



Building for People and Performance.  
Achieving Operational Excellence.

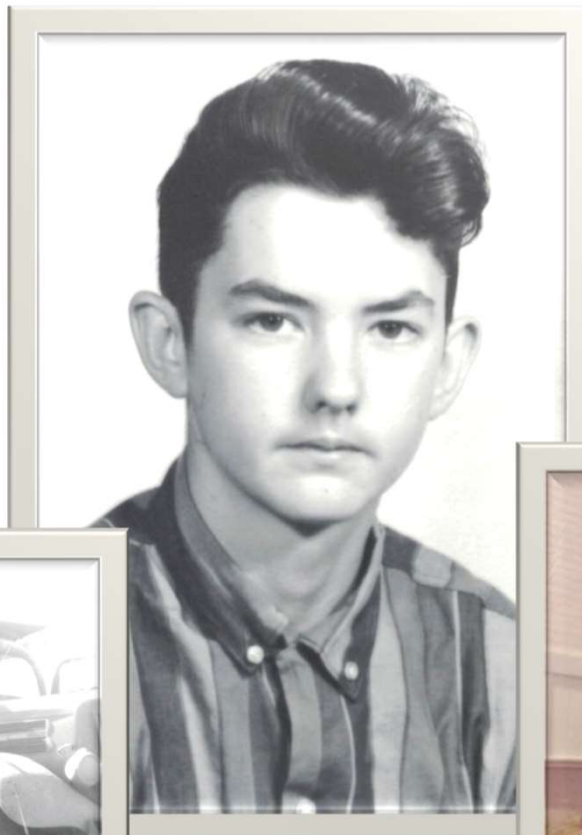
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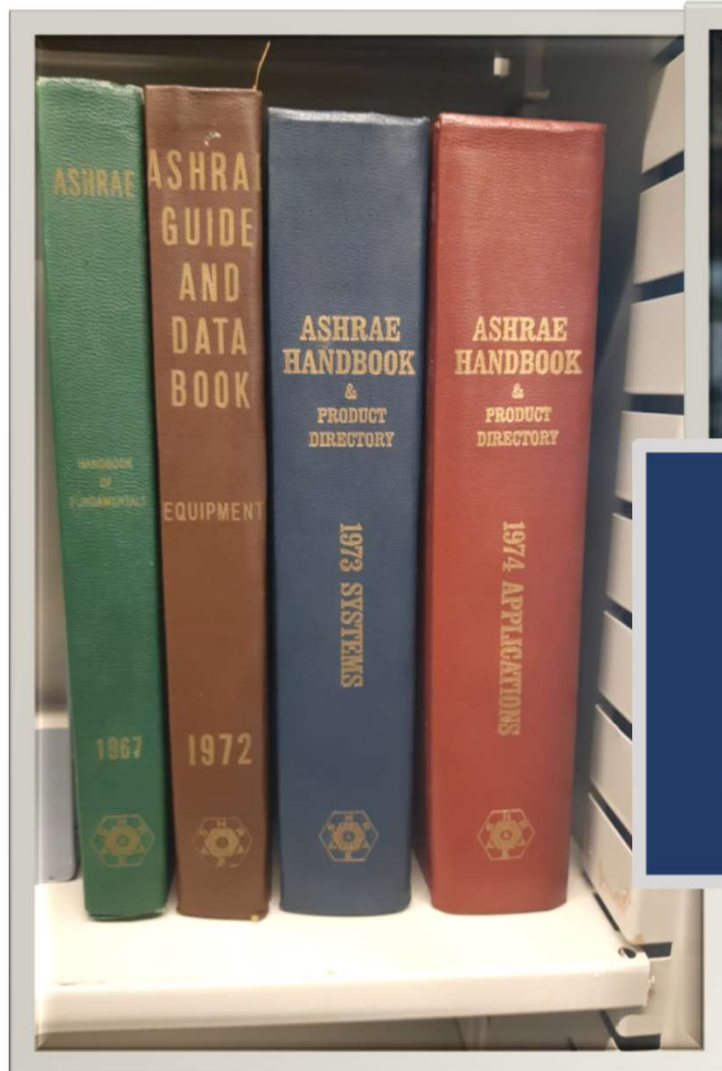
Darryl K. Boyce, P.Eng.  
2019-20 ASHRAE President

Building for People and Performance. Achieving Operational Excellence.

## Growing Up



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# All You Need to Know

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## ASHRAE HANDBOOKS





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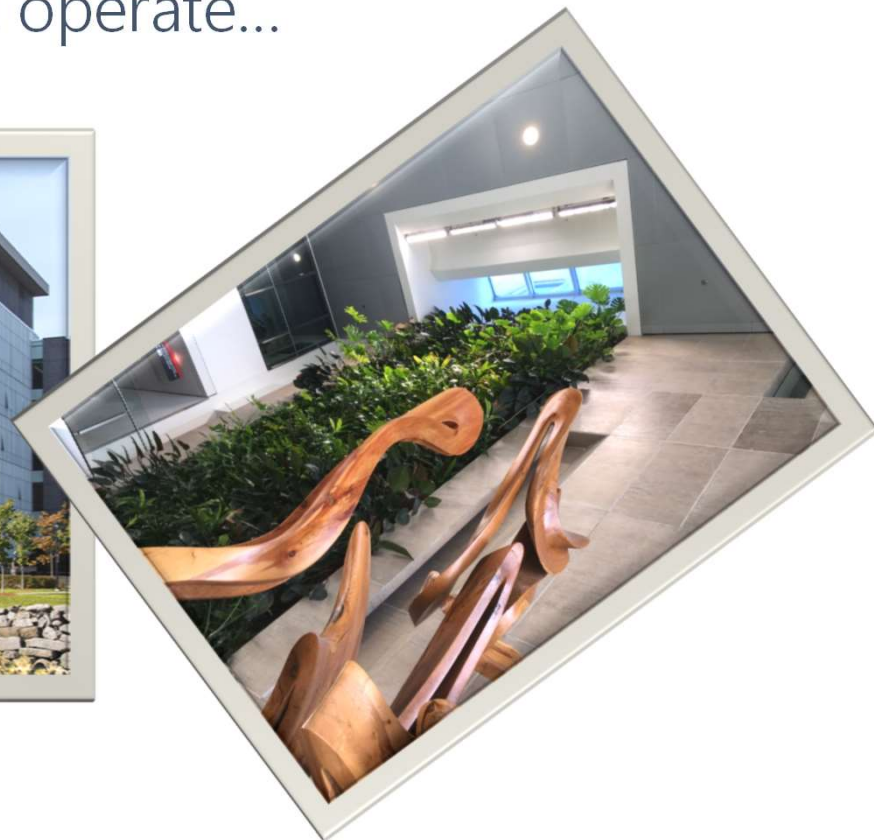
## Why Should We Care About Operational Performance?

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We “own” the buildings we design, build and operate...



THAT'S MY BUILDING!





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It's good for the  
planet!

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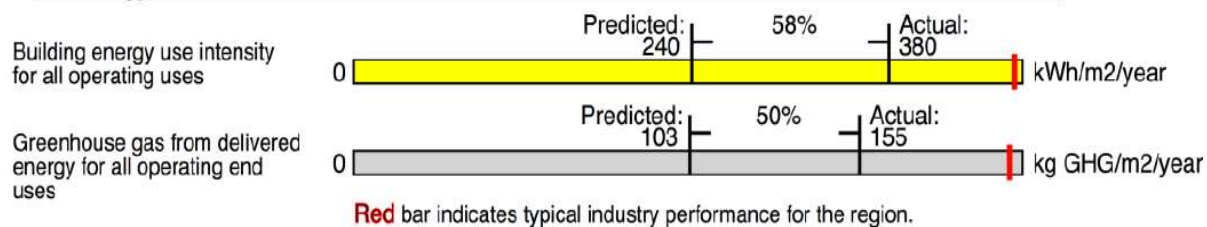


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## Alice Turner Branch Library Saskatoon, Saskatchewan, Canada

### E: Energy and Emissions

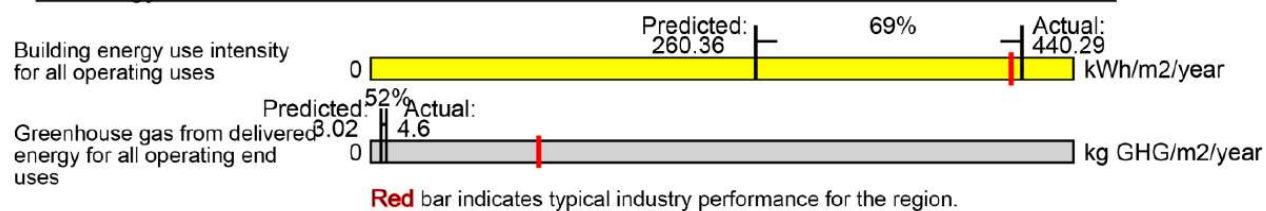


# Building for People and Performance. Achieving Operational Excellence.



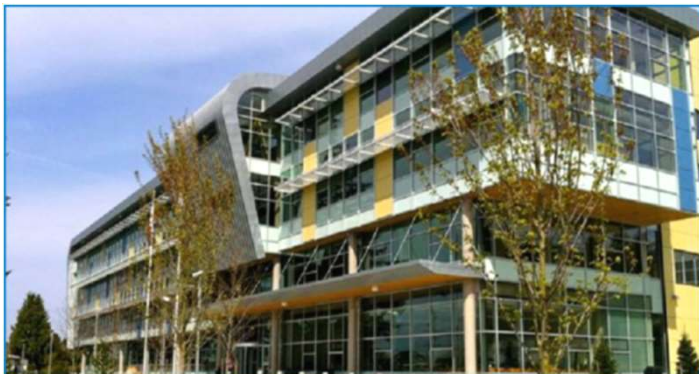
## Roblin Centre - Red River College Winnipeg, Manitoba, Canada

### E: Energy and Emissions



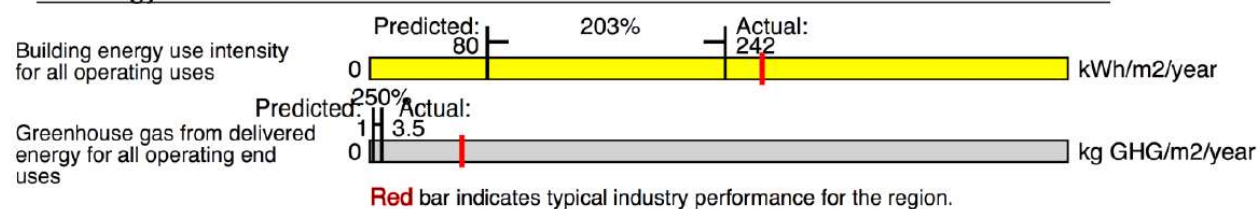


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## Surrey District Education Centre Surrey, British Columbia, Canada

### E: Energy and Emissions



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## Why Are Great Designs Not Always Delivering Great Operations?

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Designers are Not  
Always Focused on  
Operability During the  
Design Process

Buildings are More  
Complex

Operators are Lagging  
Behind



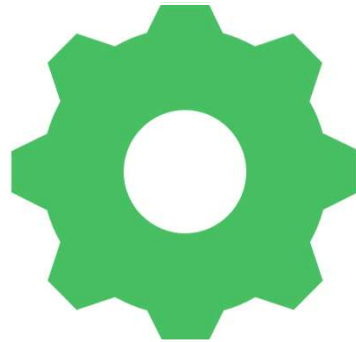


## How are buildings falling short?

Feature-packed,  
but not always  
functional



Unmanageable,  
complex control  
systems



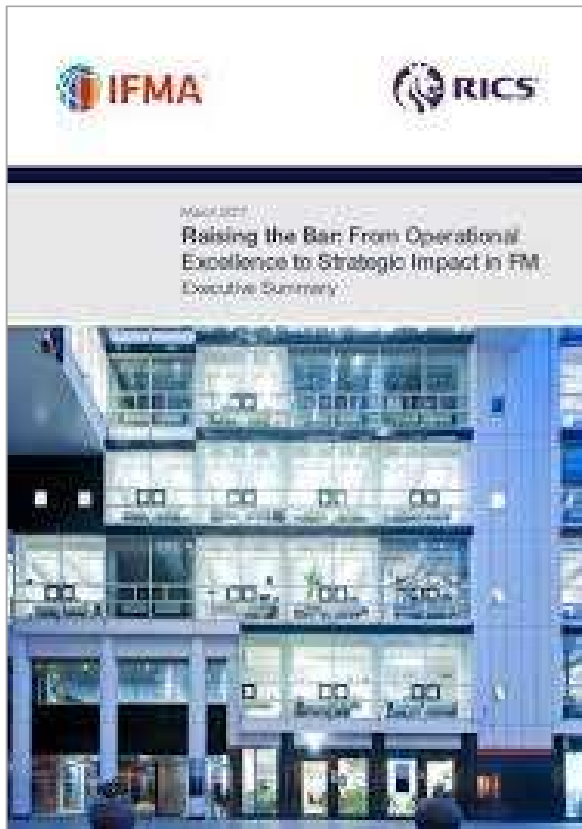
Insufficient  
Commissioning



Energy  
Consumption  
much higher than  
benchmarks



## Building for People and Performance. Achieving Operational Excellence.



"We believe that mastering the 'digital age' means applying new forms of technology, both to enhance the management of facilities and to create new kinds of work experiences."

Raising the Bar: From Operational Excellence to Strategic Impact in FM, 2017  
IFMA Research Study



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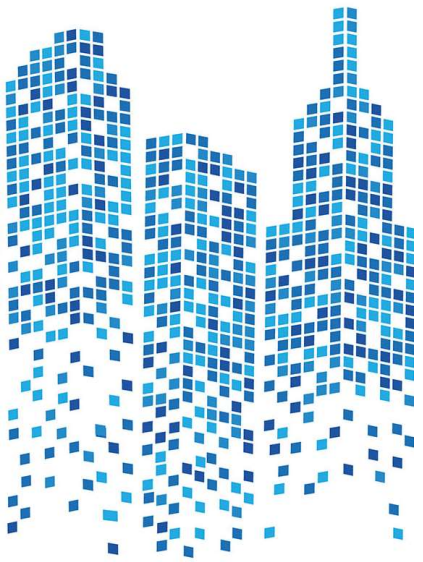
Let's Talk About Solutions!

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## Include the Building Operations Team

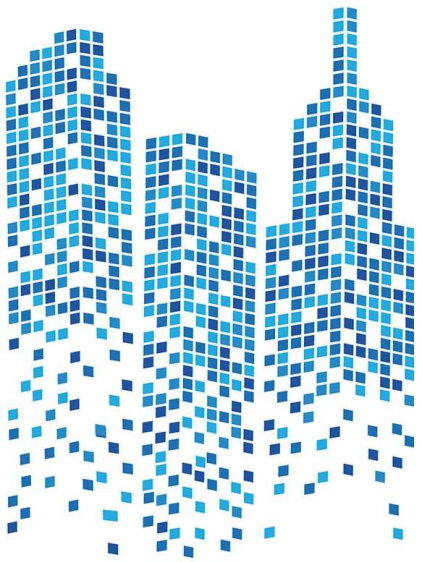


Include the building operations team at the beginning of the design process – not just at the end

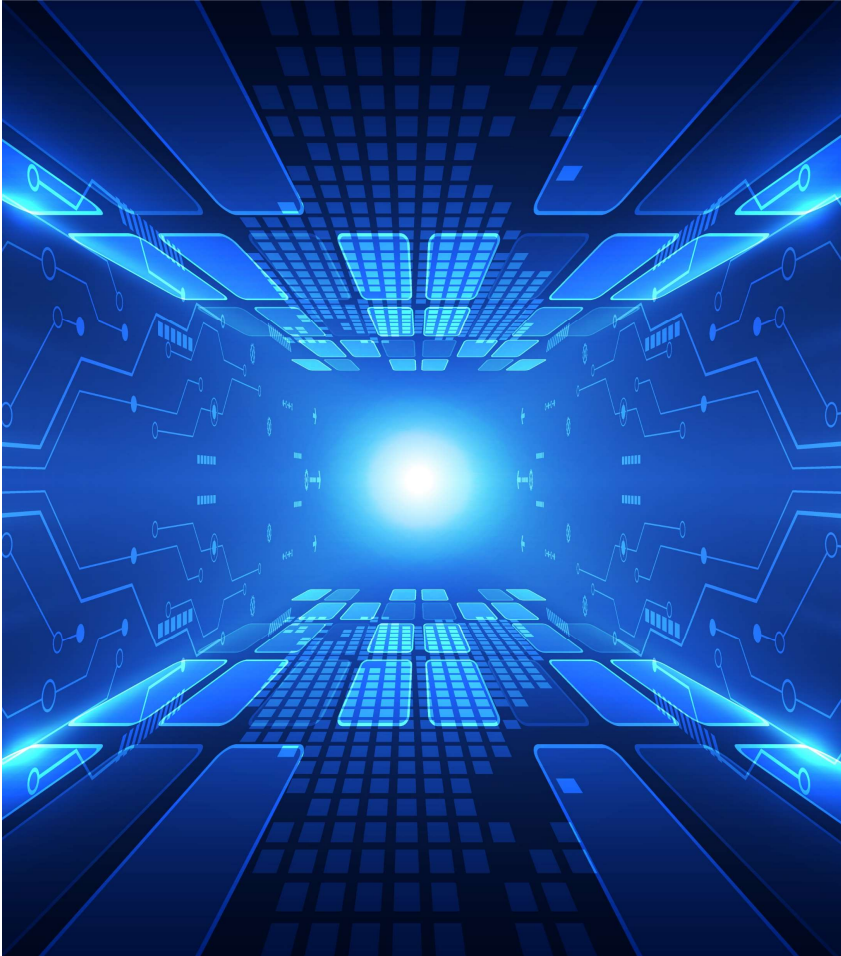
- Design buildings for the **occupant** operators
  - *All design decisions should be evaluated for their impact on Indoor Environmental Quality*
- Develop training strategies to prepare operators
- Establish an effective turnover and training process
- Use data effectively
- Remember humans are the best sensors of comfort

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- We must learn about the use of Analytical/Fault detection software and apply it to enhance the operation of building systems
- A comprehensive study by the National Research Council in Canada determined that with today's building automation systems we have more than enough data, we just need to use it effectively



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Consider a Digital Building Twin to improve the understanding of the building operations as a base model





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In the UK, a program called Soft Landings, was developed to support a building delivery process which runs through the project from inception to completion and beyond. The process ensures all decisions made during the project are based on improving operational performance of the building and meeting the client's expectations.



## *the* Soft Landings **Core Principles**

- ADOPT THE ENTIRE PROCESS
- PROVIDE LEADERSHIP
- SET ROLES AND RESPONSIBILITIES
- ENSURE CONTINUITY
- COMMIT TO AFTERCARE
- SHARE RISK AND RESPONSIBILITY
- USE FEEDBACK TO INFORM DESIGN
- FOCUS ON OPERATIONAL OUTCOMES
- INVOLVE THE BUILDING MANAGERS
- INVOLVE THE END USERS
- SET PERFORMANCE OBJECTIVES
- COMMUNICATE AND INFORM

www.bsria.co.uk

BSRIA BG54/2012

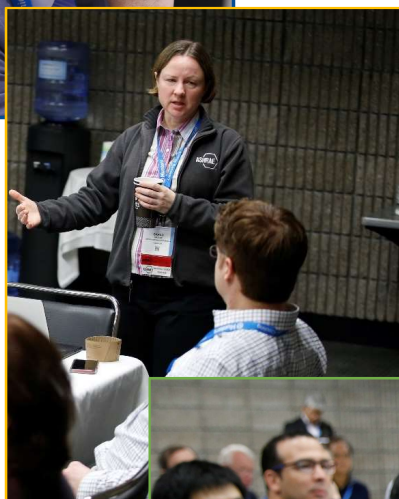


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## How Is ASHRAE Helping The Industry Achieve Operational Excellence?

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## Multidisciplinary Task Group: Effective Building Operations

Created to coordinate the activities of multiple Technical Committees, Task Groups, Technical Resource Groups, and other stakeholders

- Suggestions for research
- Development of technical programs and special publications on Effective Building Operation to Achieve Excellent Indoor Air Quality while not wasting energy





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## ASHRAE Headquarters Building Ad-Hoc Committee



What does the building owner and operator bring to the design discussions?

**We are going to learn first-hand!**



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## What Can ASHRAE Members Do?

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Learn



Engage



Act





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Learn...

Get a copy of the new ASHRAE guideline:  
"Designing for Effective Building Operations"

*Available June 2020*



**Review the Centre for the Built Environment**

**Understand the perspective of the building  
occupant – what they see and feel**



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Engage...

Engage with building operators at the ASHRAE Chapter and Society level

- Improve our understanding of their problems
- Develop educational and training programs to reduce the gap between design, construction and operations
- Listen to what they are saying
- Have at least one meeting this year to talk about operational challenges



Act...

Follow the principles: "Designing for Effective Building Operations"

- As building designs become more computerized, add computer assisted building operations enhancements into the design program
- Transfer the as designed operational concepts to the operations team
- Learn and apply well-building fundamental principles to the design



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# We Can Achieve Operational Excellence!



**It's good** for the building.

**It's good** for those who live and work within our buildings.

**It's good** for the environment.

**It's good** for us!





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To learn more:  
[ashrae.org/president](http://ashrae.org/president)

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