Ingenious Solution

PCS

Project Consulting Services

Projectconsultings.com
info@projectconsultings.com

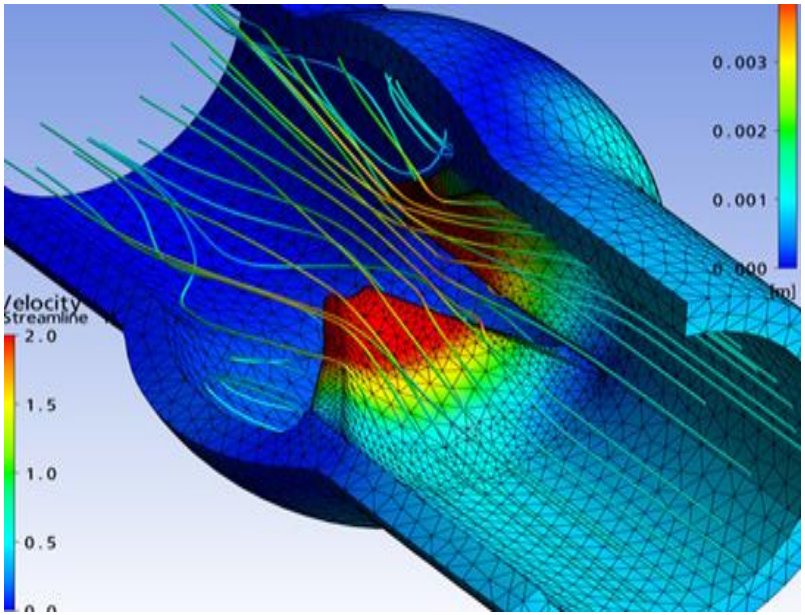
SOFTWARE CAPABILITIES

- **Solid works / Solidedge / Catia / Inventor /Creo Parametric Elements** (Professional Level, 3Dmodeling/assembly/animation for product development).
- **Auto Cad, Plant 3D** (Professional Level, Create 3D and 2D drawing for Assembly/ Detailed dwgs.),
- **Ansys Workbench / Abacus** (Structural, Thermal & Fatigue FEM Analysis)
- **Ansys Ice Pack** (PCB Thermal Analysis)
- **CAESAR II** (Piping stress analysis – Basic level)
- **Staad Pro** (Structural/ bolted connection analysis)
- **PV elite** (pressure vessel design)
- **Aspen** analysis (Heat exchanger / process design)
- **Should Costing** – Internal home grown tool for costing machined / molded/ fabricated parts
- **Master CAM –** Development of cnc code for complex parts, jig and fixtures.

FEM Analysis services

Finite Element Analysis (FEA)

FEA experts are skilled in both static and dynamic structural analysis. Our team has worked on a number of projects where they had the task of ensuring that the finished product is fit for its purpose and able to stand up to the rigors of intended use. The FEA analysis is done for stress analysis, durability analysis, fatigue analysis, vibration analysis, modal analysis and design optimization.



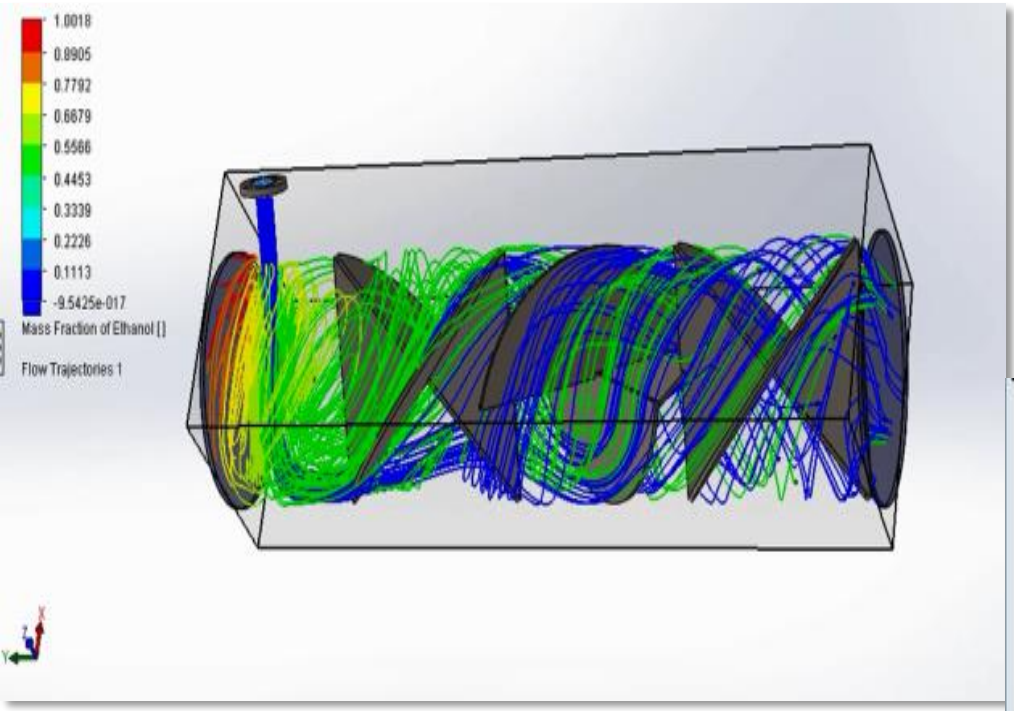
Computational Fluid Dynamics (CFD)

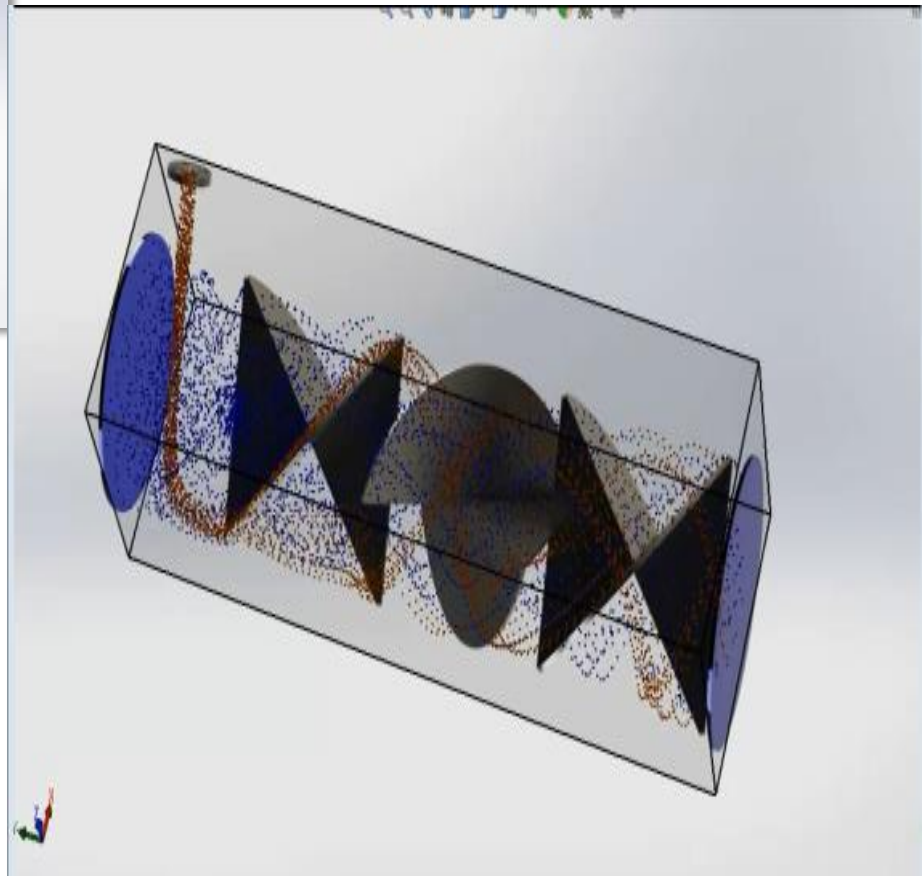
Our Analysis team uses Computational Fluid Dynamics (CFD) tools to analyze and solve issues relating to fluid flow. The CFD analysis process involves simulation of the interaction of liquids/gases with the boundary conditions, to identify and rectify potential problems.

Our CFD analysis service capabilities include:

- Heat Transfer and Fluid Flow (Electronic Cooling, HVAC)
- Rotating Machines (Fans, Turbines, Pumps)
- Fluid Structure Interaction (FSI)
- Combustion and related (IC Engine, Boilers, Gas turbines)
- Multiphase Flows (Free Surface, Granular)

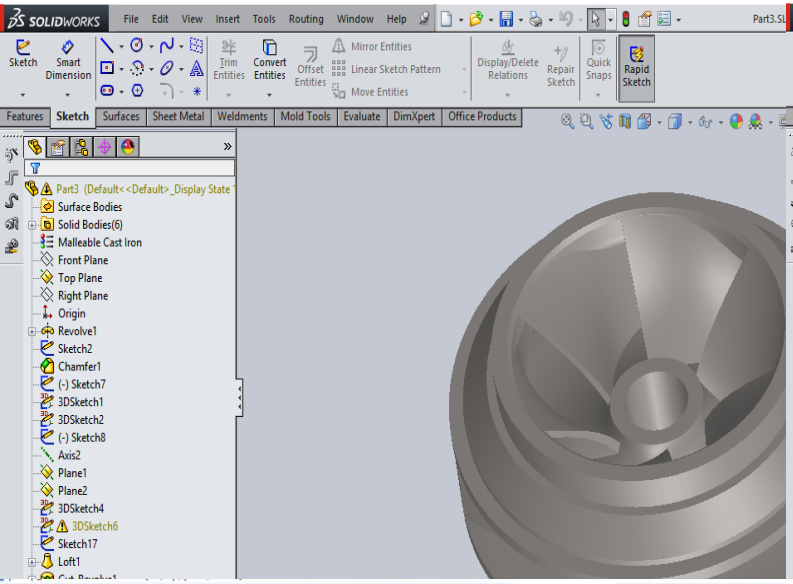
Modeling & Thermal/Flow Simulation Using CFD For Client –Vopak, Indonesia

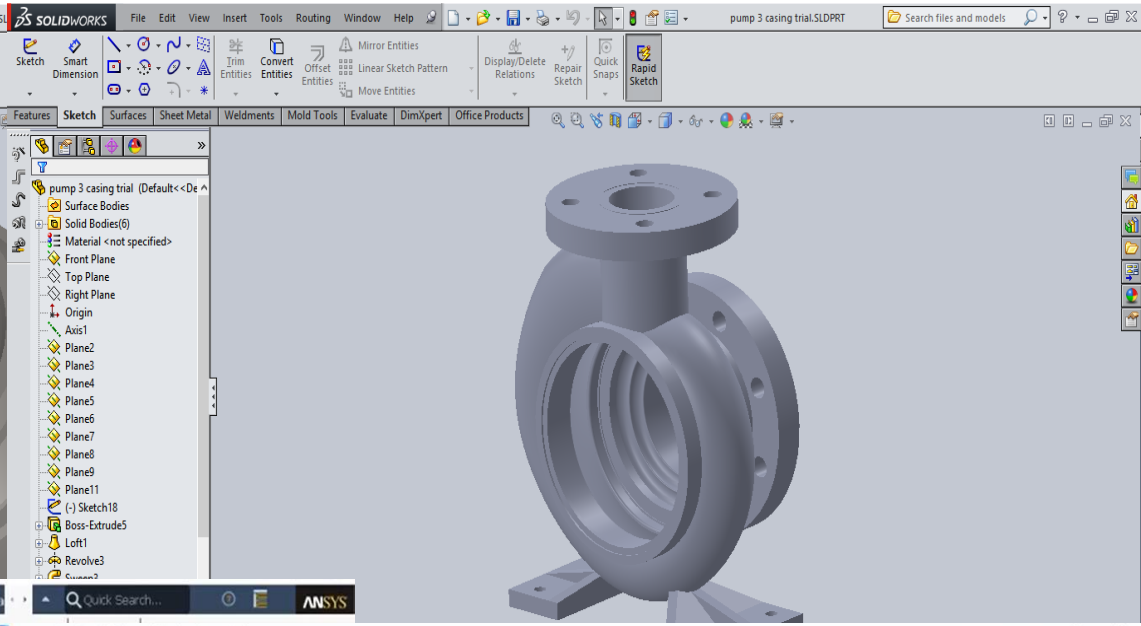


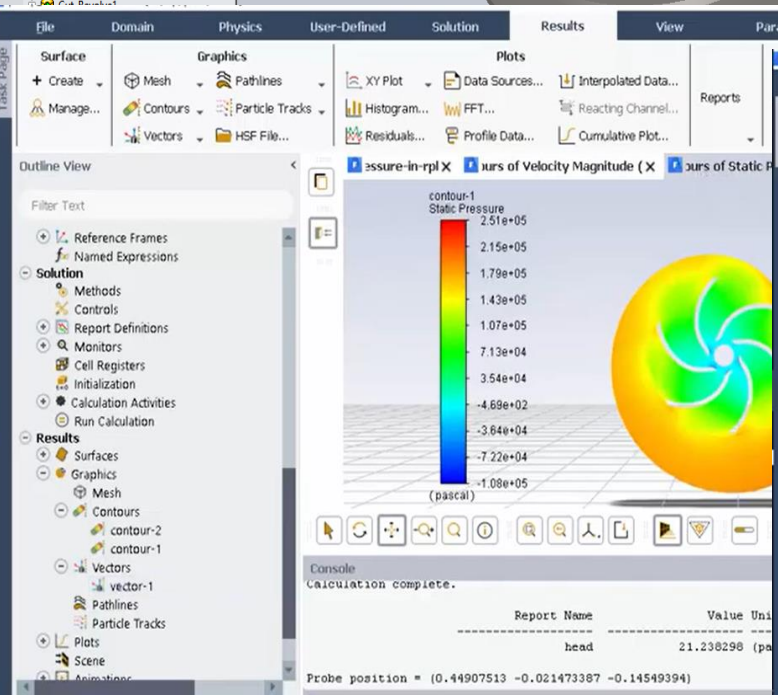


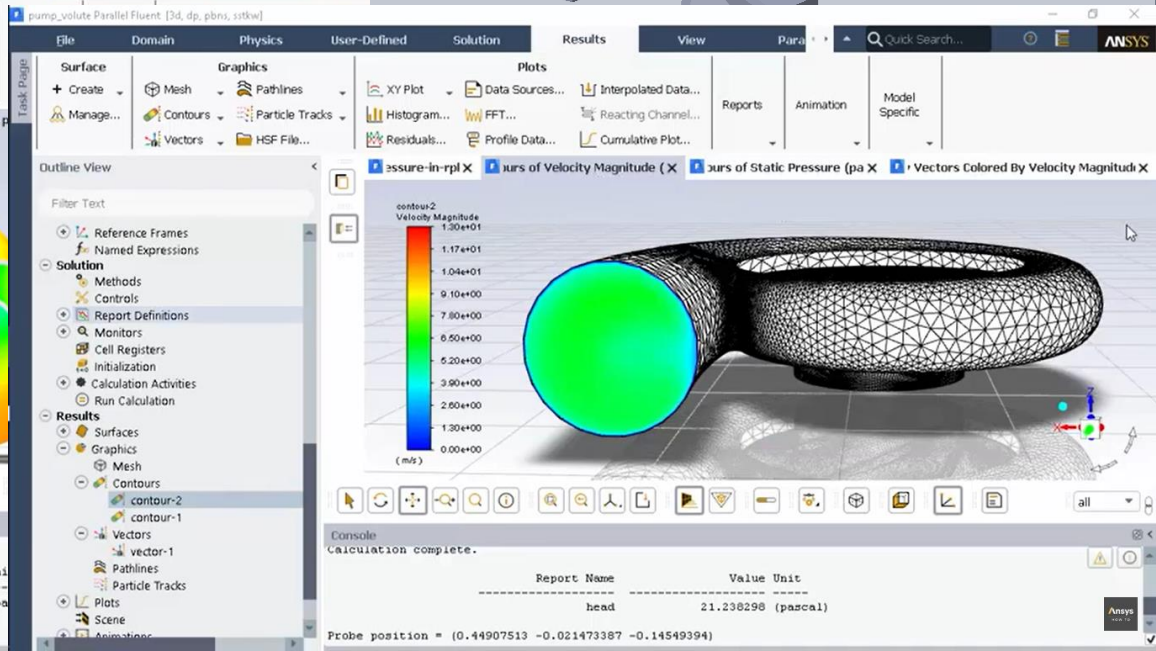
- Modeling of static mixture
- Flow simulation, Pressure drop and heat transfer analysis in various area of static mixture.

2D/3D CAD Modelling and CFD Analysis



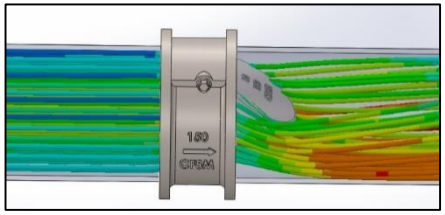


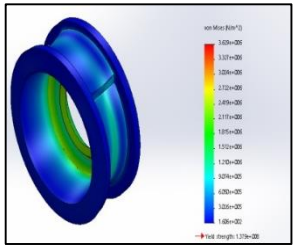




Modeling & Simulation of Single Plate Wafer Type Check Valve Using CFD for client – 3 Pillars PTE, Singapore

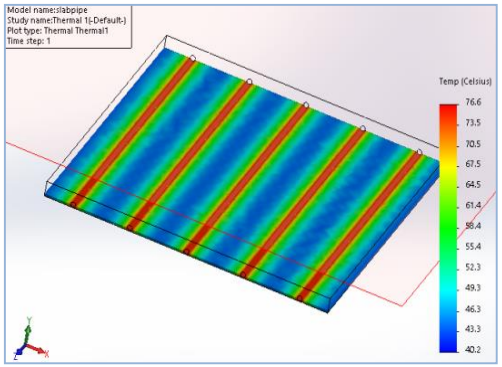
Flow simulation for wafer valve

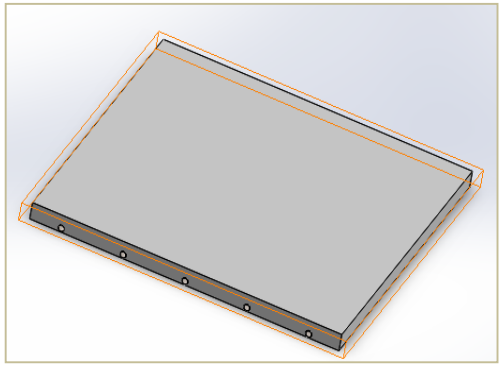




- Modeling of wafer type valve for 10’ and 14’ size
- Flow simulation, Pressure drop and heat transfer analysis in various area of valves

Thermal analysis to optimize evaporation rate

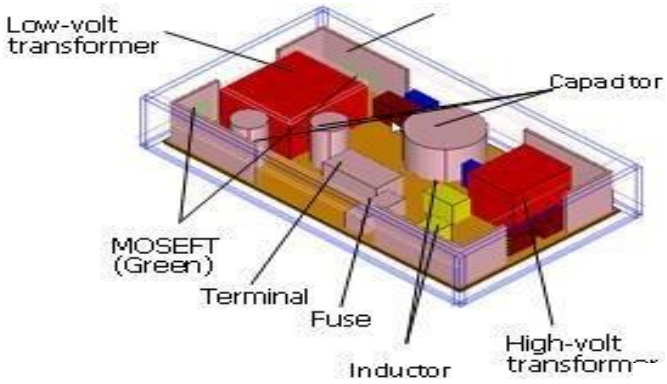


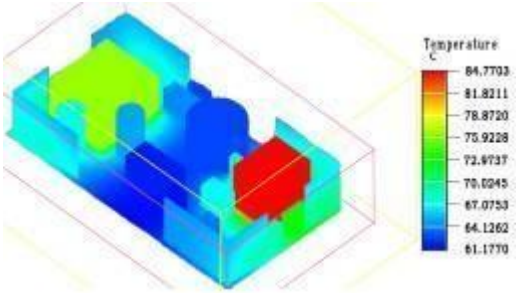


- Modeling of RCC slab with solar heated water piping system
- Simulation of sludge drying process with thermal fluid flow analysis.
- Optimization of No of pipes and heating water temp for sludge drying process as per customer requirement.

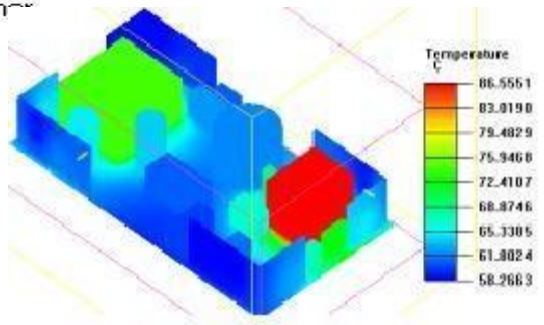
RESEARCH WORK ON THERMAL SIMULATION OF PCB WITH/WITHOUT HEAT PIPE WITH ANSYS ICEPAK

Thermal Simulation of Led Driver Model in Ansys Icepak





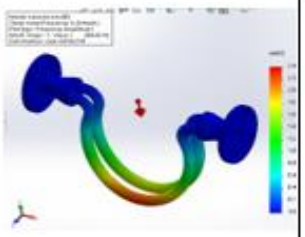
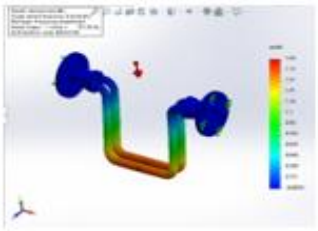
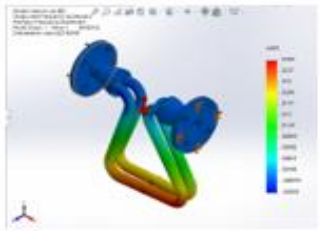
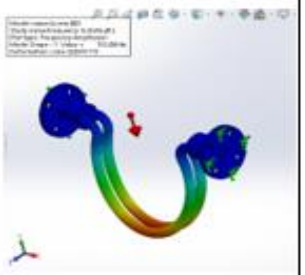
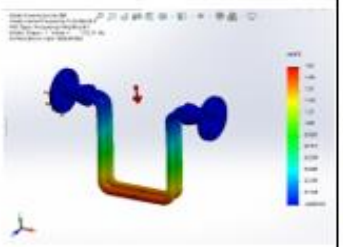
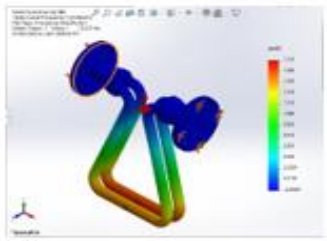
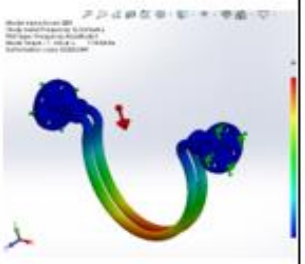
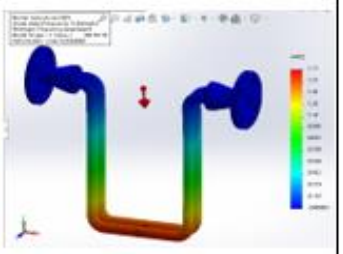
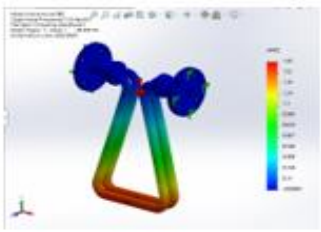
original cooling system



With heat pipes cooling system

Elements	Original plan	With heat pipes	temperature difference
Low-volt transformer	76.64	74.29	-2.35
High-volt transformer	84.77	86.56	1.79
Aluminum Pedestal 1	68.85	63.58	-5.27

Modeling & Vibration Simulation For Coriolis Mass Flow Meter

Mode 1 Vibration of Different Shape and Size of CFM			
CFM Tube path length in mm	Arc Shape	U Shape	Triangle Shape
450			
550			
650			

- Modeling and vibration optimization of Coriolis flow meter tube shape and size.

ENERGY EFFICIENCY MODELLING FOR 45L FOR USA

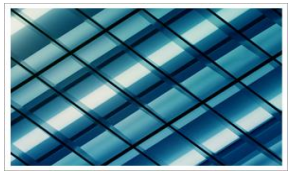
Section 45L New Energy Efficient Home Tax Credit

- Extended through 2016
- Credit is generally $2,000 per qualifying residence.
- Claimed by the person who constructed the qualified energy efficient home.
- Qualification is based on the 2006 International Energy Conservation Code (IECC) and requires a 50% reduction in energy usage.
- Must be for a dwelling that includes a residence, apartment building, units within a condominium or a houseboat.

179D Energy Efficiency Deduction For USA

Energy Policy Act of 2005 (Notice 2006-52)

- ≥ 50% over ASHRAE 90.1-2001 baseline = $1.80
- Lighting ≥ 25% = $.60



- HVAC ≥ 15% = $.60

- Envelope ≥ 10% = $.60

1. Modeling Required
2. Interim Lighting Allowed
3. EPAct 2008 update (Notice 2008-40) Designers of Government Buildings

Thank You!

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