

Always Advancing Requires Code Advocacy by You!

Model Building Code Development

Speaker: Stephen Szoke, PE, F.ACI,
ACI Distinguished Staff
Code Advocacy Engineer

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Our Business | Mission

ACI develops, disseminates, and advances the adoption of its consensus-based knowledge on concrete and its uses.

Our Business | Mission

ACI develops, disseminates, and advances **the adoption of its consensus-based knowledge** on concrete and its uses.

Learning Objectives

- Understand the general building code and process
- Understand the role of model codes and referenced standards
- Discover the challenges related to adoptions
- Discover opportunities to become involved



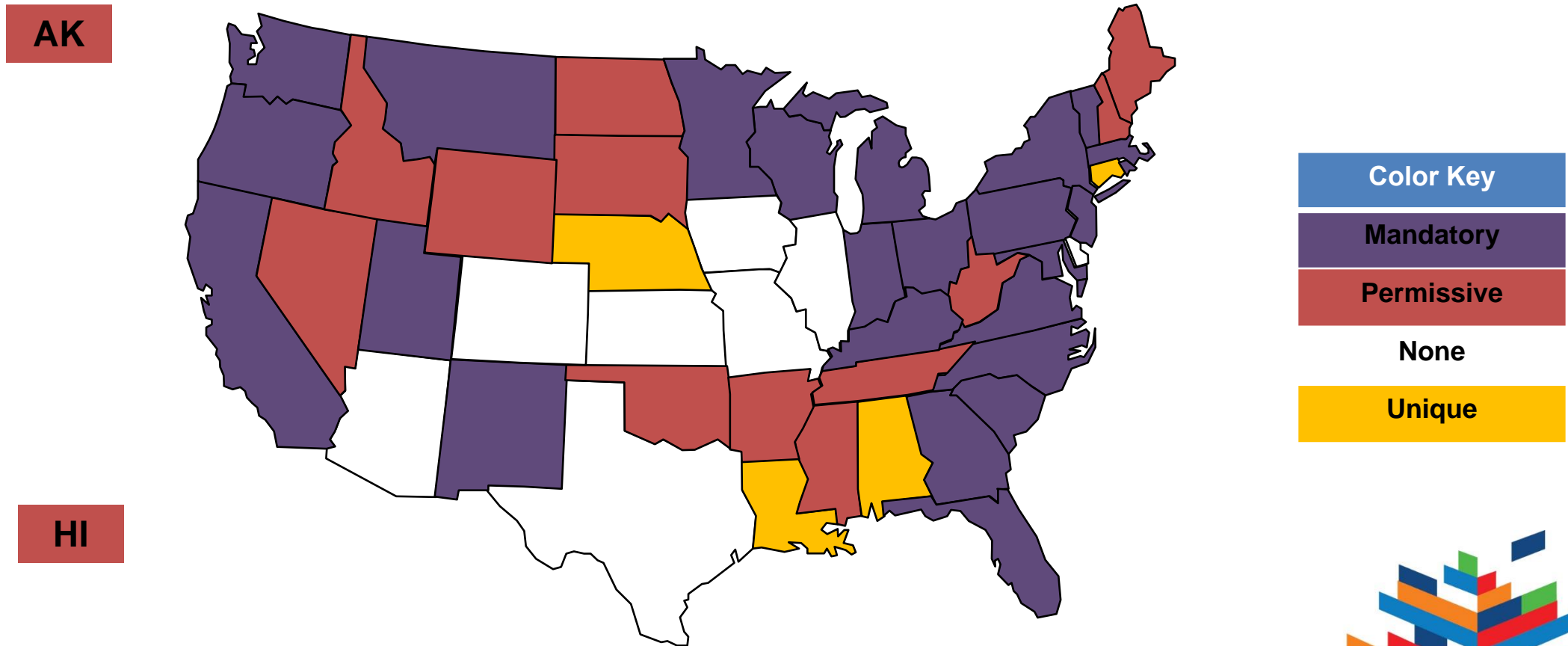
Code Development Varies



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Statewide Codes – Commercial Buildings



Source: www.ibhs.org last visited 2020

THE WORLD'S GATHERING PLACE FOR ADVANCING CONCRETE



Authorities Having Jurisdiction (AHJ)



Image: mdcourts.gov

- Country
- State or Province
- County
- City or Other Municipality
- Township



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2024 I-Code Development Cycle

≈ 1900 Proposals

≈ 1200 Reviewed by Staff

≈ 100 Relevant to ACI Committee Work

≈ 10 ACI as Proponent or Co-Proponent

RB312-22

IRC: AW101.1

Proponents: Stephen Szoke, representing Am
(scampbell@nrmca.org)

2021 International Residential

Revise as follows:

AW101.1 Scope. Buildings, structures and built
designed, constructed and inspected in accord

Exception: This Appendix shall not be app

Reason: Experience in the field of construction

S174-22

IBC: 1901.2, 1901.2.1 (New), ACI Chapter 35 (New), ASTM Chapter 35 (New)

2021 International Building Code

1901.2 Plain and reinforced concrete. Structural concrete shall be designed and constructed in accordance with the requirements of this chapter and ACI 318 as amended in Section 1905 of this code. Except for the provisions of Sections 1904 and 1907, the design and construction of slabs on grade shall not be governed by this chapter unless they transmit vertical *loads* or lateral forces from other parts of the structure to the soil.

Add new text as follows:

1901.2.1 Structural concrete with GFRP reinforcement. Cast-in-place structural concrete internally reinforced with glass fiber reinforced polymer (GFRP) reinforcement conforming to ASTM D7957 and designed in accordance with ACI CODE 440.11 shall be permitted where fire resistance ratings are not required and only for structures assigned to Seismic Design Category A.

Add new standard(s) as follows:



Testimony/Development Categories

- Reference ACI Documents
 - Maintain
 - Update
 - Add
- Align Provisions with ACI Documents
- Acceptable Concrete Technology
- Posturing

Referenced ACI Documents

IBC	'18	'21	'24	'27
117 – C-I-P Tolerance	--	X	X	X
216.1 – Fire Protection	X	X	X	X
318 – Structural	X	X	X	X
319 – Precast	--	--	--	?
320 – Post –Tensioned	--	--	--	?
440 – GFRP	--	--	X	X
550.5 – Precast Diaphragms	X	X	X	X
ITG-7 – Precast Tolerances	--	X	X	X



Referenced ACI Documents

IEBC	'18	'21	'24	'27
562 – Repair	--	--	X	X
IRC	'18	'21	'24	'27
318 – Structural	--	X	X	X
332 – Structural	X	X	X	X
ISPSC	'18	'21	'24	'27
318 – Structural	--	--	X	--
322 – Watershapes	--	--	--	?



Align with ACI Documents

IBC Topic	Text	ACI Reference
Types of Construction	Chapter 6	--
Fire Protection	Chapter 7	216.1
Sound Transmission	Chapter 12	--
Exterior Walls	Chapter 14	--
Structural Design		
Construction documents	Chapter 16	--
Structural Integrity	Chapter 16	318



Align with ACI Documents

IBC Topic	Text	ACI Reference
Inspection and Tests	Chapter 17	318
Soils and Foundations		
Dampproofing	Chapter 18	--
Foundation Walls	Chapter 18	--
Foundations	Chapter 18	--
Shallow Foundations	Chapter 18	--
Deep Foundations	Chapter 18	--



Align with ACI Documents

IBC Topic	Text	ACI Reference
Inspection and Tests	Chapter 17	318
Soils and Foundations		
Dampproofing	Chapter 18	--
Foundation Walls	Chapter 18	--
Foundations	Chapter 18	--
Shallow Foundations	Chapter 18	--
Deep Foundations	Chapter 18	--

ASCE New Standard on Foundations



Align with ACI Documents

IBC Topic	Text	ACI Reference
Concrete		
Structural	Chapter 19	318
Non-structural	Chapter 19	--
Durability ≈	--	318
Seismic Provisions	Chapter 19	--
Footings for Light Frame	Chapter 19	--
Slab-on-Ground	Chapter 19	--
Shotcrete	--	318
Flood Resistance	Appendix G	--



Align with ACI Documents

IRC Topic	Text	ACI Reference
Foundations		
Materials	Chapter 4	318, 332
Footings	Chapter 4	332
Walls¹	Chapter 4	318, 332
Floors (Slabs-on-Ground)	Chapter 4	332
Walls (Exterior Concrete)	Chapter 4	318, 332
Building Envelope	Chapter 11	--
3D Printed	Appendix AW	--



Align with ACI Documents

IRC Topic	Text	ACI Reference
Foundations		
Materials	Chapter 4	318, 332
Footings	Chapter 4	332
Walls¹	Chapter 4	318, 332
Floors (Slabs-on-Ground)	Chapter 4	332
Walls (Exterior Concrete)	Chapter 4	318, 332
Building Envelope	Chapter 11	--
3D Printed	Appendix AW	--

Prescriptive = Alignment and Alternate

Referenced ICC Standards

ICC Standards	Text	ACI Reference
ICC 500 - Storm Shelters Concrete Details	ICC 500	--
ICC 600 - High Wind (Residential) Footings and Foundations	403	--
Floors	404	--
Above Grade Walls	409	--
ICC 700 - Sustainability Residential	ICC 700	--
ICC 1200 - Off-site Construction	ICC 1200	--



Referenced ICC Standards

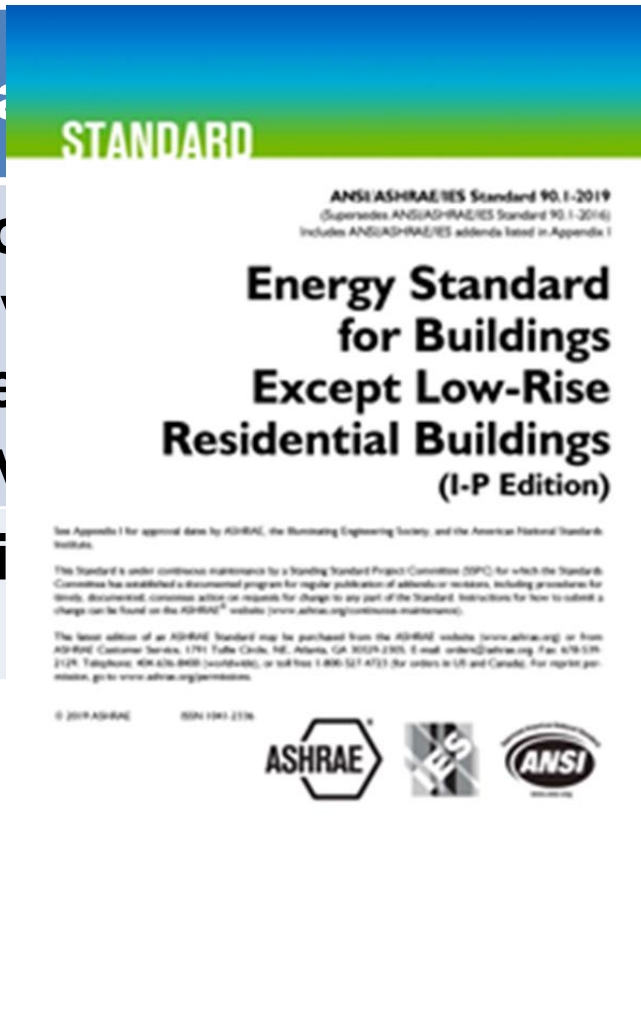
ICC Standards	Text	ACI Reference
IECC - Energy Conservation		
Commercial Envelope	IECC	--
Thermal Bridges	IECC	--
Residential Envelope	IECC	--
IgCC - Green Building		
ASHRAE 189.1	IgCC	--

Referenced ICC Standards

ICC Sta

IECC - Energy Co
Commercial En
Thermal Bridge
Residential Env

IgCC - Green Bui
ASHRAE 189.1



2024 I-Code Change Report

Handbooks and Manuals

Education Publications

Certification Publications

Symposium Volumes

International Translations

Document Errata

Permission and Reprint Requests

Model Building Code Development in the USA

The United States does not have a national building code.

[READ MORE](#)

Authorities having jurisdictions (AHJ) over the development and enforcement of building codes tend to be: states, counties, and municipalities. Most AHJs develop their respective building codes with only a few modifications to nationally developed model codes. There are three major model building code development organizations:

[International Code Council \(ICC\)](#) model building codes most commonly serve as the basis for requirements on concrete.

[Understanding the ICC Process \(pdf\)](#)

[National Fire Protection Association \(NFPA\)](#) model codes having requirements for concrete, but only serve as the basis of building codes in a few jurisdictions. [Understanding the NFPA Process \(pdf\)](#)

[International Associations of Plumbing and Mechanical Officials \(IAPMO\)](#) model codes have few or no requirements related to concrete.

[Current ACI proposals](#) and activities related to the development of the ICC model codes.

ACI Code Advocacy Portal

by Industry Role...

Engineers
Educators & Researchers
Contractors
Identifiers

Tools

Concrete Resource Subscriptions
Frequently Asked Technical Questions
Career Center
318 Building Code Portal
Concrete Repair Portal
ACI Code Advocacy Portal
Code Official Portal



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Posturing and Fostering Support



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Being Effective

- Staff
 - Code Development Expertise
 - General Technical Knowledge
- Members
 - Expert Testimony
 - Rebuttal
- Education
 - ACI
 - ACI Positions



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Code Development Timeline

Steps in Code Development	2021 Group A	2022 Group B
Submittal Deadline	Jan 11	Jan 10
Proposals Posted	Mar 01	Feb 23
Committee Action Hearings	Apr 11 – May 05	Mar 27 – Apr 06
Public Comment Deadline	Jul 02	Jun 20
Comments Posted	Aug 13	Aug 04
Public Comment Hearing	Sep 21 – Sep 28	Sep 14 – Sep 21



NEW Code Development Timeline

Steps in Code Development	Group A	Group B
Proposal Deadline	Jan '24	Jan '25
Committee Hearing 1	Apr '24	Apr '25
Comment Deadline 1	Jun '24	Jun '25
Committee Hearing 2	Sep/Oct '24	Sep/Oct '25
Comment Deadline 2	Feb/Mar '25	Jan '26
Public Comment Hearing	Apr '26	Apr '26



Grouping of Code Changes - Subject to Change

Group A	
IBC - E gress	N/A
IBC - F ire S afety	216
IBC - G eneral	318
IFC [F IRE]	N/A
IFGC [F UEL G AS]	N/A
IMC [M ECHANICAL]	N/A
IPC/IPSDC [P LUMBING]	N/A
IPMC/IZC[M AINTENANCE/ Z ONING]	N/A
IRC P lumbing and M echanical	N/A
ISPSC [S WIMMING P OOLS]	322

Group B	
ADMIN	Ref Stds Updates
IBC - S tructural	117, 311, 318, 319, 320, 336, 360, 440.11, 564
IRC - B uilding	318, 332, 360, 564
ICC P erformance C ode	N/A
IEBC E xisting B uilding	562

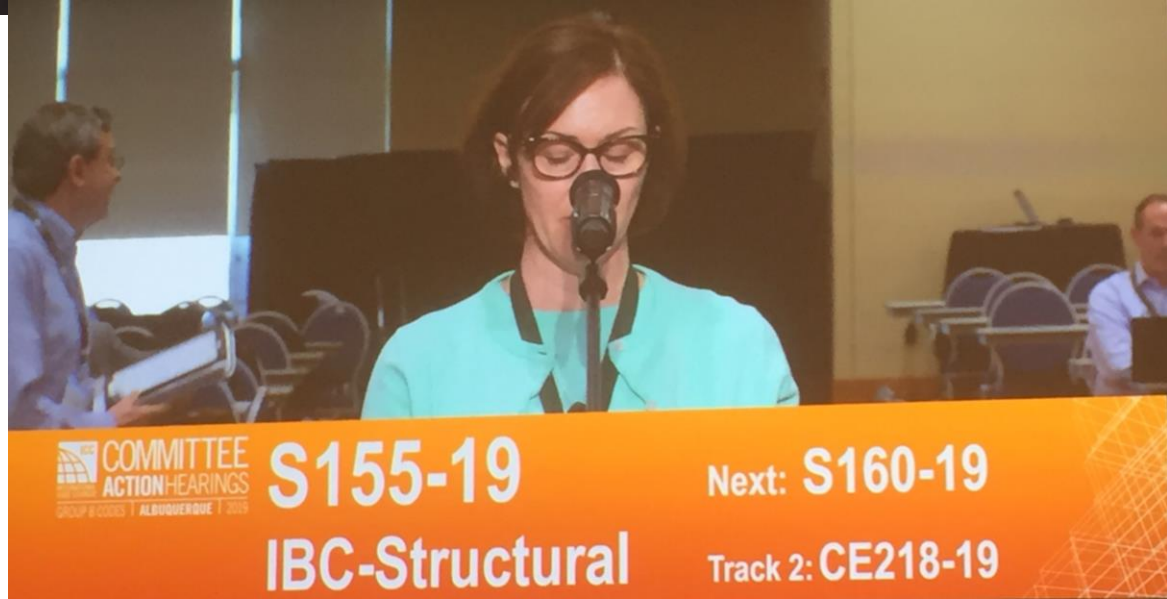
New ICC Code Development Timeline – Group A

	2023			2024												2025												2026			
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Prepare Proposals	█	█	█																												
Submit Proposals				█																											
Review Proposals					█	█																									
Committee Hearing 1							█																								
Prepare Comments								█																							
Submit Comments									█																						
Review Comments											█																				
Committee Hearing 2												█	█																		
Prepare Comments															█	█															
Submit Comments																	█														
Review Comments																		█	█												█
Public Hearing																															█

New ICC Code Development Timeline – Group B

	2023			2024												2025												2026					
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr		
Prepare Proposals													█	█	█																		
Submit Proposals																█																	
Review Proposals																	█	█															
Committee Hearing 1																		█															
Prepare Comments																				█													
Submit Comments																					█												
Review Comments																						█	█										
Committee Hearing 2																								█	█								
Prepare Comments																											█	█					
Submit Comments																													█				
Review Comments																														█	█		
Public Hearing																																█	

Committee Action Hearing



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Public Comment Hearing



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How the Hearings Work

2:00
MINUTE TIMER

- **2 minutes testimony in support**
- **2 minutes testimony in opposition**
- **1 minute rebuttal in support**
- **1 minute rebuttal in opposition**
- **Action by committee (CAH) or assembly (PCH)**

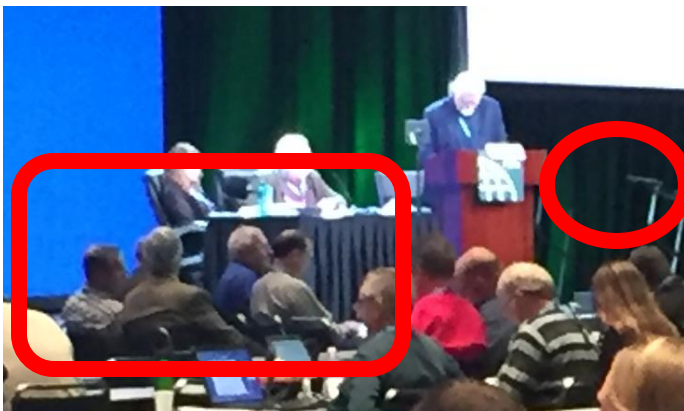
How the Hearings Work

- 2 minutes testimony in support
- 2 minutes testimony in opposition
- 1 minute rebuttal in support
- 1 minute rebuttal in opposition
- Action by committee (CAH) or assembly (PCH)

10 proponents and 5 opponents = 45 min.

How the Hearings Work

- No visuals (including hand gestures)
- No repeat testimony
- No waiting for testifiers
- Changes in order can only move back
- Withdraws accepted at any time



When Will a Specific Proposal Be Heard?

- First few in the hearing order – predictable
- All others – not predictable

- All proposals must be heard by hard closing time for hearings
 - Typically, sessions are 8:00 am to 7:00 pm
 - Sessions have started before 7:00 am
 - Sessions have ended after 1:00 am

Out-Come of Process

- Action on Proposals – AS, AM, D
 - Committee Recommendation (9-15)
- Action on Public Comments – AS, AM, AMPC, D (100-200)
 - Assembly Action Recommendation
- On-line Governmental Consensus Voting (5400)
- Accreditation and Validation (Process/Appeals)

AS - APPROVED AS SUBMITTED

AM - APPROVED AS MODIFIED

D - DISAPPROVED

AMPC - APPROVED AS MODIFIED BY PUBLIC COMMENT

W - WITHDRAWN



ICC Model Code Development Activities

- Review Codes
- Draft Proposals and Public Comments
- Identify Co-Proponents
- Foster Support
- Serve on Committees
- Attend Code Action Committees (CACs)
- Review Proposals and Public Comments by Others
- Prepare Testimony
- Testify at Hearings



Code Official Knowledge



13 Codes
+ IgCC/ASHRAE 189.1
+ IECC/ASHRAE 90.1

IBC References

> 500
> 50 SDOs

IRC References

> 800
> 50 SDOs



General Advocacy

- **Establish ACI as a Technical Resource**
 - Technical programs at ICC Chapter meetings
 - Technical support for code administrators
 - Building officials to ACI chapter meetings
- **Establish ACI as Part of Code Development**
 - Discover how ACI might better address needs
 - Support related legislative issues
 - Participate in *Building Safety Month* (May)

Sign-up as an ACI code advocate:

**for the benefit of your society
and...**

society as a whole.

Thank You!

steve.szoke@concrete.org

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