Sustainability of “this old house”

…….showing some deference to our Bostonian friends – Bob Vila, Steve Thomas, Norm Abram, Tom Silva, Richard Tretheway….maybe even their friend from up north………………Mr. Holmes…………………………….
Welcome to Manitoba
the Keystone Province

Where are we? Winnipeg

- Other names:
  - Winterpeg
  - Winnerpeg
  - Swaggerville
our Campus
What we’ll cover today……..

• What is Sustainability
• Operate, Manage, Maintain
• Usage, Place and Master Planning
• Systems and Sustainability
• Preventive Maintenance - and when it’s a waste of time
• Technology, technology, technology

Is this Sustainability?

• Low flush toilets, linoleum floors, LED lights & bike racks?
Sustainability

• “the capacity to endure”
• or in our situation as hospital facility managers
• “the capacity of the building and it’s systems to endure … the activities and occupants which are in them.”

Why “this old house”

• The average age of the healthcare buildings which we maintain is ..........27 years
• we are usually renovating this stock of buildings for new technology, adjustments or complete re-purposing
• So what is it that we need to do to “this old house”? 
OOOOMMMMMMMMMMMMM

- Operate
- Maintain
- Manage
What do we need to know

What’s this building’s:
• USE – today’s
• PLACE – next
• MASTER PLAN – future

A Building Which Needs To Know It’s Place
• and where It stands in the Master Plan
Master Planning

- Program Assessment
- Infrastructure Assessment

System Categories

- Architectural systems
- Electrical systems
- Mechanical systems
- Plumbing systems
- Building systems
Resources?

System and Product Criteria

- Life span
- Standardization
- Reliability

- Serviceability
- Maintainability
- Refurbishment
- Flexibility
Reliability

• 99% uptime = 1% down = 87 hours/year
• 99.9% uptime = .1% down = 8.7 hrs/year
• 99.99% uptime = .01% down = 52 min/year
• 99.999% uptime = .001% down = 5 min/year
• 99.9999% or Six Sigma = .0001% down = 30 secs/year

Serviceability

• How long will the vendor support?
• Who can provide me service?
• Is there an upgrade path – planned? Possible?
Maintainability

Have my building systems been designed for me to:
• Maintain
• Modify
• Renovate
without significant shutdowns & impact

Do I have redundancy – built in? or temporary?

System and Product Criteria

• Life span
• Standardization
• Reliability
• Serviceability
• Maintainability
• Refurbishment
• Flexibility

Flexibility
Architectural Systems

- Roofing – show curbs
- Windows – CH/CK outside
- Wall Systems
- Flooring
- Doors – show examples
- Wall protection – show Acrovyn ad & examples
- Ceilings

Roofing – curb that equipment
Roofing – inverted EPDM in an 80 C range environment

Windows
Wall Systems

Linoleum – can you tell the 50 year old stuff and the 5 year old?

Same Traffic Area? Is the newer really better?

1950 install  2007 install
Flooring – a hallway of testing

Up Close Results

An accelerated 6 months test in our highest traffic area
OR Floors – testing

Door Protection
Doors

Bumper Cars & Guards
Wall Protection – flexible PVC, PVC panels, linoleum, phenolic
Elevator Exteriors & Interior Wall Protection

Washroom Walls
An example of bad renovation design and construction

- Patient washroom and shower stall with coved based adhered to a tile wall? Mounted over drywall? A recipe for disaster that was mixed, baked and delivered

Electrical Systems

- Primary distribution and transformation
- Secondary
- End use
- Emergency Power
- Conduit/Raceway – show bad cable tray/J hook layout
Cable management

.....the good, the bad & the ugly......

Mechanical Systems

• Central plant –
• Air Handling Units
• Pumping systems
Watch that Humidity Level

Plumbing Systems

- Sinks & Toilets – show images
- Piping – valving and pipe quality
- Fire Sprinkler protection
- Medical Gas
Toilets – low flow – quality flush?

Piping – getting the right pipe
- What do I expect from a sink like this?

Failed Drains no doubt
Medical Gas – testing method?

• Local Alarm with
  • test station

Master Alarm with
Locked valve & test port

Building Systems

• Fire alarm
• Nurse call
• CCTV
• Controls
Preventive Maintenance

- We all know that all building system and equipment requires preventive maintenance? Right?
- Wrong! - or almost wrong. Yes most systems require some – but there are many scenarios where your investment can be fruitless.

When PM isn’t effective

- The building has no Place or Master Plan purpose
- The system is at the end of it’s life span
- It’s a technology system
PM & Technology

- Manage the technology
  - record & copy firmware
  - copy and archive software/settings
  - what is the migration path?
  - what is the legacy support
  - do I have the tools, training, vendor support

PM’s

- Whatever you need to do – write it down
- Get it in a your schedule
- This is a key to your plan
- Keep adjusting your plan as you review your Usage, Place and Master Plan
Other things… not discussed
• But very necessary to keep this old house moving along
• Commissioning
• Record documents – as builts and O&M

What we have looked at:
• First – sustainability is about the capacity to endure – endure what are the demands of our healthcare facility
What we have looked at:

• First – sustainability is about the capacity to endure
• Second thing: Operate, Maintain and Manage your facility

What we have looked at:

• First – sustainability is about the capacity to endure
• Second thing: Operate, Maintain and Manage your facility
• Third – we can effectively do this if we know our facilities:
  – Usage - today,
  – Place – next, and
  – Master Plan – for the future.
What we have looked at:

- First – sustainability is about the capacity to endure
- Second thing: Operate, Maintain and Manage your facility
- Third – Usage, Place and Master Plan
- Fourth – we can with this knowledge Operate, Maintain and Manage the Systems and ensure that our systems and products have
  - suitable life span
  - standardized,
  - reliable,
  - maintainable,
  - serviceable,
  - refurbishable and flexible.

What we have looked at:

- First – sustainability is about the capacity to endure
- Second thing: Operate, Maintain and Manage your facility
- Third – Usage, Place and Master Plan
- Fourth – systems must have suitable life span, standardized, reliable, maintainable, serviceable, refurbishable and flexible.

- Fifth – when we have systems which are necessary – then we need a suitable PM process to make sure they endure
Thank you

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What Does a Plan Look Like?

• No One Single Document
• Resources – master plan, record documents
• Documented PM – reviewed regularly
• A 10 year capital maintenance plan/approach – with annual reviews
• Testing/Investigation of Systems & Products