



**NGBS
GREEN**™



2020 NGBS Overview



Home Innovation Research Labs

- Founded in 1964
- Clients: architects, builders, developers, and product manufacturers
- Four categories of services:
 - Market Research
 - Applied building science research
 - Standards developer
 - Accredited third-party lab and certification agency
 - EPA selected MRO for ENERGY STAR certification



Mission:
Improve quality, durability,
affordability, & environmental
performance of homes

ICC 700-2020
National Green
Building Standard®



CREATING MORE SUSTAINABLE PLACES TO CALL HOME

INDEPENDENT. RIGOROUS. COST-EFFECTIVE.

GREEN CERTIFICATION

NGBS GREEN CERTIFIED HOMES & APARTMENTS

701,960

GET NGBS GREEN CERTIFIED

2026-2027 Iowa QAP Energy Requirements

New Construction

Required: NGBS Green Silver

2 pts: NGBS Green Gold

3 pts: NGBS Green Emerald

Rehab

Required: NGBS Green Bronze

2 pts: NGBS Green Silver

3 pts: NGBS Green Gold

Agenda



Overview



Compliance



Ch Specifics



Certification
Program



Tips for Working
with a Verifier



Certification
Activity



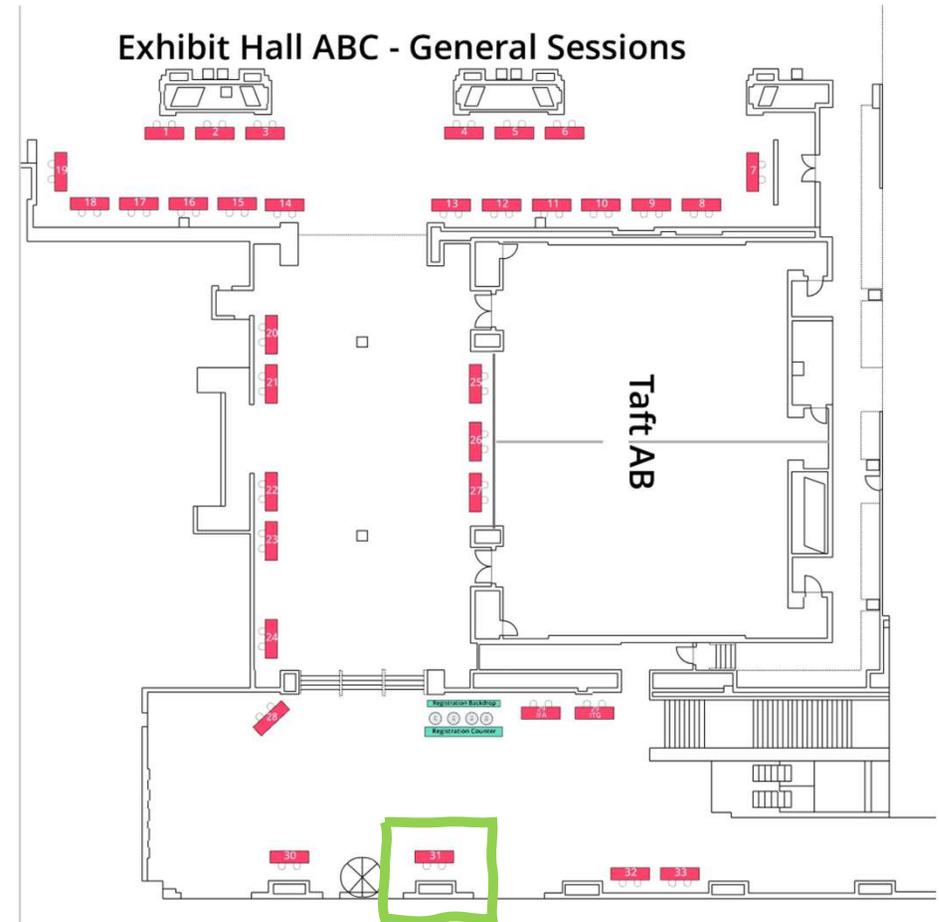
Certified
Buildings in Iowa



Q&A

Let's Meet in the Exhibit Hall

- Joined by local Verifiers from **Heartland Energy Consultants**
- Will address your technical and process questions



ICC 700-2020 National Green Building Standard®



ICC 700 National Green Building Standard (NGBS)

- Voluntary, above-code green certification program
- For residential occupancies
- American National Institute of Standards (ANSI) approved
- Part of ICC suite of I-Codes



IgCC[®]

INTERNATIONAL
GREEN CONSTRUCTION CODE[®]

A Comprehensive Solution for High-Performance Buildings

A Member of the International Code Family[®]

POWERED BY
ANSI/ASHRAE/ICC/USGBC/IES 189.1-2020
Standard for the Design of High-Performance
Green Buildings Except Low-Rise Residential Buildings



International Green Construction Code

- Developed by AIA, USGBC, ICC, ASHRAE
- NGBS is alternative compliance path for residentially-used buildings 4+ stories
- NGBS is sole compliance path for SF homes, townhomes, residential buildings < 4 stories

NGBS Versions

2009 NGBS

- Retired

2012 NGBS

- Retired

2015 NGBS

- Retired

2020 NGBS

- Current version

2025 NGBS

- Expected Q4 2025

2020 NGBS Scope

1. Residentially-used buildings
2. Residential portions of mixed-use buildings
3. Entire mixed-use buildings where residential portion is >50% of gross floor area
4. Land developments & neighborhoods (at least one residentially-used building)





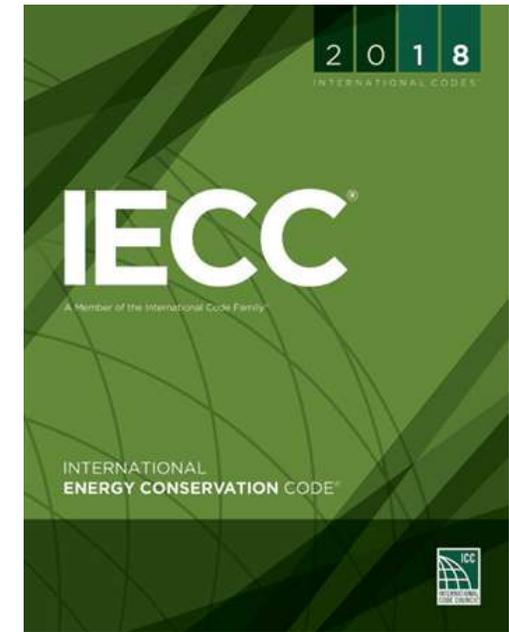
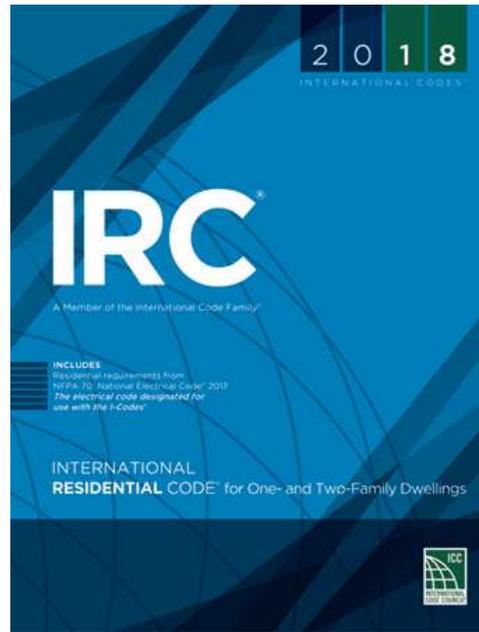
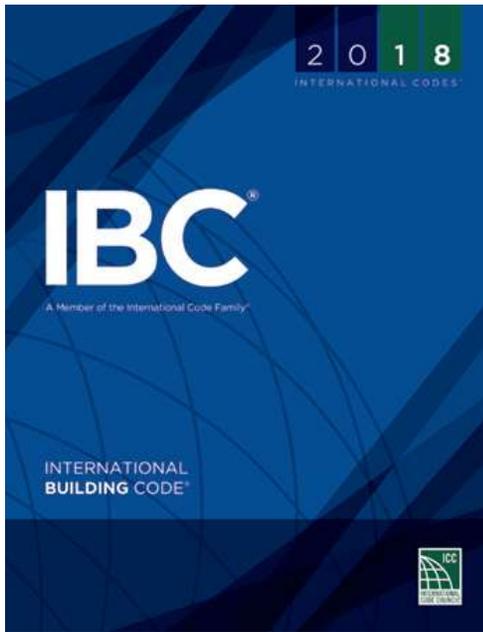
NGBS Definition of "Residential"

- Buildings with "residential-like" uses
- Includes
 - Buildings within IRC scope
 - Group R occupancies in IBC
 - IBC Group I-1 occupancy considered residential



NGBS for the Places We Live

- Dorms
- Student housing
- Assisted living facilities
- Supportive housing / homeless shelters
- Residential board and care facilities / Group homes
- Hotels / motels
- Building conversions
- ADUs



2020 NGBS Code Baseline

- 2020 NGBS baseline are 2018 I-codes
- Numerous references to these codes and local amendments irrelevant unless local code prohibits NGBS practice



NGBS Compliance

- **Mandatory Practices**
 - No exemptions
 - No points
 - Ensures baseline building performance nationwide
- **Voluntary Practices**
 - Awards points
 - Points based on difficulty level
 - Design, product/system selection, or construction-based practices
 - Minimum point requirements in 6 green categories
 - 100% independent, third-party on-site verification

Certification Levels

- Buildings can earn one of four certification levels
- Certification level depends on how many green practices are incorporated, *and*
- Relative level of energy and water efficiency



Threshold Point Ratings for Green Buildings

Green Building Categories			Rating Level Points ^{(a) (b)}			
			BRONZE	SILVER	GOLD	EMERALD
1.	Chapter 5	Lot Design, Preparation, and Development	50	64	93	121
2.	Chapter 6	Resource Efficiency	43	59	89	119
3.	Chapter 7	Energy Efficiency	30	45	60	70
4.	Chapter 8	Water Efficiency	25	39	67	92
5.	Chapter 9	Indoor Environmental Quality	25	42	69	97
6.	Chapter 10	Operation, Maintenance, and Building Owner Education	8	10	11	12
7.		Additional Points from Any Category	50	75	100	100
Total Points:			231	334	489	611

(a) In addition to the threshold number of points in each category, all mandatory provisions of each category shall be implemented.

(b) For dwelling units greater than 4,000 square feet (372 m²), the number of points in Category 7 (Additional Points from Any Category) shall be increased in accordance with Section 601.1. The "Total Points" shall be increased by the same number of points.

New Construction Green Categories

Chapter 5: Lot
Design

Chapter 6:
Resource
Efficiency

Chapter 7: Energy
Efficiency

Chapter 8: Water
Efficiency

Chapter 9: Indoor
Environmental
Quality

Chapter 10:
Operation &
Maintenance



Lot Selection & Design

Chapter 5

Chapter 5 Sections

- **Lot Selection**
 - Lot location
 - Multi-modal transportation
- **Project Team, Mission Statement & Goals**
- **Lot Design**
 - Natural Resources
 - Slope Disturbance
 - Soil disturbance / erosion
 - Stormwater management
 - Landscape Plan
 - Wildlife habitat
 - Environmentally sensitive areas
- **Lot Construction**
 - Trees and vegetation
 - Soil disturbance
- **Innovative Practices**
 - Driveways, parking areas
 - Heat island mitigation
 - Density
 - Mixed-use development
 - Community Gardens
 - EV charging stations

Chapter 5 Overview

- To earn points, lot of building must meet practice's intent
 - For SF homes, each buildable lot must meet the practice
 - Few exceptions, for example, natural resources inventory may be completed for entire subdivision & lot can earn points
- Multifamily buildings generally find Chapter 5 points easier to earn





Resource Efficiency

Chapter 6

Chapter 6 Focus

- Use fewer resources
- Manage moisture
- Improve durability
- Universal design practices
- Resilient construction



Resource Efficiency Categories

QUALITY OF
CONSTRUCTION
MATERIALS AND
WASTE

ENHANCED
DURABILITY AND
REDUCED
MAINTENANCE

REUSED OR
SALVAGED
MATERIALS

RECYCLED-
CONTENT
BUILDING
MATERIALS

RENEWABLE
MATERIALS

RECYCLING AND
WASTE REDUCTION

RESOURCE-
EFFICIENT
MATERIALS

REGIONAL
MATERIALS

LIFE CYCLE
ASSESSMENT

PRODUCT
DECLARATIONS

INNOVATIVE
PRACTICES

RESILIENT
CONSTRUCTION

Chapter 6 Mandatory Practices

Capillary
break

Exterior drain
tile

Vapor retarder

Sealed
crawlspce

Water
resistive
barrier

Flashing

Tile backing
materials

Ice barrier

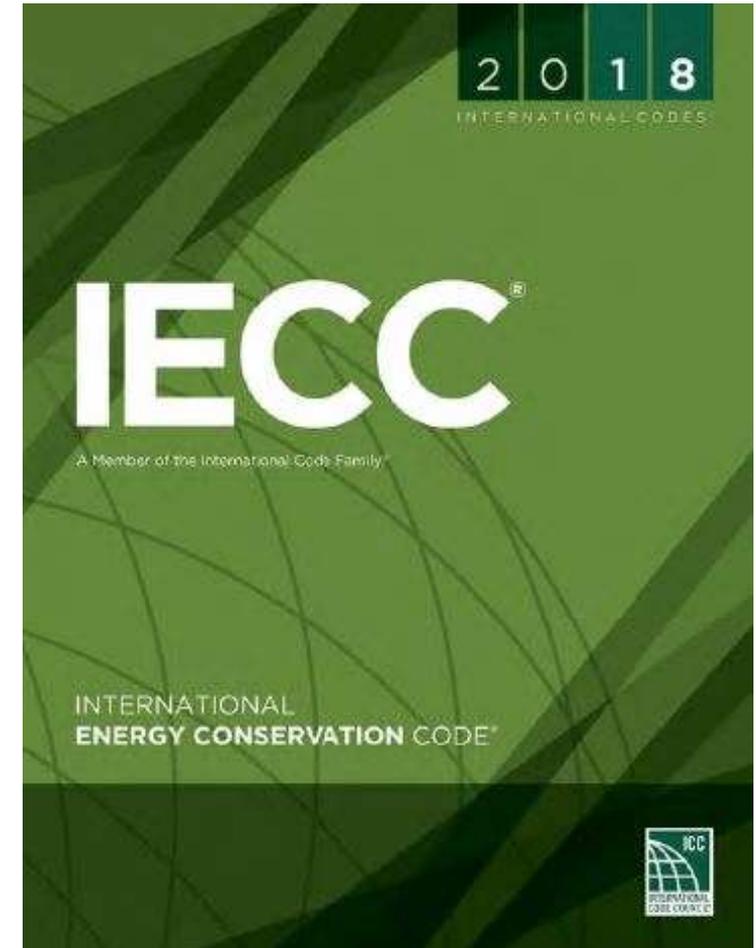
Sloped
horizontal
ledgers

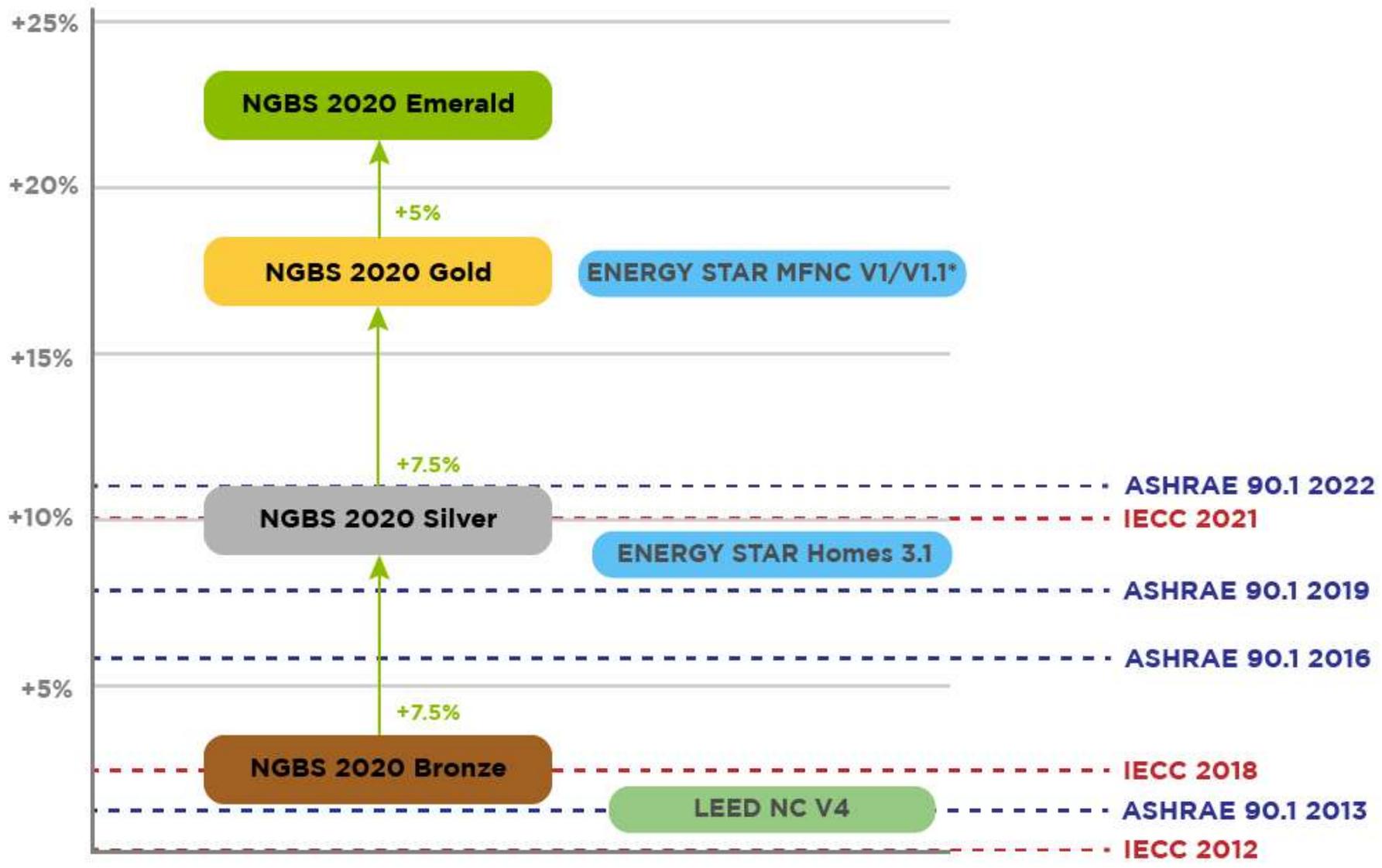
Sloped lot

Hazardous
waste plan

Energy Efficiency

- Baseline is **2018 IECC**
- More flexibility than code
- Several compliance paths





701.4 Mandatory Practices

HVAC System Sizing

- Space heating and cooling sized in accordance with Manual J

Duct Systems

- Duct air sealing
- Framing cavities not used as ducts or plenums
- Sizing in accordance with Manual D

Insulation and Air Sealing

- Thermal envelope air sealing
- Blower door testing (exemption for buildings 4+ stories)
- Grade I insulation
- Fenestration air leakage is 0.3 cfm/sf
- Lighting in thermal envelope is sealed

High-efficacy Lighting

- At least 75% of hard-wired lighting is high efficacy, OR
- Lighting power density is 1.1 or less

Energy Compliance Options

Performance Path Section 702	Prescriptive Path Section 703	ERI Target Path Section 704
Comply with Section 701 Mandatory Practices + Comply with 2 practices from 705 OR 1 from 705 and 1 from 706		
Modeling to demonstrate min energy savings level \geq 2018 IECC for Bronze, above for higher levels	Earn min of 30 points from Section 703	Earn min 30 points from ENERGY STAR v3.0 National ERI Target Procedure
Bronze, Silver, Gold, Emerald	Bronze, Silver, Gold	Bronze, Silver, Gold, Emerald

Alternative Compliance

Bronze	Silver	Gold
ENERGY STAR Ver 3.0 Certified Home	ENERGY STAR Ver 3.1 Certified Home	In Tropical Zone complies w/ IECC R401.2.1 AND PV AND battery storage AND min SEER
ENERGY STAR Multifamily HR Ver 1.0, rev 3	ENERGY STAR Multifamily HR Ver 1.0, rev 3 w/ baseline of ASHRAE 90.1-2010 (or ES MFNC)	
Complies w/ 2018 IECC OR 2018 IRC Chapter 11	In Tropical Zone complies w/ requirements in 2018 IECC R401.2.1	Complies w/ IgCC Chapter 7 AND air tightness testing

Water Efficiency

Chapter 8



Water Efficiency Chapter Compliance

OPTION 1: Prescriptive Path

Achieve points from any of the sections, including:

- Indoor hot water usage
- Water-conserving appliances
- Showerheads
- Faucets
- Water closets and urinals
- Irrigation systems
- Rainwater Collection and Distribution

25 Points=Bronze; 39 Points=Silver; 67 Points=Gold; 92 Points=Emerald

OPTION 2: Performance Path

Achieve a Water Rating Index at or below 70

70 WRI Score=Bronze; 60 WRI Score=Silver; 50 WRI Score=Gold; 40 WRI Score=Emerald

Water Efficiency Mandatory Practices

- 3 mandatory practices
- For Gold and Emerald level homes, **toilets and urinals** must be highest performing
- If **irrigation system**, must be planned by qualified individual
- Where **pool** is installed, separate water meter required



Prescriptive Sections

Indoor Hot
Water Usage

Water-
conserving
Appliances

Showerheads

Lavatory
Faucets

Irrigation
Systems

Innovative
Practices

Water Rating Index (WRI) Overview



Tool for evaluating water use efficiency, both indoor and outdoor water use



Assesses a building's water use based on a single number between 0 and 100 (lower score is better)



Can be used for new single-family homes and multifamily buildings





Indoor Environmental Quality

Chapter 9

IAQ Practices

POLLUTANT SOURCE
CONTROL

POLLUTANT
CONTROL

MOISTURE
MANAGEMENT:
VAPOR, RAINWATER,
PLUMBING, HVAC

INDOOR AIR
QUALITY

INNOVATIVE
PRACTICES

Chapter 9 Mandatory Practices

Fireplaces
vented to
outside

Sealed attached
garages

CO alarms

No carpets in
bathrooms

Clothes dryer
vented to
outside

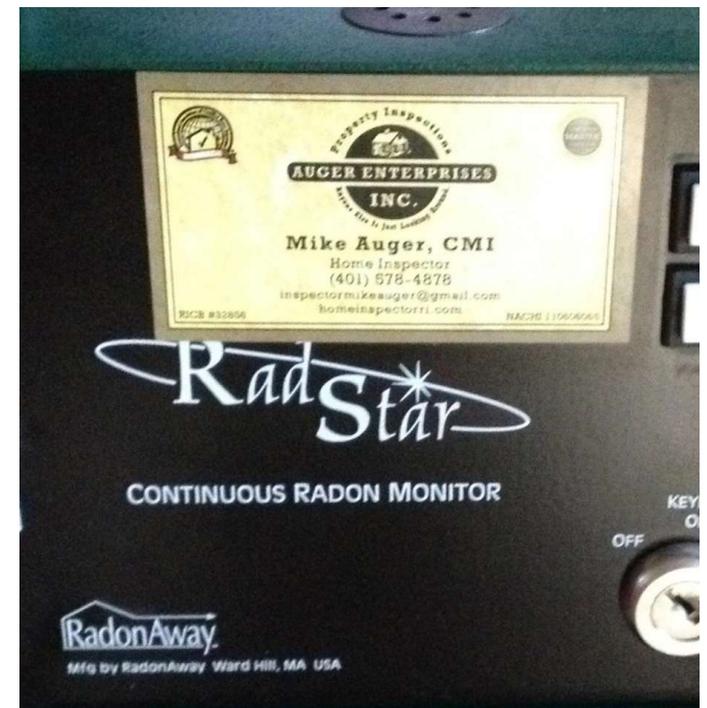
Spot ventilation

Passive radon
mitigation AND
testing in Zone 1

Microbial and
moisture
inspections

Mandatory Practices

- **Radon testing**
 - Required for Zone 1
 - Exempt if occupied space above unenclosed space
 - Detailed testing instructions; if above minimum, must install radon fan
 - Test results to be provided to owner in construction documents
- **Microbial growth and moisture inspection**
 - Verify no visible signs of discoloration and microbial growth on ceilings, walls or floors, or other building assemblies
 - If visible, must remediate
 - N/A if no wood building





Chapter 10

Operation, Maintenance

Ch 10: Operation, Maintenance, and Builder Owner Education

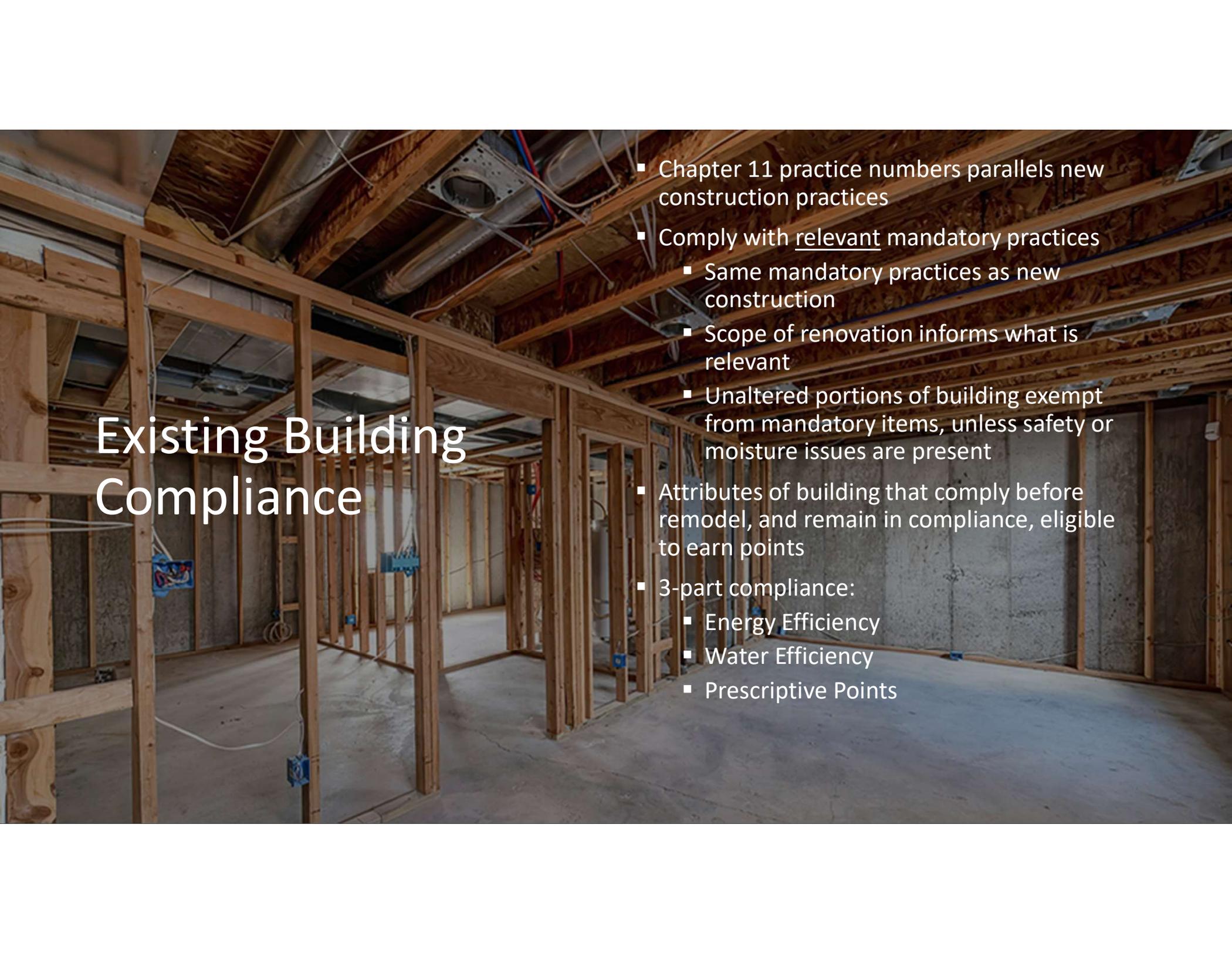
- **MANDATORY:**
 - Building Construction Manual
 - Operations Manual
 - Maintenance Manual
 - Occupant Manual
 - Building Owner and Resident Education
- Optional practices for Public Education, Ongoing Verification, and Appraisal



Existing Buildings

Chapter 11





Existing Building Compliance

- Chapter 11 practice numbers parallels new construction practices
- Comply with relevant mandatory practices
 - Same mandatory practices as new construction
 - Scope of renovation informs what is relevant
 - Unaltered portions of building exempt from mandatory items, unless safety or moisture issues are present
- Attributes of building that comply before remodel, and remain in compliance, eligible to earn points
- 3-part compliance:
 - Energy Efficiency
 - Water Efficiency
 - Prescriptive Points

Energy and Water Performance Path

- Certification level based on reduction of energy and water, determined by audit and analysis or utility data
- Calculated reduction is % difference between consumption before and after remodel

Required Water and Energy Use Reduction				
	BRONZE	SILVER	GOLD	EMERALD
Reduction in Energy	15%	25%	35%	45%
Reduction in Water	20%	30%	40%	50%

Water + Energy Prescriptive Path

- Certification level based on points earned
- Points earned by practices implemented or in-place

Points Required for Water and Energy				
	BRONZE	SILVER	GOLD	EMERALD
Energy	30	45	60	70
Water	25	39	67	92

Prescriptive Points

Resource Efficiency, Lot Design, IAQ, O&M

BRONZE

SILVER

GOLD

EMERALD

88

125

181

225



Home Innovation
NGBS GREEN CERTIFIED™



“Adopting Entity” for NGBS; certification agency to determine compliance

Home Innovation certifies buildings are NGBS compliant

- NGBS Green = certification of compliance
- Provides technical assistance and interpretations for projects seeking certification
- Reviews every inspection report submitted by Verifiers

Oversees stringent third-part verification process

- Develops verification criteria
- Qualifies, trains, tests, accredits Verifiers
- Manages QA/QC process for Verifiers

Third Party Verification & Certification

- Qualify, train, test, & accredit Verifiers to inspect projects
- Minimum two inspections
- Verifiers confirm NGBS conformance
- Home Innovation
 - Reviews every verification report
 - Audits % of reports
 - Verifiers graded on reports
 - Issues certification



NGBS Green Certification Process

Design Phase / Hire A Verifier

- Hire Verifier; review of construction plans and specs
- Score building, serves as Verifier inspection checklist

Certification Process Starts

- Verifier registers buildings, registration is free
- Set up AXIS Account, sign client agreement

Verification Inspections

- Verifier inspects pre-drywall and final, prepares reports
- For MF, every unit and common areas visually inspected

Earn NGBS Certification

- Pay Home Innovation certification fee
- Certificate issued within one week of final inspection

NGBS.com/FindNGBSVerifier

ACCREDITED NGBS GREEN VERIFIERS

Filters

Accreditation Type

Country

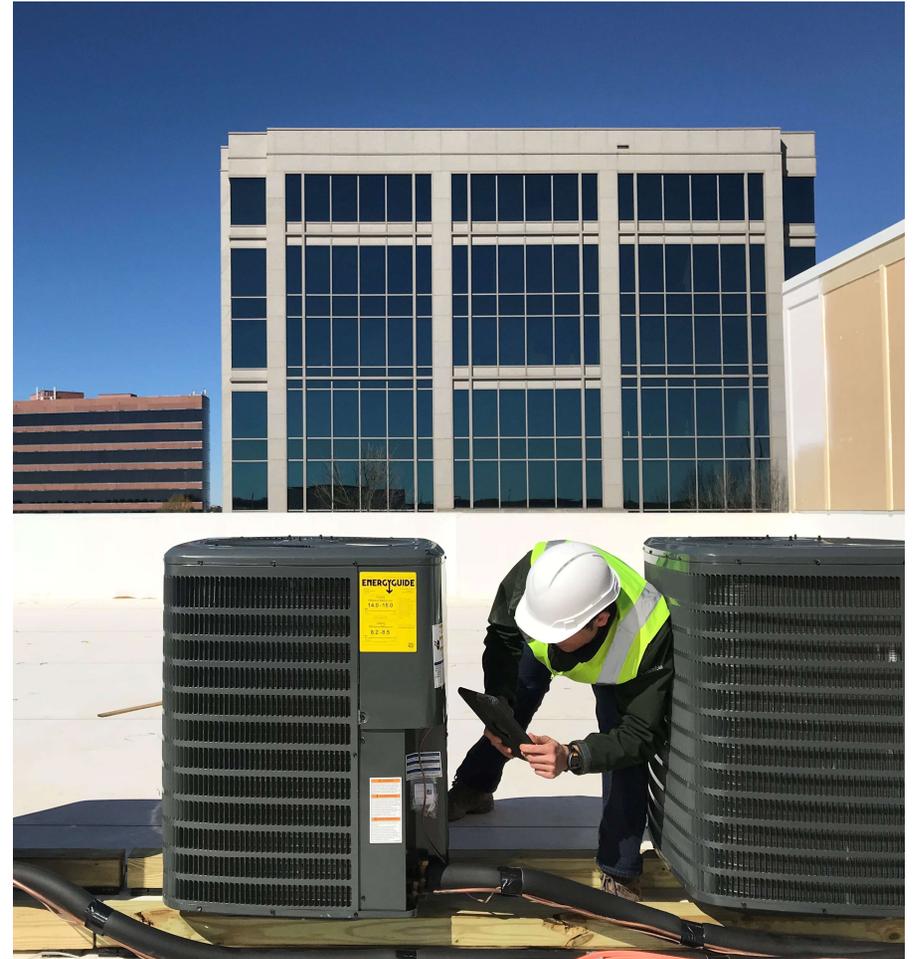
State

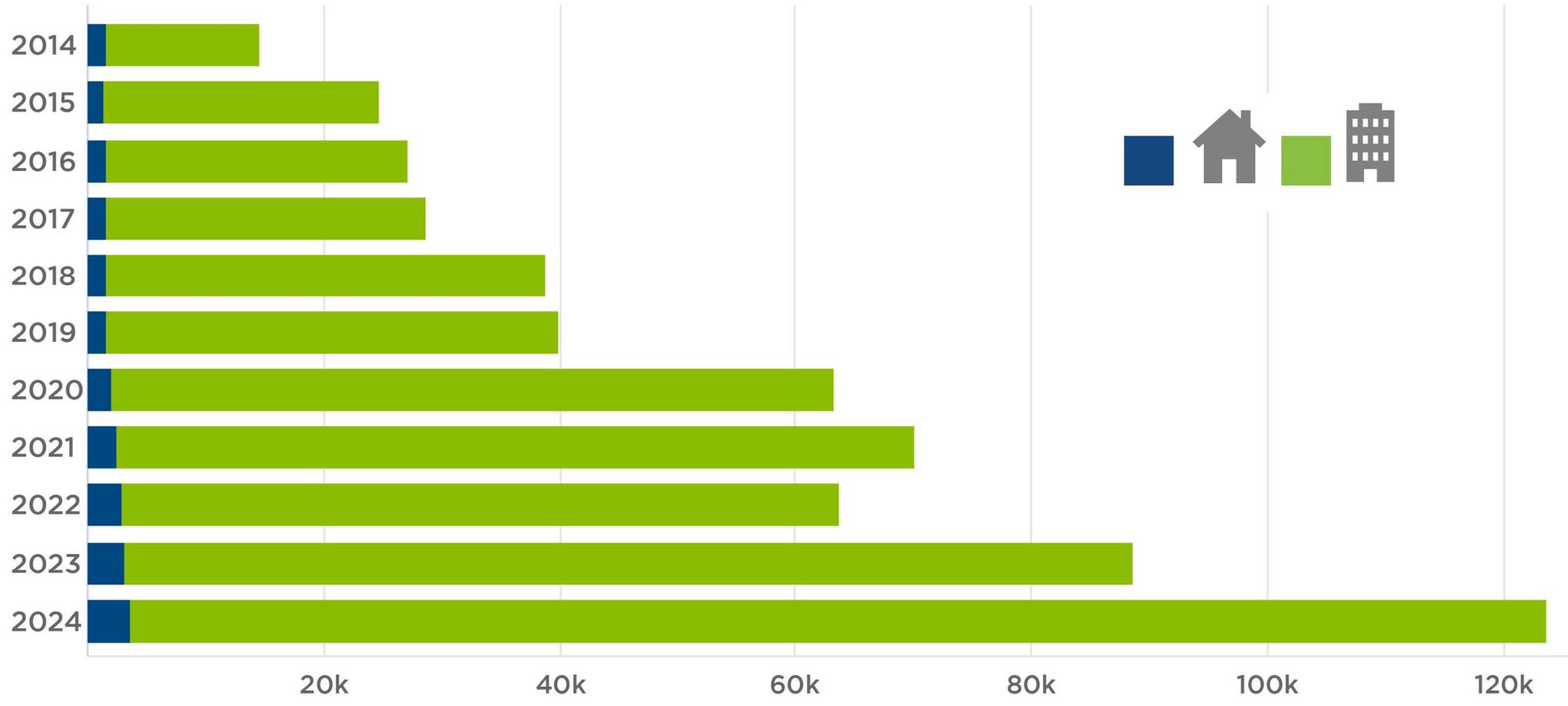
Search

<u>Verifier</u>	<u>Office Location</u>	2020 NGBS	Master Verifier	WRI Verifier	Green Field Rep	<u>Existing Building Experience (# of homes/apartments)</u>
Will Adcock Heartland Energy Consultants	North English, IA	✓				
Michael Boerst Heartland Energy Consultants	North English, IA	✓				247
Corey Depenning Redfox Inspections	Des Moines, IA	✓				
Austin Marcks Heartland Energy Consultants	North English, IA	✓				

Tips for Finding & Working with a Verifier

- Foster a Long-Term Relationship
- Your Perfect Match Doesn't Need to be Local
- Find the Right Expertise (esp. for Existing Buildings)
- More than an "Inspector"... Valuable Expert & Team-member
- Get Started Early
- Coordinate for Documentation Hand-Off
- Communicate about Construction Scheduling
- Ask about Construction and Maintenance Manuals





Over 700,000 Green Certified Homes

NGBS Project Type	Certified	In Process
Single-Family Homes (new & remodeled)	32,447	10,263
Multifamily & Mixed-Use Buildings (new)	15,384	5,569
Apartment count Multifamily & Mixed-Use Buildings (new)	619,667	316,804
Multifamily & Mixed-Use Buildings (remodeled)	3,576	2,631
Apartment count Multifamily & Mixed-Use Buildings (remodeled)	49,846	46,759
Commercial Space (sq ft)	380,590	1,303,885

Federal and State Incentives

- ***Parity with LEED and other national programs***
- 7 federal funding programs
 - HUD Green MIP
 - CDBG-DR
- Fannie and Freddie green financing
- Nearly 30 state low-income housing programs
- 50+ Local Building Codes
- 4 jurisdictions recognize as 2021 IECC Alternative





Low-Income Housing Tax Credit (LIHTC) Incentives for Affordable Housing

- Nearly 30 states recognize NGBS Green
- States either mandate or incentivize green certification to get higher performing, healthier residences
- Often recognized alongside other certifications, including LEED, Enterprise Green Communities, Passive House. NGBS Green is often selected due to its flexibility and affordability.

Certification Activity in Iowa

	Certified	In-Process
Multifamily	79 buildings, 1,248 apartments	11 buildings, 613 apartments
Single-Family	95	4

Case Study: Union at North Crossing

Affordable community in Waterloo, IA

- 5 residential buildings (3 stories, 36 units)
- Clubhouse

2020 NGBS Green Certification at Silver Level

Green Features

- Walkable community near resources
- Soil protection and stormwater management
- Native vegetation
- Off-street parking
- Resource-efficient materials
- Energy Performance Path – 6% above 2018 IECC
- Efficient common area and exterior lighting
- ENERGY STAR dishwasher
- Efficient faucets and fixtures
- Continuous exhaust and supply ventilation



Case Study: Hawthorne Points

Affordable Housing Community in Bondurant, IA

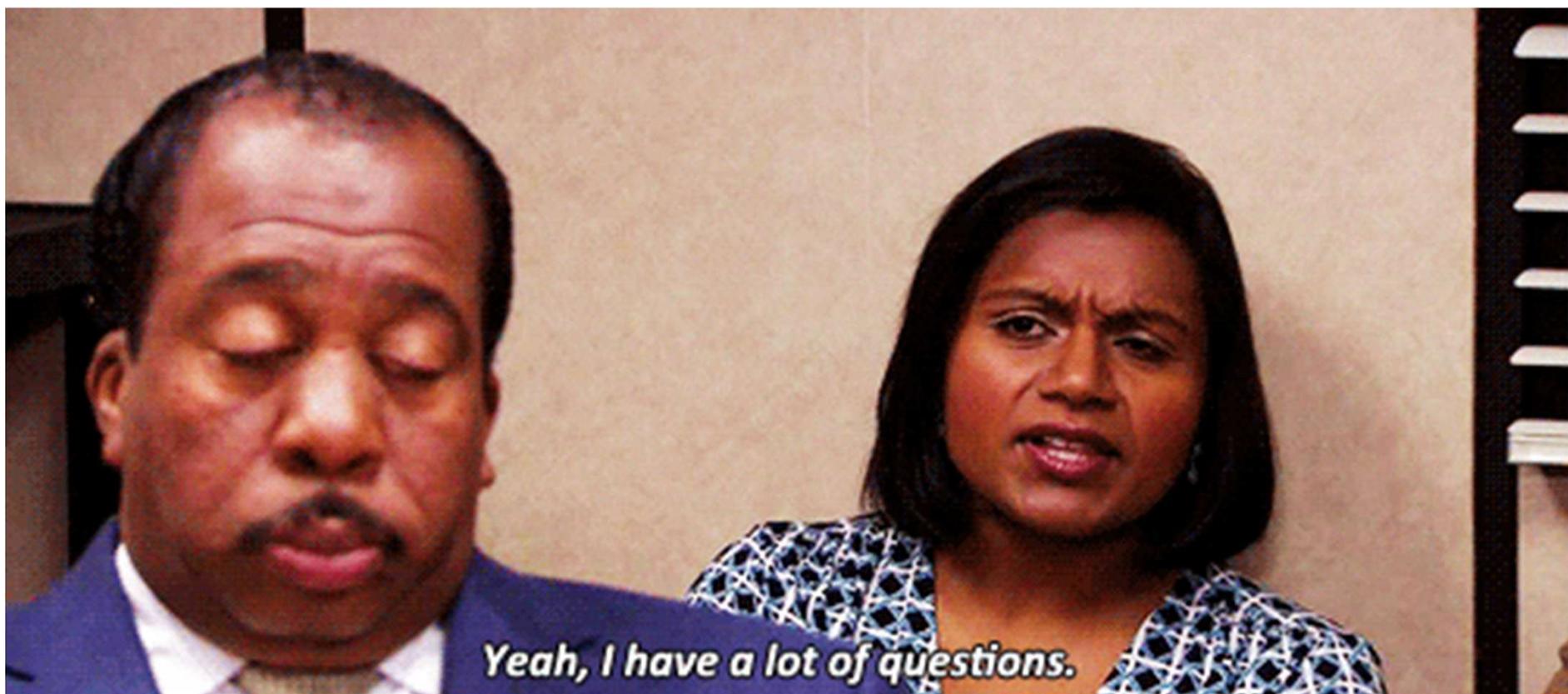
- 1 residential building (2-story, 16 units)
- Clubhouse

2020 NGBS Green Certification at Silver Level

Green Features

- Walkable community
- Soil protection and stormwater management
- Native vegetation
- No-smoking community
- Prefabricated components
- Prefinished materials
- Universal design features
- Energy Performance Path – 11% above 2018 IECC
- ENERGY STAR dishwashers
- Efficient faucets and fixtures
- ENERGY STAR exhaust fans
- Exhaust and supply fans for continuous operation





Become NGBS Green Verifier

- Support builders and developers in achieving green certification for their residential buildings
- Prerequisites:
 - Meet one of the following:
 - Minimum 1 year working as a Field Rep
 - Successful completion of approved in-house mentoring and training
 - 1-year experience in construction (jobsite or management), as licensed or qualified home inspector, in residential design or architectural work; green verification services for another program; or construction consulting, training, or inspection
 - Complete on-demand training course





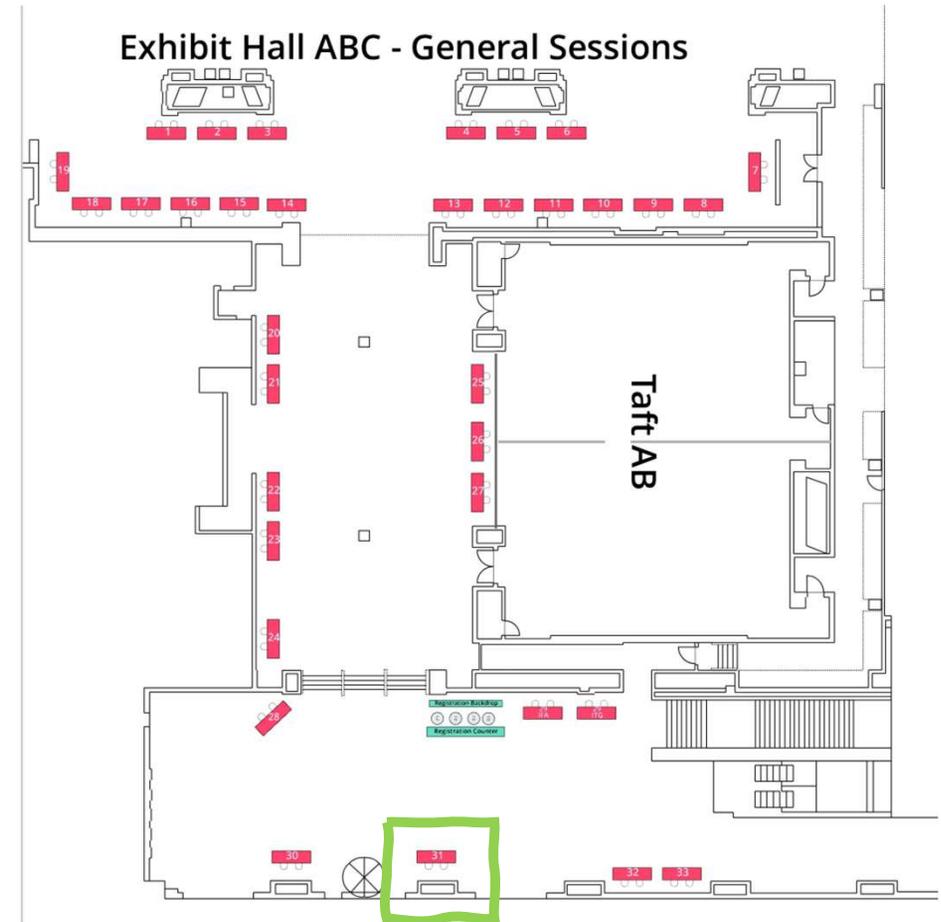
NGBS Green PRO

- Designation indicates advanced knowledge of NGBS and NGBS Green Certification
- Not pathway to become a Verifier

Ask me for a 20% discount code!

Let's Meet in the Exhibit Hall

- Joined by local Verifiers from **Heartland Energy Consultants**
- Will address your technical and process questions



Join Me
Tomorrow

Efficiency That Pays: Energy Programs for Multifamily Developers & Owners

September 4, 2025 10:45 AM-12:00 PM CT

310 - 3rd Floor

Check In Code: [Event29](#)

Looking to boost efficiency and property value? This session will cover new and existing programs designed to help multifamily properties save energy and reduce costs. Learn about the Iowa Economic Development Authority's (IEDA) new Multifamily Energy Audit Program and Energy Saving Loan Pilot Program, offering up to 100% audit funding and loans with rates as low as 0% for energy-saving upgrades. Willdan will share how its Commercial New Construction Program helps multifamily projects fast-track savings, qualify for incentives and increase net operating income as well as real-world success stories. Home Innovation Research Labs will also provide an overview of the National Green Building Standard (NGBS) certification process and tools to help your project meet high-performance goals.



Abbie Christophersen
Energy Project Manager
Iowa Economic Developme...



Molly Kiick
Energy Program Manager
Iowa Economic Developme...



Mr. Vinoth Sekar
Senior Building Performanc...
Willdan



Cindy Wasser
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Leadership

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