

# Good Healthcare Facility Design: The First Line of Defence



Presentation for 2009 AIHA Alberta Local Section

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# Introduction

## Deborah Redden

- Canadian Certified Professional Ergonomist
- Occupational Health, Safety & Wellness Department with Alberta Health Services – Edmonton Zone
- Emphasis on incorporating ergonomics and other supporting disciplines into the design process

## AIHA

- How many of you focus completely on industrial hygiene?
- How many of you work in general H&S including ergonomics?
- How many of you have been involved in the design of a renovation or new construction of a facility?

What I have learned is that design falls into three distinct realities...

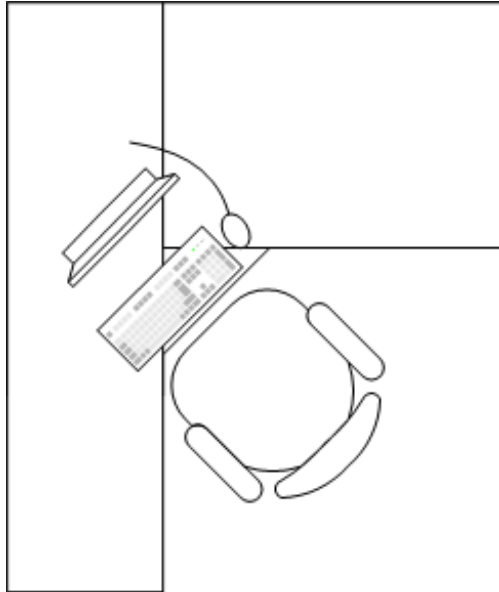
The design  
as we **expect**  
it will be used

The design  
as it is  
**actually** used

The design  
as it will be  
used in the  
**future**

Here are a few  
examples to  
illustrate the three  
realities...

# Computer Workstation



•**Expected:** A computer workstation used by one person for tasks including computer use, telephone use, and paper charting and resource referencing.



•**Actual:** A computer workstation shared by two people for the same tasks, often at the same time.

# Biological Safety Cabinet



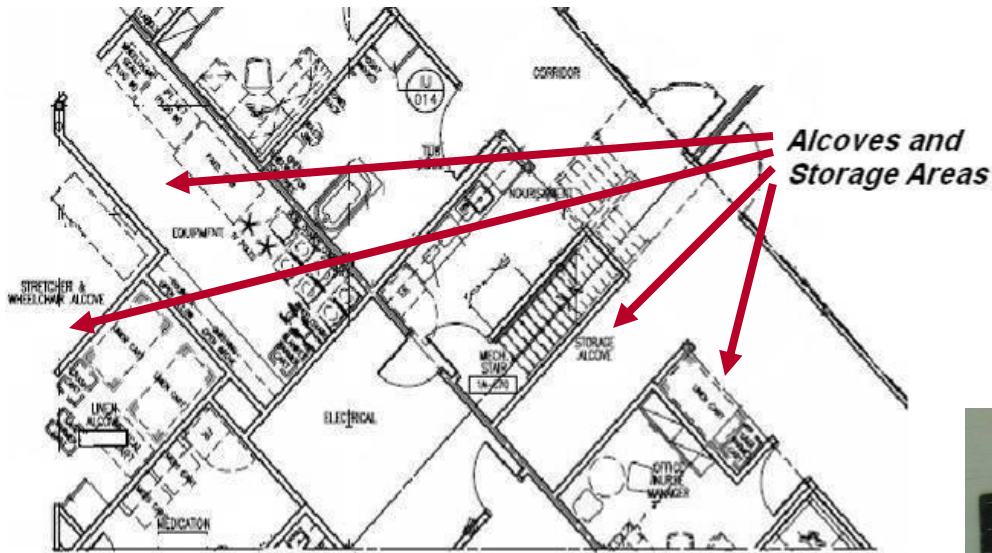
•**Expected:** A biosafety cabinet is installed with the appropriate ventilation requirements, with appropriate PPE and processes utilized.



•**Future:** Lab demands increase and the need for a second biosafety cabinet is recognized, and so a second one is installed. However the impact on the original ventilation and working clearance is not explored.



# Storage Areas



•**Expected:** Storage rooms and cupboards will meet the storage needs of the area.



•**Actual:** Storage spaces allocated may be insufficient, be located too far away from point of use, become untidy and cluttered, etc.

These design realities  
are a challenge.  
So what can we do  
about them?

## Identify who needs to be involved:



- Primary and Secondary users
  - Remember both management and front-line staff levels
- Experts about the functions of the space
- The design team
- Supplementary design experts
  - e.g. ergonomists, industrial hygienists, infection control practitioners, security advisors, etc.

# Determine How to Bring Expert Knowledge Forward

- **Consider your expert knowledge that you would like to see incorporated into the design process:**
  - Can you provide guidance documents to the design team?
  - Can you participate in design review meetings?
  - Can you provide training to the design team or others involved in the design process?
  - Can you be available when the design team has questions?
  - Do you have colleagues you can discuss issues with?

# Research Existing Designs and Areas

- **Look at comparable existing rooms/buildings/spaces and ask:**
  - What is working well?
  - What is not working well? Why?
  - If the users could make changes, what would they suggest?
  - What modifications have been made by users?
  - How much growth or change has this area already experienced?
  - How have processes changed to date, and how are they expected to change?
- **\* Post-Occupancy Review \***

# Research emerging design influences

- **New technology, influences, and advances are constant and need to be identified and incorporated to design.**
  - New legislation and best practice guidelines
  - Media influence
  - Society changes
  - Increased computerization
  - Changing workforce and clients

# Case Study – Endoscopy Suite

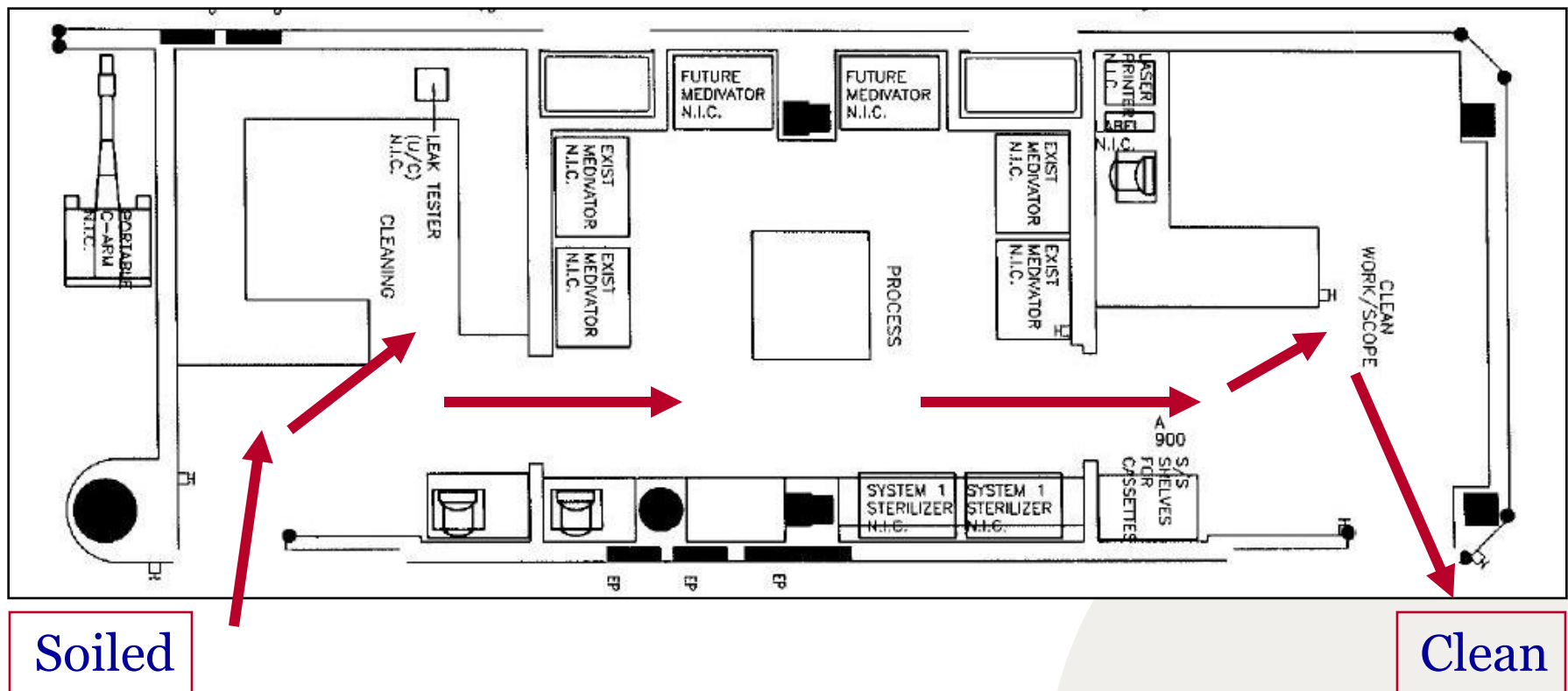
- **Endoscope**

- A lighted optical instrument used to get a deep look inside the body and examine organs such as the throat or esophagus. An endoscope can be rigid or flexible.



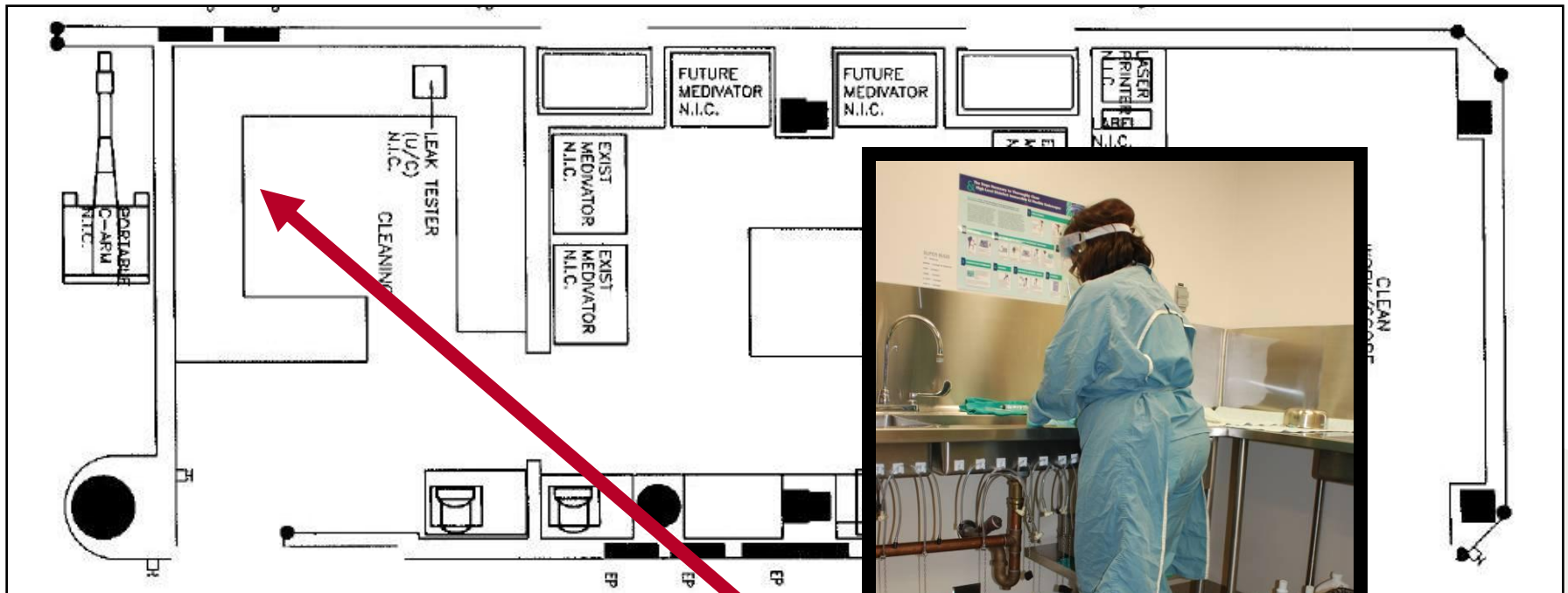
- **Let's look at an Endoscopy Suite design from various perspectives:**
  - Infection Prevention and Control
  - Ergonomics
  - Safety and Hygiene

# Endoscopy – Infection Prevention & Control

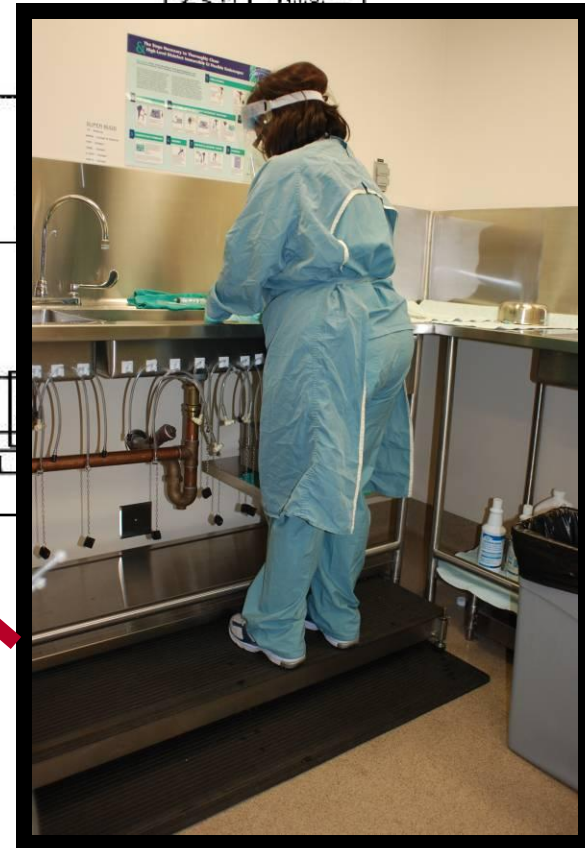


- Good workflow and movement from soiled to clean state
- Appropriate disinfecting, processes, and surfaces throughout suite

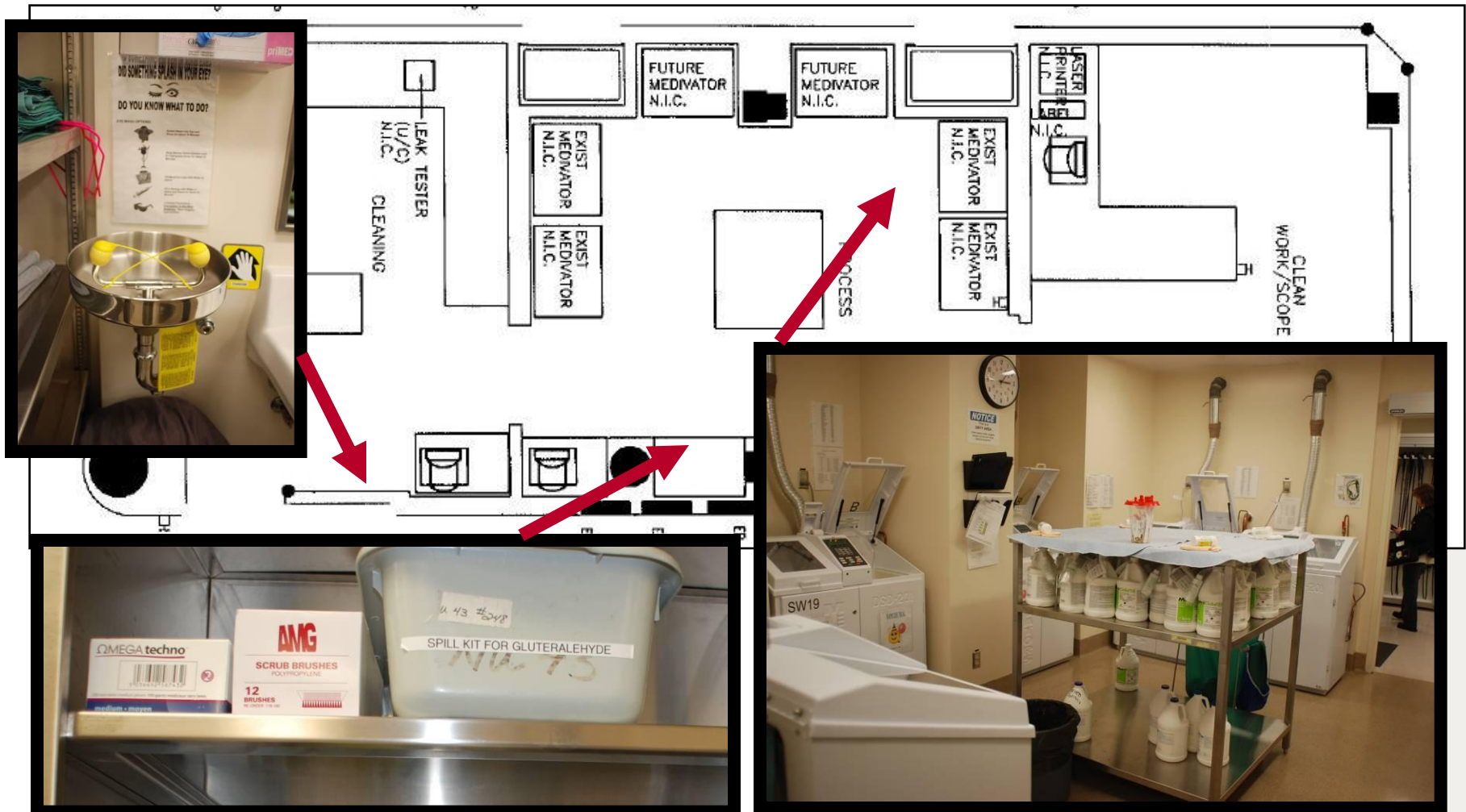
# Endoscopy - Ergonomics



- Good workflow and movement from soiled to clean state
- Design to accommodate shorter and taller workers at the sink



# Endoscopy – Safety and Hygiene



# Post-Occupancy Review of Endoscopy Suite

- So the design of the endoscopy suite is still being considered a design success, even several years after the users moved in...
- But what can we learn to affect future designs?



# Summary

- Think about every time your phone rings with a concern in the workplace... could it have been minimized or not occurred at all with different considerations earlier in the design process?
- What avenues are available to you to affect earlier design stages?
- Recall the resources to draw upon:
  - Post-occupancy review
  - Complementary expertise
  - Users
  - Existing and future influences

# Thank You!

## Any Questions?