

# **We Are In A Race, to the Bottom**



# Fred Hutchinson Cancer Research Center

- World Famous Cancer Research Center
- 13 Buildings (1 LEED)
  - 1.4 Million Square feet
  - 3,000+ employees
    - 3 Nobel prize winners
- Sunny shores of South Lake Union









# **Flexibility, Reliability, Sustainability, Innovation, Savings**





**We cover a lot of territory, Lots of Staff  
& Patients, a lot of Equipment, 24X7**

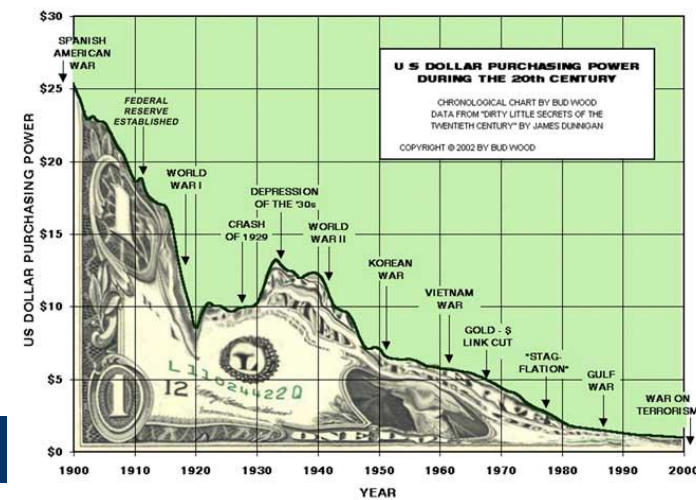


# **We Are In A Race, to the Bottom**



# Its not a fun race

- Everyone can do it cheaper
- Standard of living is being recalibrated
  - Services are being cut
  - Pensions are being cut
  - People are working longer hours
  - We are traveling less
  - We are not even getting our 30% raises every year
- It's a race where the fun is being replaced by the bottom line
- Its being driven by the economy



# In This Race

- There are Winners
- There are Losers
- And there are Survivors





# The Losers aren't in this room

- They've moved on
  - Outsourced
  - Better Job
    - Less Stress, better hours, more benefits
      - Think President here



# If the losers aren't here, by definition We've only got Winners and Survivors

- I'd like to give some tips
  - To Help the Survivors Become Winners
  - And the Winners stay Winners
    - Because this is really a marathon not a sprint
- How Fred Hutchinson Won the race
  - At least for the time being



# I'm going to give you 6 Tips

- Tip # 1 How do you know when you've won the race
- Tip #2 Remember everyone wants you to win
  - And will support you
- Tip # 3: The Bottom line
- Tip # 4,5,6 Thoughts on Major Cost Centers



# Tip #1

- If you don't know where you are going, you are never going to get there



# In the Race to the Bottom, You can fool a fool, but you can't snow the Snowman

- In Finance Ice runs through their veins
  - They are all snowmen
    - They live the bottom line
  - They can call in really big snowmen
    - Think Auditing groups like Mckinsey



# Bean Counters like beans

- Number crunchers like numbers
- In this race you are going to have to show #s
  - But numbers are good,
    - you can't manage what you don't measure
  - And those numbers are going to have to be in context
    - Its called Benchmarking





# Benchmarking is a science until itself

- Get in front of the power curve on benchmarking
    - Do it with your peers
    - If the numbers make you look good, share up the food chain
      - If the numbers don't make you look good
        - Figure out where you have opportunities
        - Work on it until the numbers make you look good
          - Then share it up the food chain
          - Best defense is a good offense, *Julius Caesar 58 BC*
- Even if you don't want to take the offensive keep them in your hip pocket*



## Tip # 2, Everyone wants you to win the race

- Now is the time to make moves,
  - that you might have been hesitant to make before
- But explain those moves and how they benefit the organization
  - You will be amazed at how supportive people are



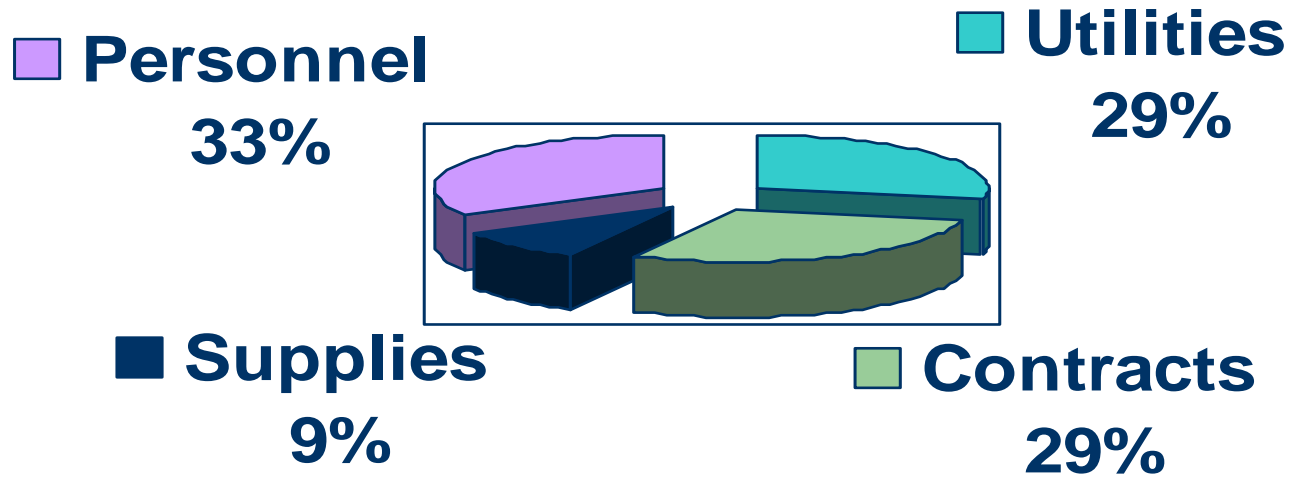
## Tip #3. The Bottom Line

- Is the Bottom line,
  - You have to know where your money is going
- You have to think about it
  - Strategically





# My Budget



**Breaks down into 3 or 4 major cost centers**

# Tips 4-6, strategic and tactical thoughts around major cost centers

- Contracts/Supplies
  - Mainly Service Contracts
    - Janitorial, Landscape, Garbage
- Energy
  - Almost as much as In House Labor
  - 98% management effort on Labor
    - 2% on Energy
- In House Labor
  - Its good to be lean
    - Because if your not, someone else will be



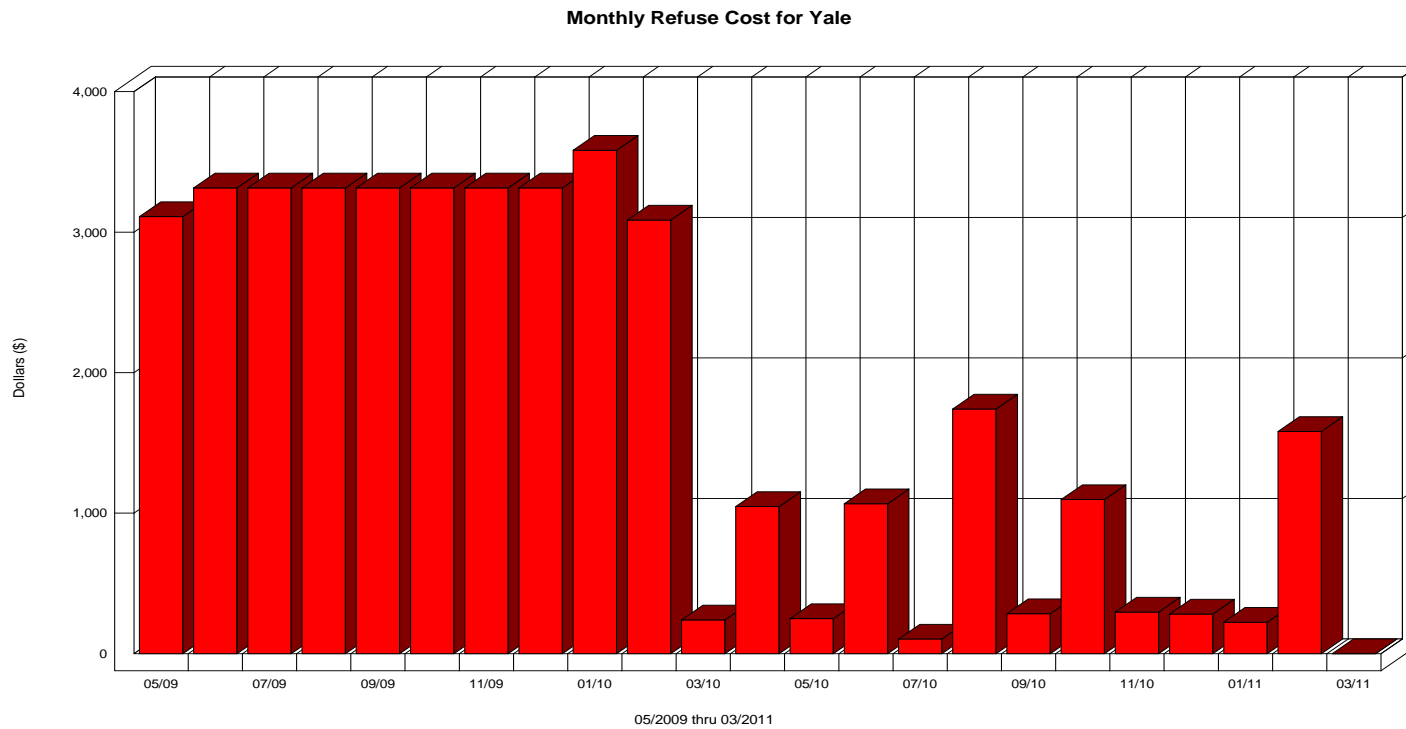
# Tip #4 Contract/Supplies

- Ask Three Questions
  - How?
    - How do you do the Job
      - And how do you contract for it
  - How Much?
    - How Much ....What are the Service Levels
  - Who?
    - Who does the Job
      - It's a contract, but when was the last time you bid it
        - Is it the same who you've had for the last 10 years
        - That's not bad or is it?



# How?

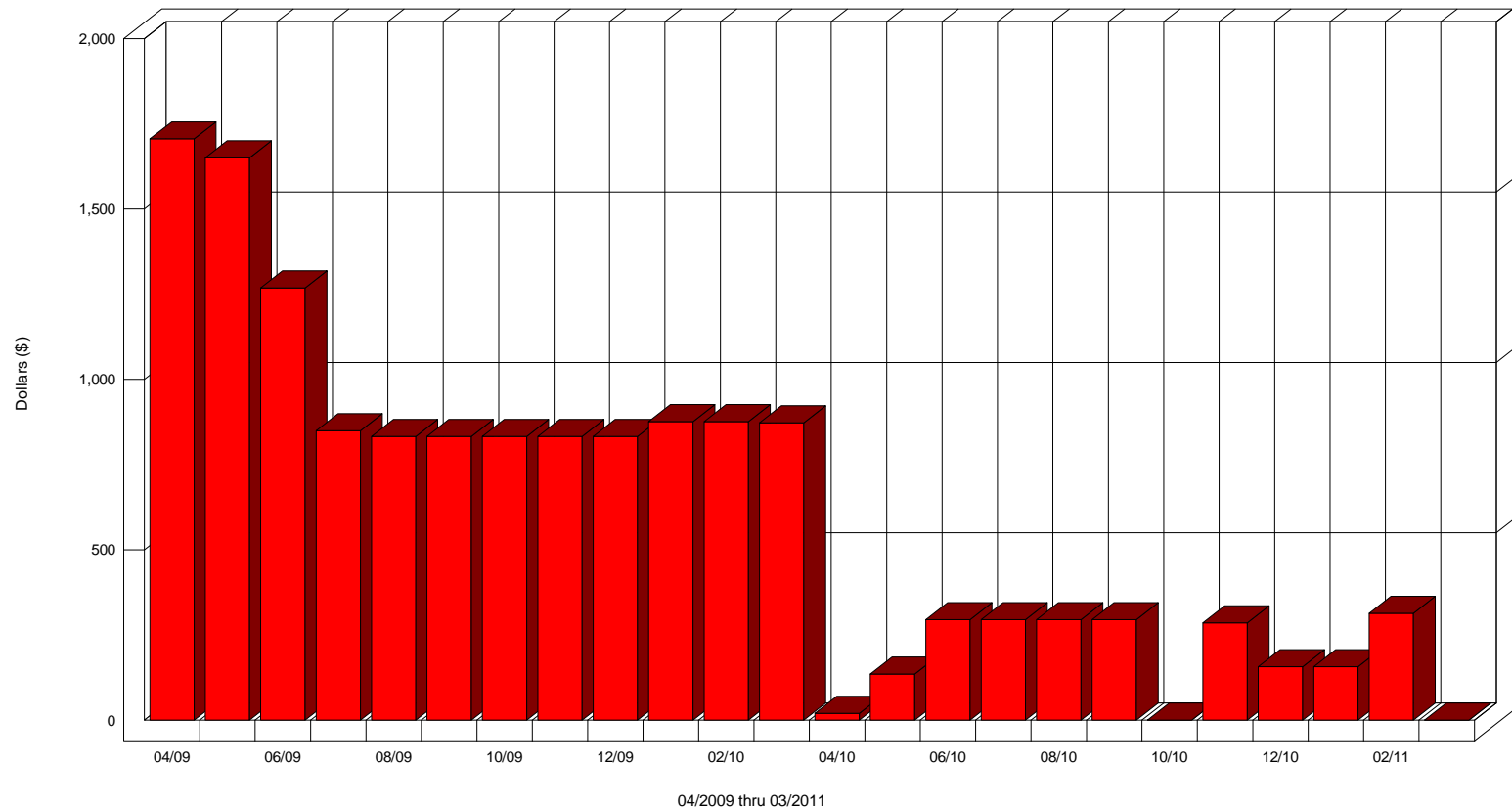
## From Dumpsters to Compactors





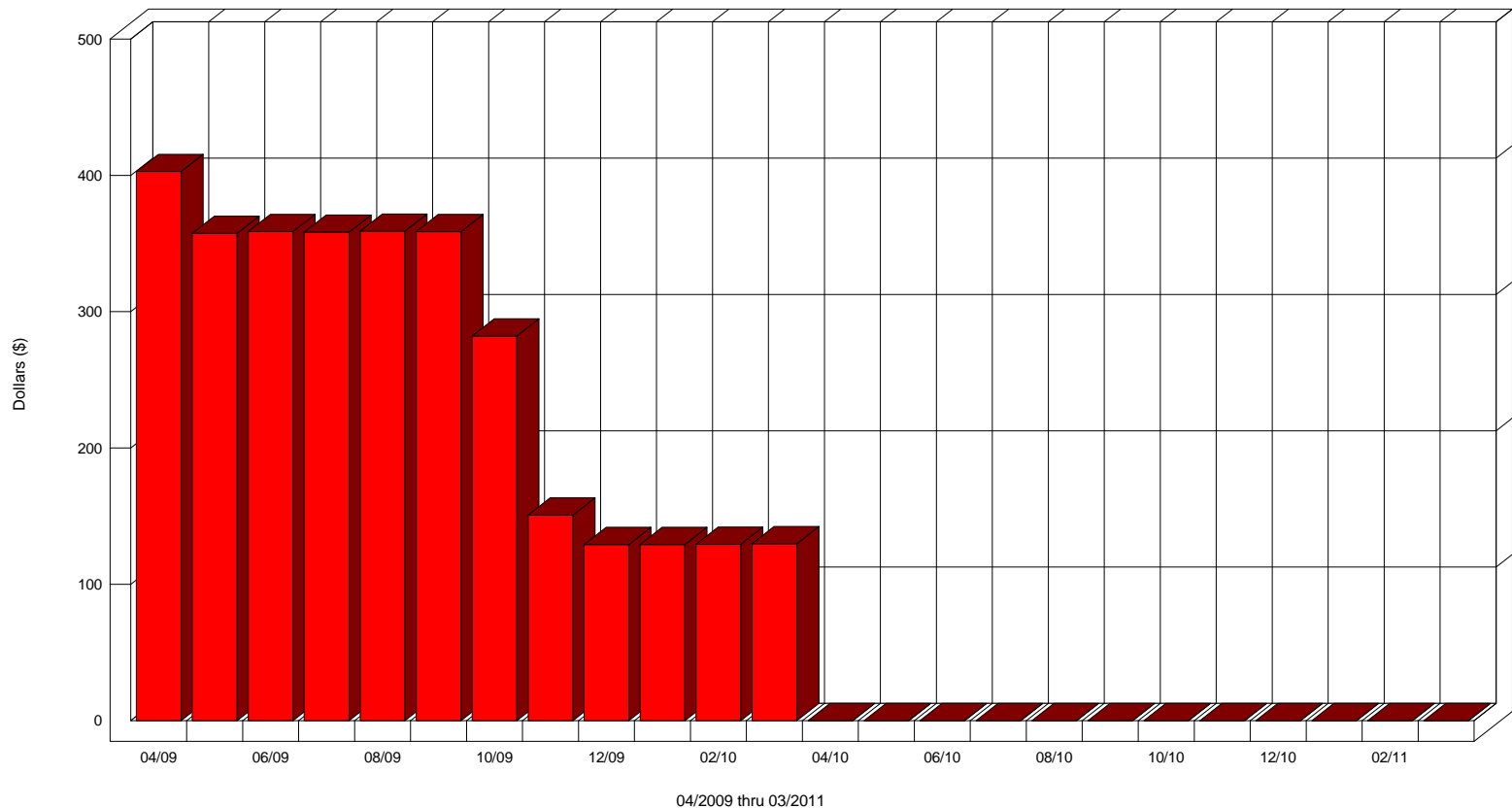
# Transparent to the end User

Monthly Refuse Cost for Fairview Building



# 3 Buildings, \$50K per year Savings

Monthly Refuse Cost for Minor Building



# Less than one year payback



# How you do it is important,

- How Much you do is even more important

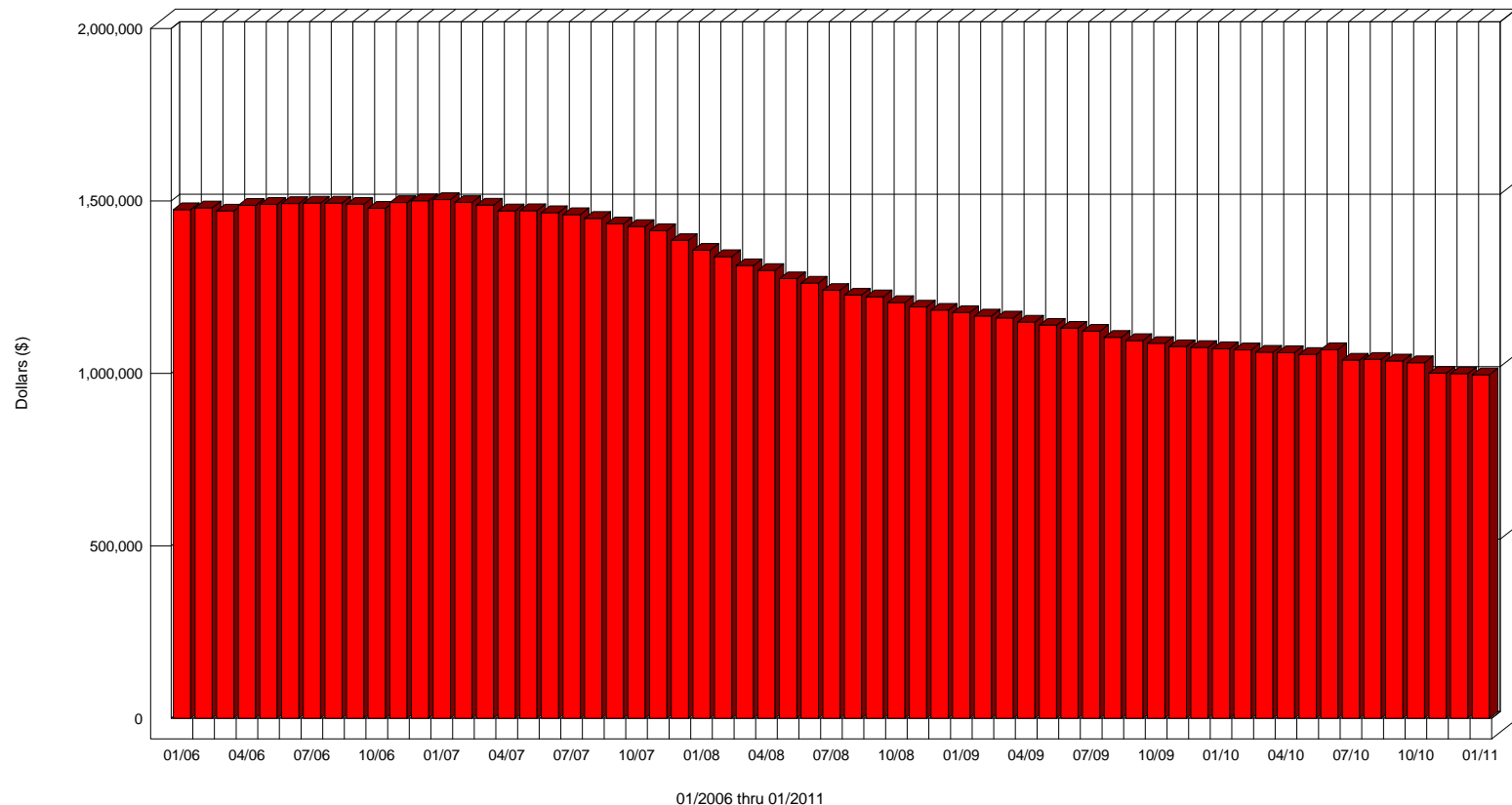
What's missing here is Quantity





# Janitorial Cost Down, Satisfaction up

Annual Cleaning Services Cost for Day Campus: FHCRC



# Took a hard look at Service Levels

- I was vacuuming every day
  - I wasn't doing that at home
- I was emptying trash every day
  - I wasn't doing that at home



# We reduced what wasn't important

- Increased what was
  - More day porters
    - Bathrooms are better
    - Common spaces are better
    - Emergent conditions get quicker response

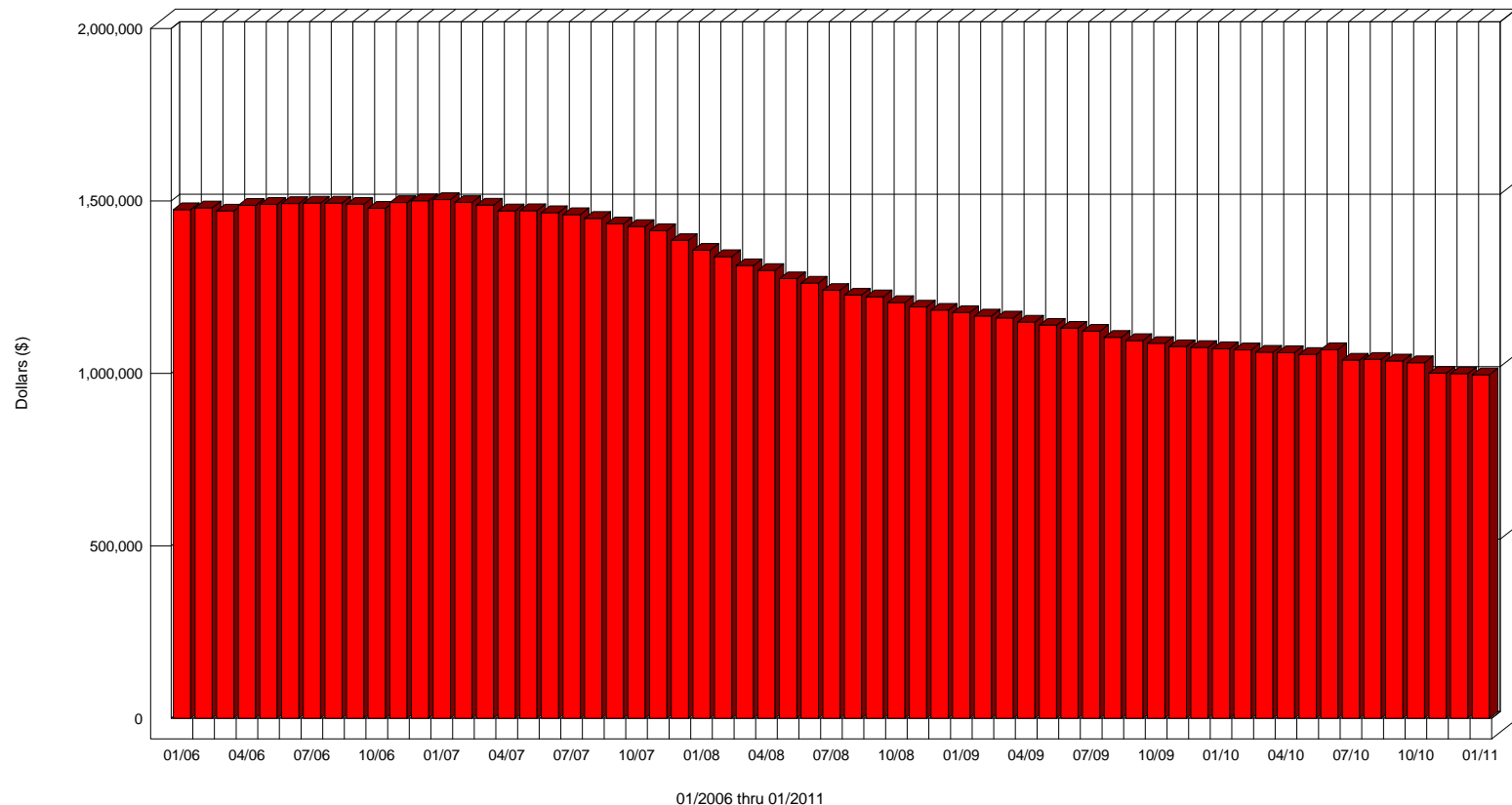
# We also rebid the contract

- 5 year contract
  - 1 year base
  - 4 individual option years
  - Contractor has incentive to do good



# Cut Cost 500,000 dollars / Satisfaction up

Annual Cleaning Services Cost for Day Campus: FHCRC



# Tip # 5: I love to save Energy

- Why?....I'm not really a tree hugger
  - I appreciate its good for the environment
    - My kids are going to love me for it
- Because every therm saved is a dollar in my budget
  - Done Right..... No one notices
    - If I cut payroll 10%,
      - people are out on the street
      - Bob's salary gets reduced
    - Cut Energy 10%
      - I'm a Energy Hero
      - Not a maintenance Zero



# How do you save Energy?

- Have a good Energy Philosophy
- What you can't measure, you can't manage
- Its all about air
  - Perhaps more than you realize
- 98% of management time in personnel, 2% in energy, isn't a formula for success



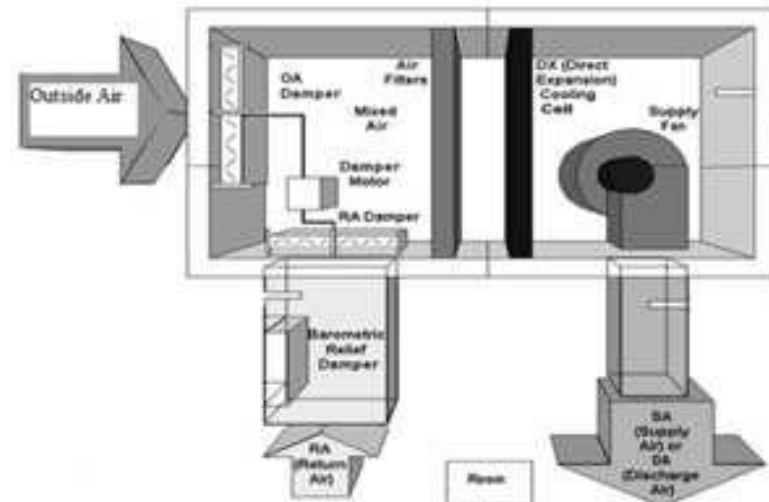
# Energy Philosophy

- Deliver the Right Amount of Energy
- Deliver the Energy Just in Time
- Deliver the Energy as Efficiently as Possible



# Deliver the right amount of Energy

- This doesn't mean set your temp at 68
  - What's the static pressure in your ducts
  - What's the air change rate
  - What's your percentage of outside air
  - What's the lighting intensity





# Deliver the Energy just in time

- Learn your building
  - When do you turn it on/off
    - Does that meet the needs of your occupants
      - Or is it more than they need
- Do you have zone overrides
  - So you don't have to turn on an entire floor for someone working in their cube at night
- Do you have occupancy sensors

Are your lights turning off automatically

- Or are you counting on Bob to shut them off when I go home



# Deliver the Energy as efficiently as possible

- This is all about VFD's and third generation fan wheels, this is about energy efficient motors LED's and T5's, this is about those capital projects you've been afraid (too busy) to tackle



# Don't Know What to Do?

- You don't have to!
  - You're not an Energy Conservation Expert.
- You can get an Expert and you can get him for  $\frac{1}{2}$  his cost.
  - The utility will pick up the rest.
- I'm doing it

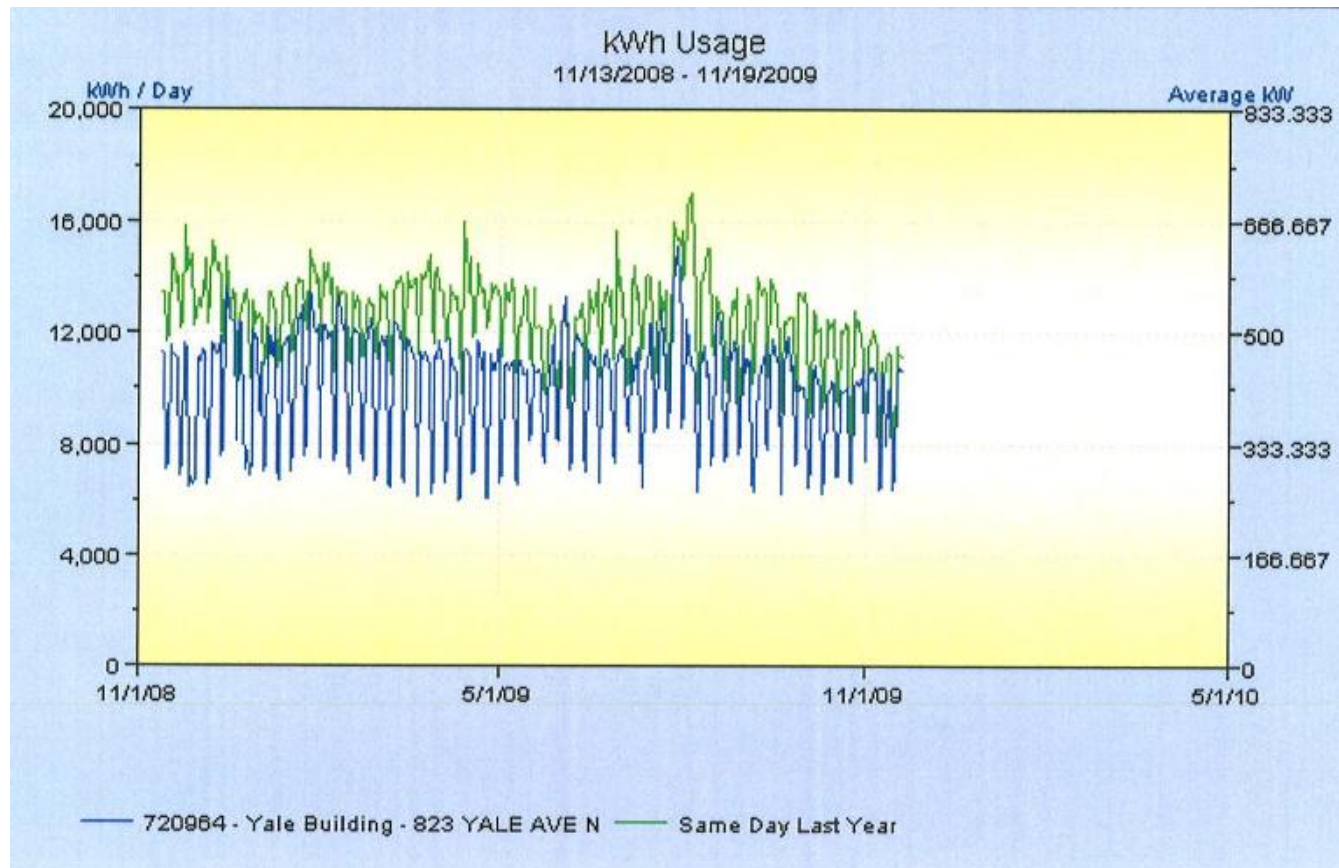


Don't

**You can't manage, what you can't  
measure**

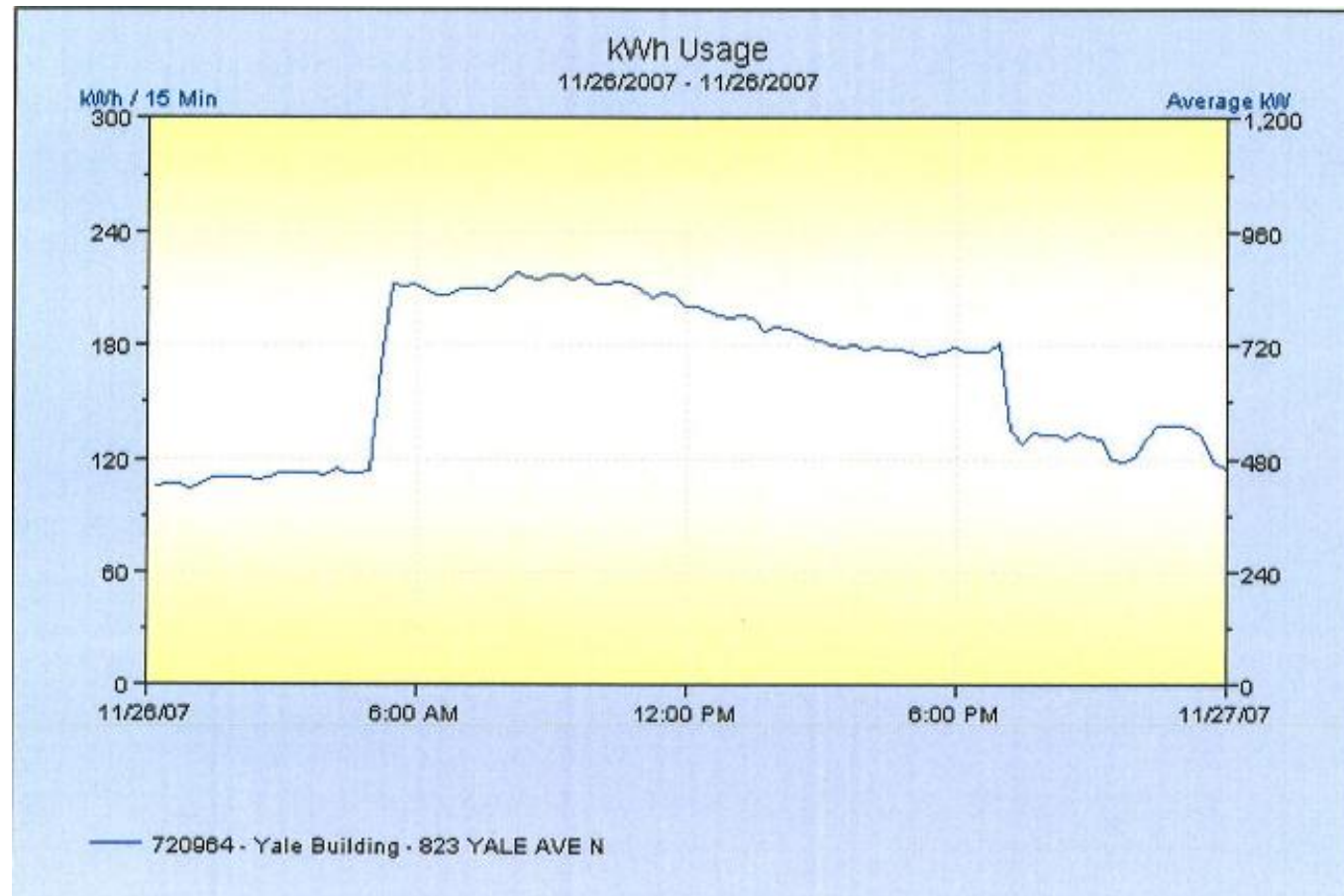


# Smart Meters, Smart Systems, Smart People = 20% reduction





# Seattle, Meter Watch

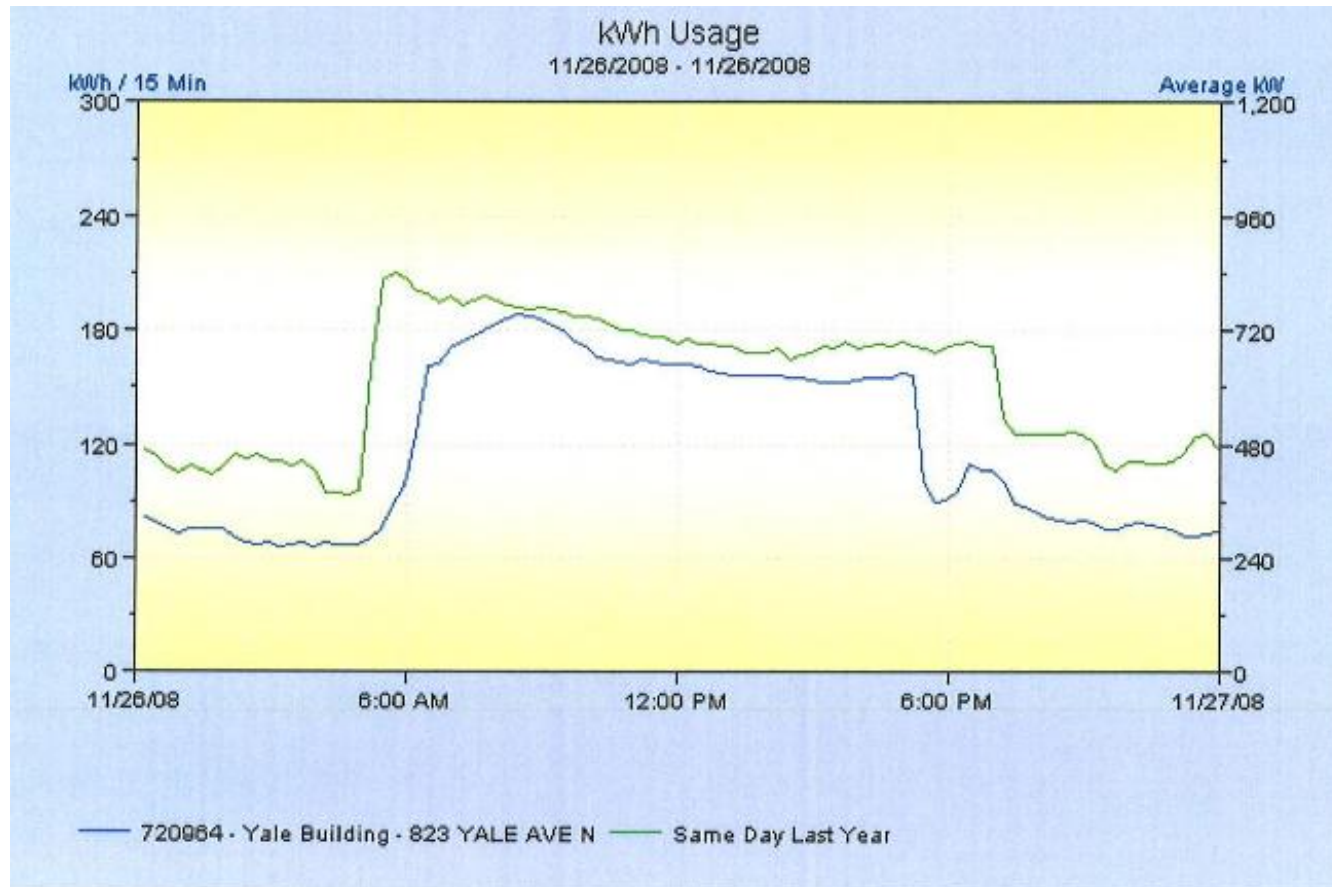


# Elevator traffic Survey

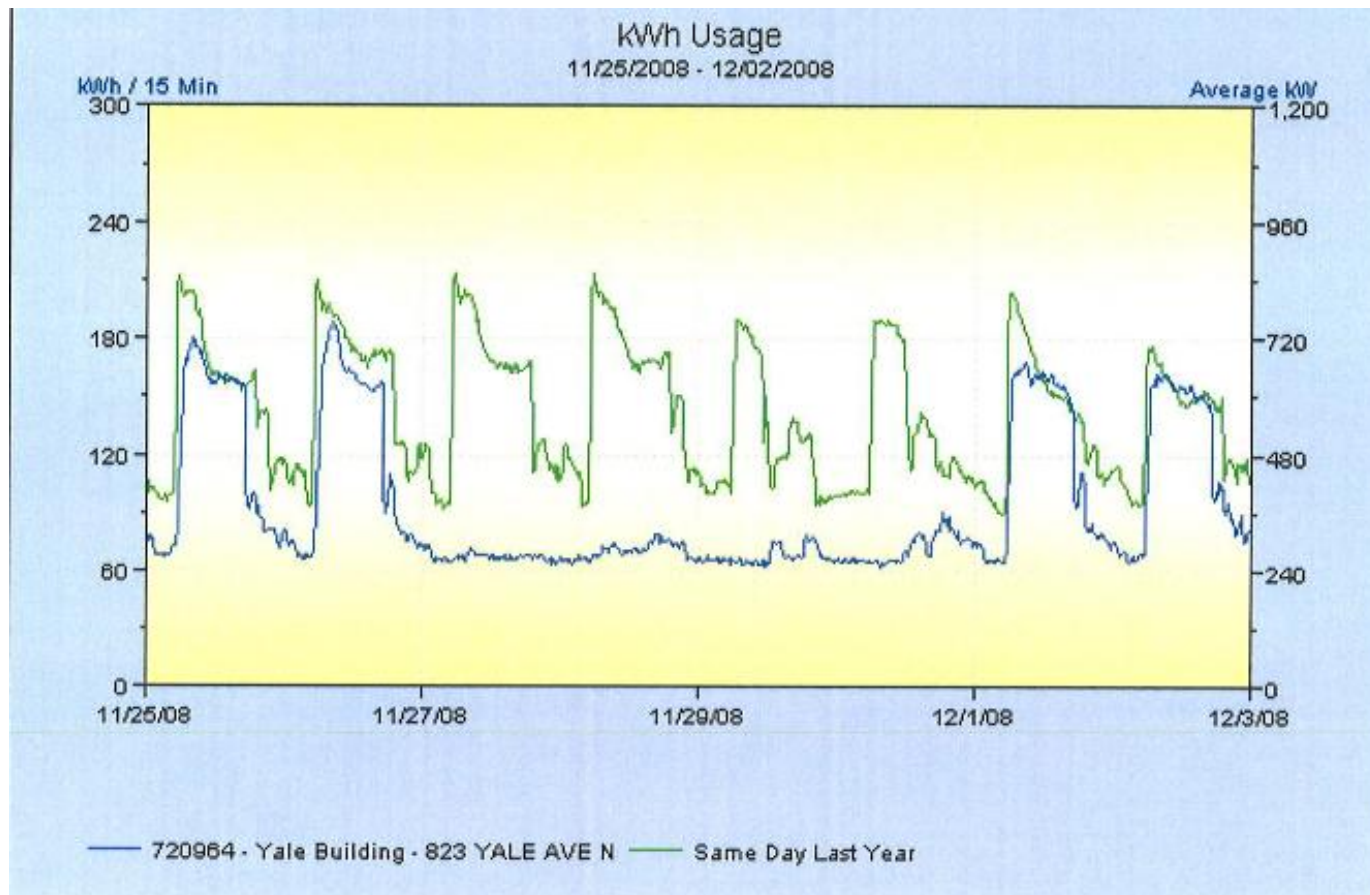
IMS Intelligent Management System C bldg 6,7		October 30, 2008 11:01:41PM	
UP/DN CALL SUMMARY		Start Time	10/30/2008 3:48:30PM
15 MINUTE INTERVALS		Stop Time	10/30/2008 9:03:30PM

Time Slot		Time In Seconds						Longest	Avg Wait	Total Calls
		< 15	< 30	< 45	< 60	< 120	120 +			
Dn 10/30/2008 3:48:30PM		4	0	0	0	0	0	10	6.8	4
Up 10/30/2008 3:48:30PM		1	1	0	0	0	0	21	10.5	2
Dn 10/30/2008 4:03:30PM		1	1	0	0	0	0	18	12.0	2
Up 10/30/2008 4:03:30PM		1	0	0	0	0	0	0	0.0	1
Dn 10/30/2008 4:18:30PM		2	2	0	0	0	0	24	11.5	4
Up 10/30/2008 4:18:30PM		3	0	0	0	0	0	5	1.7	3
Dn 10/30/2008 4:33:30PM		3	1	1	0	0	0	34	15.6	5
Up 10/30/2008 4:33:30PM		2	0	0	0	0	0	12	8.5	2
Dn 10/30/2008 4:48:30PM		4	5	0	1	2	0	69	25.6	12
Up 10/30/2008 4:48:30PM		2	1	0	0	2	0	105	43.6	5
Dn 10/30/2008 5:03:30PM		5	3	1	0	0	0	33	15.4	9
Up 10/30/2008 5:03:30PM		1	0	0	1	0	0	47	23.5	2
Dn 10/30/2008 5:18:30PM		3	2	0	0	0	0	21	9.4	5
Up 10/30/2008 5:18:30PM		1	0	0	0	0	0	0	0.0	1
Dn 10/30/2008 5:33:30PM		3	4	0	0	1	0	60	19.4	8
Up 10/30/2008 5:33:30PM		3	0	0	0	0	0	13	6.7	3
Dn 10/30/2008 5:48:30PM		0	2	0	0	0	0	16	16.0	2
Up 10/30/2008 5:48:30PM		0	0	0	0	0	0	0	0.0	0
Dn 10/30/2008 6:03:30PM		2	1	1	0	0	0	39	18.0	4
Up 10/30/2008 6:03:30PM		1	0	1	0	0	0	32	19.0	2
Dn 10/30/2008 6:18:30PM		0	1	0	0	0	0	15	15.0	1
Up 10/30/2008 6:18:30PM		0	0	0	0	0	0	0	0.0	0
Dn 10/30/2008 6:33:30PM		1	1	0	0	0	0	15	7.5	2
Up 10/30/2008 6:33:30PM		2	0	0	0	0	0	8	7.5	2
Dn 10/30/2008 6:48:30PM		1	0	0	0	0	0	10	10.0	1
Up 10/30/2008 6:48:30PM		0	0	0	0	0	0	0	0.0	0
Dn 10/30/2008 7:03:30PM		3	1	0	0	0	0	21	10.0	4
Up 10/30/2008 7:03:30PM		0	0	0	0	0	0	0	0.0	0
Dn 10/30/2008 7:18:30PM		0	1	0	0	0	0	16	16.0	1
Up 10/30/2008 7:18:30PM		1	0	0	0	0	0	6	6.0	1
Dn 10/30/2008 7:33:30PM		2	1	0	0	0	0	16	10.7	3
Up 10/30/2008 7:33:30PM		0	0	0	0	0	0	0	0.0	0
Dn 10/30/2008 7:48:30PM		0	0	0	0	0	0	0	0.0	0
Up 10/30/2008 7:48:30PM		0	0	0	0	0	0	0	0.0	0
Dn 10/30/2008 8:03:30PM		0	1	0	0	0	0	16	16.0	1
Up 10/30/2008 8:03:30PM		0	0	0	1	0	0	54	54.0	1
Dn 10/30/2008 8:18:30PM		3	0	0	0	0	0	11	5.7	3
Up 10/30/2008 8:18:30PM		1	0	0	0	0	0	6	6.0	1
Dn 10/30/2008 8:33:30PM		1	0	0	0	0	0	1	1.0	1
Up 10/30/2008 8:33:30PM		0	0	0	0	0	0	0	0.0	0
Up 10/30/2008 8:48:30PM		2	0	0	0	0	0	6	5.5	2
Dn 10/30/2008 8:48:30PM		3	1	0	0	0	0	21	9.3	4

# We put them together...

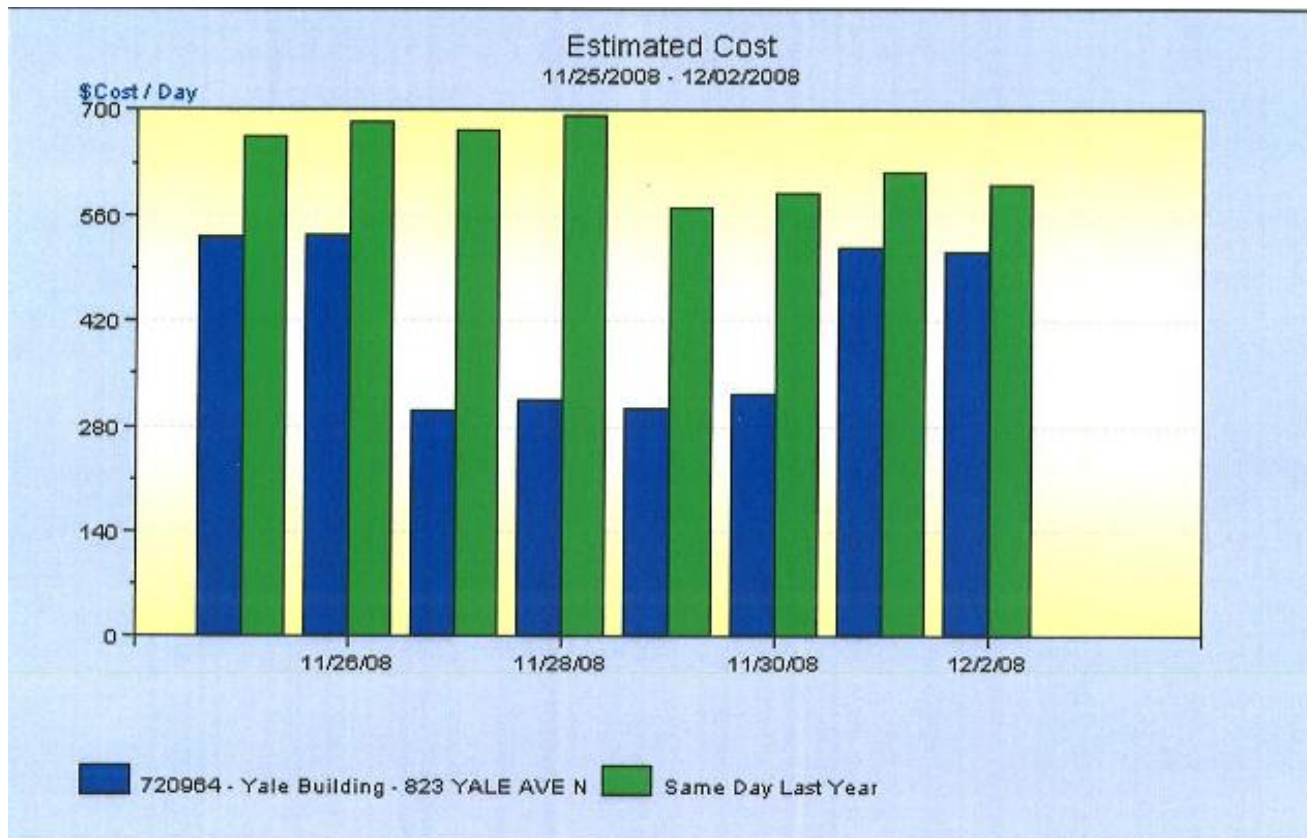


# We looked at Weekends & Holidays



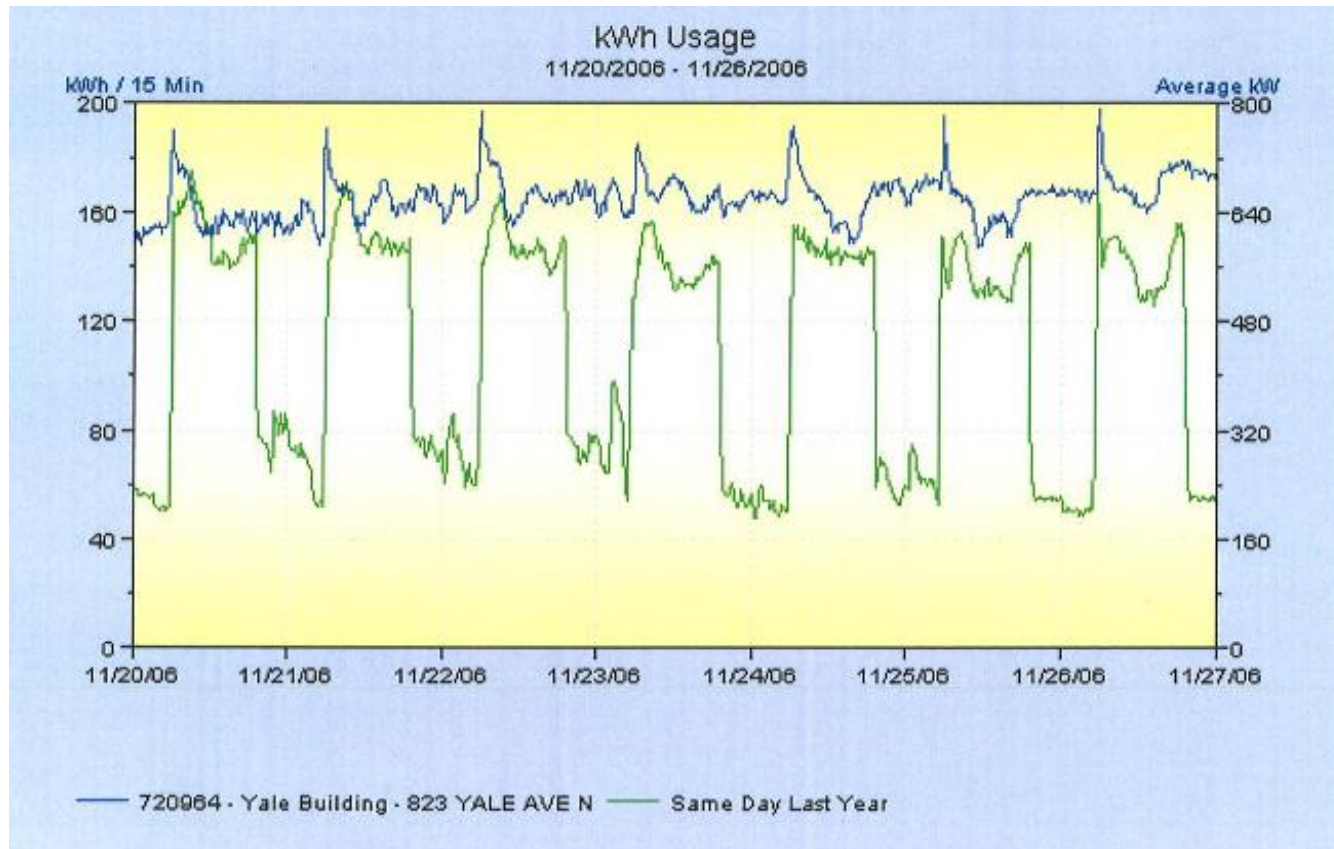
# We Save a Lot of money

## 06-\$268,000 to 09-\$187,000



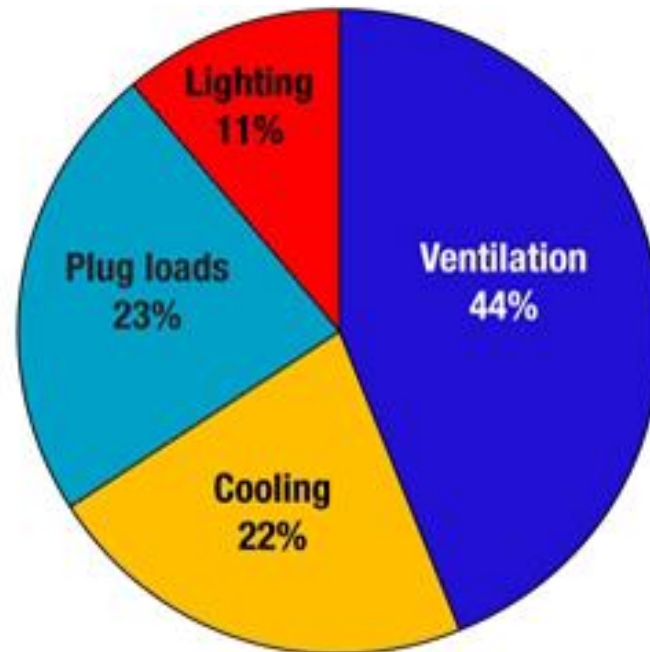


# Helps detects problems also...



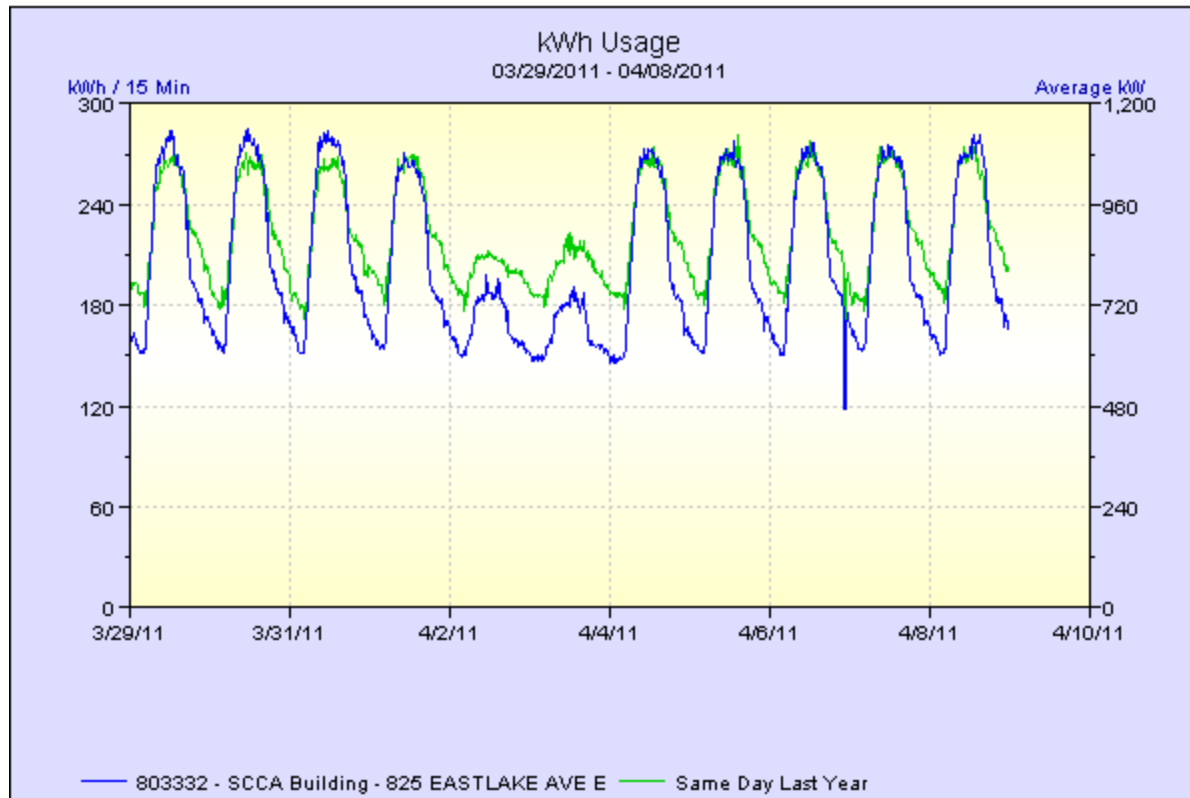


**Its all about Air; The savings are real and  
They're Fabulous!!**

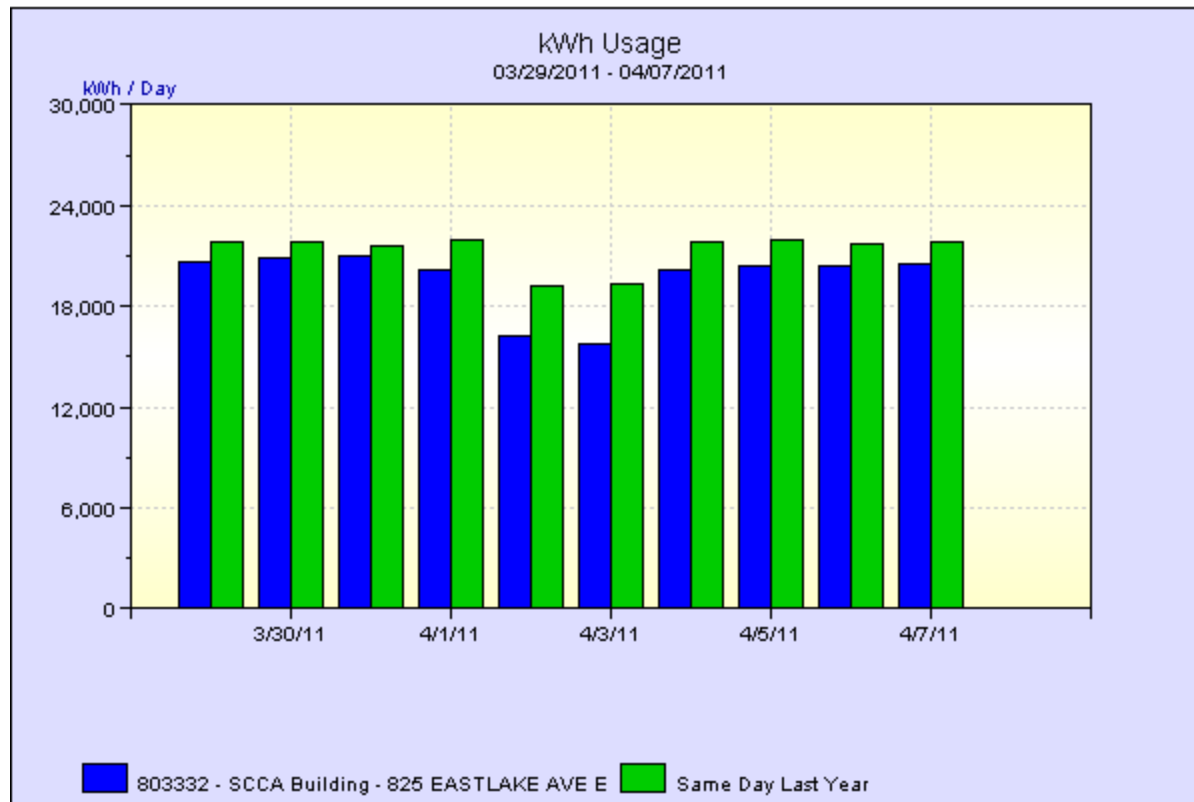


**•Fig. 1. Annual electricity use in Louis Stokes Laboratory, National Institutes of Health, Bethesda, Md.**

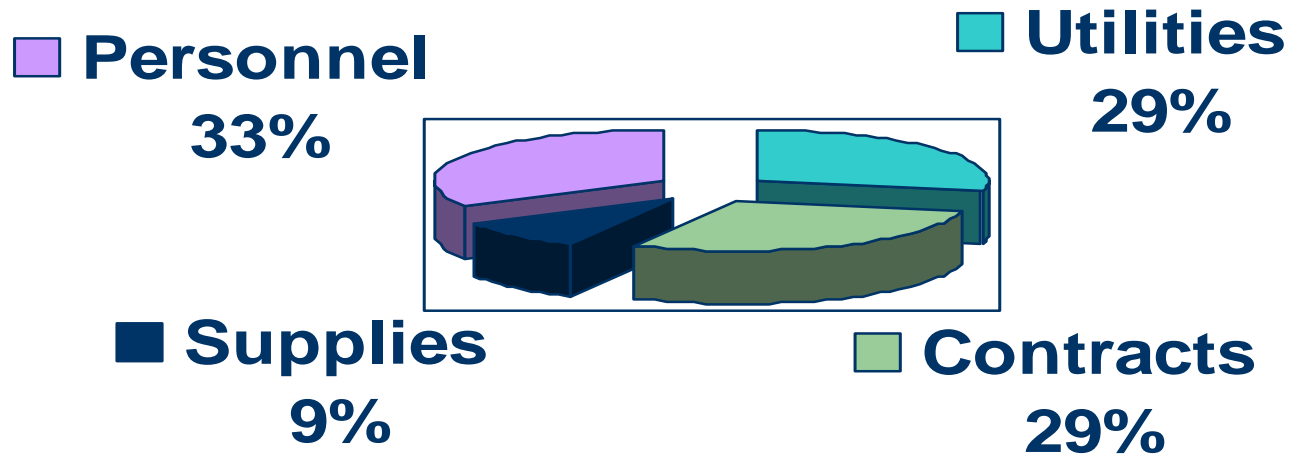
# Look at the energy savings, by reducing the amount of air provided to the spaces in this building



# Over 10%, 25% on weekends, doesn't count heating or cooling savings

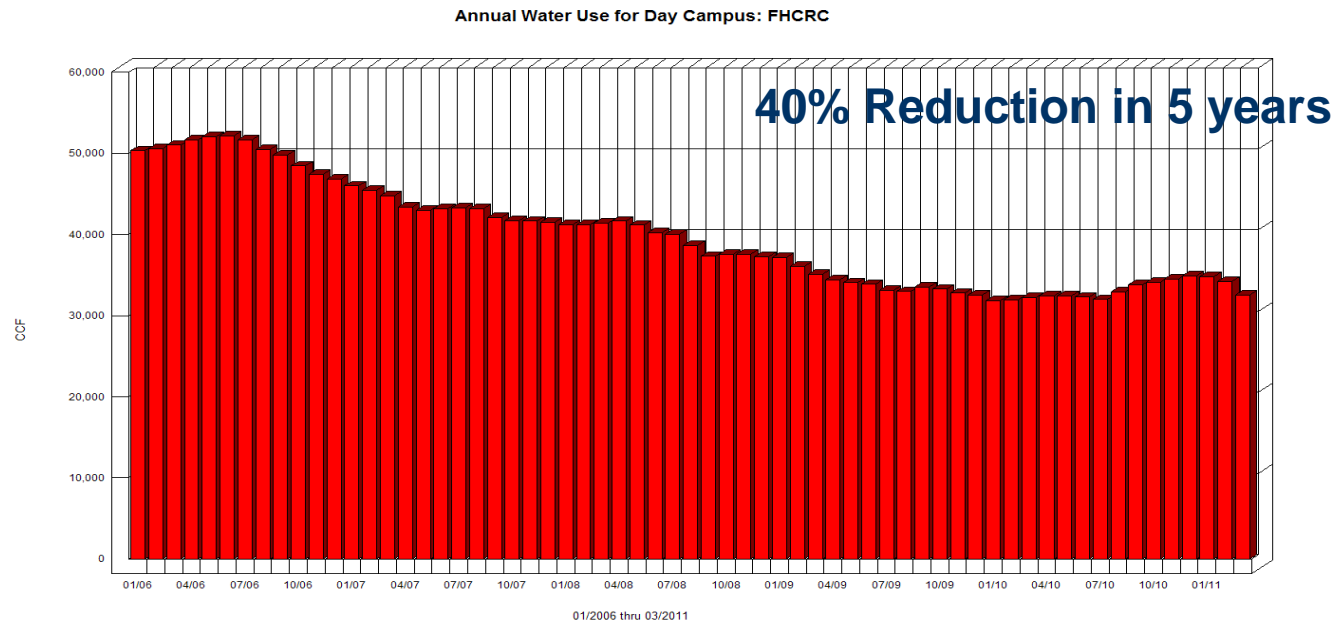


# Why do we put 98% of our management effort into Personnel and 2% into Energy?



# Lots of money to be made in Utilities

- Don't forget the third Utility
  - Its not the third rail, you can and should touch it
- Water/Sewer



# Tip # 6; You have to be successfully Lean

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# It's easy to be Lean...

- The Trick is to be Successfully Lean
  - If your not, someone else will!



# Is Fred Hutch Successfully Lean?

- Metrics
  - Indicators we are not just Lean, but successfully lean



# Things that contribute to Fred Hutch being Lean

- Fantastic Team
  - The ECO-Social Engineering that shaped that team
- Great Design & Great Equipment
  - How we got it and how we got it better
- Communications
  - Up and down the food chain
- The Secret Ingredient (S)



# Are We Lean?

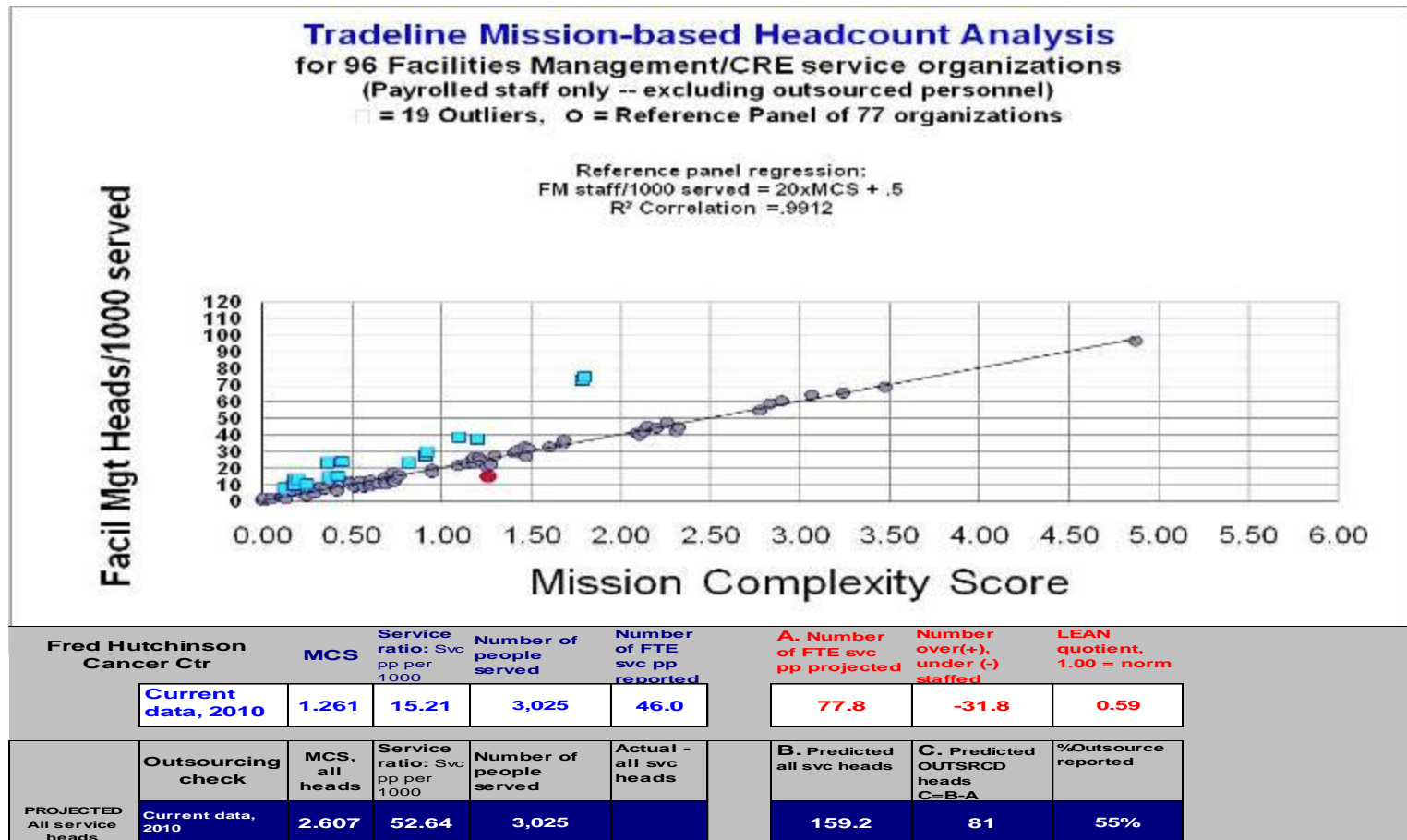
- Operate/Maintain, Manage Service Contracts
  - With 46 in house
    - 34 Operating Engineers
    - 6 FTE support Scientific equipment
      - 860 Freezers
      - Lab equipment support
  - 5 FTE from Contractors
    - Low end stuff
      - Painting
    - Repetitive stuff
      - Fire alarm testing
    - Specialty support
      - Elevators



**We cover a lot of territory, Lots of Staff  
& Patients, a lot of Equipment, 24X7**

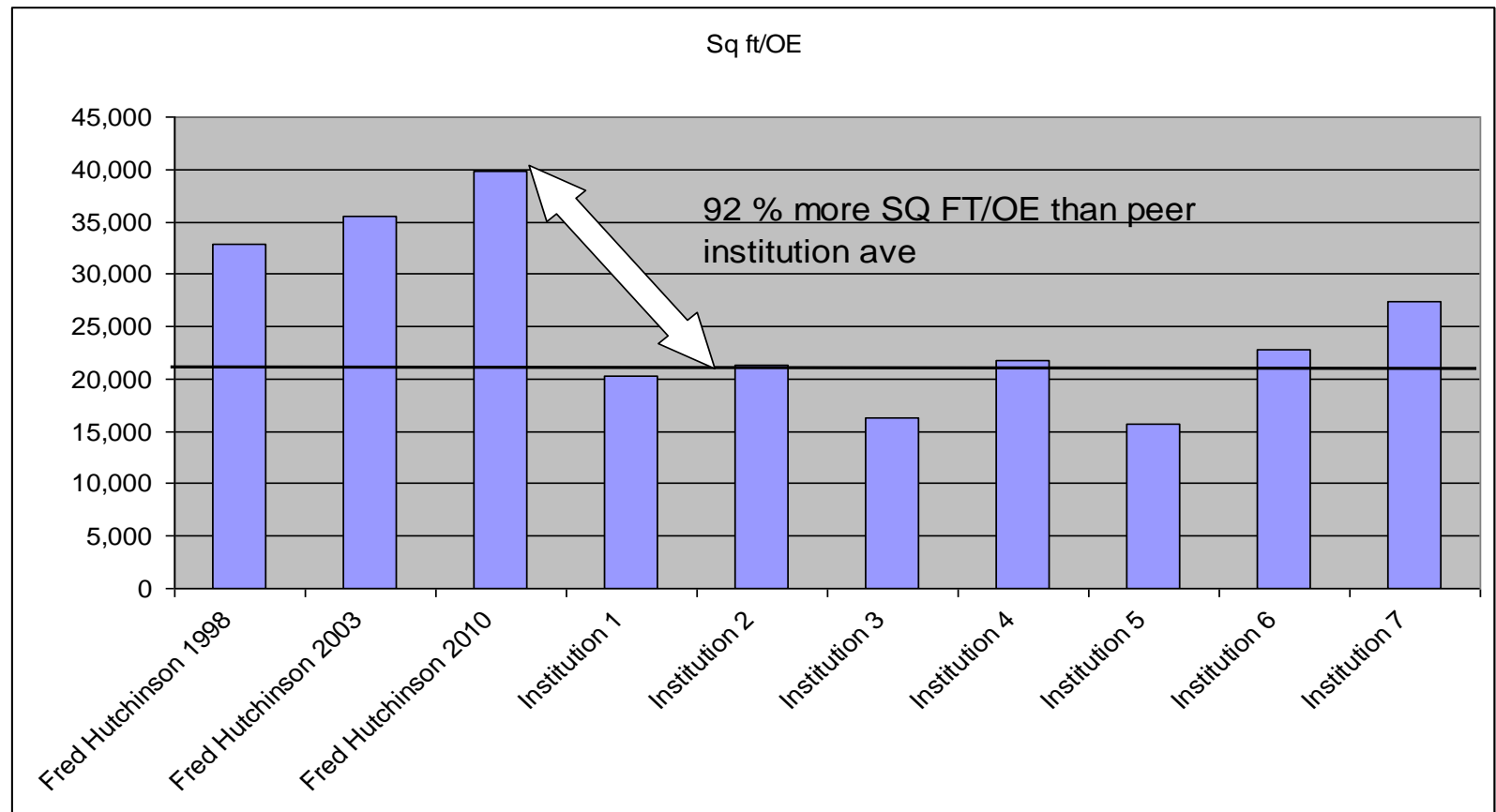


# Tradeline says we are short 32 FTE





# Bob's Study says we cover twice the square footage of peer Institutions



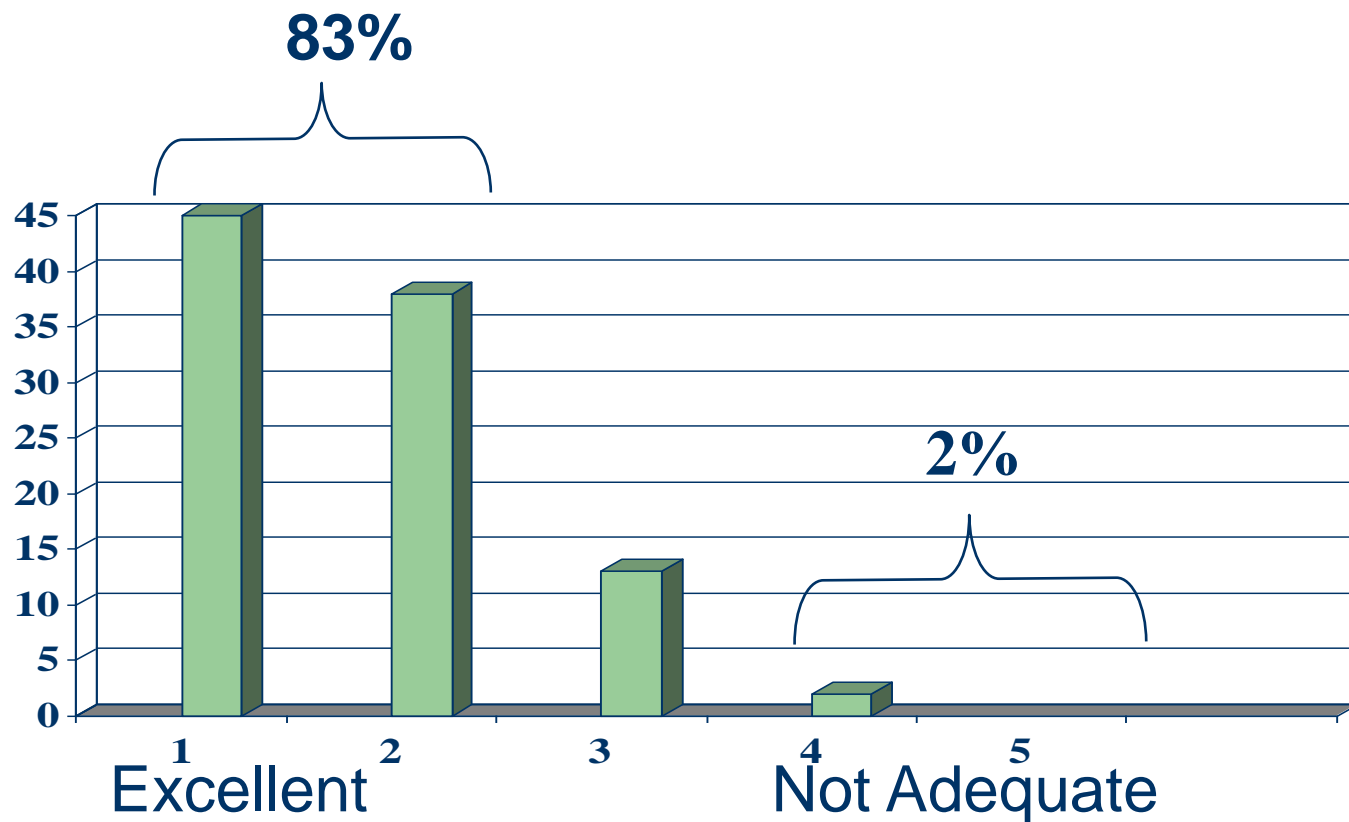
# In the last 3 Years

	<b>Feb 2007</b>	<b>July 2010</b>	<b>% change</b>
<b>Square footage</b>	1,300,195	1,356,195	4.30%
<b>FH pop</b>	2,638	2,730	3.50%
<b>SCCA pop</b>	716	923	28.90%
<b>Building average age</b>	9	12	33.30%
<b>Freezer growth</b>	809	859	6.20%
<b>Budget</b>	11,250,000	10,272,000	-8.60%
<b>Engineering</b>	47	46	-2.10%

# Are We Successfully Lean?



# Customer Satisfaction



# Other indicators



- Our COO likes us
    - Thx to Fac Engineers - you all rock!  
Myra (Tanita, COO Fred Hutchinson CRC)
  - Passed Every Inspection
    - Joint Commission, FDA, DoH, USDA, AAALAC,
  - We won a lot of Awards
    - 20+ Energy Conservation Awards
      - Reducing consumption by 20%
  - Insurance Companies have reduced our rates
- 
- 

# We've handled every emergency thrown our way.....priceless



If you don't have a good plan B,  
you better have a good resume.



# Bob's still gainfully employed



# What makes the magic happen?

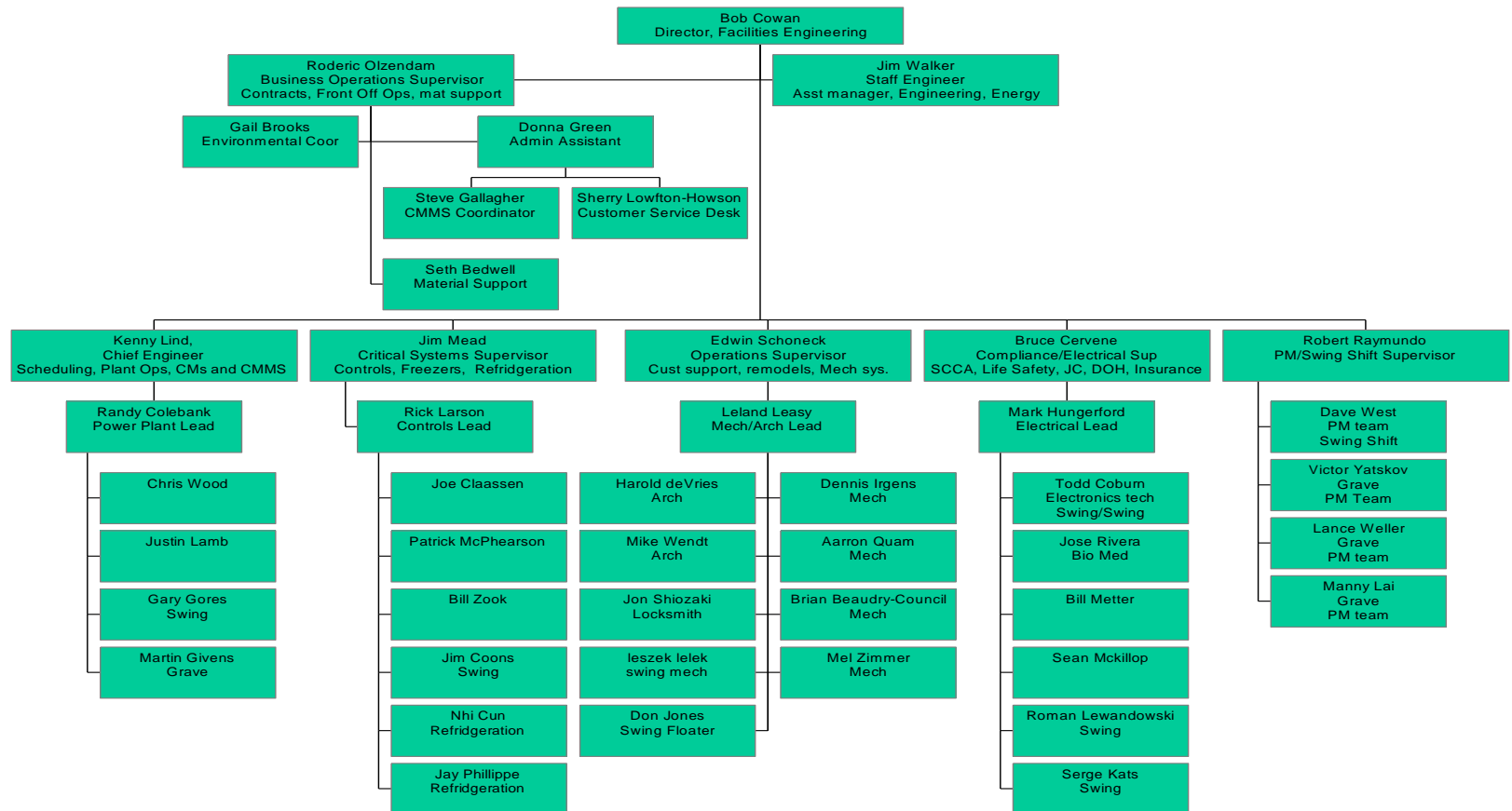
Hundreds of little things cause the snowball to roll uphill...

1. Fantastic Team
2. Great Design & Great Equipment
3. Communications
4. Secret ingredient (s)

# #1. Great Team



# Organizationally: Round Pegs in Round holes



# How do you get a great team?

- Get a great group of guys & gals,
- you make them friends,
- keep them around for a long time,
- train them, train them and train them
- recognize and reward them,
- make the work place fun

# Eco-Social Engineering of a great team

- Eco in this case is not about tree hugging

- It's 

- Emphasis
  - Skills, longevity, flexibility and production



# We have a unionized Work Force

- Local 286 Operating Engineers
  - One Union not 5
    - Electricians do boiler watches
    - Mechanics move freezers

# Our contract pays for skills and longevity

- Base Rate OE1 \$31.70/hr
  - Less \$ 4.5/hr for Central Pension Fund
  - \$27.20 net, Great Benefits
- We pay for (on site) experience
  - \$ .50/hr every 5 years on site,
    - Average time on site 13+
- We pay for (Skills) Licenses (up to three)
  - \$1.00/hr for every A license
    - Journeyman Electrician, Electrical Ad, Bio Med Engineer, Controls 1
  - \$ .50/hr for every B license
    - 2<sup>nd</sup> grade boiler operator, Journeyman Carpenter, Maintenance Elec.
  - \$ .25/hr for every C license
    - backflow preventer, 3<sup>rd</sup> grade boiler

# We invest in training

- Weekly 1 hr training in house training session
  - Fire Alarm, Process cooling system
- We bring Vendors on site
  - One size doesn't fit all (Tailor the training to the right level)
    - Controls System
      - Controls team level training, Management level training, OE level training
- We send guys to factory level training
  - Nurse Call, Tube system, Controls
- We run drills
- We build training into our specifications
  - Vendor training on all new systems
  - Video tape it



# Recognize our employees...

- 3 Wyckoff (highest award Center bestows) in the department
- 17 Innovation Cups Highest Department total in Center
- 2 City wide Power Player Awards and 1 Better Brick Award



# Promote friendships





# Try to make the Work Place, Fun “Engineering Olympics”





# Great Supervisors and Leads

- Bring Leadership, Energy and Enthusiasm to the team
  - Those are the most important ingredients



# Who Multi Task

- **Jim Walker – Assistant Manager**

- Staff Engineer, responsible for all Engineering decisions, maintains our archive room, In charge of our Energy Conservation program (Won over 20 Awards), He's the head of our Engineering Department And....
  - He's our entire Engineering Department

- **Kenny Lind – Chief Engineer**

- Chief Engineer, Overall responsibility for all power plants, does all scheduling, Responsible for all training, Safety, maintains our 20 year plan, And ....
- Runs our CMMS system



# Productivity across all shifts





## #2 Great Design and Great Equipment

- It starts at the beginning during design and construction
  - Don't let them VE out key features
- Make Lemonade out of the Lemons
  - Be an Energy Hero not a Maintenance Zero
- Replace a year early
  - Versus a year late
  - 20 year plan



# Design and Build in 4 years operate and maintain 4ever



# Design in Maintainability & Operability

- Make Sure the Designers and Operators are on the same page.
  - What level of redundancy we want and where
  - Campus standards
    - Controls to numbering systems
  - How much Vendor training
- We give a list of 200 items
  - Permanently sealed bearings
    - 10 cents during design
    - 10 dollars after construction





# Just because you asked for it, doesn't mean you're going to get it...

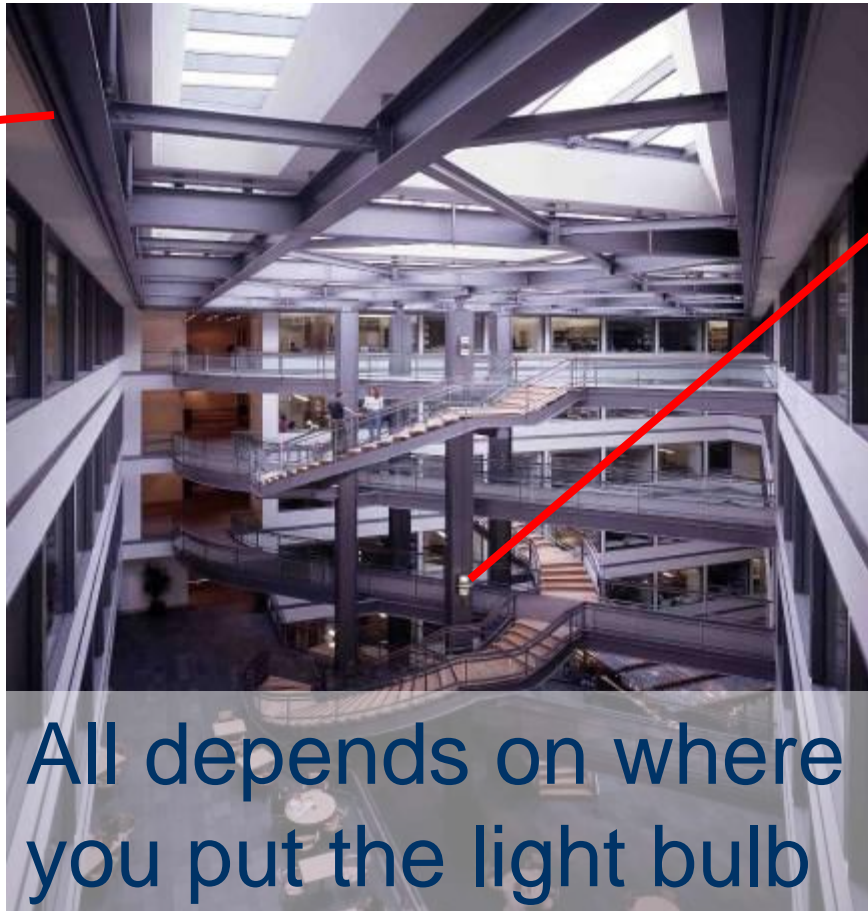
- You have to do a very careful design review:
  - Track all of our design comments
- And a very careful review of the submittals;
  - Make sure you are getting what you asked for
- Double check Maintainability
  - Can you get to the equipment to maintain it



# How many Engineers does it take to change a light bulb?

Trolley  
Track

Lights accessible  
for maintenance



All depends on where  
you put the light bulb

# Maintainability is not all that needs to be checked...



- Space
  - Have you ever seen a building with enough space for filters?
- Operability
  - Do we have to turn on all the lights on the floor if someone is working late at night in their cube?
- Work Flow
  - a MCC being located on one floor, motors it served on another



# And At Some Point...



You are going to have to replace your:

- Chillers, Boilers and Generators
- Can you get them out/in
- You hope its not your problem, but it might be...





# It Happened to Me...



# **We had to bring a New Chiller 300 feet into the Building**



# Once You have a Great design...

- Fight to keep it great.
- Value Engineering?
  - Tends to be more about reducing construction cost, rather than adding long term value
  - But you have to be an active participant to fight for what's important!





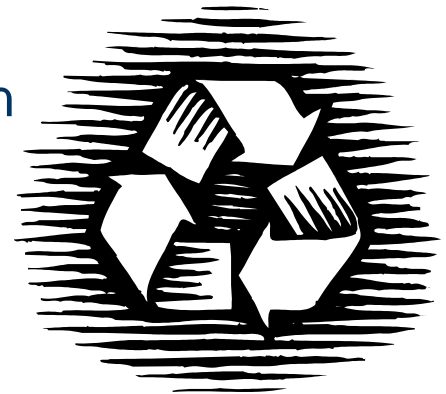
# Things we fight for:

- Maintain a campus standard for Equipment
  - Training
  - Parts
  - Maintenance Contracts
  - Emergency Response
- Maintain Quality Equipment
- Maintain Maintainability
  - Don't let them VE out the Bypass feature on your Automatic Transfer Switch



# If You have a Lemon make Lemonade

- But not every system is great
  - So we try to make it great
  - We identify key systems that are either problematic or lack redundancy
    - Then we improve them
      - Done it to over 10 systems, at least 1 per year
- The Story of AHU B2
  - Big Critical Air Handler, that was a lemon
  - Hired an Engineering firm to do a 50 year plan
  - 20 great ideas
    - 7 Energy savers



# Key Air Handler

68,000 CFM

Serving a critical area

2 redundant fans, 150 HP, Econo Cone

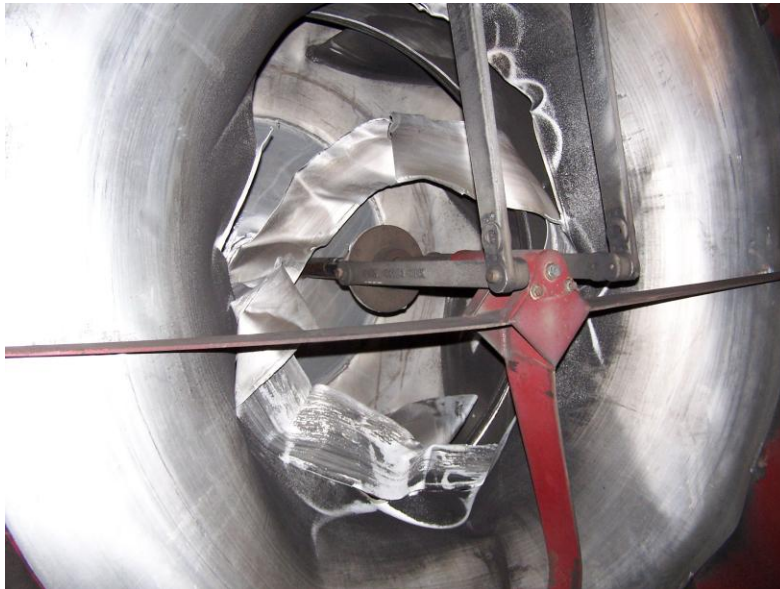


# Pain in the .....

- Twice burnt out motor
- Capacitor bank blew up once
- Numerous problems with Actuators
- Humidifier was 1 foot in front of coiling coil
  - Always had a lake
- Final filters were 3 ft downstream of humidifier
  - Always wet, actually blew out filter bank
    - We had to reinforce and put in blow out panels
- Etc., Etc.
- So we came up with a great 50 year plan to fix all problems

# But before we could get to the 50 year plan...

- We had to get through a couple of tough days and nights





**That's where the contingency plan but even more importantly a great team, was priceless!**



# We implemented our Contingency plan...





# Set the Wheels in motion



**And 31 Days later the Damaged Fan was replaced**



## 3.5 months later we had made 20 improvements

- No Econo Cone (known bad performer)
- No need to fix broken Actuator
- No Actuators (can't be repaired or replaced)
- No linkage nor shocks to maintain
- VSD on motor, easier starts
- VSD on motor, more energy efficient
- No capacitor bank to worry about (problematic in past)
- Able to by-pass MCC in an emergency and wire directly to VSD
- energy Efficient Fan
- Rebate from SCL for energy efficient fan and VSD on Motor
- more air capacity than old fan
- Filter bank in new location (another rebate from SCL)
- New Humidifier (another rebate from SCL)
- Replaced temperature, pressure and humidity Controls
- improved lighting
- New duct reduced static pressure ( another rebate from SCL)
- Drain pan under humidifier
- New Transducers, Electrical outlets in the AH, Emergency Interconnect

# **We were an Energy Hero, not a Maintenance Zero**

- We got \$75,000 in rebates from SCL
  - Plus we'll save 17,000 per year
- We got \$77,000 from the Insurance company
- That paid for 75% of the project

\_\_\_\_\_

	Item	Location	Description	Budget	Install Yrs	Date	Repair Yrs	Date	Replace Yrs	Maintenance
#	AHU'S		(10 yrs water proof 160°CSP+1.25)							(25 yrs paint 725°CSP+1.25)
#	ARCH EXT/INTER.									
#	ATS									
#	BLRS & HTO									
#	CASEWORK		(\$150.0) each to replace							
#	CHILL & CLG		[Chiller cost 70% of 2005 1000 ton cost]							
#	COMPRESSORS									
#	CONTROLS		upgrade							
#	DOCK LEVELER		(hydraulic)							
#	DOORS & HARD.		(Electronic locksets)							
#	ELEVATORS									
#	ENV RMS		(evaporator re-tilt)							
#	EXP TANKS		(replace bleeder) (cost / 4)							
#	FANS		(Replace Motor 15 years) (cost / 2)							
#	FAN COIL									
#	FIRE PANELS									
#	FIRE PRE ACT									
#	FLOORS		[use Marble price for Slate floors]							
#	FUEL OIL									
#	GATES		(door repair cost + repair cost / 4)							
#	GEN									Mark (+dd+10% labor)
#	ICE MACH									
#	KITCH EQUIP									
#	LEIBERT									
#	MISC									
#	PEVCO									
#	PUMPS		(replace motor 12 years) (cost / 4)							
#	ROOFS		(+\$800*sqft/100' .25yr+.25%							(+\$942*sqft/100' .25)/25 yrs
#	ROOFS (out bldgs)		(\$522*sqft/100' .25)%							(\$300*sqft/100' .25) 20yrs
#	RO SYSTEM									
#	SWITCH GEAR									
#	UPS									
#	VAC									(Replacement cost/4)
#	VFD'S									
#	WOOD STRS									
#	DRIVE									
#			High Priority							
#			Medium Priority							
#			Low Priority							



# Over 200 pumps in system...

1	item	location	description	budget	install	yrs	date	repair	yrs1	date1	replace	reference
1261	PUMPS		(replace motor 12 years) (cost / 4)									
1262		PH1										
1263	P-SANT-1	PH1	SANITARY WASTE PUMP	109844	2004	12	2016	\$1,000	15	2019	\$16,000	Jim Walker
1264	P-SANT-2	PH1	SANITARY WASTE PUMP	109844	2004	12	2016	\$1,000	15	2019	\$16,000	Jim Walker
1265	P-SANT-3	PH1	DELLUSION PUMP	109844	2004	12	2016	\$1,000	15	2019	\$3,000	Jim Walker
1266	P-SANT-4	PH1	DELLUSION PUMP	109844	1999	12	2011	\$1,000	15	2014	\$3,000	Jim Walker
1267	P-STRM-1	PH1	STORM WATER PUMP CF	109844	1993	12	2005	\$1,000	15	2008	\$3,000	Jim Walker
1268	P-STRM-2	PH1	STORM WATER PUMP CF	109844	1993	12	2005	\$1,000	15	2008	\$3,000	Jim Walker
1269	P-STRM-3	PH1	STORM WATER PUMP AX	109844	2008	12	2020	\$1,000	15	2023	\$4,130	Jim Walker
1270	P-STRM-4	PH1	STORM WATER PUMP AX	109844	2004	12	2016	\$1,000	15	2019	\$4,130	Jim Walker
1271	PB-BF-A	BF	CENTRIFUGAL RO PUMP	109844	1993	12	2005	\$1,100	20	2013	\$4,400	2002 Means 15180_4610
1272	PB-BF-B	BF	CENTRIFUGAL RO PUMP	109844	1993	12	2005	\$1,000	20	2013	\$4,000	2002 Means 15180_4530
1273	PB-BF-C	BF	CENTRIFUGAL RO PUMP	109844	1993	12	2005	\$1,100	20	2013	\$4,400	2002 Means 15180_4610
1274	PB-BF-D	BF	CENTRIFUGAL RO PUMP	109844	2004	12	2016	\$1,000	20	2024	\$4,000	2002 Means 15180_4530
1275	PB-BF-E	BF	CENTRIFUGAL RO PUMP	109844	2001	12	2013	\$1,000	20	2021	\$1,475	2002 Means 15180_4090
1276	P-B-20	BE	CENTRIFUGAL PRIM HTG PUMP	109844	1993				20	2013	\$4,350	2002 Means 15230_4080
1277	MTR-P-B-20	BE	ELECTRIC MOTOR	109844	1993	12	2005	\$1,088				
1278	P-B-21	BE	CENTRIFUGAL PRIM HTG PUMP	109844	1993				20	2013	\$4,350	2002 Means 15230_4080
1279	MTR-P-B-21	BE	ELECTRIC MOTOR	109844	1993	12	2005	\$1,088				
1280	P-B-22	BE	CENTRIFUGAL PRIM HTG PUMP	109844	1993				20	2013	\$4,350	2002 Means 15230_4080
1281	MTR-P-B-22	BE	ELECTRIC MOTOR	109844	1993	12	2005	\$1,088				
1282	P-B-23-1	BE	CENTRIFUGAL 2ND HTG PUMP	109844	1993				20	2013	\$5,700	2002 Means 15230_4090
1283	MTR-P-B-23-1	BE	ELECTRIC MOTOR	109844	1993	12	2005	\$1,425				
1284	P-B-23-2	BE	CENTRIFUGAL 2ND HTG PUMP	109844	1993				20	2013	\$5,700	2002 Means 15230_4090
1285	MTR-P-B-23-2	BE	ELECTRIC MOTOR	109844	1993	12	2005	\$1,425				
1286	P-B-24-1	BE	CENTRIFUGAL 2ND HTG PUMP	109844	1993				20	2013	\$6,300	2002 Means 15230_4100
1287	MTR-P-B-24-1	BE	ELECTRIC MOTOR	109844	1993	12	2005	\$1,575				
1288	P-B-24-2	BE	CENTRIFUGAL 2ND HTG PUMP	109844	1993				20	2013	\$6,300	2002 Means 15230_4100
1289	MTR-P-B-24-2	BE	ELECTRIC MOTOR	109844	1993	12	2005	\$1,575				
1290	P-B-30	BE	CENTRIFUGAL CW PUMP	109844	1993				20	2013	\$6,300	2002 Means 15230_4100
1291	MTR-P-B-30	BE	ELECTRIC MOTOR	109844	1993	12	2005	\$1,575				
1292	P-B-31	BE	CENTRIFUGAL CW PUMP	109844	1993				20	2013	\$6,300	2002 Means 15230_4100
1293	MTR-P-B-31	BE	ELECTRIC MOTOR	109844	1993	12	2005	\$1,575				
1294	P-B-32	BE	CENTRIFUGAL CW PUMP	109844	1993				20	2013	\$6,300	2002 Means 15230_4100
1295	MTR-P-B-32	BE	ELECTRIC MOTOR	109844	1993	12	2005	\$1,575				
1296	P-B-33-1	BE	CENTRIFUGAL 2ND CHILL PUMP	109844	1993				20	2013	\$15,200	2002 Means 15230_4270
1297	MTR-P-B-33-1	BE	ELECTRIC MOTOR	109844	1993	12	2005	\$3,800				
1298	P-B-33-2	BE	CENTRIFUGAL 2ND CHILL PUMP	109844	1993				20	2013	\$15,200	2002 Means 15230_4270
1299	MTR-P-B-33-2	BE	ELECTRIC MOTOR	109844	1993	12	2005	\$3,800				
1300	P-B-34-1	BE	CENTRIFUGAL 2ND CHILL PUMP	109844	1993				20	2013	\$6,725	2002 Means 15230_4240



### 3. Communicate, Communicate, Communicate



# Standing meetings

- Weekly Staff Meeting
  - Supervisors and Front Office staff
- Weekly Coordination Meetings
  - Supervisors and LEADS
  - Lunch once a month
- Monthly Crew Meeting
  - All Hands, Morning and Afternoon
- Labor Management Meetings



# Department Info Center

- Schedule, Department Calendar, Electronic Log



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[illegible]

# Departmental Calendar

## Facilities Engineering

Wednesday, January 12

4<sup>am</sup>

5<sup>00</sup>

6<sup>00</sup>

7<sup>00</sup>

8<sup>00</sup>

Crew Meeting

9<sup>00</sup>

10<sup>00</sup>

Process Improvement (Engineering conference room)

11<sup>00</sup>

IFMA Board Meeting (LF-118)

12<sup>pm</sup>

1<sup>00</sup>

SCCA AUDIT (LF-118)

2<sup>00</sup>

Crew Meeting (Changes in the wind) (LF-118)

3<sup>00</sup>

4<sup>00</sup>

5<sup>00</sup>

6<sup>00</sup>

PM of Filterine chiller (GA-121)

7<sup>00</sup>


8<sup>00</sup>

# Web based, Electronic log

- Facilities Status
  - Tells us what issues are out there, what the status is and what's been done to resolve it
- Log
  - Tells us the good, the bad and the ugly of each shift
- Pass down section
  - What we want/need someone to do on shift
- Review section
  - No one can say they didn't know that pump was down
    - All Leads, Chief Engineer, Director initials daily



# Facilities Status


 Facilities Engineering

Facilities Status   Engineering Log   Search Logs   Daily Calendar   Schedule   Help   Logout

Status Log

Status	Open	Comment	1.5 inch steam valve in BD Interstitial is leaking, no isolation nearby. Valve is located NW BD Interstitial marked with red traffic tape.
Priority	3	Follow Up	
Creator	icoons		
Date	2/18/2011		
Status	Open	Comment	security and a nurse on the 5th floor at scca reported double door push button malfunctioning. I removed the strikes in the jamb
Priority	2	Follow Up	
Creator	diwest		
Date	2/18/2011		
Status	Open	Comment	Julia Richardt request rounds to be done twice a shift on loaner minus 20 freezer in d3 313 until Monday
Priority	1	Follow Up	
Creator	rlewando		
Date	2/18/2011		
Status	Open	Comment	SCCA on B level garage the automatic door to the elevator corridor has been bent bad enough to where the door will not
Priority	3	Follow Up	Western Entrance will be here on 2.15 to repair. bob 2.14 Repaired 2.18 Jon
Creator	pmphear		
Date	2/13/2011		

# Log

 Facilities Engineering

Facilities Status   **Engineering Log**   Search Logs   Daily Calendar   Schedule   Help   Logout

Current Log   Date: 14 Feb 2011   Shift: 2   QC1: jmphilli   Add Item: +


Status	Closed	Comment	A B AND C BUILDING OFFLINE WITH STANLY AND FIRE PANAL BYPASSES ON FOR ONE HOUR TILL 3:30PM PER BRIAN B.
Priority	4	Follow Up	Back on line. per Joe 02142011
Creator	bzook		
Time	2:45 PM		
Status	Closed	Comment	SCCA building and boiler rounds are ok. PHS boiler rounds ok. Building B and D boiler rounds are ok.
Priority	4	Follow Up	Deli Case refer in DE755 is at 4 degrees. The loaner was found empty and unplugged.
Creator	jmpilli		
Time	12:30 PM		
Status	Closed	Comment	Found Edson Park water feature pump valved off and running. The pump was very hot and water steaming out of pressure gage
Priority	2	Follow Up	Put new gasket on flange, repaired leaking gage nipple. REC
Creator	rcoleban		
Time	10:09 AM		

Pass Down Log   Add Item: +

Turn Over Section

Review Section

# Pass down section

 Facilities Engineering

Facilities Status Engineering Log Search Logs Daily Calendar Schedule Help Logout

Current Log Date: 17 Feb 2011 Shift: 3 QC1: skats Add Item: +

Pass Down Log Add Item: +

Status Open

Priority 1

Creator rcoleban

Date 1/27/2011


Comment Check the low pressure condensate pump on Thomas building a couple times a shift. If the sight glass is full of liquid then tap the

Follow Up New pumps on order as of 2.16 (kl)

Turn Over Section

Review Section

# Review section

 Facilities Engineering

Facilities Status   **Engineering Log**   Search Logs   Daily Calendar   Schedule   Help   Logout

Current Log   Date : 10 Feb 2011   Shift : 1   QC1 : mgivens   Add Item: +

Status: Closed

Priority: 3

Creator: mgivens

Time: 6:04 AM

Comment: AHU B10 is turn off UMC is in there working.

Follow Up: back on line ral 2.10.11

Status: Closed

Priority: 4

Creator: mgivens

Time: 2:25 AM

Comment: building and boiler rounds. ok  
chiller and freezer rounds. ok

Follow Up:

Status: Closed

Comment: Fairview loading dock door is not locking.

Pass Down Log   Add Item: +

Turn Over Section

Review Section

☒ Plant Lead Reviewed   [rcoleban : 2/10/2011]

☒ Electrical Lead Reviewed   [mhungerf : 2/14/2011]

☒ Control Lead Reviewed   [dgreene : 2/10/2011]

☒ Mechanical Lead Reviewed   [lleasy : 2/10/2011]

☒ Chief Engineer Reviewed   [klind : 2/10/2011]

☒ Manager Reviewed   [rcowan : 2/12/2011]

# Communications Go Up the Food Chain, as well as down

- We brief the board.
- We really like giving tours
  - President, CEO, Virtually every VP, many PI's,
  - Departments
    - Finance, HR, IT, Security, EH&S
  - Business Partners
    - Major Utilities, Major Suppliers
  - Other Organizations



# Use Posters to Communicate to Staff

**FRED HUTCHINSON CANCER RESEARCH CENTER**

**Facilities Engineering  
25 Years of Service  
250 Years of Experience**



Energy Conservation   Video Teleconferencing   Computerized Building Controls   Parts Coordination   Crisis Planning Support   Work Management System Coordination

"Contractor" Coordination  
Facilities Engineering Manager



24/7 Power Plant Operations   Locksmith   Commercial Coordination




Preventive Maintenance Team   Emergency Generator Testing   Working on Work Orders   District Alarm System   Work Order Coordination   Service Desk

Photography and Design by Dennis Givens

**FRED HUTCHINSON CANCER RESEARCH CENTER**

**Electrical System**



**Teamwork**  
Facilities Engineering provides a high level of skilled and experienced support for diverse electrical equipment. From Emergency Generators to Cobalt Irradiators.

**Above:** Uninterruptible Power Supplies across campus offer superior quality electrical power for sensitive equipment.

**Right:** Preventive Maintenance techniques like infra-red scanning are used to assure System reliability.

**Above:** 2000 H.P. Emergency Standby Generator requires diligent testing and maintenance.

**Below:** Technicians service and repair research equipment. In-depth knowledge of dozens of types of equipment is necessary.

Photography and Design by Dennis Givens

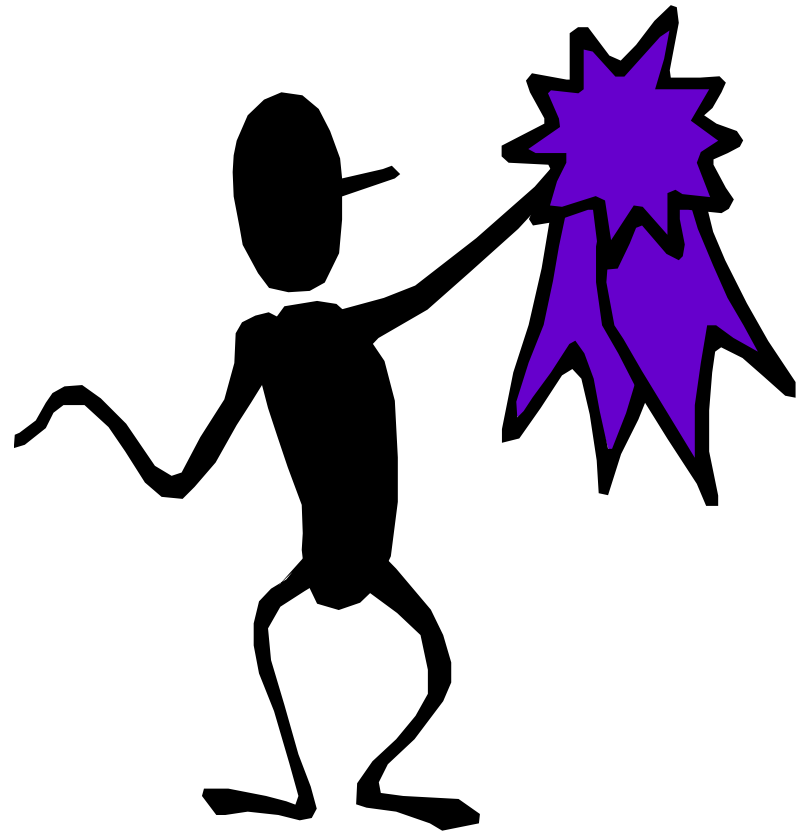


# Radio's



# So we've got

- Great Team
- Great Equipment
- Great Communication
- But Wait, there's more!!



**There's not one, not two,  
but three secret ingredients!**



# Maintenance Advantage

- 26 different entrance procedures to restricted spaces



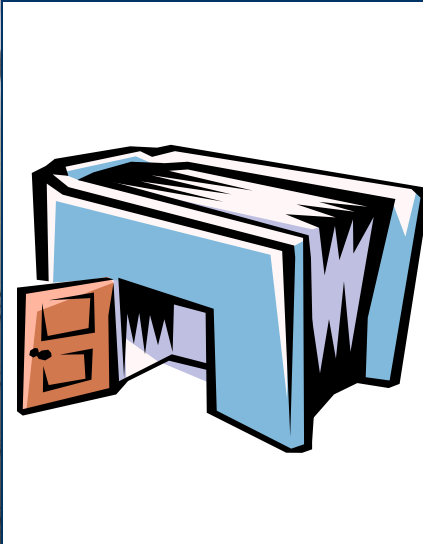


# Maintenance Comparison

## Non Interstitial vs. Interstitial



# A Repository of Knowledge





# Final Secret

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- Work Fast

Fantastic Team in Action

# Follow the Money

- Contracts
- Energy
- Personnel

Ensure you and your team  
are winners in the race  
to the bottom



# How Fred Hutch won the race

- Passed the Mckinsey audit with flying colors
  - Leadership understands and is oriented around mission
  - No egregious inefficiency or excessive spending
  - Opportunities to increase effectiveness far outweigh efficiency opportunities
    - This is key it says no outsourcing and that was our goal
  - Opportunities for cross cutting initiatives & centralization
  - Best in Class in Energy Conservation
  - Kudo's for benchmarking and tracking #s

# We'll be back

- It's a marathon, not a sprint

