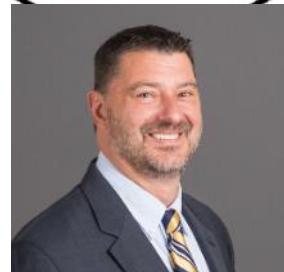
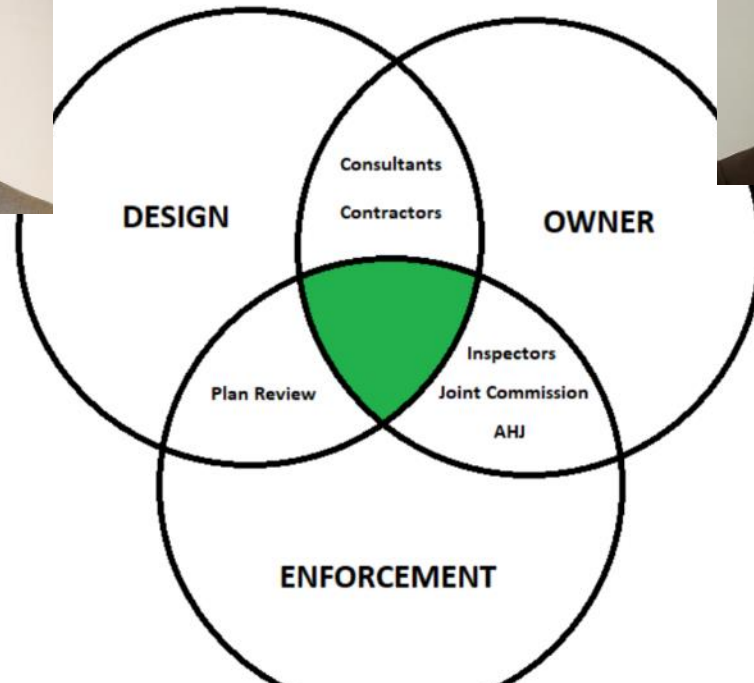


AVOIDING CODE RAGE



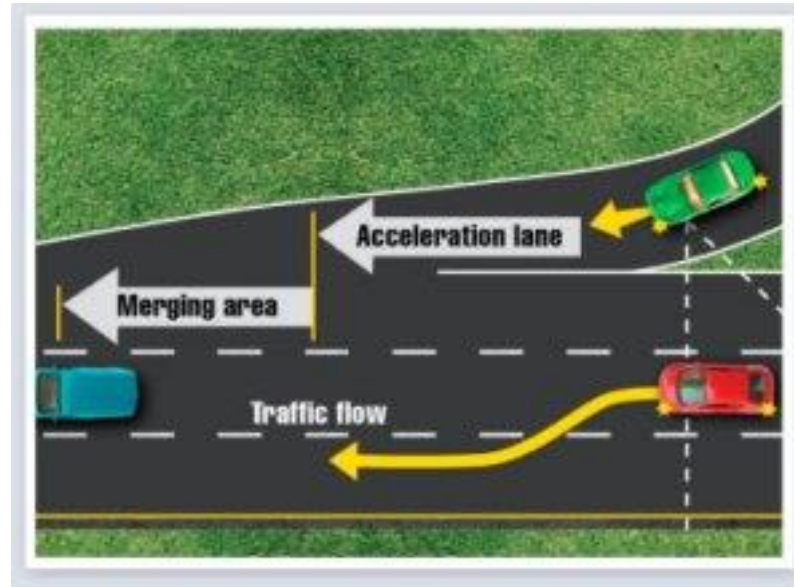


DISCLAIMER

The information in the coming slides are based on our professional opinion and not the position of our individual firms. We don't know or claim to know everything about every edition – content discussed may be codified in a new edition or being codified. So, sit back, relax and enjoy the presentation



What is Road Rage



- *Right turn on red - don't turn*
- *Don't pull forward into intersection on left turn*
- *Slow drivers in left lane*
- *Cutting across lanes likely knowing miles earlier*
- *On and off ramps are long for a reason*
- *Alternating cars at merging lanes*
- *Turn signals way too early*

What is Code Rage?

“The uncontrolled frustration that emerges from the realization of how differently we can perceive or interpret code language, arising from the increased, inconsistent, and conflicting regulation and enforcement.”

The Project Construction Cycle - The Tree Swing



How the client described it



How the architect envisioned it



How the engineer designed it



What the budget allowed



How the liability insurance agent described it



How the estimator bid it



How the manufacturer made it



What the building inspector expected



How the contractor installed it



What the customer really wanted



How the project was documented



How the customer was billed

Code Purpose and Objective

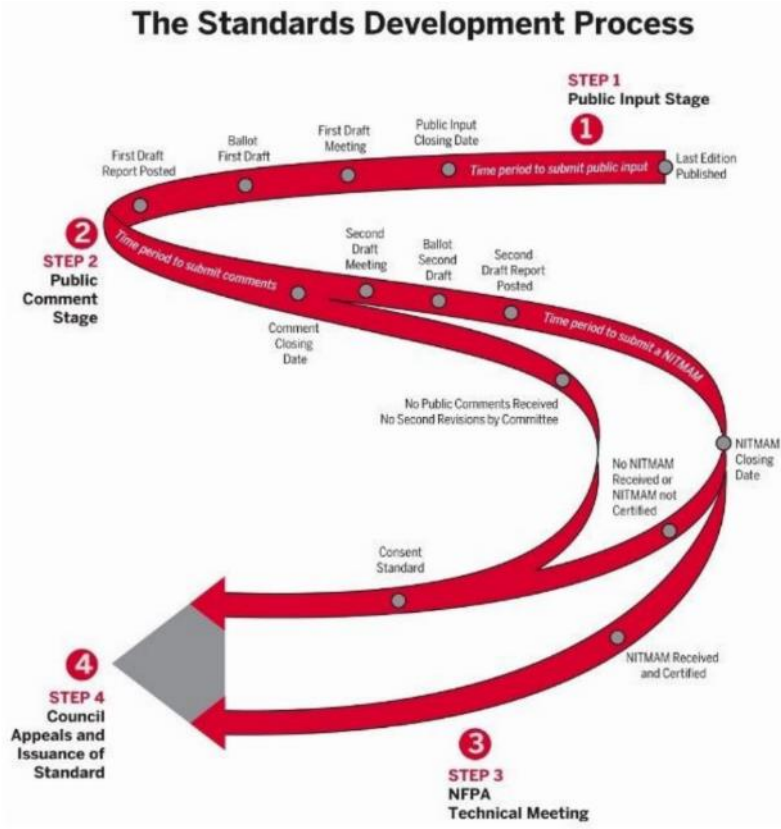
To establish the minimum requirements to provide a reasonable level of safety, public health and general welfare through structural strength, means of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment and to provide a reasonable level of safety to fire fighters and emergency responders during emergency operations

Peanuts | Charles M Schulz



Why is it so hard?

Excruciating long process to make changes to the codes



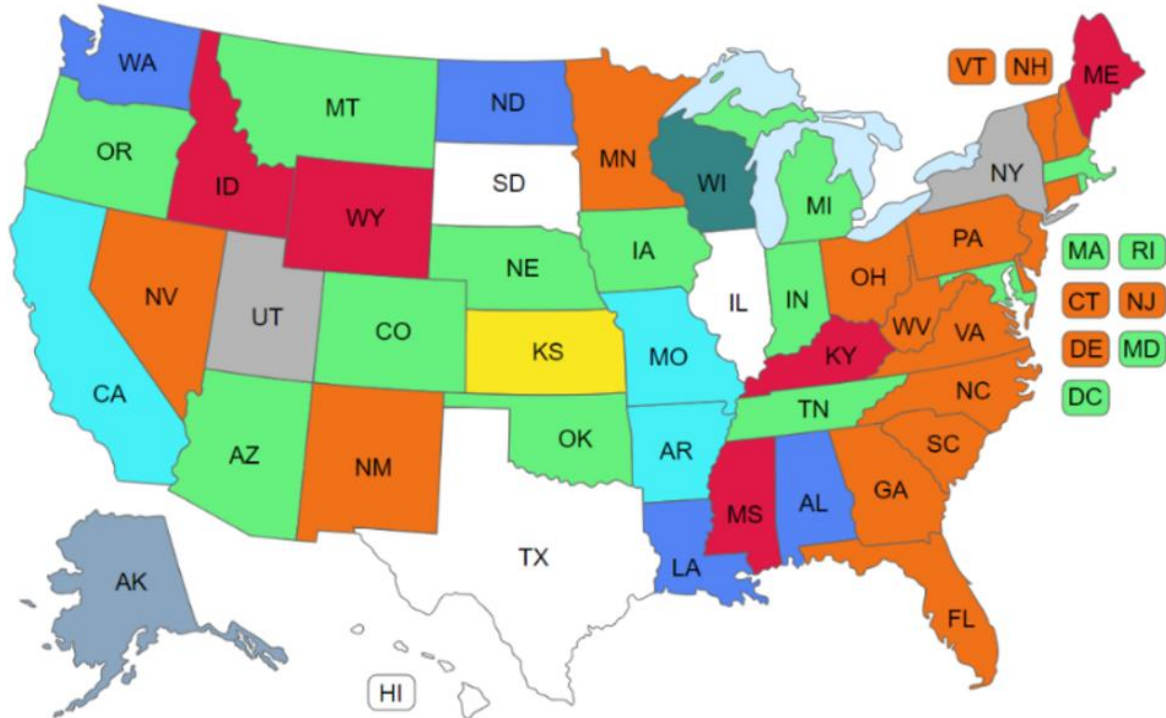
Code Development/Change

- *New Technology, Building Materials*
- *Environmental Awareness*
- *Unexpected Incidents*
- *Special Interest*
- *Unique and Complicated Designs*



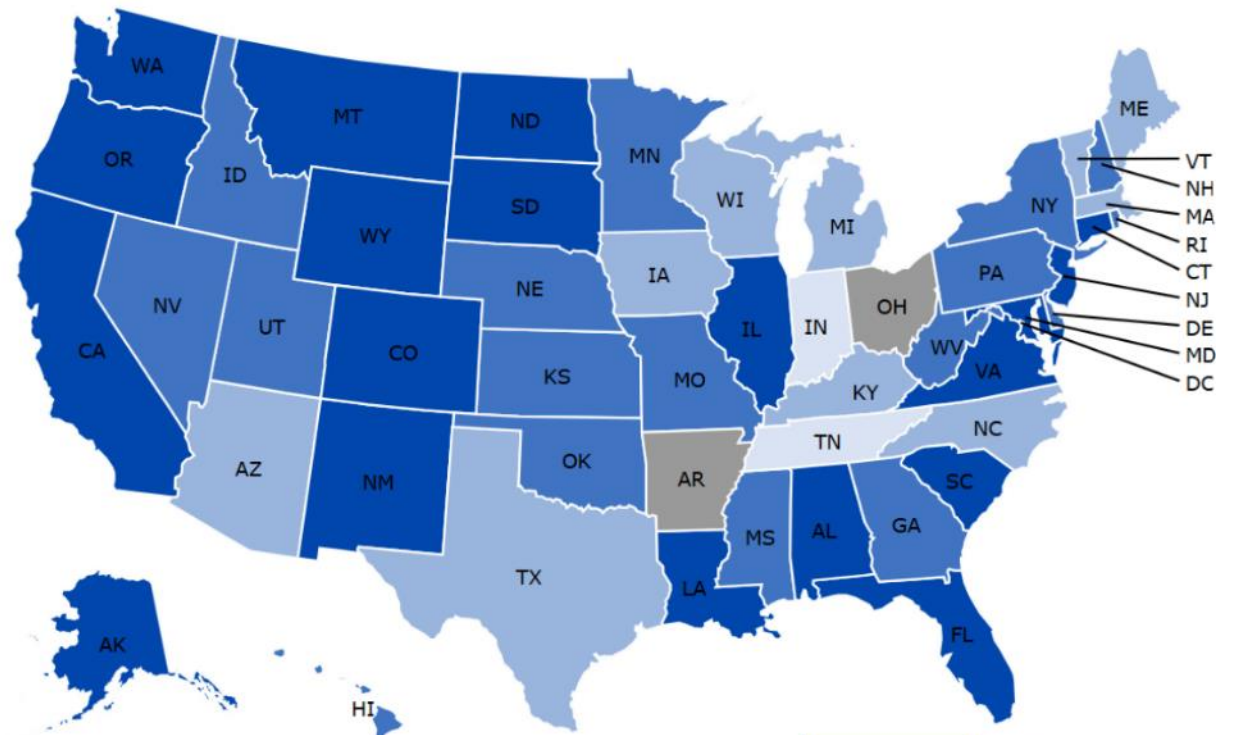
Why is it so hard?

FGI BY STATE



Key	
2022	Orange
2018	Green
2014	Blue
2010	Grey
2006	Red
2001	Light Blue
1996-97	Yellow
Equivalency*	Cyan
HVAC Only	Dark Green

IBC BY STATE



2021 IBC®	Dark Blue
2018 IBC®	Medium Blue
2015 IBC®	Light Blue
2012 IBC®	Very Light Blue
2009 IBC®	Grey
No state-wide IBC adoption	Brown

Why is it so hard?

**NFPA/ICC 5 Editions Sets - over 150,000 pages
Equal to a 2-story building**



Browse All Sta...	ANSI Standards	AWPA Standards	DASMA Stand...	HVI Standards	NCMA Standards	PSAI Standards	USDOT Stand...
AA Standards	APA Standards	AWS Standards	DOJ Standards	ICC Standards	NEMA Standards	RESNET-ICC	WMA Standards
AARST Standa...	APSP Standards	BSI Standards	DOL Standards	IFAI Standards	NFRC Standards	RMI Standards	WRI Standards
ABTG Standards	ASABE Standa...	CA Technical B...	DOTn Standards	IAR Standards	NREL Standards	SBCA Standards	
ACI Standards	ASCE-SEI Sta...	CEC Standards	FCC Standards	IKECA Standards	NSF Standards	SDI Standards	
AFSI Standards	ASHRAE Stan...	CGR Standards	FEMA Standards	LIHI Standards	OSHA Standards	SJI Standards	
AHAM Standards	ASSP Standards	CGSB Standards	Green Seal St...	MHI Standards	PCA Standards	SMACNA Stan...	
AISC Standards	ASTM Standards	CPA Standards	Green-e Stand...	NAAMM Stand...	PCI Standards	SPRI Standards	
AISI Standards	AWC Standards	CPSC Standards	Gypsum Stand...	NAIMA Standa...	PDI Standards	TPI Standards	
AMCA Standards	AWCI Standards	CRRC Standards	HUD Standards	NBBI Standards	PHTA Standards	USC Standards	

From The Death of Common Sense, by Philip K. Howard:

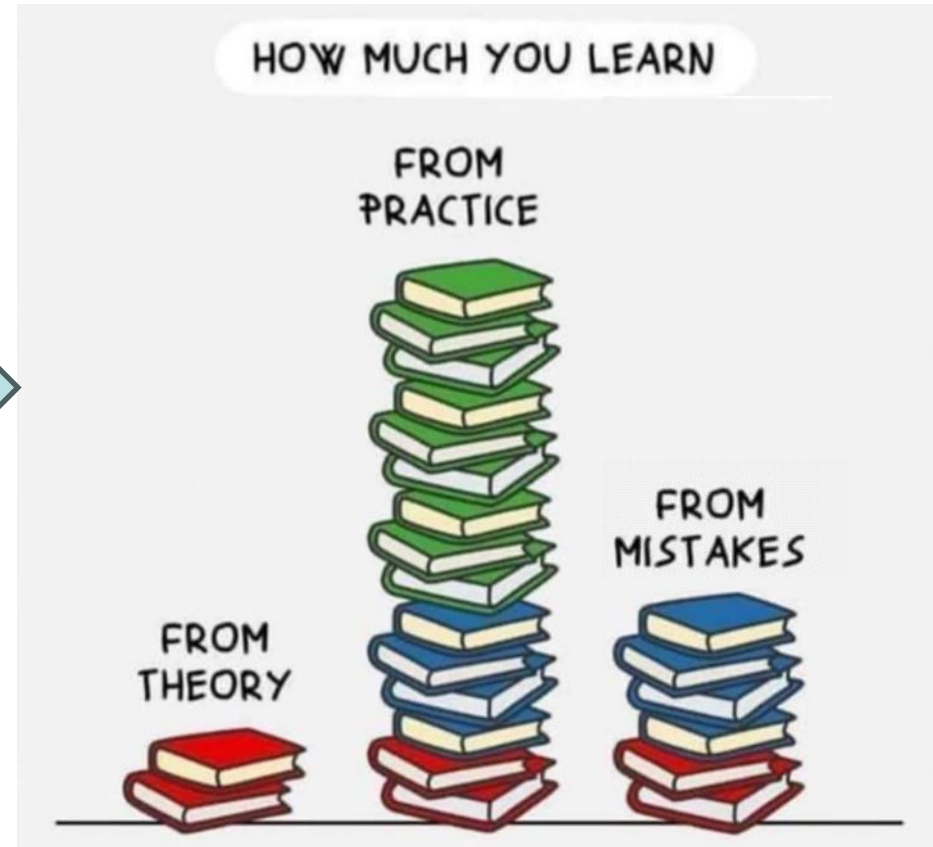
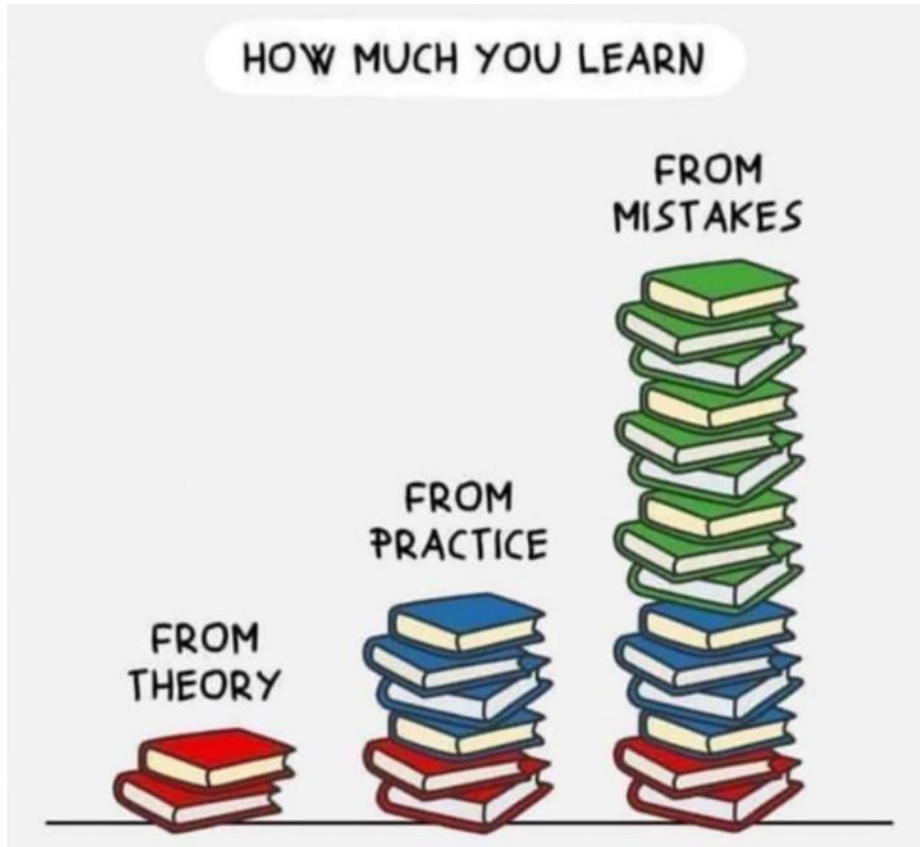
- ***“lawmaking momentum...surged in the 1960s...due to government techniques”, which “changed our attitudes toward legal detail.”***
- ***“the Federal Register increased from 15,000 pages to 70,000 pages...;***
- ***OSHA...had 140 regulations on wooden ladders;***
- ***EPA alone has over 10,000 pages of regulations***

They are everywhere – Swimming in CODES!

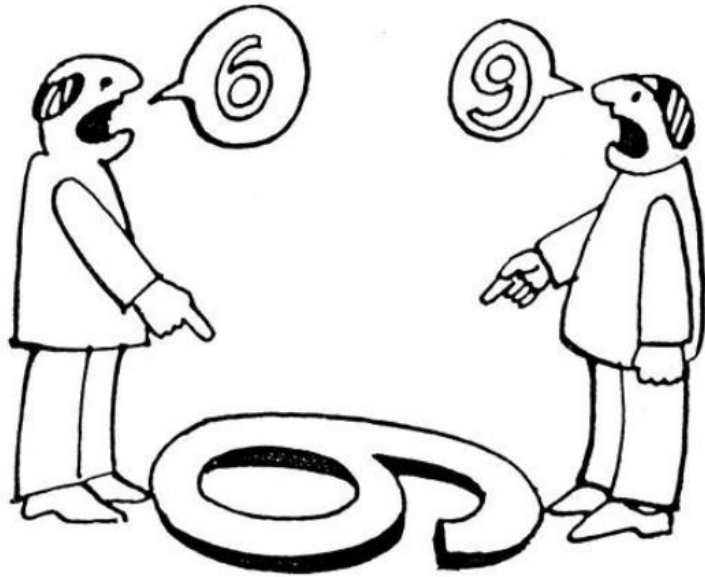


Building Type, Location and Job Responsibility determines how big your pool is

Less mistakes....more early detection



Why is it so hard?



Remember, perspective can cause two people to look at the same thing and see two totally different things.

What Causes Code Rage

Don't Cross Reference chapters (NFPA 20/38)

Relativity (Lap Test)

*AHJ
Interpretation*

Tolerances

Multiple Codes

*Code
edition*

Code Change process

Clarity or Lack thereof (36" corridor in HC Suite)

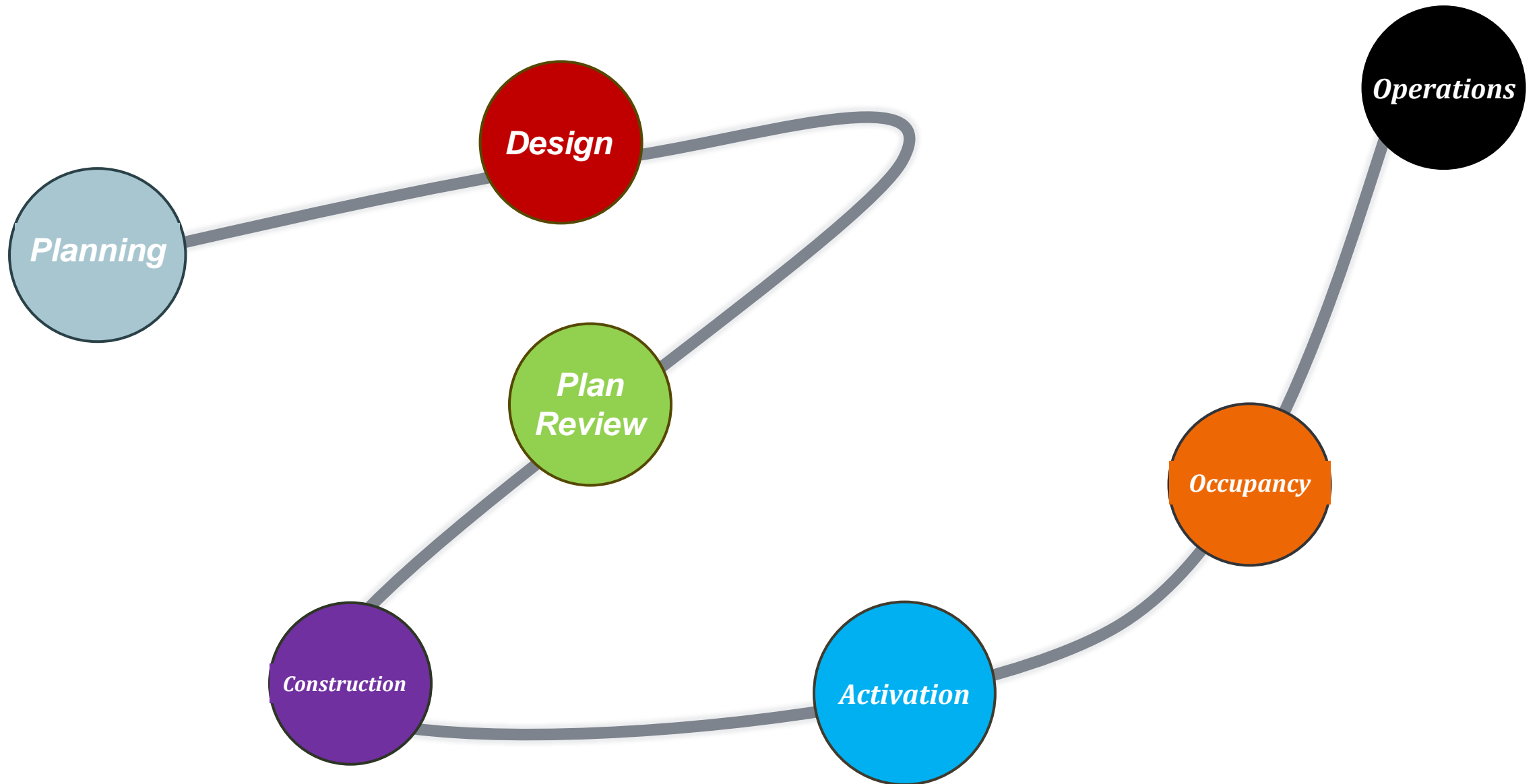
*Local
Amendments*

Conflicts

Use consistent terminology (Some Detection/Fire Detection)

Absence of content (F-1 with B – Exterior exposure)

Code Rage through the Building Cycle



Code Rage Reasons

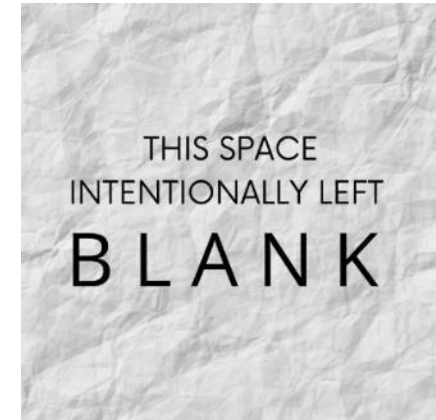
INTERPRETATION



CODE CONFLICT



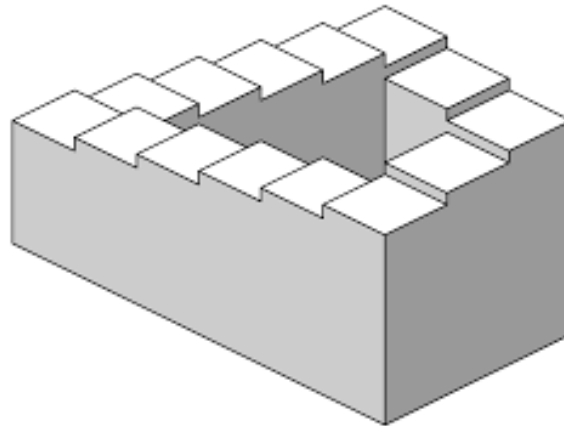
NOT CODIFIED



REVIEW / INSPECTION



DESIGN



AMBIGUOUS



How to Avoid Code Rage

Design Strategies

Be conservative

Avoid Ambiguity (i.e Room Names)

Construction Tolerances

Design with the code in mind

Alternative design options

Know your Client's needs (i.e. accreditation)

Licensing/Billing (CMS)

Appeals and Waivers – Start early

Avoid overdesigning

Code Strategies

Be open to other interpretations

Student of the Code

Seek Consensus

Internal Team

AHJ Confirmation

Code Organization

Code Professionals

Code Software

Historical Context
(Document/Document/Document)

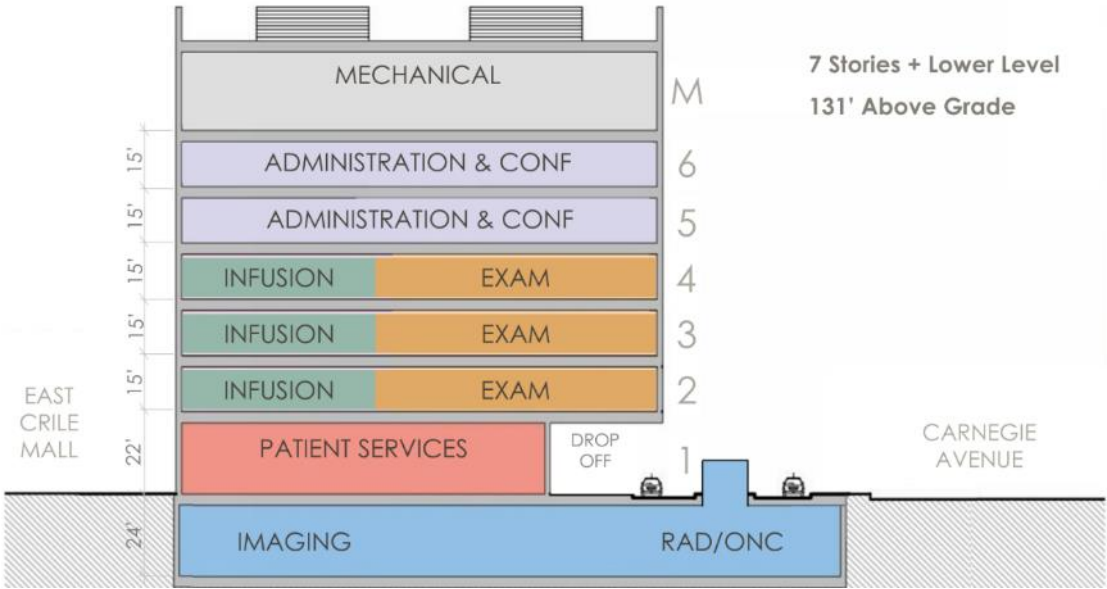
USE COMMON SENSE

Cost of Over Design

- 1. *The Cost of Regulation (Ex. A charity group tried to set up a homeless shelter in an old, abandoned multi-story building for hundreds of people after raising \$500,000 for the purpose, but gave soon after because the government was going to force them to install an incredibly expensive elevator that would have exhausted their funds.) Find a compromise.***
- 1. *Overdesign (Ex. defining smaller than needed smoke compartments results in unnecessary smoke barriers that need to be maintained for life of the building) Focus on initial and long-term cost savings.***



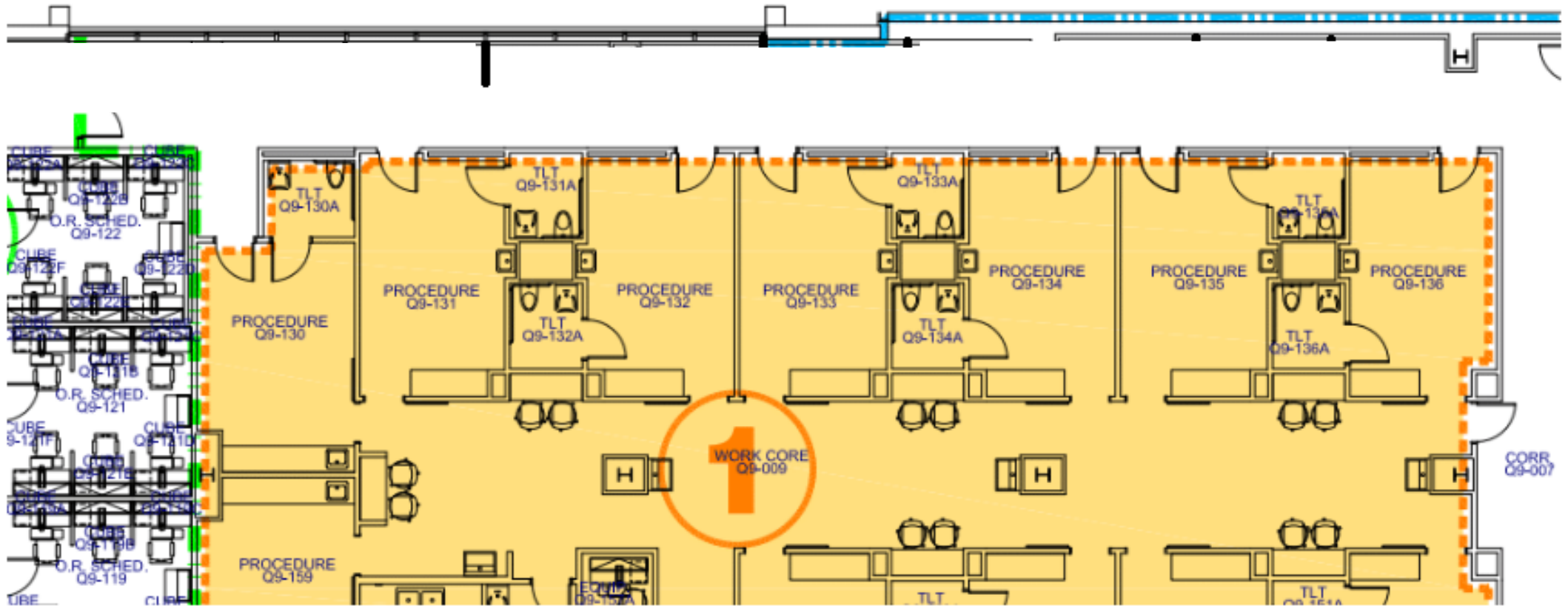
Building Area



Design Conservatively and Early discussion with AHJ

I-2 Corridor Alcoves

How Many Is Too Many?



More responsible design or application of other code sections

Design

Suite Travel Distance

Travel Distance to Corridor

Vs.

Suite to Suite Travel Distance



Design to most restrictive

Interpretation

Code Conflict

Not Codified

Construction/Inspect

Design

Ambiguous

Design

Vertical Openings

*Two Story Openings
Vs.
"Really High Ceilings"*



AHJ Conversation or performance-based design

Interpretation

Code Conflict

Not Codified

Construction/Inspect

Design

Ambiguous



Limit the Transfer of Smoke



Ceilings that "Limit the Transfer of Smoke"

*Drop In Ceiling
Vs.
Monolithic Ceiling*

NFPA Commentary - So if a code indicates that a wall must limit the transfer of smoke, and suggests that it is neither a smoke barrier or smoke partition, would you agree that the wall that limits the transfer of smoke is it less of a wall than a smoke partition?

Design to most restrictive

Interpretation

Code Conflict

Not Codified

Construction/Inspect

Design

Ambiguous



Hazardous Area Design

Area Separation



Design to most restrictive - Know your Client's needs

Interpretation

Code Conflict

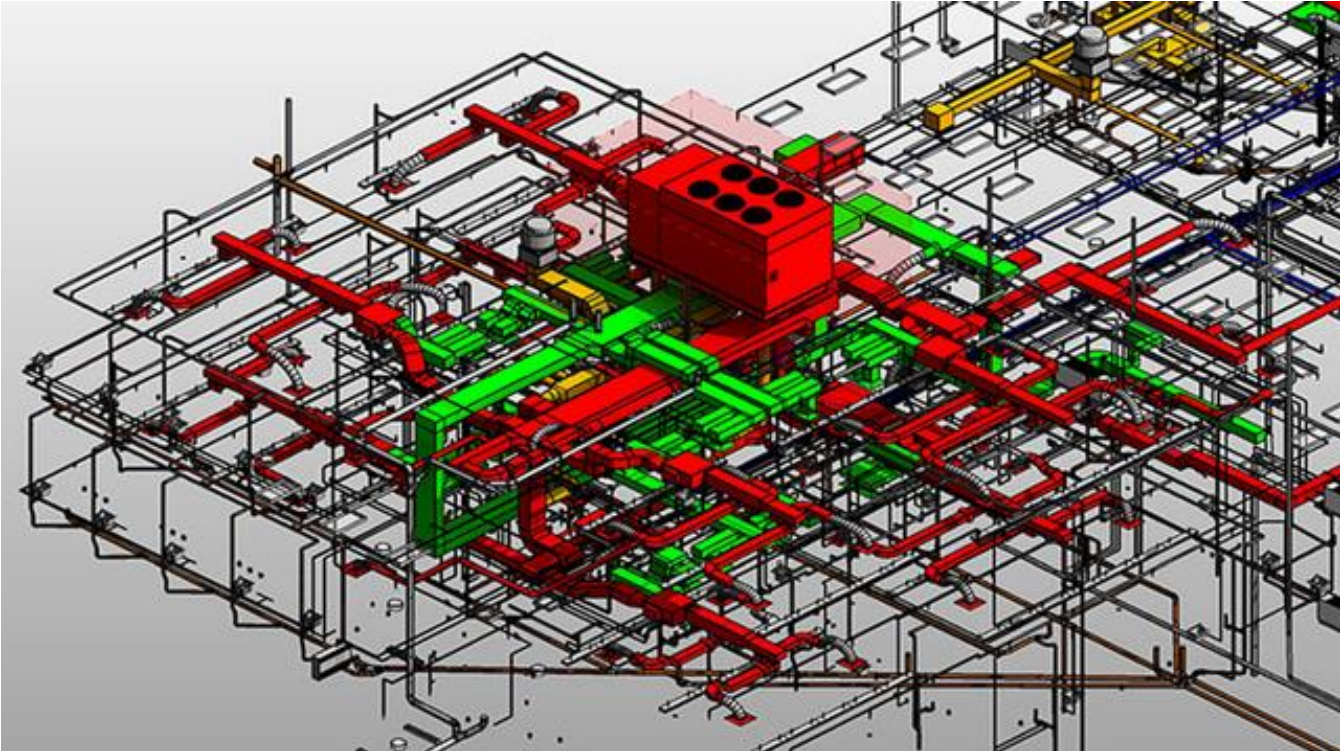
Not Codified

Construction/Inspect

Design

Ambiguous

WHAT IS FULLY DUCTED?



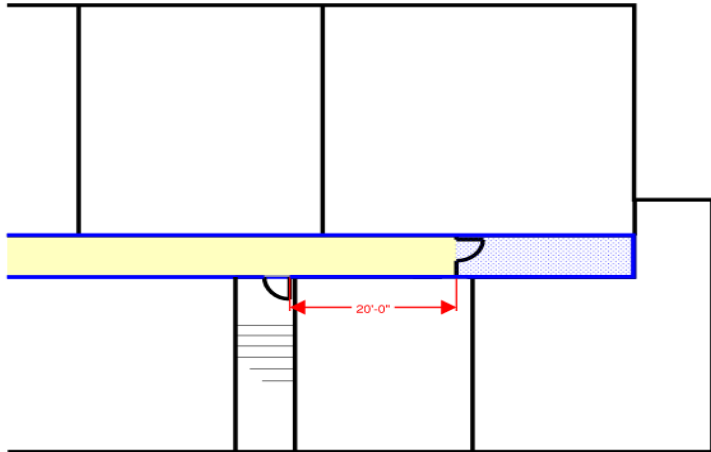
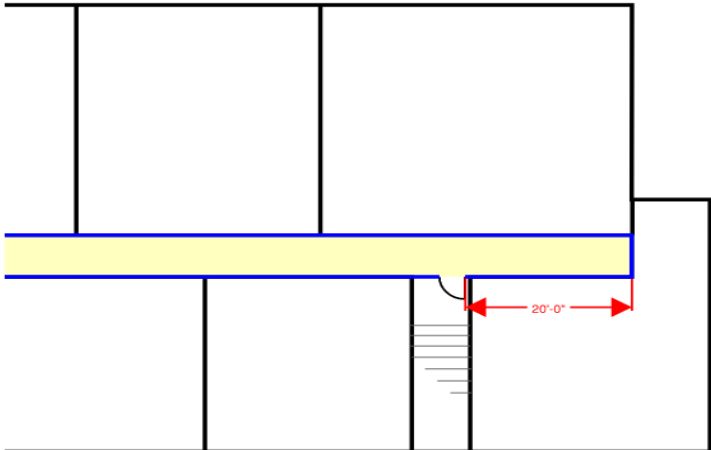
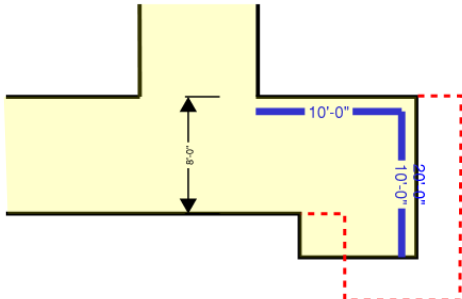
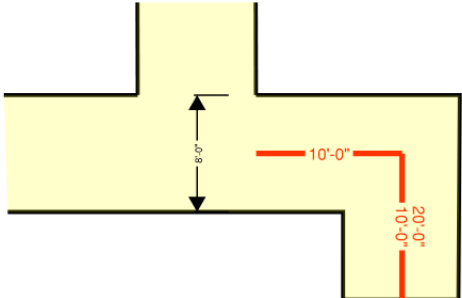
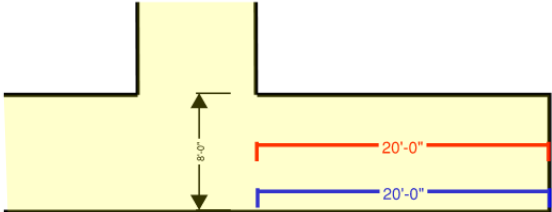
Design to most restrictive



Dead End Corridor

NFPA:
“along the centerline of the corridor”

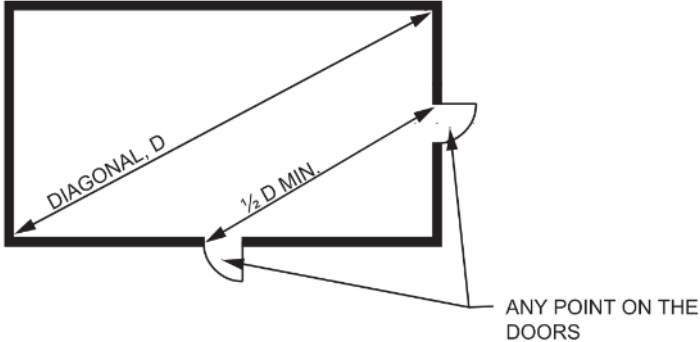
IBC:
“measured from the extreme point in the dead end”



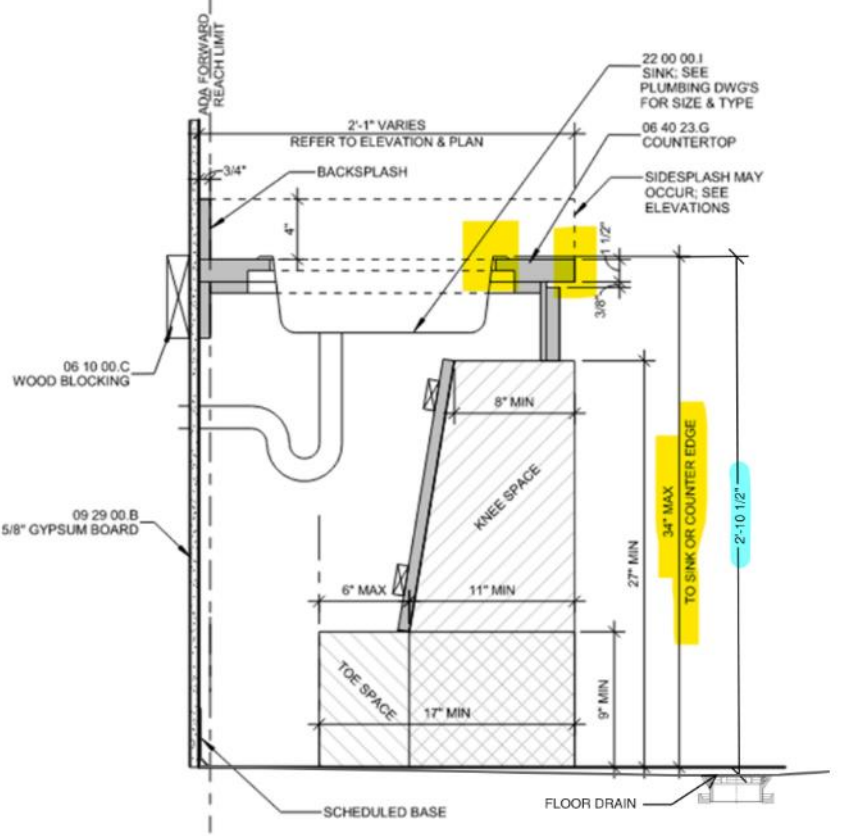
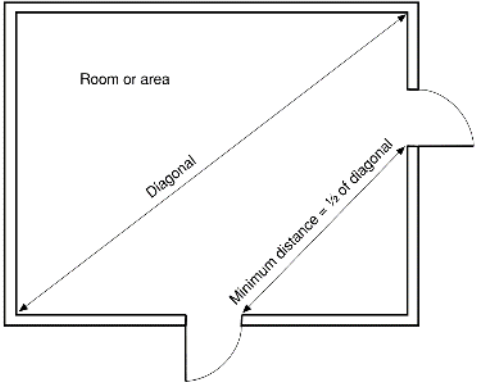
Design to most restrictive or modify design

MEASUREMENT / TOLERANCES

IBC:
straight-line distance between the center of the thresholds of the doors



NFPA:
“measured in a straight line between the nearest edge of the exits”



1 BASE CABINET - ADA SINK
 1 1/2" = 1'-0"

Design to most restrictive or modify design



ASC / BUSINESS OCCUPANCY HAZARDOUS AREAS

38.3.2 Protection from Hazards.

38.3.2.1* **General.** Hazardous areas including, but not limited to, areas used for **general storage**, boiler or furnace rooms, and maintenance shops that include woodworking and painting areas shall be protected in accordance with Section 8.7.

VS

Table 18.3.2.1 Hazardous Area Protection

Hazardous Area Description	Protection/ Separation [†]
Boiler and fuel-fired heater rooms	1 hour
Central/bulk laundries larger than 100 ft ² (9.3 m ²)	1 hour
Laboratories employing flammable or combustible materials in quantities less than those that would be considered a severe hazard	See 18.3.6.3.11.
Laboratories that use hazardous materials that would be classified as a severe hazard in accordance with NFPA 99, <i>Standard for Health Care Facilities</i>	1 hour
Paint shops employing hazardous substances and materials in quantities less than those that would be classified as a severe hazard	1 hour
Physical plant maintenance shops	1 hour
Rooms with soiled linen in volume exceeding 64 gal (242 L)	1 hour
Storage rooms larger than 50 ft ² (4.6 m ²) but not exceeding 100 ft ² (9.3 m ²) and storing combustible material	See 18.3.6.3.11.
Storage rooms larger than 100 ft ² (9.3 m ²) and storing combustible material	1 hour
Rooms with collected trash in volume exceeding 64 gal (242 L)	1 hour

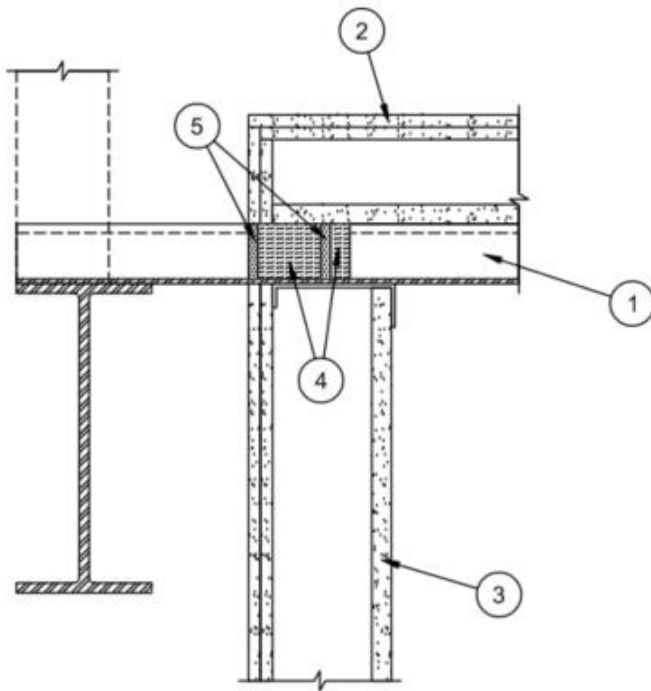
[†]Minimum fire resistance rating.

More responsible design or application of other code sections



ENGINEERING JUDGEMENTS

ENGINEERING JUDGMENT FIRESTOP DETAIL
*F Rating - 2 HR



Design Change that Allowed unaltered UL system

Interpretation

Code Conflict

Not Codified

Construction/Inspect

Design

Ambiguous

Activation

STAIRWAY LOCKING / RE-ENTRY ACTIVATION



Design to most restrictive

Interpretation

Code Conflict

Not Codified

Construction/Inspect

Design

Ambiguous



MECHANICAL ROOM STORAGE



Design to most restrictive, consult with AHJ

Interpretation

Code Conflict

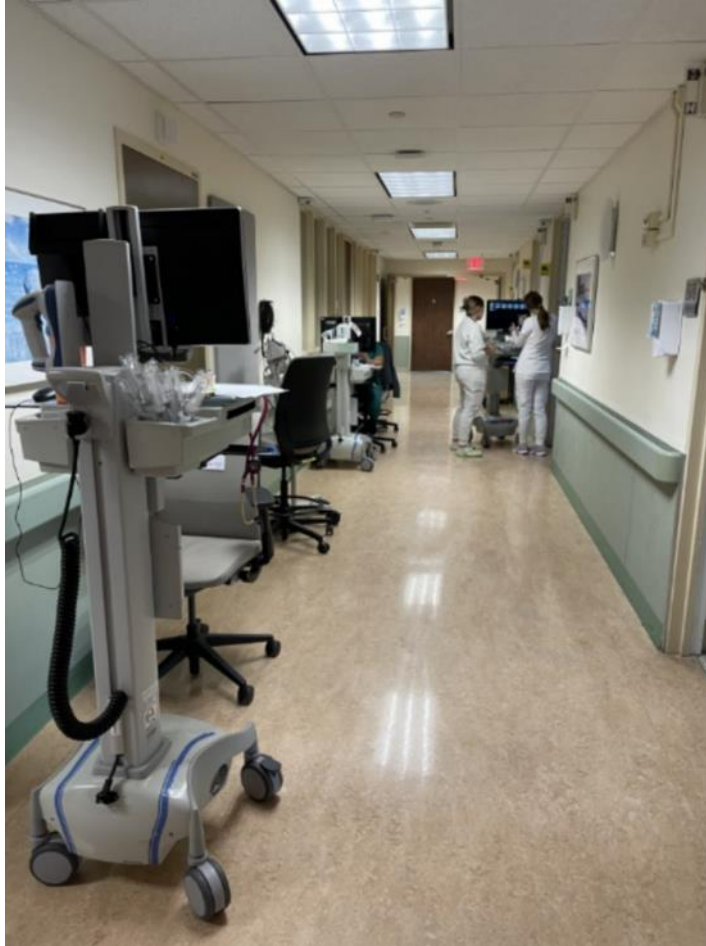
Not Codified

Construction/Inspect

Design

Ambiguous

CODE RAGE THROUGHOUT THE BUILDING CYCLE



WOW's are allowed...but not chairs!



Design to avoid conflict (chair alcove)

WHAT HAPPENS IN THE FUTURE?



Drones



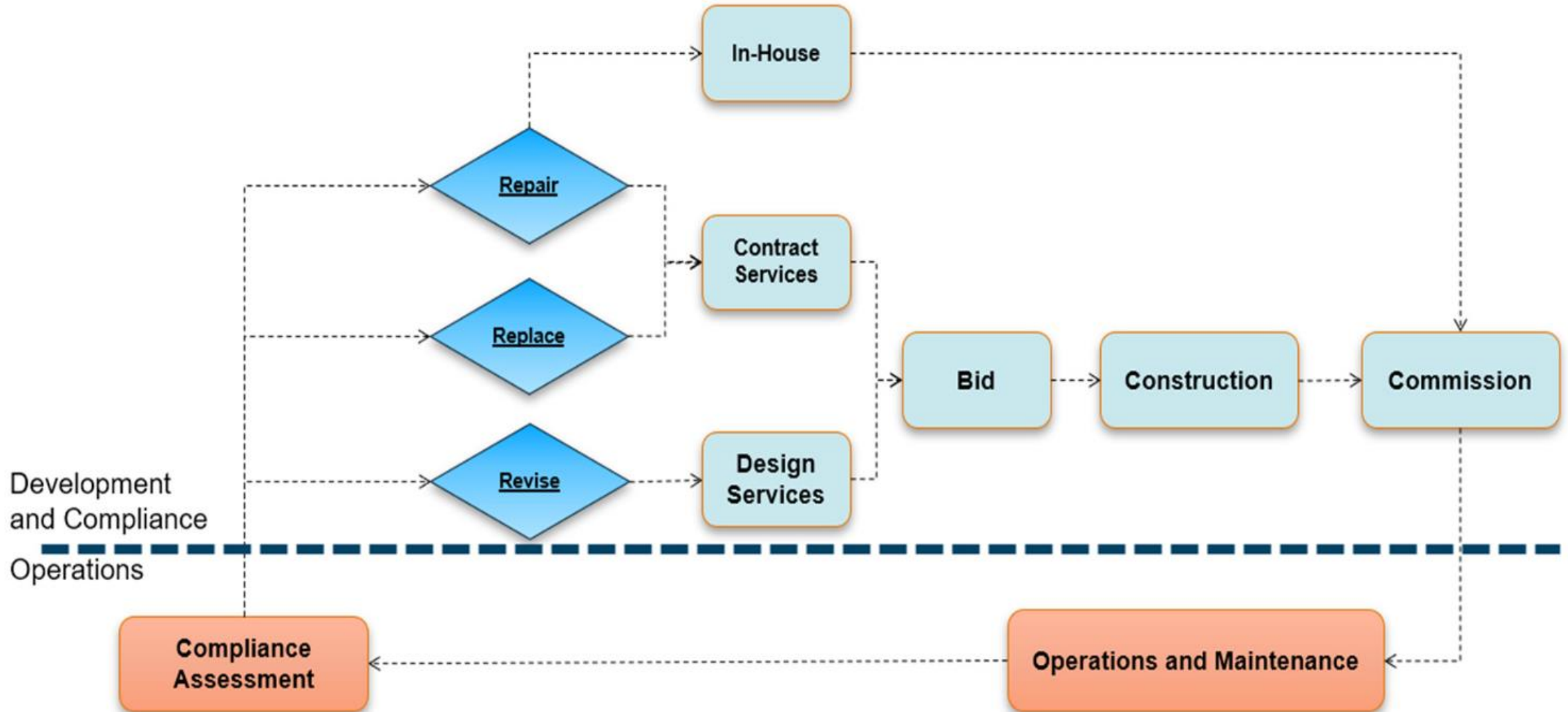
Floor Cleaner



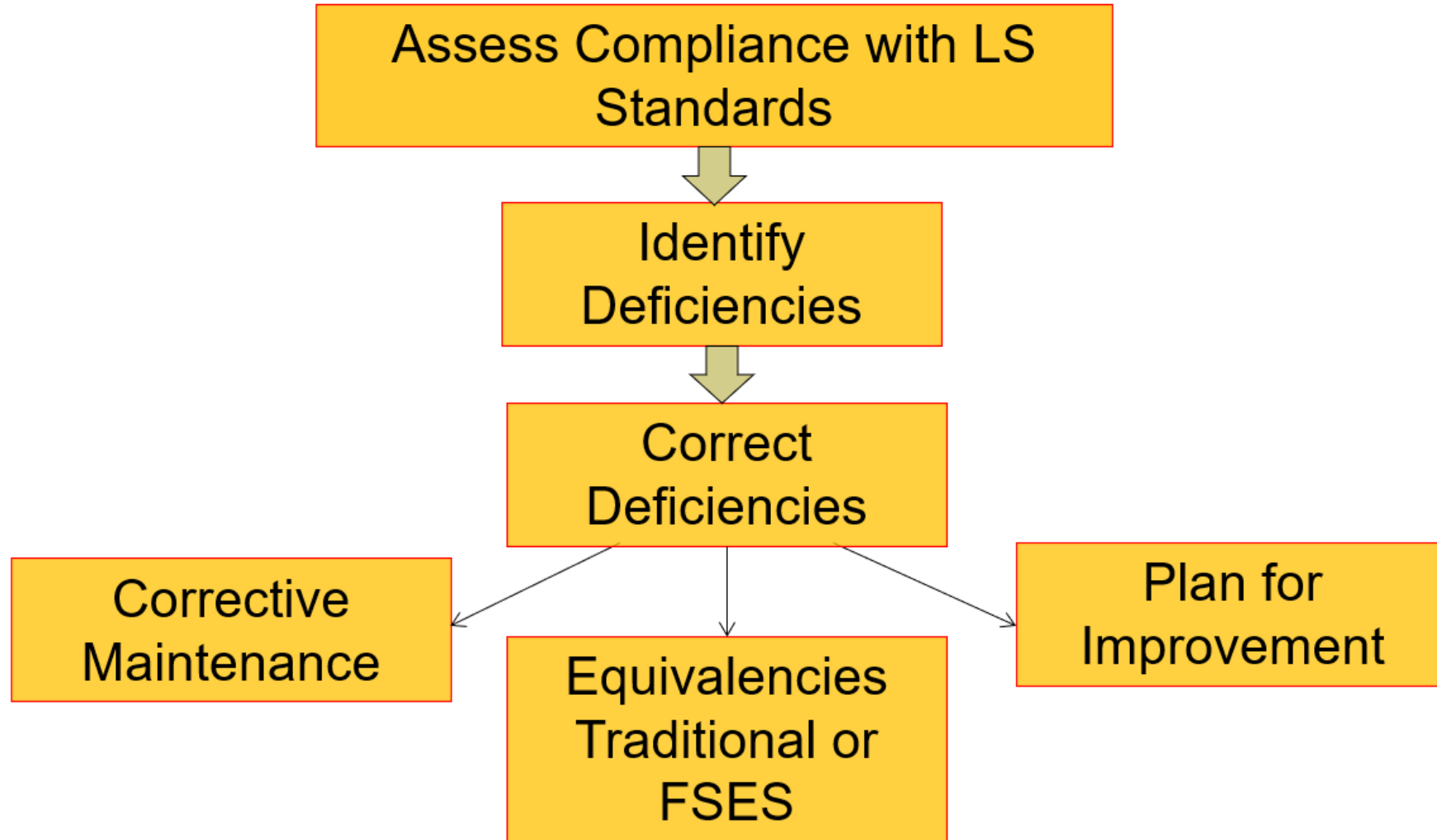
AGV's

Codes need to begin to address now, ASK YOUR VENDORS!

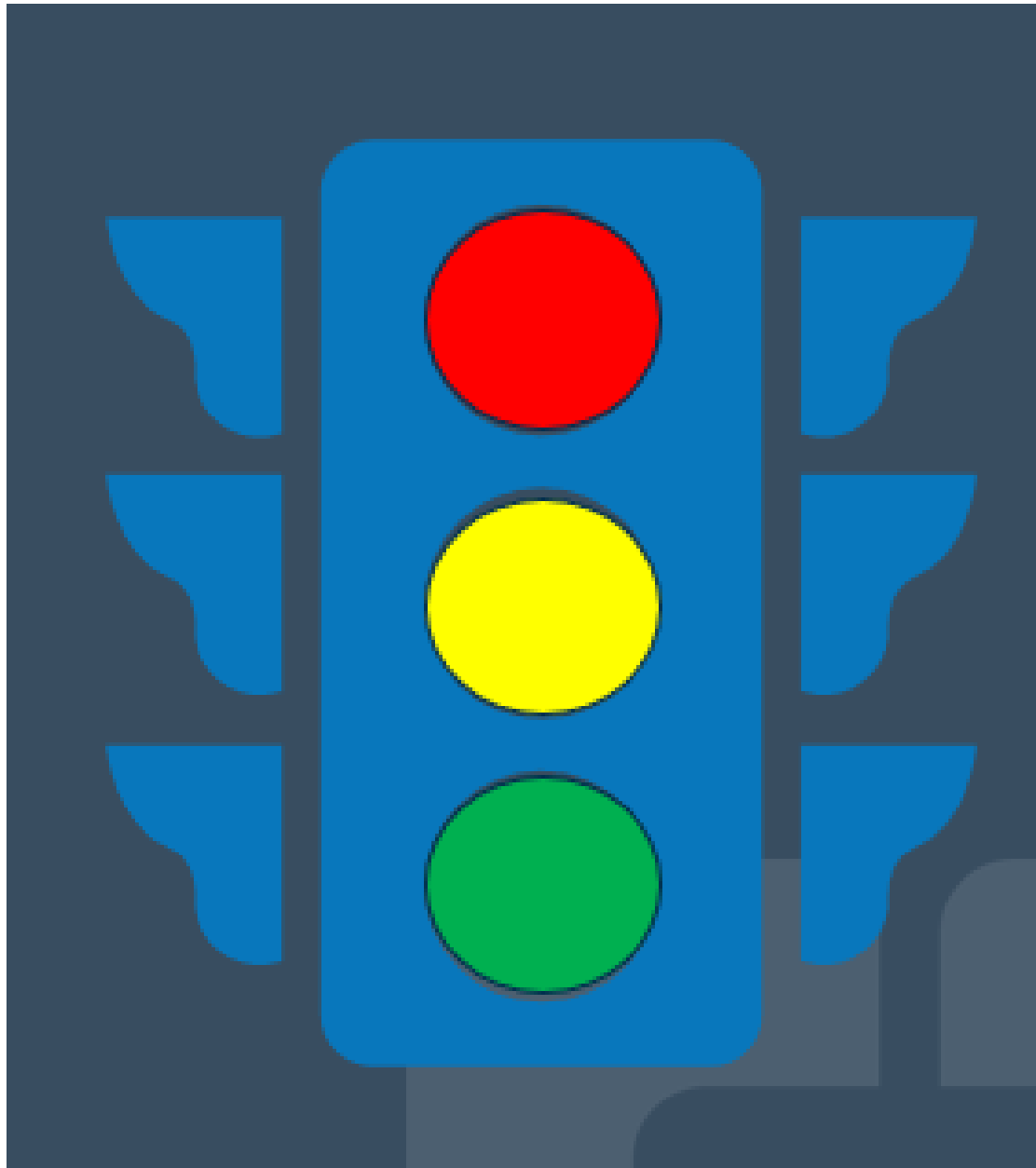
MINIMIZING CODE RAGE



Code Content and Organization



Avoiding Code Rage



Work Around of the Code (EJ, AHJ Talk, etc)

Influence the Code (Work with professional societies to influence code, etc)

Change (Volunteer to sit on Code Committee or submit code language changes to be debated)

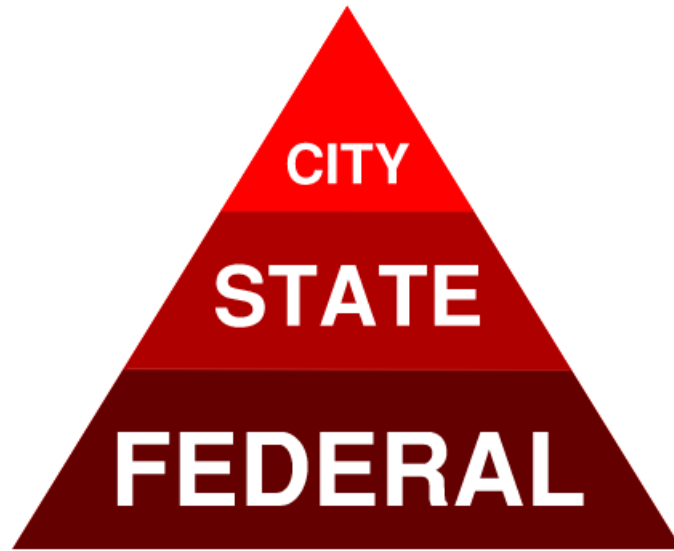
Talking to the AHJ

- 1. Don't be afraid of talking to AHJ***
- 2. Be prepared, succinct, and accurate***
- 3. Don't ask them to do your job***
- 4. Be cautious about going to the well too often***
- 5. Help them answer your question***



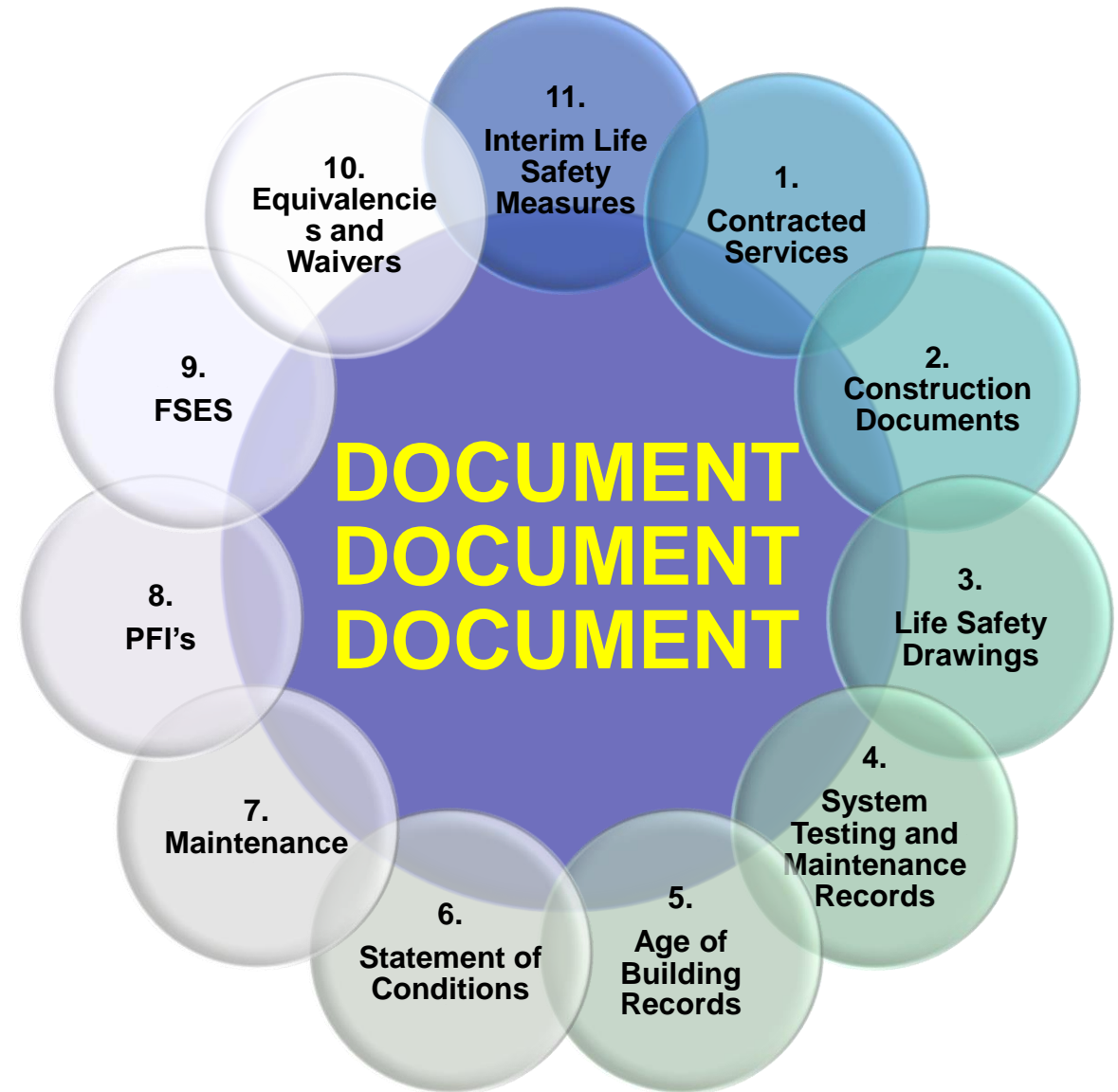
Code Content / Organization

CODE
EDITION
MATTERS



Document!

- **KEEP A MAINTENANCE CALENDAR**
- UTILIZE THIRD PARTY RESOURCES
- **DEVELOP AN ELECTRONIC FORMS/RECORDS**
- SCAN PAPER DOCUMENTS
- **CREATE/OBTAIN CHECKLISTS**
- CONDUCT REGULARLY SCHEDULED LIFE SAFTY MEETINGS
- **PRIORITIZE GOALS AND OBJECTIVES**
- UPDATE REGULARLY



Document, Document, Document!

***“Documents create a
paper reality we call
proof.”***

Mason Cooley (American Aphorist)

In Summary

- ❑ **Be conservative**
- ❑ **Try to Avoid Ambiguity**
- ❑ **Build in Construction Tolerances**
- ❑ **No need to over design**
- ❑ **Design with the code in mind**
- ❑ **Consider alternative design options, appeals or waivers early**
- ❑ **Know your Client's needs (i.e. accreditation, licensing, how they operate)**
- ❑ **Be open to other interpretations before jumping to confrontation**
- ❑ **Be a student of the code or work with those that are**
 - ❑ **Code Organizations, AHJ, Code Consultants**
- ❑ **Seek Consensus with your team**
- ❑ **AHJ Confirmation**
- ❑ **Code Software - AI (New)**
- ❑ **Historical context (Document/Document/Document)**
- ❑ **May be able to use the newer provisions to justify equivalency**
- ❑ **USE COMMON SENSE**

Additional Resources

NFPA TECHNICAL QUESTIONS SERVICE (TQS)

NOTICE: NFPA TQS is provided **only** to NFPA Individual Membership and Electrical Inspection Membership holders as a member benefit. *The service is also available to certain Public Authorities Having Jurisdiction (AHJ's).*

For NFPA Members and Authorities Having Jurisdiction (AHJ's)

NFPA TQS* provides support for answering technical questions regarding NFPA codes and Standards. Responses are provided by NFPA technical staff on an informal basis. The Technical Questions Service supports questions related to:

- Clarification of a committee's intent, codes and standards requirements
- Technical basis of requirement
- Application of requirement
- General interpretation

REQUIRES MEMBERSHIP

Code Council Members Get Building Code Opinions/Interpretations

As a member of the International Code Council, you have exclusive access to technical experts who can clarify I-Codes text and provide a written code opinion that will help you move forward quickly and with confidence.

[Request a Code Opinion/Interpretation](#)



QUESTIONS?



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