



# Excellence Award

## Corporate -Wide:



**COLGATE-PALMOLIVE** COMPANY

*February 24, 2012*





# Colgate Palmolive

- 39,000 employees
- \$15.6B Sales
- Sell products in over 200 countries
- Manufacture in over 60 locations globally
- Four Product Categories
  - Oral Care
  - Personal Care
  - Home Care
  - Pet Nutrition



# Reducing Noise Globally

- Colgate is committed to world class health and safety performance
- One of our goals is to reduce the number of people exposed to noise
- Our solution was to implement a multi-faceted global approach to Noise Reduction

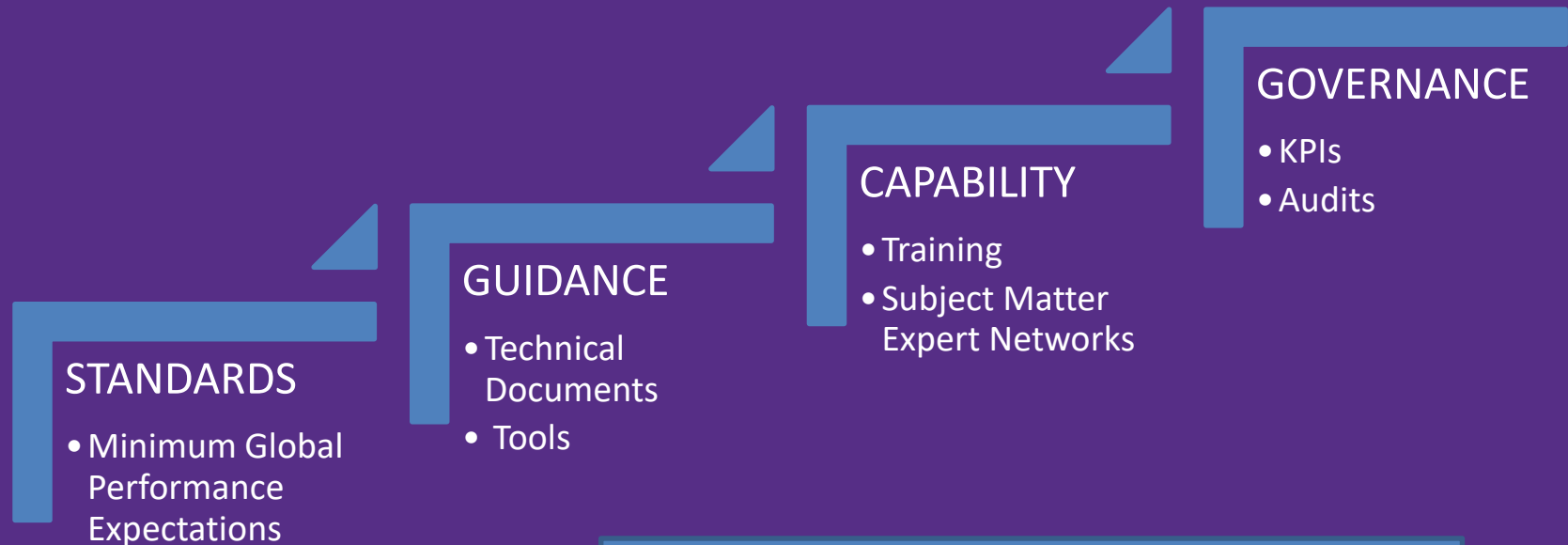
# Our Global Team



*USA   Thailand   Mexico   India   Brazil*  
*China   Italy   Poland ...*



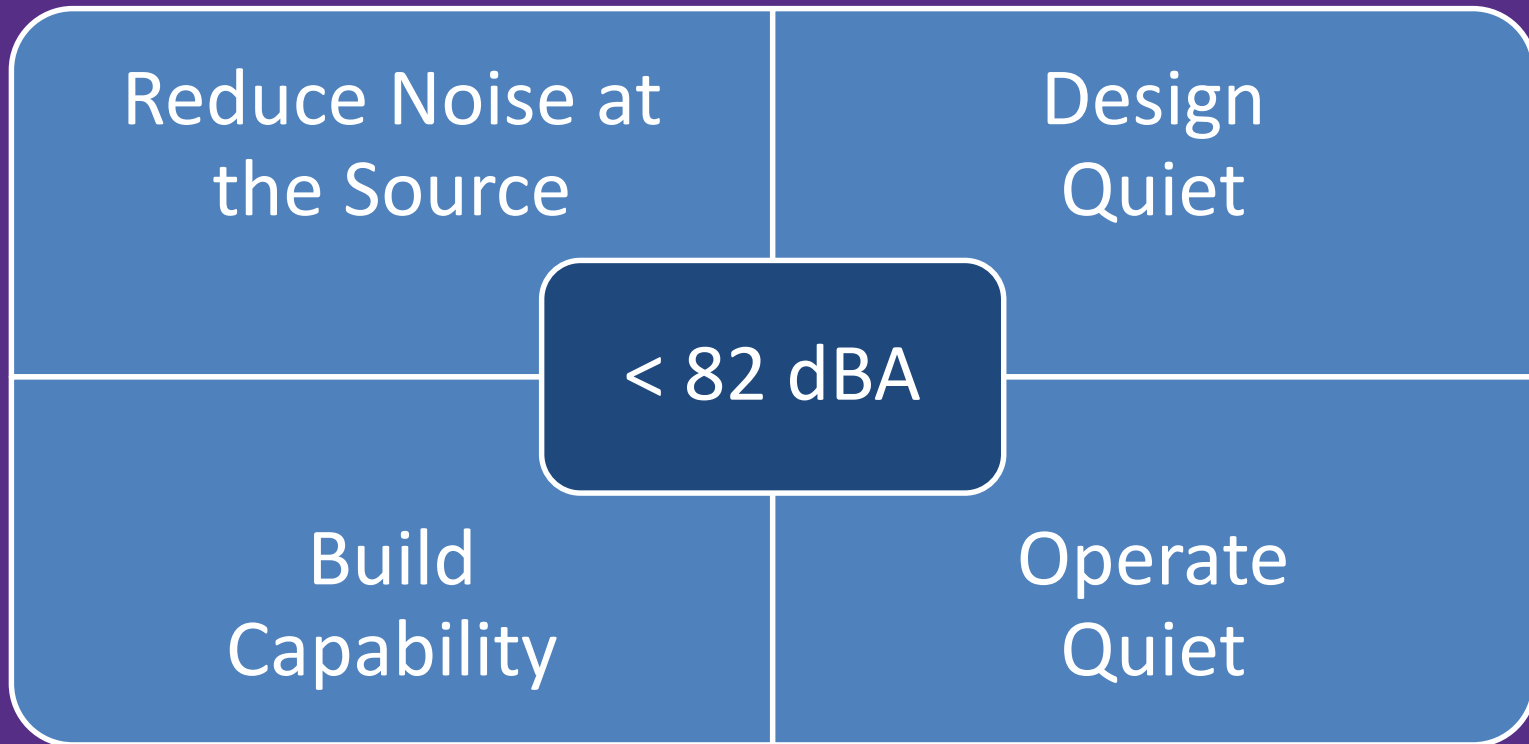
# Driving EOHS Performance



Consistent Global Approach  
Noise is one of Many “Standards”



# Noise Reduction Strategy



*Colgate follows the ACGIH-TLV or local regulations whichever is more stringent*



# Design Quiet

- Buy Quiet Equipment
  - New equipment specifications include  $< 82$  dBA, where feasible
  - Partnered with selected strategic suppliers on low noise equipment design
- Design Quieter Manufacturing Plants
  - Provided construction guidance to optimize building envelope and equipment layout





# Operate Quiet

- Linking Noise and Maintenance
  - Autonomous Maintenance Step Progression Checklists
  - Equipment Specific Planned Maintenance SOPs





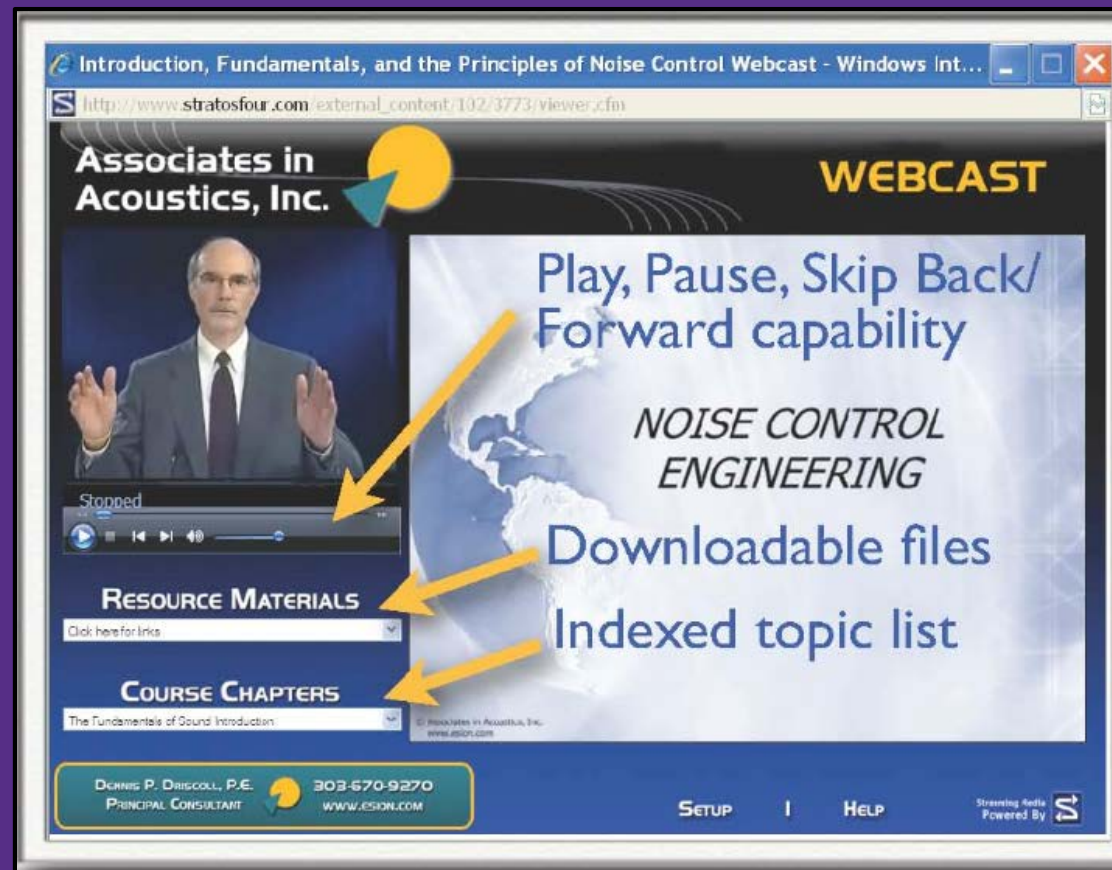
# Compressed Air

- Compressed Air at Colgate
  - Significant source of Noise (~30%) and Energy (~15%)
- Noise, Energy & Maintenance teams partnered to create a guidance document to:
  - optimize system operation
  - minimize leaks
  - provide guidance on appropriate use



# Build Capability

- Webinar Training
- Noise Reduction Handbook
- Noise Networks
- Intranet Noise Site



# Noise Networks & Intranet Noise Website



Supported with Noise  
Network Best Practice  
Sharing Teleconferences



# Reduce Noise at the Source

- Manufacturing Noise Assessments
  - Professionally evaluated over 60 pieces of equipment
  - Identified best practice solutions
- Two Noise Projects/Year
  - Executed at the site level with Technician involvement
  - Project implementation is a global Key Performance Indicator





# Example Projects

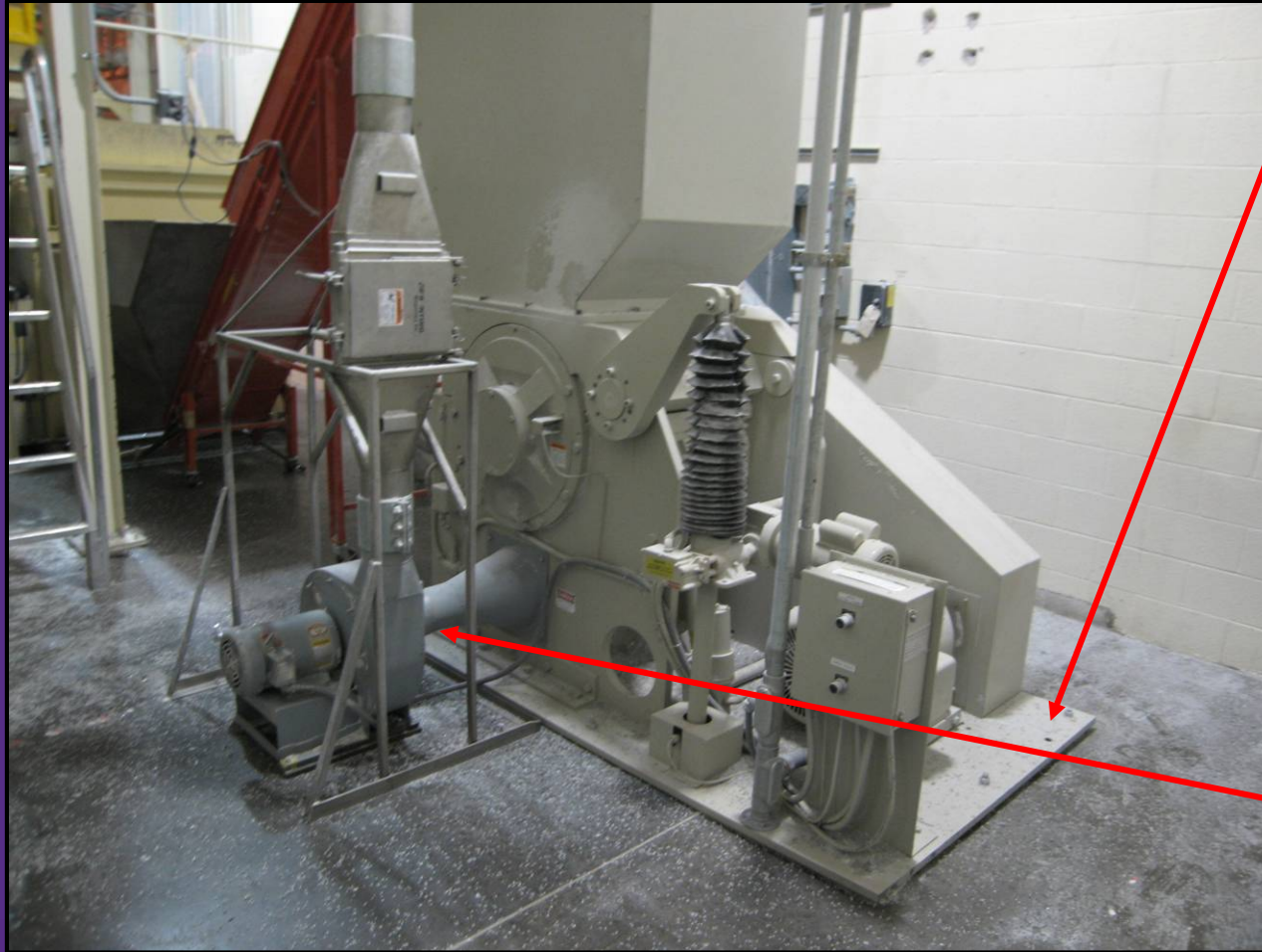
<u>Projects</u>	<u>Reduction</u>
• Cumberland Grinder	(8 dBA)
• Case Former	(10 dBA)
• HDPE Blending Room	(6 dBA)
• 14 Palletizer Systems	(5 dBA ea)
• Filler Outfeed	(26 dBA)
• Con-Air Dryer	(9 dBA)
• Ceiling Sala Michelangelo	(5-10 dBA)
• Air Wand	(22 dBA)
• Trimmer In Feed	(9 dBA)
• Muffler	(17 dBA)
• AISA 3000	(6 dBA)







# Cumberland Grinder (before)



Dust build-up on floor around grinder due to inefficient regrind evacuation

Noise level from blower/grinder:  
**93 dBA**



# Cumberland Grinder (after)



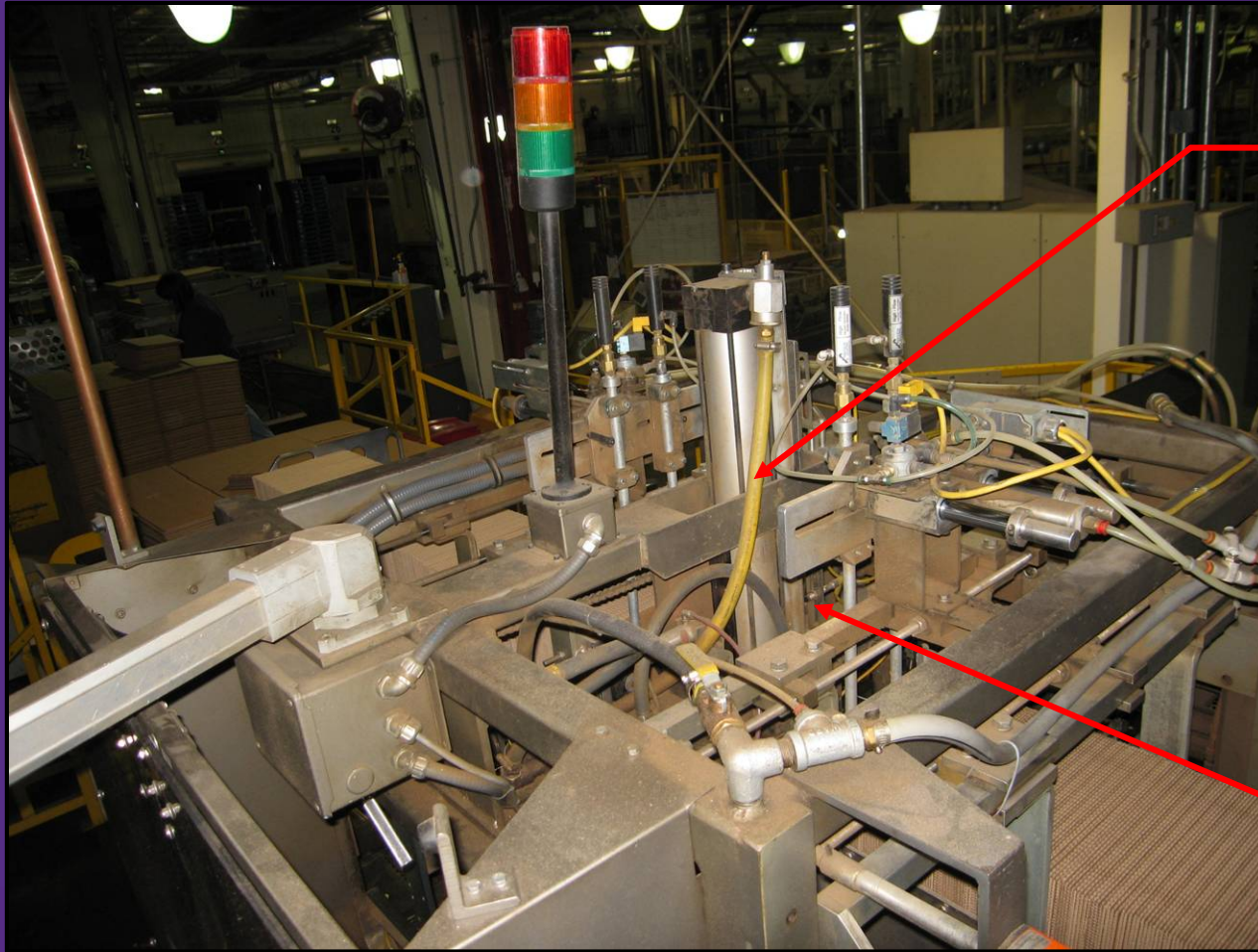
No dust build-up  
on floor around  
grinder

Noise level from  
grinder: **85 dBA**





# Moen Case Former (before)

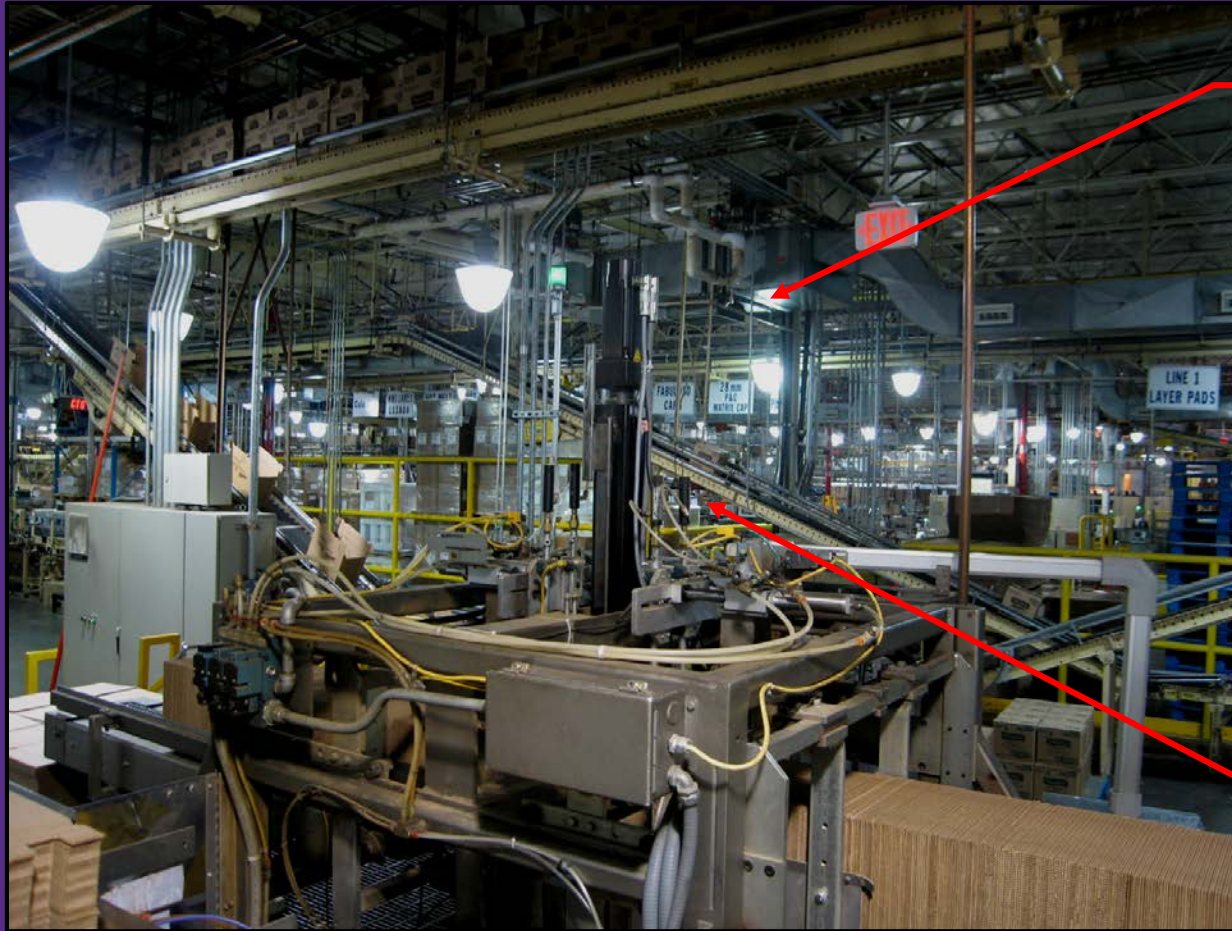


Pneumatic cylinder seals wear, need replacement, caused banging noise, increased wear on machine

Noise level from case former:  
**97 dBA**



# Moen Case Former (after)



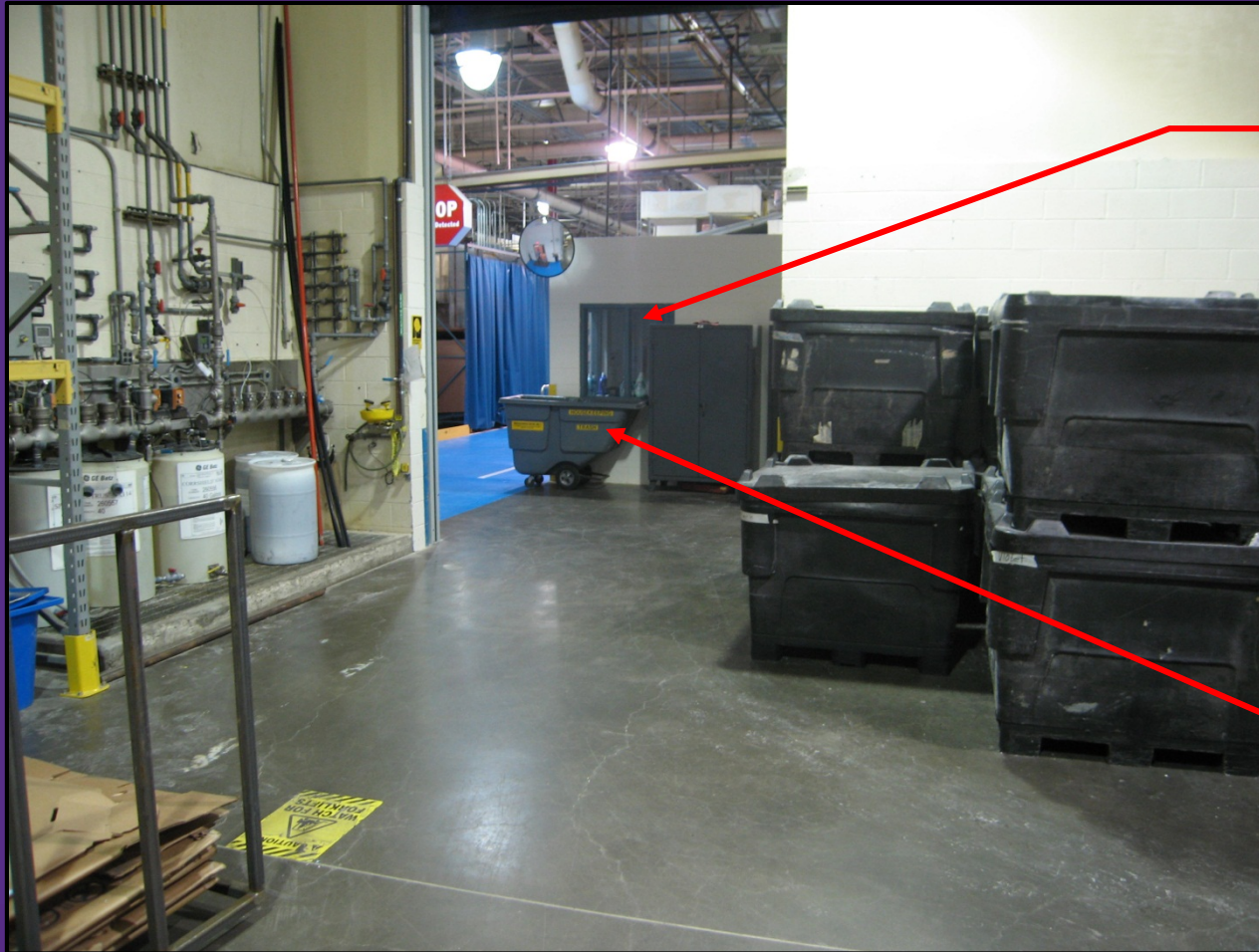
Conversion to servo-mandrel resulted in 72% reduction in air consumption, smoother stroke, less noise

Noise level from case former:  
**87 dBA**





# HDPE Blender Room (before)



Noise and dust generated by blending room grinders

Noise level from blending room:  
**85 dBA**



# HDPE Blender Room (after)



Door isolates  
grinder noise and  
HDPE dust

Noise level from  
blending room:  
**79 dBA**





# Palletizer Hydraulics (before)

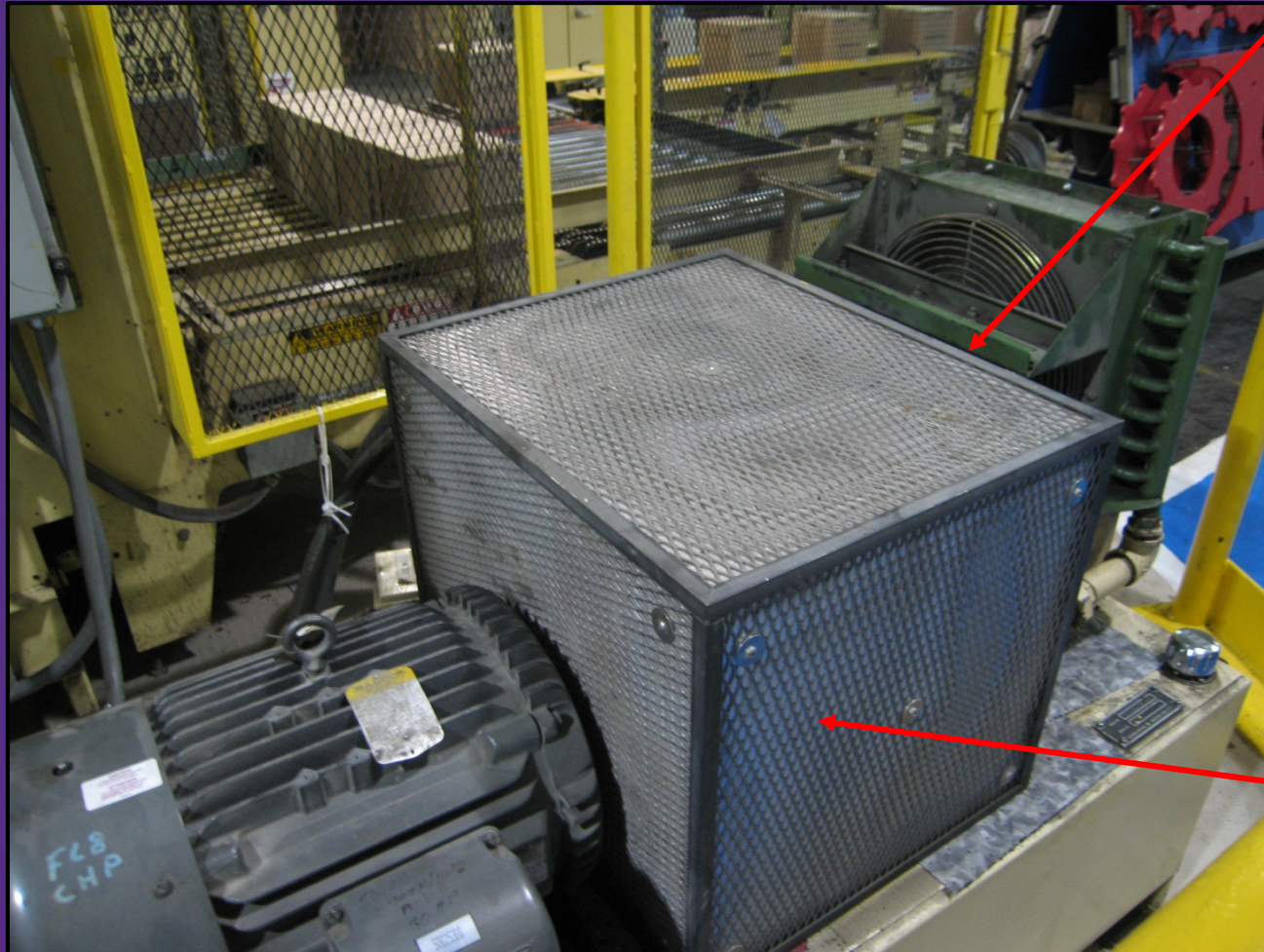


Fluids in the system  
from bang when  
motor turns on/off

Noise level from  
Palletizer pump:  
**88 dBA**



# Palletizer Hydraulics (after)



Installed suppressor to minimize hydraulic banging. Pump whine contained in sound-insulated box

Noise level from Palletizer pump:  
**83 dBA**





# Filler Outfeed (before)



Even with sound barrier, motor, line shaft, and gearboxes were very loud

Noise level from filler outfeed:  
**107 dBA**





# Filler Outfeed (after)



Line shaft removed;  
Individual drives installed: cleaner, quieter

Noise level from  
L4 Filler outfeed:  
**81 dBA**



# Con-Air Dryer (before)



Single frequency blower produced lots of noise, vibrated floor & enclosure panels

Noise level from old Dryer:  
**94 dBA**





# Con-Air Dryer (after)



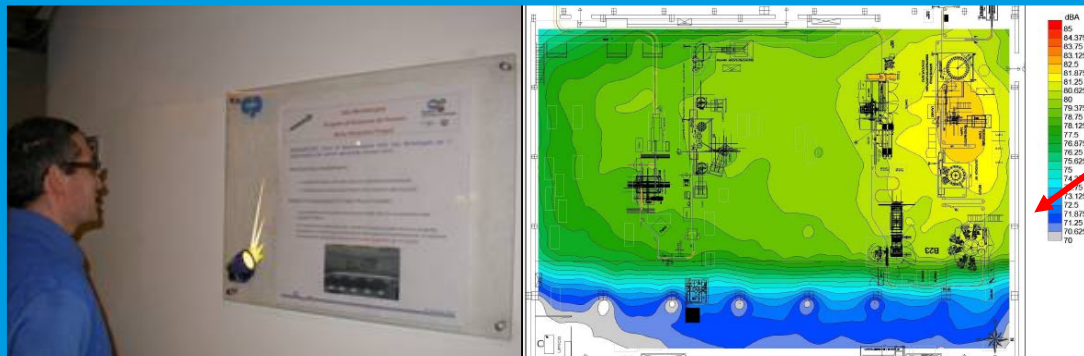
Machine set on vibration mounts, quieter blower

Noise level from new dryer:  
85 dBA

# Sala Michelangelo - Example



Acoustic insulation panels reflective of local culture



Employee education on noise reduction



# Replacement of 45 Air Wands



Dosimeter  
before:  
112.8 dBA

Dosimeter after:  
90.1 dBA





# Trimmer In Feed (before)



Air nozzles created noise and were ineffective on new bottle

Noise level:  
Door Open  
103 - 113 dBA  
Door Closed  
98 - 113 dBA



# Trimmer In Feed (after)



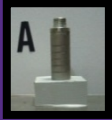




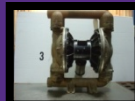


Replaced nozzles  
with in feed  
decline drive belt;  
reduced noise  
improved  
productivity

Noise level:  
Door Open  
90.7 – 104 dBA  
Door Closed  
**86 - 104 dBA**





# Muffler Addition (before)

Muffler Pump				Net Reduction
	92.9	90.2	80.6	22.1 dBA**
	85.8	94.4*	77.6	16.8dBA
	92.6*	92.2	81.3	11.3dBA
	95.2*	94.4	83.6	11.6dBA
	97.4	94.1	83.2	21.8dBA**

\*\* No Muffler Installed, \*Starting Muffler



# Muffler Addition (after)

- Reduced sump pump noise rating by 17%
- Measured noise levels reduced
  - Average 98.1dBA to 81.3dBA
- Process in place to ensure future pumps installed with correct muffler



# Noise Reduction Results

- 250 noise reduction projects across 60 facilities around the globe
- \$2 Million invested
- Delivered ~ 6 dB noise reduction per project
- Reduced noise exposure for over 5,000 Colgate employees



# Moving Forward

- Continue implementation of global strategy
  - 120 additional Noise Reduction Projects targeted in 2012
  - \$500,000 Budgeted
  - Further develop engineering, equipment supplier and maintenance partnerships
- Create a Zero Hearing Protection Site



# Lessons Learned

- Driving Organization-wide Change
  - Specific measurable goals and objectives
  - Monitor and communicate progress regularly
  - Recognize and reward progress
- Key Partnerships
  - Engineering
  - Maintenance
  - Suppliers
  - Global Energy Team
  - Employees



# Significance of the Award

- Recognizes the global team of Engineers, EOHS professionals and leadership that contributed to this initiative
- Safe in Sound Award will be communicated internally and externally
  - Sustainability Awards Colgate.com (external)
  - ourColgate.com (internal)
    - Banner
    - EOHS Website
    - Organization-wide e-Mail



# Contact Information

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