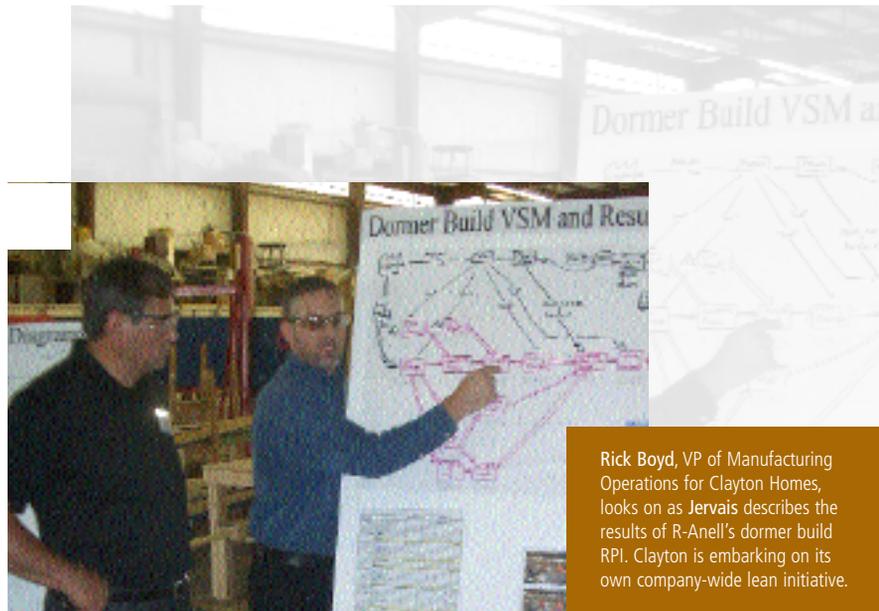


**HUD Visits R-Anell Housing: Observes Lean Production in Action**

With assistance from the Manufactured Housing Research Alliance (MHRA) and support from the Partnership for Advancing Technology in Housing (PATH), R-Anell Housing Group, a leading manufacturer of factory-built housing, has embraced lean production, an approach to manufacturing that can dramatically reduce costs by systematically eliminating waste.



Rick Boyd, VP of Manufacturing Operations for Clayton Homes, looks on as Jervais describes the results of R-Anell's dormer build RPI. Clayton is embarking on its own company-wide lean initiative.



**The Manufactured Housing Research Alliance (MHRA)**, the research arm of the manufactured housing industry, provides content for *Technologies*.

- *Technologies* highlights the research of MHRA and examines other research and development activities throughout the industry.
- For more in-depth information about research in the factory-built housing industry, or to find resources mentioned in *Technologies*, visit the MHRA Web site.



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In October, PATH staff toured R-Anell's residential facility in Denver, N.C., to observe how lean manufacturing techniques are being applied in the plant. During the two-day visit, PATH staff witnessed several lean activities, including a "kaizen" event aimed at identifying and eliminating waste in R-Anell's on-site cabinet shop. Discussions on how lean production is transforming R-Anell's operations also provided a context for understanding the role of lean manufacturing methods in improving home-building practices.

**R-Anell's Lean Management Strategy**

R-Anell is taking the long-term view and investing in this methodology that has been proven in other industries, but is new to factory homebuilding. R-Anell's management believes in the potential of lean production and understands that it requires investment—not in equipment, but in people.

R-Anell's lean team has developed a rigorous and thorough plan for implementing lean production techniques as part of a renewed corporate strategy developed earlier in 2006. The company

employs one full-time lean engineer who performs much of the research, preparation, follow-up and organizational work required to conduct lean events in the plant. A director of process development with extensive lean experience oversees the lean initiative and reports directly to senior management.

**Elements of R-Anell's lean strategy include:**

- Incorporating lean production into the company's long-term corporate strategy
- Communicating behaviors that are expected from management
- Respecting plant associates and their ability to contribute to improving plant operations
- Publicly recognizing contributions made by associates and celebrating their achievements
- Sustaining and building on achievements by documenting lean production activities
- Fostering a culture of continuous improvement throughout the organization

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While R-Anell is off to a strong start, the company recognizes that most of the gains from applying lean methods are yet to be realized. Embracing lean has required a rethinking of old habits and entrenched practices. According to Charles Jervais, R-Anell's Director of Process Development, "While there have been some skeptics, by and large the R-Anell employees have embraced our lean initiative wholeheartedly once they experience the process and see the results." The investments are beginning to pay dividends. "Associates in areas that have conducted rapid process improvements (RPIs) are extremely proud of their accomplishments, making sustaining them that much easier," Jervais noted.

## R-Anell's Recipe for Kaizen

Kaizen events, also known as rapid process improvement (RPI) events, are an integral part of implementing lean production strategies. The goal of an RPI event is to make measurable and dramatic improvements to a specific operation or process in the plant by focusing on it intensely for a short period of time in partnership with workers from the area.

R-Anell includes extensive education and training leading up to the first kaizen event in each area of the plant. The training includes an overview of basics of lean production, value stream mapping and a half-day role-playing simulation workshop referred to as the *Pipe Factory*.

The workshop drives home a number of lean production concepts, including takt time, standard work, incremental improvement, breaking down departmental barriers, product flow, stability, inventory reduction and customer

focus. Through the *Pipe Factory* exercise, the plant associates are able to experience how process changes can speed production and reduce errors.

**R-Anell's process for planning and conducting RPI events includes these key steps typically conducted over the course of a few weeks:**

1. Set goals and expectations for the selected area
2. Plan for the event (collect data on workflow, prepare materials lists, record process steps, etc.)
3. Train area workers and developing value stream maps of the department
4. Brainstorming improvements with the team (includes all area workers)
5. Make physical changes to the area (done by the team with maintenance personnel as necessary)
6. Report by the team to R-Anell's executive management team
7. Follow-up and create documentation, including analysis of revised work flow and adjustments based on feedback from area associates.

The *Pipe Factory* training, followed by RPI events, have engaged R-Anell plant staff at all levels in the process of rethinking production methods and the benefits are beginning to ripple through the plant. "Our commitment to lean production as a company has only been reinforced by what we have seen so far," says R-Anell's President Dennis Jones. "We expect it to totally transform R-Anell Housing in the next 5 years."



In the Pipe Factory workshop, R-Anell associates simulate a production line to learn lean manufacturing concepts.

## MHRA to Hold Lean Production Symposium



MHI, the National Modular Housing Council (NMHC), and MHRA will co-host a national symposium on lean production that will be held on Jan. 29, 2007 in conjunction with the MHI 2007 Winter Meeting, in Austin, Texas. The results of the MHRA nine-plant lean production program will be reported during the event. This will be an extraordinary opportunity for industry members to hear directly from plant personnel about their approach to and results of their lean production initiatives. Each plant team, including the MHRA lean experts that worked with the plants, will present their accomplishments, lessons learned and plans to expand their lean production investment in the future.

To reserve your place at the symposium, contact NMHC's Thayer Long at [tlong@modularcouncil.org](mailto:tlong@modularcouncil.org) or 703.558.0678. ■