Request for Expressions of Interest
Tompkins County Old Library Property

SWBR ARCHITECTS

Cayuga Housing Development Corporation

Ithaca Senior Apartments
Conceptual Rendering

Ithaca Housing Authority

Rochester's Cornerstone Group Ltd.

Rochester's Cornerstone Group Ltd.

Integrity is the Cornerstone.

March 12, 2014

Ms. Lisa Hall, Buyer
Tompkins County Purchasing
125 E. Court Street
Ithaca, NY 14850

RE: Request for Expressions of Interest Tompkins County Old Library Property

Dear County Planning Advisory Board:

Rochester's Cornerstone Group, Ltd. ("RCG") and Cayuga Housing Development Corporation ("CHDC") are pleased to respond to the Tompkins County Request for Expressions of Interest to re-develop the Tompkins County Old Library Property. The enclosed response to your Request for Expressions of Interest will demonstrate that we have the qualifications and a viable development plan for selection by Tompkins County to provide a formal Request for Proposal.

We propose to acquire the site, demolish the existing structure and develop 70-80 senior affordable housing units. Our concept building elevations depicts a harmonious synergy with the Dewitt Historic District architecture including the First Presbyterian Church located across the street. Our senior residents will benefit from the proximity to the adjacent Lifelong Senior Center, Dewitt Park, retail, and cultural sites in the neighborhood and City Center.

CHDC and RCG will own and operate the property upon completion through their respective affiliated property management firms, the Ithaca Housing Authority ("IHA") and Cornerstone Property Managers, LLC. Having an experienced local co-developer (CHDC) and manager (IHA) will ensure the property's long term success and will be a valuable addition to filling the housing needs of the City of Ithaca.

During the past ten years, RCG has developed over $170 million of affordable rental housing, including new construction and rehabilitation projects. We have developed 1,123 units ranging from single family, townhouse, and garden style to elevator senior buildings. We have forged and maintained relationships with short and long term lenders and equity investors, developing an expertise in 9% federal and state low income tax credit and 4% tax exempt bond financing.

366 White Spruce Boulevard | Rochester, NY 14623 | *office* (585) 424-1400 | *fax* (585) 424-5379 | *email* info@rcgltd.net | *web* www.rcgltd.net

Should you have any questions, please contact Carol Oster, Rochester's Cornerstone Group at (585) 424-1400 or Brenda Westfall, Cayuga Housing Development/Ithaca Housing Authority at (607) 273-8629. Thank you for your consideration.

Sincerely,

Carol U. Oster
Vice President of Development
Rochester's Cornerstone Group

Brenda C. Westfall
Executive Director, Ithaca Housing Authority
President, Cayuga Housing Development Corp.

Cayuga Housing Development Corporation ("CHDC") and Rochester's Cornerstone Group, Ltd ("RCG") propose to acquire and redevelop the Tompkins County Old Library Property. Our detailed response to the Tompkins County Request for Expressions of Interest will demonstrate we have the qualifications and a viable development plan for selection by Tompkins County to provide a formal Request for Proposal to be issued.

RCG will be the lead developer and proposes CHDC, an Ithaca based 501 (c) (3) not for profit housing development company formed in 2001, to be its co-developer. Ms. Brenda Westfall, Executive Director for the Ithaca Housing Authority ("IHA") for over 25 years, also serves as the President for CHDC. IHA and CHDC are affiliated entities. RCG has developed 1,123 rental housing units in New York State. Carol Oster will be the lead developer for our proposed project. She previously developed three projects in the Town of Ithaca (Ellis Hollow Apartments, Cayuga View Apartments and Conifer Village at Ithaca).

SWBR Architects was retained to provide a conceptual site plan and building plan. We propose to construct 70-80 senior mixed income rental apartment units on the .88 acre parcel located at 310-314 N. Cayuga Street, City of Ithaca. To achieve the highest density and best use of the property we would demolish the existing structure and construct a new four story building with a maximum building height of 54 feet. Rehabbing the existing structure would result in a nominal 30 rental units with excessive common space in the central building core and is not deemed economically feasible.

The building will contain a mix of one bedroom and two bedroom floor plans designed for independent living with unit and building features that allow for seniors to age in place. All spaces will be visitable (handicapped accessible). The typical one bedroom size is 674 square feet and 798 for the two bedroom unit. Resident community space includes a community room, conference room, laundry rooms, tenant storage, exercise room, and craft room. Additional common space includes an elevator, on-site management offices, maintenance shop and mechanical rooms. The building will be constructed in conformance with NYSERDA Multifamily Performance Program, version 3.1 and will participate in the LEED for Homes program. The entire building will have energy star rated systems including central air conditioning, heating with sealed combustion chambers, lighting, fans and appliances.

The site will be improved by a courtyard with green space, 10 surface parking spaces and 36 covered parking spaces (ground floor). There will be community balconies with views from the rear and front of the building. The building's exterior has traditional features including stone accents and peaked roofs. These features will complement the architecture of the First Presbyterian Church's located directly across the street and other structures within the Dewitt Historic District. Our senior residents will benefit from the proximity to the adjacent Lifelong Senior Center site, Dewitt Park, retail, and cultural sites in the neighborhood and City Center.

This mixed-income Project will target senior households at 60-90% of Area Median Income. The County commissioned 2011 Ithaca/Tompkins County Apartment Analysis states from 2010-2015 senior households will increase from 6,808 to 8,010 households. This is a 17.7% increase with even greater increases in the future without any new senior housing constructed in the downtown market. IHA, an experienced well respected local housing provider since 1971, will provide property management services. They own and manage Titus Tower I/II representing 235 senior housing units in downtown Ithaca.

We propose to purchase the .88 acre parcel located at 310-314 N. Cayuga Street, City of Ithaca. To achieve the highest density and best use of the property we would demolish the existing structure and construct a new four story building with a maximum building height of 54 feet containing 70-80 senior mixed income rental apartment units. Rehabbing the existing structure would result in a nominal 30 rental units with excessive common space in the central building core and is not deemed economically feasible and therefore not pursued as a viable development plan.

SWBR Architects was retained to provide a conceptual site plan and building plan. The concept drawings are attached.

The newly constructed building will contain a mix of one bedroom and two bedroom floor plans designed for independent living with unit and building features that allow for seniors to age in place. All spaces will be visitable (handicapped accessible). The typical one bedroom size is 674 square feet and 798 for the two bedroom unit. Resident community space includes a community room, conference room, laundry rooms, tenant storage, exercise room, and craft room. Additional common space includes an elevator, on-site management offices, maintenance shop and mechanical rooms. The building will be constructed in conformance with NYSERDA Low-rise Residential New Construction Program, version 3.1 and will participate in the LEED for Homes program. The entire building will have energy star rated systems including central air conditioning, heating with sealed combustion chambers, lighting, fans and appliances.

The site will be improved by a courtyard with green space, 10 surface parking spaces and 36 covered parking spaces (ground floor). There will be community balconies with views from the rear and front of the building. The building's exterior has traditional features including stone accents and peaked roofs. These features will complement the architecture of the First Presbyterian Church's located directly across the street and other structures within the Dewitt Historic District. Our senior residents will benefit from the proximity to the adjacent Lifelong Senior Center site, Dewitt Park, retail, and cultural sites in the neighborhood and City Center.

The proposed project timeline is as follows with full occupancy projected as early as December 2016:

Milestone	**Date**
County authorizes RCG/CDHC to respond to RFP	June 2014
County releases RFP	July 2014
RFP due	September 2014
County Selection of Developer	November 2014
Apply for financing, grants, tax credits as funding RFP become available	November 2014
Develop demolition plan including hazards material abatement and related cost	November/December 2014
Sale terms agreed upon	January 2015
County adopts sale terms	February 2015
Complete financing 3rd party lender reports; appraisal, market study; Phase I-III; architectural/civil construction documents	March-May 2015

Construction and permanent financing commitments	June 2015
Close on property and financing	July 2015
Demolition	July – October 2015
Construction completion	October 2016
Full occupancy	December 2016

Sale terms will include closing subject to the developer obtaining sufficient financing commitments to construct the project. The developer commits to initiating 3rd party due diligence reports upon being selected the developer and prior to February 2015, the date specified by Tompkins County adopting the sale terms. These 3rd party reports including appraisal, market study; Phase I-III; architectural/civil construction documents necessary to obtaining/satisfying financing commitments and loan closing.

The developers intend to finance the project with 4% tax exempt bonds including low income tax credits and subsidy. The New York State Housing Finance Agency has an open window for accepting applications. The demolition and hazard material abatement expense adds an estimated $1,500,000 to the project cost. This significant expense is not an eligible tax credit cost. The developer will apply for any City and County funding available to the project.

SWBR ARCHITECTS

CAYUGA HOUSING
DEVELOPMENT CORPORATION

ITHACA SENIOR APARTMENTS
CONCEPTUAL RENDERING

ITHACA HOUSING AUTHORITY

Rochester's
Cornerstone
Group
Ltd.

PROJECT SUMMARY:

TOTAL UNITS:

61 - ONE BEDROOM UNITS (674 SF PER UNIT)
9 - TWO BEDROOM UNITS (798 SF PER UNIT)

70 APARTMENTS UNITS TOTAL

45 PARKING SPACES (10 SURFACE PARKING SPACES & 35 COVERED PARKING SPACES)

APARTMENT BUILDING

TOTAL GROSS BUILDING
55,090 SF not including garage which is 17,120 s.f.

54' BUILDING HEIGHT TO TOP OF PEAK

NFPA 13 SPRINKLER SYSTEM THROUGHOUT

NO DRAFTSTOPPING OR FIRE WALLS REQ'D

FACILITY SQUARE FOOTAGE BREAKDOWN:

CIRCULATION SPACE (CORRIDORS, STAIRS)

1ST FLOOR -	446 SF
2ND FLOOR -	2,196 SF
3RD FLOOR -	2,196 SF
4TH FLOOR -	2,196 SF
TOTAL -	7,034 SF

COMMON SPACE (LOUNGE, PARLOR, COMM. ROOM)

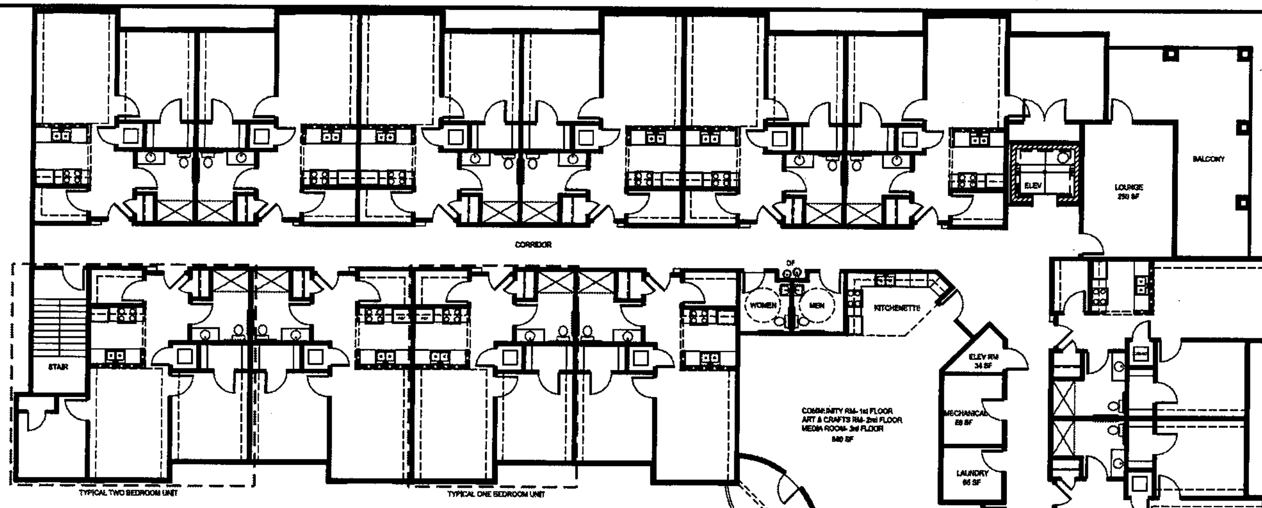
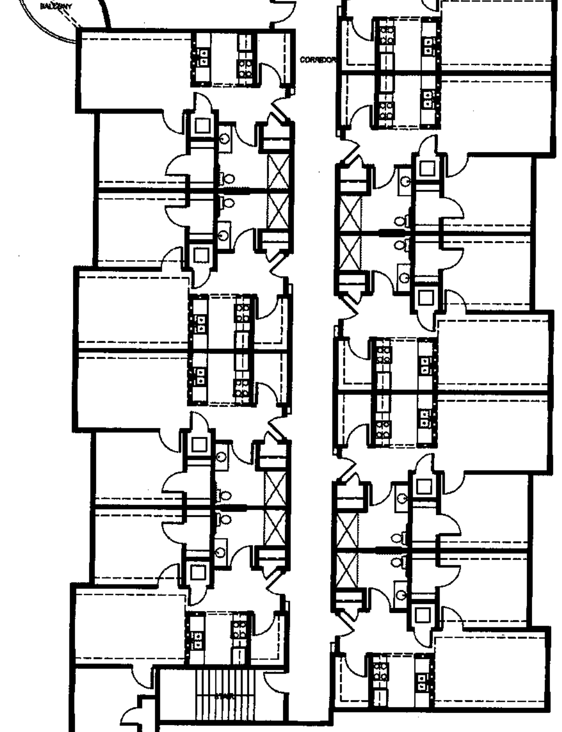
1ST FLOOR -	147 SF
2ND FLOOR -	1,130 SF
3RD FLOOR -	1,130 SF
4TH FLOOR -	1,130 SF
TOTAL -	3,537 SF

OFFICE SPACE

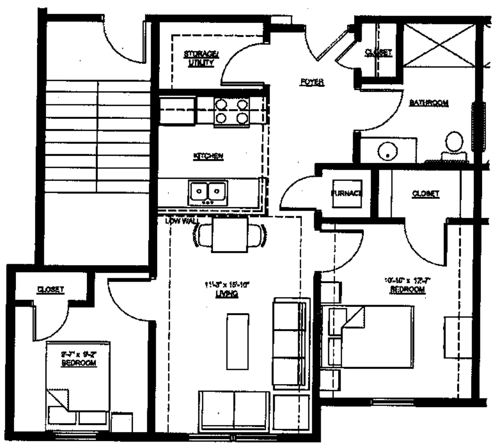
1ST FLOOR -	144 SF
2ND FLOOR -	N/A
3RD FLOOR -	N/A
4TH FLOOR -	N/A
TOTAL -	144 SF

SUPPORT SPACE (MECH., TLT RM. JANITOR, LAUNDRY)

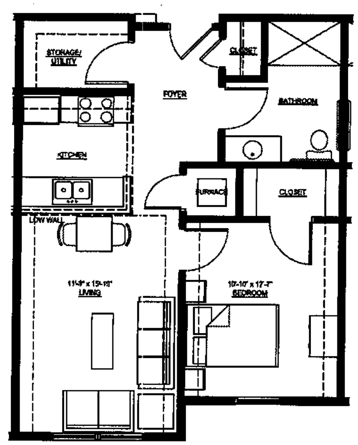
1ST FLOOR -	416 SF
2ND FLOOR -	305 SF
3RD FLOOR -	305 SF
4TH FLOOR -	305 SF
TOTAL -	1,331 SF

1 SECOND, THIRD & FOURTH FLOOR PLAN
1/8"=1'-0"



3 TYPICAL TWO BEDROOM UNIT (UNIT SIZE - 798 SF)
1/4"=1'-0"



2 TYPICAL ONE BEDROOM UNIT (UNIT SIZE - 674 SF)
1/4"=1'-0"

SWBR ARCHITECTS
PERFECT BALANCE
387 East Main Street
Rochester, NY 14604-2107
Voice: 585.232.8300
Fax: 585.232.0221
www.swbr.com

ROCHESTER, NEW YORK

ISSUE
mark	date	by	description

PROJECT:
ITHACA SENIOR APARTMENTS

CLIENT:
ROCHESTER'S CORNERSTONE GROUP, LTD

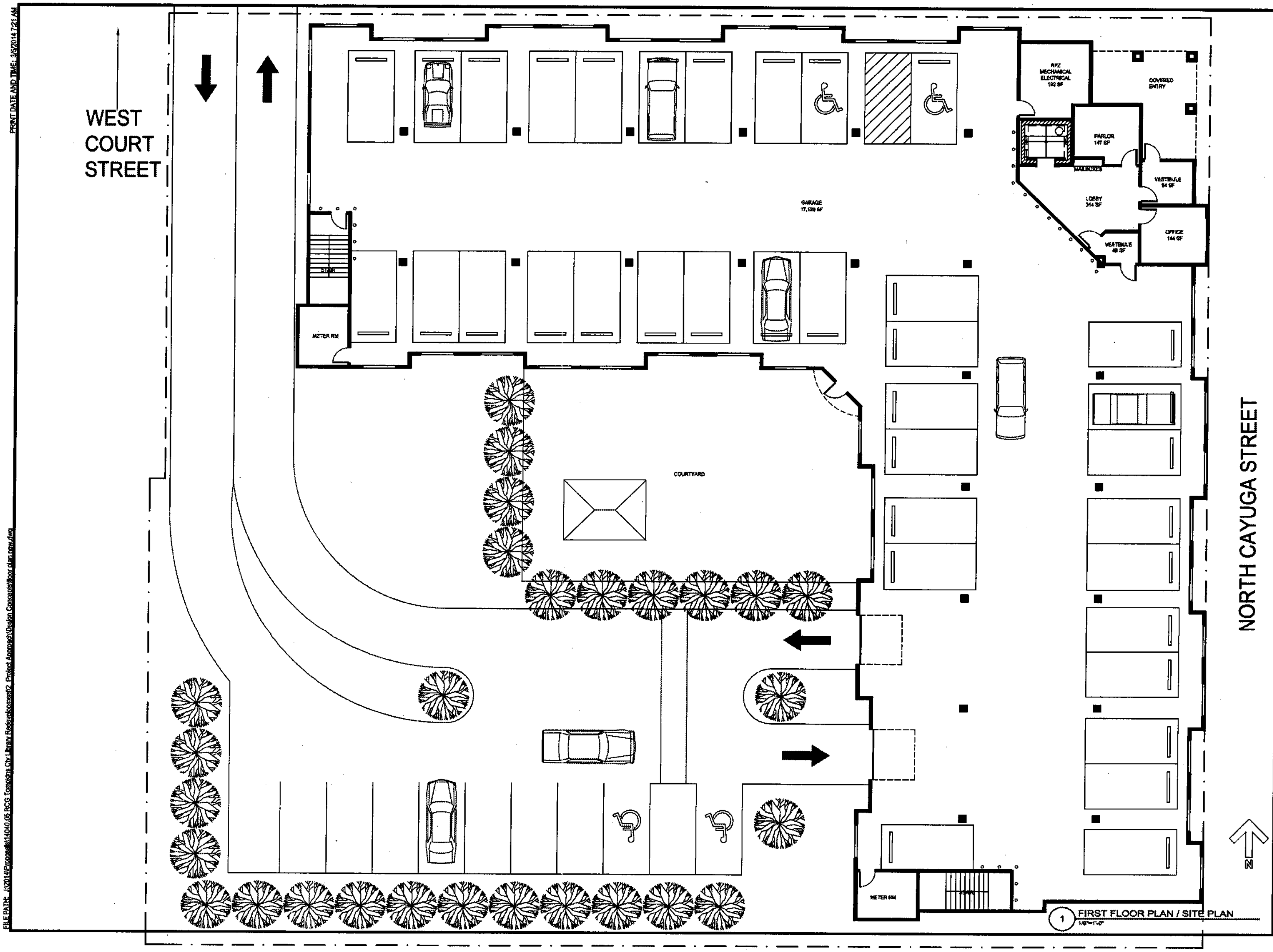
DRAWING TITLE
SECOND, THIRD AND FOURTH FLOOR PLANS

DRAWING NO.
A-102

drawn by TMZ
checked JG
proj. mgr. TMZ
proj. no. 14105.00

STATUS:
PROGRESS PRINT NOT FOR CONSTRUCTION
ISSUE DATE:
3-4-2014

PRINT DATE AND TIME: 3/6/2014 10:30 AM



SWBR
SWBR ARCHITECTS
PERFECT BALANCE
East Main Street
Rochester, NY 14604-2107
www.swbr.com
ROCHESTER, NEW YORK

ISSUE

mark	date	by	description

PROJECT:
ITHACA SENIOR APARTMENTS

CLIENT:
ROCHESTER'S CORNERSTONE GROUP, LTD.

DRAWING TITLE
FIRST FLOOR PLAN / SITE PLAN

DRAWING NO.
A-101

drawn by TMZ
checked JG
proj. mgr. TMZ
proj. no. 14195.00

STATUS:
PROGRESS PRINT NOT FOR CONSTRUCTION
ISSUE DATE:
3-4-2014

Cayuga Housing Development Corporation ("CHDC") and Rochester's Cornerstone Group, Ltd ("RCG") Rochester's Cornerstone Group, Ltd. ("RCG") are the proposed project co-developers, owners and operators. Ithaca Housing Authority ("IHA") and Cornerstone Property Managers, LLC will provide property management services. IHA and CHDC are affiliated entities.

Our corporate brochures and detailed resumes are attached along with the financial statements for Rochester's Cornerstone Group, Ltd. RCG has the financial stability/capacity to complete the project and can provide the financial guarantees necessary to obtain financing commitments.

RCG will be the lead developer and proposes CHDC, an Ithaca based 501 (c) (3) not for profit housing development company formed in 2001, to be its co-developer. Ms. Brenda Westfall, Executive Director for the Ithaca Housing Authority ("IHA") for over 25 years, also serves as the President for CHDC for the past eleven years. CHDC is the 501(c) (3) affiliate company of the IHA that is dedicated to supporting IHA's commitment to helping low-income families and individuals achieve self-sufficiency and improve their quality of life by providing quality housing opportunities and services. Ms. Westfall will be responsible as the project co-developer.

During the past ten years, RCG has developed over $170 million of affordable rental housing, including new construction and rehabilitation projects. Over 1,100 units have been developed ranging from single family, townhouse, and garden style to elevator senior buildings. We have forged and maintained relationships with short and long term lenders and equity investors, developing an expertise in 9% federal and state low income tax credit and 4% tax exempt bond financing. Carol Oster will be the lead developer for the proposed project with responsibility for the performance of all other development team members including design, construction and property management activities. She will also have oversight for the completion of development budget sources and uses, securing financing and equity commitments, local approvals, permits, real estate and loan closings, construction monitoring and transitioning the project to property management.

IHA, an experienced well respected local housing provider since 1971, will provide property management services to the project. Cornerstone Property Managers will assist IHA with tax credit, state agency and investor property management functions. IHA owns and manage 341 senior and family housing units in downtown Ithaca. They also administer 992 housing choice vouchers for households living in the Ithaca/Tompkins County area, 3 scattered site properties, a successful Section 8 HCV Homeownership Program and Family Self-Sufficiency Program and as such are an informed and valuable resource to ensure the proposed project is well managed. IHA's housing programs are rated each year by the U.S. Dept. of Housing and Urban Development (HUD), and they have successfully maintained a High Performer rating, which is the highest rating available from HUD. In addition, as a result of the IHA's proven track record to successfully manage its housing programs, over the past several years it has been awarded over 400 enhanced vouchers by HUD to manage housing vouchers for participants living in local housing developments, including tax credit properties, bringing its Section 8 voucher count to 992.

RCG Executive Staff Resumes

Roger W. Brandt, Jr., President and owner of Rochester's Cornerstone Group, Ltd., had a successful career at Chase Lincoln First Bank where he managed the commercial real estate finance department. In 1990, he and others founded Rochester's Cornerstone Group, Ltd. Brandt was involved in many HUD transactions from a financing side through his involvement at the bank with development companies including Conifer Realty. It was there that he leveraged his knowledge of real estate financing into a business, which has successfully completed affordable housing developments throughout western New York by procuring various forms of financing, rent subsidies and property management.

Carol U. Oster, Vice President of Development Services at RCG, has extensive experience in the field of housing, especially affordable housing. She has held positions in property management, development and underwriting. Prior to joining RCG, she co-founded Edgemere Development, Inc., a Rochester based affordable housing development firm and was employed by Conifer Realty and Baldwin Real Estate, whose portfolios include affordable and market rate multifamily properties. She previously developed three projects in the Town of Ithaca (Ellis Hollow Apartments, Cayuga View Apartments and Conifer Village at Ithaca). Carol has a Certified Property Manager designation through the Institute of Real Estate Management and has a passion for the multifamily business. She is proactive and has a team-focused approach to problem solving, which has served her very well for many years.

Robin Rubado, is Project Manager and Director of Asset Management at RCG. She has over twenty years of experience in affordable housing. She worked for Conifer Realty as Compliance Manager and Vice President of Property Management at Landsman Real Estate Development, with a focus on asset management and leasing. Robin is tax credit certified and a Certified Property Manager through the Institute of Real Estate Management.

Rochester Cornerstone Group's development references are as follows; reference letters are attached.

1. Housing project completed by Carol Oster in the Town of Ithaca; Ms. Susan Ritter has offered to take phone calls from Tompkins County and provide Ms. Oster a favorable reference.

   Ms. Susan Ritter
   Director of Planning
   Town of Ithaca
   215 N, Tioga Street
   Ithaca, NY 14850
   (585) 273-1736

2. Rochester's Cornerstone Group, Ltd. received Project of the Year (Upstate) NYSAFAH 2012 AWARDS FOR EXCELLENCE for the redevelopment of Fairport Apartments.

The renovated project has twelve (12) funding sources being utilized in a unique myriad of loans, grants and equity. The project has utilized reserve funds which had been accumulated over 30+ years, tax credit equity from Raymond James, Housing Trust Fund money, Empire Loan Funds, a mortgage based upon the remaining Interest Reduction Payments for the project, as well as a grant to help pay for solar panels. The community center will be able to generate 6kW of electricity which will lower the project's utility costs a moderate amount going forward.

Rev. Garth E. Brokaw, President of Fairport Baptist Homes
75 Elmdorf Ave
Rochester, NY 14619
585-748-1966

3. Equity participant and partner for several low income tax credit projects:

Darryl Seavey, Managing Director Northeast Region
Raymond James Tax Credit Funds, Inc.
535 Madison Avenue
9th Floor
New York, NY 10022
(212) 883-6550

4. Construction and permanent financing:

John Berry, Vice President
First Niagara
777 Canal View Blvd., Suite 100
Rochester, New York 14623
(585) 770-1627

CHDC and IHA Executive Staff Resume

Brenda C. Westfall, IHA's Executive Director, is responsible for planning, development, management and oversight of the IHA while managing a staff of 22. Mr. Westfall brings 25 years' of public service experience. During her career she has held positions of increasing responsibility which includes managing individual departments to entire housing programs, managing multiple grants, risk management oversight, etc. Her experience details a dynamic leader with a proven track record in organizational change, program integrity, operational effectiveness and amalgamating federal, state and local resources. Under her leadership, the IHA has been designated a High Performer by the U.S. Department of Housing and Urban Development for its Public Housing and Section 8 Programs. This is the highest ranking that may be assigned by the federal government. Ms. Westfall has an impressive ability to utilize and manage multiple programs. The IHA has built coalitions of public and private resources to educate, support and finance low-income families in their quest for independence and homeownership. This program has a successful track record and the respect of the community. In

2009, the IHA received a respected Energy Star award for its excellence in affording housing. In addition, the IHA received the National Association of Housing and Redevelopment Officials (NAHRO) Award of Excellence for its innovative Nurse Case Manager program wherein frail elderly are provided certified nursing services in an effort to help them remain living independently with dignity.

Jeffrey M. Tilton, Head Building Maintenance Mechanic has over three decades of experience working at IHA. He will be responsible for overseeing the maintenance program at the proposed project. He currently supervises seven employees and is responsible for preventative maintenance, regular inspections, safety and training programs for staff, supervising capital improvement projects and subcontractors, supply procurement and emergency preparedness procedures. Under his leadership and supervision, IHA received High Performer status by the U.S. Department of Housing and Urban Development representing their highest ranking.

Victoria McDonald, Tenant Relations Coordinator has seven years of experience working at IHA. She will be responsible for working with the project site managers in developing tenant selection and income certifications for funding program eligibility. Under her department leadership at IHA, she administers housing choice vouchers to approximately 1,000 families living in Tompkins County.

Where integrity is the cornerstone

Rochester's Cornerstone Group, Ltd.

366 White Spruce Boulevard
Rochester, NY 14623
585.424.1400 Phone
585.424.5379 Fax

www.rcgltd.net

DEVELOPER BACKGROUND

Formed in 1990 by Roger Brandt, Rochester's Cornerstone Group has become a true leader in affordable housing development in Western New York. Since being formed, Cornerstone has created or preserved over 1,200 units of affordable housing in upstate New York. These projects serve a wide range of people, including families, the elderly, individuals with mobility impairments or people with developmental disabilities. Cornerstone has also brokered dozens of commercial properties in Western New York, ranging from professional office space to vacant land to industrial parks, as well as developed multiple commercial properties, from new construction to historic renovation.

Current Projects Under Construction

Construction is now complete on a 40-unit independent senior living facility adjacent to an existing 51-unit enriched-living community in Henrietta. Closing of the permanent financing will take place by the end of 2013. The independent apartments will share common amenities and a wide array of recreation activities with the existing facilities.

Recently Closed Transactions

In 2010-2011, Cornerstone was able to construct and complete a 32-unit family project in Hornellsville, New York, a 42-unit family project in North Chili, NY and constructed a 25-unit scattered-site project in Northeast Rochester. In 2012, Cornerstone completed new construction of a 45-unit senior facility in Webster and renovated a 104-unit senior apartment complex in Fairport.

A second phase to a successful urban project was recently completed. The project consists of 25 single family homes in the City of Rochester.

Projects in Pre-Development/Funding Stages

Cornerstone is currently in various stages of planning urban and suburban new construction projects as well as several renovation projects which will provide rehabilitation to older residential communities.

Cornerstone is utilizing the programs which are currently being offered by HUD and the state to the ultimate benefit of the residents.

Also, market rate and student housing are currently in the planning stages.

Management Firm

Cornerstone has formally begun a management company, Cornerstone Property Managers, LLC. With the addition of Robin Rubado, CPM, an experienced veteran in the field of property management, Cornerstone is now managing market rate and affordable residential projects as well as commercial ventures.

Record of Success

Cornerstone has received accolades for persistence in difficult economic climates, willingness to construct in challenging neighborhoods, and creativity in completing difficult transactions. Fairport Apart-

ments was named 2012 Project of the Year (Upstate) by New York State Association for Affordable Housing. Cornerstone's Olean-Kennedy Revitalization Project redeveloped 144 mixed-income apartments in the City of Rochester, and earned the company recognition including "Best Family Project in the Nation" in *Affordable Housing Finance* magazine's Readers Choice Awards for the Nation's Best Affordable Housing Developments. The first phase of this development (Plymouth Manor) was presented with New York State Association for Affordable Housing's Project of the Year Award for Excellence. The Affordable Housing Tax Credit Coalition gave both phases of the project an Honorable Mention as an urban housing project at the 13th Annual Charles L. Edson Tax Credit Excellence Awards Ceremony. This national awards program celebrates the best in affordable rental housing development.

Planned Unit Development

Currently, the company is involved in the development of Union Square, a 140-acre parcel, zoned as a planned residential development district, in Chili. Planned and existing in the community is a combination of single family homes, townhouses, apartments, and senior care facilities for independent-living seniors as well as a skilled nursing facility. Approvals for 768 housing units plus up to 30,000 square feet of commercial space are in place. Cornerstone has developed Union Meadows, a 48-unit family project (townhomes), Union Meadows II, a 42-unit family project, and Union Park, a 50-unit senior project at the Union Square site. This housing community was the recipient of the Town of Chili Beautification Award.

Industrial/Business Parks

Other current developments include the 235-acre Rochester International Commerce Center and the adjacent 180-acre Jetview Business Park, which together offer light industrial zoned land for warehouse, distribution and light assembly uses.

Wetland Mitigation Banking

Also in Chili, Cornerstone constructed the first Wetland Mitigation Bank in New York State. The bank offers a unique opportunity for developers to have an option for meeting their state and federal wetland requirements when development plans unavoidably impact wetlands.

Office Park Development

Cornerstone Centre is an award-winning 12-acre, 87,600 square foot professional office park at Buffalo Road and the Route 490 Expressway in Gates. To complement the leasing option, a Property Owners' Association was formed to offer units for sale to investors and businesses.

Affordable Housing Renovation/Bond Financing

Cornerstone was engaged by Rochester Management, Inc. to serve as developer for the rehabilitation of 516 apartment units in three rental communities in the City of Rochester. The scope of work involved major renovations as well as refinancing. This $61 million preservation project utilized a complex myriad of financing including tax exempt bonds, tax credits as well as NYSERDA funds.

For over twenty years, Cornerstone has capitalized on its ability to listen to client's needs, create strategic partnerships, and navigate challenging economic climates thanks to our expertise in real estate development and finance, as well as our strong community relationships. Our reputation precedes us, and our integrity underscores everything we do.

PROPERTY MANAGEMENT

Cornerstone Property Managers, LLC is a licensed real estate brokerage firm which can assist with all property management needs such as; Customer Service, Leasing, Rent Collection, Evictions, Marketing, Compliance and Maintenance. We offer a unique combination of property management experience. Our team of professionals includes Certified Property Managers, NY State Brokers, and Real Estate Licensed professionals, Certified Occupancy Specialists, Certified Tax Credit Specialists and Certified Managers of Maintenance.

Customer Service
Our goal for strong landlord-tenant relationships is an important component to our success. We believe in treating everyone with respect and integrity. There is a proper way to explain the reasons why decisions are what they are and help our customers have a positive experience.

Leasing, Rent Collections and Evictions
Leasing units is our priority as we will ensure your property occupancy is at the highest achievable market levels. We collect rents in a timely manner and guarantee the best return to owner. Unfortunately, sometimes an eviction must take place. We have great knowledge of the Real Estate legal requirements for eviction and promise to proceed when required.

Compliance
Our compliance knowledge of affordable housing is among the best the rental housing market has to offer. We are up to date on all compliance requirements. We u understand and conduct all business in accordance with regulations of HUD, HCR, HFA, and all other federal and state supervisory agencies, Fair Housing, Americans with Disabilities Act, OSHA, federal, state, local and all other laws pertaining to multifamily housing.

Marketing
Your marketing needs are met through tracking and measuring campaigns over multiple channels, such as email, search, social media, telephone and direct mail. Another benefit; you will be listed on our company web site.

Maintenance
The maintenance for the physical asset is an important part to excellence in management. Cornerstone has standardized policies and procedures and the manpower required to manage effectively.

We are your full service management team ready to assist firms in managing their investment.

ROCHESTER'S CORNERSTONE GROUP, LTD.

Roger W. Brandt, Jr.
President

As founder and president of Rochester's Cornerstone Group, Roger Brandt's experience, knowledge and entrepreneurial dedication has gained a favorable reputation in Western New York's real estate industry. Having formed Cornerstone in 1990, Roger has developed nearly every type of real estate since then. Roger has overseen Cornerstone's brokerage arm as well as defining Cornerstone's development of industrial and office parks, historic office building renovation, and a large suburban multi-use residential community in the town of Chili.

In the past ten years, Roger has developed over $70 million of affordable housing, including both new construction and rehabilitation projects, ranging from townhomes built for families to senior apartment communities. Cornerstone's affordable housing projects, under Roger's visionary leadership, include an award-winning $32 million mixed finance, mixed income urban revitalization community, located in Rochester's southeast side adjacent to Cornhill.

In late 2009, Cornerstone completed a $60 million rehabilitation project of 516 units built in the 1940s for returning World War II veterans. The extensive renovations and relocation of tenants was funded by a combination of federal tax credits (and syndicating those credits to raise private equity), tax exempt bond financing, private debt financing, and a variety of funding sources ranging from City funding commitments to New York State energy efficiency incentives.

Roger has developed an expertise in constructing highly complex financial packages to fund large real estate projects. In addition to using the financial acumen developed over his ten years at Chase Bank, Roger has a demonstrated ability to forge and maintain relationships with long and short term lending institutions which participate in many of Cornerstone's projects. Further, his expertise of federal low income tax credits and government bond finance has led to Roger arranging financing for over $350 million in investment in our region.

Aside from his successes in real estate development, Roger is also an accomplished broker and consultant. It is through the real estate and community networks that he has created a reputation whereby Rochester's Cornerstone Group has been able to succeed at selling, developing and leasing properties. Roger is immersed in all aspects of the industry, including representing buyers, sellers and tenants as a broker on multiple projects since the inception of Rochester's Cornerstone Group..

Roger has been extensively involved in the community for many years. He has served on many boards, including terms as Chairman and President for not-for-profit entities. The Boy Scouts, Catholic Family Center, Gates Chili Chamber of Commerce and Al Sigl Center Boards are just a few examples. He firmly believes in active involvement in the community to help build a stronger region. A graduate of St. Lawrence University, Roger also remains involved in his alma mater's activities.

Rochester's Cornerstone Group Ltd.

ROCHESTER'S CORNERSTONE GROUP, LTD.

Carol U. Oster, CPM
Vice President, Development Services

Carol oversees the conceptual development and construction of housing developments for families and seniors in locations throughout New York State. She manages the entire development process for the residential communities, which entails predevelopment activities including site selection and local approvals, project civil and architectural design over site, financing applications, construction and permanent loan closings.

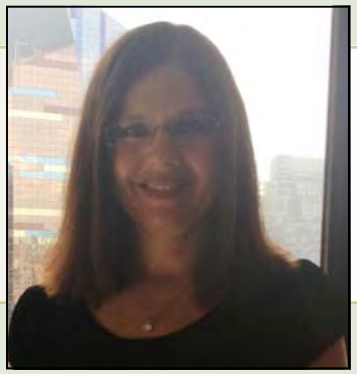
Carol graduated from SUNY Brockport and received her Bachelor of Science degree in Business Administration. She has over 20 years of experience in commercial real estate, with positions held in multi-family development, property management and commercial loan underwriting. She was founding partner in Edgemere Development, Inc., an affordable housing development company and then joined Conifer Realty, LLC as manager of their affordable housing development department. She also held Asset Management and property management positions at Conifer Realty and Baldwin Real Estate Corporation whose portfolios included affordable and market rate multi-family, office and retail properties. Ms. Oster was employed at First Niagara Bank as a commercial real estate loan underwriter.

Carol communicates with all members of the project team, facilitating and following through on all project details. Her passion is identifying potential development opportunities and establishing partnerships to get the task at hand completed in a timely manner. Potential roadblocks are identified before they happen and a proactive team-focused approach to problem solving is employed to ensure developments come to market expeditiously.

Rochester's Cornerstone Group Ltd.

ROCHESTER'S CORNERSTONE GROUP, LTD.

Robin Rubado, CPM
Project Manager and Director of Asset Management



Robin's roles at Rochester's Cornerstone Group, Ltd. are Project Manager and Director of Asset Management. She works as a project manager developing projects that include both new and rehabilitated buildings. She oversees the portfolio asset management to ensure success. Robin is also in charge of our newly created property management division and will bring expertise and excellence to all our customers.

Prior to working at Rochester's Cornerstone Group, Robin held the position of Vice President of Housing at Landsman Real Estate Services, Inc. and was responsible for managing a portfolio of 2,665 affordable and market residential units. She has over 20 years experience in property management.

Prior to joining Landsman, Robin held various positions at Conifer Realty including Property Manager, Compliance Manager and Compliance Director. Her responsibilities included overseeing the compliance for 108 properties and managing the Property Management database system.

Robin was also responsible for creating and teaching compliance and software training classes. She has worked with agencies in multiple states such as New York, New Jersey and Pennsylvania. She has experience in compliance programs such as HUD, DHCR, Tax Credit, RD and HOME.

She has a degree in business and also holds the following designations: HCCP, C3P, C4P, C5P, C6P, COS, Star, Shining Star and LRM. Robin is a Certified Property Manager through the Institute of Real Estate Management and a licensed real estate salesperson in the State of New York.

Robin was named 2013 CPM of the Year by the Institute of Real Estate Management (IREM) Rochester Western New York Chapter 58.

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Ryan Brandt
Development Associate

Ryan Brandt joined Rochester's Cornerstone Group, Ltd. in the spring of 2013 as a Real Estate Development Associate. His focus will be on providing support for affordable housing development projects, while also assisting with the application process. He will also be a part of developing market-rate ventures in and around the Rochester area.

Ryan's prior experience includes four years at CoreLogic Real Estate Tax Service, where he spent the majority of his time overseeing the payment and maintenance of property taxes for the CitiMortgage REO (Real Estate Owned) portfolio. This consisted of approximately 3,000 bank-owned properties and required close communication with title companies, banks, law offices, and other third party lien holders that may have acquired an interest in these foreclosure properties.

His other responsibilities at CoreLogic included training and monitoring the workflow for a team of offshore processors to ensure that timely and accurate tax payments were made to agencies across the country. Ryan also co-led a Six Sigma Yellow Belt project to help improve quality and efficiency of the company's escrow analysis process. In addition, he was selected to be one of CoreLogic's inter-department auditors for document and quality control.

A graduate of Pittsford Mendon High School and St. Lawrence University in Canton, NY, Ryan now lives in the city of Rochester with his wife Elizabeth.

Rochester's Cornerstone Group Ltd.

AWARDS

Fairport Apartments

2012 Project of the Year (Upstate), *New York State Association for Affordable Housing*

El Camino Estates Phase I

2010 Green Residential Homes Program, *The New York State Energy Research and Development Authority, Recognition for outstanding achievement in the New York ENERGY STAR Homes Program, and for developing green, affordable housing at El Camino Estates in Rochester, New York*

Tri Veterans Housing

2009 Award of Merit, *NAIOP Upstate New York, The Commercial Real Estate Assoc.*

Plymouth Manor and Carlson Commons

2007 Best Family Project in the Country, *Affordable Housing Finance magazine*

2007 One of the top three new developments, *Charles L. Edson Tax Credit Excellence Award*

2007 Development of Distinction (Carlson Commons), *WNC & Associates, Inc.*

2006 Award for Excellence (Plymouth Manor), *NYS Association for Affordable Housing*

Union Park Apartments

2006 Town of Chili Beautification Reward, *Gates-Chili Chamber of Commerce*

Rochester's Cornerstone Group, Ltd.

2000 Gates-Chili Chamber of Commerce**,** *Joseph Entress Memorial Award for Economic Development*

ROCHESTER'S CORNERSTONE GROUP, LTD.

ROCKWOOD CENTER AT BRENTLAND WOODS

This 40-unit independent elderly rental community serves low and very low income seniors in Henrietta, New York. It will be linked by an enclosed walkway to Brentland Woods, an assisted living

Location:	3831 E. Henrietta Rd, Henrietta, NY
Project Type:	Affordable, independent housing for seniors
Number of units:	One 40-unit building consisting of one and two bedroom apartments
Project Cost:	$7.6 million
Funding Sources:	Federal low-income housing tax credits, County HOME funds, HUD 202 funds, Private equity
Date of completion:	2013

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ROCHESTER'S CORNERSTONE GROUP, LTD.

FAIRPORT APARTMENTS

Rehabilitation and refinancing of a senior apartment community in Fairport.

Location:	1030 Whitney Road East, Fairport, NY
Project Type:	Rehabilitation/Preservation of Rental Housing
Number of units:	104
Cost:	$15.3 million
Cornerstone's Role:	Developer
Funding Sources:	Tax Exempt Bonds, Low Income Housing Tax Credits, Equity, HFA Subsidy, HUD, Federal Home Loan Bank & Monroe County HOME
Completion Date:	2012

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MONARCH SENIOR LIVING

A 45-unit Senior Apartment Building located in Webster, New York

Location:	840 Holt Road, Webster, NY 14580
Project Type:	Affordable, independent housing for seniors
Number of units:	One 45-unit building consisting of one and two bedroom apartments
Project Cost:	$8.4 million
Funding Sources:	Federal low-income housing tax credits, County HOME funds, NYS Housing Trust Fund, HUD 202 funds, Private equity
Date of completion:	2012

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EL CAMINO ESTATES PHASE II

New construction of 25 single-family rental homes, built on scattered sites in Northeast Rochester.

Location:	Northeast neighborhood of the City of Rochester
Ownership entity:	Ibero-American Development Corp.
Project Type:	Affordable housing single-family homes
Number of units:	25
Project Cost:	$6.2 million
Permanent Funding Structure:	Federal low-income housing tax credits, private equity, NYS Housing Trust Fund
Date of Completion	2012

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ROCHESTER'S CORNERSTONE GROUP, LTD.

UNION MEADOWS II

The second phase of an affordable housing community for families in Union Square (planned residential community).

Location:	45 & 46 Union Square Boulevard, N. Chili, NY 14514
Project Type:	Affordable housing (townhome style apartments)
Number of units:	42
Permanent Funding Structure:	Federal low-income housing tax credits, HOME funds, NYS Housing Trust Fund, Federal Home Loan Bank, Private equity
Date of completion:	2010

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Date of Completion	2010

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ROCHESTER'S CORNERSTONE GROUP, LTD.

SENECA MANOR APARTMENTS

Located in Hornellsville, NY, this community will provide affordable housing for families in an attractive, well-located setting.

Location:	Seneca Road, Hornellsville, NY (Steuben County)
Project Type:	32 one, two and three bedroom apartments for families at or below 50% of area median income
Project Cost:	$4.8 million
Funding Sources:	Federal low-income tax credits and stimulus funds (TCAP), USDA Rural Development, Federal Home Loan Bank Funds administered through Maple City Savings Bank, Five Star Bank, Private equity
Date of completion:	2010

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ROCHESTER'S CORNERSTONE GROUP, LTD.

OLEAN HEIGHTS

Phase 3 of a major redevelopment in southwest Rochester, consisting of 32 single-family rental homes, built on scattered sites.

Location:	Southwest neighborhood of the City of Rochester
Ownership entity:	Olean Housing III, LLC
Project Type:	Affordable housing multi-family homes
Number of units:	32
Project Cost:	$7.4 million
Permanent Funding Structure:	Federal low-income housing tax credits, private equity, NYS Housing Trust Fund
Date of Completion	2009

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ROCHESTER'S CORNERSTONE GROUP, LTD.

TRI VETERAN'S HOUSING

Rehabilitation and financial restructuring of three apartment communities in the City of Rochester: Ramona Park, Fernwood Park and Norton Village. All three communities were built in the late 1940's by community leaders, for returning war veterans.

Location:	Three apartment complexes in Rochester, New York (Ramona Park, Fernwood Park and Norton Village)
Project Type:	Rehabilitation/Preservation of Rental Housing
Number of units:	516
Total Dev. Cost:	$61 million
Funded by	Tax Exempt Bonds, 4% Low Income Housing Tax Credits, plus additional sources
Date of completion:	2009

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CARLSON COMMONS

Phase 2 of a major redevelopment in southwest Rochester, consisting of 77 units, 35 of which are public housing. Named "Best Family Project" in *Affordable Housing Finance* magazine's 2007 Readers Choice Awards for the Nation's Best Affordable Housing Developments.

Location:	Southwest neighborhood of the City of Rochester
Ownership entity:	Olean Housing, LLC
Project Type:	Affordable housing multi-family homes
Number of units:	77
Project Cost:	$18.2 million
Permanent Funding Structure:	Federal low-income housing tax credits, Federal Home Loan Bank, Rochester Housing Authority, NYS Homes for Working Families, Tax Exempt Bonds, City of Rochester HOME Funds, private equity
Date of Completion	2007

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PLYMOUTH MANOR

Phase 1 of a multi-finance, mixed income project; redeveloping 67 affordable housing units, 35 of which are public housing. Named "Best Family Project" in *Affordable Housing Finance* magazine's 2007 Readers Choice Awards for the Nation's Best Affordable Housing Developments.

Location:	Southwest neighborhood of the City of Rochester
Ownership entity:	South Plymouth Housing, L.P.
Project Type:	Affordable Housing multi-family homes
Number of units:	67
Project Cost:	$12.3 million
Permanent Funding Structure:	Federal low-income housing tax credits, Federal Home Loan Bank, Rochester Housing Authority, NYS Housing Trust Fund, Rochester Equity Fund, private equity
Date of completion:	2006

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SHORTSVILLE MEADOWS APARTMENTS

Located in rural Shortsville, NY, consisting of 20 units, the setting is perfect for affordable independent senior and family housing.

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Location:	45 East Avenue, Shortsville, NY
Ownership entity:	Providence Shortsville Housing Inc.
Project Type:	Affordable Housing Apartments
Project Cost:	$2.25 million
Number of units:	20
Permanent Funding Structure:	Federal low-income tax credits, NYS Housing Trust Fund, USDA Rural Development, Private equity
Date of completion:	2006

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UNION PARK

Located in a planned residential community, the 50-unit senior living complex opens up to a scenic pond in Chili, NY.

Location:	49 Union Square Blvd, Chili NY 14514
Project Type:	Affordable, independent housing for seniors
Number of units:	50
Project cost:	$6 million
Permanent Funding Structure:	Federal Low-Income Housing tax credits, New York State Housing Trust Fund, HOME funds, Federal Home Loan Bank, Private equity
Date of completion:	2005

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UNION MEADOWS

These town homes, which overlook a six-acre pond, provide affordable housing for families in the Union Square Planned Residential Community.

Location:	Linnea Lane, Chili, NY
Ownership entity:	Union Meadows Associates, LLC
Project Type:	Affordable Housing townhome style apartments
Number of units:	48
Project Cost:	$4.75 million
Permanent Funding Structure:	Federal low-income housing tax credits, HOME funds, NYS Housing Trust Fund, Federal Home Loan Bank, Community Preservation Corp., Private equity
Date of completion:	1998

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UNION SQUARE

A developer's dream - a planned residential community, multifamily zoned, approved for high density.

Location:	Union Square Blvd, Chili, NY
Ownership entity:	Rochester's Cornerstone Group-Union St., LLC
Project Type:	Planned Residential Community
Acres:	140
Approved units:	768 residential plus 30,000 sq ft. of communal space
Date of commencement:	1997

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Cornerstone Centre

A 12-acre professional office park conveniently located at the intersection of Routes 33 and I-490.

Where integrity is the cornerstone

Location:	2300 Buffalo Rd, Gates, NY
Ownership entity:	Cornerstone Centre, LLC
Project Type:	Professional Office Park
Project Cost:	$7,200,000
Sq footage:	87,600

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HIGH FALLS BUSINESS CENTER

A perfect setting for entrepreneurs, nestled in the High Falls District of the City of Rochester, across the street from Eastman Kodak Headquarters.

Location:	250 Mill Street, Rochester, NY
Ownership entity:	250 Mill Street, LLC
Project Type:	Business incubator located in a historic rehabilitated office building
Sq footage:	16,000
Year Built:	1840

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JETVIEW BUSINESS PARK

A well-established business park with over 15 companies, conveniently located adjacent to the airport with rail access, close to expressways.

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Location:	Jetview Drive, Chili, NY
Ownership entity:	Rochester's Cornerstone Group-RICC, LLC
Project Type:	Light Industrial Business Park
Acres:	220

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ROCHESTER INTERNATIONAL COMMERCE CENTER

One of Monroe County's largest industrial parks, adjacent to the airport with rail access, in close proximity to Routes 490 and 390.

Location:	Paul Road, Chili, NY
Ownership entity:	Rochester's Cornerstone Group, RICC-LLC
Project Type:	Light Industrial Business Park
Acres:	235

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WETLAND MITIGATION BANK

The first Wetland Mitigation Bank in New York State. A unique opportunity for developers to meet federal and state wetland permitting Requirements.

Location:	Trade Court, Chili, NY
Ownership entity:	Rochester's Cornerstone Group, RICC-LLC
Project Type:	Wetland Mitigation Bank
Wetlands Eligible for Mitigation:	New York State DEC and Federal AC-OE Wetlands
Acres:	20

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CHILD DAYCARE CENTER

A beautiful child-care center adjacent to the RIT campus provides a perfect setting, with easy accessibility.

Location:	295 John Street, Henrietta, NY
Ownership entity:	Rochester's Cornerstone Group - Wiltsie
Project Type:	Childcare Center
Project Cost:	$1,100,000
Sq. footage:	13,650

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Rochester's Cornerstone Group Ltd.

Rochester's Cornerstone Group, Ltd confidential and proprietary financial information is attached.

Rev. Garth E. Brokaw
75 Elmdorf Avenue
Rochester, NY, 14619
(585) 748-1996

March 10, 2014

To Whom It May Concern:

I recently retired as President of Fairport Baptist Homes Caring Ministries ("FBHCM") and related entities. During my final years at the organization, which numbered over 30, we initiated the renovation of a 104-unit senior citizen apartment complex. FBHCM had been involved in developing this rental campus using the HUD 236 and Mitchell Lama programs in the early 1970s. The project served hundreds of seniors who had modest means for over 40 years, keeping rents low, but it was time for a complete renovation.

We sought out real estate developers to work with us on this very complex refinancing project. The firm which we selected, Rochester's Cornerstone Group, Ltd., stood apart from the others. Cornerstone worked patiently with FBHCM and our partner, Perinton Churches Housing, which represented 13 churches in Perinton. There were many challenges with the project, but Cornerstone had the determination and resources to be able to work through the complexities, including the temporary relocation of the residents during construction.

Cornerstone worked diligently to line up the funding sources to ensure that this project could continue to meet the needs of its residents. In the end, Cornerstone accumulated twelve sources of funds, all of which worked together to keep the rents low at the Fairport Apartments. A number of seniors are paying less in rent now than they did before the rehabilitation.

In the end, the project was one of impressive transformation of a very old and tired senior citizen's apartment campus. The buildings and grounds were made handicap accessible to the extent possible. Platform lifts were added to each building for easier access to the second floor of the residential buildings. A small laundry facility was added to each building so the seniors would not have to go to the community center to do their laundry, though that option remained. The exterior appearance of the campus was so dramatic that many asked if these 40-year-old buildings had been newly constructed. Perhaps best of all, the community center was redesigned with the residents in mind, and now is used to a much greater extent for tenant directed activities.

It was obvious to us that Cornerstone had the respect of the financial community and especially New York State Division of Homes and Community Renewal and the New York State Housing

Finance Agency, through which most of the funding was obtained. Cornerstone presented itself throughout the development process as a true partner in every sense of the word. They utilized the design and construction professionals in the best ways possible.

We were extremely pleased to work with Rochester's Cornerstone Group and give a strong recommendation for partnering with them in the development of affordable senior housing.

Sincerely,

Garth Brokaw/ps

Rev. Garth E. Brokaw
President Emeritus, Fairport Baptist Homes Caring Ministries

RAYMOND JAMES

March 7, 2014

To Whom It May Concern:

I would like to take a moment to describe my experience working with Rochester's Cornerstone Group ("RCG") as an equity participant and partner in Seneca Manor, Monarch Senior Living, and Fairport Apartments.

Seneca Manor, located in the Town of Hornellsville, is a 32-unit project which receives Rural Development Rental Assistance for 16 units and Project Based Section 8 Vouchers for 16 units. The project was syndicated post-completion due to its participation in the Tax Credit Assistance Program (TCAP), and tax credit equity will be used to pay down TCAP funds. The completion of this project has demonstrated RCG's ability to coordinate multiple layers of subsidies. Further, being one of the first projects in the State of New York to be converted from a TCAP project to a tax credit equity project, RCG demonstrated that it is a leader in using new, unique financing structures.

Monarch Senior Living is a 45-unit age-restricted rental project located in Webster, New York. This tax credit development also received subsidy from the HUD Section 202 program, which greatly increased the complexity of this transaction. Rochester's Cornerstone Group successfully structured the transaction, reviewed and negotiated debt and equity financing documents, analyzed the HUD Section 202 financing and regulatory agreements in compliance with LIHTC, investor, and construction lender requirements, and coordinated the closing flawlessly. The projected was completed and leased months ahead of schedule.

Fairport Apartments involved the renovation of 104 age-restricted apartment units located in 14 total buildings. This project utilized eight different funding sources. The project was particularly complicated due to the coordination of rehabbing several buildings inhabited by elderly tenants. The meticulously synchronized construction schedule has resulted in work that has been completed on budget without any unforeseen problems. The RCG development team demonstrated flexibility, leadership, and command of the issues and was able to repeatedly circumvent project obstacles in moving the project towards completion.

The Rochester's Cornerstone Group's ability to finance and coordinate large, sophisticated multi-building development projects and finish them on budget and ahead of schedule has been impressive. The organization clearly has the capacity to deftly manage the development of projects of all sizes, scope, and financing structures, and I would strongly recommend them for consideration for any development project.

Very truly yours,

Darryl Seavey
Managing Director Northeast Region
Raymond James Tax Credit Funds, Inc.

FIRST NIAGARA

March 10, 2014

To Whom It May Concern:

Rochester's Cornerstone Group, LTD. has been known to the personnel at First Niagara Bank for many years. Its President, Roger W. Brandt, Jr. was a former colleague of several First Niagara Bank officers when he was with Chase Lincoln First Bank for ten years, as manager of their Commercial Real Estate Finance Group.

Recently, First Niagara Bank provided construction financing for a $15 million senior apartment renovation project in Fairport, New York. The redevelopment of these apartments brought together twelve different funding sources. Coordinating these various financial participants and their respective interests provided a myriad of challenges which were repeatedly resolved in a professional and productive manner.

This particular redevelopment was completed on time and on budget with all of the apartments being leased within weeks. Of note, this project was recognized by the New York Association for Affordable Housing as Project of the year in 2012.

Cornerstone has developed a reputation in the community for being an innovative leader for multifamily development. Cornerstone provides development as well as management services for all types of multifamily rental communities across Upstate New York.

Please contact me with any questions at 585-770-1627. Thank you.

John M. Berry
Vice President
Commercial Real Estate

Public Housing

Apply now to get on the waiting list

Rent is based on 30% of adjusted income

Security Deposit is equal to one month's gross rent

Applications available at: www.ithacaha.org
Or by calling: 607-273-8629

Ithaca Housing Authority
Our Mission

The mission of the Housing Authority (IHA) of the City of Ithaca, NY, is to operate a socially and financially sound agency that assists area low-income families and individuals with safe, decent, and affordable housing opportunities and related services as they strive to achieve self-sufficiency and improve the quality of their lives.

Description of IHA-Owned Properties

IHA owns and maintains 341 public housing properties in Ithaca, NY

Titus Towers I: consists of 165 single-dwelling units for the elderly located at 800 South Plain Street.

Titus Towers II: consists of 70 single-dwelling units for the elderly located at 798 South Plain Street.

Northside: is comprised of eleven 2-bedroom, thirty-three 3-bedroom, and twenty-six 4-bedroom units located at 510-530 Madison Street, 107-141 Fifth Street, 503-621 Hancock Street, 202-311 Fourth Street, 216-312 Third Street, and 118-130 Morris Avenue.

Overlook Terrace: is comprised of four 3-bedroom, and six 2-bedroom apartments located at 410-412 Hector Street.

Southview: is comprised of eight 2-bedroom, sixteen 3-bedroom, and two 5-bedroom apartments located at 410-414 South Plain Street and 302-310 Center Street.

Ithaca Housing Authority
798-800 South Plain Street
Ithaca, NY 14850

Phone: 607-273-8629
Fax: 607-273-5738
www.ithacaha.org

Ithaca Housing Authority

PUBLIC HOUSING

EQUAL HOUSING OPPORTUNITY

Phone: 607-273-8629
www.ithacaha.org

Titus Towers I

- 24 Hour on call Maintenance
- Utilities included in rent
- Onsite laundry facilities
- Intercom system
- Key fob security system
- Assigned parking spaces
- Tubs and/or showers
- Fire suppression sprinkler system
- Emergency lighting system
- Doors with peep holes
- Emergency assist alarms
- Refuse rooms on each floor
- Onsite Chapel
- Activities Room
- Onsite Library
- Onsite Beauty Salon
- 14th Floor Observation Room
- TV Room
- Conference Room
- Foodnet congregate meal site
- Foodnet meal deliveries
- Full-time elderly services coordinator
- Fitness equipment
- Picnic areas

Titus Towers II

- 24 Hour on call Maintenance
- Heat included in rent
- Onsite laundry facilities
- Intercom system
- Key fob security system
- Assigned parking spaces
- Tubs and/or showers
- Fire suppression sprinkler system
- Emergency lighting system
- Doors with peep holes
- Emergency assist alarms
- Refuse rooms on each floor
- Onsite Chapel
- Activities Room
- Onsite Library
- Onsite Beauty Salon
- 14th Floor Observation Room
- TV Room
- Conference Room
- Foodnet congregate meal site
- Foodnet meal deliveries
- Full-time elderly services coordinator
- Fitness equipment
- Picnic areas

Family Sites

We offer two, three, four and five bedroom units located in three residential complexes within the City of Ithaca.

- 24 Hour on call maintenance
- Utilities included in rent
- Onsite laundry facilities
- Off street parking, assigned spaces
- Doors with peep holes
- Community room with a fully equipped kitchen
- Cable TV hookup
- Garbage dumpsters
- Recycle bins
- 503 Building intercom system

EQUAL HOUSING OPPORTUNITY

Ithaca Housing Authority

798-800 S. Plain Street
Ithaca, NY 14850
607-273-8629 PH
607-273-1244 Sec. 8
273-6073 After-Hours Emergencies

The IHA Insider
FEBRUARY 2014

Published by HeidiJo Gunn, Receptionist
Edited by Doreen Osterman, Executive Secretary

Quote of the Month

"To the world you may be but one person, but to one person you may be the world."

By: ~ Kristen

Employee Birthday

Zak Seeley 2/2,
Temporary Laborer

Mirsada Torlic 2/14,
Senior Acc. Clerk Typist

Kevin McClain 2/26,
Maintenance Worker

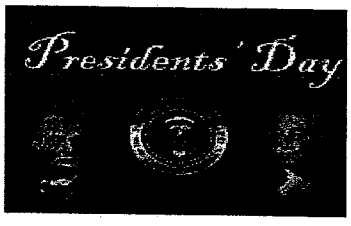
Valentine Smile

On Valentine's Day we think of those
who make our lives worthwhile,
those gracious, friendly people who
we think of with a smile.
I am fortunate to know you
that's why I want to say,
to a rare and special person:
Happy Valentine's Day!
By Joanna Fuchs, Professional Writer

NEXT IHA BOARD MEETING: FEBRUARY 18TH AT 10:00 AM IN THE TITUS TOWERS 2 CONFERENCE ROOM

Happy Valentine's Day
February 14th

The Office will be closed on Feb. 17th for President's Day



February is Black History Month

HEIDIJO'S RECIPE CORNER

CHOCOLATE DIPPED STRAWBERRIES

For your Sweet Heart

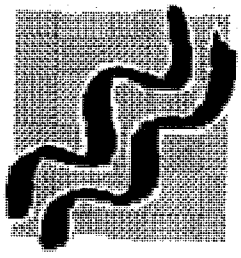
Ingredients:

1 Pkg. 7 oz. Baker's dipping milk chocolate.
Fresh Strawberries, Bananas, or any kind of fruit that you like.

Directions:

Melt chocolate as directed on package.
Dip fresh fruit in chocolate; let excess chocolate drip off.
Place on waxed paper covered baking sheet. Refrigerate 30 min. or until chocolate is firm.

FEBRUARY 2014 HOROSCOPE



Activities with friends are very much in the spotlight this month for you. Your thoughts are pretty much involved with your goals and direction in life and the picture seems quite rosy, but you are having many worries concerning your job as you have been learning an awful lot lately, and the situation could be very positive for you in this area. Any investment or speculation that you have done in the past seems to be in a very vague mode now but what you have learned and are learning will bring you the reward that you deserve.

TRIVIA QUESTION

Who, where and when was the lyrics wrote for "Puff the Magic Dragon"?

Answer:

In 1959 a 19 year old Cornell University student Leonard Lipton wrote the lyrics as a poem. The group Peter, Paul & Mary recorded the song in 1962.

BIRTHDAYS

Happy Birthday wishes to our residents who celebrate their birthdays in February.

WELCOME!

We are happy to welcome our new residents and hope they enjoy their tenancy with IHA.

SMOKE DETECTOR

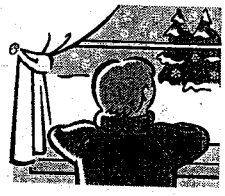
Your unit is equipped with one or more smoke detectors. You must ensure that the smoke detectors are operating at all times.

Never disconnect a smoke detector for any reason.

If your smoke detector isn't operating and you need assistance, notify the office immediately. There is no charge for this service. If you fail to keep all smoke detectors in your unit operating at all times, you will be charged $50 for each incident. If you continue to fail to comply with this rule, IHA will have grounds to evict you.

WINDOWS

The cold weather is upon us. Because the temperature can vary this time of year, please close your windows if it is below 50 degrees outside. If you have your windows open and it is below 50 degrees, you will be charged $20.00.



Titus Garbage Rooms

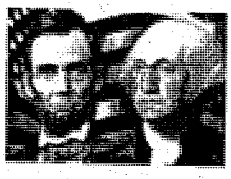
REMINDER:

When using the garbage rooms, please break down your cardboard boxes and stack them on the pile of other boxes AND put your garbage bags down the chutes. If you leave boxes in the garbage rooms that have not been broken down, other tenants have to maneuver around them which poses a potential tripping hazard. Thank you for your cooperation.

HYPODERMIC NEEDLES

If you use hypodermic needles, please come to the Receptionist Office and pick up a FREE disposable needle container. Please place your used needles in this special container and bring it to the Receptionist Office for proper disposal. Your cooperation is greatly appreciated in our effort to prevent our Maintenance Workers from getting stuck with needles when they compact garbage from the garbage chutes.

Presidents' Day



Presidents' Day is an American holiday celebrated on the third Monday in February. Originally established in 1885 in recognition of President George Washington, it is still officially called "Washington's Birthday" by the federal government. Traditionally celebrated on February 22—Washington's actual day of birth—the holiday became popularly known as Presidents' Day after it was moved as part of 1971's Uniform Monday Holiday Act, an attempt to create more three-day weekends for the nation's workers. While several states still have individual holidays honoring the birthdays of Washington, Abraham Lincoln and other figures, Presidents' Day is now popularly viewed as a day to celebrate all U.S. presidents past and present.

Black History Month

Black History Month is an annual celebration of achievements by black Americans and a time for recognizing the central role of African Americans in U.S. history. The event grew out of "Negro History Week," the brainchild of noted historian Carter G. Woodson and other prominent African Americans. Since 1976, every U.S. president has officially designated the month of February as Black History Month. Other countries around the world, including Canada and the United Kingdom, also devote a month to celebrating black history. Harriet Tubman became famous as a "conductor" on the Underground Railroad during the turbulent 1850s. Born a slave on Maryland's eastern shore, she endured the harsh existence of a field hand, including brutal

beatings. In 1849 she fled slavery, leaving her husband and family behind in order to escape. Despite a bounty on her head, she returned to the South at least 19 times to lead her family and hundreds of other slaves to freedom via the Underground Railroad. Tubman also served as a scout, spy and nurse during the Civil War.

Harriet Tubman is one of the few African American Women who experienced the Underground Railroad and lived to tell her story. She ultimately sacrificed her life to save others and fight for their freedom. Harriet Tubman will always be a true American Hero. To learn more about Harriet Tubman, you can visit her museum in Auburn, NY. For hours of operation and directions just look up Harriet Tubman home on the internet or call (315) 252-2081.

WANT TO HAVE YOUR TAXES DONE FOR FREE?

Alternatives will once again be hosting a Volunteer Income Tax Assistance program. Tax returns are prepared by volunteers certified by the IRS and every return is reviewed by Alternatives staff.

Alternatives Community Tax Program provides a wide variety of services such as:

- **FREE tax preparation**
- **FAST refund with direct deposit**
- **FREE electronic filing for both federal and state returns**

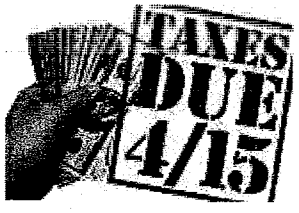
Alternatives Tax Program is FREE to families that made less than $51,000 and individuals with no dependents that made less than $30,000 in 2012

Dates:
January 18 – April 15, 2014

Times:
Tuesdays: 10am – 1pm, 3pm – 8pm.
Wednesdays & Thursdays: 3pm – 8pm.
Saturdays: 10am – 2pm.

Alternatives will also be hosting additional satellite sites in Caroline, Dryden, and Groton.

To make an appointment and for more information, please call the 211 referral line or 877-211-8667



Cutting Connection

Beauty Shop
@ Titus Towers
339-7290
Hours Monday – Thursday 9am – 2pm.
For evening appointment please call to schedule.

Gift Certificates Available for That Special Someone!

Shampoo, Cut, Wax and Style $28.00
Men's hair Cuts $14.00

UNIVERSAL CROSSWORD

Wednesday, January 15, 2014

Edited by Timothy Parker

ACROSS

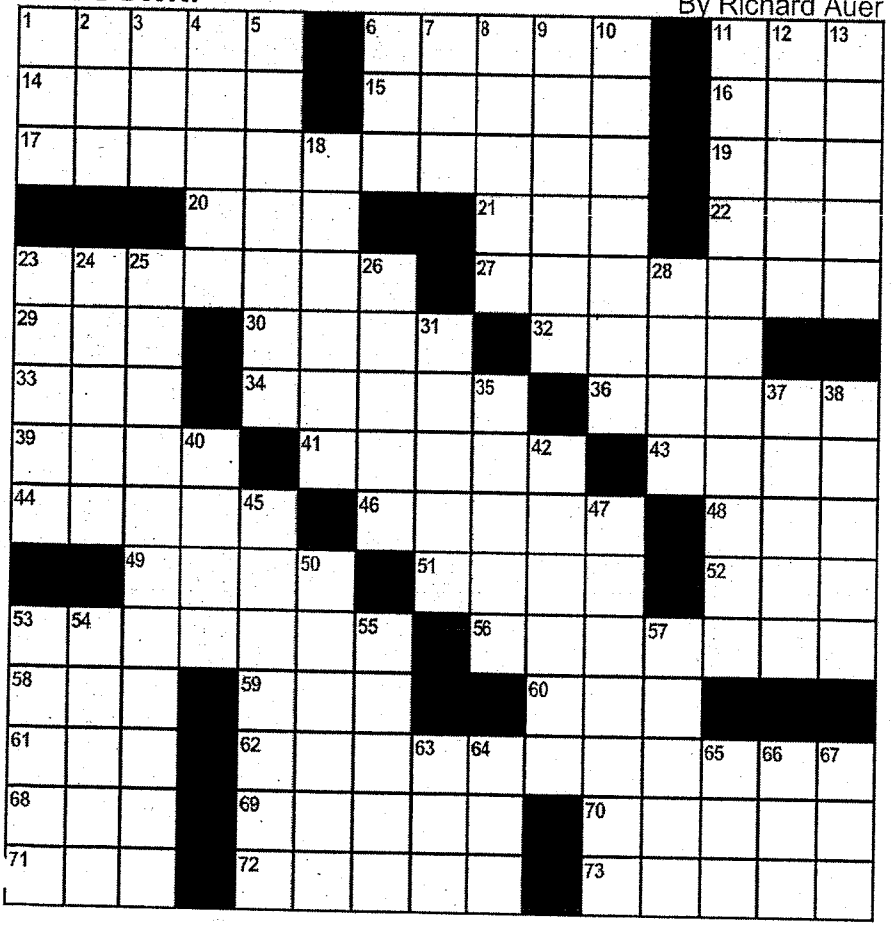
1) Pipeline attachments
6) Wyoming neighbor
11) Word in four other places in this puzzle
14) What Sherlock said the game was
15) Red, white or blue
16) "Bed-in" participant Yoko
17) Quietly persuasive
19) Opposite of ruddy
20) Play on words
21) SI or GQ
22) Be a chair person?
23) Fast month, for some
27) Mass, length and speed, to a physicist
29) Eggs, to a biologist
30) Kuwait City VIP
32) Organic chemical compound
33) Needle-nosed fish
34) All the words in a language
36) How beer may be served
39) "Back in the ___" (Beatles song)
41) Access the Internet
43) Borderline
44) Group values
46) Nine-piece combo
48) Creator of James and Q
49) Buddy in Australia
51) Opens, as a sugar packet
52) In-flight announcement, for short
53) Blazing
56) Piece of personal property
58) Olive or sunflower extract
59) College sweater letter
60) A little bit of history
61) It keeps hair in place
62) Shrub with large catkins
68) This may be inflated
69) River of forgetfulness
70) Opposite of everybody
71) Certain conifer
72) Industrial city of Germany
73) Put your two cents in, maybe

DOWN

1) Chum
2) Area 51 craft
3) Do a landscaping chore
4) Momma's partner
5) Fruit-filled pastry
6) Suffix with "poet" or "hero"
7) Uno, ___, tres
8) Homecoming attendees
9) A learned Mann
10) Cooking herb
11) A doctor may put you on one
12) Broadcast booth sign
13) Habitual ways
18) Coat in one's mouth
23) Ne'er-do-well
24) "Stop, sailor!"
25) Campfire treat
26) Watergate president
28) Like Tonto's masked friend
31) Excessive sternness
35) Boom in "The Right Stuff"
37) 5-1/2 point type
38) Word before code or colony
40) Go gadding about
42) One crying uncle?
45) Engrave with dots
47) Russian emperor's wife
50) Comes as a result
53) One whose style is out of fashion
54) Loyal subject, or city in Belgium
55) Central points
57) Bird claw
63) Yonder lass
64) Currency of Japan
65) Parking or odd follower
66) Sawbuck fraction
67) Become the spouse of

GET DOWN!

By Richard Auer



UNIVERSAL CROSSWORD

Monday, December 9, 2013

Edited by Timothy Parker

ACROSS

1) Final Greek letter
6) Intensifies (with "up")
10) Spill the beans
14) Lion's plaints
15) Rummage through
16) Actress Kudrow
17) Scheming duo of old cartoons
20) "McSorley's Bar" painter John
21) ___ on (prodded)
22) Dot above the i
24) Put through the paces
27) Alternative to Panasonic, once
30) The MGM lion
31) You might play something by it
33) Vow to pony up
35) Cooking maven Rombauer
37) Fizzled firecracker
39) All square
41) Cheerful willingness to be obliging
44) Implant deeply, as in soil
45) Atop, poetically
46) Kind of proprietor or survivor
47) Farmer's field
48) Gaggle formation
50) Attack word
52) After expenses amount
53) Blackthorn plum
55) State gambling games
58) Cartoonist's colleague
60) Eloper's acquisition
63) One ensuring army equipment works
68) Too diluted
69) Straddling
70) Manicure board material
71) Dwindles
72) "You ... yeah, you"
73) Sit through again

DOWN

1) Christmas bulb shape
2) Cows hit a low with these?
3) Jimmy Carter's middle name
4) Tribal historian
5) Ridicule or berate
6) Prince Valiant's son
7) Runway figure
8) Soft, thin silk cloth
9) Adult male deer
10) Disposable razor insert
11) Fleur-de-___
12) Cigar residue
13) Sheep bleat
18) Come before
19) Any foursome
23) Recommend big-time
25) Type of auto collision
26) Muss, as hair
27) Star in Orion's foot
28) Old hags
29) Ethically challenged
32) Pre-meal drink
34) Shocking win
36) "Much ___ About Nothing"
38) Smallest possible team
40) "Walk-___ welcome"
42) Repeated Catholic prayer
43) Take ten
49) Picks
51) Hold a meeting
54) Sty noises
56) Some cookies
57) "Ghostbusters" goop
59) Sack attachment
61) Hotshot pilots
62) "The stockings ___ hung ..."
63) Be beholden to
64) Soldier in Lee's army
65) Hair gel amount
66) Select (with "for")
67) White or wheat alternative

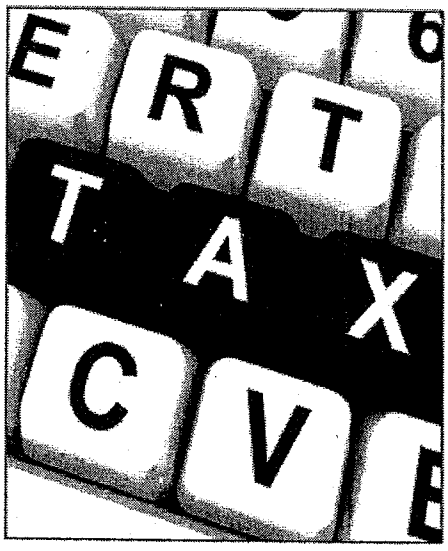
DNA TEST

By Martin G. Morris

1 O	2 M	3 E	4 G	5 A	■	6 A	7 M	8 P	9 S	■	10 B	11 L	12 A	13 B
14 R	O	A	R	S	■	15 R	O	O	T	■	16 L	I	S	A
17 B	O	R	I	S	18 A	N	D	N	A	19 T	A	S	H	A
■	20 S	L	O	A	N	■	21 E	G	G	E	D	■	■	■
■	■	■	22 T	I	T	23 T	L	E	■	24 T	E	25 S	26 T	■
27 R	28 C	29 A	■	30 L	E	O	■	31 E	32 A	R	■	33 I	O	34 U
35 I	R	M	36 A	■	37 D	U	38 D	■	39 P	A	40 I	D	U	P
41 G	O	O	D	42 N	A	T	U	43 R	E	D	N	E	S	S
44 E	N	R	O	O	T	■	45 O	E	R	■	46 S	O	L	E
47 L	E	A	■	48 V	E	49 E	■	50 S	I	51 C	■	52 N	E	T
■	53 S	L	54 O	E	■	55 L	56 O	T	T	O	57 S	■	■	■
■	■	■	58 I	N	59 K	E	R	■	60 I	N	L	61 A	62 W	■
63 O	64 R	65 D	N	A	N	C	E	66 O	F	F	I	C	E	67 R
68 W	E	A	K	■	69 A	T	O	P	■	70 E	M	E	R	Y
71 E	B	B	S	■	72 P	S	S	T	■	73 R	E	S	E	E

IRS trained and certified volunteers prepare Free Federal and New York State tax returns.

All Seniors 60+



FREE Tax Prep

at LIFELONG, Tompkins County Senior Citizens Center

PLUS

Individuals

with income below $31,000

Families

with income below $52,000

What should you bring?

- Photo I.D.
- Social Security cards for you, your spouse,and dependents
- Last year's state & federal income tax returns
- 2013 income statements from Social Security, pension, retirement accounts, bank, investments, work, unemployment compensation, and other income sources (W-2, 1099, etc)
- Medical, mortgage, property tax, charitable contribution, and tax receipts if you itemize
- Other expenses for tax deductions and credits
- Checkbook for payment or direct deposit

273-1511

By Appointment Only:

January 30 thru April 12, 2014

Thursdays, Fridays and Saturdays Only

Lifelong,119 West Court Street
Downtown Ithaca

Note: You may not qualify for free tax preparation if your return is complex.
Home visits are available for taxpayers who are medically unable to travel.

The Tax Counseling for the Elderly (TCE) Program is sponsored in Tompkins County by the IRS and Lifelong, Tompkins County Senior Citizens' Council, Inc.

February 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat

email: titustenants10@gmail.com **phone: 607-273-1091**

Tenant Council meetings last about an hour on the first Monday of every month *unless it's a holiday-then the next Monday!*. Bring a neighbor or two. Got an idea for a trip or event? Any concerns or suggestions? This is the place to let yourself be heard. We are as only as effective as each of you are...Thanks!

					1 BLACK HISTORY MONTH BEGINS Bingo 6:15pm	
2 GROUNDHOG DAY Bingo 6:15pm	3 Quilting 9am Tai Chi 10am Tenant Council Mtg 2pm Bingo 6:15pm	4 Bingo 6:15pm	5 Bingo 6:15pm	6 Church 7pm	7 Bible study-Chapel Card games, etc	8 Bingo 6:15pm
9 Bingo 6:15pm	10 Quilting 9am Tai Chi 10am Bingo 6:15pm	11 Aldi's 10am Bingo 6:15pm	12 LINCOLN'S BDAY Tioga Downs 10am Bingo 6:15pm	13 Church 7pm	14 VALENTINE'S DAY Card games, etc.	15 Bingo 6:15pm
16 Bingo 6:15pm	17 PRESIDENT'S DAY Quilting 9am Tai Chi 10am Bingo 6:15pm	18 IHA Brd Mtg 10am Bingo 6:15pm	19 Bingo 6:15pm	20 Church 7pm	21 Bible study-Chapel Card games, etc Cake&IceCream 6pm	22 Bingo 6:15pm
23 Bingo 6:15pm	24 Quilting 9am Tai Chi 10am Bingo 6:15pm	25 Bingo 6:15pm	26 Bingo 6:15pm	27 Church 7pm	28 Card Games, etc.	

Big Brothers Big Sisters of The Ithaca Youth Bureau

Invites you back to

North Side Neighborhood Saturdays!!

Who's invited: Any child between the ages of 6-14 who'd like to come

Where: In the Northside Community Center, 625 Hancock St.

When: *Saturday's from 1-3pm

*We **will** be there on these Saturdays: **2/1, 2/8, 2/15, 2/22, 3/8, 3/22, 3/29, 4/5, 4/12, 4/19, 5/3**

Join Staff from **Big Brothers Big Sisters**

And volunteers from **Cornell University** and **Ithaca College**

As we have fun and try some new things!!

We'll be doing all sorts of things: Gymnastics! Arts & Crafts! Science Projects! Cooking! Sports! More!

If you'd like your child to attend, just come down to meet us and drop them off for some fun.

If you have questions about this program, please call Joe Gibson at 607-273-8364 x144

At Big Brothers Big Sisters, we match children with caring, adult mentors from the community.

In addition to coming to see us on Saturdays, we'd love to connect your children with

--**Their own Big Brother or Big Sister**--

Come down on a Saturday and talk to us about enrolling your child, or just come and hangout.

We look forward to seeing you there!

10 Cool Ways to Beat the Winter Blues

By Nicole Nichols, Fitness Instructor & Health Educator

Winter is in full force. As the days get shorter and the nights get colder, even the best of us can get a little down. The "winter blues" are characterized by the mild depression, lack of motivation, and low energy that many people experience during this cold season. Luckily, there's a lot you can do to both prevent the blues from coming on and get yourself back to normal if they're already here.

1. Exercise. As if we needed another reason to get fit! Exercise isn't only for maintaining your weight and staying healthy. It's great for relieving the stresses of life. Plus, the effects of a good workout can last for several hours after you hit the showers. You'll have more energy throughout the day, and your metabolism with stay elevated too. Exercise also helps your mind by releasing those "feel good chemicals" that improve your mood.

2. Eat a Healthy Diet. What and when you eat has a great effect on your mood and energy. Avoid refined and processed foods (like white breads, rice, and sugar). These foods are not only devoid of the nutrients your body craves, but they zap your energy levels and can affect your mood—causing depression, lack of concentration, and mood swings. Try to incorporate more complex carbohydrates (whole wheat breads, brown rice, veggies, fruit) and get your daily 8 cups of water. These healthy foods provide your body (and mind) with nutrients, and stabilize your blood sugar and your energy levels.

3. Get Some Sun. Most people know that sunlight provides us with Vitamin D. But did you know that it also improves your mood? Winter days are shorter and darker than other months, and because of the cold weather, a lot of people spend less and less time outdoors. Lack of sunlight can cause many people to become depressed—without knowing why! Similar to exercise, sunlight exposure releases neurotransmitters in the brain that affect mood. Try to spend a little more time outdoors. Keep your shades up during the day to let more light in. Sit near windows in restaurants and during class. Try changing the light bulbs in your house to "full spectrum" bulbs. These mimic natural light and actually have the same effects on your mind as the real thing.

4. Act on your Resolutions. A recent study from the Centers for Disease Control showed a strong link between healthy behaviors and depression. Women who exhibited healthy behaviors (like exercising, not smoking, etc.) had less sad and depressed days than those whose behaviors were less than healthy. Although researchers studied women, the results are likely similar in men.

5. Avoid Binge Drinking. Staying in with a cold beer or a nice glass of wine may seem like the only thing to do in the winter months, and many people who feel down also tend to turn to alcohol when they're feeling down. But alcohol is actually a depressant, and rather than improving your mood, it only makes it worse. Avoiding alcohol when you are already depressed is a good idea. Moderate drinking is fine for most people, but binge drinking (defined as having 5 or more drinks in one sitting) is never a healthy choice. The morning after will have you feeling sick, depressed, and even more tired, which will affect many aspects of your life. This will make your low energy and bad mood even worse.

6. Treat Yourself. Having something to look forward to can keep anyone motivated. Winter seems endless! But if you plan something exciting, your mood improves when you're anticipating it and when the event actually comes. Plan something that's exciting to you—a weekend trip, a day at the spa, a party (but keep #5 above in mind), or special event like a play, girls (or guys) night out, or sporting event.

7. Relax! You're busy! Work, class, family, friends, appointments, meetings—even if you enjoy being busy, everyone needs some time off. Don't be afraid to say "No" to extra opportunities (covering a shift for a co-worker, bringing food to your son's class party). Try to spend a few minutes each day doing nothing! Read a book or magazine, sleep in on the weekend, go to bed early, try some meditations, or take a yoga class. Relaxation, especially in the form of yoga, can alleviate stress and leave you with a calm energy. Mental exercises like meditation and positive thinking can help keep depression at bay.

8. Embrace the Season. Instead of always avoiding the cold and the snow—look for the best that it has to offer! Take up a winter sport like ice skating, snowboarding, hockey, or even sledding! Enjoy these opportunities while they last—after all, they're only here a few months per year. Staying active will boost your energy. Seeing winter in a positive light, with all the fun activities that it has to offer, will keep your spirits high.

9. Get Social Support. Don't underestimate the power of friends, family, mentors, co-workers, and neighbors. Who can you turn to when you're down and need a pick-me-up? Keep a mental list of these special people and don't be afraid to ask for help or encouragement when you need it. Something as simple as a phone call, a chat over coffee, or a nice email or letter can brighten your mood.

10. Catch some Zzzz's. People naturally want to sleep a little bit more during the winter. But with all we have going on, sometimes sleep is the first thing to go. With a little time management, and some self-discipline, you can meet your shut-eye needs. Aim for 7-8 hours each night, and try to keep your bedtime and waking time consistent. That way, your sleeping patterns can normalize and you'll have more energy. Try not to oversleep—those 12-hour snoozes on the weekend can actually make you MORE tired. Don't forget naps! A short (10-30 minute) afternoon nap may be all you need to re-energize midday.

BRENDA C. WESTFALL
Executive Director - Ithaca Housing Authority (IHA)
President – Cayuga Housing Development Corporation (CHDC) March 2014

As Executive Director, Ms. Westfall is responsible for planning, development, management and oversight of the IHA while managing a staff of 22. Programs include 341 Public Housing units, 992 Section 8 Housing Choice Vouchers, 3 scattered site properties, a successful Section 8 HCV Homeownership Program and Family Self-Sufficiency Program.

Mr. Westfall brings 25 years' of public service experience. During her career she has held positions of increasing responsibility which includes managing individual departments to entire housing programs, managing multiple grants, risk management oversight, etc. Her experience details a dynamic leader with a proven track record in organizational change, program integrity, operational effectiveness and amalgamating federal, state and local resources.

Her core values include accountability, responsibility, integrity, humility, dedication, creativity and fairness. Her experience has taught her that the organizational culture must permeate these values from top to bottom. She holds the highest standards of ethical conduct in dealings with the IHA Board of Commissioners, residents, clients, co-workers and the public while managing IHA's approximate $10,000,000 budget.

A talented administrator and team-builder, Ms. Westfall's responsibility to IHA extends to her relationship with residents which is displayed by her commitment to improve the housing conditions of her fellow citizens and/or the viability and sustainability of the communities in which they live and/or work.

Under her leadership, the IHA has been designated a High Performer by the U.S. Department of Housing and Urban Development for its Public Housing and Section 8 Programs. This is the highest ranking that may be assigned by the federal government. Ms. Westfall has an impressive ability to utilize and manage multiple programs. The IHA has built coalitions of public and private resources to educate, support and finance low-income families in their quest for independence and homeownership. This program has a successful track record and the respect of the community. In 2009, the IHA received a respected Energy Star award for its excellence in affording housing. In addition, the IHA received the National Association of Housing and Redevelopment Officials (NAHRO) Award of Excellence for its innovative Nurse Case Manager program wherein frail elderly are provided certified nursing services in an effort to help them remain living independently with dignity.

Ms. Westfall has several affiliations within the public housing industry. She was appointed to the Public Housing Authorities Directors Association's (PHADA) Board of Trustees in September, 2010 and currently serves as chairperson for the PHADA Bollinger Scholarship Committee. She is an active committee member for PHADA's Professional Development Committee, Executive Director Education Program Sub-Committee and PHADA's Task Fork Committee. In addition she serves as a current Board Member of the New York State Public Housing Authorities Directors Association (NYSPHADA) and serves as chairperson for the NYSPHADA Scholarship Program. Each year she travels to Washington, D.C. as part of a PHADA delegation committee to advocate for public housing assistance programs. She has served as the President of the Cayuga Housing Development Corporation for the past 11 years, which is the 501(c)(3) affiliate company of the IHA that is dedicated to supporting IHA's commitment to helping low-income families and individuals achieve self-sufficiency and improve their quality of life by providing quality housing opportunities and services.

Ms. Westfall is a native of Ithaca, NY and holds an Associate's Degree in Business Studies as well as a Bachelor's degree in Business Administration from Empire State College. In addition, she holds countless housing authority specific certifications, including Certified Public Housing Manager, Public Housing Occupancy Specialist, Rutger's (the State University of New Jersey) Executive Director Education Program, and Voucher Housing Management Certification, to name a few.

Jeffrey M. Tilton, Head Building Maintenance Mechanic
Ithaca Housing Authority (IHA) March 2014

Mr. Tilton has over three decades of experience working in the Maintenance Department at the IHA. Under the direction of the Executive Director, he is responsible for coordinating and supervising the work of seven employees in the general maintenance and upkeep of buildings, grounds, and equipment. He is responsible for maintaining electrical, plumbing, mechanical, and related systems planning, and overseeing the maintenance operations of the IHA. The IHA consists of 5 property sites totaling 341 resident apartments in addition to office and common spaces, mechanical rooms, grounds and three scattered sites. He possesses a good knowledge of the practices, tools, equipment, terminology and materials for all building maintenance operations.

Mr. Tilton ensures that departmental performance is in compliance with federal assessment programs as well as local regulations and code. Under his guidance, the IHA scored very highly under the physical condition category of its Public Housing Assessment Program; consequently, the IHA received High Performer status by the U.S. Department of Housing and Urban Development. This is the highest ranking that may be assigned by the federal government.

Through regular and comprehensive inspections Mr. Tilton identifies areas that need attention or upgrading in an effort to provide residents with safe, clean and modern housing. If renovations are required, he plays a vital role in providing building systems information to contractors during the construction phase as well as ensuring quality performance by the contractor. This includes coordinating the construction with federal, state and local agencies.

Safety of residents and staff are a priority and he ensures that timely and thorough inspections are conducted so that apartments meet our stringent standards. He is dedicated to ensuring that his staff is current with appropriate safety and training programs to reduce loss incidences. In addition, he coordinates emergency preparedness procedures for severe weather and other emergencies.

His daily interaction with residents demands a great deal of patience and compassion, and Mr. Tilton is triumphant in this respect, especially with the IHA's diverse population.

His supervisory/administrative role requires that he coordinates employee schedules to ensure a smooth operation, validate timecards, prepare a monthly report for the IHA Board of Commissioners, monitor parts and supplies to ensure there is adequate stock, developing and implementing maintenance procedures, and makes certain that the comprehensive preventative maintenance plan is followed.

Mr. Tilton is a native of Ithaca, NY and currently lives in the neighboring Town of Newfield. He continues his education in the field by participating in industry trainings, including Uniform Physical Conditions Standards Fundamentals, building emergency and managing risks in high-rises trainings, Basic HVAC training, and Public Housing Maintenance Management.

Victoria McDonald, Tenant Relations Coordinator
Ithaca Housing Authority (IHA)

March 2014

Ms. McDonald leads the IHA's Section 8 Department which provides housing assistance in the form of housing choice vouchers to approximately 1,000 families living in Tompkins County. She has over seven years of experience working in the Section 8 Department, five of which in a supervisory capacity.

Under the direction of the Executive Director, she is responsible for the day-to-day operations of the Section 8 Department. She is responsible for the supervision of four Tenant Relations Assistants who are involved in determining and recertifying the eligibility of applicants and participants for IHA's subsidized Section 8 Housing Choice Voucher (HCV) Program. Numerous participants reside at tax credit properties throughout the County; therefore, she has a working knowledge of the tax credit process. In addition, she supervises the IHA Receptionist and the Family Self-Sufficiency Case Manager. She provides training to her staff and evaluates them regularly for quality control. When needed, she takes on a caseload of her own in an effort to ensure a smooth operation. She serves as the Hearing Officer for IHA's Public Housing Program, which task includes determining if an applicant or tenant may be admitted to, or remain on IHA's Program by reviewing the facts and making a formal written decision.

Ms. McDonald performs and/or supervises inspections of current and potential dwelling units for compliance with Housing Quality Standards established by the U.S. Dept. of Housing and Urban Development (HUD) and communicates with landlords regarding status of their property. She possesses good powers of observation and has very strong communication skills. She has the ability to read and understand complex written information and deals effectively with a broad range of people in a diverse local community. Good judgment, tact, patience, and compassion are a few of her many respectable qualities. She prepares a monthly report for the IHA Board of Commissioners which provides an outline of the accomplishments of her department.

She possesses a good knowledge of the numerous regulations and established eligibility guidelines set forth by HUD which governs the Section 8 Program. It is her responsibility to ensure that her staff is also knowledgeable with the guidelines and is kept up to date with regulation changes.

Under her management, the IHA has been designated a High Performer by HUD for its Section 8 Program. This is the highest ranking that may be assigned by the federal government. She successfully implemented two enhanced voucher conversions wherein the IHA was awarded over 300 housing choice vouchers from HUD for individuals living in other assisted housing developments. This task involved meeting with each resident, sometimes on numerous occasions, to bring them onto IHA's Section 8 program and ensure they understand the program guidelines. Ms. McDonald handled this complex and laborious task with professionalism and effectiveness which provided the residents a seamless transition.

Ms. McDonald is a native of Ithaca, NY and currently lives in the neighboring Town of Trumansburg. She holds an Associate's Degree in Human Services and continues her education in the field by participating in industry trainings, including HCV Executive Management, Hearing Officer Workshop, Self-Sufficiency Case Management, and HCV Housing Quality Standards, to name a few.

The building will be constructed in conformance with NYSERDA Multifamily Performance Program, version 3.1 and will participate in the LEED for Homes program and as such is consistent with the City of Ithaca LEED for Neighborhood Development priorities. The entire building will have energy star rated systems including central air conditioning, heating with sealed combustion chambers, lighting, fans and appliances. The developers will contract with an approved NYSERDA rater and LEED for Homes Provider to ensure the standards are met.

These programs and specifications are more fully described in the attached program documents and as follows.

Green Building and Energy Efficiency Practices:

Radon Mitigation:
Utilize radon mitigation measures in projects located in EPA Radon Zones 1 and 2. Install passive radon resistant features below the slab and vented up through the roof by utilizing vent piping running through the interior of the building. Radon testing shall be conducted prior to occupancy. If the results of this testing exceed the recommended EPA action level, the passive radon system shall be activated. Testing shall occur at the end of construction, prior to occupancy.

ENERGY STAR Appliances:
All refrigerators, dishwashers, and clothes washers included in the project, or supplied by vendors, shall be ENERGY STAR rated.

ENERGY STAR Equipment:
All heating and air conditioning equipment shall be ENERGY STAR rated, or provide the equivalent in energy savings, quality and operational cost.

ENERGY STAR Lighting:
All lighting shall be ENERGY STAR rated, or provide the equivalent in energy savings and quality. Interior lighting and exterior building lighting shall incorporate ENERGY STAR fixtures, or high efficiency lamps. Exterior site lighting shall utilize high efficiency lighting. All exterior building and site lighting shall include either daylight sensors or timers to minimize electrical usage.

Low-VOC paint, Adhesives and Sealants:
All paints, applied finishes, adhesives, and sealants shall, at a minimum, meet Green Seal, or an equivalent, low-VOC standard.

Integrated Pest Management:
All projects are to incorporate integrated pest management during construction that includes sealing all openings, cracks and joints to prevent the infestation of insect and animal pests from entering the building, or migrating from one apartment or common area to another. After occupancy, the building management shall incorporate environmentally friendly pest management strategies and extermination practices that are safe for the health of the residents and the environment.

Construction Material Recycling:

LEED for Homes will require us to both utilize construction material recycling and to develop a plan to investigate local options for waste diversion. We will also document our achieved diversion rate for construction waste.

LEED for Homes:

We will have a letter of agreement with a LEED for Homes Provider to oversee the design and construction as necessary for final certification to the Certified level, or higher. The letter of agreement must be fully executed by the applicant and the LEED for Homes Provider. Final closeout of the project shall be contingent upon certification from USGBC.

ENERGY STAR Certified Homes, Version 3 (Rev. 07) Inspection Checklists for National Program Requirements

As described in the ENERGY STAR Certified Homes National Program Requirements, Version 3 (Rev. 07), one prerequisite for certification is that a home must meet the requirements of the four attached checklists:

- Thermal Enclosure System Rater Checklist
- HVAC System Quality Installation Contractor Checklist
- HVAC System Quality Installation Rater Checklist
- Water Management System Builder Checklist

To be eligible for certification, a home must also meet the other requirements listed in the National Program Requirements document, including verification of all requirements by a Rater. [1] Note that compliance with these guidelines is not intended to imply compliance with all local code requirements that may be applicable to the home to be built. Where requirements of the local codes, manufacturers' installation instructions, engineering documents, or regional ENERGY STAR programs overlap with the requirements of these guidelines, EPA offers the following guidance:

a. In cases where the overlapping requirements exceed the ENERGY STAR guidelines, these overlapping requirements shall be met;

b. In cases where overlapping requirements conflict with a requirement of these ENERGY STAR guidelines (e.g., slab insulation is prohibited to allow visual access for termite inspections), then the conflicting requirement within these guidelines shall not be met. Certification shall only be allowed if the Rater has determined that no equivalent option is available that could meet the intent of the conflicting requirement of these ENERGY STAR guidelines (e.g., switching from exterior to interior slab edge insulation). Note that, under the Performance Path, a home must still meet its ENERGY STAR HERS Index Target (or equivalent target for regional program requirements). Therefore, other efficiency measures may be needed to compensate for the omission of the conflicting requirement.

The Rater must review all items on the Rater checklists. Raters are expected to use their experience and discretion to verify that the overall intent of each inspection checklist item has been met (i.e., identifying major defects that undermine the intent of the checklist item versus identifying minor defects that the Rater may deem acceptable). The column titled "N/A," which denotes items that are "not applicable," should be used when the checklist item is not present in the home or conflicts with local requirements.

In the event that a Rater finds an item that is inconsistent with the intent of the inspection checklists, the home cannot earn the ENERGY STAR until the item is corrected. If correction of the item is not possible, the home cannot earn the ENERGY STAR. In the event that an item on a Rater checklist cannot be inspected by the Rater, the home also cannot earn the ENERGY STAR. The only exceptions to this rule are in the Thermal Enclosure System Rater Checklist, where the builder may assume responsibility for verifying a maximum of eight items. This option shall only be used at the discretion of the Rater. When exercised, the builder's responsibility will be formally acknowledged by the builder signing off on the checklist for the item(s) that they verified.

In the event that a Rater is not able to determine whether an item is consistent with the intent (e.g., an alternative method of meeting a checklist requirement has been proposed), then the Rater shall consult their Provider. If the Provider also cannot make this determination, then the Rater or Provider shall report the issue to EPA prior to project completion at: energystarhomes@energystar.gov and will typically receive an initial response within 5 business days. If EPA believes the current program guidelines are sufficiently clear to determine whether the intent has been met, then this guidance will be provided to the partner and enforced beginning with the house in question. In contrast, if EPA believes the program guidelines require revisions to make the intent clear, then this guidance will be provided to the partner but only enforced for homes permitted after a specified transition period after the release of the revised guidelines, typically 60 days in length.

This process will allow EPA to make formal policy decisions as partner questions arise and to disseminate these policy decisions through the periodic release of revised program documents to ensure consistent application of the program guidelines.

The Rater is required to keep electronic or hard copies of the completed and signed checklists.

Raters who operate under a Sampling Provider are permitted to verify any item designated "Rater Verified" using the RESNET-approved sampling protocol for homes located outside California, and the CEC-approved sampling protocol for homes located in CA. No parties other than Raters are permitted to use sampling. All other items shall be verified for each certified home. For example, no items on the HVAC System QI Contractor Checklist are permitted to be verified using a sampling protocol because they may only be designated as "Builder Verified" or "Contractor Verified". As another example, if a Rater verifies 10 items on the Water Management System Builder Checklist and the builder verifies the remaining checklist items, then the applicable (either RESNET or CEC) sampling protocol is permitted to be used only on the 10 Rater-verified items.

Rater Name: _____ Rater Company Name: _____ Builder Company Name: _____	☐ Rater has verified that builder is an ENERGY STAR partner

ENERGY STAR Certified Homes, Version 3 (Rev. 07) Inspection Checklist Notes

1. The term 'Rater' refers to the person completing the third-party inspections required for certification. This person shall: a) be a certified Home Energy Rater, Rating Field Inspector, BOP Inspector, or an equivalent designation as determined by a Verification Oversight Organization such as RESNET; and, b) have attended and successfully completed an EPA-recognized training class. See www.energystar.gov/newhomestraining.
2. The Rater may define the 'permit date' as either the date that the permit was issued or the date of the contract on the home. In cases where permit or contract dates are not available, Providers have discretion to estimate permit dates based on other construction schedule factors. These assumptions should be both defensible and documented.

ENERGY STAR Certified Homes, Version 3 (Rev. 07)
Thermal Enclosure System Rater Checklist

Home Address: _____ City: _____ State: _____ Zip Code: _____

	Must Correct	Builder Verified [1]	Rater Verified	N/A
1. High-Performance Fenestration				
1.1 *Prescriptive Path:* Fenestration shall meet or exceed ENERGY STAR requirements [2]	☐	☐	☐	☐
1.2 *Performance Path:* Fenestration shall meet or exceed 2009 IECC requirements [2]	☐	☐	☐	☐
2. Quality-Installed Insulation				
2.1 Ceiling, wall, floor, and slab insulation levels shall comply with one of the following options:				
2.1.1 Meet or exceed 2009 IECC levels [3,4,5] **OR**;	☐	☐	☐	☐
2.1.2 Achieve ≤ 133% of the total UA resulting from the U-factors in 2009 IECC Table 402.1.3, excluding fenestration and per guidance in Footnote 3d, AND home shall achieve ≤ 50% of the infiltration rate in Exhibit 1 of the National Program Requirements [4,5]	☐	☐	☐	☐
2.2 All ceiling, wall, floor, and slab insulation shall achieve RESNET-defined Grade I installation or, alternatively, Grade II for surfaces that contain a layer of continuous, air impermeable insulation ≥ R-3 in Climate Zones 1 to 4, ≥ R-5 in Climate Zones 5 to 8	☐	☐	☐	☐
3. Fully-Aligned Air Barriers [6]				
At each insulated location noted below, a complete air barrier shall be provided that is fully aligned with the insulation as follows: • At interior or exterior surface of ceilings in Climate Zones 1-3; at interior surface of ceilings in Climate Zones 4-8. Also, include barrier at interior edge of attic eave in all climate zones using a wind baffle that extends to the full height of the insulation. Include a baffle in every bay or a tabbed baffle in each bay with a soffit vent that will also prevent wind washing of insulation in adjacent bays • At exterior surface of walls in all climate zones; and also at interior surface of walls for Climate Zones 4-8 [7] • At interior surface of floors in all climate zones, including supports to ensure permanent contact and blocking at exposed edge [8,9]				
3.1 Walls [10]				
3.1.1 Walls behind showers and tubs	☐	☐	☐	☐
3.1.2 Walls behind fireplaces	☐	☐	☐	☐
3.1.3 Attic knee walls [11]	☐	☐	☐	☐
3.1.4 Skylight shaft walls	☐	☐	☐	☐
3.1.5 Wall adjoining porch roof	☐	☐	☐	☐
3.1.6 Staircase walls	☐	☐	☐	☐
3.1.7 Double walls	☐	☐	☐	☐
3.1.8 Garage rim / band joist adjoining conditioned space	☐	☐	☐	☐
3.1.9 All other exterior walls	☐	☐	☐	☐
3.2 Floors				
3.2.1 Floor above garage	☐	☐	☐	☐
3.2.2 Cantilevered floor	☐	☐	☐	☐
3.2.3 Floor above unconditioned basement or unconditioned crawlspace	☐	☐	☐	☐
3.3 Ceilings [10]				
3.3.1 Dropped ceiling / soffit below unconditioned attic	☐	☐	☐	☐
3.3.2 All other ceilings	☐	☐	☐	☐
4. Reduced Thermal Bridging				
4.1 For insulated ceilings with attic space above (i.e., non-cathedralized), Grade I insulation extends to the inside face of the exterior wall below at these levels: CZ 1-5: ≥ R-21; CZ 6-8: ≥ R-30 [12]	☐	☐	☐	☐
4.2 For slabs on grade in CZ 4 and higher, 100% of slab edge insulated to ≥ R-5 at the depth specified by the 2009 IECC and aligned with thermal boundary of the walls [4,5]	☐	☐	☐	☐
4.3 Insulation beneath attic platforms (e.g., HVAC platforms, walkways) ≥ R-21 in CZ 1-5; ≥ R-30 in CZ 6-8	☐	☐	☐	☐
4.4 Reduced thermal bridging at above-grade walls separating conditioned from unconditioned space (rim / band joists exempted) using one of the following options: [13]				
4.4.1 Continuous rigid insulation, insulated siding, or combination of the two; ≥ R-3 in Climate Zones 1 to 4, ≥ R-5 in Climate Zones 5 to 8 [14,15,16], **OR**;	☐	☐	☐	☐
4.4.2 Structural Insulated Panels (SIPs) [14], **OR**;	☐	☐	☐	☐
4.4.3 Insulated Concrete Forms (ICFs) [14], **OR**;	☐	☐	☐	☐
4.4.4 Double-wall framing [14,17], **OR**;	☐	☐	☐	☐
4.4.5 Advanced framing, including all of the items below:				
4.4.5a All corners insulated ≥ R-6 to edge [18], **AND**;	☐	☐	☐	☐
4.4.5b All headers above windows & doors insulated ≥ R-3 for 2x4 framing or equivalent cavity width, and ≥ R-5 for all other assemblies (e.g., with 2x6 framing) [19], **AND**;	☐	☐	☐	☐
4.4.5c Framing limited at all windows & doors to one pair of king studs, plus one pair of jack studs per window opening to support the header and sill [20], **AND**;	☐	☐	☐	☐
4.4.5d All interior / exterior wall intersections insulated to the same R-value as the rest of the exterior wall [21], **AND**;	☐	☐	☐	☐
4.4.5e Minimum stud spacing of 16 in. o.c. for 2x4 framing in all Climate Zones and, in Climate Zones 5 through 8, 24 in. o.c. for 2x6 framing [22]	☐	☐	☐	☐

ENERGY STAR Certified Homes, Version 3 (Rev. 07)
Thermal Enclosure System Rater Checklist

5. Air Sealing	Must Correct	Builder Verified[1]	Rater Verified	N/A
5.1 Penetrations to unconditioned space fully sealed with solid blocking or flashing as needed and gaps sealed with caulk or foam				
5.1.1 Duct / flue shaft	☐	☐	☐	☐
5.1.2 Plumbing / piping	☐	☐	☐	☐
5.1.3 Electrical wiring	☐	☐	☐	☐
5.1.4 Bathroom and kitchen exhaust fans	☐	☐	☐	☐
5.1.5 Recessed lighting fixtures adjacent to unconditioned space ICAT labeled and fully gasketed. Also, if in insulated ceiling without attic above, exterior surface of fixture insulated to ≥ R-10 in CZ 4 and higher to minimize condensation potential.	☐	☐	☐	☐
5.1.6 Light tubes adjacent to unconditioned space include lens separating unconditioned and conditioned space and are fully gasketed [23]	☐	☐	☐	☐
5.2 Cracks in the building envelope fully sealed				
5.2.1 All above-grade sill plates adjacent to conditioned space sealed to foundation or sub-floor with caulk, foam, or equivalent material. Foam gasket also placed beneath above-grade sill plate if resting atop concrete or masonry and adjacent to conditioned space [24, 25]	☐	☐	☐	☐
5.2.2 At top of walls adjoining unconditioned spaces, continuous top plates or sealed blocking using caulk, foam, or equivalent material	☐	☐	☐	☐
5.2.3 Drywall sealed to top plate at all unconditioned attic / wall interfaces using caulk, foam, drywall adhesive (but not other construction adhesives), or equivalent material. Either apply sealant directly between drywall and top plate or to the seam between the two from the attic above.	☐	☐	☐	☐
5.2.4 Rough opening around windows & exterior doors sealed with caulk or foam [26]	☐	☐	☐	☐
5.2.5 Marriage joints between modular home modules at all exterior boundary conditions fully sealed with gasket and foam	☐	☐	☐	☐
5.2.6 All seams between Structural Insulated Panels (SIPs) foamed and / or taped per manufacturer's instructions	☐	☐	☐	☐
5.2.7 In multifamily buildings, the gap between the common wall (e.g. the drywall shaft wall) and the structural framing between units fully sealed at all exterior boundaries	☐	☐	☐	☐
5.3 Other openings				
5.3.1 Doors adjacent to unconditioned space (e.g., attics, garages, basements) or ambient conditions made substantially air-tight with weatherstripping or equivalent gasket	☐	☐	☐	☐
5.3.2 Attic access panels and drop-down stairs equipped with a durable ≥ R-10 insulated cover that is gasketed (i.e., not caulked) to produce continuous air seal when occupant is not accessing the attic [27]	☐	☐	☐	☐
5.3.3 Whole-house fans equipped with a durable ≥ R-10 insulated cover that is gasketed and either installed on the house side or mechanically operated [27]	☐	☐	☐	☐

Rater Name: _____ Rater Pre-Drywall Inspection Date: _____ Rater Initials: _____

Rater Name: _____ Rater Final Inspection Date: _____ Rater Initials: _____

Builder Employee: _____ Builder Inspection Date: _____ Builder Initials: _____

Notes:

1. At the discretion of the Rater, the builder may verify up to eight items specified in this Checklist. When exercised, the builder's responsibility will be formally acknowledged by the builder signing off on the checklist for the item(s) that they verified.
2. *For Prescriptive Path:* All windows, doors, and skylights shall meet or exceed ENERGY STAR Program Requirements for Residential Windows, Doors, and Skylights – Version 5.0 as outlined at www.energystar.gov/windows. *For Performance Path:* All windows, doors and skylights shall meet or exceed the component U-factor and SHGC requirements specified in the 2009 IECC – Table 402.1.1. If no NFRC rating is noted on the window or in product literature (e.g., for site-built fenestration), select the U-factor and SHGC value from Tables 4 and 14, respectively, in 2005 ASHRAE Fundamentals, Chapter 31. Select the highest U-factor and SHGC value among the values listed for the known window characteristics (e.g., frame type, number of panes, glass color, and presence of low-e coating). Note that the U-factor requirement applies to all fenestration while the SHGC only applies to the glazed portion. The following exceptions apply:
   a. An area-weighted average of fenestration products shall be permitted to satisfy the U-factor requirements;
   b. An area-weighted average of fenestration products ≥ 50% glazed shall be permitted to satisfy the SHGC requirements;
   c. 15 square feet of glazed fenestration per dwelling unit shall be exempt from the U-factor and SHGC requirements, and shall be excluded from area-weighted averages calculated using a) and b), above;
   d. One side-hinged opaque door assembly up to 24 square feet in area shall be exempt from the U-factor requirements and shall be excluded from area-weighted averages calculated using a) and b), above;
   e. Fenestration utilized as part of a passive solar design shall be exempt from the U-factor and SHGC requirements, and shall be excluded from area-weighted averages calculated using a) and b), above. Exempt windows shall be facing within 45 degrees of true South and directly coupled to thermal storage mass that has a heat capacity > 20 btu / $ft^3 x°F$ and provided in a ratio of at least 3 sq. ft. per sq. ft. of South facing fenestration. Generally, thermal mass materials will be at least 2 in. thick.

3. Insulation levels in a home shall meet or exceed the component insulation requirements in the 2009 IECC - Table 402.1.1. The following exceptions apply:
   a. Steel-frame ceilings, walls, and floors shall meet the insulation requirements of the 2009 IECC – Table 402.2.5. In CZ 1 and 2, the continuous insulation requirements in this table shall be permitted to be reduced to R-3 for steel-frame wall assemblies with studs spaced at 24 in. on center. This exception shall not apply if the alternative calculations in d) are used;
   b. For ceilings with attic spaces, R-30 shall satisfy the requirement for R-38 and R-38 shall satisfy the requirement for R-49 wherever the full height of uncompressed insulation at the lower R-value extends over the wall top plate at the eaves. This exemption shall not apply if the alternative calculations in d) are used;
   c. For ceilings without attic spaces, R-30 shall satisfy the requirement for any required value above R-30 if the design of the roof / ceiling assembly does not provide sufficient space for the required insulation value. This exemption shall be limited to 500 sq. ft. or 20% of the total insulated ceiling area, whichever is less. This exemption shall not apply if the alternative calculations in d) are used;
   d. An alternative equivalent U-factor or total UA calculation may also be used to demonstrate compliance, as follows:

      An assembly with a U-factor equal or less than specified in 2009 IECC Table 402.1.3 complies.

      A total building thermal envelope UA that is less than or equal to the total UA resulting from the U-factors in Table 402.1.3 also complies. The insulation levels of all non-fenestration components (i.e., ceilings, walls, floors, and slabs) can be traded off using the UA approach under both the Prescriptive and the Performance Path. Note that fenestration products (i.e., windows, skylights, doors) shall not be included in this calculation. Also, note that while ceiling and slab insulation can be included in trade-off calculations, Items 4.1 through 4.3 of the Checklist shall be met regardless of the UA tradeoffs calculated. The UA calculation shall be done using a method consistent with the ASHRAE Handbook of Fundamentals and shall include the thermal bridging effects of framing materials. The calculation for a steel-frame envelope assembly shall use the ASHRAE zone method or a method providing equivalent results, and not a series-parallel path calculation method.

4. Consistent with the 2009 IECC, slab edge insulation is only required for slab-on-grade floors with a floor surface less than 12 inches below grade. Slab insulation shall extend to the top of the slab to provide a complete thermal break. If the top edge of the insulation is installed between the exterior wall and the edge of the interior slab, it shall be permitted to be cut at a 45-degree angle away from the exterior wall. Alternatively, the thermal break is permitted to be created using ≥ R-3 rigid insulation on top of an existing slab (e.g., in a home undergoing a gut rehabilitation). In such cases, up to 10% of the slab surface is permitted to not be insulated (e.g., for sleepers, for sill plates). Insulation installed on top of slab shall be covered by a durable floor surface (e.g., hardwood, tile, carpet).

5. Where an insulated wall separates a garage, patio, porch, or other unconditioned space from the conditioned space of the house, slab insulation shall also be installed at this interface to provide a thermal break between the conditioned and unconditioned slab. Where specific details cannot meet this requirement, partners shall provide the detail to EPA to request an exemption prior to the home's certification. EPA will compile exempted details and work with industry to develop feasible details for use in future revisions to the program. A list of currently exempted details is available at: www.energystar.gov/slabedge.

6. For purposes of this Checklist, an air barrier is defined as any durable solid material that blocks air flow between conditioned space and unconditioned space, including necessary sealing to block excessive air flow at edges and seams and adequate support to resist positive and negative pressures without displacement or damage. EPA recommends, but does not require, rigid air barriers.

   Open-cell or closed-cell foam shall have a finished thickness ≥ 5.5 in. or 1.5 in., respectively, to qualify as an air barrier unless the manufacturer indicates otherwise.

   If flexible air barriers such as house wrap are used, they shall be fully sealed at all seams and edges and supported using fasteners with caps or heads ≥ 1 in. diameter unless otherwise indicated by the manufacturer. Flexible air barriers shall not be made of kraft paper, paper-based products, or other materials that are easily torn. If polyethylene is used, its thickness shall be ≥ 6 mil.

7. EPA highly recommends, but does not require, inclusion of an interior air barrier at rim / band joists in Climate Zones 4 through 8.

8. Examples of supports necessary for permanent contact include staves for batt insulation or netting for blown-in insulation. Alternatively, batts that completely fill floor cavities enclosed on all six sides may be used to meet Items 2.2 and 3.2, even when compression occurs due to excess insulation, as long as the R-value of the batts has been appropriately assessed based on manufacturer guidance and the only defect preventing the insulation from achieving the required installation grade is the compression caused by the excess insulation.

9. Fully-aligned air barriers may be installed at the exterior surface of the floor cavity in all Climate Zones if the insulation is installed in contact with this exterior air barrier and the perimeter rim and band joists of the floor cavity are also sealed and insulated to comply with the fully-aligned air barrier requirements for walls.

10. All insulated vertical surfaces are considered walls (e.g., above and below grade exterior walls, knee walls) and must meet the air barrier requirements for walls, with the exception of adiabatic walls in multifamily dwellings. All insulated ceiling surfaces, regardless of slope (e.g., cathedral ceilings, tray ceilings, conditioned attic roof decks, flat ceilings, sloped ceilings), must meet the requirements for ceilings.

11. Exterior air barriers are not required for attic knee walls that are ≤ 24 in. in height if an interior air barrier is provided and insulation extends in all directions from the top of this interior air barrier into unconditioned space at the following levels: CZ 1-5: ≥ R-21; CZ 6-8: ≥ R-30.

12. The minimum designated R-values must be achieved regardless of the trade-offs determined using an equivalent U-factor or UA alternative calculation, with the following exception:

    For homes permitted through 12/31/2012: CZ 1-5: For spaces that provide less than 5.5 in. of clearance, R-15 Grade I insulation is permitted. CZ 6-8: For spaces that provide less than 7.0 in. of clearance, R-21 Grade I insulation is permitted.

    For homes permitted on or after 01/01/2013: Homes shall achieve Item 4.1 without exception.

    Note that if the minimum designated values are used, then higher insulation values may be needed elsewhere to meet Item 2.1. Also, note that these requirements can be met by using any available strategy, such as a raised-heel truss, alternate framing that provides adequate space, and / or high-density insulation.

13. Mass walls utilized as the thermal mass component of a passive solar design (e.g., a Trombe wall) are exempt from this Item. To be eligible for this exemption, the passive solar design shall be comprised of the following five components: an aperture or collector, an absorber, thermal mass, a distribution system, and a control system. For more information, see:

http://energy.gov/sites/prod/files/guide_to_passive_solar_home_design.pdf.

Mass walls that are not part of a passive solar design (e.g., CMU block or log home enclosure) shall either utilize the strategies outlined in Item 4.4 or the pathway in the assembly with the least thermal resistance, as determined using a method consistent with the 2009 ASHRAE Handbook of Fundamentals, shall provide ≥ 50% of the applicable assembly resistance, defined as the reciprocal of the mass wall equivalent U-factor in the 2009 IECC – Table 402.1.3. Documentation identifying the pathway with the least thermal resistance and its resistance value shall be collected by the Rater and any Builder Verified or Rater Verified box under Item 4.4 shall be checked.

14. Up to 10% of the total exterior wall surface area is exempted from the reduced thermal bridging requirements to accommodate intentional designed details (e.g., architectural details such as thermal fins, wing walls, or masonry fireplaces; structural details, such as steel columns). It shall be apparent to the Rater that the exempted areas are intentional designed details or the exempted area shall be documented in a plan provided by the builder, architect, designer, or engineer. The Rater need not evaluate the necessity of the designed detail to certify the home.
15. If used, insulated siding shall be attached directly over a water-resistive barrier and sheathing. In addition, it shall provide the required R-value as demonstrated through either testing in accordance with ASTM C 1363 or by attaining the required R-value at its minimum thickness. Insulated sheathing rated for water protection can be used as a water resistant barrier if all seams are taped and sealed. If non-insulated structural sheathing is used at corners, advanced framing details listed under Item 4.4.5 shall be met for those wall sections.
16. Steel framing shall meet the reduced thermal bridging requirements by complying with Item 4.4.1 of the Checklist.
17. Double-wall framing is defined as any framing method that ensures a continuous layer of insulation covering the studs to at least the R-value required in Item 4.4.1 of the Checklist, such as offset double-stud walls, aligned double-stud walls with continuous insulation between the adjacent stud faces, or single-stud walls with 2x2 or 2x3 cross-framing. In all cases, insulation shall fill the entire wall cavity from the interior to exterior sheathing except at windows, doors and other penetrations.
18. All exterior corners shall be constructed to allow access for the installation of ≥ R-6 insulation that extends to the exterior wall sheathing. Examples of compliance options include standard-density insulation with alternative framing techniques, such as using three studs per corner, or high-density insulation (e.g., spray foam) with standard framing techniques.
19. Compliance options include continuous rigid insulation sheathing, SIP headers, other prefabricated insulated headers, single-member or two-member headers with insulation either in between or on one side, or an equivalent assembly, except where a framing plan provided by the builder, architect, designer, or engineer indicates that full-depth solid headers are to be used. The Rater need not evaluate the structural necessity of the details in the framing plan to certify the home. Also, the framing plan need only encompass the details in question and not necessarily the entire home. R-value requirement refers to manufacturer's nominal insulation value.
20. Additional jack studs shall be used only as needed for structural support and cripple studs only as needed to maintain on-center spacing of studs.
21. Insulation shall run behind interior / exterior wall intersections using ladder blocking, full length 2x6 or 1x6 furring behind the first partition stud, drywall clips, or other equivalent alternative.
22. In Climate Zones 5 - 8, a minimum stud spacing of 16 in. o.c. is permitted to be used with 2x6 framing if ≥ R-20.0 wall cavity insulation is achieved. Regardless, all vertical framing members shall either be on-center or have an alternative structural purpose (e.g., framing members at the edge of pre-fabricated panels) that is apparent to the Rater or documented in a framing plan that encompasses that member and is provided by the builder, architect, designer, or engineer. The Rater need not evaluate the structural necessity of the framing plan to certify the home. However, all 2x6 framing with stud spacing of 16 in. o.c. in Climate Zones 5 - 8 shall have ≥ R-20.0 wall cavity insulation installed regardless of any framing plan or alternative equivalent total UA calculation.
23. Light tubes that do not include a gasketed lens are required to be sealed and insulated ≥ R-6 for the length of the tube.
24. Existing sill plates (e.g., in a home undergoing a gut rehabilitation) on the interior side of structural masonry or monolithic walls are exempt from this Item. In addition, other existing sill plates resting atop concrete or masonry and adjacent to conditioned space are permitted, in lieu of using a gasket, to be sealed with caulk, foam, or equivalent material at both the interior seam between the sill plate and the subfloor and the seam between the top of the sill plate and the sheathing.
25. In Climate Zones 1 through 3, a continuous stucco cladding system adjacent to sill and bottom plates is permitted to be used in lieu of sealing plates to foundation or sub-floor with caulk, foam, or equivalent material.
26. In Climate Zones 1 through 3, a continuous stucco cladding system sealed to windows and doors is permitted to be used in lieu of sealing rough openings with caulk or foam.
27. Examples of durable covers include, but are not limited to, pre-fabricated covers with integral insulation, rigid foam adhered to cover with adhesive, or batt insulation mechanically fastened to the cover (e.g., using bolts, metal wire, or metal strapping).

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HVAC System Quality Installation Contractor Checklist [1]

Home Address: _____ City: _____ State: _____ Zip Code: _____

System Description [2] _____ Cooling system for temporary occupant load? [3] Yes ☐ No ☐

1. Whole-Building Mechanical Ventilation Design [4]	Builder Verified [5]	Cont. Verified [6]	N/A
1.1 Ventilation system installed that has been designed to meet ASHRAE 62.2-2010 requirements including, but not limited to, requirements in Items 1.2-1.5. [7]	☐	☐	-
1.2 Ventilation system does not utilize an intake duct to the return side of the HVAC system unless the system is designed to operate intermittently and automatically based on a timer and to restrict outdoor air intake when not in use (e.g., motorized damper).	☐	☐	-
1.3 Documentation is attached with ventilation system type, location, design rate, and frequency and duration of each ventilation cycle.	☐	☐	-
1.4 If present, continuously-operating vent. & exhaust fans designed to operate during all occupiable hours.	☐	☐	☐
1.5 If present, intermittently-operating whole-house ventilation system designed to automatically operate at least once per day and at least 10% of every 24 hours.	☐	☐	☐
2. Heating & Cooling System Design [4,8] - *Parameters used in the design calculations shall reflect home to be built, specifically, outdoor design temperatures, home orientation, number of bedrooms, conditioned floor area, window area, predominant window performance and insulation levels, infiltration rate, mechanical ventilation rate, presence of MERV6 or better filter, and indoor temperature setpoints = 70°F for heating; 75°F for cooling.*			
2.1 Heat Loss / Gain Method: ☐ Manual J v8 ☐ 2009 ASHRAE ☐ Other:_____	☐	☐	-
2.2 Duct Design Method: ☐ Manual D ☐ Other: _____	☐	☐	☐
2.3 Equipment Selection Method: ☐ Manual S ☐ OEM Rec. ☐ Other: _____	☐	☐	-
2.4 Outdoor Design Temperatures: [9] Location: _____ 1%: ___°F 99%:___ °F	☐	☐	-
2.5 Orientation of Rated Home (e.g., North, South): _____	☐	☐	-
2.6 Number of Occupants Served by System: [10] _____	☐	☐	-
2.7 Conditioned Floor Area in Rated Home: _____ Sq. Ft.	☐	☐	-
2.8 Window Area in Rated Home: _____ Sq. Ft.	☐	☐	-
2.9 Predominant Window SHGC in Rated Home: [11] _____	☐	☐	-
2.10 Infiltration Rate in Rated Home: [12] Summer: _____ Winter:_____	☐	☐	-
2.11 Mechanical Ventilation Rate in Rated Home: _____ CFM	☐	☐	-
2.12 Design Latent Heat Gain: _____ BTUh	☐	☐	-
2.13 Design Sensible Heat Gain: _____ BTUh	☐	☐	-
2.14 Design Total Heat Gain: _____ BTUh	☐	☐	-
2.15 Design Total Heat Loss: _____ BTUh	☐	☐	-
2.16 Design Airflow: [13] _____ CFM	☐	☐	-
2.17 Design Duct Static Pressure: [14] _____ In. Water Column	☐	☐	☐
2.18 Full Load Calculations Report Attached [15]	☐	☐	-
3. Selected Cooling Equipment, If Cooling Equipment to be Installed			
3.1 Condenser Manufacturer & Model: _____	☐	☐	☐
3.2 Evaporator / Fan Coil Manufacturer & Model: _____	☐	☐	☐
3.3 AHRI Reference #: [16] _____	☐	☐	☐
3.4 Listed Efficiency: _____ EER _____ SEER	☐	☐	☐
3.5 Metering Device Type: ☐ TXV ☐ Fixed orifice ☐ Other: _____	☐	☐	☐
3.6 Refrigerant Type: ☐ R-410a ☐ Other: _____	☐	☐	☐
3.7 Fan Speed Type: [17] ☐ Fixed ☐ Variable (ECM / ICM) ☐ Other: _____	☐	☐	☐
3.8 Listed Sys. Latent Capacity at Design Cond.: [18] _____ BTUh	☐	☐	☐
3.9 Listed Sys. Sensible Capacity at Design Cond.: [18] _____ BTUh	☐	☐	☐
3.10 Listed Sys. Total Capacity at Design Cond.: [18] _____ BTUh	☐	☐	☐
3.11 If Listed Sys. Latent Capacity (Value 3.8) ≤ Design Latent Heat Gain (Value 2.12), ENERGY STAR certified dehumidifier installed	☐	☐	☐
3.12 Listed Sys. Total Capacity (Value 3.10) is 95-115% of Design Total Heat Gain (Value 2.14) or next nominal size [8, 19]	☐	☐	☐
3.13 AHRI Certificate Attached [16]	☐	☐	☐
4. Selected Heat Pump Equipment, If Heatpump to be Installed			
4.1 AHRI Listed Efficiency: _____ HSPF or Ground-Source:_____ COP	☐	☐	☐
4.2 Performance at 17°F: Capacity _____ BTUh Efficiency: _____ COP [20]	☐	☐	☐
4.3 Performance at 47°F: Capacity _____ BTUh Efficiency: _____ COP [20]	☐	☐	☐

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5. Selected Furnace, If Furnace to be Installed	Builder Verified [5]	Cont. Verified [6]	N/A
5.1 Furnace Manufacturer & Model: _____	☐	☐	☐
5.2 Listed Efficiency: _____ AFUE	☐	☐	☐
5.3 Listed Output Heating Capacity: _____ BTUh	☐	☐	☐
5.4 Listed Output Heat. Cap. (Value 5.3) is 100-140% of Design Total Heat Loss (Value 2.15) or next nominal size [6,21]	☐	☐	☐
6. Refrigerant Tests - *Run system for 15 minutes before testing* Note: If outdoor ambient temperature at the condenser is ≤ 55°F or, if known, below the manufacturer-recommended minimum operating temperature for the cooling cycle, then the system shall include a TXV, and the contractor shall mark "N/A" on the Checklist for Section 6 & 7. [22]			
6.1 Outdoor ambient temperature at condenser: ____ °F DB		☐	☐
6.2 Return-side air temperature inside duct near evaporator, during cooling mode: ____ °F WB		☐	☐
6.3 Liquid line pressure: ____ psig		☐	☐
6.4 Liquid line temperature: ____ °F DB		☐	☐
6.5 Suction line pressure: ____ psig		☐	☐
6.6 Suction line temperature: ____ °F DB		☐	☐
7. Refrigerant Calculations			
For System with Thermal Expansion Valve (TXV):			
7.1 Condenser saturation temperature: _____ °F DB (Using Value 6.3)		☐	☐
7.2 Subcooling value: _____ °F DB (Value 7.1 - Value 6.4)		☐	☐
7.3 OEM subcooling goal: _____ °F DB		☐	☐
7.4 Subcooling deviation: _____ °F DB (Value 7.2 – Value 7.3)		☐	☐
For System with Fixed Orifice:			
7.5 Evaporator saturation temperature: _____ °F DB (Using Value 6.5)		☐	☐
7.6 Superheat value: _____ °F DB (Value 6.6 – Value 7.5)		☐	☐
7.7 OEM superheat goal: _____ °F DB (Using superheat tables and Values 6.1 & 6.2)		☐	☐
7.8 Superheat deviation: _____ °F DB (Value 7.6 – Value 7.7)		☐	☐
7.9 Value 7.4 is ± 3°F or Value 7.8 is ± 5°F		☐	☐
7.10 An OEM test procedure (e.g., as defined for a ground-source heat pump) has been used in place of sub-cooling or super-heat process and documentation has been attached that defines this procedure		☐	☐
8. Electrical Measurements – *Taken at electrical disconnect while component is in operation*			
8.1 Evaporator or furnace air handler fan: ____ amperage _____line voltage		☐	☐
8.2 Condenser unit: ____ amperage _____line voltage		☐	☐
8.3 Electrical measurements within OEM-specified tolerance of nameplate value		☐	☐
9. Air Flow Tests			
9.1 Air volume at evaporator: _____ CFM		☐	☐
9.2 Test performed in which mode? ☐ Heating ☐ Cooling		☐	☐
9.3 Return duct static pressure: _____ IWC Test Hole Location: [23] _____		☐	☐
9.4 Supply duct static pressure: _____ IWC Test Hole Location: [23] _____		☐	☐
9.5 Test hole locations are well-marked and accessible [23]		☐	☐
9.6 Airflow volume at evaporator (Value 9.1), at fan design speed and full operating load, ± 15% of the airflow required per system design (Value 2.16) or within range recommended by OEM		☐	☐
10. Air Balance			
10.1 Balancing report prepared and attached indicating the room name and design airflow for each supply and return register. In addition, final individual room airflows measured and documented through one of the following options:			
10.1.1 Measured by contractor using ANSI / ACCA 5 QI-2007 protocol, documented by contractor on the balancing report, & verified by contractor to be within the greater of ± 20% or 25 CFM of design airflow [24], OR;		☐	☐
10.1.2 To be measured, documented, and verified by a Rater per Item 1.4.2 of the HVAC System QI Rater Checklist		☐	☐
11. System Controls			
11.1 Operating and safety controls meet OEM requirements		☐	☐
12. Drain pan			
12.1 Corrosion-resistant drain pan, properly sloped to drainage system, included with each HVAC component that produces condensate [25]		☐	☐

HVAC Company Name: _____ Credentialing Organization: ACCA / AE / Other

HVAC Contractor Name: _____ HVAC Contractor Signature: _____ Date: _____

Builder Name: [5] _____ Builder Signature: [5] _____ Date: _____

ENERGY STAR Certified Homes, Version 3 (Rev. 07)
HVAC System Quality Installation Contractor Checklist [1]

Notes:

1. This Checklist is designed to align with the requirements of ASHRAE 62.2-2010 and published addenda and ANSI / ACCA's 5 QI-2007 protocol, thereby improving the performance of HVAC equipment in new homes when compared to homes built to minimum code. However, these features alone cannot prevent all ventilation, indoor air quality, and HVAC problems (e.g., those caused by a lack of maintenance by occupants). Therefore, this Checklist is not a guarantee of proper ventilation, indoor air quality, or HVAC performance.

   This Checklist applies to ventilation systems, split air conditioners, unitary air conditioners, air-source heat pumps, and water-source (i.e., geothermal) heat pumps up to 65,000 Btu / h with forced-air distribution systems (i.e., ducts) and to furnaces up to 225,000 Btu / h with forced-air distribution systems (i.e., ducts). All other permutations of equipment (e.g., boilers, mini-split / multi-split systems) and distribution systems are exempt. If the ventilation system is the only applicable system installed in the home, then only Section 1 shall be completed.

   One Checklist shall be completed for each system and provided to the Rater.

2. Description of HVAC system location or area served (e.g., "whole house", "upper level", "lower level").

3. Check "Yes" if this system is to handle temporary occupant loads. Such a system may be required to accommodate a significant number of guests on a regular or sporadic basis and shall be handled by a supplemental cooling system (e.g., a small, single-package unit or split-coil unit) or by a system that can shift capacity from zone to zone (e.g., a variable volume system).

4. The person responsible for the heating, cooling, & ventilation design shall be responsible for completing Sections 1 and 2 of this Checklist.

5. For Sections 1 through 5, the 'Builder Verified' column shall be used to indicate items verified by the builder (or a firm or HERS Rater hired by the builder). If any Items have been marked 'Builder Verified', then the builder is responsible for these Items and must sign this Checklist. Note that builders are not permitted to verify any Items in Sections 6-12.

6. For Sections 1 through 5, the 'Cont. Verified' column shall be used to indicate Items verified by the credentialed contractor (or a firm or HERS Rater hired by the contractor). In contrast, for Sections 6 through 12, the 'Cont. Verified' column shall *only* be used to indicate Items verified by the credentialed contractor (i.e., neither a builder, nor a firm, nor a HERS Rater are permitted to verify Sections 6 - 12). The credentialed contractor is responsible for these Items and shall sign this Checklist.

7. For proper procedures, exceptions, and selection methods see ASHRAE 62.2-2010 and published addenda. All components shall be designed and installed per local codes, manufacturers' installation instructions, engineering documents, and regional ENERGY STAR program requirements.

   The system shall have at least one supply or exhaust fan with associated ducts and controls. Local exhaust fans are allowed to be part of an exhaust ventilation system. Outdoor air ducts connected to the return side of an air handler are allowed to be part of a supply ventilation system if manufacturer requirements for return air temperature are met.

8. Heating and cooling loads shall be calculated, equipment shall be selected, and duct systems shall be sized according to the latest editions of ACCA Manuals J, S, & D, respectively, 2009 ASHRAE Handbook of Fundamentals, or other methodology approved by the Authority Having Jurisdiction. The HVAC system design shall be completed for the specific configuration (e.g., plan, elevation, option, and orientation) of the home to be built except as permitted herein.

   For each house plan with multiple configurations (e.g., orientations, elevations, options), the loads shall be calculated for each potential configuration. If the loads across all configurations vary by ≤ 25%, then the largest load shall be permitted to be used for equipment selection for all configurations, subject to the over-sizing limits of ACCA Manual S. Otherwise, the contractor shall group the load for each configuration into a set with ≤ 25% variation and equipment selection shall be completed for each set of loads.

   For each house plan with multiple configurations, the room-level design airflows shall be calculated for each potential configuration. If the design airflows for each room vary across all configurations by ≤ 25% or 25 CFM, then the average room-level design airflow shall be permitted to be used when designing the duct system. Otherwise, the contractor shall group the room-level design airflow for each configuration into a set with ≤ 25% or 25 CFM variation and the duct design shall be completed for the average airflow of that set.

9. If the design conditions are dictated by a code or regulation, then the requirements of the lawful or controlling authority supersedes the Manual J or ASHRAE default design values. Otherwise, the default values shall be used. The values for the geographically closest location shall be selected or a justification provided for the selected location.

10. The number of occupants among all HVAC systems in the home must be equal to the number of bedrooms, as defined below, plus one. Occupants listed for systems that are indicated in the header as a cooling system for temporary occupant loads, as described in Footnote 3, shall be permitted to exceed this limit.

    A bedroom is defined by RESNET as a room or space 70 sq. ft. or greater size, with egress window and closet, used or intended to be used for sleeping. A "den", "library", or "home office" with a closet, egress window, and 70 sq. ft. or greater size or other similar rooms shall count as a bedroom, but living rooms and foyers shall not.

    An egress window, as defined in 2009 IRC section R310, shall refer to any operable window that provides for a means of escape and access for rescue in the event of an emergency. The egress window definition has been summarized for convenience. The egress window shall:

    - have a sill height of not more than 44 inches above the floor; AND
    - have a minimum net clear opening of 5.7 sq. ft.; AND
    - have a minimum net clear opening height of 24 in.; AND
    - have a minimum net clear opening width of 20 in.; AND
    - be operational from the inside of the room without the use of keys, tools or special knowledge.

11. "Predominant" is defined as the SHGC value used in the greatest amount of window area in the home.

12. Infiltration rate shall reflect value used in confirmed or projected HERS rating for rated home. Alternatively, use "Average" or "Semi-loose" values for the cooling season infiltration rates and "Semi-tight" or "Average" values for the heating season infiltration rates, as defined by ACCA Manual J, Eighth Edition, Version Two.

13. Design airflow is the design value(s) for the blower in CFM, as determined by using the manufacturer's expanded performance data to select equipment, per ACCA Manual S procedures.
14. Design duct static pressure shall account for the installation of a MERV 6 or higher filter.
15. The load calculation for the home shall be provided, documenting all design elements and all resulting loads, including but not limited to the values listed in Items 2.1 through 2.17.
16. All evaporators and condensing units shall be properly matched as demonstrated by an attached AHRI certificate. If an AHRI certificate is not available, a copy of OEM-provided catalog data indicating acceptable combination selection and performance data shall be attached.
17. If the whole-house ventilation system utilizes the HVAC air handler, then the fan speed type shall be ECM / ICM and variable speed, or include a controller (e.g., smart cycler) that reduces the ventilation run time by accounting for hours when HVAC system is heating or cooling the home.
18. Listed system capacity at design conditions is to be obtained from the OEM expanded performance data.
19. For cooling systems, the next largest nominal piece of equipment may be used that is available to satisfy the latent and sensible requirements. Single-speed systems generally have OEM nominal size increments of ½ ton. Multi-speed or multi-stage equipment may have OEM nominal size increments of one ton. Therefore, the use of these advanced system types can provide extra flexibility to meet the equipment sizing requirements.
20. Items 4.2 and 4.3 are not applicable to ground-source heat pumps.
21. For warm air heating systems, the output capacity must be between 100% and 140% of calculated system load unless a larger size is dictated by the cooling equipment selection.
22. Either factory-installed or field-installed TXV's may be used. For field-installed TXV's, ensure that sensing bulbs are insulated and tightly clamped to the vapor line with good linear thermal contact at the recommended orientation, usually 4 or 8 o'clock.
23. Examples of return or supply duct static pressure measurement locations are: plenum, cabinet, trunk duct, as well as front, back, left or right side. Test hole locations shall be well marked and accessible.
24. Ducts shall not include coiled or looped ductwork except to the extent needed for acoustical control. Balancing dampers or proper duct sizing shall be used instead of loops to limit flow to diffusers. When balancing dampers are used, they shall be located at the trunk to limit noise unless the trunk will not be accessible when the balancing process is conducted. In such cases, Opposable Blade Dampers (OBD) or dampers located in the duct boot are permitted.
25. Condensate pan shall be made of corrosion-resistant materials, to include galvanized steel and plastic. Drain pan shall drain condensate to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drainage system; and shall be equipped with a backflow prevention valve when drained to a shared drainage system, such as a storm water management system.

ENERGY STAR Certified Homes, Version 3 (Rev. 07)
HVAC System Quality Installation Rater Checklist [1]

Home Address: _____ City: _____ State: _____ Zip Code: _____

1. Review of HVAC System Quality Installation Contractor Checklist [2]	Must Correct	Rater Verified	N/A
1.1 HVAC System Quality Installation Contractor Checklist completed in its entirety and collected for records, along with documentation on ventilation system (1.3), full load calculations (2.18), and AHRI certificate (3.13).	☐	☐	☐
1.2 Review the following parameters related to system cooling design, selection, and installation from the HVAC Contractor Checklist (Contractor Checklist Item # indicated in parenthesis): [3]			
1.2.1 Outdoor design temperatures (2.4) are equal to the 1% and 99% ACCA Manual J design temperatures for contractor-designated design location [4]	☐	☐	☐
1.2.2 Home orientation (2.5) matches orientation of rated home	☐	☐	☐
1.2.3 Number of occupants (2.6) equals number of occupants in rated home [5]	☐	☐	☐
1.2.4 Conditioned floor area (2.7) is within ±10% of conditioned floor area of rated home	☐	☐	☐
1.2.5 Window area (2.8) is within ±10% of calculated window area of rated home	☐	☐	☐
1.2.6 Predominant window SHGC (2.9) is within 0.1 of predominant value in rated home [6]	☐	☐	☐
1.2.7 Listed latent cooling capacity (3.8) exceeds design latent heat gain (2.12)	☐	☐	☐
1.2.8 Listed sensible cooling capacity (3.9) exceeds design sensible heat gain (2.13)	☐	☐	☐
1.2.9 Listed total cooling capacity (3.10) is 95-115% (or 95-125% for Heat Pumps in Climate Zones 4-8) of design total heat gain (2.14), or next nominal size [7]	☐	☐	☐
1.2.10 HVAC manufacturer and model numbers on installed equipment, Contractor Checklist (3.1, 3.2, 5.1), and AHRI certificate or OEM catalog data all match [8]	☐	☐	☐
1.2.11 Using reported liquid line (6.3) or suction line (6.5) pressure, corresponding temperature (as determined using pressure / temperature chart for refrigerant type) matches reported condenser (7.1) or evaporator (7.5) saturation temperature (± 3 degrees) [9]	☐	☐	☐
1.2.12 Calculated subcooling (7.1 minus 6.4) value is within ±3 °F of the reported target temperature (7.3) or calculated superheat (6.6 minus 7.5) value is within ±5 °F of the reported target temperature (7.7). [9]	☐	☐	☐
1.3 Rater-verified supply & return duct static pressure ≤ 110% of contractor values (9.3, 9.4)	☐	☐	☐
1.4 Contractor-prepared balancing report indicating the room name and design airflow for each supply and return register collected by Rater for records. In addition, final individual room airflows measured and documented on balancing report through one of the following options:			
1.4.1 Measured and documented by contractor (10.1.1), OR;	☐	☐	☐
1.4.2 Measured by Rater using Section 804.2 of the Mortgage Industry National HERS Standard, documented by Rater, & verified by Rater to be within the greater of ± 20% or 25 CFM of design airflow (10.1.2)	☐	☐	☐
1.5 HVAC contractor holds credentials necessary to complete the HVAC System QI Contractor Checklist [10]	☐	☐	☐
2. Duct Quality Installation - *Applies to All Heating, Cooling, Ventilation, Exhaust, and Pressure Balancing Ducts* [11]			
2.1 Connections and routing of ductwork completed without kinks or sharp bends. [12]	☐	☐	☐
2.2 No excessive coiled or looped flexible ductwork. [13]	☐	☐	☐
2.3 Flexible ducts in unconditioned space not installed in cavities smaller than outer duct diameter; in conditioned space not installed in cavities smaller than inner duct diameter	☐	☐	☐
2.4 Flexible ducts supported at intervals as recommended by mfr. but at a distance ≤ 5 ft.	☐	☐	☐
2.5 Building cavities not used as supply or return ducts unless they meet Items 3.2, 3.3, 4.1, and 4.2 of this Checklist.	☐	☐	☐
2.6 HVAC ducts, cavities used as ducts, and combustion inlets and outlets may pass perpendicularly through exterior walls but shall not be run within exterior walls unless at least R-6 continuous insulation is provided on exterior side of the cavity, along with an interior and exterior air barrier where required by the Thermal Enclosure System Rater Checklist.	☐	☐	☐
2.7 Quantity & location of supply and return duct terminals match contractor balancing report. [11]	☐	☐	☐
2.8 Bedrooms pressure-balanced using any combination of transfer grills, jump ducts, dedicated return ducts, and / or undercut doors to either: a) provide 1 sq. in. of free area opening per 1 CFM of supply air, as reported on the contractor-provided balancing report; or b) achieve a Rater-measured pressure differential ≤ 3 Pa with respect to the main body of the house when all bedroom doors are closed and all air handlers are operating. [11,14]	☐	☐	☐
3. Duct Insulation - *Applies to All Heating, Cooling, Supply Ventilation, and Pressure Balancing Ducts* [15]			
3.1 All connections to trunk ducts in unconditioned space are insulated.	☐	☐	☐
3.2 *Prescriptive Path*: Supply ducts in unconditioned attic have insulation ≥ R-8. *Performance Path*: Supply ducts in unconditioned attic have insulation ≥ R-6.	☐	☐	☐
3.3 All other supply ducts and all return ducts in unconditioned space have insulation ≥ R-6.	☐	☐	☐

ENERGY STAR Certified Homes, Version 3 (Rev. 07)
HVAC System Quality Installation Rater Checklist [1]

4. Duct Leakage - *Applies to All Heating, Cooling, and Balanced Ventilation Ducts*			Must Correct	Rater Verified	N/A
4.1 Total Rater-measured duct leakage meets one of the following two options: [16]					
4.1.1 Rough-in: ≤ 4 CFM25 per 100 sq. ft. of CFA with air handler and all ductwork, building cavities used as ductwork, & duct boots installed. In addition, all duct boots sealed to finished surface, Rater-verified at final. [17]			☐	☐	☐
4.1.2 Final: ≤ 8 CFM25 per 100 sq. ft. of CFA with the air handler and all ductwork, building cavities used as ductwork, duct boots, & register grilles atop the finished surface (e.g., drywall, flooring) installed. [18]			☐	☐	☐
4.2 Rater-measured duct leakage to outdoors ≤ 4 CFM25 per 100 sq. ft. of conditioned floor area. [16,19]			☐	☐	☐
5. Whole-Building Delivered Ventilation					
5.1 Rater-measured ventilation rate is within 100-120% of HVAC contractor design value (2.11). [20]			☐	☐	☐
6. Controls					
6.1 Air flow is produced when central HVAC fan is energized (set thermostat to "fan").			☐	☐	☐
6.2 Cool air flow is produced when the cooling cycle is energized (set thermostat to "cool"). [21,22]			☐	☐	☐
6.3 Heated air flow is produced when the heating cycle is energized (set thermostat to "heat"). [21]			☐	☐	☐
6.4 Continuously-operating ventilation & exhaust fans include readily accessible override controls.			☐	☐	☐
6.5 Function of ventilation controls is obvious (e.g., bathroom exhaust fan) or, if not, controls have been labeled.			☐	☐	☐
7. Ventilation Air Inlets & Ventilation Source					
7.1 All ventilation air inlets located ≥10 ft. of stretched-string distance from known contamination sources such as stack, vent, exhaust hood, or vehicle exhaust. Exception: ventilation air inlets in the wall ≥ 3 ft. from dryer exhausts and contamination sources exiting through the roof. [23]			☐	☐	☐
7.2 Ventilation air inlets ≥ 2 ft. above grade or roof deck in Climate Zones 1-3 or ≥ 4 ft. above grade or roof deck in Climate Zones 4-8 and not obstructed by snow, plantings, condensing units or other material at time of inspection.[24]			☐	☐	☐
7.3 Ventilation air inlets provided with rodent / insect screen with ≤ 0.5 inch mesh. [25]			☐	☐	☐
7.4 Ventilation air comes directly from outdoors, not from adjacent dwelling units, garages, crawlspaces, or attics.			☐	☐	☐
8. Local Mechanical Exhaust					
In each kitchen and bathroom, a system shall be installed that exhausts directly to the outdoors and meets one of the following Rater-measured airflow standards: [20,26,27]					
Location	**Continuous Rate**	**Intermittent Rate** [28]			
8.1 Kitchen	≥ 5 ACH, based on kitchen volume [29,30]	≥ 100 CFM and, if not integrated with range, also ≥ 5 ACH based on kitchen volume [29,30,31]	☐	☐	☐
8.2 Bathroom	≥ 20 CFM	≥ 50 CFM	☐	☐	☐
8.3 If fans share common exhaust duct, back-draft dampers installed.			☐	☐	☐
8.4 Common exhaust duct not shared by fans in separate dwellings. [32]			☐	☐	☐
8.5 Clothes dryers vented directly to outdoors, except for ventless dryers equipped with a condensate drain.			☐	☐	☐
9. Ventilation & Exhaust Fan Ratings (Exemptions for Kitchen, HVAC, and Remote-Mounted Fans) [33]					
9.1 Intermittent supply and exhaust fans rated at ≤ 3 sones by mfr. when producing no less than the minimum airflow rate required by Section 8 of this Checklist, unless rated flow ≥ 400 CFM.			☐	☐	☐
9.2 Continuous supply & exhaust fans rated at ≤ 1 sone by mfr. when producing no less than the minimum airflow required by Section 8 of this Checklist.			☐	☐	☐
9.3 Bathroom fans used as part of a whole-house mechanical ventilation system shall be ENERGY STAR certified; unless rated flow rate ≥ 500 CFM.			☐	☐	☐
10. Combustion Appliances					
10.1 Furnaces, boilers, and water heaters located within the home's pressure boundary are mechanically drafted or direct-vented. As an exception, naturally drafted equipment is allowed in Climate Zones 1-3. For naturally drafted furnaces, boilers, and water heaters, the Rater has followed RESNET or BPI combustion safety test procedures and met the selected standard's limits for depressurization, spillage, draft pressure, and CO concentration in ambient air, as well as a CO concentration in the flue of ≤ 25 ppm. [34,35,36]			☐	☐	☐
10.2 For fireplaces that are not mechanically drafted or direct-vented to outdoors, total net rated exhaust flow of the two largest exhaust fans (excluding summer cooling fans) is ≤ 15 CFM per 100 sq. ft. of occupiable space when at full capacity or the Rater has verified that the pressure differential is ≤ -5 Pa using BPI's or RESNET's worst-case depressurization test procedure. [26,36,37,38]			☐	☐	☐
10.3 If unvented combustion appliances other than cooking ranges or ovens are located inside the home's pressure boundary, the Rater has operated the appliance for at least 10 minutes and verified that the ambient CO level does not exceed 35 ppm. [39]			☐	☐	☐
11. Filtration					
11.1 At least one MERV 6 or higher filter installed in each ducted mechanical system. [40]			☐	☐	☐
11.2 All return air and mechanically supplied outdoor air pass through filter prior to conditioning.			☐	☐	☐
11.3 Filter located and installed so as to facilitate access and regular service by the owner. [41]			☐	☐	☐
11.4 Filter access panel includes gasket or comparable sealing mechanism and fits snugly against the exposed edge of filter when closed to prevent bypass. [42]			☐	☐	☐

Rater Name: _____ Date Checklist Inspected: _____

Rater Signature: _____ Rater Company Name: _____

ENERGY STAR Certified Homes, Version 3 (Rev. 07)
HVAC System Quality Installation Rater Checklist [1]

Notes:

1. This Checklist is designed to align with the requirements of ASHRAE 62.2-2010 and published addenda and ANSI / ACCA's 5 QI-2007 protocol, thereby improving the performance of HVAC equipment in new homes when compared to homes built to minimum code. However, these features alone cannot prevent all ventilation, indoor air quality, and HVAC problems, (e.g., those caused by a lack of maintenance by occupants). Therefore, this Checklist is not a guarantee of proper ventilation, indoor air quality, or HVAC performance.
2. The Rater is only responsible for ensuring that the Contractor has completed the Contractor Checklist in its entirety and verifying the discrete objective parameters referenced in Section 1 of this Checklist, not for assessing the accuracy of the load calculations or field verifications included or for verifying the accuracy of every input on the Contractor Checklist.
3. For each house plan with multiple configurations (e.g., orientations, elevations, options), the Rater shall confirm that the parameters listed in Items 1.2.2 to 1.2.6 are aligned with either: the rated home or with the plans for the configuration used to calculate the loads, as provided by the contractor.
4. Item 1.2.1 shall match the 1% and 99% ACCA Manual J design temperatures for the contractor-designated design location. The Rater shall either confirm that the contractor selected the geographically closest available location or collect from the contractor a justification for the selected location. The Rater need not evaluate the legitimacy of the justification to certify the home.
5. The number of occupants among all HVAC systems in the home shall be equal to the number of RESNET-defined bedrooms plus one. Occupants listed for systems for which the header of the Contractor Checklist indicates that it is designed to handle temporary occupant loads, as defined in Footnote 3 of the Contractor Checklist, shall be permitted to exceed this limit.
6. "Predominant" is defined as the SHGC value used in the greatest amount of window area in the home.
7. For cooling systems, the next largest nominal piece of equipment may be used that is available to satisfy the latent and sensible requirements. Single-speed systems generally have OEM nominal size increments of ½ ton. Multi-speed or multi-stage equipment may have OEM nominal size increments of one ton. Therefore, the use of these advanced system types can provide extra flexibility to meet the equipment sizing requirements.
8. In cases where the condenser unit is installed after the time of inspection by the Rater, the HVAC manufacturer and model numbers on installed equipment can be documented through the use of photographs provided by the HVAC Contractor after installation is complete.
9. If contractor has indicated that an OEM test procedure has been used in place of a sub-cooling or super-heat process and documentation has been attached that defines this procedure, then the box for "N/A" shall be checked for this Item.
10. If any Item in Sections 6 through 12 of the HVAC System QI Contractor Checklist is applicable to the home and, therefore, completed by an HVAC contractor, then the Rater must confirm that the contractor holds the necessary credentials. HVAC contractors must be credentialed by an EPA-recognized HVAC Quality Installation Training and Oversight Organization (H-QUITO). An explanation of this credentialing process and links to H-QUITOs, which maintain lists of credentialed contractors, can be found at www.energystar.gov/newhomesHVAC.
11. Items 2.7 and 2.8 do not apply to ventilation ducts.
12. Kinks are to be avoided and are caused when ducts are bent across sharp corners such as framing members. Sharp bends are to be avoided and occur when the radius of the turn in the duct is less than one duct diameter.
13. Ducts shall not include coiled or looped ductwork except to the extent needed for acoustical control. Balancing dampers or proper duct sizing shall be used instead of loops to limit flow to diffusers. When balancing dampers are used, they shall be located at the trunk to limit noise unless the trunk will not be accessible when the balancing process is conducted. In such cases, Opposable Blade Dampers (OBD) or dampers that are located in the duct boot are permitted.
14. For HVAC system with multi-speed fans, the highest design fan speed shall be used when verifying this requirement.
15. EPA recommends, but does not require, that all metal ductwork not encompassed by Section 3 (e.g., exhaust ducts, duct boots, ducts in conditioned space) also be insulated and that insulation be sealed to duct boots to prevent condensation.
16. Duct leakage shall be determined and documented by a Rater using a RESNET-approved testing protocol. Leakage limits shall be assessed on a per-system, rather than per-home, basis. For *balanced ventilation ducts* that are not connected to space heating or cooling systems, a Rater is permitted to visually verify, in lieu of duct leakage testing, that all seams and connections are sealed with mastic or metal tape and all duct boots are sealed to floor, wall, or ceiling using caulk, foam, or mastic tape.
17. Cabinets (e.g., kitchen, bath, multimedia) or ductwork that connect duct boots to toe-kick registers are not required to be in place during the 'rough-in' test. For homes permitted through 12/31/2013: Homes are permitted to be certified if rough-in leakage is ≤ 6 CFM25 per 100 sq. ft. of CFA with air handler and all ductwork, building cavities used as ductwork, & duct boots installed.
18. Registers atop carpets are permitted to be removed and the face of the duct boot temporarily sealed during testing. In such cases, the Rater shall visually verify that the boot has been durably sealed to the subfloor (e.g., using duct mastic or caulk) to prevent leakage during normal operation.
19. For homes that have ≤ 1,200 sq. ft. of conditioned floor area, measured duct leakage to outdoors shall be ≤ 5 CFM25 per 100 sq. ft. of conditioned floor area. Testing of duct leakage to the outside can be waived if all ducts & air handling equipment are located within the home's air and thermal barriers AND envelope leakage has been tested to be less than or equal to half of the Prescriptive Path infiltration limit for the Climate Zone where the home is to be built. Alternatively, testing of duct leakage to the outside can be waived if total duct leakage is ≤ 4 CFM25 per 100 sq. ft. of conditioned floor area, or ≤ 5 CFM25 per 100 sq. ft. of conditioned floor area for homes that have ≤ 1,200 sq. ft. of conditioned floor area.
20. The whole-house ventilation air flow and local exhaust air flows shall be measured by the Rater using a flow hood, flow grid, anemometer (in accordance with AABC, NEBB or ASHRAE procedures), or substantially equivalent method.
21. In cases where the condenser unit is installed after the time of inspection by the Rater, the Rater is exempt from verifying Item 6.2 when the condenser is for an AC unit and also Item 6.3 when the condenser is for a heatpump unit.
22. To prevent potential equipment damage, the Rater shall not conduct this test if the outdoor temperature is ≤ 55°F or, if known, below the manufacturer-recommended minimum operating temperature for the cooling cycle. When this occurs, the Rater shall mark 'N/A' on the Checklist for this Item.

23. The outlet and inlet of balanced ventilation systems shall meet these spacing requirements unless manufacturer instructions indicate that a smaller distance may be used. However, if this occurs the manufacturer's instructions shall be collected for documentation purposes.
24. EPA will permit the use of reduced ventilation air inlet heights in North Carolina. The minimum required height in North Carolina for Climate Zone 4 will be reduced from 4 feet to 2 feet and in Climate Zone 5 from 4 feet to 2.5 feet based on historical snowfall data for this state. Note that EPA is evaluating the potential to reduce inlet heights in other regions based upon historical snowfall data.
25. Without proper maintenance, ventilation air inlet screens often become filled with debris. Therefore, EPA recommends, but does not require, that these ventilation air inlets be located so as to facilitate access and regular service by the owner.
26. Per ASHRAE 62.2-2010, an exhaust system is one or more fans that remove air from the building, causing outdoor air to enter by ventilation inlets or normal leakage paths through the building envelope (e.g., bath exhaust fans, range hoods, clothes dryers).
27. Per ASHRAE 62.2-2010, a bathroom is any room containing a bathtub, shower, spa, or similar source of moisture.
28. An intermittent mechanical exhaust system, where provided, shall be designed to operate as needed by the occupant. Control devices shall not impede occupant control in intermittent systems.
29. Kitchen volume shall be determined by drawing the smallest possible rectangle on the floor plan that encompasses all cabinets, pantries, islands, and peninsulas and multiplying by the average ceiling height for this area. Cabinet volume shall be included in the kitchen volume calculation.
30. *For homes permitted through 01/01/2014:* Homes are permitted to be certified without enforcement of this Item to provide partners with additional time to integrate this feature into their homes.

    For homes permitted on or after 01/01/2014: Homes shall meet this Item. Alternatively, the prescriptive duct sizing requirements in Table 5.3 of ASHRAE 62.2-2010 are permitted to be used for kitchen exhaust fans based upon the rated airflow of the fan at 0.25 IWC. If the rated airflow is unknown, ≥ 6 in. smooth duct shall be used, with a rectangular to round duct transition as needed. Guidance to assist partners with these alternatives is available at www.energystar.gov/newhomesresources. As an alternative to Item 8.1, homes that are PHIUS+ certified are permitted to use a continuous kitchen exhaust rate of 25 CFM per 2009 IRC Table M1507.3.
31. All intermittent kitchen exhaust fans must be capable of exhausting at least 100 CFM. In addition, if the fan is not part of a vented range hood or appliance-range hood combination (i.e., if the fan is not integrated with the range), then it must also be capable of exhausting ≥ 5 ACH, based on the kitchen volume.
32. Exhaust outlets from more than one dwelling unit may be served by a single exhaust fan if the fan runs continuously or if each outlet has a back-draft damper to prevent cross-contamination when the fan is not running.
33. Fans exempted from this requirement include kitchen exhaust fans, HVAC air handler fans, and remote-mounted fans. To be considered for this exemption, a remote-mounted fan must be mounted outside the habitable spaces, bathrooms, toilets, and hallways and there shall be ≥ 4 ft. ductwork between the fan and intake grill. Per ASHRAE 62.2-2010, habitable spaces are intended for continual human occupancy; such space generally includes areas used for living, sleeping, dining, and cooking but does not generally include bathrooms, toilets, hallways, storage areas, closets, or utility rooms.
34. Per the 2009 International Mechanical Code, a direct-vent appliance is one that is constructed and installed so that all air for combustion is derived from the outdoor atmosphere and all flue gases are discharged to the outside atmosphere; a mechanical draft system is a venting system designed to remove flue or vent gases by mechanical means consisting of an induced draft portion under non-positive static pressure or a forced draft portion under positive static pressure; and a natural draft system is a venting system designed to remove flue or vent gases under nonpositive static vent pressure entirely by natural draft.
35. The pressure boundary is the primary enclosure boundary separating indoor and outdoor air. For example, a volume that has more leakage to outside than to conditioned space would be outside the pressure boundary.
36. Raters shall use either the Building Performance Institute's (BPI's) Combustion Safety Test Procedure for Vented Appliances or RESNET's Interim Guidelines for Combustion Appliance Testing & Writing Work Scope and be BPI-certified or RESNET-certified to follow the protocol. If using RESNET's worst-case depressurization protocol to evaluate fireplaces, per Item 10.2, the blower door shall not be set to exhaust 300 CFM to simulate the fireplace in operation, but the remainder of the protocol shall be followed.
37. Per ASHRAE 62.2-2010 and published addenda, the term "net-exhaust flow" is defined as flow through an exhaust system minus the compensating outdoor airflow through any supply system that is interlocked to the exhaust system. "Net supply flow" is intended to represent the inverse. If net exhaust flow exceeds allowable limit, it shall be reduced or compensating outdoor airflow provided.
38. Per ASHRAE 62.2-2010, occupiable space is any enclosed space inside the pressure boundary and intended for human activities, including, but not limited to, all habitable spaces, toilets, closets, halls, storage and utility areas, and laundry areas. See Footnote 31 for definition of "habitable spaces".
39. The minimum volume of combustion air required for safe operation by the manufacturer and / or code shall be met or exceeded. Also, in accordance with the National Fuel Gas Code, ANSI Z223.I / NFPA54, unvented room heaters shall not be installed in bathrooms or bedrooms.
40. Per ASHRAE 62.2-2010, ducted mechanical systems are those that supply air to an occupiable space through ductwork exceeding 10 ft. in length and through a thermal conditioning component, except for evaporative coolers. Systems that do not meet this definition are exempt from this requirement. Also, mini-split systems typically do not have MERV-rated filters available for use and are, therefore, also exempted under this version of the guidelines.
41. HVAC filters located in the attic shall be considered accessible to the owner if drop-down stairs provide access to attic and a permanently installed walkway has been provided between the attic access location and the filter.
42. The filter media box (i.e., the component in the HVAC system that houses the filter) may be either site-fabricated by the installer or pre-fabricated by the manufacturer to meet this requirement. These requirements only apply when the filter is installed in a filter media box located in the HVAC system, not when the filter is installed flush with the return grill.

ENERGY STAR Certified Homes, Version 3 (Rev. 07)
Water Management System Builder Checklist [1,2]

Home Address: _____ City: _____ State: _____ Zip Code: _____

1. Water-Managed Site and Foundation	Must Correct	Builder Verified	Rater Verified	N/A
1.1 Patio slabs, porch slabs, walks, and driveways sloped ≥ 0.25 in. per ft. away from home to edge of surface or 10 ft., whichever is less. [3]	☐	☐	☐	☐
1.2 Back-fill has been tamped and final grade sloped ≥ 0.5 in. per ft. away from home for ≥ 10 ft. See Footnote for alternatives. [3]	☐	☐	☐	☐
1.3 Capillary break beneath all slabs (e.g., slab on grade, basement slab) except crawlspace slabs using either: ≥ 6 mil polyethylene sheeting, lapped 6-12 in., or ≥ 1 in. extruded polystyrene insulation with taped joints. [4,5,6]	☐	☐	☐	☐
1.4 Capillary break at all crawlspace floors using ≥ 6 mil polyethylene sheeting, lapped 6-12 in., & installed using one of the following opt's: [4,5,6]				
1.4.1 Placed beneath a concrete slab; OR,	☐	☐	☐	☐
1.4.2 Lapped up each wall or pier and fastened with furring strips or equivalent; OR,	☐	☐	☐	☐
1.4.3 Secured in the ground at the perimeter using stakes.	☐	☐	☐	☐
1.5 Exterior surface of below-grade walls of basements & unvented crawlspaces finished as follows: a) For poured concrete, masonry, & insulated concrete forms, finish with damp-proofing coating. [7] b) For wood framed walls, finish with polyethylene and adhesive or other equivalent waterproofing.	☐	☐	☐	☐
1.6 Class 1 vapor retarder not installed on interior side of air permeable insulation in ext. below-grade walls. [8]	☐	☐	☐	☐
1.7 Sump pump covers mechanically attached with full gasket seal or equivalent.	☐	☐	☐	☐
1.8 Drain tile installed at the exterior side of footings of basement and crawlspace walls, with the top of the drain tile pipe below the bottom of the concrete slab or crawlspace floor. Drain tile surrounded with ≥ 6 in. of ½ to ¾ in. washed or clean gravel and with gravel layer fully wrapped with fabric cloth. Drain tile level or sloped to discharge to outside grade (daylight) or to a sump pump. [9]	☐	☐	☐	☐
2. Water-Managed Wall Assembly				
2.1 Flashing at bottom of exterior walls with weep holes included for masonry veneer and weep screed for stucco cladding systems, or equivalent drainage system. [10]	☐	☐	☐	☐
2.2 Fully sealed continuous drainage plane behind exterior cladding that laps over flashing in Item 2.1 and fully sealed at all penetrations. Additional bond-break drainage plane layer provided behind all stucco and non-structural masonry cladding wall assemblies. [10,11]	☐	☐	☐	☐
2.3 Window and door openings fully flashed. [12]	☐	☐	☐	☐
3. Water-Managed Roof Assembly				
3.1 Step and kick-out flashing at all roof-wall intersections, extending ≥ 4" on wall surface above roof deck and integrated shingle-style with drainage plane above; boot / collar flashing at all roof penetrations. [13]	☐	☐	☐	☐
3.2 For homes that don't have a slab-on-grade foundation and do have expansive or collapsible soils, gutters & downspouts provided that empty to lateral piping that discharges water on sloping final grade ≥ 5 ft. from foundation, or to underground catchment system not connected to the foundation drain system that discharges water ≥ 10 ft. from foundation. See Footnote for alternatives & exemptions. [4,14]	☐	☐	☐	☐
3.3 Self-sealing bituminous membrane or equivalent at all valleys & roof deck penetrations. [4]	☐	☐	☐	☐
3.4 In 2009 IECC Climate Zones 5 & higher, self-sealing bituminous membrane or equivalent over sheathing at eaves from the edge of the roof line to > 2 ft. up roof deck from the interior plane of the exterior wall. [4]	☐	☐	☐	☐
4. Water-Managed Building Materials				
4.1 Wall-to-wall carpet *not* installed within 2.5 ft. of toilets, tubs, and showers.	☐	☐	☐	☐
4.2 Cement board or equivalent moisture-resistant backing material installed on all walls behind tub and shower enclosures composed of tile or panel assemblies with caulked joints. Paper-faced backerboard shall not be used. [15]	☐	☐	☐	☐
4.3 In Warm-Humid climates, Class 1 vapor retarders not installed on the interior side of air permeable insulation in above-grade walls, except at shower and tub walls. [8]	☐	☐	☐	☐
4.4 Building materials with visible signs of water damage or mold *not* installed or allowed to remain. [16]	☐	☐	☐	☐
4.5 Framing members & insulation products having high moisture content *not* enclosed (e.g., with drywall) [17]	☐	☐	☐	☐

Builder Employee: _____
Builder Signature: _____ Date: _____

Builder has completed Builder Checklist in its entirety, except for items that are checked in the Rater Verified column (if any) [2]
Rater Signature: _____ Date: _____

Notes:

1. The specifications in this Checklist are designed to help improve moisture control in new homes compared with homes built to minimum code. However, these features alone cannot prevent all moisture problems. For example, leaky pipes or overflowing sinks or baths can lead to moisture issues and negatively impact the performance of this Checklist's specified features.

2. Upon completion, the builder shall return the Checklist to the Rater for review. Alternatively, at the discretion of the builder and Rater, the Rater may verify any item on this Checklist. When this occurs, the Rater shall check the box of the verified Items in the Rater Verified column. The Rater is only responsible for ensuring that the builder has completed the Builder Checklist in its entirety and for verifying the items that are checked in the Rater Verified column (if any). The Rater is not responsible for assessing the accuracy of the field verifications for items in this Checklist that are not checked in the Rater Verified column. Instead, it is the builder's exclusive responsibility to ensure the design and installation comply with the Checklist.
3. Swales or drains designed to carry water from foundation are permitted to be provided as an alternative to the slope requirements for any home, and shall be provided for a home where setbacks limit space to less than 10 ft. Also, tamping of back-fill is not required if either: proper drainage can be achieved using non-settling compact soils, as determined by a certified hydrologist, soil scientist, or engineer; OR, the builder has scheduled a site visit to provide in-fill and final grading after settling has occurred (e.g., after the first rainy season).
4. Not required in Dry (B) climates as shown in 2009 IECC Figure 301.1 and Table 301.1.
5. Not required for raised pier foundations with no walls. To earn the ENERGY STAR, EPA recommends, but does not require, that radon-resistant features be included in homes built in EPA Radon Zones 1, 2 & 3. For more information, see www.epa.gov/indoorairplus.
6. For an existing slab (e.g., in a home undergoing a gut rehabilitation), in lieu of a capillary break beneath the slab, a continuous and sealed Class I or Class II Vapor Retarder (per Footnote 8) is permitted to be installed on top of the entire slab. In such cases, up to 10% of the slab surface is permitted to be exempted from this requirement (e.g., for sill plates). In addition, for existing slabs in occupiable space, the Vapor Retarder shall be, or shall be protected by, a durable floor surface. If Class I Vapor Retarders are installed, they shall not be installed on the interior side of air permeable insulation or materials prone to moisture damage.
7. Interior surface of existing below-grade wall (e.g., in a home undergoing a gut rehab.) listed in Item 1.5a is permitted to be finished by:
   - Installing a continuous and sealed drainage plane, capillary break, Class I Vapor Retarder (per Footnote 8) and air barrier that terminates into a foundation drainage system as specified in Item 1.8; OR
   - If a drain tile is not required as specified in Footnote 9, adhering a capillary break and Class I Vapor Retarder (per Footnote 6) directly to the wall with the edges taped/sealed to make it continuous.

   Note that no alternative compliance option is provided for existing below-grade wood-framed walls in Item 1.5b.
8. The 2009 IRC defines Class I vapor retarders as a material or assembly with a rating of ≤ 0.1 perm, as defined using the desiccant method with Procedure A of ASTM E 96. The following materials are typically rated at ≤ 0.1 perm and therefore shall not be used on the interior side of air permeable insulation in above-grade exterior walls in warm-humid climates or below-grade exterior walls in any climate: rubber membranes, polyethylene film, glass, aluminum foil, sheet metal, foil-faced insulating sheathings, and foil-faced non-insulating sheathings. These materials can be used on the interior side of walls if air permeable insulation is not present (e.g., foil-faced rigid foam board adjacent to a below-grade concrete foundation wall is permitted).

   Note that this list is not comprehensive and other materials with a perm rating ≤ 0.1 also shall not be used. Also, if manufacturer specifications for a specific product indicate a perm rating above 0.1, then the material may be used, even if it is in this list. Also note that open-cell and closed-cell foam generally have perm ratings above this limit and may be used unless manufacturer specifications indicate a perm rating ≤ 0.1. Several exemptions to these requirements apply:
   - Class I vapor retarders, such as ceramic tile, may be used at shower and tub walls;
   - Class I vapor retarders, such as mirrors, may be used if mounted with clips or other spacers that allow air to circulate behind them.
9. Alternatively, either a drain tile that is pre-wrapped with a fabric filter or a Composite Foundation Drainage System (CFDS) that has been evaluated by ICC-ES per AC 243 are permitted to be used to meet this Item. Note that the CFDS must include a soil strip drain or another ICC-ES evaluated perimeter drainage system to be eligible for use. In an existing home (e.g, in a home undergoing a gut rehab.) a drain tile installed only on the interior side of the footings is permitted. Additionally, a drain tile is not required when a certified hydrologist, soil scientist, or engineer has determined that a crawlspace foundation, or an existing basement foundation (e.g., in a home undergoing a gut rehab.), is installed in Group I Soils (i.e. well-drained ground or sand-gravel mixture soils), as defined by 2009 IRC Table R405.1.
10. These Items not required for existing structural masonry walls (e.g., in a home undergoing a gut rehabilitation). Note this exemption does not extend to existing wall assemblies with masonry veneers.
11. Any of the following systems may be used: a monolithic weather-resistant barrier (i.e., house wrap) shingled at horizontal joints and sealed or taped at all joints; weather resistant sheathings (e.g., faced rigid insulation) fully taped at all "butt" joints; lapped shingle-style building paper or felts; or other water-resistive barrier recognized by ICC-ES or other accredited agency.
12. Apply pan flashing over the rough sill framing, inclusive of the corners of the sill framing; side flashing that extends over pan flashing; and top flashing that extends over side flashing or equivalent details for structural masonry walls.
13. Intersecting wall siding shall terminate 1 in. above the roof or higher, per manufacturer's recommendations. Continuous flashing shall be installed in place of step flashing for metal and rubber membrane roofs.
14. The assessment of whether the soil is expansive or collapsible shall be completed by a certified hydrologist, soil scientist, or engineer. As an alternative, a roof design is permitted to be used that deposits rainwater to a grade-level rock bed with a waterproof liner and a lateral drain pipe that meets discharge requirements per Item 3.2. As another alternative, a rainwater harvesting system is permitted to be used that drains overflow to meet discharge requirements per Item 3.2.
15. In addition to cement board, materials that have been evaluated by ICC-ES per AC 115 may also be used to meet this requirement. Monolithic tub and shower enclosures (e.g., fiberglass with no seams) are exempt from this backing material requirement unless required by the manufacturer. Paper-faced backerboard may only be used behind monolithic enclosures or waterproof membranes that have been evaluated by ICC-ES per AC 115, and then only if it meets ASTM mold-resistant standards ASTM D3273 or ASTM D6329.
16. If mold is present, effort should be made to remove all visible signs of mold (e.g., by damp wipe with water and detergent). If removal methods are not effective, then the material shall be replaced. However, stains that remain after damp wipe are acceptable. Lumber with "sap stain fungi" is exempt from this Item as long as the lumber is structurally intact.
17. For wet-applied insulation, follow manufacturer's drying recommendations. EPA recommends that lumber moisture content be ≤ 18%.

LEED for Homes Project Checklist

for Homes

Builder Name:	
Project Team Leader:	
Home Address (Street/City/State):	

Project Description

Building Type:

# of Bedrooms: *0*

Project type:

Floor Area: *0*

Adjusted Certification Thresholds

Certified: *45.0* Gold: *75.0*

Silver: *60.0* Platinum: *90.0*

Indicates that an Accountability Form is required.

	Max Pts. Available	*Preliminary Rating* Y / Pts	*Maybe*	*No*	*Project Points*

1. Integrated Project Planning

Target performance tier: ☐

☐ a) Individuals or organizations with necessary capabilities

☐ b) All team members involved in various project phases

☐ c) Regular meetings held with project team

☐ a) Glazing area on north/south walls 50% greater than on east/west walls

☐ b) East-west axis is within 15 degrees of due east-west

☐ c) At least 450 sq. ft. of south-facing roof area, oriented for solar applications

☐ d) 90% of south-facing glazing is shaded in summer, unshaded in winter

2. Quality Management for Durability

☐ a) Durability evaluation completed

☐ b) Strategies developed to address durability issues

☐ c) Moisture control measures from Table 1 incorporated

☐ d) Durability strategies incorporated into project documentation

☐ e) Durability measures listed in durability inspection checklist

☐ Builder has a quality management process in place

☐ Builder conducted inspection using durability inspection checklist

3. Innovative or Regional Design

1. LEED for Neighborhood Development

2. Site Selection

- ☐ a) Built above 100-year floodplain defined by FEMA
- ☐ b) Not built on habitat for threatened or endangered species
- ☐ c) Not built within 100 ft of water, including wetlands
- ☐ d) Not built on land that was public parkland prior to acquisition
- ☐ e) Not built on land with prime soils, unique soils, or soils of state significance

3. Preferred Locations

OR

AND/OR

4. Infrastructure

5. Community Resources / Transit

- ☐ a) Within 1/4 mile of 4 basic community resources
- ☐ b) Within 1/2 mile of 7 basic community resources
- ☐ c) Within 1/2 mile of transit services providing 30 rides per weekday

OR

- ☐ a) Within 1/4 mile of 7 basic community resources
- ☐ b) Within 1/2 mile of 11 basic community resources
- ☐ c) Within 1/2 mile of transit services providing 60 rides per weekday

OR

- ☐ a) Within 1/4 mile of 11 basic community resources
- ☐ b) Within 1/2 mile of 14 basic community resources
- ☐ c) Within 1/2 mile of transit services providing 125 rides per weekday

6. Access to Open Space

1. Site Stewardship

☐ a) Stockpile and protect disturbed topsoil from erosion.

☐ b) Control the path and velocity of runoff with silt fencing or equivalent.

☐ c) Protect sewer inlets, streams, and lakes with straw bales, silt fencing, etc.

☐ d) Provide swales to divert surface water from hillsides

☐ e) Use tiers, erosion blankets, compost blankets, etc. on sloped areas.

Where the site is not previously developed, meet all the following:

☐ a) Develop tree / plant preservation plan with "no-disturbance" zones

☐ b) Leave 40% of buildable lot area, not including area under roof, undisturbed

OR Where the site is previously developed, meet all the following:

☐ c) Develop tree / plant preservation plan with "no-disturbance" zones AND

☐ Rehabilitate lot; undo soil compaction and remove invasive plants AND

☐ Meet the requirements of SS 2.2

OR ☐ d) Build on a lot of 1/7 acre or less, or 7 units per acre.

2. Landscaping

☐ a) Any turf must be drought-tolerant.

☐ b) Do not use turf in densely shaded areas.

☐ c) Do not use turf in areas with slope of 25%

☐ d) Add mulch or soil amendments as appropriate.

☐ e) All compacted soil must be tilled to at least 6 inches.

AND/OR

☐ Percentage of designed landscape softscape area that is turf

AND/OR

☐ Percentage of installed plants that are drought-tolerant

OR

☐ Percentage reduction in estimated irrigation water demand *(calculate)*

3. Reduce Local Heat Island Effects

☐ a) Locate trees / plantings to provide shade for 50% of hardscapes

☐ b) Install light-colored, high-albedo materials for 50% of sidewalks, patios, and driveways

4. Surface Water Management

[redacted]

[ ] vegetative landscape

[ ] permeable paving

[ ] impermeable surfaces directed to infiltration features

[ ] other impermeable surfaces (areas not counted towards credit)

[redacted]

[ ] a) For portions of lot on steep slope, use terracing and retaining walls

[ ] b) Plant trees, shrubs, or groundcover

[redacted]

[ ] a) Install permanent stormwater controls to manage runoff from the home

[ ] b) Install vegetated roof to cover 50% of roof area

[ ] c) Install vegetated roof to cover 100% of roof area

[ ] d) Have lot designed by professional to manage runoff from home on-site

5. Nontoxic Pest Control

[redacted]

[ ] a) Keep all exterior wood at least 12" above soil

[ ] b) Seal external cracks, joints, etc. with caulking and install pest-proof screens

[ ] c) Include no wood-to-concrete connections, or separate connections with dividers

[ ] d) Install landscaping so mature plants are 24" from home

e) In 'moderate' to 'very heavy' termite risk areas:

[ ] i) Treat all cellulosic material with borate product to 3' above foundation

[ ] ii) Install sand or diatomaceous earth barrier

[ ] iii) Install steel mesh barrier termite control system

[ ] iv) Install non-toxic termite bait system

[ ] v) Use noncellulosic wall structure

[ ] vi) Use solid concrete foundation walls or pest-proof masonry wall design

6. Compact Development

[redacted]

[ ] # of total units on the lot [ ] lot size (acres) [N/A] density (units/acre)

OR [redacted]

OR [redacted]

[redacted]

1. Water Reuse

[redacted]

[ ] Percentage of roof area used for harvesting

[ ] Application

AND/OR [redacted]

OR [redacted]

2. Irrigation System

[redacted]

- ☐ a) Irrigation system designed by EPA Water Sense certified professional
- ☐ b) Irrigation system with head-to-head coverage
- ☐ c) Install central shut-off valve
- ☐ d) Install submeter for the irrigation system
- ☐ e) Use drip irrigation for 50% of planting beds
- ☐ f) Create separate zones for each type of bedding
- ☐ g) Install timer or controller for each watering zone
- ☐ h) Install pressure-regulating devices
- ☐ i) High-efficiency nozzles with distribution uniformity of at least 0.70.
- ☐ j) Install check valves in heads
- ☐ k) Install moisture sensor or rain delay controller

AND/OR [redacted]

OR [redacted]

☐ Percentage reduction in estimated irrigation water demand *(calculate)*

3. Indoor Water Use

[redacted]

- ☐ a) Average flow rate of lavatory faucets is ≤ 2.00 gpm
- ☐ b) Average flow rate for all showers is ≤ 2.00 gpm per stall
- ☐ c) Average flow rate for all toilets is ≤ 1.30 gpf; OR
  - ☐ Toilets are dual-flush; OR
  - ☐ Toilets meet the EPA Water Sense specification

[redacted]

- ☐ a) Average flow rate of lavatory faucets is ≤ 1.50 gpm; OR
  - ☐ Lavatory faucets meet the EPA Water Sense specification
- ☐ b) Average flow rate for all showers ≤ 1.75 gpm per stall
- ☐ c) Average flow rate for all toilets is ≤ 1.10 gpf

[redacted]

1. Optimize Energy Performance

[redacted]

☐ IECC climate zone ☐ HERS Index

7. Water Heating

[redacted]

- ☐ a) Structured plumbing system
- ☐ b) Central manifold distribution system
- ☐ c) Compact design of conventional system

[redacted]

11. Residential Refrigerant Management

[redacted]

- ☐ a) Use no refrigerants
- ☐ b) Use non-HCFC refrigerants
- ☐ c) Use refrigerants that complies with global warming potential equation

1. Material-Efficient Framing

AND/OR

☐ Requirements of MR 1.2 have been met

☐ Detailed cut list and lumber order corresponding to framing plans or scopes

AND/OR

☐ Precut framing packages

☐ Open-web floor trusses

☐ Structural insulated panel walls

☐ Structural insulated panel roof

☐ Structural insulated panel floors

☐ Stud spacing greater than 16" on center

☐ Ceiling joist spacing greater than 16" on center

☐ Floor joist spacing greater than 16" on center

☐ Roof rafter spacing greater than 16" on center

☐ Two of the following: Size headers for loads; ladder blocking; drywall clips; 2-stud corners

OR

☐ a) Panelized construction

☐ b) Modular, prefabricated construction

2. Environmentally Preferable Products

☐ a) Provide suppliers with a notice of preference for FSC products; AND

☐ Request country of manufacture for each wood product

☐ b) No tropical wood installed (exceptions for FSC-certified or reclaimed wood)

Assembly : component	*(a) EPP*		*(b) Low emission*		*(c) Local production*	
Exterior wall: siding or masonry	☐	type:			☐	
Floor: flooring	☐	(90%) type:	☐	SCS FloorScore	☐	(90%)
Floor: framing	☐	type:			☐	
Foundation: cement	☐	type:			☐	
Interior wall, ceiling: gypsum board	☐	type:			☐	
Landscape: decking and patio	☐	type:			☐	
Other: counter	☐	type:			☐	
Other : interior trim	☐	type:			☐	
Other : window frame	☐	type:			☐	
Roof: roofing	☐	type:			☐	
Roof, floor, wall (2 of 3): sheathing	☐	type:			☐	
Other: driveway	☐	type: _____				

3. Waste Management

☐ a) Investigate local options for waste diversion

☐ b) Document diversion rate for construction waste

☐ a) pounds waste / square foot

☐ cubic yards waste / 1,000 square feet

☐ b) percentage of waste diverted

1. ENERGY STAR with Indoor Air Package

2. Combustion Venting

☐ a) no unvented combustion appliances

☐ b) carbon monoxide monitors on each floor (of each unit, if applicable)

☐ c) no fireplace installed, OR

☐ all fireplaces and woodstoves have doors

☐ d) space, water heating equipment designed with closed combustion; OR

☐ space and water heating equipment has power-vented exhaust; OR

☐ space and water heating equipment located in detached or open-air facility; OR

☐ no space- or water-heating equipment with combustion

Type of Fireplace or stove	*Better practice (1 pt)*	*Best practice (2 pts) (must also meet Better Practice)*
Masonry wood-burning fireplace	☐ masonry heater	☐ back-draft potential test
Woodstove and fireplace insert	☐ listed by testing lab and meets EPA standards	☐ back-draft potential test
Pellet stove	☐ EPA certified or meets safety requirements	☐ power- or direct-venting

3. Moisture Control

☐ a) Additional dehumidification system

☐ b) Central HVAC system equipped with additional dehumidification mode

4. Outdoor Air Ventilation

☐ a) Qualifies under ASHRAE Std. 62.2-2007 climate exemption.

☐ b) Continuous ventilation

☐ c) Intermittent ventilation

☐ d) Passive ventilation

☐ a) Meets EQ 4.1 part (a), active ventilation system installed

☐ b) Install heat recovery system

5. Local Exhaust

- ☐ a) Bathroom and kitchen exhaust meets ASHRAE Std. 62.2 air flow requirement
- ☐ b) Fans and ducts designed and installed to ASHRAE Std. 62.2
- ☐ c) Air exhausted to outdoors
- ☐ d) ENERGY STAR labeled bathroom exhaust fans

- ☐ a) Occupancy sensor
- ☐ b) Automatic humidistat controller
- ☐ c) Automatic timer tied to switch to operate fan for 20+ minutes post-occupancy
- ☐ d) Continuously operating exhaust fan

6. Distribution of Space Heating and Cooling

A. Forced-Air Systems

- ☐ a) Return air opening of 1 sq. inch per cfm of supply
- ☐ b) Limited pressure differential between closed room and adjacent spaces

B. Nonducted HVAC Systems

- ☐ Flow control valves on every radiator; OR
- ☐ Radiant floor system with thermostatic controls in every room

A. Forced-Air Systems

- ☐ Have supply air flow rates in each room tested and confirmed

B. Nonducted HVAC Systems

- ☐ Install at least two distinct zones with independent thermostat control

7. Air Filtering

OR

8. Contaminant Control

- ☐ a) Design and install permanent walk-off mats at each entry
- ☐ b) Design shoe removal and storage space near primary entryway
- ☐ c) Install central vacuum system with exhaust to outdoors

9. Radon Protection

10. Garage Pollutant Protection

a) In conditioned spaces above garage:

- ☐ Seal all penetrations and connecting floor and ceiling joist bays

b) In conditioned spaces next to garage

- ☐ Weather-strip all doors
- ☐ Carbon monoxide detectors in rooms that share a door with garage
- ☐ Seal all penetrations and cracks at the base of walls

AND/OR

- ☐ a) Fan runs continuously
- ☐ b) Fan designed with automatic timer control

OR

1. Education of the Homeowner or Tenant

- ☐ a) Operations and training manual
- ☐ b) One-hour walkthrough with occupant(s)
- ☐ a) Open house on at least four weekends
- ☐ b) Website about features and benefits of LEED homes
- ☐ c) Newspaper article on the project
- ☐ d) Display LEED signage on the exterior of the home

2. Education of the Building Manager

- ☐ a) Operations and training manual
- ☐ b) One-hour walkthrough with building manager

USGBC makes no warranty with respect to any LEED certified project, including any warranty of habitability, merchantability, or fitness for a particular purpose. There are no warranties, express or implied, written or oral, statutory or otherwise, with respect to the certifications provided by USGBC. By way of example only, and without limiting the broad scope of the foregoing, it is understood that LEED certification, whether at the Certified level or any other level, does not mean that the project is structurally sound or safe, constructed in accordance with applicable laws, regulations or codes, free of mold or mildew, free of volatile organic compounds or allegens, or free of soil gases including radon.

By affixing my signature below, the undersigned does hereby declare and affirm to the USGBC that the LEED for Homes requirements, as specified in the LEED for Homes Rating System, have been met for the indicated credits and will, if audited, provide the necessary supporting documents.

Project Team Leader		Company	
Signature		Date	

By affixing my signature below, the undersigned does hereby declare and affirm to the USGBC that the required inspections and performance testing for the LEED for Homes requirements, as specified in the LEED for Homes Rating System, have been completed. I have evaluated this project's documentation package and conducted the necessary QA/QC procedures with the Green Rater, and I hereby declare and affirm to USGBC that the homes included in this submittal are ready to earn LEED for Homes certification, as per the attached checklist.

Provider QAD		Company	
Signature		Date	

By affixing my signature below, the undersigned does hereby declare and affirm to the USGBC that the required inspections and performance testing for the LEED for Homes requirements, as specified in the LEED for Homes Rating System, have been completed.

I also hereby confirm that all verification services were performed in accordance with the LEED for Homes Verification & Submittal Guidelines and Addendum.

Green Rater		Company	
Signature		Date	

By affixing my signature below, the undersigned does hereby declare and affirm to the USGBC that the required inspections and performance testing for the LEED for Homes requirements, as specified in the LEED for Homes Rating System, have been completed.

I also hereby confirm that all verification services were performed in accordance with the LEED for Homes Verification & Submittal Guidelines and Addendum.

Green Rater		Company	
Signature		Date	

LEED for Homes Project Checklist

Addendum: Prescriptive Approach for Energy and Atmosphere (EA) Credits

Points cannot be earned in both the Prescriptive (below) and the Performance paths of the EA section.	*Max Pts. Available*	*Preliminary Rating* Y / Pts	Maybe	No	*Notes*	*Project Points*
2. Insulation						
☐ a) Insulation meets R-value requirements of IECC ☐ b) Insulation meets HERS Grade II specifications for installation						
☐ a) Insulation exceeds R-value requirements of IECC by 5% ☐ b) Insulation meets HERS Grade I specifications for installation						
3. Air Infiltration						
☐ Air leakage rate in ACH50						
OR						
4. Windows						
☐ a) Windows and glass doors meet ENERGY STAR 80P window specifications ☐ b) Skylight glazing area is ≤ 3% of floor area AND ☐ Skylights meet ENERGY STAR requirements for skylights						
OR						
5. Heating and Cooling Distribution System						
A. Forced-Air Systems ☐ a) Duct leakage of ≤ 4.0 CFM at 25 Pascals per 100 sq.ft. ☐ b) No ducts in exterior walls unless extra insulation is added ☐ c) At least R-6 insulation around ducts in unconditioned spaces B. Nonducted HVAC Systems ☐ At least R-3 insulation around pipes in unconditioned spaces						
A. Forced-Air Systems ☐ Duct leakage of ≤ 3.0 CFM at 25 Pascals per 100 sq.ft. B. Nonducted HVAC Systems ☐ Keep the boiler and pipes entirely within conditioned envelope						
OR						
A. Forced-Air Systems ☐ a) Duct leakage of ≤ 1.0 CFM at 25 Pascals per 100 sq.ft. ☐ b) Air-handler and all ductwork is within conditioned envelope and EA 3.3 is met ☐ c) Air-handler and all ductwork visibly within conditioned spaces (not in walls, etc.) B. Nonducted HVAC Systems ☐ Outdoor reset control to set distribution temp. based on outdoor temp.						

6. Space Heating and Cooling Equipment

☐ a) Design and size HVAC equipment using ACCA Manual J or equivalent
☐ b) Install efficient heating AND cooling equipment (see Table)
☐ c) Install ENERGY STAR programmable thermostat OR
☐ Heat pump or hydronic installed and exempted from part (c)

[ ] Type of cooling system
[ ] Cooling efficiency (SEER / EER)
[ ] Type of heating system
[ ] Heating Efficiency (AFUE / HSPF / COP)

OR

7. Water Heating

☐ a) Structured plumbing system
☐ b) Central manifold distribution system
☐ c) Compact design of conventional system

[ ] Type of DHW system
[ ] Efficiency
[ ] Solar: Percentage of annual DHW load

8. Lighting

☐ a) Indoor lighting - 3 additional ENERGY STAR lights in high-use rooms
☐ b) Exterior lighting - motion sensor controls or integrated PV

OR

☐ a) 60% of fixtures are ENERGY STAR fixtures
☐ b) 80% of lamps are ENERGY STAR CFLs

9. Appliances

☐ a) ENERGY STAR labeled refrigerator
☐ b) ENERGY STAR labeled ceiling fans in living/family room and all bedrooms
☐ c) ENERGY STAR labeled dishwasher using 6.0 gallons per cycle or less
☐ d) ENERGY STAR clothes washer

10. Renewable Energy

[ ] Reference electric load, kWh/yr (based on HERS model)
[ ] Electricity supplied by renewable system, kWh/yr
[0.0%] Percentage of annual reference electric load met by renewable system

11. Residential Refrigerant Management

☐ a) Use no refrigerants
☐ b) Use non-HCFC refrigerants
☐ c) Use refrigerants that complies with global warming potential equation

The City of Ithaca is updating its Comprehensive Plan. There are several reports commissioned and adopted by the City that are framing the updated Comprehensive Plan. These reports support the need for developing senior affordable housing in downtown Ithaca and confirms our planned project achieves the LEED for Neighborhood Development priorities.

LEED-ND Sustainability July 2013

> "Affordable housing is a significant issue in Tompkins County and the City of Ithaca is facing a growing need for an affordable housing supply, especially for families with median incomes or less. In spite of this, within the documents we reviewed, there was almost no mention of the affordable housing issue. Housing affordability and social equity are critical neighborhood components embedded in LEED-ND and, more importantly, are key to sustainability. Since reviewing affordable housing policy was beyond the scope of work, we did not provide further analysis on this topic; however, the inclusion of policies and incentives for affordable housing in the Comprehensive Plan is absolutely critical".
>
> 4 Priorities for a Sustainable Future in Ithaca, all of which our project will achieve:
>
> - Location: Focus development near existing infrastructure, amenities, and transit.
> - Design: Establish density minimums.
> - Design: Remove minimum parking requirements.
> - Buildings: Provide incentives for the adoption of LEED standards beyond municipal buildings.

City of Ithaca Comprehensive Plan, Planning Influences Report July 2012:

"Downtown Ithaca 2020 Strategic Plan (2010) Prepared by the Ithaca Downtown Alliance, the Downtown Ithaca Strategic Plan identifies "the community big idea" as a three-pronged package to revitalize the urban core, reduce regional sprawl, reduce the community's carbon footprint, bolster tourism, and strengthen the linkages between institutions of higher education and downtown. The three objectives of the "community big idea" are as follows:

□The creation of 1,500 new urban residential housing units in downtown and along the West State Street corridor.

□ The rebuilding of the Ithaca Commons to enhance its commercial and community functions, and its recasting as a transit hub, but with a streetcar or other form of enhanced transit running through the middle of the pedestrian mall.

□ The creation of a new enhanced transit program and route that connects the Commons with Cornell University and Collegetown, Ithaca College, and the West End/Waterfront. The

enhanced transit could be a streetcar or trolley that would strengthen and encourage corridor development.

Downtown Housing Needs

- The Downtown Housing Strategy, prepared for the Downtown Ithaca Alliance in 2011, projects that over the next 5 years there is overall housing demand for up to 1,350 units in the Downtown area (consisting of up to 350 for-sale units and up to 1,000 rental units). This equates to an annual demand of as many as 70 for-sale units and 200 rental units per year through 2017. It illustrates elevated demand for housing units now and in the near-term, possibly due to the extremely low vacancy rates in the City and/or need for affordable housing options in the Downtown and surrounding areas.

Special Population Housing

- Seniors comprise a small percentage of the overall population (5.9% are age 65 and older), yet many cite the need for more diverse housing options. The availability of housing options for seniors could influence the number of seniors that choose to stay in Ithaca as they age.

Housing Affordability

- The Affordable Housing Needs Assessment, prepared in 2006 for Tompkins County, identifies the need for 2,500 affordable housing units in the County over the next ten years (equating to 250 units per year). This is demand for units that are affordable to households with incomes at 100% of the County household median income level and below. This is in addition to an existing Countywide shortfall of nearly 1,350 units that are needed to meet demand for households at or above 100% of the County median household income. Note that these studies generally do not address the additional affordable housing needs of the student population.
- Like the County's Affordable Housing Needs Assessment, the Downtown Housing Strategy identifies strong demand for tax-credit and affordable to moderate-level housing in the Downtown area – as many as 125 rental units per year.

Housing Demand Summary

- Factors such as housing affordability, an aging housing stock, student housing needs and preferences, low vacancy rates, and redevelopment and investment Downtown and in other areas of the community also shape the housing needs of the Ithaca community.
- Looking toward the future, it will be important for the City of Ithaca to plan for ways to accommodate the housing needs of a growing population. It will also be important to address the current challenges in the housing market by encouraging and allowing redevelopment and investment in housing in targeted areas of the community."

Our planned project will create 120+ construction jobs and 2 permanent full time jobs.

The project location will directly advance the City's goals as the site is in:

- walkable well designed neighborhood
- infrastructure exits
- public service costs are minimized
- Workforce housing is created

The property is currently tax exempt and upon redevelopment will be added to the tax rolls.

Our mixed-income Project will target senior households at 60-90% of Area Median Income.

The pro-forma rents and household income limits for the Project are based upon the Tompkins County Area Median Income of $78,800.

Maximum income range per household size:

	1 person	2 person	3 person	4 person
1 bedroom	$33,120-$49,680	$37,860-$56,790		
2 bedroom		$37,860-$56,790	$42,600-$63,900	$47,280-$70,920

Our pro-forma rents affordable to households at 60% and 90% of area median income are as follows:

	60% rents	90% rents
1 bedroom	$ 887	$1,330
2 bedroom	$1,065	$1,597

The market need for additional affordable rental units is well documented in two apartment analysis reports completed November 2011 by Danter Company, LLC for Tompkins County and Downtown Ithaca Alliance. Since the completion of the reports, 2 family tax credit projects have completed totaling 132 units, these units are 100% leased within 3 months of certificate of occupancy. The projects are Breckenridge Place in the City of Ithaca and Poets Landing in the Village of Dryden. This net gain is however offset by the recent loss of Maple Hill Apartments 89 units that converted from HUD income restricted units to market rate units.

The following are excerpts from the Danter reports that highlight the need for additional affordable housing:

- Most new development has focused on student housing.
- Senior oriented and/or moderate income (workforce) rental development represent the strongest potential for future development
- 2010-2015 senior households will increase from 6,808 to 8,010 households representing a 17.7% increase with even greater increases in the future

- The tax credit housing market in Ithaca and Tompkins County is underserved.

- An estimated 14.4% of all rental units in Tompkins County are currently occupied by senior residents (age 55 or older). Considering the 2,908 units in the step-up/step-down base, this yields a potential senior base of support of 418 units.

- Over the next 5 years there is overall housing demand for up to 1,350 units in the Downtown EMA consisting of up to…1,000 rental housing units.

- Overall downtown vacancy is only 0.5%.

- Nationally…increasing number of seniors and empty nesters responding to a more urban lifestyle with a full amenity package.

- Accommodating a population more likely to experience "aging in place" adds a new component to conventional housing strategies.