Arriving at Green Chemistry:
A Case Study in Integrating Sustainability into a Construction Chemicals Company

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Presentation Overview

• Define Green Chemistry for Us

• Corporate Overview
  – Trickle-Down Effect

• Tremco CS&W Case Study
  – Culture Shift
  – Specific Initiatives, Programs and Processes

• Wrap-up
Green Chemistry to Us

• Sustainability encompasses green chemistry

• Sustainability also encompasses…
  – Product function and application
  – Manufacturing practices and processes
  – Corporate identity and culture
  – People and community
  – Sustaining the organization

• Integration of sustainability into our strategy positions us to address the green chemistry challenge.
Corporate Overview

RPM Today

Entrepreneurial Operating Philosophy
Competitive Advantage of Leading Brands
Balance between Consumer and Industrial Businesses
Balanced Growth Strategy between Internal Investment and Acquisitions

Consumer Segment
Industrial Segment
RPM-BSG Vision

As a **global sustainability leader**, the RPM Building Solution Group **considers people, planet and prosperity** in all business decisions. We are recognized for developing the world’s most innovative integrated products and services that **contribute to high-performance, operationally efficient outcomes** for the built environment. Utilizing **responsible chemistry and exceptional manufacturing processes**, we **conserve resources and minimize our environmental impact** to support and enhance healthy, vibrant communities. With an engaged and empowered workforce, the RPM Building Solutions Group embraces a sustainable culture and creates lasting value for our stakeholders.
Tremco CS&W Strategy: The Building Envelope Solution
Tremco CS&W Mission

We provide value-added, integrated, sustainable solutions to the key stakeholders in the construction industry that result in durable structures through effective air and moisture management. We achieve this utilizing responsible business practices, technical competency, knowledgeable sales support and specialty distribution channels.
Market Drivers and Influences

• Climate Change/Carbon Footprint

• Design Trends
  – LEED Related
  – ASHRAE, EnergyStar, IgCC, etc.
  – Integrated Building Design
Market Drivers and Influences

• Regulation, Legislation and Politics
  – Air Quality/VOCs
  – Chemicals of Concern

• Energy & Material Costs/Supply
  – Oil and Water
Sustainability & Our Products

The Present Challenge:
Provide the same or better quality and function while integrating green chemistry principles.

The Solution:
Embracing sustainability!
Committing to a Green Strategy → A Green Company

- Organizational Capability:
  - Change must be anchored in culture!
  - Resource commitment
  - Community Development and Interaction

- Process Excellence:
  - Systematic “greening” of the organization and products via specific programs, initiatives and changes in practice.

- Value Creation:
  - For our internal and external stakeholders.

- Financial Growth
Organizational Capability: Education

• Training our staff and customers on sustainability concepts.

• Develop in-house experts to be industry leaders.

• Living as We Speak:
  – Headquarter Renovation.
  – Greensburg, KS
Organizational Capabilities: Resource Commitment

• A dedicated steward to bring focus and purpose.

• Employee time for training and projects.

• Alignment of projects, initiatives and efforts into corporate goals/objectives.
  – Tie that to personal reward (bonus)

• Eco-Committee to champion sustainability initiatives.

• Use innovation to reinforce concepts and commitment internally and externally.
Organizational Capabilities: Community

• Rebuilding of Greensburg, KS as a case study.
  – Town destroyed by tornado in May 2007 that has vowed to rebuild green
    • Donations, discounted material or funds to community foundations
    • Educating contractors and architects on sustainable building practices, specifying and design
    • Helping bring other resources to town

• Outreach to the External Community

• Internal Community
Process Excellence: Zero Landfill Program

- On-going project

- Reuse by-products in other finished goods/processes, sell them to those who can use them or use/sell as fuel blend.
  - In first full-fiscal year reduced ratio of landfill to goods shipped by 30%.
  - Toronto facility has no non-hazardous landfill, overall 90%+ way to goal.
  - Business Sense: Cost Neutral

- LEAN principles in place to reduce waste creation.
Process Excellence: Operations Initiatives and Programs

• Continual improvement teams examining process time reductions in our facilities
  – Reduction in cycle time by 40% for #1 volume (gallons) product
    • Reduced energy per unit.
  – Part of LEAN operations

• Emissions Reduction and Solvent Recapture
  – Solvent reuse reduces needs, limits emissions

• Carbon Dioxide:
  – Performing baseline “embodied energy” calculations for products to drive systematic energy reduction.
Process Excellence: Responsible Chemistry Initiative

• Corporate mandate we will evaluate and provide preference to “responsible” chemistry solutions (all things being equal).

• Management team to prioritize, develop a strategy and assign specific projects/actions to targeted chemistries of concern.

• Evaluating renewable based and recycled content raw materials.

• Targeted chemistries of concern:
  – Prop 65
  – EPA CAP Items
  – Other chemistries as identified by stakeholders.
Process Excellence: Product Development Enhancements

• Integration of alternative analysis concepts into our stage-gate process

  – These insure life-cycle thinking from initial project stage.

  – Includes the following requirements of all new products and significant reformulations:

    • Consideration of renewable and/or recycled raw materials
    • Consideration of Recyclability
    • Ultra VOC Compliance
    • No/Minimized chemistries of concern
    • Alternative cure mechanisms/catalysts.
    • Reduced Cycle Times
    • Evaluate “Process Harvesting”
Process Excellence: Product Development Initiatives

• Exploration of new technology platforms
  – Water catalyzed urethanes.
    • Reduced needs for amines or organometallic complexes (ie- tins)
  – Hybrid Sealant Technologies:
    • Silane-terminated urethanes
    • Potential for renewable based polyol backbones with life of silicone.
  – Aliphatic Urethanes:
    • Less of a health issue than aromatic based.
Creating Value: Involvement

• Technical Association Involvement:
  – ASTM (E60)
  – USGBC
  – ICC
  – ASC

• Regulatory/Government Involvement
  – EPA
  – CARB/AQMD’s
  – DOE
  – Legislation and Policy Reviews

• Community and Employee Development Already Mentioned
Closing Comments

• Sustainability is relatively easy to work towards with sustainable practices integrated into the core strategy.

• A systematic implementation of such practices makes the end goal (“greener” products) attainable.

• As with any successful strategy execution, this will also yield a profitable and growing green organization

• We challenge our customers, competitors and ourselves to embrace these concepts.
Thank You for Your Time!

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