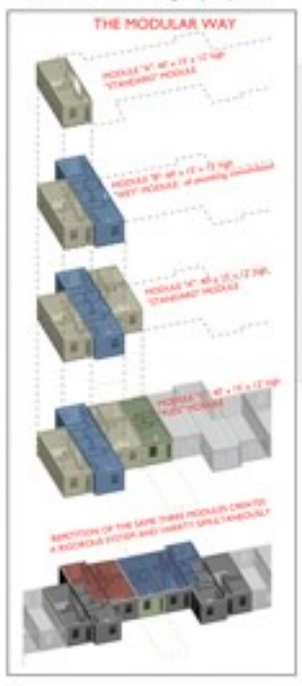
View looking East showing Community vegetable garden plots, outdoor recreation area, parking structure with rain barrel system and main vertical and horizontal circulation structure which doubles as viewing/turnaylane platform



GROUND FLOOR PLAN:
EAST BUILDING

*Note: Unit configurations are identical in West Building

SECOND FLOOR PLAN:
EAST BUILDING

*Note: Unit configurations are identical in West Building

Project Checklist

LEED for Homes

Builder Name:	
Home Address (Street/City/State):	FAIRFAX Inter-Generational

Input Values: No. of Bedrooms: 3 — Floor Area (SF): 1008

Minimum No. of Points Required: Certified: 81 — Silver: 90 — Gold: 81 — Platinum: 90

Detailed information on the measures below are provided in the companion document "LEED for Homes Rating System"

				Max Points (Available)
		Innovative and Exemplary Performance (IEP)	**Minimum of 0 to 4 Points Required**	**4**
	1.1	**Integrated Project Planning**	Preliminary Rating	Prerequisite
	1.2		Integrated Project Team	1
	1.3		Design Charrette	1
	2.1	**Quality Management for Durability**	Durability Planning (Pre-Construction)	Prerequisite
	2.2		Site Power Measurement	Prerequisite
	2.3		Quality Management	Prerequisite
	2.4		Third Party Durability Inspection	3
		Innovative and Exemplary Performance (IEP)	**Minimum of 0 to 4 Points Required**	**4**
		Location and Neighborhood (LN)		**10**
	1.1	**Site Selection**	Avoid Environmentally Sensitive Sites and Farmland	UL/1	2
	2.1	**Preferred Locations**	Select an Edge Development Site	UL/1	1
	2.2		OR Select an infill Site	UL/1	3
	2.3		Select a Previously Developed Site	UL/1	1
	3	**Infrastructure**	Site within ½ Mile of Existing Water and Sewer	UL/1	1
	4.1	**Community Resources & Public Transit**	Basic Community Resources / Public Transportation	UL/1	1
	4.2		OR Extensive Community Resources / Public Transportation	UL/1	2
	4.3		OR Outstanding Community Resources / Public Transportation	UL/1	3
	5	**Access to Open Space**	Public Accessible Open Spaces	UL/1	1
		Sustainable Sites (SS)	**Minimum of 0 to 8 Points Required**	**8**
	1.1	**Site Stewardship**	Erosion Controls (During Construction)	Prerequisite
	1.2		Minimize Disturbed Area of Site	1
	2.1	**Landscaping**	No Invasive Plants	Prerequisite
	2.2		Drought Tolerant Plants	2
	2.3	**Washing of Hardscapes**	Locate and Plant Trees to Shade Hardscapes	1
	3.1	**Surface Water Management**	Design Permanent Site	4
	3.2	**Non Toxic Pest Control**	Design Integrated Pest Control Measures Non-Toxic	1
	4.1	**Compact Development**	Average Housing Density 8 Units / Acre	UL/1	2
	4.2		OR Average Housing Density 10 Units / Acre	UL/1	3
		Water Efficiency (WE)	**Minimum of 0 to 6 Points Required**	**6**
	1.1	**Water Reuse**	Rainwater Harvesting System	2
	1.2	**Irrigation System**	Select High Efficiency Materials from List	2
	1.3		OR Install Landscape Designed by Licensed or Certified Professional	WE 1.2	4
	2.1	**Indoor Water Use**	High Efficiency Fixtures (Toilets, Showers, and Faucets)	3
	2.2		OR Very High Efficiency Fixtures (Toilets, Showers, and Faucets)	WE 2.1	6

HERS Index Value Achieved: 70 — IECC / Climate Zone: 4 — EA 1.2 Pts Achieved: 10.0

		Energy and Atmosphere (EA)	**Minimum of 0 to 19 Points Required**	**OR**	**38**
	1.1	**ENERGY STAR Home**	Meets ENERGY STAR for Homes with Third Party Testing		Prerequisite
	1.2		Exceeds ENERGY STAR for Homes	EA 1.10	34
	2.1	**Water Heating**	Improved Hot Water Distribution System		2
	3.1	**Refrigerant Management**	Minimize Ozone Depleting and Global Warming Refrigerants		1
		Materials and Resources (MR)	**Minimum of 0 to 8 Points Required**		**13**
	1.1	**Material Efficient Framing**	Overall Waste Factor for Framing Order Shall be No More Than 10%		Prerequisite
	1.2		Advanced Framing Techniques		2
	2.1	**Environmentally Preferable Products**	Tropical Woods, If Used, Must be FSC		Prerequisite
	2.2		Select Environmentally Preferable Products from List		4
	3.1	**Waste Management**	Document Overall Rate of Diversion		Prerequisite
	3.2		Reduce Waste Sent to Landfill by 25% to 100%		2
		Indoor Environmental Quality (IEQ)	**Minimum of 0 to 9 Points Required**	**OR**	**29**
	1.1	**ENERGY STAR with IAP**	Meets ENERGY STAR w/ Indoor Air Package (IAP)	IEQ1.10	13
	1.2	**Combustion Venting**	Space Heaters & HVAC Equip w/ Closed/Direct Exhaust	IEQ 1	Prerequisite
	1.3	**Outdoor Air Ventilation**	Meets ASHRAE Std 62.2	IEQ 1	Prerequisite
	2.1	**Local Exhaust**	Meets ASHRAE Std 62.2	IEQ 1	Prerequisite
	2.2		Timer / Automatic Controls for Bathroom Exhaust Fans	IEQ 1	1
	2.3		Third-Party Testing of Exhaust Air Flow Rate Out of Home		1
	3.1	**Supply Air Distribution**	Meets ASHRAE Manual D	IEQ 1	Prerequisite
	3.2		Third-Party Testing of Supply Air Flow into Each Room in Home		2
	4.1	**Supply Air Filtering**	≥ 6 MERV Filters, w/ Adequate System Air Flow	IEQ 1	Prerequisite
	4.2		OR ≥ 10 MERV Filters, w/ Adequate System Air Flow		1
	5.1	**Contaminant Control**	Seal Off Vents During Construction	IEQ 1	Prerequisite
	5.2		Permanent Walls Off Slab, Off Drive Storage, Off Central Vacuum		2
	5.3		Flush Home Continuously for 1 Week with Windows Open		1
	6.1		OR Detached Garage or No Garage	IEQ 1	1
		Awareness and Education (AE)	**Minimum of 0 to 3 Points Required**		**3**
	1.1	**Education for Homeowner and/or Tenants**	Basic Occupant's Manual and Walkthrough of LEED Home		Prerequisite
	1.2		Comprehensive Occupant's Manual and Multiple Walkthroughs / Trainings		1
	1.3		Public Awareness of LEED Home		1
	1.4	**Education for Building Mgrs**	Basic Building Manager's Manual and Walkthrough of LEED Home		1
2	Sub-Total				
01.0	**Project Totals (pre-certification estimates):**			**LEED GOLD**	**130**

Development Budget – Phase I

Gross Building Square Feet (Residential: 36 units)				40,075	
Gross Building Square Feet (Community Bldg.)				5,000	
Land Area	151,000	3.47 Acres			
SOFT COSTS					
Legal to Firm Fees				40,000	0 1.00
Permits & Fees ($500/application) Gross area (1.8/1.0) Type of Construction Factor (2 for SS) x Permit Fee Multiplier (.00150/$1.0 for CO)				9,428	0 0.24
Architect Fees		4.0%	Construction Cost	160,000	0 4.00
Engineering Civil, Structural				80,000	0 2.00
Engineering MEP, FP (design-build)					0
Soft Cost Contingency (on soc, interest reserve)		5%		12,000	0 0.30
Total			$	281,713	0 7.04
HARD COSTS					
SITEWORK					
Site Prep - 1 year lease	1,000	LF	0.00	15,625	0 0.39
Off-Site Improvements	1,000	LF	0.00	5,623	0 0.14
Excavation (material) - Export	800	CY	20.00	17,120	0 0.43
Site Clearing + Grub / Tree Removal	1	LS	10,000.00	10,000	0 0.25
Paving Surfaces					
Maximum Paving incl. excavation and base alone	2,510	SY	40.00	110,000	0 2.77
Porous Pavers	10,000	SF	5.00	130,000	0 3.25
Line Striking - Parking Spaces, HC directional Striping	47	EA	50.00	2,350	0 0.06
Concrete Curb					
New curb	1,075	LF	10.00	26,222	0 0.66
Sidewalks					
4' detached min. 4' strip/water / dams - Central Ave	3,400	SF	5.00	20,744	0 0.51
4' detached min. 4' strip/water / dams - S. Ohio Street	2,000	SF	5.00	11,437	0 0.29
Crosswalk Pad	300	SF	5.00	2,139	0 0.05
Site Improvements					
Trash Compactor enclosure - 8' high w/ gate	30	LF	40.00	1,200	0 0.03
Basketball Court	1	LS	20,000.00	20,000	0 0.50
Community Flower Garden - new top soil and raised planting beds	1	LS	5,000.00	5,000	0 0.13
Tot Lot / Jungle Gym	1	LS	20,000.00	20,000	0 0.50
UTILITIES				-	
Natural Gas Service - by Utility	800				
Water Distribution	1	LS	50,000.00	50,000	0 1.25
Sanitary / Storm Sewer System	1	LS	100,000.00	100,000	0 2.50
Power and Communication - overhead	1	LS	50,000.00	50,000	0 1.25
Plantings, Landscape Furniture					
Sidewalk trees	30	EA	750.00	22,500	0 0.56
Exterior Plantings (turf/sod / raised beds / lap set	27,000	SF	4.00	108,000	0 2.70
Site Hooks	4	EA	1,500.00	6,000	0 0.15
Site Lighting - exterior area lighting	1	LS	70,000.00	70,000	0 1.75
Yard Fencing	300	LF	30.00	21,000	0 0.53
Sitework Contingency	5.0%			40,000	0 1.00
Total Sitework				662,894	0 16.57
BUILDING COST					
Excavation & Foundations					
Excavation Crawl Spaces / Export - Residential	2,000	CY	30.00	57,313	0 1.38
Masonry Foundation Walls					
8" CMU Foundation Walls	3,000	SF	10.00	84,000	0 1.00
Rigid Insulation - Interior	3,000	SF	0.50	3,414	0 0.08
Foundation Concrete					
Spread footings incl. excavation, concrete, place + rebar	150	CY	300.00	46,500	0 1.11
Footing Wall Pads / Footings (assume 8 sq footing, 1 step in 1 square, 2'-0"x 1)	30	CY	300.00	10,910	0 0.27
Footing Garage / Elevator Hallway Concrete footings	100	CY	150.00	27,500	0 0.68
Slab on Grade					
Community Center - 4" slab on grade	2,017	SF	5.00	17,502	0 0.43
4" on slab on grade - Crawl space	25,146	SF	5.00	128,730	0 3.18
Stone sub-base (4")	800				
Vapor Barrier	800				
Under slab light insulation - (unpaved)	25,146	SF	0.50	13,873	0 0.34
Building Construction					
Modular Construction (Materials and set) - Residential	40,075	SF	80.00	2,734,875	0 65.00
Community Center Construction	5,000	SF	100.00	500,000	0 12.33
Interior Door Hardware	3,000	SF	15.00	45,000	0 1.10
Exterior Balcony and Stairs, Complete	12,000	SF	20.00	234,025	0 7.04
Electrical / Tele / Data				-	
Central Fire Alarm System	1	LS	80,000.00	80,000	0 1.40
Plumbing					
Vertical Plumbing - 1st connections from modules	30	LS	1,000.00	30,000	0 0.80
Building Contingency	5.0%			197,000	0 4.86
Total Building Costs			$	4,000,477	0 98.72
General Requirements					
Project Management, Overhead, G&A, ownership		5.0%	3,000,000	203,117	0 5.00
Insurance (Builder's Risk / Worker's Comp)				80,000	0 1.00
Total Construction Direct Cost				5,000,640	0 123.52
TOTAL COST without land			$	5,855,150	$ 126.00

F.I-G

FAIRFAX INTER-GENERATIONAL COMMUNITY

SITE STRATEGY: NEIGHBORHOOD CONNECTIONS

East 82nd Street became the primary generating axis for this project as it is central link to the Fairfax Neighborhood Core on Quincy Street between Emmanuel Square and Quincy Park with it's many outreach and educational services.

Locating the Community Center at the terminus of this axis as the North-anchoring Fairfax Inter-Generational (FIG) is an important notion of community support within the larger context of the neighborhood and it's resources to residents. The Community Center is also logistically centered on the site to provide equal access to all residents, establishing a central place of communal gathering both inside and out and to create clear and secure visual surveillance of play and recreational areas. The Community "Center" therefore is not only the building but also the Infant/Tot Lot, Picnic Pavilion and open recreational/meditative areas immediately adjacent to it. (See Image #3). This central "core" also of community allowed us to fragment the parking areas into three smaller and less invasive groupings while linking parking spaces more directly with individual units.

Given the long and narrow nature of the site, the Golden Ave "finger steel" to the North provided a perfect setting for larger scale outdoor activities such as a basketball court and community flower garden and composting/recycling center. Duplex units, more in keeping with the smaller residential structures of Golden Ave but still connected to the FIG community, could be built at a later date. Similarly, the existing two story structure on the South West corner of the site, facing Central Ave, should be saved and converted at a future date into 6 residential units.

The primary residential structures facing Central Ave were conceived as both single/efficient communal buildings but also as a series of individual structures and experiences that break down the scale of a large residential complex. The result is a set of buildings that have no front or back, private yards on the North and South at grade and to the East and West at a second level green roof. The experience of the private interior and exterior spaces are intended to be both intimate and private while at the same time communal (See Image #4).

A significant dimension of this "communal" experience is the circulation/meeting platform linking all residential units at the second level. This light steel structure functions as an informal meeting place, recreational area for all communal spaces and as the main vertical and horizontal circulation for the residential units (See Image #2).

PROJECT STATISTICS

LAND AREA TOTAL: 151,000 SF
36 UNITS + Residential Manager
50 PARKING SPACES
1 Bedrooms - 1
2 Bedrooms - 26
3 Bedrooms - 6
4 Bedrooms - 4

1ST FLOOR (All Type "A" Units)	23,175 SF
8 Two Bed, 6 Three Bed, 4 Four Bed	
2ND FLOOR	18,900 SF
18 Two Bed	
SUBTOTAL	**42,075 SF**
COMMUNITY CENTER	3,000 SF
TOTAL	**45,075 SF**
PHASE 2 DUPLEX UNITS	7,200 SF
EXISTING TWO STORY RENOVATION 6 UNITS	3,500 SF

FLEXIBILITY, ERGONOMICS, ACCESSIBILITY, EXPANSION

Most units have the ability to transform from 2 bedroom units to 3 or 4 bedroom units and vice versa. More importantly, however, is the ease by which this is accomplished. As the detailed plans indicate, no significant renovations are required to allow this flexibility to occur. This makes for an inherently efficient structure. All units on the ground floor (50%) are Type "A" handicap accessible units. There are four possibilities and scales for future expansion designed into this project: 1) Separate Duplex units constructed on Golden Ave will provide at least 4 new units and will not disturb the existing FIG residents. 2. renovation of existing building at the SW corner of site will create 6 new units also without disturbing residents. 3. conversion of Covered Outdoor Porch on second level into a third bedroom will not expand the number of units but will expand the number of 3 and 4 bedroom units possible. 4. addition of a third story on primary East and West buildings can be done with relative ease through modular construction and provide an additional 18 units in the future.

SUSTAINABILITY

LEED for Homes is the structure by which this project articulates its extension to "sustainability" which is too often misused or misinterpreted. LEED is a rigorous and quantifiable strategy by which a project is held accountable to its claims of sustainability. As the checklist on the following board indicates, this project has been designed to achieve LEED Gold status. A summary of some significant approaches and features of the project include: 1. a density factor of 14 units per acre, 2. a storm water management system that captures a significant amount of rain water from carport roofs and buildings into rain barrels strategically placed on the site around the community garden plots to be used for irrigation; green roofs on 2nd floor levels; pervious walking surfaces and recreation areas rather than more expensive storm water retention systems, 3.composting and recycling center at North East edge of site, 4.electric plug-in car ports in parking areas, 5.significant material efficiency construction techniques since the project will be built in a modular factor and produce very little waste, 6. 95% of all construction waste to be diverted from landfill, 7.environmentally preferable products such as flyash concrete for foundations, bamboo flooring, recycled drywall, Low VOC paints and sealants, recycled concrete board siding, no carpet, kitchen cabinets made without formaldehyde, 8. shoe storage at entries to reduce contaminants and improve indoor air quality, 9. 14 SEER HVAC unit, 10. compact fluorescent lighting, 11. low-flow faucets and dual flush toilets to reduce water consumption by 30%, 12. Grade #1 insulation package which will reduce heating and cooling costs, 13. rainscreen facade which allows walls to "breathe" and reduces the potential for mold growth.

AFFORDABILITY

An $120.00 of this LEED Gold project proves that building sustainably means building affordably. A significant reason for this affordability comes from the efficiencies inherent with a modular system of building. Typically, construction time is cut in half which reduces soft costs, waste is dramatically reduced, quality control is superior as modules are completed inside a factory under controlled conditions, materials are procured in larger quantities generating better prices, sound between units is markedly reduced as each module has a floor and ceiling, separating units acoustically, and the entire project is constructed from only three different modules: Module "A", the Standard module (40'x13'x12'), Module "B", the "WEST" module (40'x13'x12') which houses all plumbing-related functions for all units, Module "C", the "FLEX" module (40'x13'x12'), which houses two bedrooms and allows units to grown or shrink in size easily.

View looking West from 2nd floor circulation/meeting platform allowing residents to have constant visual access and security over recreational areas

View looking South on axis with East 82nd Street indicating a visibly open and transparent Community Center as it relates to the Tot Lot areas

View looking North from Central Ave. at the East building demonstrating the building's varied yet cohesive relationship to the street.

View looking South showing integrated relationship between car ports, pedestrian paths, green spaces and residential units.