



National Green Building Standard

ICC-700

An aerial, high-angle photograph of a dense urban skyline, likely New York City. The image shows a vast number of skyscrapers and high-rise buildings packed closely together. The buildings vary in architectural style, with some featuring prominent setbacks and others having more uniform facades. The overall tone is monochromatic, with a dark, muted color palette. The text "Photos are NGBS Green Certified buildings!" is overlaid in the center in a white, sans-serif font.

Photos are NGBS Green
Certified buildings!

Agenda

- The Briefest of NGBS History
- NGBS Green Certification: State of the Program
- Areas Needing Attention
- Deep Dive into the Practices

A modern, multi-story house with white siding, dark accents, and palm trees in the foreground. The house features a prominent balcony with a glass railing and a large glass door on the ground floor. The scene is set against a clear blue sky with some light clouds.

NGBS Background

The Briefest of History

What Was Need for NGBS?

- Until NGBS, no national above code certification program specifically for homes
 - Residential buildings significantly lagged in green certifications nationwide
 - Preferred voluntary program as opposed to mandate
 - Wanted alternative to LEED
-





Green
Housing
Benefits

Lower
operational
costs

Healthier for
residents

Better for
environment

NGBS Versions

2008

- Retired

2012

- Retired, COVID-delayed projects finishing certification

2015

- Registration deadline April 1, 2022

2020

- Current version

2024

- Development now



HANOVER
BUCKHEAD VILLAGE

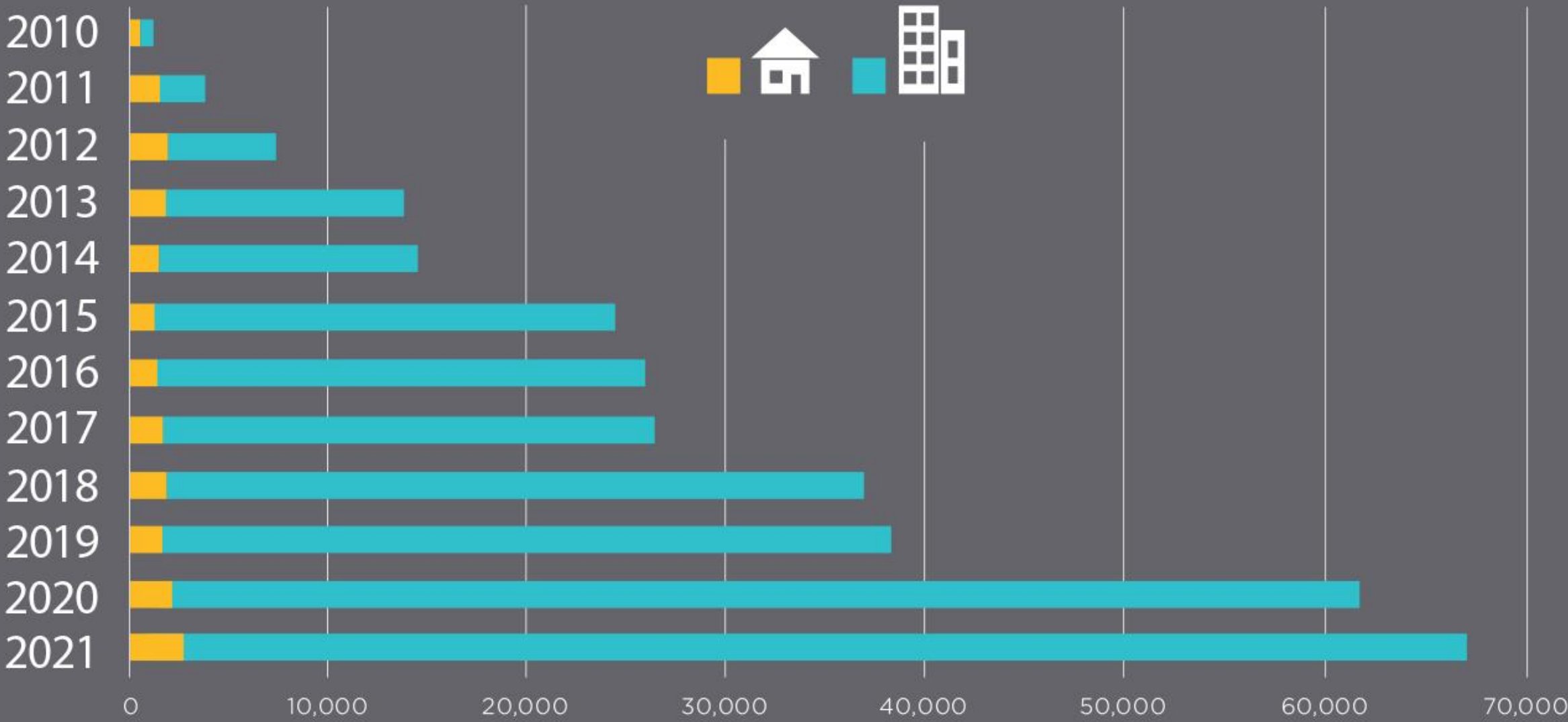
NGBS Green

The Leading Certification for the Places We Live

Why is NGBS Green So Successful?

- The Standard
 - Written in code language *AND* pegged to code baseline
 - Specifically, for residentially-used buildings
 - Rigorous *AND* Flexible
 - Design *AND* construction based
- The Certification Program
 - Recognized as credible
 - Affordable
 - Provides value
 - Third-party

NGBS GREEN CERTIFICATION ACTIVITY BY YEAR



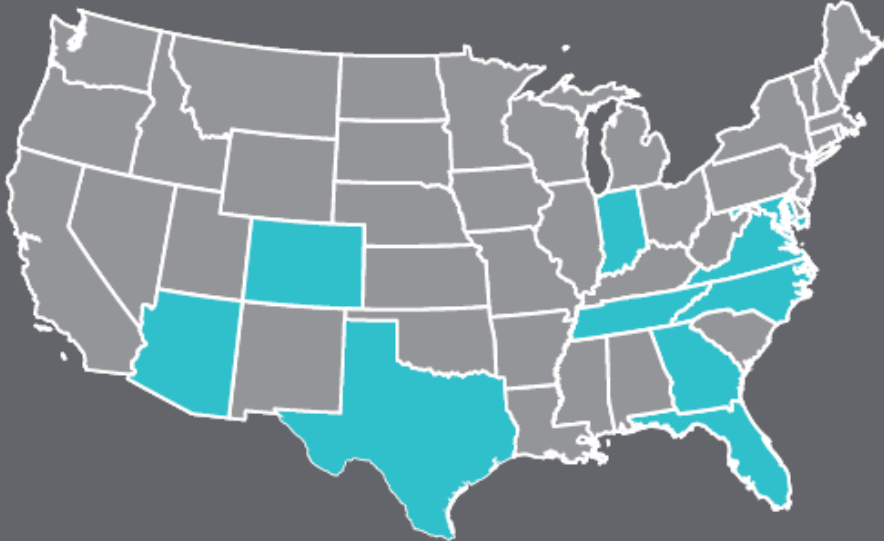
TOP 10 STATES FOR NGBS GREEN CERTIFICATION ACTIVITY



- 1. TEXAS
- 2. FLORIDA
- 3. NORTH CAROLINA
- 4. GEORGIA
- 5. MARYLAND
- 6. VIRGINIA
- 7. COLORADO
- 8. ARIZONA
- 9. TENNESSEE
- 10. INDIANA



- 1. NORTH CAROLINA
- 2. VIRGINIA
- 3. DELAWARE
- 4. FLORIDA
- 5. TEXAS
- 6. INDIANA
- 7. MARYLAND
- 8. NEW YORK
- 9. WASHINGTON
- 10. MISSOURI



NGBS Green Stats

NGBS Project Type	Certified	In Process
Single-Family Homes (new & remodeled)	21,831	7,725
Multifamily Buildings (new)	7,902	5,159
Apartments - Multifamily Buildings (new)	323,457	308,667
Multifamily Existing Buildings	1,403	1,370
Apartments - Multifamily Existing Buildings	15,957	27,623

NGBS Green By Versions

VERSION		CERTIFIED	IN-PROGRESS
2012	Homes (new & remodel)	9,170	3,180
2012	MF Buildings (new)	5,237	968
2012	Apts	214,979	47,639
2012	MF Buildings (remodel)	619	117
2012	Apts	8,896	2,706
2015	Homes (new & remodel)	5,018	3,879
2015	MF Buildings (new)	1,285	3,519
2015	Apts	47,815	213,016
2015	MF Buildings (remodel)	557	617
2015	Apts	4,867	14,560
2020	Homes (new & remodel)	309	2,672
2020	MF Buildings (new)	19	709
2020	Apts	1,341	49,277
2020	MF Buildings (remodel)	76	638
2020	Apts	1,004	10,627

Certification Drivers

- Government
 - Financial incentives (LIHTC, tax credits, HUD MIP)
 - Density bonuses or proffered during local review
 - Local mandates
 - Future SEC climate disclosure requirements
- Private
 - ESG goals, corporate sustainability commitments
 - Fannie and Freddie preferred financing
 - Operational savings for portfolio
 - Future asset valuation
 - Consumer preferences

Deep Dive Into Homes

- Small, but growing
- SF homes certified in 2021 up 24% YOY
- BARRIERS:
 - Hot housing market
 - Lack of incentives or preferred financing
 - Cost sensitivity amid rising building supply issues and land costs
 - State code baseline variability rising

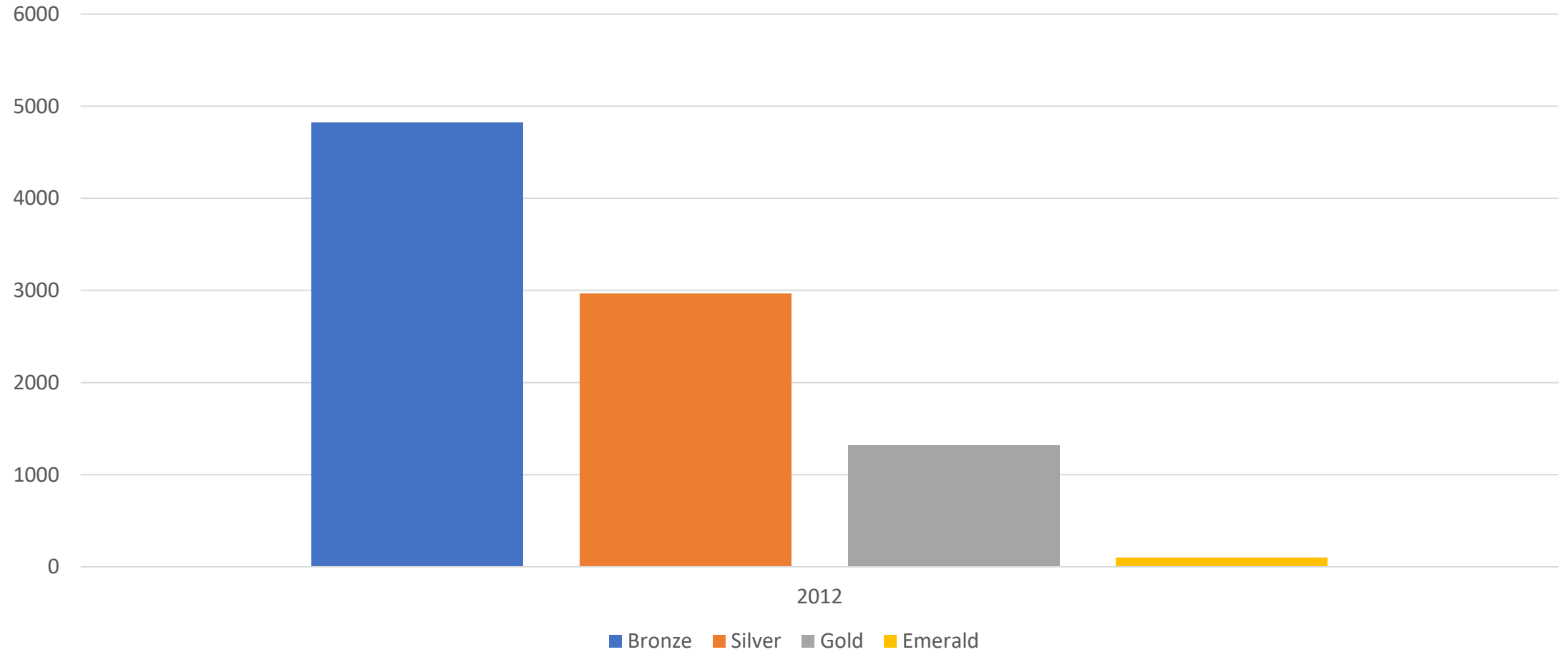


2020 NGBS SF Certified Path

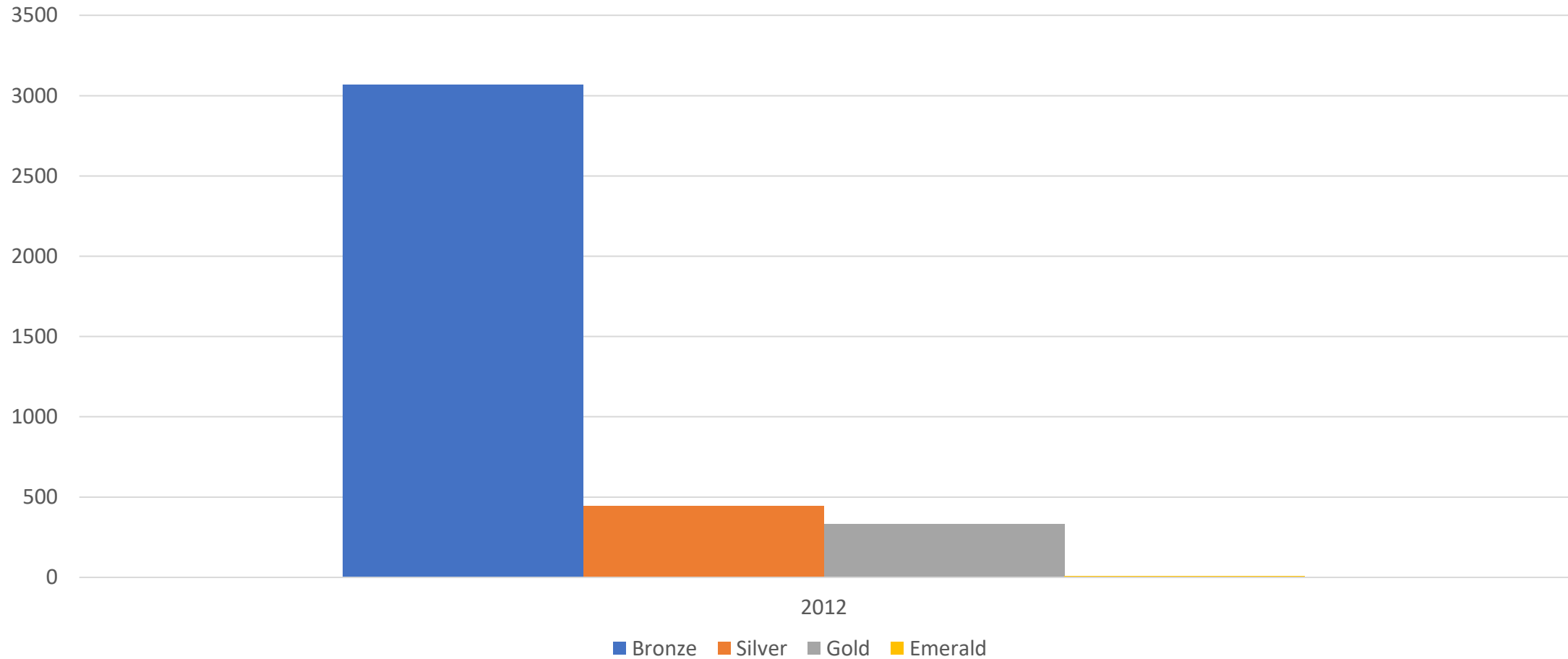
- Available for homes and THs
- Binary compliance – all practices mandatory
- To date, infrequently used
- Requirement for kitchen exhaust vented to outside is untenable
- Ultimately, other market issues may be barrier for SF builders to certify



2012 SF By Certification Level

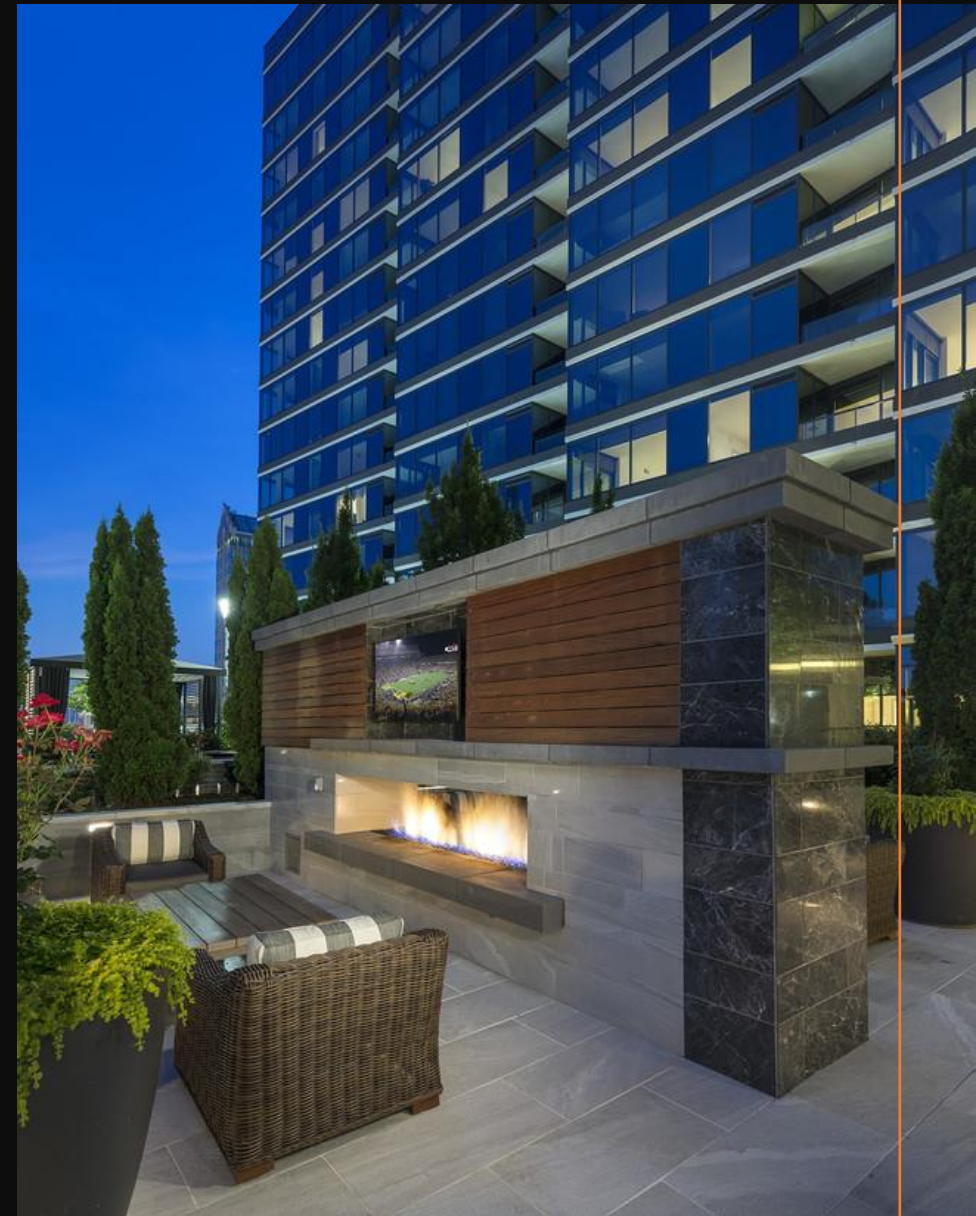


2015 SF By Certification Level

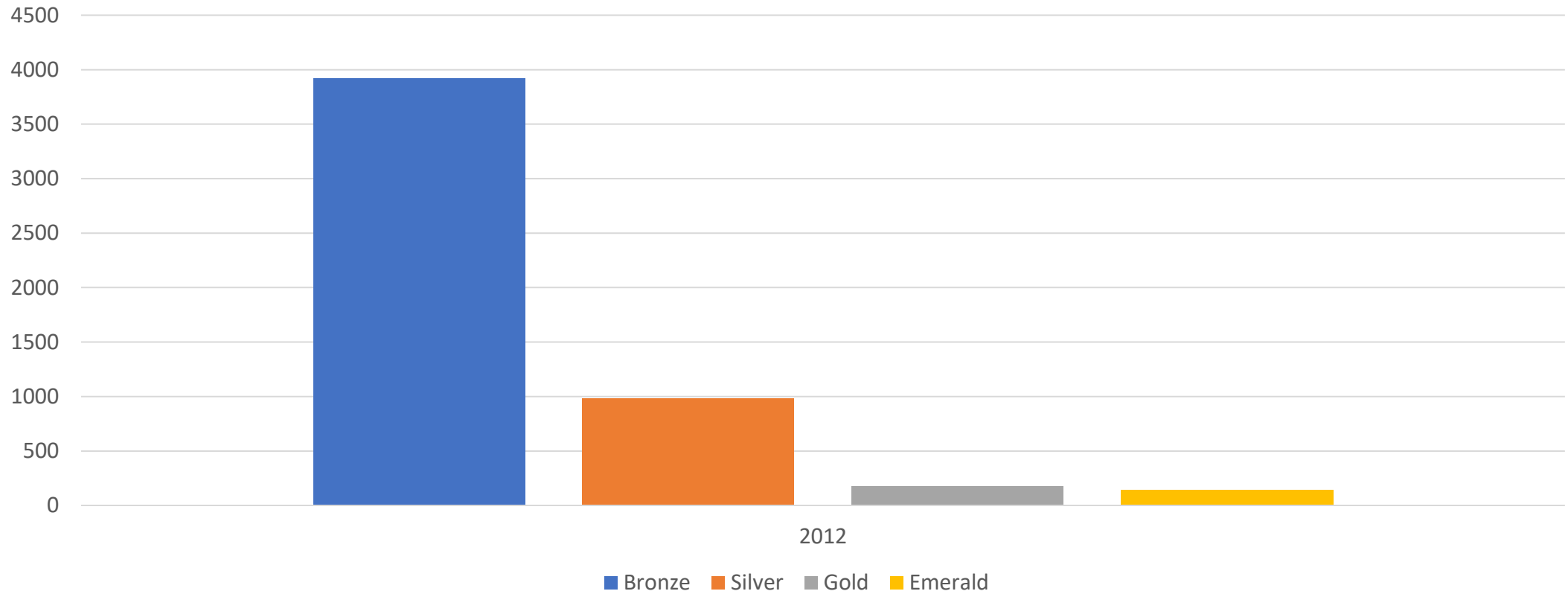


Deep Dive Into Multifamily NC

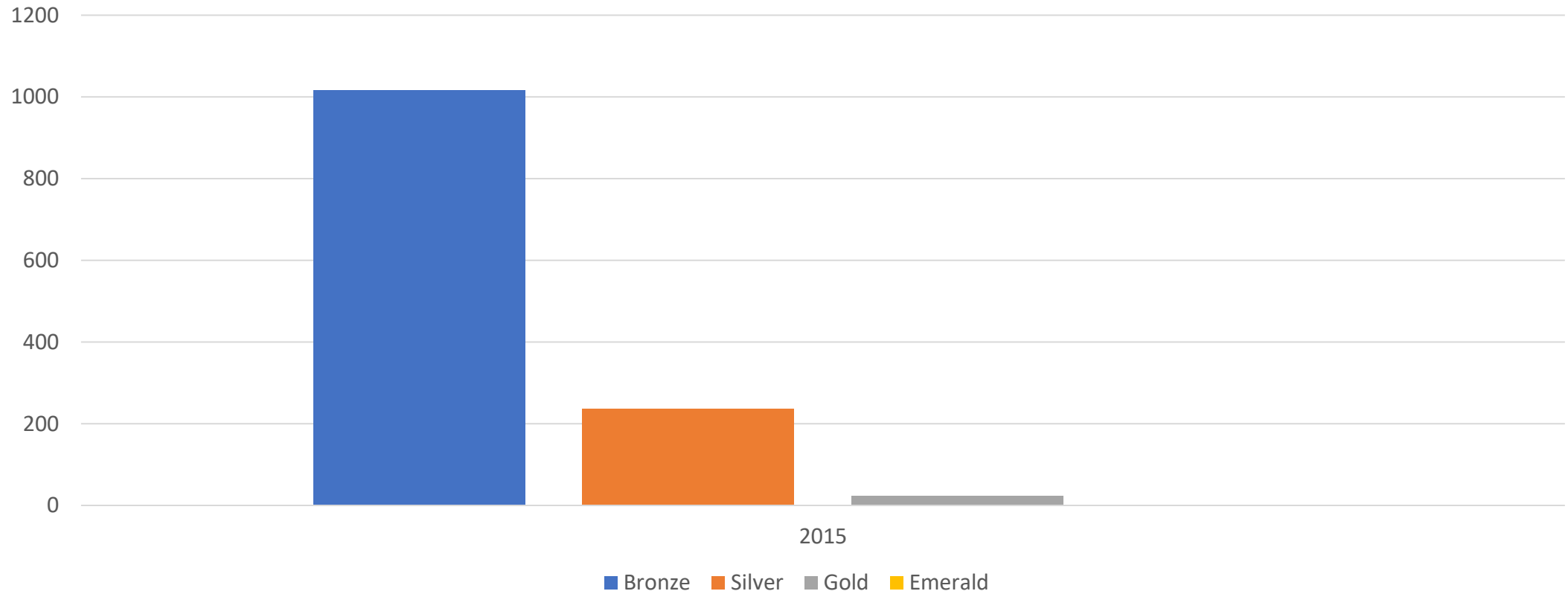
- Remains strong
- Nearly 67,500 new apartments certified in 2021—up 10% YOY
- Registrations continue to grow
- Financing incentives and other market drivers position NGBS Green Certification as high-value, low cost
- Experience with NGBS breeds loyalty and familiarity



2012 MF By Certification Level



2015 MF By Certification Level



Deep Dive Into Existing Buildings

- Certifications continue to rise steadily
- Driven by HUD Green MIP
- NGBS fills need for pragmatic existing building certification
- NGBS provides flexibility to accommodate huge diversity of building types and conditions, but still rigorous
- Several issues need to be resolved that are barriers to certification



Deep Dive Into Commercial Space

- Core-and-Shell or Fully Fitted Out and Equipped (FFOE) available
 - FFOE requires core-and-shell compliance
 - Growing importance as HUD Green MIP requires full building certification
 - 23 buildings registered for Core-and-Shell
 - 5 for Fully Fitted Out
 - Several issues need to be resolved that are barriers to certification
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Deep Dive Into Tropical Buildings

- Big market in Puerto Rico and Caribbean, less in Hawaii
- Construction, barriers, opportunities different in PR/Caribbean and Hawaii
- Certification Drivers
 - Puerto Rico driven by HUD requirements
 - US Virgin Islands by QAP requirements
 - Hawaii has no similar incentives, fewer Verifiers



TZ Certification Stats

PROGRAM	CERTIFIED	IN-PROGRESS
SF Homes (new & remodel)	587	942
SF Homes Certified Path	0	825
MF Buildings (new)	6	95
MF Apts (new)	160	3,289
MF Existing Buildings	0	34
MF Existing Apts	0	1,454



Areas Needing Attention

Problems, Inconsistencies, Areas Needing Clarification

5 Big Issues

1. Set energy efficiency baseline and stretch goals
2. Revisit existing building criteria
3. Existing buildings < 5 years old
4. Reconsider existing buildings with non-residential space
5. Streamline Tropical Zone compliance

Energy Baseline & Goals

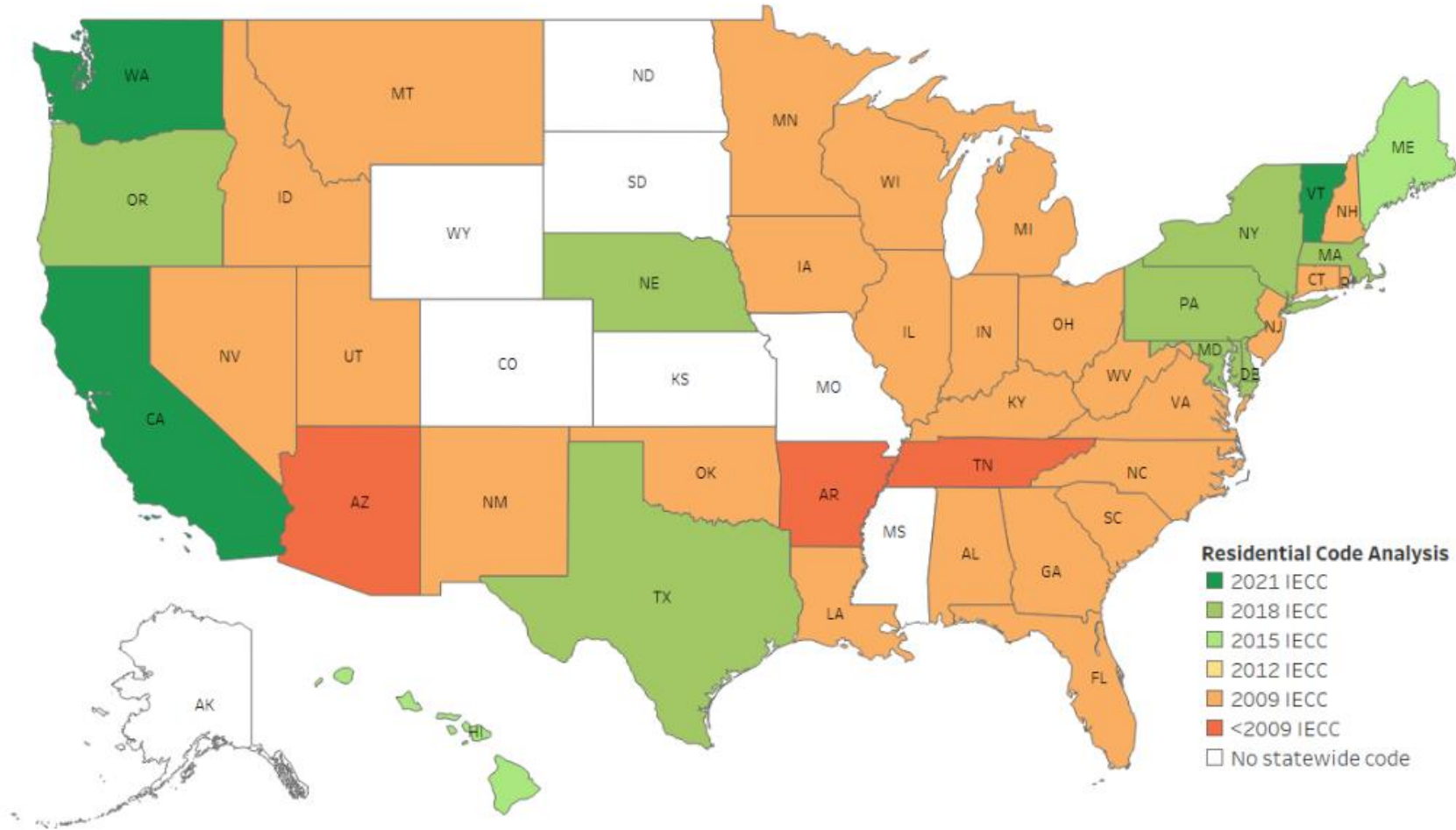
- EE baseline (Bronze certification level) consistent with current code is useful
- Pairing Emerald level certification with net zero energy also helpful
- Silver and Gold are in-between intervals



Chapter 7: Energy Efficiency

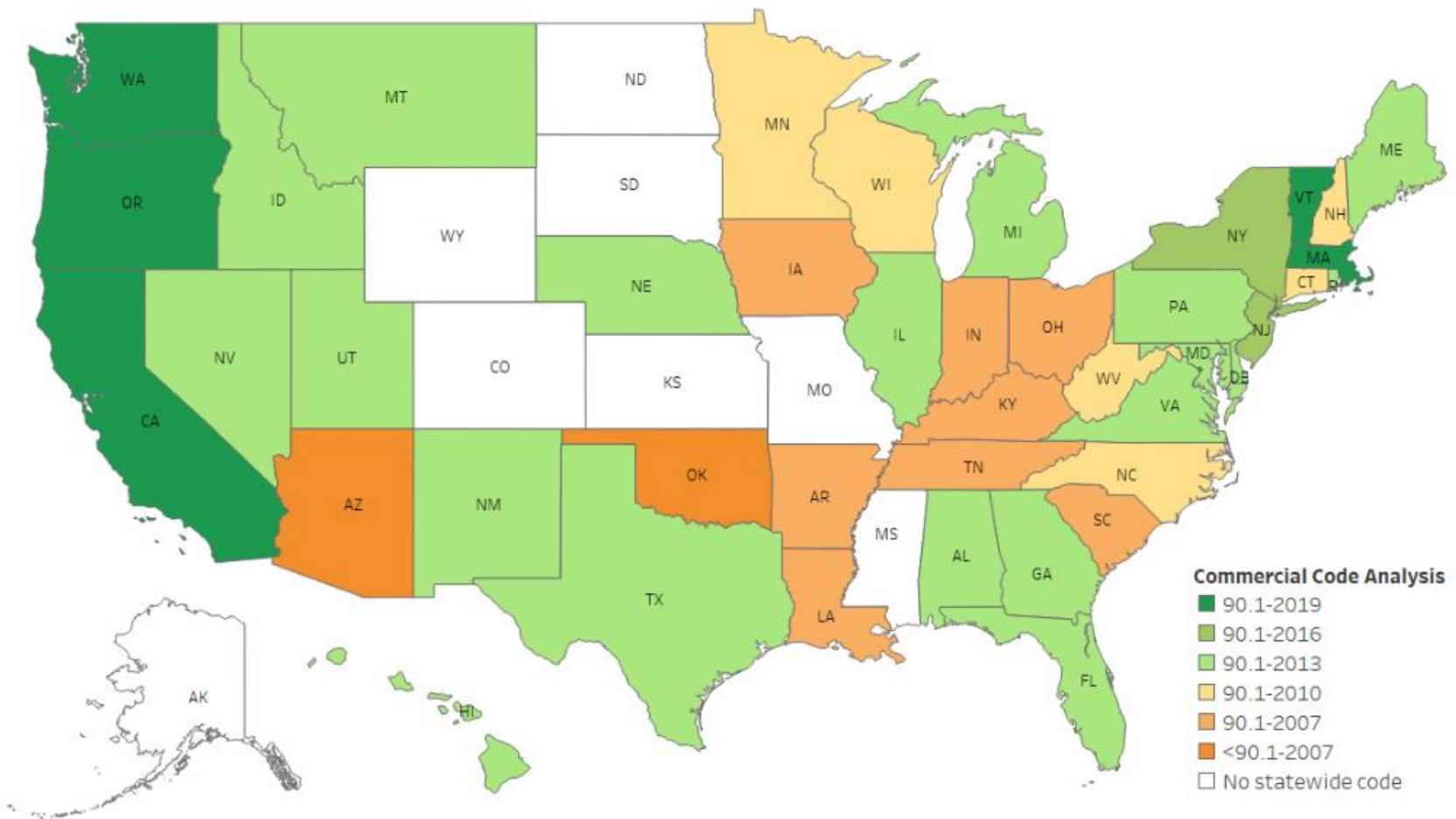
- Bigger gaps in energy code baselines
- Want to strike balance to incentivize higher building performance in states with weaker codes (and not make compliance impossible) **AND**
- Provide stretch in states aiming toward zero energy

Residential Buildings



Updated as of 03/31/22

Commercial Buildings



Updated as of 03/31/22

Chapter 11: Existing Buildings

- Rebrand “Remodeling” to “Existing Buildings” to align better with other certification options, lender, and agency requirements
- Address 2020 NGBS compliance gap for buildings >1 year and <5 years where certification impossible regardless of building’s performance
- Recognition for high performing buildings (perhaps as demonstrated by actual consumption data), but plan few or no alterations

Existing Mixed-Use Buildings

- Present unique challenge – desire whole building certification, but owner may not have influence over in-place retail/commercial businesses
- Owners willing to hit higher energy and water consumption targets to account for commercial space consumption, but NGBS does not explicitly allow this
- Flexibility would encourage more owners to renovate and improve performance

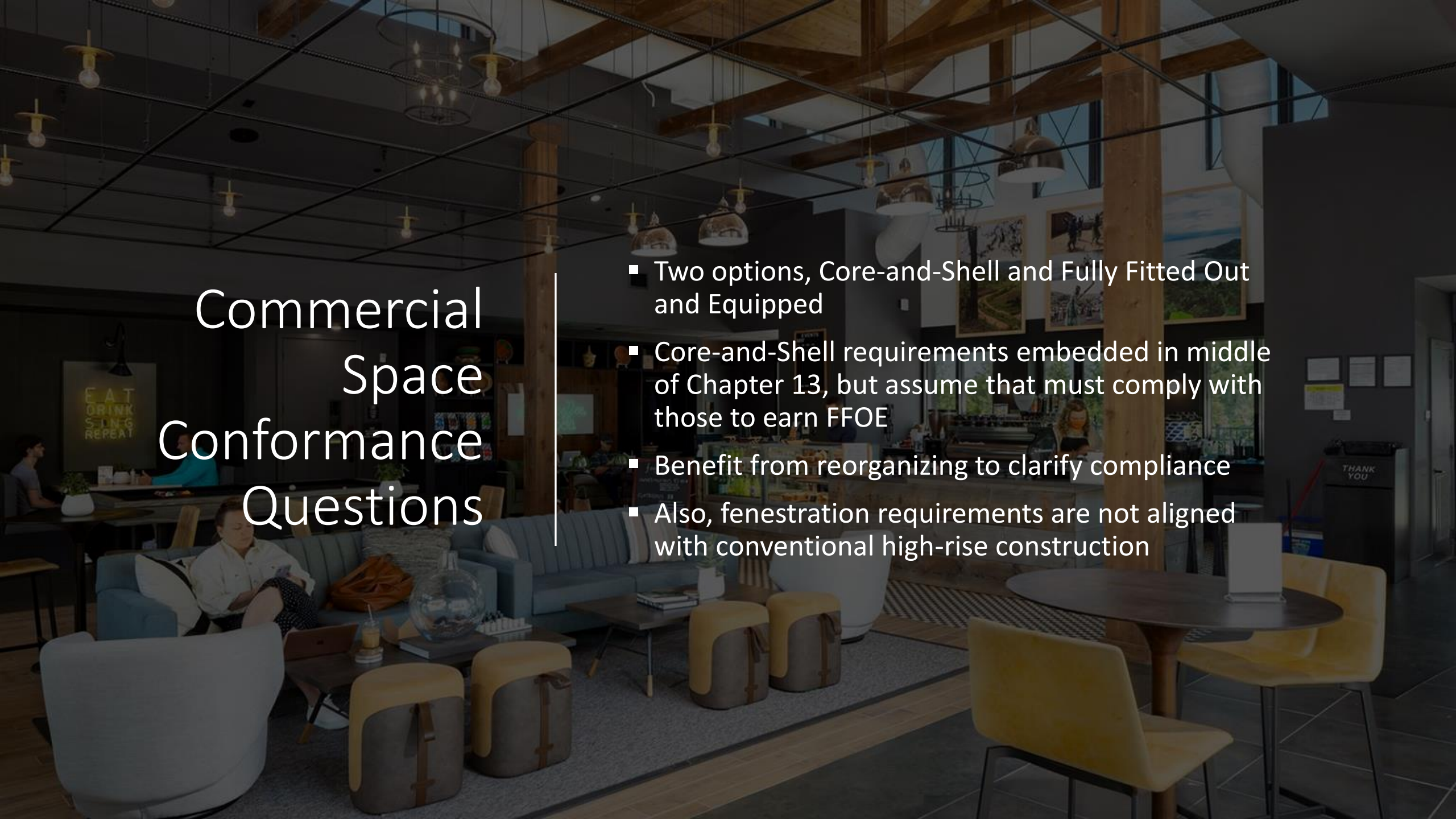


Tropical Zone Buildings

- Most buildings don't have heating or cooling
 - MF buildings may have conditioned common areas
 - Even at higher elevations do not have heating
- No HVAC means windows are always open
 - Kitchen and bath ventilation is enigma to builders
 - Ceiling fans are common
- TZ Chapter 7 compliance not easily extracted in current format, would benefit from creating a stand-alone TZ section

6 Smaller Issues

1. Clarify non-residential space criteria by reorganizing chapter
2. Rewrite resilient construction section to allow prescriptive compliance
3. Raise stringency of Resource Efficiency chapter based on product availability
4. Refine Water Rating Index calculations to fill gaps and address inconsistencies
5. Reconsider Accessory Structure conformance
6. Why not tris- and quads for Chapter 12?



Commercial Space Conformance Questions

- Two options, Core-and-Shell and Fully Fitted Out and Equipped
- Core-and-Shell requirements embedded in middle of Chapter 13, but assume that must comply with those to earn FFOE
- Benefit from reorganizing to clarify compliance
- Also, fenestration requirements are not aligned with conventional high-rise construction

Resiliency



- Current practice is design focused and therefore not as useable to many builders and projects
- Helpful to have prescriptive measures to be accessible to more buildings
- Also helps educate NGBS users as to what practices make a building more resilient

Resource Efficiency Baseline: Needs a Boost?

- Sustainable products more widely available, more cost effective – but Chapter 6 practices haven't changed – do they need revision for practices and points available
- LCA / EPD
 - Haven't been as widely used, but believe that they maybe used more as cities/states move to adopt climate plans
 - Should there be something that addresses embodied carbon as an innovative practice?
- Universal Design
 - Widely used by projects
 - Recently launched the NGBS Green + Universal Design badge

WRI

- Align building eligibility and scope (unitary vs. whole-building rating) with NGBS scope
- Add new section to address multifamily amenity areas
- Address editorial issues and fix small issues with numeric values and equations
- Clarify appropriate applications for captured water

Accessory Structures

- Huge diversity of accessory structures
 - Clubhouse, laundry facility, pool house, maintenance shed, ADU, artist loft, ...
 - Some conditioned, some are not
- Many MF communities desire every building to earn certification, and HUD requires it for Green MIP
- NGBS compliance requirements are somewhat vague
- Could small commercial structures, designed to serve residents of MF community, earn certification using Chapter 13?



Chapter 12

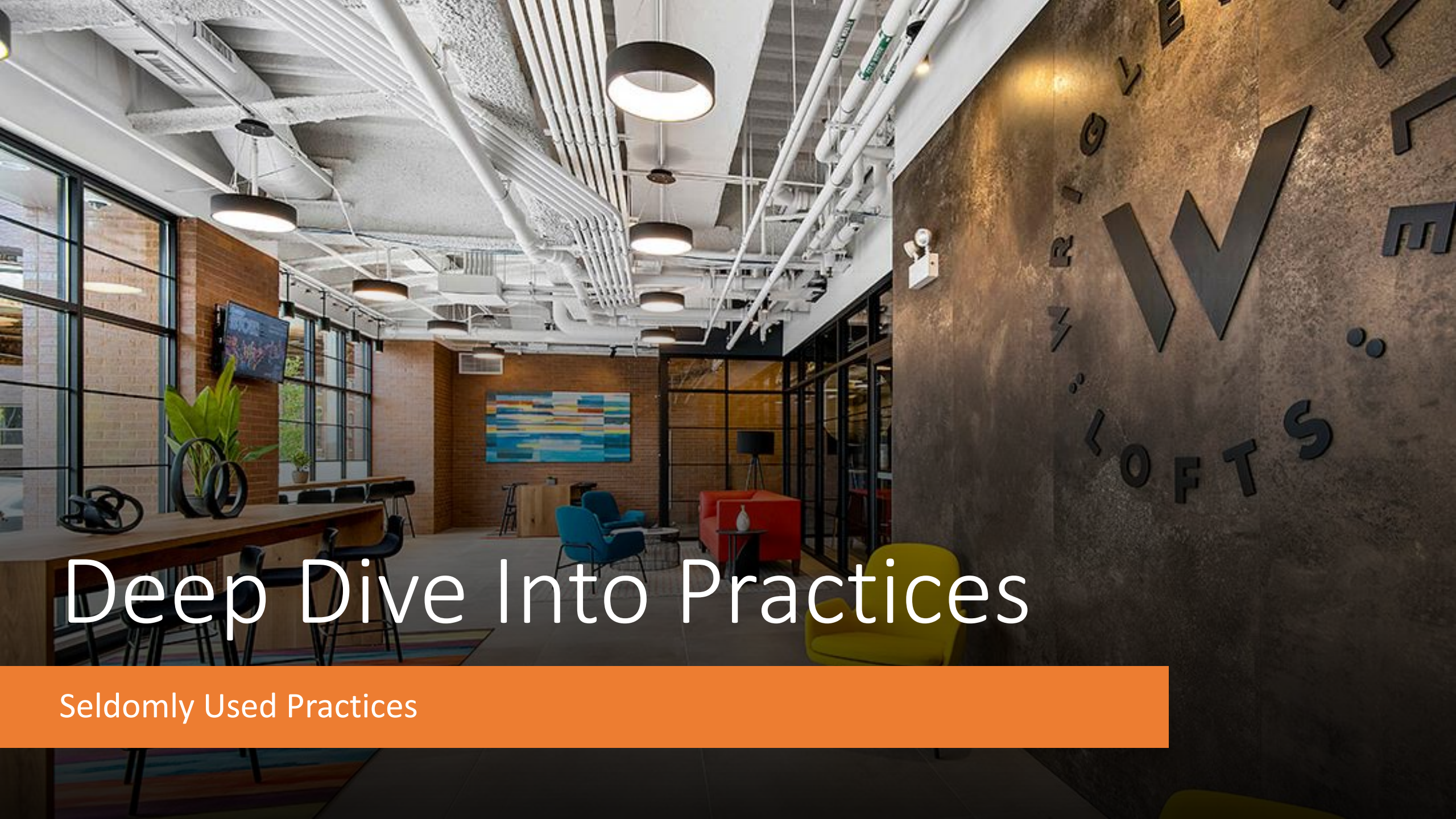
- Chapter 12 didn't include triplexes and quads – why not?

IEQ Issues

- Incentivize entire non-smoking community?
- Clarify radon reduction construction and testing requirements
- Clarify sound barrier practice
- Rework ventilation requirements of Certified Path

New Issues to Ponder

- Property-wide improvements to align with EPA Portfolio Manager benchmarking constraints and HUD financing rules
- Emerging concepts: All-Electric Homes; Low-Carbon Design; Net Zero Energy Construction
- WHAT ELSE WE GOT?



Deep Dive Into Practices

Seldomly Used Practices

PRACTICES HARDLY EVER CLAIMED

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501.1(2)	Certified Site
503.6(1-4)	Wildlife Habitat
505.5	Community Garden(s)
505.6	EV Charging
601.8	Foundations
605.2(a-c)	On-Site Recycling
611.1	Manufacturer's Environmental Management System Concepts

PRACTICES HARDLY EVER CLAIMED: Chapter 7

PRACTICES HARDLY EVER CLAIMED

701.4.1.2	Radiant and Hydronic Space Heating
703.7.1	Sun-Tempered Design
703.7.3	Passive Cooling Design
703.7.4	Passive Solar Heating Design
705.6.4.1	Potable Hot Water Demand Recirculation System (SF)
705.6.4.2	Potable Hot Water Demand Recirculation System (MF)
705.7	Submetering
706.2	Renewable Energy Service Plan
705.6	Parking Garage Efficiency
706.7	Grid-Interactive Electric Thermal Storage System
706.8	Electrical Vehicle Charging Station
705.9	Automatic Demand Response



Chapters 8-10

- Water Efficiency
 - Updates to flow rates and/or points?
 - Reconsider and/or clarify new mandatory for dedicated meter for pools/spas
- Indoor Environmental Quality
- Operation & Maintenance
 - Code official feedback that they like the Chapter 10 requirements for high performance buildings
 - Recognize value of benchmarking through EPA's Portfolio Manager
 - Incentive water or energy benchmarking separately, not require both

PRACTICES HARDLY EVER CLAIMED

PRACTICES HARDLY EVER CLAIMED

801.4.2	Touchless Faucets
801.5(4b)	Urinals
801.5(4c)	Composting Toilet and/or Urinal
801.7	Rainwater Collection and Distribution
802.1	Reclaimed, Gray, or Recycled Water
802.2	Reclaimed water, graywater, or rainwater pre-piping
802.3	Automatic Shutoff Water Devices
802.4	Engineered Biological System or Intensive Bioremediation System
802.5	Recirculating Humidifier
802.6	Advanced Wastewater Treatment System
901.13(1-2)	Building Entrance Pollutants Control
1004.1(2)	Verification System



End

Questions?