



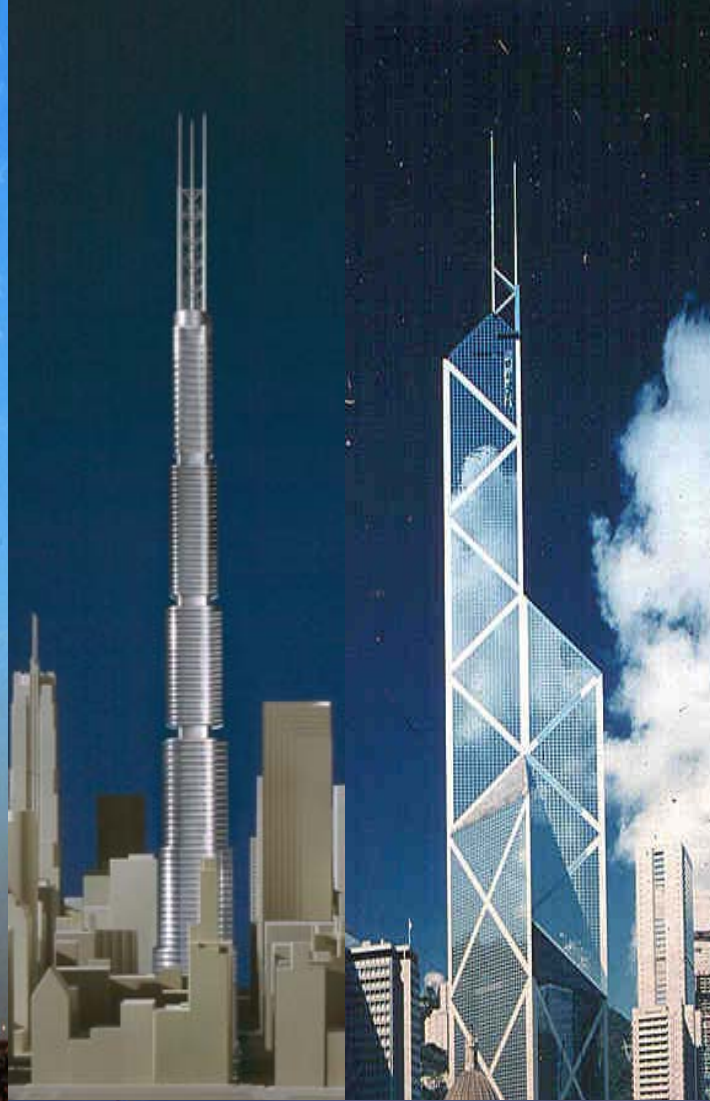
# *Use and Application of the IBC on International Projects*

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**Randolph W. Tucker, P.E.**  
**Executive Vice President**  
**The RJA Group, Inc.**

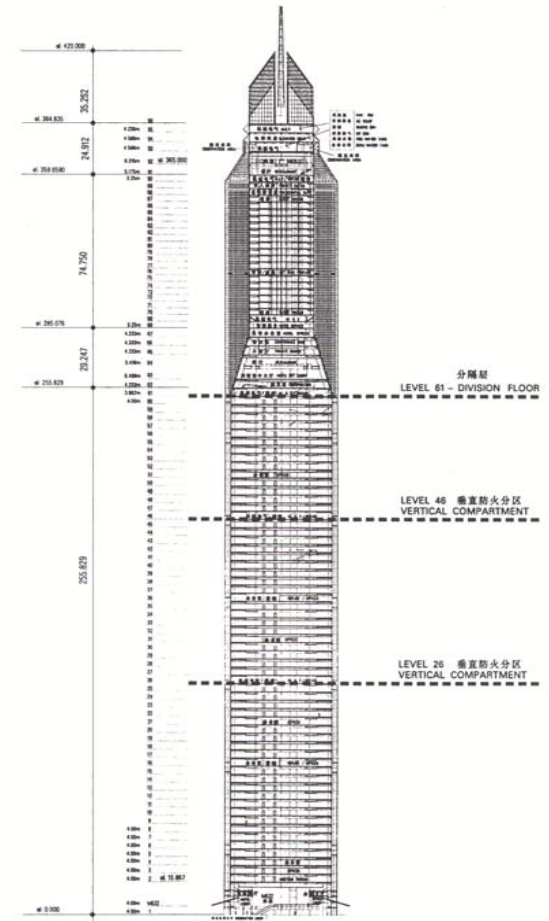
**World Organization of Building Officials**  
**September 19, 2006**





# International Design Challenges

- Creative Designs Requiring Unique Fire Safety Approach
- Many and Varied Fire Safety Standards
- Assurance to Local Authorities of a "Safe" Building





# Global Code Considerations

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- **Social Factors**
- **Workforce**
- **Enforcement Approach**
- **System Testing**
- **Maintenance**

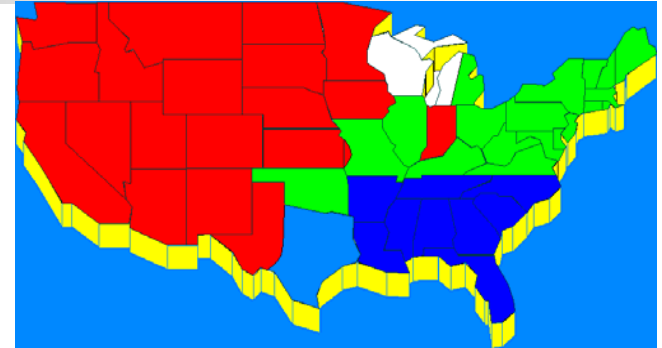
# Basic Fire Safety Issues

- Protection of the Building Structure
- Availability of Adequate Means of Egress
- Reliability of Fire Detection and Suppression Systems
- Protected Fire Fighters' Access and Facilities



# What is the IBC?

- **Regional U. S. Model Building Codes**
  - Uniform Building Code
  - BOCA National Building Code
  - Standard Building Code
- **International Codes**

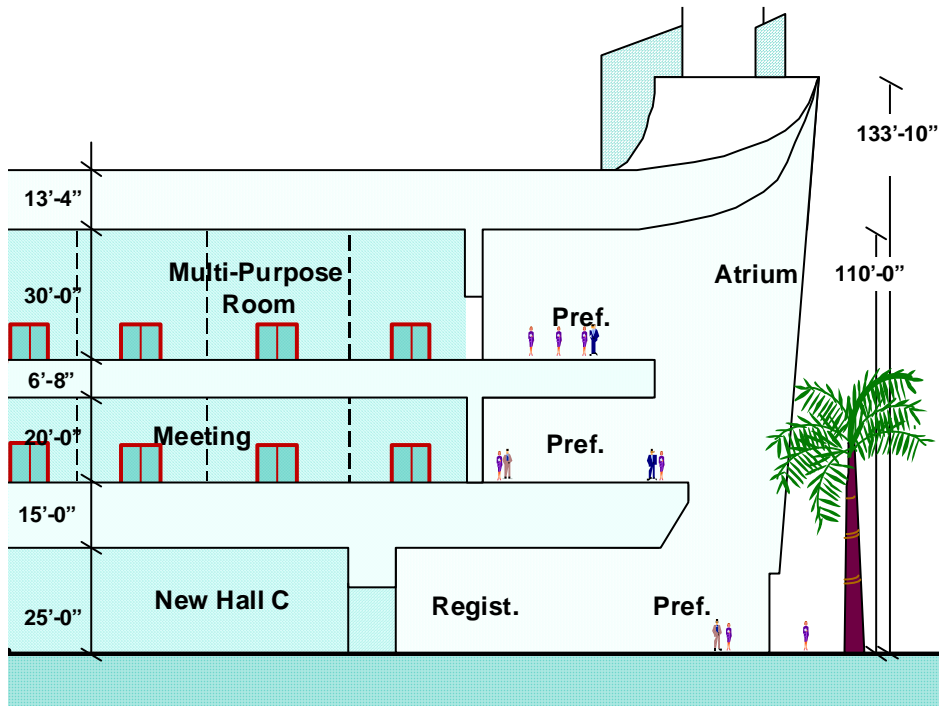


# General IBC Requirements

- Use and Occupancy Classification
- Requirements Based on Use and Occupancy
- General Building Heights and Areas
- Construction Types
- Fire Protection Systems
- Means of Egress



# Specific Requirements



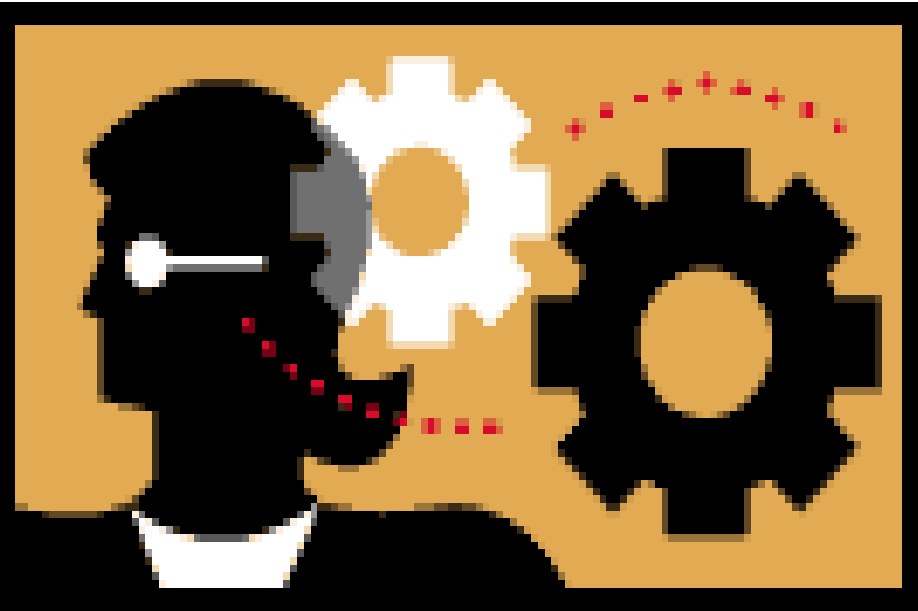
- **Special Facilities**
  - **Covered Malls**
  - **High Rise Buildings**
  - **Underground Buildings**
  - **Atriums**





# Strengths of the IBC

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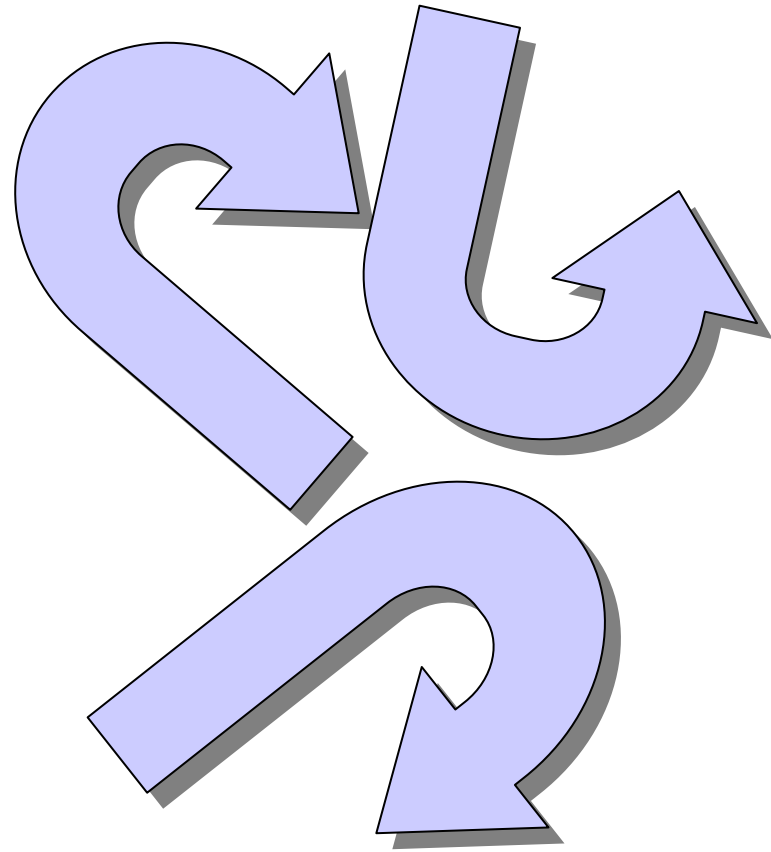
- Clear Process for Alternative Materials and Design Methods
- Third Party Review and Testing
- ICC Change Process



# Alternative Methods

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- **Code Official Finds Satisfactory and Complies With Code Intent**
- **Equivalent in Performance**
- **Research Reports**
- **Tests**



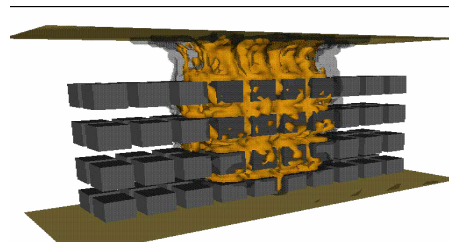
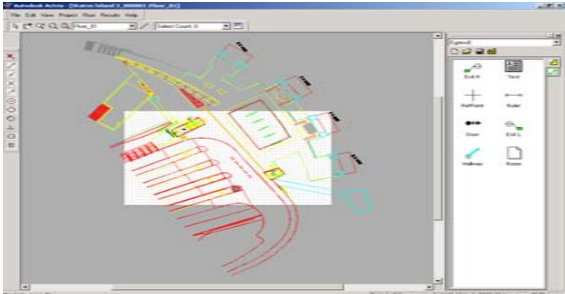
# Third Party Review



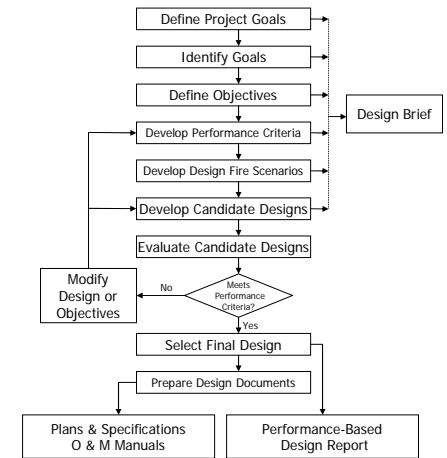
- Review Design for IBC Compliance
- Inspection and Testing of Fire Safety Systems
- Validation of Performance Based Design Approach and Fire Modeling

# Performance Based Design

- Design Objectives
- Scenarios
- Analytical Tools
- Evaluation



SFPE Performance-Based Design Guide



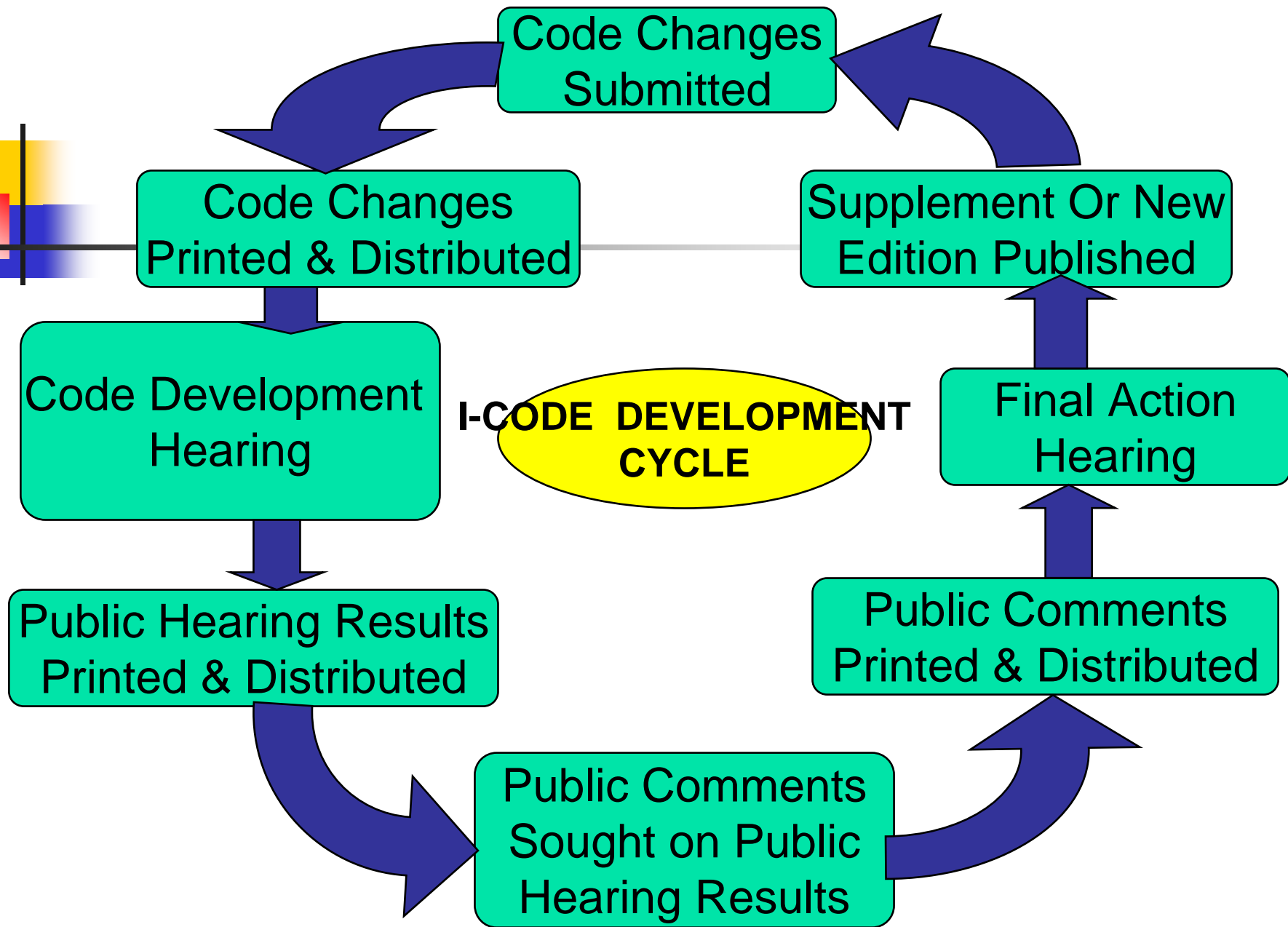
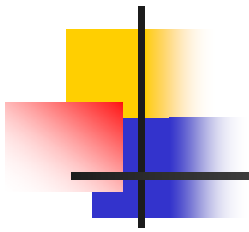


# IBC Change Process

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- **Development Cycle**
- **Participants**
- **Public hearings**





# Application of the IBC

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## Global Design & Construction Teams





# Setting the Ground Rules

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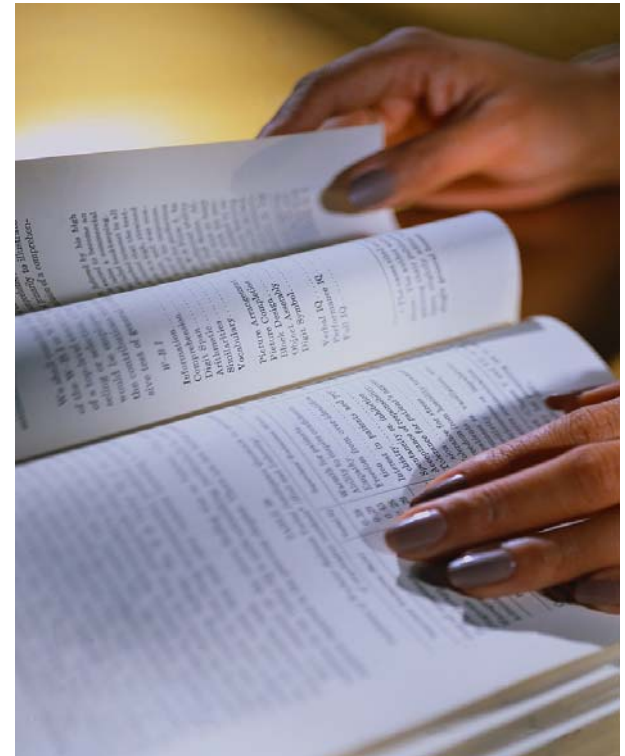


- **Design Team**
- **3<sup>rd</sup> Party Reviewer**
- **Interface with Local Code Officials**



# Setting the Ground Rules

- Review Reports
- Process for Equivalency Review and Acceptance



# Setting the Ground Rules

RJA DUCT SMOKE DETECTORS		Project Name: _____		Inspectors: _____								
		Location: _____		_____								
		Number: _____		_____								
		INSPECTION					TESTING					
Fan #	Detector #	Zone #	Manufacturer and Model	Listing #	Installed per Listing	# Agrees with Location on Control Diagram	Listed for Application	Within Listing Limits for Temperature and Airflow	Activate Device and Verify Change in Status Notification	Monitoring System Correctly Annunciates Device	Output Functions per Input/Output Matrix	Remarks
VF/1/115A/CF2		1C	Edwards		YES	YES	YES	YES	YES	YES	No power at fan	
AHU/1/02		1C	Edwards		YES	YES	YES	YES	YES	YES	No action	
AHU/2/04	10-147	1C	Edwards		YES	YES	YES	YES	YES	YES		
AHU/2/01	10-151	1C	Edwards		YES	YES	YES	YES	YES	YES		
AHU/2/16	10-155	1C	Edwards		YES	YES	YES	YES	YES	YES		
VF/3/113/136	136	1C	Edwards		YES	YES	YES	YES	YES	YES	No power at fan	
AHU/3/03	138	1C	Edwards		YES	YES	YES	YES	YES	YES		
VF/3/115/CF3		1C	Edwards		YES	YES	YES	YES	YES	YES	No power at fan	
VF/3/148/148	148	1C	Edwards		YES	YES	YES	YES	YES	YES		
AHU/3/02	146	1C	Edwards		YES	YES	YES	YES	YES	YES		
AHU/3/06		1C	Edwards		YES	YES	YES	YES	YES	YES	No access to fan	
PAU/7/09	168	1C	Edwards		YES	YES	YES	YES	YES	YES		
VF/1/115B	8-144	1C	Edwards		YES	YES	YES	YES	YES	YES		
AHU/1/03	8-148	1C	Edwards		YES	YES	YES	YES	YES	YES		
AHU/2/03	1C	1C	Edwards		YES	YES	YES	YES	YES	YES	No access to fan	
AHU/2/17	10-153	1C	Edwards		YES	YES	YES	YES	YES	YES		

Comments: \_\_\_\_\_

- Commissioning and Final Acceptance

# Setting the Ground Rules

- Record Documents
- Maintenance
- Regular System Re-Testing Requirements





# Questions

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