



# Energy Efficiency at Ford Motor Company

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# Performance Contracting

# Performance Contracting

- ◆ **Background**
  - **Capital Lease**
  - **Operating Lease**
  - **Performance Contracting**

# Capital Lease

- ⌚ Lease transfers ownership of property to lessee by the end of the lease term
- ⌚ Lease contains a bargain purchase option
- ⌚ Lease term is equal to 75% or more of the depreciable (economic) life of the asset
- ↩ Present value of rental or MINIMUM lease payments equals 90% of fair value

**Accounting Treatment: Reflected on Ford Balance Sheet**

# Operating Lease

**If any of the criteria for capital leasing are not met, the lease is classified as an operating lease.**

**Accounting Treatment: Reflected in a foot note as a contingent liability in Ford's Annual Report.**

# Performance Contract

- ⌚ **Monthly payment is contingent on metered savings**
- ⌚ **Monthly payment is variable due to metered savings**
- ⌚ **Monthly payment is expense - utility payment**
- ↩ **Monthly savings are guaranteed**
- ⊞ **Equipment operation/performance guaranteed**

**Accounting Treatment: Not Reflected on Ford Balance Sheet - Treated as Expense.**

# Performance Contracting

- ◆ **Performance Contracting Concept is Supported by:**
  - **Ford Corporate Finance (confirmed by Price-Waterhouse -Coopers)**
  - **Ford Credit**
  - **Ford Treasury**
  - **Ford Land**
  - **Manufacturing Finance**
  - **Purchasing**
  - **Ford Office of General Counsel**

# Performance Contracting

- ◆ **The vendor owns the equipment.**
- ◆ **The vendor has the right to remove the equipment at lease end but must restore Ford property to the “as was” condition.**
- ◆ **The payment to the vendor will be contingent depending on the savings generated by the equipment, and verified with installed meters.**
- ◆ **The Performance Contract is a utility contract and is not reflected on Ford’s balance sheet.**

# Implementation

- ◆ **Step 1: Performance Contractor evaluates a project for performance contracting.**
- ◆ **Step 2: Performance Contractor submits a Letter of Agreement, to the plant and Energy Efficiency and Supply a Letter of Agreement for approval, complete with scope, Financial pro-forma and "buy out cost" for study.**
- ◆ **Step 3: Performance Contractor performs a detailed study and submits an Energy Services Agreement, complete with energy baselines.**

# Implementation

- ◆ **Step 4: Plant Management and Energy Efficiency and Supply execute agreement with Performance Contractor.**
- ◆ **Step 5: Performance Contractor implements project**
- ◆ **Step 6: Plant management accepts installation and Performance Contractor starts billing on verified savings.**

# Performance Contracting Benefits

- ◆ **No Ford capital investment**
- ◆ **Off balance sheet treatment - utility contract**
- ◆ **Project cost paid through savings**
- ◆ **Savings are guaranteed**
- ◆ **Equipment/system performance guaranteed**
- ◆ **After the term of the contract, the plant receives 100% of the savings.**

# Performance Contract Projects

- ◆ **H&V Upgrades / Boiler Shutdown**
- ◆ **“Mega Lights” -lighting upgrade at 16 assembly plants**
- ◆ **Air Compressor controls/systems**
- ◆ **Incinerator conversions RTO to RCO.**
- ◆ **Paint Booth upgrades**
- ◆ **Parts washers**

# Vehicle Operations - Steam Elimination/H&V Upgrade Performance Contracts

# Existing Conditions

- ◆ **Central Boilerhouses, Steam Units and Piping 40 to 75 years old.**
- ◆ **Steam System 50% Efficient**
- ◆ **Process changes have created negative air pressure and reduced steam loads in plants**
- ◆ **Rouge incident has caused us to review the use and need of all thermal requirements**

# Change Barriers

- ◆ **Required Capital Funding**
- ◆ **High Capital Cost**  
(Approx. \$5-\$10 million per plant)
- ◆ **High TARR Hurdle Rates(50%)**
- ◆ **Low TARR Project (15%-20%)**
- ◆ **U.A.W. Heating and Ventilation issues**

Solution:  
Division Wide Performance  
Contracts

# Objective of Divisional Contracts

- ◆ **Leverage the number of Boiler House Shut Downs**
- ◆ **Upgrade Existing Heating and Ventilating Systems, Guaranteed performance( winter +/- 2 °, summer max. outside temp.+ 5°)**
- ◆ **Save Energy/Reduce Cost**
- ◆ **Off Balance Sheet Financing**
- ◆ **Reduce environmental emissions**

# Utilize Newer Technology

- ◆ **Big Foot - 200,000 cfm direct fired air house**
- ◆ **Ductless Distribution System**
- ◆ **Hot Water Station(Non Pressure Vessel)**
- ◆ **Global Control/Energy Management System**

# Newer Technology Allows Us to:

- ◆ **Standardize Engineering & Training**
- ◆ **Standardize Contract & Baseline**
- ◆ **Standardize Operation & Maintenance**
- ◆ **Standardize and Leverage Purchasing of Equipment**
- ◆ **Leverage Installation**
- ◆ **Lower Capital Cost**

# Chicago Assembly Plant - Steam Elimination/H&V & Air Compressor Upgrade Project.

# Existing Conditions: H&V

- ◆ **Central Boilerhouse, Steam Units and Piping over 70 years old.**
- ◆ **Steam System 50% Efficient**
- ◆ **Process Changes have created negative pressure in plant**
- ◆ **Chicago Code has caused inefficient operation of natural gas fired units**

# Existing Conditions: Air Compressors

- ◆ **Mix of Oil Free Centrifugal and Lubricated Reciprocating Air Compressors**
- ◆ **Manual control of individual compressors.**
- ◆ **Design and age of compressors are less efficient and require more maintenance than newer designs.**
- ◆ **Pressure drops from central compressors station to end use.**

# Change Barriers

- ◆ **Limited Capital Funding**
- ◆ **High Capital Cost(Approx. \$8 million)**
- ◆ **High TARR Hurdle Rates(50%)**
- ◆ **Low TARR Project (15%)**
- ◆ **Chicago Codes**
- ◆ **U.A.W. Concerns**

Solution:  
Chicago Assembly Plant  
Performance Contract

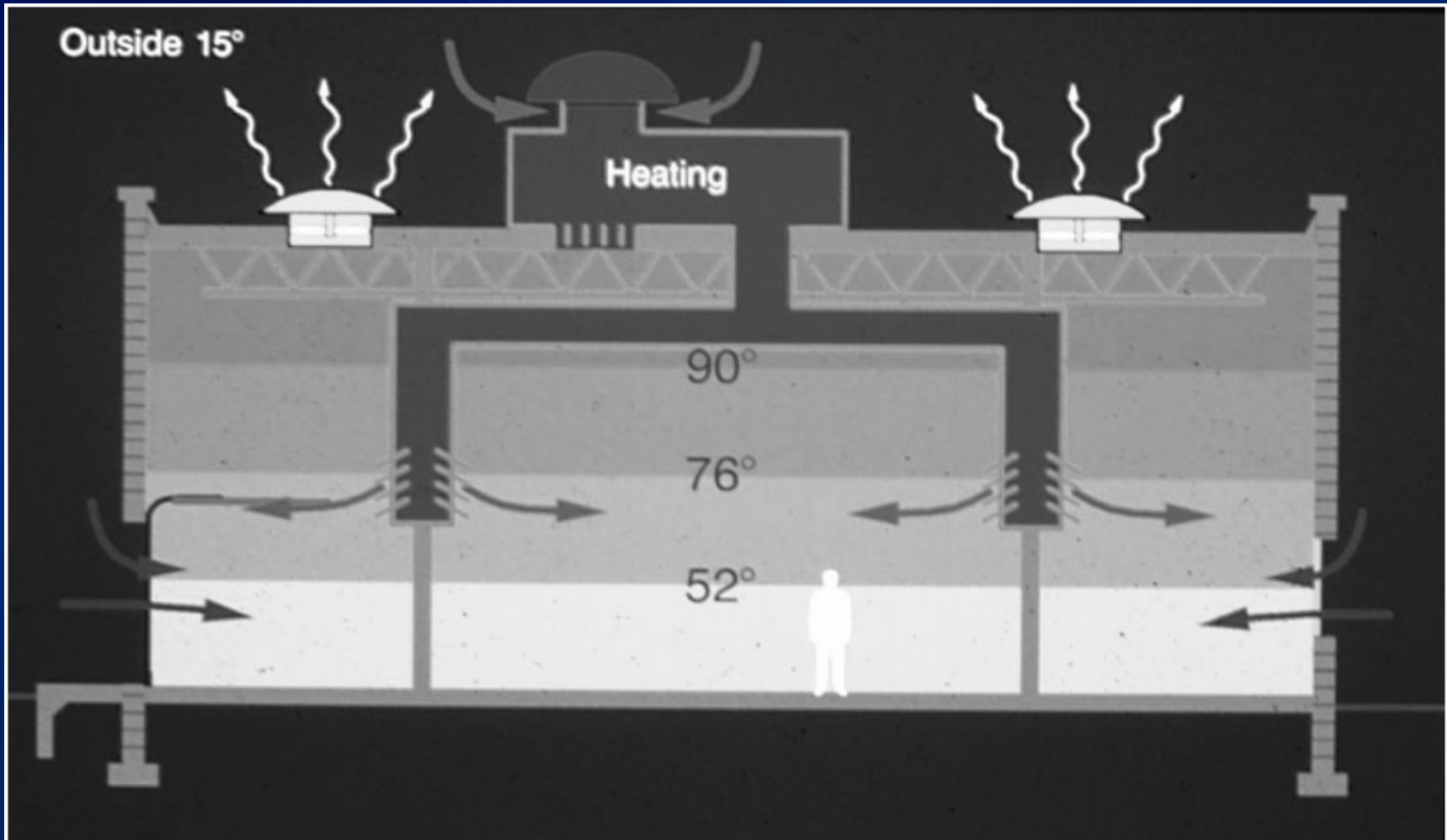
# Project Team

- ◆ **Chicago Assembly Plant**
- ◆ **Ford Motor Land Services**
- ◆ **Planergy/PSI**

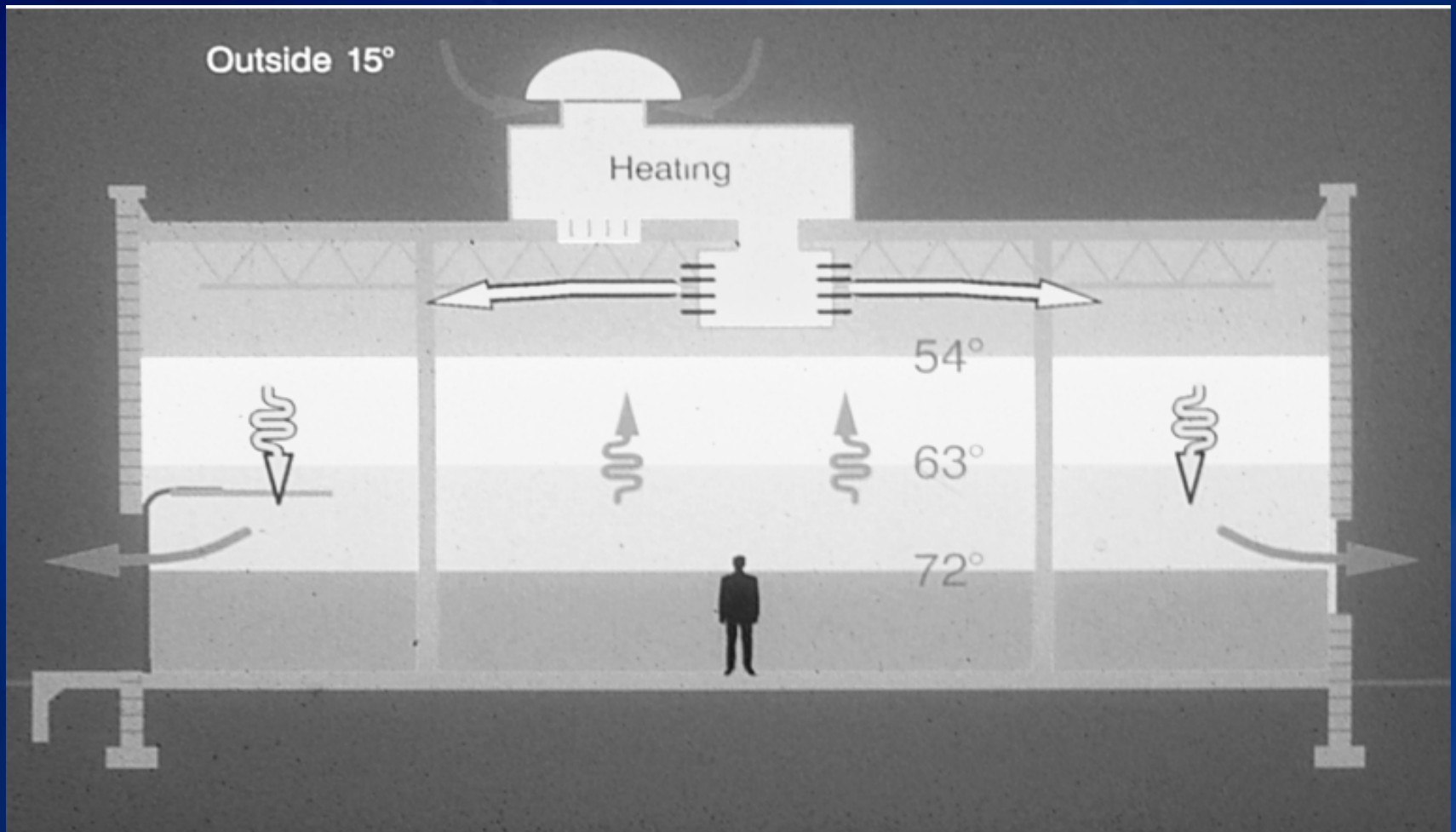
# Scope of Project

- ◆ Install new( 4-200,000 cfm direct fired units, 4 - indirect unit heaters)
- ◆ Utilize existing equipment(1 direct fired, 24-indirect fired, 18 unit heaters, 6 infrared.
- ◆ Install new direct contact hot water heater.
- ◆ Install 3 new 5000 cfm water cooled centrifugal compressors & Dryers
- ◆ Install global control system

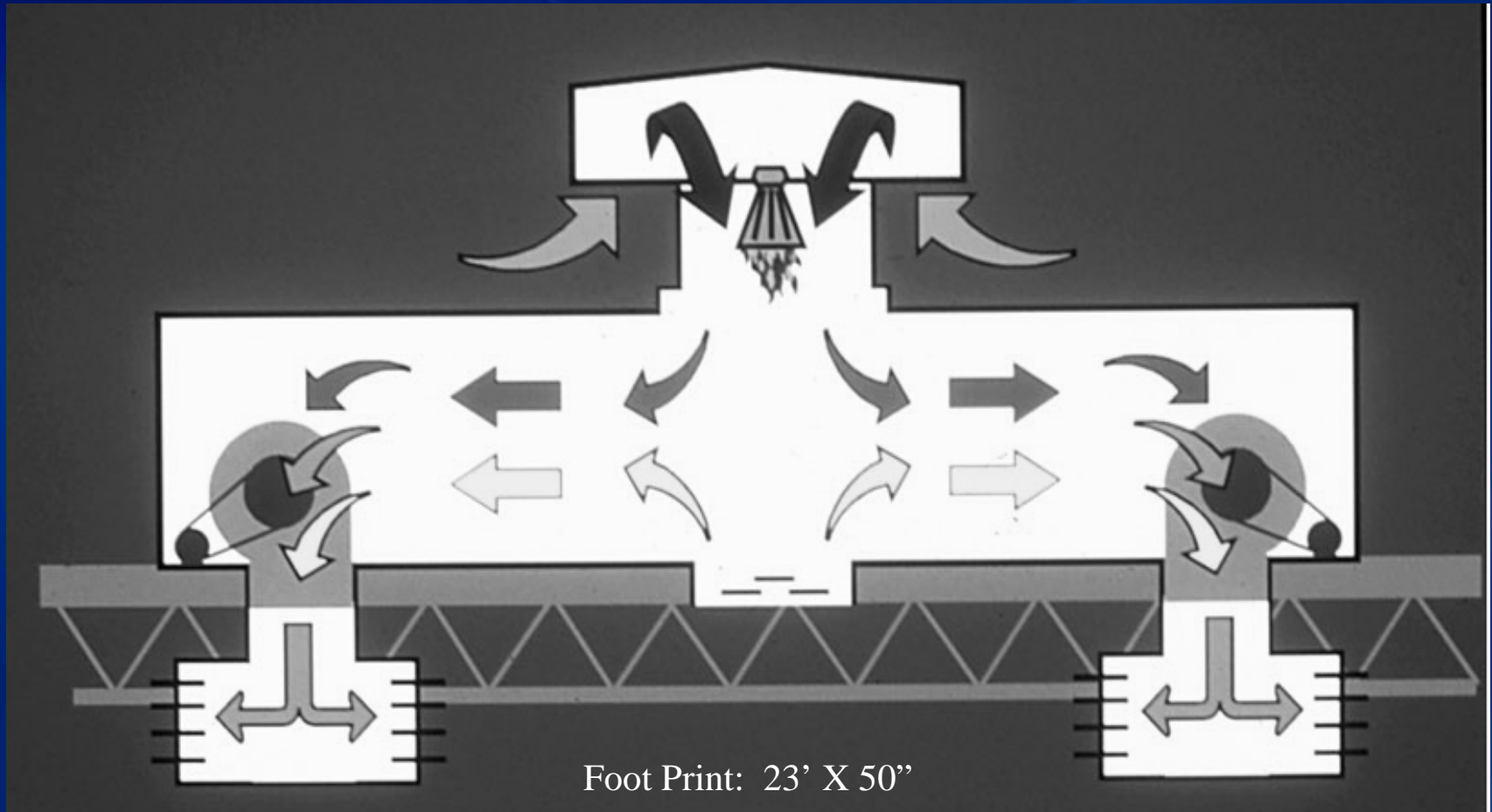
# Negative Building Infiltration



# Ductless System



# Big Foot 200,000 Cfm Direct Fired Gas Unit



# Global Control



# Scope of Project

- ◆ **Cost: \$7.94 Million dollars**
- ◆ **Annual Savings: \$2 million(\$1.8 energy \$200k Manpower)**
- ◆ **8 year contract(required Alex Trotman's signature)**
- ◆ **Actual Annual Savings to Plant : \$270 - \$250k Guaranteed.**
- ◆ **Project has received code deviation for City of Chicago**

# System Benefits

- ◆ **New equipment with guaranteed performance**
- ◆ **Guaranteed Savings(\$270,000 to \$250,000) with no investment**
- ◆ **Oil free compressed air system**
- ◆ **Total building H&V and compressor control system**

Questions?