listing the names of the foremen and the types of crews they were qualified to lead.

<table>
<thead>
<tr>
<th>NAME</th>
<th>Crew Leader</th>
<th>Framing Crew Leader</th>
<th>Framing Foreman</th>
<th>Roof Truss Crew Leader</th>
<th>Roof Truss Foreman</th>
<th>Sheathing Crew Leader</th>
<th>Sheathing Foreman</th>
<th>Blockout Fascia Crew Leader</th>
<th>Blockout Fascia Foreman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luis A</td>
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<td></td>
<td>X</td>
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<td>X</td>
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<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fernando B</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Lenny B</td>
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<td>X</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>John C</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>Jeff C</td>
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<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>John C</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Rick C</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
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<tr>
<td>Felix G</td>
<td>X</td>
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<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Patricio G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fernando G</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>Tom H</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>Ladislav H</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>Khuyen I</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Qualified Foreman List

Lists of Standard Materials

Builder scopes of work and architectural drawings specify most materials. However, some clients do not have well-defined specifications. Accordingly, the quality representative compiled a comprehensive list of approved materials. Approved materials were specified at the lowest level of detail that produces quality results.

<table>
<thead>
<tr>
<th>Material/Equipment</th>
<th>Approved Use and Placement</th>
<th>Specification</th>
<th>Installation Method</th>
<th>Source of Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nail Guns</td>
<td>As Needed</td>
<td>Select make of choice. Guns may not be modified.</td>
<td>Manufacturers use instructions.</td>
<td></td>
</tr>
<tr>
<td>Circular Saws</td>
<td>As Needed</td>
<td>Select make of choice. Saws may not be modified.</td>
<td>Manufacturers use instructions.</td>
<td></td>
</tr>
<tr>
<td>Hammers</td>
<td>As Needed</td>
<td>Select hammer of choice.</td>
<td>Standard practice.</td>
<td></td>
</tr>
<tr>
<td>Ladders</td>
<td>As Needed</td>
<td>Type 1 250 pound duty rating.</td>
<td>Manufacturers use instructions affixed to ladder.</td>
<td></td>
</tr>
<tr>
<td>Hardhats</td>
<td>Worn at all times by everyone.</td>
<td>ANSI Z39.1-1997</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Eye Protection</td>
<td>Worn at all times by everyone when there is potential for flying debris.</td>
<td>High impact protection. ANSI Z87.1</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Footwear</td>
<td>Worn at all times by everyone.</td>
<td>Hard-soled work boots must be worn. Allowable Exception: Roof sheaters working on the roof and framers walking on tops of trusses and top plates may wear sandals.</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

Approved Materials List
Regulatory Requirements

The quality assurance system references the applicable sections of the national building codes and the New Jersey Regulations Governing New Home Warranties.

Workmanship Performance Tolerances

Before implementation of the system, All-tech Carpentry Contractors relied on an array of important performance tolerances documented in a 17-page publication entitled All-tech Standard Operating Procedures for the Field.

The quality representative created a set of workmanship tolerances to supplement the manual.

Unless superseded by builder specifications, the operating manual and the workmanship tolerances serve as default specifications.

Quality Manual

The above items were assembled into the “All-tech Quality Manual.”

“Like any other initiative, you’ve got to have another layer or another tier…or team that will come in and make sure that those checklists are being done properly and that has to be regular. Just like you get certified as a framer, you’ve got to have a review and then people come in and do audits. That’s to make sure that the process continues and is adhered to and continues.” Jalsa Urubshurow, All-tech Carpentry Contractors
5.4 Operation of the Quality System

The system became fully operational in May 2000 as verified by a quality assurance system review. In September 2000, the NAHB Research Center, Inc., performed a full-day certification audit of quality records, interviewed employees, and verified jobsite quality assurance policies and procedures.

Job Inspections

All-tech Carpentry Contractors area supervisors perform inspections on each home. They are responsible for all framing crews working in a community and approve the completion of each phase of framing construction.

“There were no real substantive changes in the true scope of work for our field personnel. It provided a systematic approach to the accomplishment of these duties, and compliance that could be tracked, creating true accountability.” Jalsa Urubshurow, All-tech Carpentry Contractors

An area superintendent performs a foundation condition inspection before framing layout begins. Dimensions, square, flatness, and straightness are verified, as are hotspot problem areas. Problems that arise are documented on the foundation condition report and then reported to the builder’s superintendent. If job-ready conditions are violated, builder or quality representative instructions for proceeding are recorded. Work proceeds only when problems have been resolved.

“...acceptance by any means. It involved a higher level of accountability and more work in some ways—administrative work and checklists and things of that nature.” Jalsa Urubshurow, All-tech Carpentry Contractors
The inspection forms are a modification of the existing production status reporting form. A single form documents inspection results, updates production status, and automatically initiates payment to the independent contractor that performed the work.

"It is more scrutiny and there's more paperwork than the way we were doing it before, which also had paperwork, but not as focused. We revamped our entire billing system. [We] linked the approval of their payments to the quality control checklist. A subcontractor will not get paid unless that supervisor running that project has checked his work."

Jalsa Urubshurow, All-tech Carpentry Contractors

Initially, crew foremen did not formally inspect their own work. Instead, they were concerned only with repairing problems identified by the supervisor. The process changed, however, when the evaluation of crew performance focused on first-time quality rather than simply on the completion of punch-out items. Under these circumstances, most crews chose to self-inspect in anticipation of the supervisor review.

"Anytime someone is held accountable, it can feel uncomfortable, that's just life—that is a normal, human thing to do. The reality is that in time... quickly... compared to what I might have thought it could take, people accepted that responsibility because they ultimately had it anyway. All we were doing is refining the way [we use] systems to identify who is responsible. To some degree a little more under the magnifying glass."

Jalsa Urubshurow, All-tech Carpentry Contractors
Quality Improvement and Training

After the review of inspection trend data, hotspot training is introduced as a periodic agenda item at Monday production meetings.

"After reviewing the trend data, we discuss the problem areas with our supervisors. Training sheets are developed for foremen to use when they discuss quality practices in weekly toolbox talks with their crews. The focus on quality is the same as our focus on safety; we take this very seriously, and our end goal is to produce a zero-defect home." Narma Stepanow, vice president, All-tech Carpentry Contractors

In a hotspot session, the vice president of operations leads a discussion on the hotspot and hands out a single-page training sheet. Front and back are identical except that the text is in English on one side and in Spanish on the other. The sheets are produced in-house with the use of a digital camera and Microsoft Word.

Hotspot training requires crews to change what they have been doing to conform to a documented best practice. Most crews have responded well, but some have been reluctant to improve their practices. After several warnings without a response, several crews have been severed from the company.

Double, Triple Stud Nailing

- Double and triple studs will be nailed on both sides every 16” staggered.

Hotspot Training Sheet

One area supervisor coined the term “feed and weed,” a twist on a tag line for lawn care products. He explained that hotspot training nourishes good crews, permitting them to grow and get better. At the same time, it weeds out undesirable crews that do not seem to care. Before, they were able to hide, but not anymore.

"This is a good thing. It makes my life easier. I used to have to go back to the same crews for the same things all the time." Area supervisor, All-tech Carpentry Contractors
5.5 Future Plans

All-tech Carpentry Contractors management reports that many of the quality system benefits come from the hotspot quality improvement process. All-tech plans to focus future efforts on increasing the frequency of quality hotspot improvements and related field training.

“Now the greatest challenge is to keep refining it, to sustain it, and to keep people proactive about it.” Jalsa Urubshurow, All-tech Carpentry Contractors

5.6 Contact

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609-860-8790