



LEAN OFFERINGS BY TRUENORTH DEVELOPMENT, INC.

There are two common questions about Lean, and the answers shed light on why Lean is not yet the norm in homebuilding:

1. What is Lean?
2. Why is it not widely practiced in homebuilding?

At the risk of oversimplifying, let's strip these questions down to the underlying principles.

Question 1: What is *Lean*?

In its simplest terms, *Lean* gets rid of anything the customer will not knowingly and willingly pay for. If you cannot get rid of it, reduce it. It's a logical way to look at your product or service: if your customer doesn't value it, why incur the expense of providing it?

Question 2: Why is it not widely practiced in homebuilding?

Life has been too good. We had a long period of high demand, almost unlimited resources, and sustained profitability. When things are sweet, there is no incentive to change.

If you have not yet gone through a LeanBuilding Blitz, the two answers above should strike you as logical, perhaps haunting. Most builders intuitively know they can be better, and in the downturn have tried many remedies to be better. But when you've run out of all known remedies and still need improvement, what next?

If you have gone through a LeanBuilding Blitz, you know that Lean holds the key to major waste reduction and corresponding cost savings without dumbing down your house, without making it undesirable or harder to sell, and without harming the suppliers and trades upon whom you depend. You've seen evidence of this in your own operations, brought up by your own people. You've seen Lean strengthen the bonds among you and your suppliers & trades; you've seen the promise of improved profitability for everyone.

You've also seen why TrueNorth guarantees a multiple-return on your investment. It doesn't matter that you're different, that your work is unique, personally crafted, specially fitted, often customized, constantly adjusted, and totally unsuited to "Lean Process" managing. Every builder *is* different, but every builder is *totally* suited to LeanBuilding.

The biggest hurdle to Lean acceptance is getting started. Once started, you'll become a convert, but starting means overcoming management's legitimate fear of complexity and unknown time commitments. Having already reduced staff, builders hoard remaining resources. There is always "just one more thing" to do first. Only when familiar remedies are exhausted will a struggling company reach for something new. When a builder grows desperate for *any* solution, they might entertain the *Lean* solution.

If this feels familiar, know that Lean need be neither complex nor time consuming. TrueNorth has been working this field for years and we developed LeanBuilding specifically to benefit builders, suppliers, and trades. Builders are mostly an impatient lot, always driving to solution, so we built the LeanBlitz to "show you the money" in just 5 days. We launched in 2007 and our launch record stunned even us: 10 home runs in our first 10 at bats. Now, 4 years and more than 1,300 contributing suppliers and trades later, we average nearly \$8,500 *per house* in savings opportunities. The process, in any form, has yet to fail, and resulting builder requests have led to five Lean packages:

- **LeanBuilding Blitz.** The fundamental application of Lean to everyday homebuilding; the LeanBuilding Blitz is the starting point for everything. We focus on waste that is





surfaced by suppliers and trades because they are closest to the actual work as performed (as contrasted with the way we *think* it is performed), and because it is easier to see someone else's waste than it is to see our own.

- **LeanPlan Workout.** Half of all LeanBlitz improvement ideas have their root in plan issues. Therefore, LeanPlan Workout improves *existing* plans before they are built, rather than applying layer upon layer of corrective actions during the building process. Note: these layers of corrective actions are repeated – with varying degrees of accuracy and effectiveness – every time a plan is built.
- **LeanDesign Charrette:** Few architects are equipped to ferret out “design-induced waste”, but the Charrette applies a 650-point checklist for *new* product that is both appealing to homeowners and less costly to build. Whereas LeanPlan Workout fixes *existing* plans, LeanDesign Charrette creates *new* plans from scratch.
- **LeanCompany.** The second leading cause of waste often lies in builder practices and procedures, therefore this shorter version of the LeanBlitz focuses on the builder's internal departments rather than on external suppliers and trades.
- **LeanSupplier.** Lean builders often seek out Lean Suppliers, and they encourage their not-so-lean suppliers to examine themselves the same way they have examined themselves. Lean suppliers and trades are valued more, and save the builder time and money.

Each Lean package is described in the pages following. All are guaranteed to pay for themselves and all stem from builder requests, so if you don't see what you need, ask us and we'll work something out for you, too. Note also that all are eminently affordable, but particularly so if selected within one week of a LeanBlitz (more on that in *Pricing* at the end of this document).

LEANBUILDING BLITZ™ 4.3

Three things you need to know about the LeanBuilding Blitz right up front:

1. It's a no-lose proposition: either identify so much waste in your products and processes – a large multiple of our fee – or don't pay us. We guarantee this in writing.
2. You set the criteria. Your own people define the value of an idea, whether it is attainable or not, and whether you want to go after it or not. Roughly half the value of accepted ideas can be realized in less than 30-60 days, so payback is rapid. The rest is achievable, but your staff may figure it will take a little longer.
3. The investment to start is small. A deposit of 12-20% reserves dates, the same amount is due upon completion of the BlitzWeek (at which point you have the waste-reduction ideas in hand), and the remaining 60-75% is payable per closing thereafter. This means the savings *from* the Blitz are used to pay *for* the Blitz.

The LeanBlitz uses 8-12 of your key personnel from construction, purchasing, sales, warranty, design, payables, estimating, and field operations. This group, called the *LeanTeam*, uses less than five days to focus on ideas brought forward by 23 of your most progressive and important suppliers and trades. The LeanTeam evaluates those supplier and trade ideas, decides which ones to pursue, then establishes a plan for harvesting the savings. This happens in three parts:





- **Orientation** for your employee and supplier/trade participants is a half-day session scheduled 10-20 days before the BlitzWeek, during which we translate Lean Concepts into examples that apply specifically to homebuilding. Your suppliers & trades leave with 50+ questions to start them thinking about where avoidable waste and cost occurs in your specific operations as they prepare for the next step.
- **BlitzWeek** is a rigorous five days with *two* TrueNorth facilitators. Your suppliers and trades each have a one-hour dedicated appointment with your whole LeanTeam – that's 23 hours of listening to ideas over the course of three days. The LeanTeam emerges with an average of 140+ ideas, all captured in detailed notes, flipcharts and spreadsheets. On day four, your LeanTeam reviews, evaluates, debates and rates every idea for potential cost savings, ease of implementation, and feasibility, then votes go/no-go on each idea (some are always rejected). When the week is over, project champions are assigned to surviving ideas and all documentation is turned over to you.
- **Follow Up.** One TrueNorth facilitator returns at 30-, 60-, and 90-day intervals to assist with follow through and to establish a Supplier/Trade Council. The Council, 9-12 key suppliers/trades and 3 builder representatives, is charged with aggressively pursuing ideas identified in the LeanBlitz. They meet once a month for just a couple of hours, and their meetings are coordinated with LeanTeam sessions so everyone stays focused, synchronized, and aware of progress and obstacles. Suppliers and trades take over their own leadership after three Council meetings and the process continues without further TrueNorth involvement.

The LeanBuilding Blitz targets both immediate savings and longer term continual improvement. We succeed only when you succeed, therefore we put our fee on the line every time. We know of no other consulting firm who puts this kind of skin in the game.

Summary:

LeanBuilding Blitz consists of

- an orientation for 23 suppliers and trades and all builder personnel
- a 5-day BlitzWeek with two facilitators
- four follow up days at 30/31-days, 60-days, and 90-days

LEANPLAN WORKOUT™

Roughly half of the ideas surfaced during a LeanBlitz can be traced back to difficulty with the plans: missing dimensions, confusing or conflicting information, absence of (or too much) option detail, design-induced conflicts (e.g. drain location vs. joist location), erroneous information, uncorrected redlines, reversed plan omissions, architectural details that create unnecessarily complex systems or structures, etc. Any of these that can be resolved *before* construction will save return trips, repairs, schedule delays, rework, scrap, excess material usage, and may even improve HVAC performance so much that you can reduce load specifications.

Not every issue with present plans can be remedied; some are tied too closely to the basic structure, or have too big an impact. Nevertheless, a surprising number can be worked out, and always enough to make LeanPlan Workout pay for itself many times over. In most cases, lessons learned on your more frequently built plans carry over to other plans in your





portfolio as well, increasing the return on your Workout investment. The discipline learned in Workout drives to the very core of homebuilding.

- **Orientation.** The half-day Orientation is scheduled 10-20 days prior to Workout Week, with suppliers and trades chosen from a shortened list of 17 plan-driven elements (e.g. foundation, framing, roofing, mechanicals, drywall, etc.). The 50+ questions used in the LeanBlitz are replaced by 650 specific, trade-appropriate and plan-affecting questions, all derived from LeanBlitzes conducted across North America and Australia. You provide each participating supplier/trade up-to-date blueprints for your four most popular models, and we instruct them on the *Lines & Notes* process for identifying design-induced waste.
- **Workout Week.** The builder LeanTeam is replaced with a smaller core of construction, design/sales, and purchasing/estimating personnel. This small group meets with suppliers and trades in 30-120 minute sessions over the course of three days to pore over the builder's top four plans, facilitated by TrueNorth and our associate architect familiar with architecture, production building, and the 650-point *TrueNorth LeanFilter*. Each supplier/trade discusses plan-related improvements, fixes, changes, or tweaks that reduce material cost, construction time, return trips, rework, warranty service, on-the-job adjustments, or otherwise ease the construction process without making the home less desirable or harder to sell.

Day four of Workout Week finds the architect consolidating all the comments onto clean red-lines coded to a comprehensive list of plan and engineering recommendations for either implementation or further investigation. At the same time, the TrueNorth Facilitator works with your small core construction & design team to evaluate each idea for value and practicality in much the same manner as was done in the LeanBlitz. All suggestions and ideas are fully documented, noting the change, why it is beneficial, its relative priority, and action tracking.

NOTE: This process does not require or suggest a change in architects. Any architect and/or engineer, internal or external, can proceed from the clean red-lines, and they will then have a template from which to improve additional plans. However, should you wish to engage our architect for follow through work, that is possible but would be treated as a separate transaction between you and the architect.

Eliminating design-induced waste makes plans less costly to build, with better quality, and with no loss of value to the homeowner. Like all Lean packages from TrueNorth, LeanPlan Workout more than self-funds; it liberates cash that is currently left on the ground or built into your plans. Suppliers & trades eagerly join in the process because it makes *their* lives easier and their labor more profitable while reducing total cost to you.

Summary:

LeanPlan Workout consists of

- a half-day Orientation
- a 4-day Workout Week

If engaged during or immediately following a LeanBuilding Blitz, the Lead TrueNorth Facilitator already familiar with your product, processes, Suppliers, and Trades remains attached to your project and the price is significantly discounted.





LEANDSIGN CHARRETTE™

Our industry conceives of a floor plan, creates variations with elevations, and only then looks at approximating materials for fit. As a result, multiple challenges are built in. Framers over-build without adding structural strength. Rooms that don't consider drywall or floor covering sizes add scrap to one room and excess seams in another. Foundation corners, joist location, lam-beam usage, stair size, window size and location, floor plan details, mechanical and chase locations, cabinet placement, roof plane intersections, penetrations... all create on-the-fly decisions by the trades to "*make things work.*" This practice fuels upstream waste in labor and materials and downstream waste in scrap removal, rework and warranty. It is very expensive, but invisible because accounting has no line item for it. This is covered in the handy phrase, "That's just the way homebuilding is."

That *is* the way homebuilding is, but it is not the way it has to be.

LeanDesign Charrette, a process facilitated by TrueNorth and our associate architect familiar with architecture, production building, and the 650-point *TrueNorth LeanFilter*, considers construction methods and material fit *during the design process*. We design waste out of a house, not into a house. LeanDesign Charrette plans and elevations are not only appealing to homebuyers, they're more profitable to build.

- **The Pre-Charrette Startup Package** includes questions, surveys, and phone discussions to establish design preferences and parameters around envelopes, style, square footages, and price targets. We provide sample communication to your staff so everyone is on board from the start. The Startup Package, designed to gather enough information to begin preliminary design concepts, lets us hit the ground running to make the most of the 3-Day LeanDesign Charrette, minimizing the time commitment of your employees and trades.
- **Orientation** is by teleconference with two participant teams: design employees (the *Product Development Team*) and construction and trade participants (the *Construction Team*). The telephone conference minimizes travel and work interruptions and generally takes 30-60 minutes with half a dozen internal builder personnel and selected trades already familiar with the LeanBlitz. We begin with a brief survey of wants, needs, desires, and objections, and gather basic information on the size, type, and style of house that best suits your image and market.
- **LeanDesign Charrette Week** consists of two basic elements:
 1. **Design Walkaround.** In a process called "*Dots and Qs*", your Production Development Team members individually mark up draft sketches prepared in advance by TK Design based on what was learned from the Startup Package. Interacting as a group in the *Design Focus* refinement process, the Production Development Team explains and debates their individual comments until they arrive at a shared position, from which TK Design revises sketches on the spot as needed. *Walkaround* and *Dots & Qs* allow the Product Development Team to fully review and provide input to the initial design concepts. Additional Walkarounds at the end of the second and third days allow the Product Development Team to monitor progress and suggest changes to the plans and elevations during the charrette, thus helping TK Design continually refine the sketches.
 2. **Construction Review.** While the architect refines his sketches based on the Product Development Team input, TrueNorth leads the *Construction Team* through their own Walkaround and Dots and Qs process, looking to ensure the house can be readily built as designed and that key dimensions and callouts are





noted. Have conflicts between floor joist and plumbing been addressed? Are there sufficiently sized chases for HVAC, plumbing, and electrical? Do cabinets and countertops conflict with window or door placement? Are lumber and drywall dimensions considered? How complex are wall intersects and interior door placements? Select trades who have already experienced the LeanBlitz provide valuable input on constructability. Construction input at the conceptual design stage leads to greater building efficiency and cost containment when the plans are built.

- **Follow Up** occurs about 21 days following the LeanDesign Charrette Week. Our architect returns and discusses with the Product Design Team, Construction Team, and senior management the three resulting floor plans, each with three elevations. These drawings will include foundation study, framing study, and HVAC study. They will meet your criteria, be highly marketable, and affordable to build. If you want more plans or more elevations, they can be provided as cost-efficiently as the basic LeanDesign Charrette if we know in advance.

As with LeanPlan Workout, this process does not require or suggest a change in architects. Any architect and/or engineer, internal or external, can proceed from the drawings provided. However, should you wish to engage our architect for follow through work, that would be treated as a separate transaction between you and the architect.

Summary:

LeanDesign Charrette consists of

- a pre-Charrette survey
- a brief teleconference orientation
- a 3-day Charrette Week
- a half-day in-person follow up to present the final sketches and studies.

If engaged during or immediately following a LeanBuilding Blitz or LeanPlan Workout, the Lead TrueNorth Facilitator already familiar with your product, processes, Suppliers, and Trades remains attached to your project and the price is significantly discounted.

LEANCOMPANY™

We put our suppliers and trades through a great deal with POs, VPOs, scopes, takeoffs, estimates, requests for bids and rebids, specifications changes, options, plan variation, elevations and options combinations, selection sheets, inspections and quality walks, and continual plan changes. Taken together, such builder-originating issues form the second leading cause of waste. What can be done with builder practices and procedures to drive out waste without increasing quality problems or losing financial leverage and controls?

Similar to the LeanBlitz, this 3-day process focuses on the builder's internal departments rather than on external suppliers and trades.

- **Orientation** is the morning of a three-day session. We advise everyone in the company of how the process works and provide toolkits for breakout sessions according to each departmental function (Finance or Accounting, Sales, Marketing, Construction, Purchasing & Estimating, Design, Land, etc.) according to your specific needs and company structure.





- **LeanCompany Process** continues the first afternoon with the Employee WasteID Idea Generation breakout sessions. These sessions are organized by departmental teams to identify and select specific strategies and ideas for waste-reduction using TrueNorth's structured process and worksheets. Meetings must be held in close proximity to each other, allowing the facilitator to move from group to group to provide support (the facilitator can be summoned from group to group via text message). The last segment of the day involves 2 representatives from each group for a brief "how to" prep for presenting their group's ideas on day 3 using the TrueNorth *White Sheet*.

On day two, the builder's original LeanTeam sits in review of each department's proposals, asking questions to further develop ideas and gauge impact on company. This process closely follows the 1-hour appointments used by the trades in the LeanBlitz.

The last two hours of the day and the first few hours of day three are used by the LeanTeam to evaluate each idea according to the ABCD Matrix used in the LeanBlitz. The remainder of day three is used to present to management, prioritize actions, assign champions for implementation, and practice effective Action Planning to ensure follow through, including establishing goals, dates & milestones.

Summary:

LeanCompany consists of

- a 3-day Week

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LEANSUPPLIER™

Since the housing industry crash, suppliers and trade contractors have been forced to cut back wherever possible to meet the unending cost reduction demands of builders. The pain and collateral damage have been severe, and most suppliers and contractors simply feel they have done all they can do. If "all they can do" means more of the same, we agree.

TrueNorth's LeanSupplier drives out waste for suppliers, distributors, and trade contractors just as effectively as the LeanBuilding Blitz does for builders. Through Lean, suppliers & trades move beyond "slash & burn" cost-cutting to targeted waste removal that benefits everyone.

Because homebuilding habits and practices are so deeply ingrained, we accept too much waste as an unavoidable cost of doing business. We fail to see waste for what it is, and therefore seldom seriously question ourselves. Overcome the inertia that blocks change by enlisting the willing support of employees, suppliers, and contractor work crews; tap their knowledge and experience to talk openly about the waste they encounter on the job and in the office each day. TrueNorth unlocks the "textbook" language of Lean by translating it into the language of homebuilding, enabling those who do the work to see where waste costs time, money, errors, defects, and dissatisfaction. Without fail, the LeanSupplier process *always* identifies waste of staggering proportions.

LeanSupplier is a 5-step process, though flexibility and adaptability are important to make the process relevant and appropriate to your situation.





- 1. LeanTeam Selection.** The LeanTeam consists of 5-8 employees, depending on the size of your company, all being key opinion leaders from throughout your organization. These are not necessarily those with high titles, but rather those who possess solid working knowledge of the company's functions, who command the respect of the entire company, and who have the authority to get things done. This cross-functional team is responsible for implementation following the Blitz.
- 2. Contributor Selection.** Contributors are suppliers, contractors, and employee *departments* who bring ideas to the LeanTeam for consideration. A carefully crafted process adapts the concepts of Lean to your particular situation for an outpouring of thoughts and ideas. The LeanTeam meets with representatives from 7 contributors a day for each of two days: one day of suppliers and one day of their own employees.
- 3. Facility/Field Walk & Orientation.** The TrueNorth Facilitator needs to understand your unique environment and processes. He will join one of your operational leaders for a half-day field walk of your facilities and work area before leading a half-day Orientation. He will assign limited but important pre-work to contributors, and detail the LeanTeam's critical role. TrueNorth provides step-by-step instructions that pull the best ideas from the teams, and then organizes ideas into a format everyone can understand. The Field Walk and Orientation occur 10-20 days prior to BlitzWeek.
- 4. BlitzWeek Presentations.** Each contributor team has a 1-hour individual appointment with the LeanTeam to present their ideas. All ideas are captured on flip charts and are evaluated for merit at the end of the day in a LeanTeam-only debriefing session.
- 5. Analysis by LeanTeam.** Each day of the BlitzWeek wraps up with a LeanTeam evaluation of the ideas presented that day, revisiting each idea for merit, possible savings, ease of implementation, and feasibility. Your executives have an opportunity to give a thumbs-up/thumbs-down vote before prioritizing surviving ideas for action. The process wraps up with a training session on using the TrueNorth Action Planner.

LeanSupplier uses one TrueNorth Facilitator and therefore requires someone to act as the LeanTeam's official "Recorder". This person is present for the entirety of the process and uses TrueNorth-supplied *Word* and *Excel* forms to record discussions and decisions as those conversations occur. The Recorder works with the TrueNorth Facilitator prior to the BlitzWeek to become familiar with the forms and processes used. While the recorder's job is not difficult, it is of critical importance. (Note: TrueNorth can fill the Recorder role *upon request and at additional charge*, but because it adds facilitation fees and travel expense, we recommend the Supplier provide the Recorder and a laptop if possible.)

If a Supplier/Trade Organization wishes to invite a fellow, non competing trade partner to participate in LeanSupplier to help manage cost-sharing, they can do so for a small additional administrative fee. The process becomes slightly more involved, but this is a cost effective way to bring the process to more than one Supplier or Trade at a time.

Summary:

LeanSupplier consists of

- an Orientation and Field Walk
- remote training for the Recorder
- a 3-day LeanSupplier Week

If engaged during or immediately following a LeanBuilding Blitz or LeanPlan Workout, the Lead TrueNorth Facilitator already familiar with your product, processes, Suppliers, and Trades remains attached to LeanSupplier and the price is significantly discounted.

