Long Range Planning

How to Recognize Future Problems?

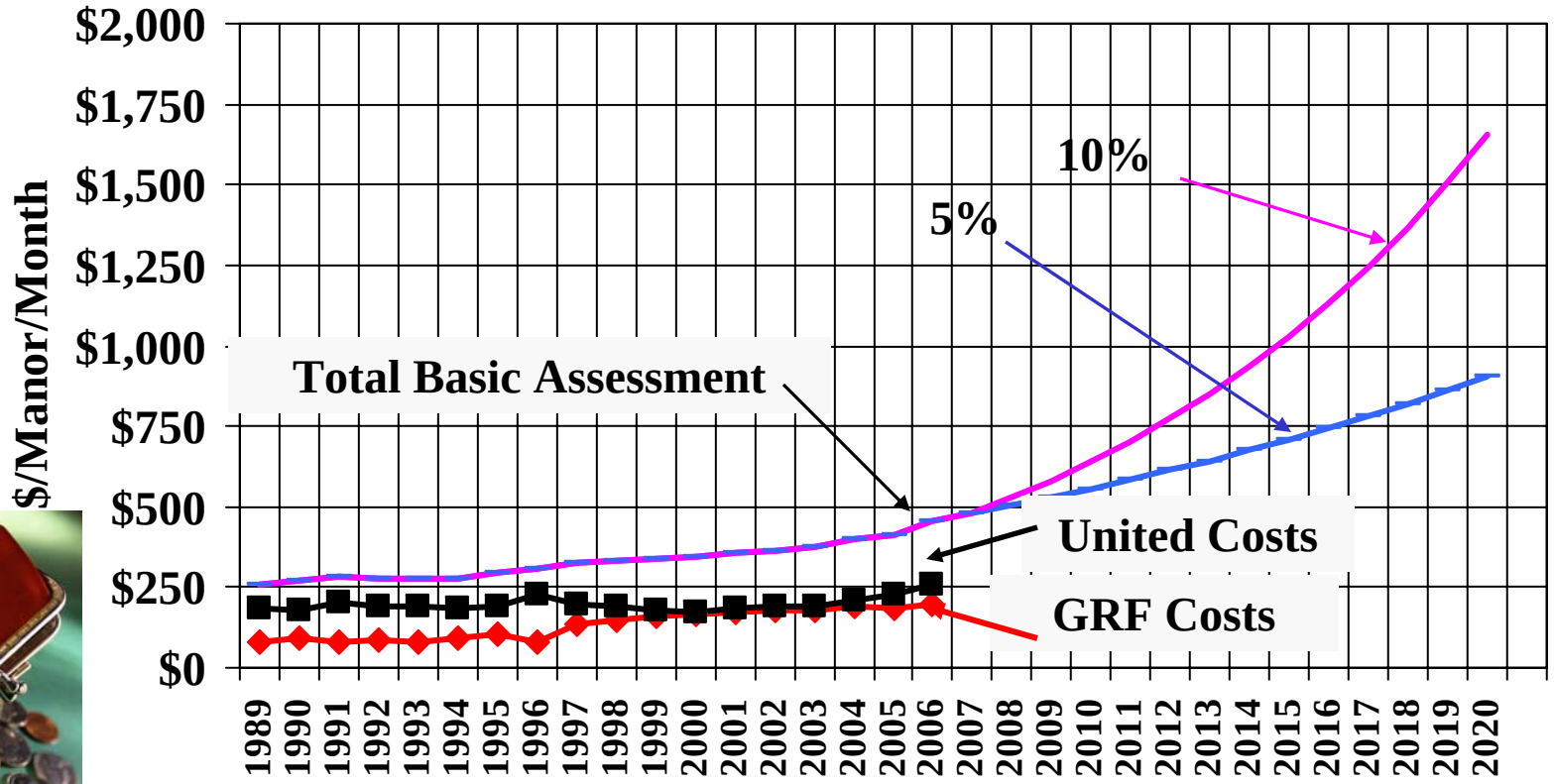
Today's Methodology!

- Current reports come from the existing "Service Order Entry System" originally designed for Financial tracking.

- Costs seldom identify Symptoms or Problems which are needed for planning for our future.

Ultimate Financial Tracking

United Assessments - $/Manor/Month



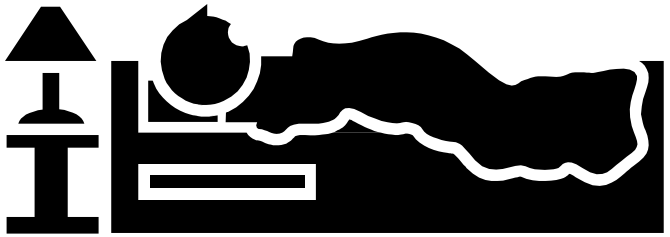
Financial Tracking and the Future

- A common method to predict the future is by using ***existing*** measurements of the past.
- Such as Roofs, so,
- What does our Financial tracking (the Red Book) tell us about our “Roofs?”

A Financial Look at 2003 Roofs!

Financial	*2003 Budget*	*2003 Actual*
Roof Replacements	$1,004,030	$ 965,940
Roof Repair	$ 82,000	$ 74,535
Total Roof Costs	$1,086,030	$1,040,475

4% Below Budget – ***We should sleep well tonight!***

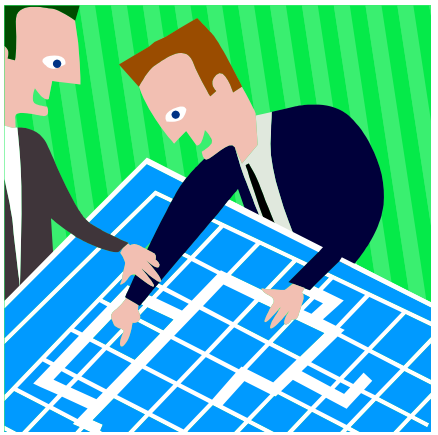


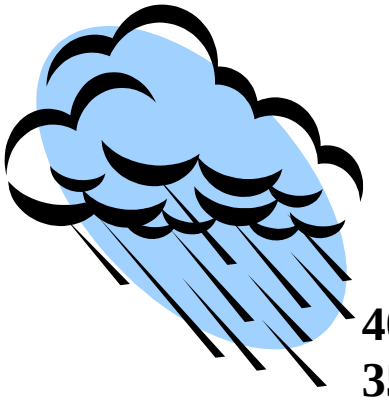
Engineering Tracking and the Future

- Work Order Data from our Current Service Order Entry System was used for this presentation.

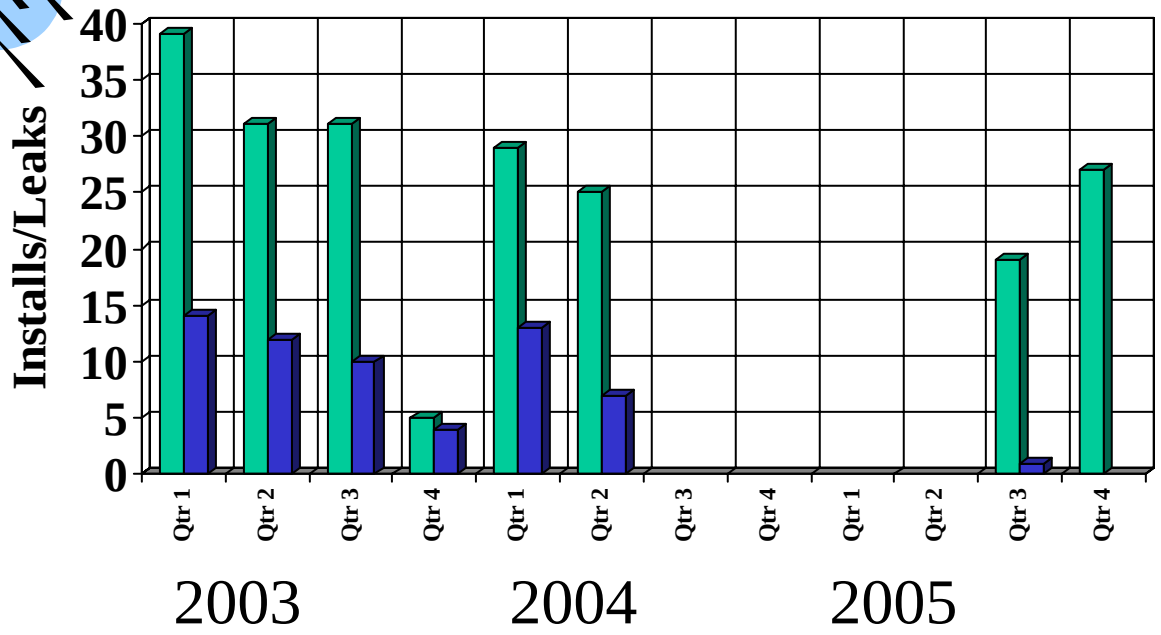
  - Applying Industry Standard Engineering techniques we can use other means to measure ***Roof Performance***.

An Engineering Look at 2003 Roofs

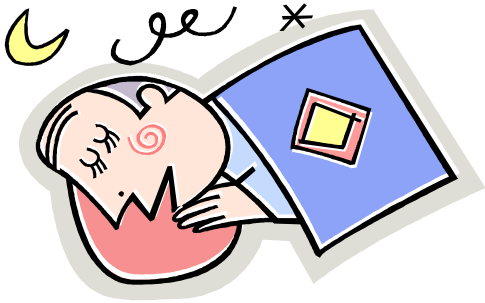




Rain Leaks in Bldgs with Roofs Installed by Quarter



Financial:	*2003 Budget*	*2003 Actual*
Roof Replacements	$1,004,030	$ 965,940
Roof Repair	$ 82,000	$ 44,991
Total Roof	$1,086,030	$1,010,931



4% Below Budget – (Problem?)

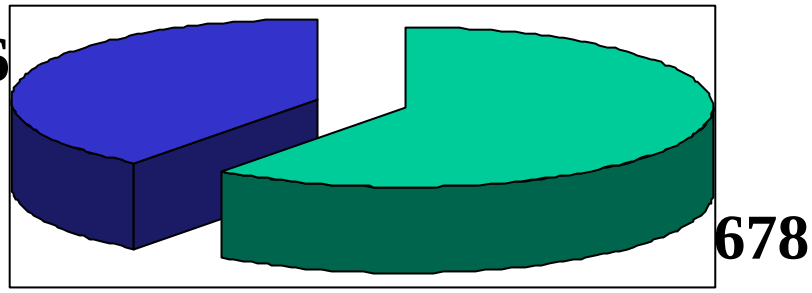
(compared to)

Engineering: *of 106 New Roofs installed in 2003*

40 had "Rain Leaks" since then (Problem?)

"Rain Leaks" Another Engineering Look

2003-2005 Data for
1124 Buildings in United Mutual



40% had no leak - 60% had at least one leak

BUT we are below budget Financially!

"Rain Leaks" Symptom or Problem?

- Definition for this Presentation:
  - A "Rain Leak" can be any water leak associated with the roof including, roof tiles, paper, flashing, downspouts, etc. If the leak is concurrent with a rain, and, it requires someone to get up on the roof to make a repair, it is defined as a "Rain Leak."

How Do We Get From

Symptom to Problem

Chasing symptoms MAY NOT solve the problem if we cannot distinguish the difference!

Make-up of a Symptom

- It can be derived from multiple Symptoms.

- It can be result of one Problem, or many.

- Problems can be layered at various levels causing various symptoms.

- Financial Tracking generally doesn't help!

Samples of Some "Symptoms"

- The following slides are samples of some underlying United Mutual symptoms:

Symptoms Not Seen Financially!

1124 Buildings in United

206 Re-roofed
during 2003-2005
Average age by end of 2005 = 1.2 yrs

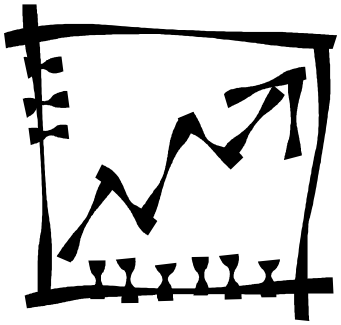
918 Not Re-roofed
during 2003-2005
Est Avg Age = 10 yrs

61 had Leaks
30%

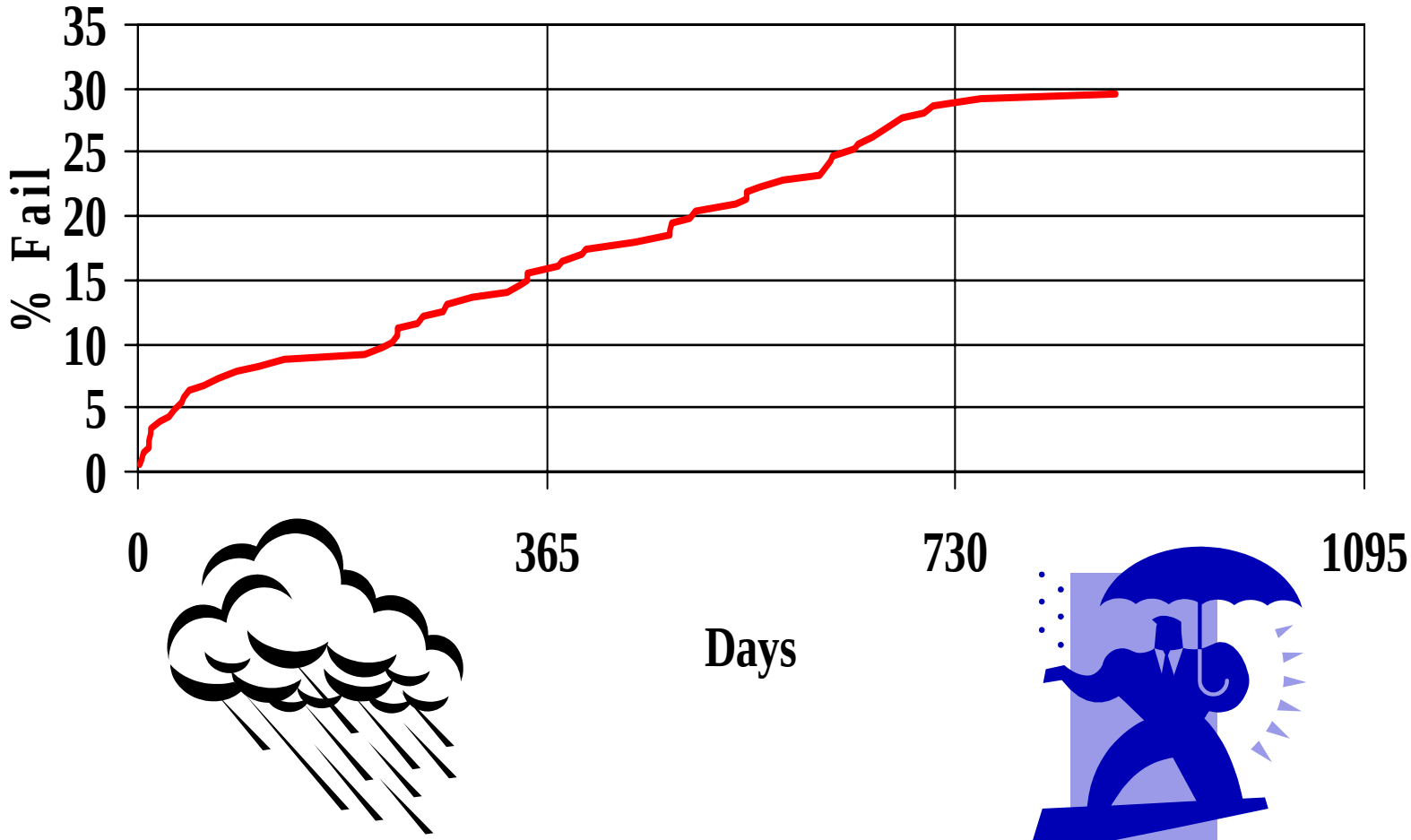
145 had no Leaks
70%

617 had Leaks
67%

301 had no Leaks
33%



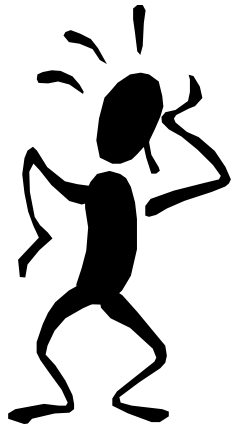
Same Symptom (Rain Leaks) with Different View - Cummulative % Fail of 206 Bldgs with New Roofs



The Financial Data Does NOT:

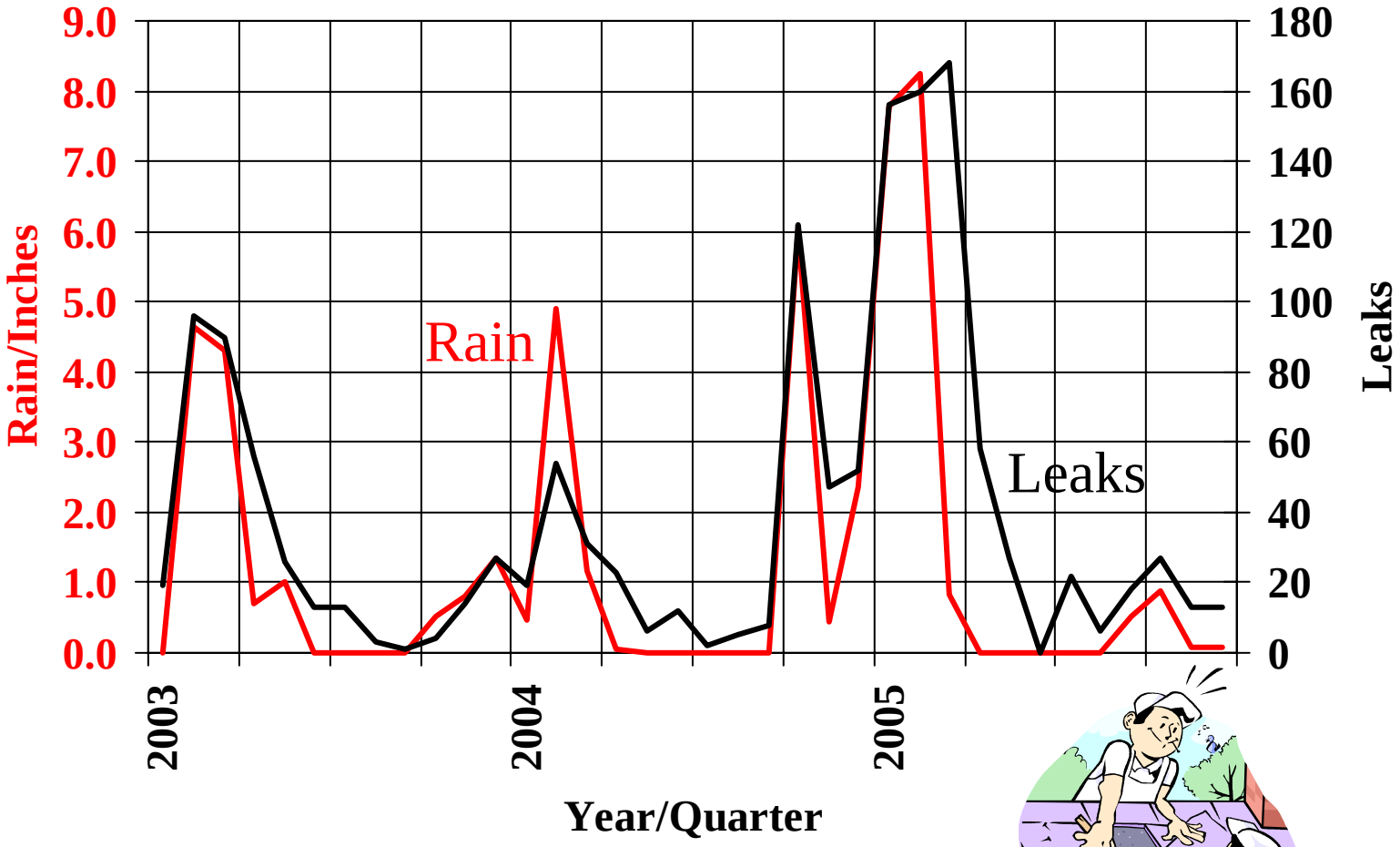
- Isolate the symptom.
  - Such as; Occurs only during a rain?
- Understand the parameters of the symptom.
  - Early Life Problem or Wear Out?
- Define the extent of the problem.
  - All buildings, or selected models?
- Determine How To Eliminate/Prevent the problems.
  - Can we have No Rain Leaks? Is problem solvable?

Initial Response to this Presentation:



- "Many of the 'Rain Leaks' are ***miscoded work orders*** and may have been due to leaks in ***water pipes*** or ***drain lines*** therefore the data is skewed."
  1. Should we have resolved this miscoding problem at least 20 years ago, or, is this the first time we have used the data for an Engineering Roofing Problem?
  2. However, what if there is a correlation between "Rain" and "Rain Leaks?" Could it eliminate miscoding as a possible explanation for the skewed ***data?***

Monthly Rain Leaks vs Inches of Rain



Common Forecast for the Future:

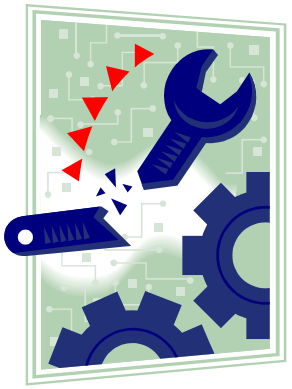
- "When the 'Stellar System' is functional it will provide data to identify Engineering Problems!"
  1. There are no current plans defining what analysis the "Stellar System" will be programmed to do. The data used in this presentation will not be available from "Stellar."
  2. In June, 2006, when the new "Stellar System" is functional, analysis can ***still*** only be done manually by using the current "Existing System!"

Now! Will the "REAL" Problem Please Step Forward!

- Management Philosophy over the past 40 years has placed primary emphasis on Financial Tracking.

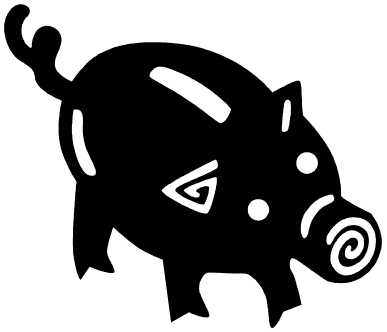
- The result is a deficiency in being able to understand, perform, and utilize Engineering Tracking & Problem Identification.

- For example, this is the first time these ***Engineering*** S***ymptoms*** have been presented in this manner.



Why Does This Problem Exist?

- The MIS Database is managed by the Finance Department and Engineering is a low priority.
- We have NOT hired people with ***Engineering Data Analysis*** expertise or job description.
- Current employees do not have a path for ***<u>"On The Job Training"</u>*** that will develop the needed expertise for Engineering Data Analysis. This results from the current ***"Reactive"*** rather than ***"Proactive"*** approach to Problem recognition.



Financial vs Engineering Tracking?

- Financial (current Cost tracking method)
  - Estimates a “Roof Life” (ie; 20 years) and allocates funds to replace the roof after 20 years.
  - Self-fulfilling prophesy. If roof could last longer it will never be determined.
  - Does not provide Early Life Quality or Wear Out measurements.
  - If it meets budget, there is no alarm.

- Engineering (proposed Problem tracking method)
  - Establish a “Roof Life” based on the actual life of a roof.
  - Uses empirical data for measurement and problem determination.
  - Provides Early Life Quality and Wear Out measurements.
  - Cost is only a small part of the measurement.

Conclusions Based on Financial Tracking

No Problem!

we are

within BUDGET

Conclusions Based on Engineering Tracking

Replacing Roofs

does NOT

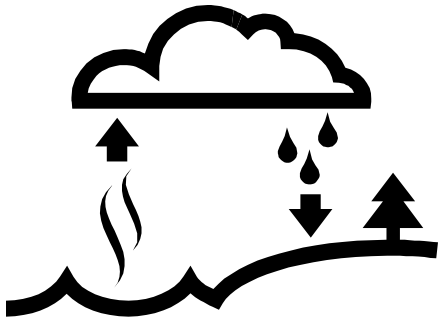
eliminate Rain Leaks

Summary

- ***The Obvious!***
  - ***Nearly 700 buildings had rain leaks during this period!***
  - ***Over 30% continued to leak after new roof installation!***
  - ***The United Roofing Budget for 2006 is over $2.4 million dollars (nearly $32 per manor per month)!***

- ***The Not-So-Obvious!***
  - ***We do not track Engineering information as illustrated in this presentation!***
  - ***We lack "Measurable Engineering Specifications" for roofing contractors!***
  - ***We do NOT know how to prevent rain leaks!***

Some Final Words on LEAKS



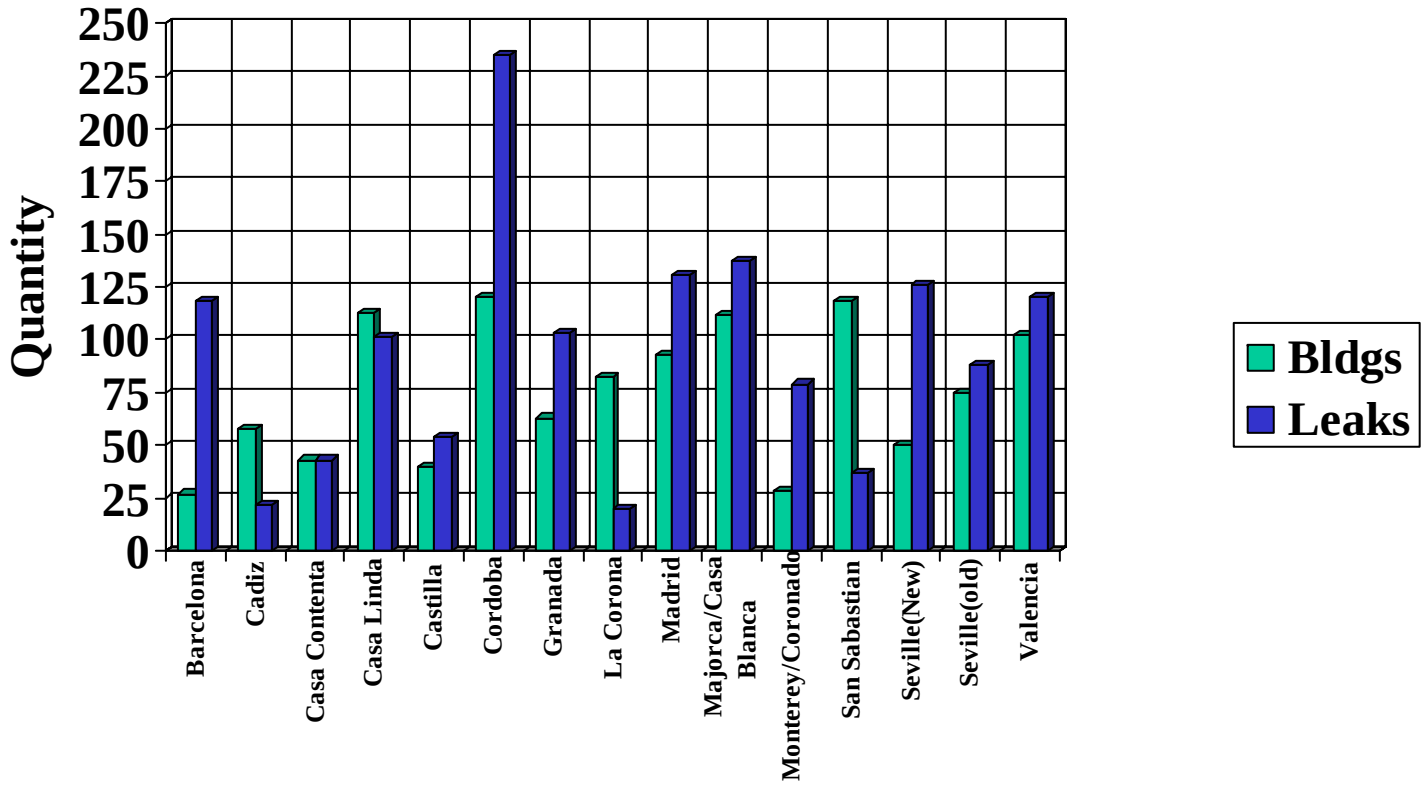
- "Rain Leaks" result in:
  - Inconvenience to the resident.
  - Potential costly water damage.
  - Exposure to the potential generation of "Dry Rot" and "Mold"
    - This can occur with minimal amounts of water, if the leak occurs repeatedly.

Additional Symptoms/Problems

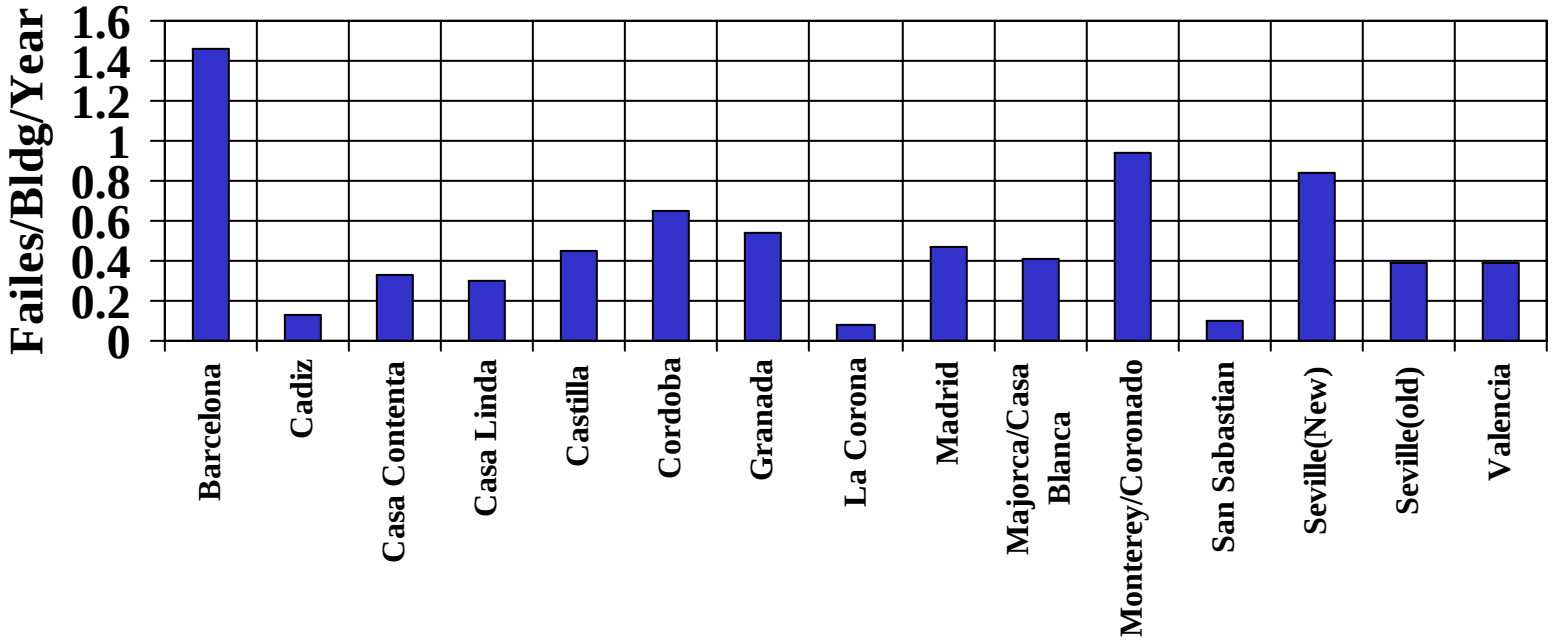
"Rain Leaks"

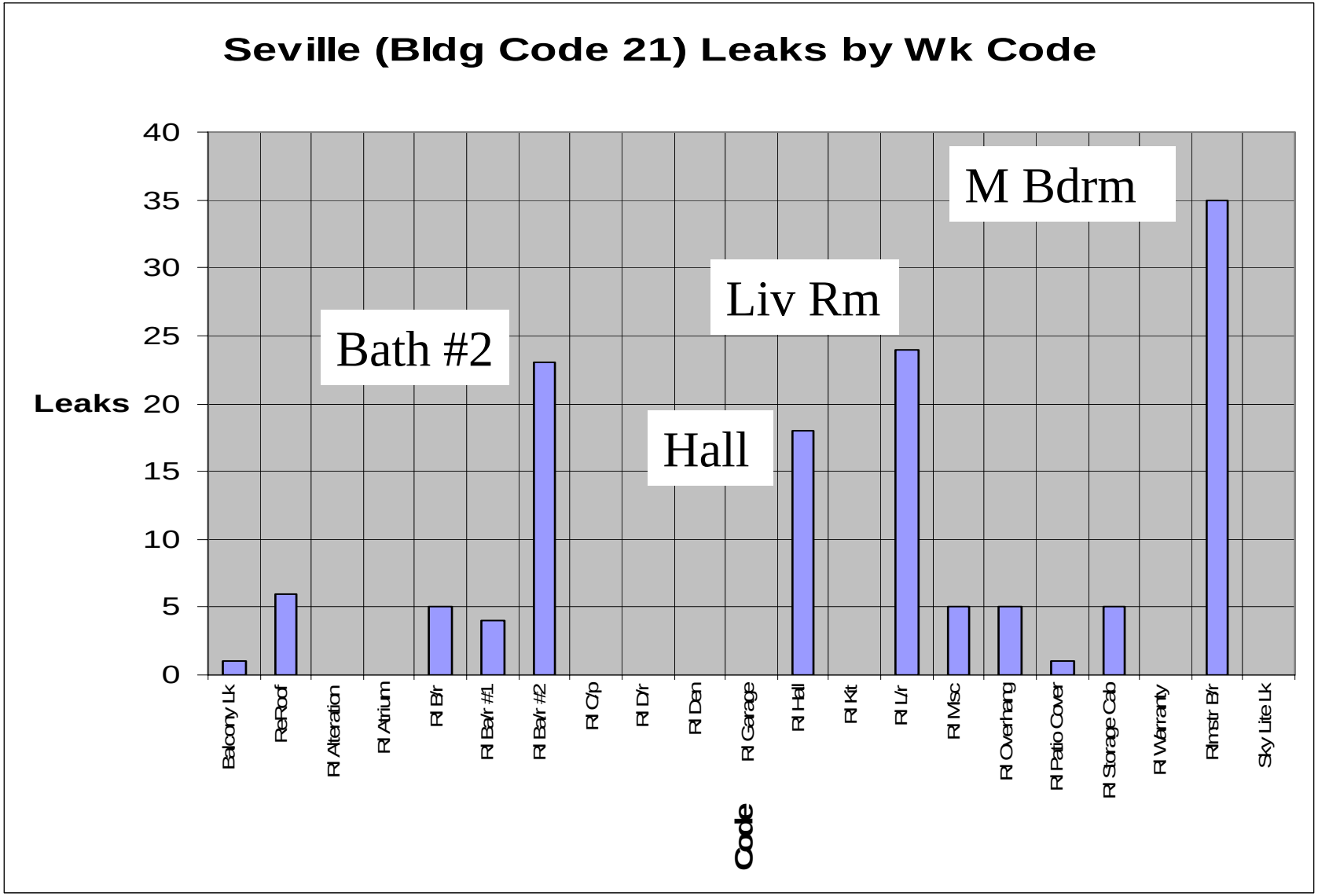
"MIS Database"

2003-2005 No. Bldgs vs Leaks by Model



2003-2005 Leak Rate/Bldg/Year by Model




Seville (Bldg Code 21) Leaks by Wk Code
Leaks
Code
0
5
10
15
20
25
30
35
40
M Bdrm
Liv Rm
Bath #2
Hall
Balcony Lk
ReRoof
Rf Alteration
Rf Atrium
Rf B/r
Rf Ba/r #1
Rf Ba/r #2
Rf C/p
Rf D/r
Rf Den
Rf Garage
Rf Hall
Rf Kit
Rf L/r
Rf Misc
Rf Overhang
Rf Patio Cover
Rf Storage Cab
Rf Warranty
Rimstr B/r
Sky Lite Lk

MIS Databases

- ***"Current System"***
  - ***Service Order Entry System*** used for past 10 years.
  - Financial Tracking only.
  - Uses Sequel to extract analysis data.
  - Performs no Engineering Analysis

- ***"Stellar"***
  - Proposed ***Service Order Entry System*** for tracking Work Orders.
  - For Financial & Engineering Tracking.
  - Cannot extract analysis data.
  - Performs no Engineering Analysis.
  - Needed 20 years ago.
  - Current Housing Mutual problems need Engineering Problem Definition.

"Stellar" Today!

- "***Stellar***" is a magnificent ***Data Collection*** system with instant recall of the raw Service Order Entry Data to the user's display screen.

- "***Stellar***" has ***No Analysis Capabilities*** built into it, and at this time, there is no definition of what it should be able to do with the raw data in the future. At this time any analysis that is done by Staff, can only be done using the "***Current System***."

What does that mean?

"Current System"

"Stellar" System This Year

BUT, it is not until Next Year that we get the

Stellar Conclusions

- We have spent $,$$$,$$$.$$ to implement ***"Stellar"*** System and there is no end in sight with a "Business as Usual" approach.

- We need to find monies to immediately move forward with the implementation of the **potential** use of the ***"Stellar"*** System.

THE END