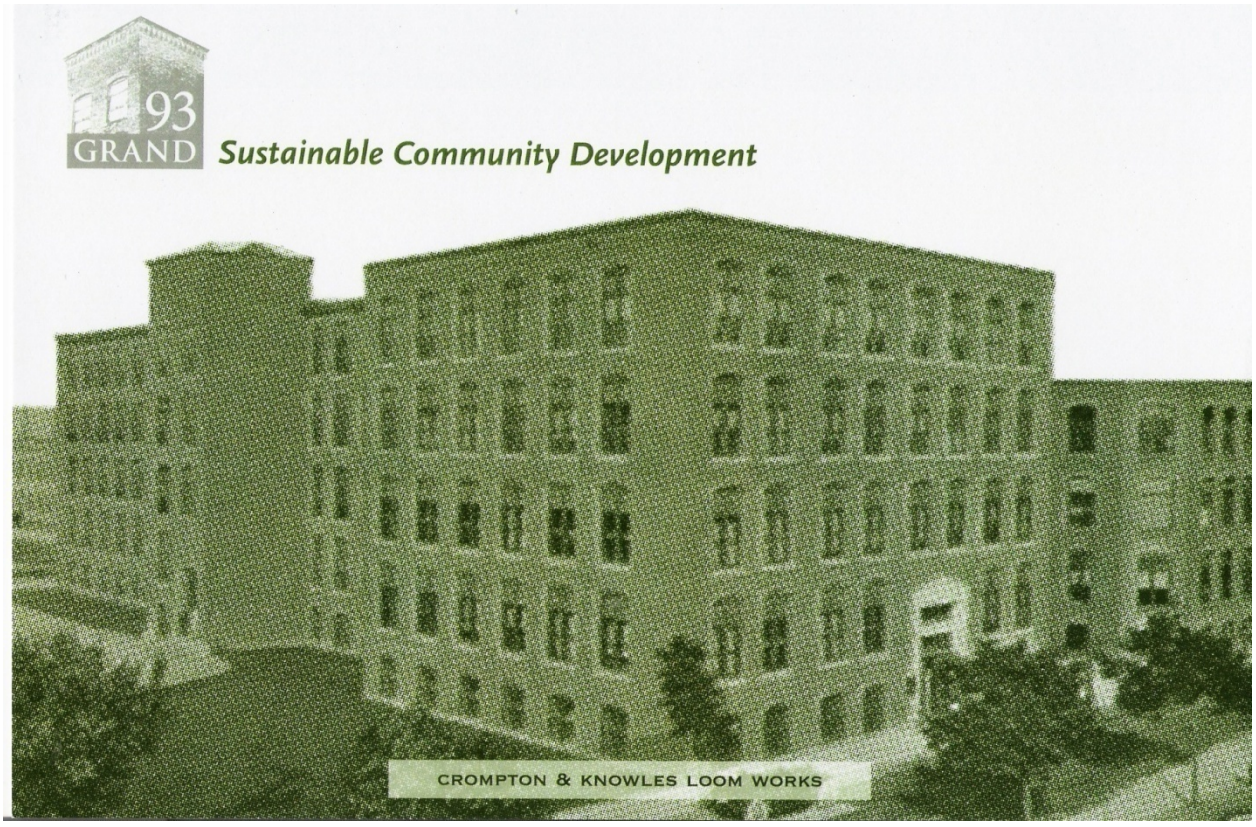
The 93 Grand Project

Main South Community Development Corporation



Created By:
Angela McAlister
Benjamin Roy
Michael Swanton

Meeting Minutes

Our Sponsor

Meeting Minutes: November 12, 2008
At Main South CDC
First Meeting with Peggy Middaugh

Members in Attendance:

- Peggy Middaugh
- Angela McAlister
- Michael Swanton
- Benjamin Roy

Design Charrettes

- Wednesday December 10, 2008-Professionals 12-2
- Thursday December 11, 2008-Community 5:30-7

Brian McGrail- Building Manager/Contractor

Other buildings of interest

- Whitinsville, Lowell

Talk to Robert Kruger about Colin Cryan

Research

- Wind (community very interested)
- Kilby Gardener Hammon Project
- Energy Star

Tainter Street has good history

Contact Information for Peggy Middaugh

- Office: 508-363-4911
- Cell: 508-864-3489

Meeting Minutes: December 10, 2008
At Main South CDC
Professional Charrette

Members in Attendance:

- Peggy Middaugh
- Rob Krueger
- Angela McAlister
- Michael Swanton
- Benjamin Roy

Professionals who attended:

- Steve Teasdale
- Alberto Cardenas
- Colm Cryan
- Brian McGrail
- Matt Root
- Thaddeus Szkoda
- Leslie Fanger
- Lynn Denninger
- Neil Benner
- Cindy Howard
- Jim Howard
- Roger Poirer
- Gabriel McCarthy
- Margaret Morrissey
- Jack Moran
- Shyla Matthews
- Eris Williams
- Julie Lynch
- Tim McCourthy
- Matt Arnar

Group Presentations

Bee Group:

What LEED qualification would this fall under?

- New Construction
- Building Rehabilitation

LEED point opportunities

- Alternative transportation
- Preserve internal structure
- Community connection
- Rooftop garden
- Additional open space
- Remove existing building
- Incubator space for new offices
- Historical design funding
- Brownfield funding
- Demolish one of the buildings for geothermal space
- Rail spur

Is Geothermal a viable option?

- Good payback on investment

Rapid renewable

- Sound proofing
- Salvage materials
- Reuse timbers for flooring
- Divert waste away from landfills

Capture Greywater

Think overall energy strategy not a specific energy strategy

Geothermal

- Demolish building
- Have the wells at 95 Grand St.
- Vertical drilling
- Open root system

Don't get sucked into a specific technology, look best case scenario

- Think strategy not solution

Innovation

- Exceed minimal expectation
- Introduce new technology
- Spreadsheet on all points for LEED Certification
- Sustainable building
- US Green Building Council
- Revitalize through home ownership

Ideas for construction

- Gym/field house to invite in community
- Ground source heat pump
- Atrium
- Not enough roof space to have all electricity by PV
- Green roof on lower building 35
- Cogeneration

Easy LEED points

- Transportation
- Brownfield
- Reused building material
- Water efficiency
- Near bus stop, spur for train

Criteria to meet Platinum Level LEED Certification

- Tighten exterior structure

- Heat island effect
- White roof/green roof
- Historic preservation project funding
- Create a leadership committee (architect, planner, designer, engineer)
- Wind
- Natural lighting
- Geothermal and solar panels
- Rainwater reused, Greywater
- Existing lighting
- Zip cars, bikes, buses, railroad, daycare

Dolphin Group

Do what we can without much effort and cost

LEED-New Construcion

- Easy points with transportation and being recognized as a Brownfield site

Shoot for Silver LEED Certification

- Energy efficiency
- Geothermal-difficult with small footprint
- Reusing building material-roof, floors, outside structure
- When removing materials, salvage materials
- Water efficiency-grey water
- Near Bus-Stop
    - Railroad

Mix use

- Lower level should be retail
- Incubator space-secretary for many different small companies

Vegetable Group

Platinum Level LEED Certification

- Tighten up exterior envelope
- Heat island effect-reduce
- White Roof/ Green Roof/ Both
- Foam- reserve brick

Historic designation=funding

Stirring Committee-CM, Planner who is LEED Certified

Maintain windows/skylights

Geothermal and solar

Rain harvesting, green rooftop

- Flushing toilets=greywater

Exterior lighting

Infrastructure

- Zip Cars
- Bike paths and storage
- Bus
- Shuttle
- Railroad
- Daycare

50% affordable housing

Dog Group

Technology

- Geothermal
- Solar
- Photo Voltaic
- Green rooftop(s)
- Large windows
- Insulation
- Indigenous plants-use storm water

- Zip cars
- Bike paths
- Wine vineyard
- Art studios
- Restaurant-slow?
- Incubators

Leasing geothermal from ESCO

Cover brick but still be able to see it

Pedestrian zones-retail

Funnel out to Main Street

Meeting Minutes: December 11, 2008
At Main South CDC
Community Charrette

Members in Attendance:

- Peggy Middaugh
- Rob Krueger
- Angela McAlister
- Michael Swanton
- Benjamin Roy

Community members who attended:

- Jane McKeag
- Ten Conna
- Larry Haley
- Wyatt Wade
- Caitie Dwyer Huppert
- Konstantina Lukes
- Joe O'Brien
- Jen (on Kilbey Street)
- Steve Teasdale

Recap of December 10, 2008

Technology:

- Green way, storm water/grey water
- Skylights
- Green rooftops
- Water Catchment
- Geothermal- 93 grand too small (?), develop district and heating system
- Passive Solar- glass may help temperature, solar hot water on balcony

Community Functionality "Community Posture"

- Indoor field house in building #28
- Daycare for community
- Incubators
- Public art
- Studio space

Other Recreation

- Rail Link (union)
- Zipcars
- Plugs for electric cars
- Bike Racks

LEED Platinum or Gold

Project Leadership committee (architect, CM, etc)

Colin Cryan Presentation

Community Discussion

Ted Connor- solar hot water and electricity, insulate very well, co-generator "icing on the cake"

LEED Community will recognize that

Can create jobs for maintaining of the building

- Teach people how to build/create these things, then will leave with that knowledge
- Center for study/research on sustainability, develop incubator first
- If they learn the skill through the building development, then this will bring life to the building
- School groups-all ages
- Connect them to problem and will make them feel less alienated

Forces-Building, community, Clark University

- How intertwined?
- Art studios and housing

Sustainable Materials

- Brick-effective insulation
- Building Science incorporated
- Insulate inside envelope
- 2/3 pane glass, double glazing
- Zone heating system

Places of Interest

- Trustee of reservations-Leominster
- Had interesting problems with geothermal, talk to them about their experiences

Meeting Minutes: January 15, 2009
At Main South CDC

Members in Attendance:

- Peggy Middaugh
- Rob Krueger
- Angela McAlister
- Michael Swanton
- Benjamin Roy

Look a Charrette results

Continue sorting our Building/community Feel

- Meet the Neighborhood and get a feel for the community
- Set up different meeting times at the CDC to get a better feel for different parts of the day

Keep a Digital and Hardcopy Notebook of all records

Sustainable Buildings

- "It's not just the building itself, but the building in its context"-Rob Krueger

Overall goal→ Identify possible outcomes for the renovation of 93 Grand

Green child Care Center

RESEARCH OBJECTIVES

- Create a map of the home ownership/rental
- Physical Topographical map
- Water flow underground and above ground
- What kind of plants to plant where? (Bushes and such)
- Is Geothermal a Possibility at our site? (combined/Straight)
- What type of sewer system is 93 Grand on?
- Is a rooftop Garden feasible

Create Price Point Build Outs of apartment units using conventional +1, +2, +3…

Using LEED or Green Community Template-Investigate low VOC/"Green" materials

Contact Larry Harley-Knows information about local green suppliers 340-2313

Find local supplier of green building supplies

Investigate the Office of Technical Assistance of Mass possibly the one in California

- Specifically the list of Environmentally Preferred Products

Look into green options for renovations

Research the glue that is used to bond recycled products

US Census.gov Demographics-> Mainsouthcdc.org

Learn as much as possible before interviews

Check out the DPW site on East Worcester street

Feasibility studies of the following:

- Solar hot water systems
- Photovoltaic systems
- Impact of 95 Grand → Investigate the RFP on the building
- Buying power of the neighborhood
- Walk ability of the sidewalks

Second meeting with Peggy and Rob will be at

- Fantastic Pizza @ 12:00 for a lunch meeting Friday Jan 22

Third meeting will be at 10:00 at the Main South CDC on the following Friday

Meeting Minutes: January 23, 2009
At Fantastic Pizza

Members in Attendance:

- Peggy Middaugh
- Rob Krueger
- Angela McAlister
- Michael Swanton
- Benjamin Roy

Luba Zhaurova (City of Worcester) 508-799-1400

- Economic Development
- Planning Department

Went over where to get contact information

- Online at the Company's Webpage

Received Building pictures on CD

Believe that buildings 28 and 28a will be getting torn down (not set in stone)

Demographics-Most on CDC Website

- Median income vs. rest of city
- Single head of household
- Family size

Average apartment rental amounts in Worcester

Clark University has done many projects involving Worcester Community, ask people below for much of the information.

Sharon Krefetz
skrefetz@clarku.edu

Lauri Ross
508-793-7642
lross@clarku.edu

Price/Weight per sq foot for Green Roofs

Conventional Products to measure against

ABS vs. PVC Plastics

Meeting Minutes: January 30, 2009
At Main South CDC and 93 Grand Street (tour of building)

Members in Attendance:

- Peggy Middaugh
- Rob Krueger
- Brian McGrail
- Angela McAlister
- Michael Swanton
- Benjamin Roy

Companies and techniques Brian has looked into:

- Acousti
- Level Right ($1 sq/ft-sound proof)
- Therma Floor- radiant floor heating
- Maxxon
- SPF Roofing-VA
- Therm-o-flex
- Lapolla
- Liquid boot

There used to be a bank in building 1, think that building 2 is best for residential
The roof has rubber over it, put there about 15 years ago

Look into historical significance of the building (historical committee)
Brian believes there is a separate sewer system under the building and the soil is clay

Things to look into:

- Randy Muse-GCA
- Permutated drain
- Water reaching to aquifer or does it get caught up with the sewer?
- Groundwater recharge system
- Green infrastructure overlay system, how to make it work?
- Wells to recharge aquifer?

Information for green roofs from previous IQP's

- Storm events
- Combined sewer
- How much water can the roof expect to hold, therefore is it feasible?

Building information

- No boilers
- Had large boiler and shipped heat to the other buildings, but not usable

Economic Feasibility:

- Rob- in 2004 annual production only met 53% of the demand for housing needs

- Find out what apartments sell for in the area
- Spool Company north of 93 Grand Street owns the parking lot across from our building. Wants to build lots and condos but waiting to see what we do with our building.

Grant money- low interes loans
CDC can do this unlike private individuals

Kilby Street

- Really nice in 40's and 50's
- 60's there were many gangs and drugs
- Now the gangs are gone, boys and girls club and Clark University in the area

Had tour of building

Meeting Minutes: February 23, 2009
At Main South CDC

Members in Attendance:

- Peggy Middaugh
- Rob Krueger
- Angela McAlister
- Michael Swanton
- Benjamin Roy

Peggy's comments about the binder:

- Would like sewer map of entire community/city
- Pedestrian friendliness- sidewalks clear? Shoveling policy?
- How many trees are in the community and can where could they be added?
- There is a well already, take that into consideration when thinking about geothermal

General Discussion:

- Landscape technology, such as permeable concrete
- Donna Williams will know who is a local supplier of concrete
- Insulation- pros and cons of each type

Rob suggested sending out invitations to interviewees
Also maybe presenting our project to the community after break

Meeting Minutes from Interviews with Professionals

Interviewees and Contact Information

Matt Arnar
Solar Flair
1-800-445-8030

Bruce Gallagher
Solar Design Associates
1-978-456-6855

Peter Hudde
Conservation Services Group
1-508-579-2375

William Lee
Willaim T. Lee Real Estate
1-508-798-1801

Jared Markham
Weston Solutions
1-860-368-3204

Martin Orio
Water Energy distributor, Inc.
1-508-904-8122

Matt Root
Conservation Services Group
1-508-328-8079

Other Contact Information (given by interviewees)

Bob Perspvhini
Richard D. Kimball Company
1-875-221-5901

1-781-331-0990

Weston Solutions (WPI east hall)

Seth Crocker
Crocker Building
1-413-737-7803

Barbara Heller
City Official

Lynn Grinn & Shoples
1-413-732-4336

Jeff Lynch
Enterprise Equipment

Phone Interview: Peter Hudde (Solar)
January 29, 2009
Conservation Services Group
Meeting taken place at the Printers Building

Members in Attendance:

- Benjamin Roy
- Mike Swanton
- Angela McAlister
- Peter Hudee

General Discussion and information:

- Flat Roof Mounting system are non penetrating
- Strength of the roof is critical
- Figure out the usable space on the building

Do you know the efficiency of a this type of system?

- Possible obstacles such as HVAC units decrease the amount of usable roof space dramatically
- 10% Efficiency is normal and the mounting angle is typically equal to the latitude (42degrees for Worcester)
- Business of CSG is only for consulting
- Solar modules have efficiencies in the 5-20% and Mass is specifically 10-15% efficiency

About half of the usable roof space is lost to layout issues
The safe setback from the roof is 10 feet from the edge of the building
Parapets can eliminate the need to have a safe setback

Do you know of any funding available?

- The Government has a Bailout program for solar electric/hot water systems
- There are Tax Credits for using solar systems
- There are also grants for the system installation

e-mail address peter.hudde@csgrp.com

Phone Interview: Bruce Gallagher (Solar)
February 6, 2009
SolarDesign.com
Meeting taken place at the Printers Building

Members in Attendance:

- Benjamin Roy
- Mike Swanton
- Angela McAlister
- Bruce Gallagher

General discussion and basic information about solar energy
If you have a flat roof then you can install ballast panels or a self ballasted system
Make sure you look for anything that could possibly be shading the system

How much would the system cost?
It matters on your roof space, but it has to be at least 10 feet from any edge of the building.
Usually get around 9 watts per square foot and it costs around $8 dollars per watt.
You can visit www.dsireusa.org for common wealth rebates
Also, you can visit http://rredc.nrel.gov/solar/codes_algs/PVWATTS/version1/ for a performance calculator

What kind of systems have you worked with recently?
We have done buildings such as the Whitehouse and Olympics in Atlanta.

Phone Interview: Martin Orio (Geothermal)
February 10, 2009
Water Energy Distributor, Inc.
Meeting taken place at the Printers Building

Members in Attendance:

- Benjamin Roy
- Mike Swanton
- Angela McAlister
- Martin Orio

General Discussion about a Geothermal System
Most importantly, you need to know the load (how much energy it will use) of the building
Should use standing columns for our building
Can use greywater or a gardening system on the roof
What is underground? If you drill down what will you find?
If you install 1,500' x 8'' pores at least 50 feet apart, you will receive 25 tons of energy from it but could increase the amount of tons
You need to know the tons wanted
Could you explain the Two Types of Systems?
Water to air unit in each room

- Air based is best for multiple rooms
- Maximum temperature is 120 degrees (air)
- Ducts are bigger because you only have 120 degree air temp maximum.

Can get 160-180 air temperature, but we only need 120 with this system, which will provide low static and max temperature. The more air you get the higher static and lower efficiency. We will need move more air at a higher air flow so this system is better.

Water to Water Central Plant

- Water heat pumps
- Once central tank
- More flexible, more expensive

During winter, you have a big tank with 120 degree water for radiant floor heating etc.
Ground will fill up the left side of tank where the right will be used for the heating; this is constant recycling of water

Do you know the average price of each system?
Price has a lot to do with what you do with the type of system

- Closed Loops: 450 feet down, 20 feet apart and will cost about $3,500 per ton
- Vertical system: 3-4 standing columns 50 feet apart and will cost about $2,500 per ton

Costs: $2,500-$3,500 per ton on outside, $4,000-$7,000 per ton on inside
Total costs=$6,500-$10,000 per ton
The price will depend on many different things, such as

- Type of machine
- Zone development
- Length of ducting
- Fresh air systems

Will need a makeup air system
Brick provides very little insulation and in reality brick just won't work.
Say you have a 100 ton building; you will need 3-4 standing columns, 50 feet apart compared to 33 loopholes 20 feet apart. The standing columns make a lot more sense because we don't have a large footprint.
It is very hard to identify a price for the building without actually knowing the information.
If the building envelop is not tight you can heat 400 square feet per ton, if the envelop is tight with good insulation, then will get 500 square feet per ton.
Should find out the average coldest temperature in the area
Manual-N: need for geothermal
Will have zero carbon footprint

Can you give us a little more information on the greywater aspect?
System-water responsibly returns to the earth because water will leak out when they are full.
Say there is a big storm; the rain (greywater) will overflow the system and will replenish groundwater
Scenario: you dig wells and you are only getting 10 gallons per minutes, then it is a cold winter day and you are bleeding off 5 gallons per minutes for 45 minutes. If you manage the water off of the building then there will be greywater to use for the heating (as backup).
Rain water is not very hot or very cold.

Do you know how the drilling is in the Worcester area?
You will probably hit bedrock at around 50 feet down in the Worcester area.
Some believe that this is a problem, but it is actually better. The bedrock is like the wells own natural case.
If there is very little rock or low water levels, geothermal becomes a bad idea because if there is no water then the pump costs become higher.
Note: Bob Duggan from Wellington Pump will know about drilling in the Worcester area.

In your professional opinion, do you think geothermal is a good system to use in this building?
"Absolutely, with no question in my mind".
First, make the load as small as possible, need insulation!

Some contacts in Worcester area:
RDK-Bob Perspvhini
875-221-5901
Design service for HVAC requirements

Crocker Building-Seth Crocker
413-737-7803
Builds the building then leases it back to city

Lynn Grinn&Shoples
Engineer and analysis 413-732-4336

Enterprise Equipment- Jeff Lynch
781-331-0900

Phone Interview: Matt Arnar (Solar)
February 10, 2009
Solar Flair
Meeting taken place at the Printers Building

Members in Attendance:

- Benjamin Roy
- Mike Swanton
- Angela McAlister
- Matt Arnar

General discussion and basic information:
Most solar panels have a 25 year standard warranty
"I've been working in this industry for 9 years and I have never seen a failed panel."
It's not cost effective to track the sun in New England
Solar Flair Systems will alert customer if panels are having a problem
Generally maintenance will cost 200-300 dollars per year after the first 5 years
Solar arrays only get the tax credits if it is connected to the power grid; this also is less expensive because the system doesn't require any batteries to store energy
Building 1

- Rated for a 17kW system (possibly better to use green roof here)

Building 2

- Rated for a 68kW system @ 10-15 degree tilt
- Low tilt chosen so that there is low wind load and simple concrete ballasts can be used to secure the panels to the roof. It also helps with the snow in the winter.

Solar Flair takes care of the whole process including planning, installation, rebates and warranty/maintenance
Standard numbers

- 8$ per watt of solar (includes permits and other type things)
- 5lbs per square foot of roof load
- 10kW projects usually have payback period of 5-7 years(this includes the fact that during Jan and Feb very little energy is produced.

Do you think Solar Hot water is feasible for this building?

- Poor option for building of this size
- Not necessary if using geothermal

What are the Costs/Benefits of photo voltaic?

- Enormous rebates available for PV systems
- For a 100,000$ the rebate can be about half
- + a 30% Tax rebate
- Accelerated depreciation is also a choice
- Payback would be about 4-5 years [14% return]
- Normal lifetime for system would be 25 years

Phone Interview: Jared Markham (Green rooftops)
February 12, 2009
Weston Solutions
Meeting taken place at the Printers Building

Members in Attendance:

- Benjamin Roy
- Mike Swanton
- Angela McAlister
- Jared Markham

General discussion and basic information:
Would need a structural engineer to determine type of Green roof applicable

Could you expand on the two different types of rooftops?
Two types offered- extensive and intensive
Extensive

- Most cost effective
- Weight load of 18-22 lb/sf +snow load
- 4 inches in depth of soil
- Also offer an extensive roof with 2½ inches of soil
    - Requires more maintenance
    - Yet same price as 4 inch soil depth

Intensive

- 8 inches of soil depth
- Weight loading starts at 40lbs
- Allows for recreation, etc. on roof

Could you give us a rough cost of each system?
Price is largely driven on the size of the project.

- Larger the project the cheaper it is per square foot
    - Small area closer to $20 per square foot
    - Larger area closer to $12 per square foot
- Also based on plant selection

Plant species recommended

- Sedum species (Spurium)
- Chives

Accent planting (10% of total plants, higher failure rate)

- Dianthus
- Small grass types

Weston Solutions constructed the green roof atop WPI's East Hall

Phone Interview with William Lee (real estate specialist)
February 17, 2009
William T. Lee Real Estate
Meeting taken place at the Printers Building

Members in Attendance:

- Benjamin Roy
- Mike Swanton
- Angela McAlister
- William Lee

General discussion:
First thought is that the clientele likely cannot support green
WPI side and Indian lake area could support
Green is likely too expensive for the area
Could possibly even build green closer to the Clark area if you were able to sell to Clark
Recommendation would be to do normal construction

- Green is a construction type that attracts certain buyers at more expensive price
- Doesn't believe that factor will aide Main South's project

After explaining that Main South could likely receive federal funding in order to incorporate William Lee's response was:
The more federal funding the more aesthetically pleasing and successful the project
This would also attract better clientele
Or it would make the project feasible to have green low income housing
This factor almost creates two schools of thought

- If you have funding do it because either you can get better clients or it makes low income economically feasible
- If you don't have the funding, green construction doesn't make sense because of the high price and lack of interest in going green to people who would rather pay for the cheaper conventional construction

Contact Barbara Heller (City Official) she could identify who our possible buyers would be

Design Charrette Information

Attendees List: Professional Charrette
December 10, 2008

Name	Tech. Segment	Company	Phone
Steve Teasdale	Proj. Manager	MSCDC	
Rob Krueger	Facilitator	WPI	
Peggy Middaugh	Coordinator	GBC	
Alberto Cardenas	Architect	Domenech Hicks	
Colm Cryan	Green Building Systems	University of Limerick, Ireland	
Brian McGrail	Project Manager	MSCDC	
Matt Root	Energy - efficiency, tech.	Conservation Services Group	508-836-9500x13494
Thaddeus Szkoda	Geothermal	Freedom Energy Systems	508-248-0700
Leslie Fanger	Landscape Design	BSC Group	508-792-4500
Lynn Denninger	Green Roofs Architect	Cannon Design	716-773-6800
Neil Benner	Construction Mgr	Gilbane, Inc. Providence	1-800-GILBANE
Cindy Howard	Geothermal	Center for Hope, Southbridge	508-764-4085x619
Jim Howard	Geothermal	Center for Hope, SOuthbridge	x624
Roger Poirer	Geothermal	Center for Hope, Southbridge	
Gabriel McCarthy	Developer	Crane Development, Soutbridge	
Margaret Morrissey	Developer	Southbridge	
Jack Moran	Design/Build - Green Architect	Cutler Associates	(508) 757-7500
Shyla Matthews	Funder	Mass Development	
Erin Williams	Cultural Development Office	City of Worcester	
Julie Lynch	Architect	City of Worcester	
Tim McCourthy	Economic Development	City of Worcester	
Benjamin Roy	IQP Student	WPI	
Angela McAlister	IQP Student	WPI	
Michael Swanton	IQP Student	WPI	
Matt Arnar	Solar	Solar Flare	1-800-445-8030

Attendees List: Community Charrette
December 11, 2008

Name	Tech. Segment	Company
Jane McKeag	Resident	Castle Street, Worcester
Ted Conna	Resident	Hollywood Street, Worcester
Larry Haley	Builder, Resident	Worcester
Wyatt Wade	Business Owner	Davis Productions, Worcester
Caitie Dwyer Huppert	Resident	Castle Street, Worcester
name unknown	City of Worcester, Architecture Dept.	
Konstantina Lukes	Mayor, City of Worcester	
Joe O'Brien	Resident	Oread Place, Worcester
Jen (on Kilby Street)	Resident	Kilby Street
Steve Teasdale	Director	Main South CDC
Rob Krueger	Facilitator	
Peggy Middaugh	Coordinator, Resident	Alden Street, Worcester
Benjamin Roy	IQP Student	WPI
Angela McAlister	IQP Student	WPI
Michael Swanton	IQP Student	WPI

NOTE: Any of the names whose addresses are listed live in the Main South neighborhood.

Green Building Design Charette for
93 Grand Street, Worcester Mass
December, 2008
Sponsored by Enterprise

Summary of Process

The Main South CDC plans to renovate the former Crompton Knowles mill building at 93 Grand Street for a mixed use development of housing, commercial and retail space. We would like this project to be a showcase of sustainable design within an affordable and practical context. With that goal in mind, the Main South CDC applied for and was awarded a Green Communities Design Charette grant in November, 2008 in the amount of $5,000, to seek input from both professionals with "Green Building" expertise and people either living or involved in the Main South community.

Two information gathering meetings were held. The first, which took place on December 10th from 12:00 – 2:00 pm, was geared toward professionals with "Green Building" expertise and included renewable energy contractors, energy efficiency consultants, architects, and funders. The second took place on December 11th from 4:30 – 7:00 pm and included neighborhood residents, public officials, and people generally interested in sustainable building projects.

Preparation for the meetings included developing poster sized visual renderings of the property from a variety of perspectives. These [visuals] played a major role in soliciting feedback and ideas from Charette participants.

Invitations were mailed…….also invited by email. Specific attendees for professional meeting; community meeting announced more broadly.

Meeting Agendas: (see attached)

Both meetings began with a welcome from Main South CDC Executive Director Steve Teasdale, an introduction to the project by facilitator and WPI Professor Rob Krueger, and a powerpoint presentation by Colm Cryan of the University of Limerick, Ireland describing his "smartgrowth" successes in urban projects in that city.

Attendees were then asked to peruse the six poster sized visual renderings of the 93 Grand Street property which were set up on easels in an area adjacent to the meeting room. With color coded "sticky notes" in hand, they were asked to write down things that came to mind – comments, questions, ideas – as they viewed each poster. After 30 minutes, participants got together in four pre-assigned break out groups and spent 45 minutes brainstorming their ideas with one another. Then the groups came back together and shared the ideas that each group had discussed.

Charrette coordinators collected the numerous sticky notes and summarized the report of each breakout group on (what do you call those sheets?) The notes from the meetings are attached.

Green Building Design Charette
93 Grand Street, Worcester Mass
December, 2008

NOTES

Group 1: Dolphins

- LEED rating system (big issue for this group)
    - Probably "new construction" for this project
- Low fruit: brownfields, Transportation (rail, bus) – 26 "points" basic
- Strategy: tick off easy things
- Energy Efficiency
- Power sources
    - Geothermal? (small footprint)
- Reuse of materials (salvage)
    - Roof, floor, outside structure
    - Keep out of waste stream
- Water efficiency (plumber, mechanical)
    - Reduce dependence on water
- Mixed use
    - 1st floor – retail
    - Incubator space

Group 2: Bees

- Considered big space for gym/fieldhouse
    - Inclusion of non-residents
- Atrium in building #1
    - Inviting
    - Control solar gains
    - PV awnings –south side
    - Ground source heat pumps
        - Use of building (??? *Cant read)*
        - Smaller vs. larger zones
- Roof area too small for electric gen.
    - Lower loads w/ PV
- Green Roof – building #28a
- Cogneneration – district heat power – City

Group 3: Vegetables

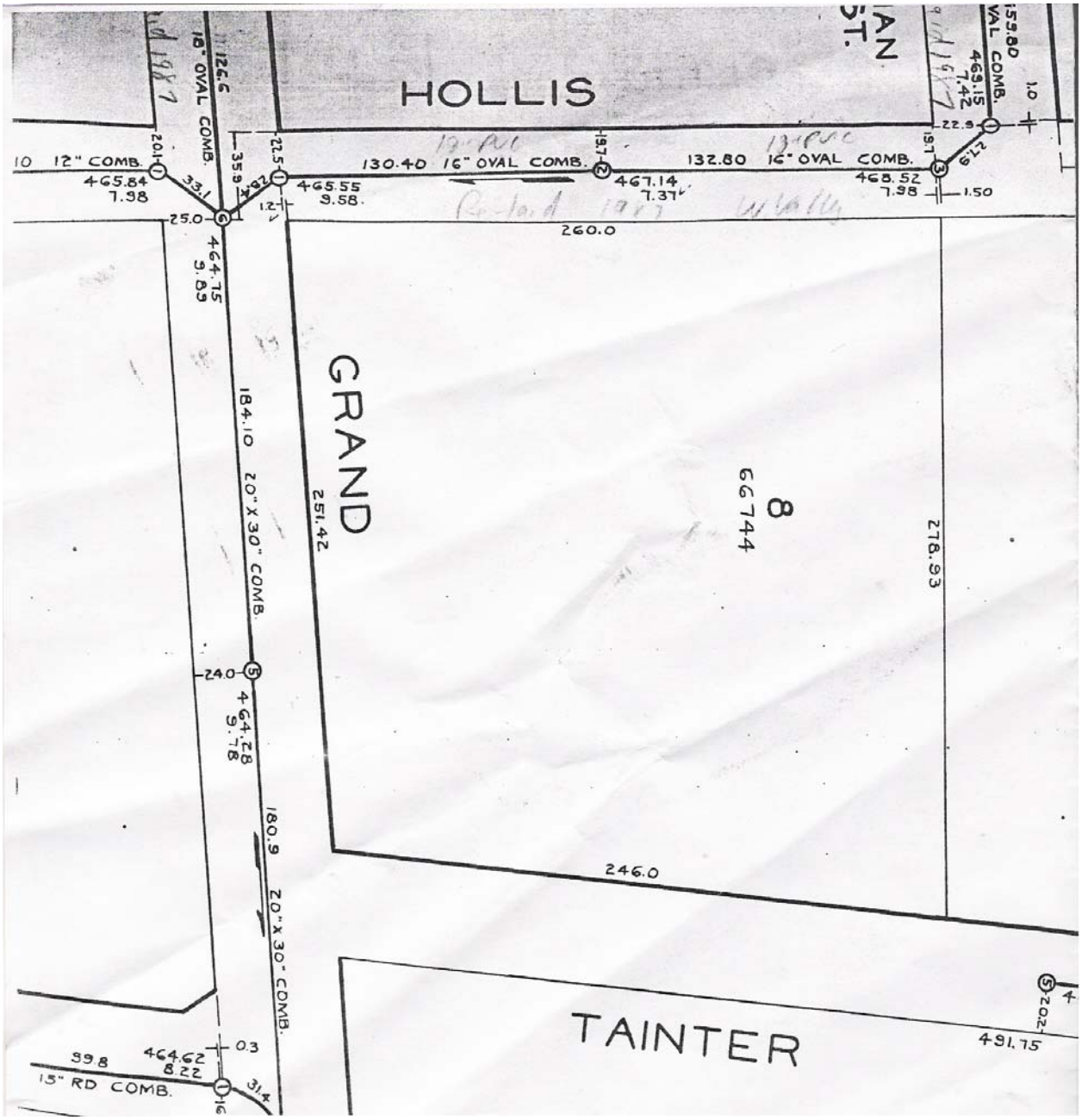
- Platinum level LEEDS
- Tighten exterior envelope
- Heat island effect from current roof
    - White
    - Green roof
- Inside
    - Foam and sheet rock
    - Preserve some brick
- Historic designation/preservation – funding
- Project leadership committee:
    - Architect
    - Construction Mgr
    - Planner
    - LEED specialist
- Reducing operating cost of the building
- Maintenance:
    - windows – natural light
    - Skylights
    - Geothermal
    - Solar
    - Rain harvesting
        - Gardens
        - Toilets
        - Laundry
- Exterior lighting
    - 100% cut off
- Infrastructure
    - Zip cars for building
    - Bike path/storage
    - Railroad
- Use: Daycare facilities
    - <50% (???) rate

Group 4: Paws

- Technological: Active
    - Geothermal
    - Solar hot water
    - PV

    - Green Roofs
    - Consider ESCOs
    - Leasing technology from private companies
- Technological Passive
    - Light
    - Insulating
    - Alternate landscaping
        - Indigenous plants
    - Compare to 89 Shrewsbury St:
        - Paint layer
        - Feel of brick
        - Thermal barrier
- Community Connections
    - Community garden
    - Vineyard
    - Zip cars
    - Art Studios
    - Slow Food
    - Incubators
- Outward posture
    - To outdoors
    - To community

Building Information


HOLLIS
GRAND
TAINTER
8
66744
130.40 16" OVAL COMB.
132.80 16" OVAL COMB.
10 12" COMB.
18" OVAL COMB.
184.10 20"X30" COMB.
180.9 20"X30" COMB.
15" RD COMB.
260.0
251.42
278.93
246.0
491.75


General Site Plan
Key:
Buildings to be demolished.
Existing buildings to remain.
Surface parking.
Structure parking.
93 Grand Street
PLAN SHOWING LOCATION OF ELEVATORS

Building Pictures

Building Exterior

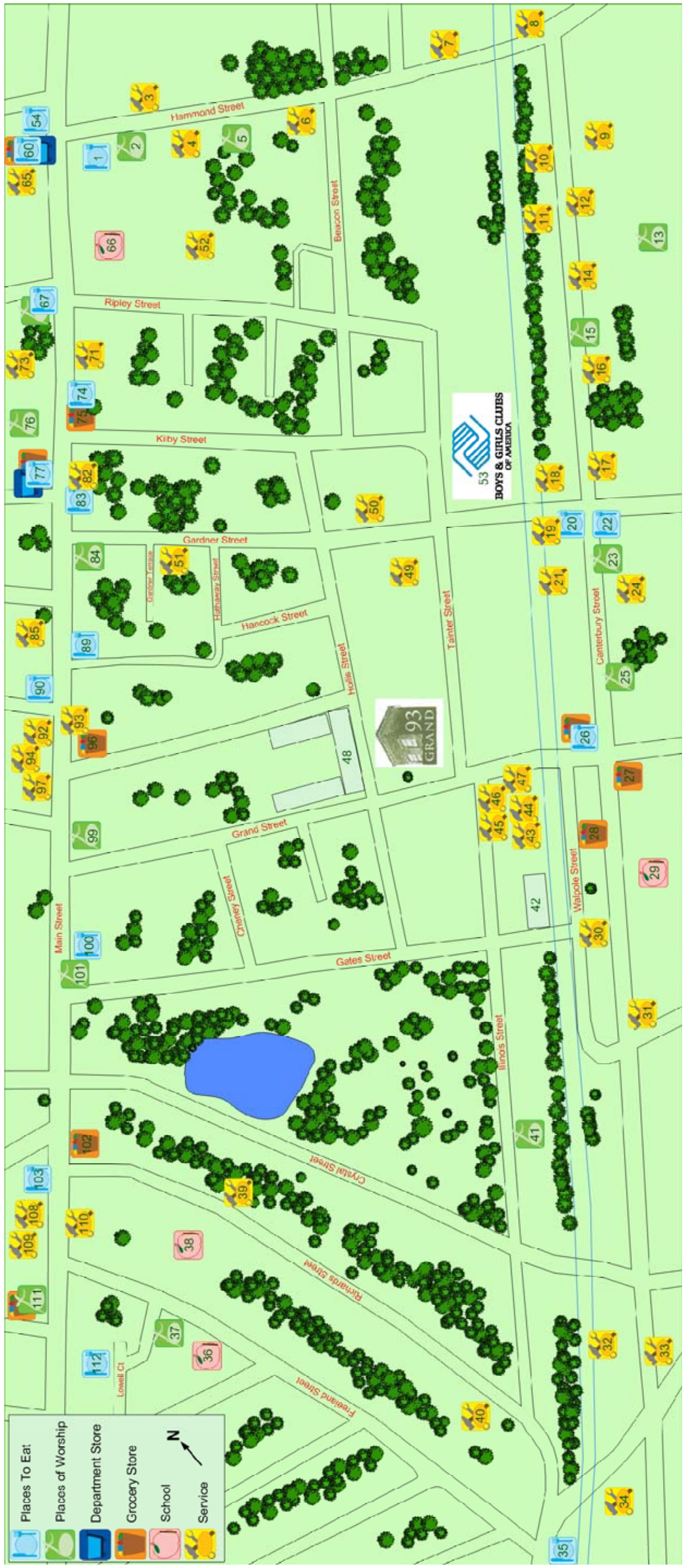
Building 1

Upper Floors

Buildings 1 and 2


Building 28

Building Information



Places To Eat
Places of Worship
Department Store
Grocery Store
School
Service
N
Hammond Street
Beacon Street
Ripley Street
Kirby Street
Gardner Street
Hathaway Street
Hancock Street
Hollis Street
Tainter Street
Canterbury Street
Grand Street
Cheney Street
Main Street
Gates Street
Walpole Street
Illinois Street
Crystal Street
Richards Street
Freeland Street
Lowell Ct
BOYS & GIRLS CLUBS OF AMERICA
93 GRAND

	Places to Eat
1	Dunkin Doughnuts
20	Danny T Murphy's
22	crescent Café
26	Kotsai Pizza
35	Genes Place
54	Diamond Pizza
	Tiem Vang
60	Khai Thue
	Nhu Hgoc
67	Hong Kong (food)
74	Giocha thu Dic Vietnam Fast Food
77	Special in Oriential Food
	Best Chinese Resturant
83	Moynihan's Pub
89	Huang Vu
90	Fantastic Pizza
100	Mohanan
103	Uncle Sam's pizza
	Main Attraction
	Brisa tropical Resturant
	Saigon Resturant
112	McDonalds

	Schools
29	Canterbury Street School
36	University Park School
38	Goddard School of Science and Technology
66	St Peter Central Catholic School

	Places of Worship
2	Catholic Charities
5	Second Baptist Church
13	Casa De Oracion
15	Worcester African Cultural Center
23	Vietnamese assembly of God
25	Brazilian assembly of God
37	St Mary's Episcopal Church
41	holyName of Jesus Rectory
67	La Luz Del Mundo
	New Life Temple
	Iflesia Jesucristo Fuente De Gracia, Inc.
76	Tempio Adventista
84	The Woo- An art Christian Church-Pilgrim Congregation Church
99	St. Peter's Catholic Church
101	Church of God
111	Liberia Christiana

	Grocery Stores
26	Atlantic Market Seafood
27	San Miguel Grocery
28	Randell Package Store
60	Kumasi Supermarket
75	Family 88 supermarket
77	Hatien Market Oriential Food + Gifts
96	Main South Market
102	Tedeschi Food Shops
111	Santiagos Market

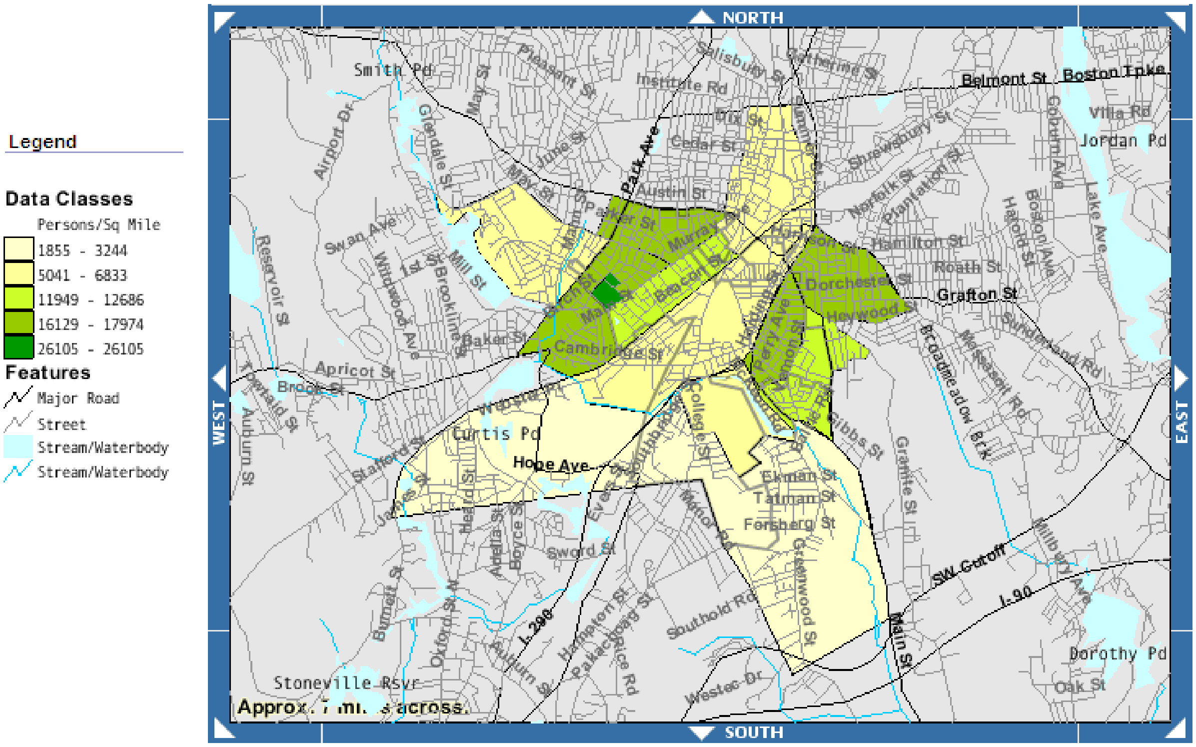
	STORES
60	Habilab Department store
77	Super Discount

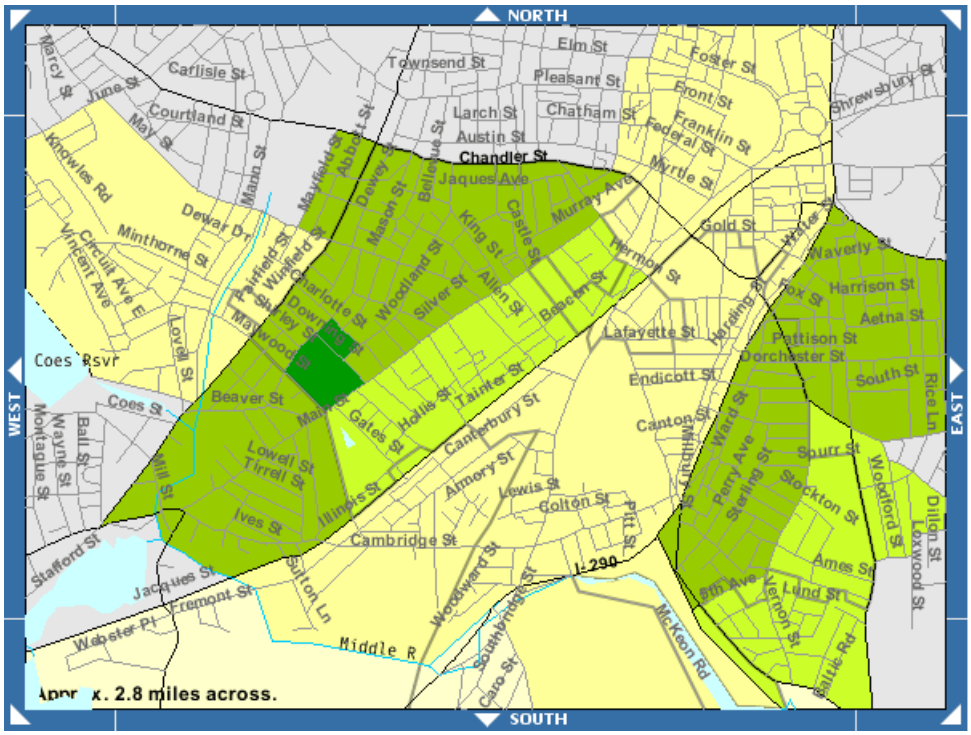
	SERVICES
3	Real Court Reporting
4	Alfred Roy and Sons Funeral Home
6	Sun Bridge Care and Rehabb Hammon House
7	New Method plating Inc.
8	Providence/Worcester Railroad
9	David's service Center

10	Stoney Collision Center
11	Cogswell Sprinkler Company Inc.
12	Insight Neuroimaging Systems
14	Lusignan Bros Inc
16	Leader Sign Inc.
17	Hi-Tech Auto
18	Pioneer Oil Company
19	Lopez Auto
21	Kelly's Auto body/Central Auto Works
22	Allure Barber Shop
24	Baker Fire Equipment Company Inc.
26	Ethnic Beauty International
30	Us Reflector
31	People's Choice Hair Center
32	Kesseli & Morse Company
33	GCM Auto
34	Joe Pes Sports
39	Communications Technology
40	Son Redemption Center
43	Micro Tech Manufacturing
44	Terminal Whare house
45	F and R Office Products Inc.
46	Furniture Plus
47	Sclamos
49	Mal's Auto
50	ANC Tool
51	G & V Auto Repair
52	Bishop BJ Flanagan Center
54	Triana studio
	Professional Cuts
	Job Finder
60	Nau Beauty Salon
	Lams Bridal
	Chuyentien
65	Family Dental Center
67	Happy Laundomat
71	Main South CDC
	Neighborhood Alert Center
73	Cultural Center Hrisohoorafiton Alexander the Great, Inc.
77	New England Nails Supply
82	George's Flowers + Gormet Basket

85	MacShawson Insurance
	Kieth Plub Heat
	Mathason Law Office
	GTBW Therapy
90	WCUW Radio
92	Clarck University book Store
93	Carlito's Barbershop
94	Unique Nails
	Music Plus
97	La Canastilla Ideal
	China Lantern
103	Riveria Nails
108	The Ward Building
109	Bones + Flowers
110	Xuansttair Salon

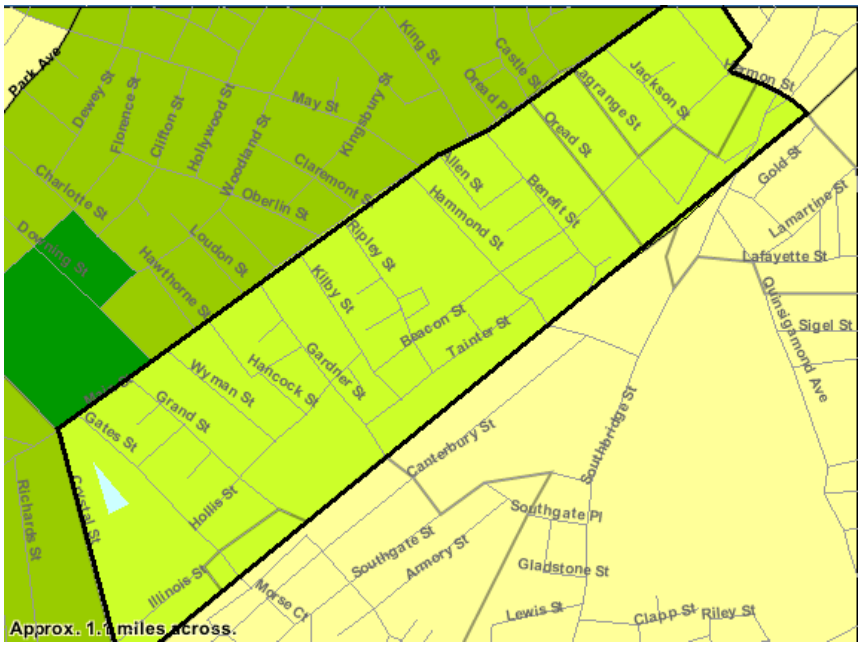
	PLACES OF INTEREST
42	University Park Lofts
48	The Royal Worcester Apartments
53	Boys and Girls Club


Legend
Data Classes
Persons/Sq Mile
1855 - 3244
5041 - 6833
11949 - 12686
16129 - 17974
26105 - 26105
Features
Major Road
Street
Stream/Waterbody
Stream/Waterbody
NORTH
SOUTH
WEST
EAST
Smith Pd
Belmont St
Boston Tpke
Villa Rd
Jordan Pd
Park Ave
Austin St
Cedar St
Grafton St
Curtis Pd
Hope Ave
Ekman St
Tallman St
Forsberg St
SW Cutoff
I-90
I-290
Dorothy Pd
Oak St
Stoneville Rsvr



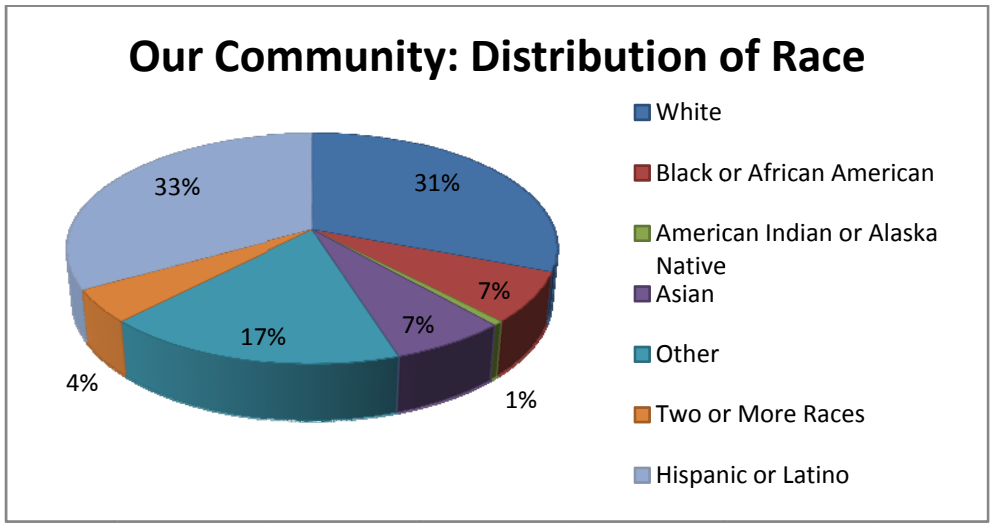
Boundary Streets for Our Community

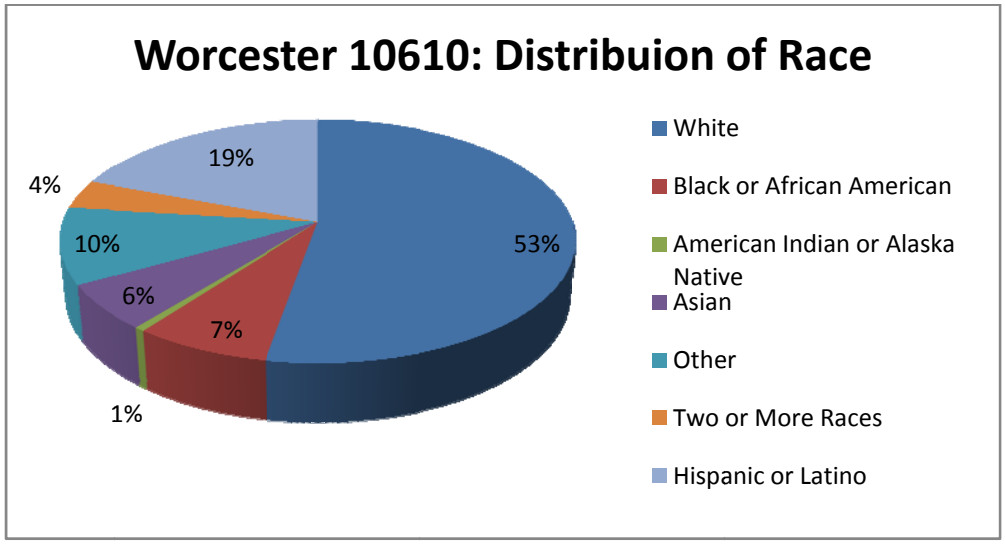
Main Street
Hammond Street
Railroad Tracks (Canterbury Street)
Crystal Street

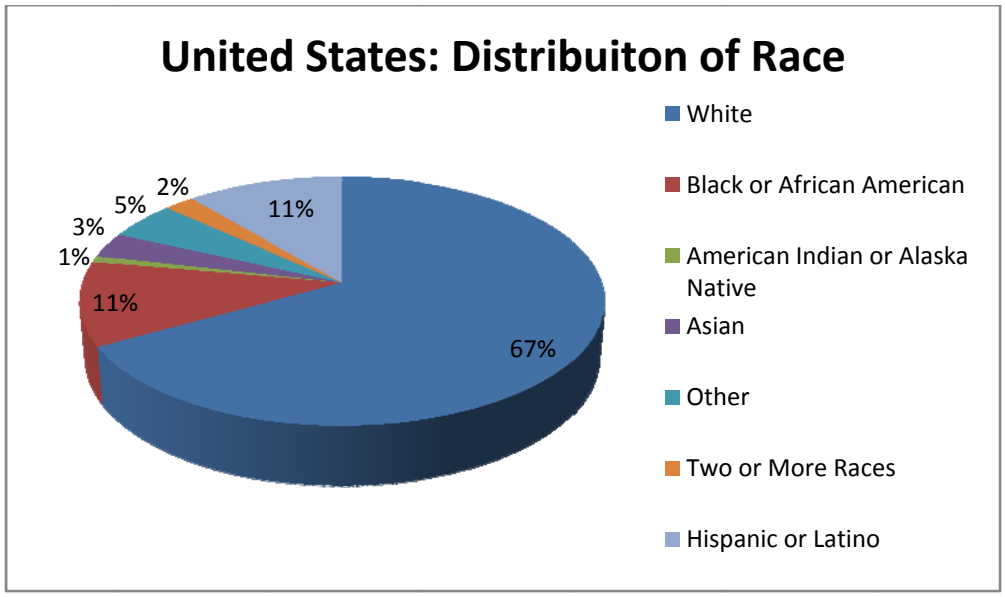


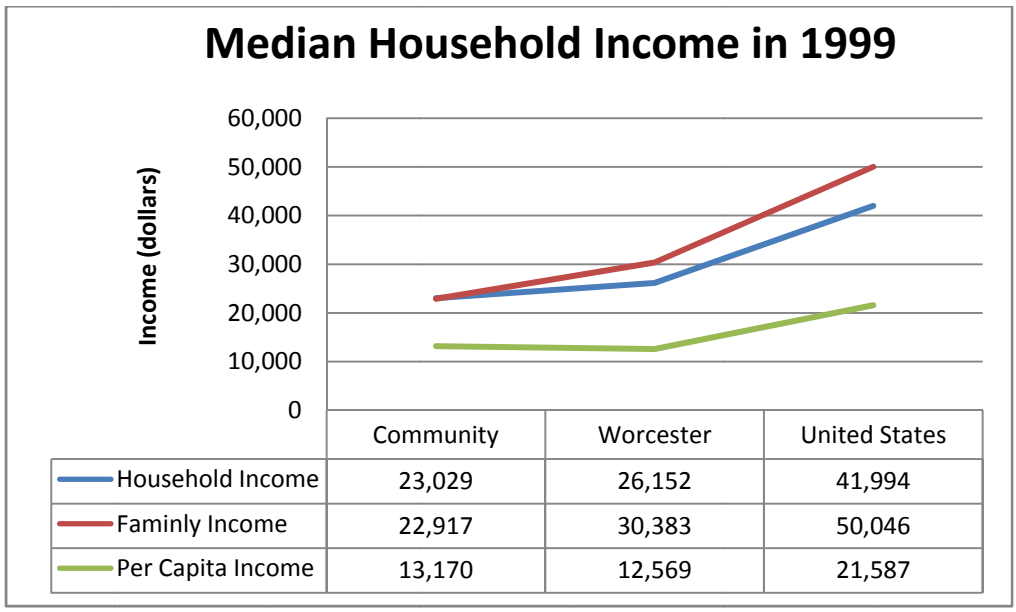
Demographic Data

	Our Community	Worcester 01610	U.S.
General Characteristics			
Total Population	11,949-12,686	23,773	
Median Age	27.5 - 28.9	25.2	35.3
Race (percent)			
White	41.1 - 47.6	65.4	75.1
Black or African American	9.4 - 11.3	9.2	12.3
American Indian or Alaska Native	.8 - 1.3	0.7	0.9
Asian	8.8 - 10.8	7.4	3.6
Some Other Race	22.8 - 28.4	12.6	5.5
Two or More Races	6.1 - 6.2	4.8	2.4
Hispanic or Latino	44.2 - 48.0	23.8	12.5
Household Population (number of households)	1,152 - 1,240	19,919	
Avg. Household Size	2.71 - 2.84	2.58	2.59
Avg. Family Size	3.59 - 3.62	3.32	3.14
Total Household Units	1,272 - 1,380	8,455	
Owner-Occupied Housing Units	12.9 - 15.5	21.7	66.2
Renter-Occupied Housing Units	84.5 - 87.1	78.3	33.8
Vacant Housing Units	9.4 - 10.6	8.8	9
Social Characteristics			
Population 25 years or older			
High School Grad or Higher	50.5 - 56.0	63.3	80.4
Bachelor's Degree or Higher	13.8 - 16.4	12.4	24.4
Speak a language other than English at home	54.9 - 61.3	40.2	17.9
Economic Characteristics			
Median Household Income in 1999(dollars)	23,029-25,382	26,152	41,994
Median Family Income in 1999(dollars)	22,917-23,696	30,383	50,046
Per Capita Income in 1999(dollars)	13,170-14,277	12,569	21,587
Families Below Poverty Level (percent)	38.4 - 38.6	25.0	9
Individuals Below Poverty Level (percent)	35.8 - 40.5	30.0	12
Housing Characteristics			
Single-Family Owner-Occupied Homes		639	
Median Value (dollars)	67,500-83,300	99,300	119,600
Median of Selected Monthly Owner Costs			
With a Mortgage (dollars)	863 - 980	949	1,088
Not Mortgaged (dollars)		328	295

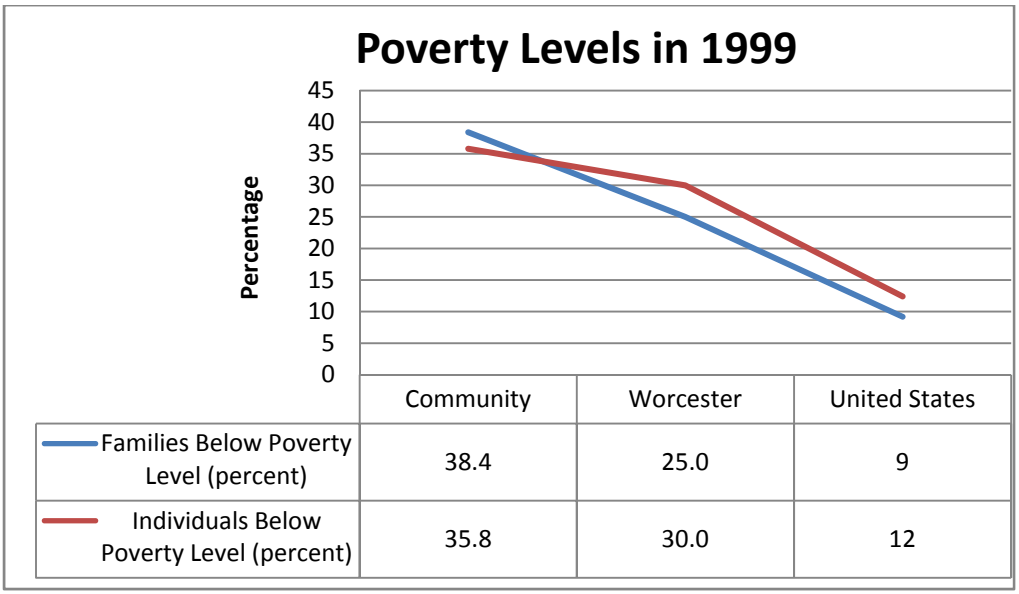

Our Community: Distribution of Race
31%
7%
1%
7%
17%
4%
33%
White
Black or African American
American Indian or Alaska Native
Asian
Other
Two or More Races
Hispanic or Latino


Worcester 10610: Distribuion of Race
53%
7%
1%
6%
10%
4%
19%
White
Black or African American
American Indian or Alaska Native
Asian
Other
Two or More Races
Hispanic or Latino





	Community	Worcester	United States
Household Income	23,029	26,152	41,994
Faminly Income	22,917	30,383	50,046
Per Capita Income	13,170	12,569	21,587



	Name	Address	Phone Number	Bedrooms
Renting				
	Royal Worcester Apartments	45 Grand St	508-755-1406	1
				2
				2
				3
	SkyMark Tower	600 Main St	866-927-6760	1
				2
	University Apartments	74 Beaver St	508-798-8406	1
	Citywide Apartment Rentals	221 Chandler St	508-753-1000	2
	29 Oberlin	29 Oberlin St	305-476-2060	2
	Bancroft Apartments	50 Franklin Street	508-753-1612	stuido
				1
				2
				3

Selling				
	University Park Lofts	21 Illinois St.	866-437-2539	1
	67 Illinois St	#G2		2
	The Fremont Lofts	160 Fremont St.	800-301-5254	
		#305		2
		#306		2
		#321		2
		#322		2
		#109		2
Eco-Friendly				
(Renting)	Hamel Mill Lofts	40 Loft St. Haverhill MA	978-372-5638	1
				2
	Parkside Commons	100 Stockton St. Chelsea MA	617-884-2400	stuido
				1
				2
	Lynnfield Commons	375 Broadway Lynnfield, MA	781-592-6800	1
				2

Baths	Square Footage	Price
1		925
1		1050
2		1075
1		1300-1801
1		1000
1		1200
1		795
1		895
1	700	800
	437	600
1	685	725
1	841	950
1	1000	1150

1	945	115,000
1	921	76,500
2	1295	174,900
2	1295	174,900
2	1060	185,000
2	1060	189,900
2	1890	225,000
1	616-889	1095-1405
2	896-1198	1435-1825
1	520	1260
1	710-930	1665-1885
2	1020-1060	2010
1	795-1007	1685-2145
2	1124-1221	2030-2230

Green Child Care Centers

A green child care center is one that is environmentally friendly. They take measures to ensure that the environment provides the best in health for children, offer locally-grown or organic food, and celebrate multiculturalism. Also children are taught to respect the earth and its precious resources. [1]

Eco-Healthy Child Care Checklist

The Oregon Environmental Council (OEC) provides an *Eco-Healthy* *Child Care Checklist* which has 25 environmental-health criteria for daycare centers. Of those 25 criteria, daycare centers must meet at least 20 of 25 items. 2 of the 25 items are mandatory: The use of nontoxic techniques to control pests and no smoking anywhere on the premises or in sight of children.

[1] http://daycare.suite101.com/article.cfm/environmentally_friendly_child_care_centers

The Eco-Healthy Child Care Checklist can be accessed from
http://www.oeconline.org/resources/publications/kitsandtipsarchive/2007EHCCChecklist

So far this program that was created by the Oregon Environmental Council is endorsed by more than 230 daycare centers in the United States. The OEC's program acts as the basis for the current movement of daycare centers from conventional, to a more environmentally friendly basis. These daycare centers traditionally do cost more than typically daycare center due to the added cost of sustainable construction and building materials.[2] However, as sustainable building becomes more common, the cost of such buildings is greatly decreasing which will also bring down the added cost of green daycare centers.[3]

Nearby:

Tolland Green Day Care Center
45 Tolland Grn
Tolland, Ct 06084
(860) 875-2795

Green Baby Home Daycare
Billerica, MA 01821
978-362-2188
http://www.greenbabydaycare.com/

Patti's Place Family Child Care
Reading, MA 01867
781-942-7957

The Kathy Herward Child Care Center
Andover, MA 01810
978-474-5451

The LEGO Creative Childcare Center
Enfield, CT 06082
860-763-3407

Plowshares Child Program
360 Lowell Ave
Newton, MA 02460
(617) 527-3755
http://www.plowshareschildcare.org/

[2] http://seattletimes.nwsource.com/html/living/2004417688_webgreendaycare16.html
[3] http://www.whitehutchinson.com/children/greenchildcare.shtml

Price Point Build-Out Information

Green Materials for Price Point Build-outs

Flooring

- Bamboo $4-8/sf
- Green Capet $4/sf
- Cork $3-6/sf
- Wood $3-6/sf
- Linoleum $4/sf

Note: Bamboo is not a locally grown material, so there would be additional shipping costs. Cork sealers are harmful to the air quality. Wood must be Forest Stewardship Council Certified.

Cabinetry

- Wheat Grass Cabinets
- Bamboo Cabinets
- Breathe Easy Cabinets (Brand)
- Wood

Countertops

- Recycled Plastic $50-100/sf
- Wood Butcher Block $50-75/sf
- Laminate $25-50/sf
- Ceramic/porcelain tiles $5-20/sf

Bathroom Walls

- Stone $5-65/sf
- Terrazzo &Concrete $20-50/sf
- Glass Tile $15-40/sf
- Ceramic Tile $5-20/sf

Toilets

- Low flow $150+
- Dual Flush $300+
- Composting $1,500-2,000

Paints and Stains

- Auro Paint, Stain
- AFM Naturals

Shower Head & Sink

- Low Flow

Lighting

- CFL's

Price Point Build Outs

+ 1 Build Out:

- Flooring – Green Carpet & Linoleum
  - http://www.truehardwoods.com/i//shaw_carpet_1.jpg
- Cabinetry – FSCC Wood
  - http://www.hdwoodworking.com/template_Cabinets%20plus%20dining%20room.JPG
- Countertop – Ceramic or Porcelain Tile
  - http://www.showroom411.com/Media/Category/tilecounter.jpg
- Bathroom Wall – Ceramic or Porcelain Tile
  - http://www.renovation-headquarters.com/images2/bathroom%20porcelain%20tile.jpg
- Toilet – Low Flow
  - http://www.foxnews.com/images/326620/0_61_toilet.jpg

+ 2 Build Out:

- Floor – Green Carpet & Cork
  - http://www.blcflooring.com/Images/Best/Best_Carpet.jpg
- Cabinetry – Bamboo
  - http://www.bamboohardwoods.com/mmBAMBOO/Images/cabinets.jpg
- Countertop – Green Laminate
  - http://images.doityourself.com/stry/laminatecomeback2.jpg
- Bathroom Wall – Glass Tile
  - http://images.myknobs.com/dynamic/review-4382-1-zoom.jpg
- Toilet – Dual Flush
  - http://green.apartmenttherapy.com/images/uploads/9_21_2007-sterlingrockton.jpg

+ 3 Build Out:

- Floor – Green Carpet & Bamboo
  - http://www.jetsongreen.com/images/2007/12/09/next_in_line.jpg
- Cabinetry – Wheat Grass
  - http://www.kitchendesignsremodeling.com/green-large/wheatgrass-cabinetry.html
- Countertop – FSCC Butcher Block Wood
  - http://www.strawsticksandbricks.com/images/categories/DSCN1167.JPG
- Bathroom Wall – Terrazzo or Stone
  - http://www.berlinwallpaper.com/dcfix/images/Terrazzo.jpg (couldn't find wall pic)
- Toilet – Composting
  - http://greatgreengadgets.com/gadgets/wp-content/uploads/2007/04/composttoilet.jpg

All Build Outs will include Green Paints and Stains, Compact Fluorescent Light bulbs, Low Flow showerheads and sinks, and green ceiling panels.

Local Green Suppliers in Massachusetts

Bradco Supply Corporation (marked as A on map)

http://www.bradcosupply.com/index.asp
2 Sherman St. Worcester, MA
508-792-1200
Description taken from their website:

> As a leader in the building products distribution industry, Bradco Supply is dedicated to supporting environmentally conscious, or "Green," building practices.

For a list of green products please visit: http://www.bradcosupply.com/green_products.aspx**Total**

Plastics Inc. (marked as B on map)

http://www.totalplastics.com/
81 Lafayette St. Worcester, MA
508-365-2300
Green Statement taken from their website:

> **Description:**
> *Total Plastics and the Environment*
> Total Plastics, Inc.™ and its suppliers are committed to making the world a better place to live through plastics technology. Plastics possess the following benefits, which better our lives with minimal environmental impact.

To see complete description please visit: http://www.totalplastics.com/products/357
To see a list of products please visit: http://www.totalplastics.com/products/category/45

Grainger (marked as C on map)

http://www.grainger.com/Grainger/wwg/start.shtml
209 Brooks St. Worcester, MA
508-853-7300
Description taken from their website:

> According the U.S. Green Building Council (USGBC), of which Grainger is a member, 2008 was the year when green building became inevitable, due to the U.S. recession. USGBC is a non-profit organization composed of leaders from every sector of the building industry working to promote buildings that are environmentally responsible, profitable and healthy places to live and work.

For a list of products please visit: http://www.grainger.com/Grainger/static/rc_green.html?xi=xi

Bettencourt Green Building Supplies (marked as D on map)

http://www.bettencourtwood.com/index.html
Stocks in Medford, MA
800-883-7005
Description taken from their website:

> Dedicated to providing quality green building materials to designers, architects, contractors and homeowners on the East Coast, Bettencourt Green Building Supplies offers innovative products at affordable prices. Extensive research and first hand experience working with new materials help us to provide elegant and appropriate alternatives to many of the environmentally damaging choices currently available in the industry.

For a list of products available please visit: http://www.bettencourtwood.com/products_main.html

Green Depot (marked as E on map)

http://www.greendepot.com/greendepot/default.asp
100 Fallon Road Stoneham, MA
781-914-3300
Mission Statement taken from their website:

Make "green" building and living solutions accessible, affordable and gratifying.

For a list of products please visit:
http://www.greendepot.com/greendepot/dept.asp?dept_id=500&s_id=0

ReStore (marked as F on map)

http://www.restoreonline.org/
250 Albany St. Springfield, MA
413-788-6900
They accept donations from usable but unwanted home improvements and sell them to the public. They sell used and salvaged materials along with unwanted surplus stock from other industries.
Mission Statement taken from their website:

- Reuse valuable materials
- Make home improvement affordable for more people
- Create local jobs and provide job training

The ReStore received grant funding to help cover costs during the first few years of operations, but is now self-sustaining through the income created by sales.

For common materials please visit: http://www.restoreonline.org/common.htm

Battic Door Home Energy Conservation (marked as G on map)

http://www.batticdoor.com/
Mansfield, MA
508-320-9082
Description taken from their website:

We manufacture Home Energy Conservation Products that save you money, reduce your energy bills, and improve the comfort of your home. We sell direct - buy from the manufacturer. Fireplace Plugs, Whole House Fan Shutter Covers, R-50 Attic Stair Covers, R-42 EZ Hatch Attic Access Doors, Dryer Vent Seals, Radon Test Kits, Air Conditioner Covers, Insulated Switch Plate Covers Our products SAVE YOU MONEY ON YOUR ENERGY BILLS by reducing drafts and air-leaks around often overlooked "holes", including the attic stairs, the whole house fan, the fireplace, the clothes dryer, and the bathroom exhaust fan. By sealing these air leaks, our products reduce cold drafts and heat loss in the winter, as well as air-conditioning loss in the summer. Our products conserve energy, lower your utility bills, reduce noise and pollutants, improve indoor air quality, reduce the chance of ice dams and attic mold, and improve the comfort of your home. We ship direct to customers, and sell in bulk to builders, weatherization contractors, and distributors.

For a list of products please visit: http://www.batticdoor.com/store.htm

De Vries Building Supply Inc. (marked as H on map)
http://www.devriesbuildingsupply.com/
21 Berkshire School Rd. Sheffield, MA
413-229-8777
Mission Statement taken from their website:

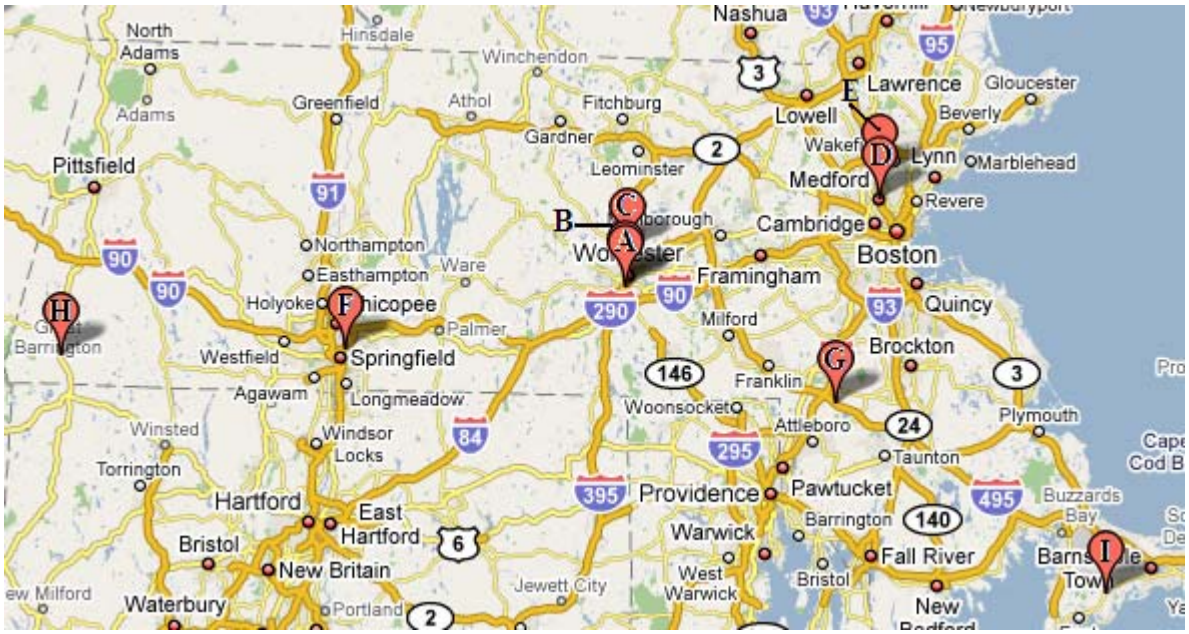
> We offer traditional building materials, as well as some innovative alternatives to common construction products. Our goal is to help educate the homeowner, and professional contractor as to the application and installation of alternative products to further promote the greening of the construction industry. As homeowners, we are always trying to come up with ways of improving our homes. We hope each improvement will enhance the value of our investment, whether it be new state-of-the-art windows and doors, earth-friendly cotton insulation, or just a new coat of paint. Whatever we change will impact the whole.

For a list of products please visit: http://www.devriesbuildingsupply.com/secondary/greenProducts.htm

'g' Green Design Center (marked as I on map)
http://www.ggreendesign.com/
28 Bates Road Mashpee, MA
508-477-7988
Mission Statement taken from their website:

> Our focus is to provide you with everything needed to create green, sustainable environments that are both beautiful and responsible to our earth.
> We do this through the **'g' Green Design Center's** showroom, a place where clients and visitors can learn about, explore and purchase not only the materials they need to create a green building, home or business, but a multitude of home accessories, organic clothing and body care products.

For a list of products and pricing please visit: http://www.ggreendesign.com/green-products.htm



Green Suppliers in Connecticut

The Center of Green Building (marked as J on map)

http://www.centerforgreenbuilding.com/
3380 Fairfield Avenue Bridgeport, CT
203-382-0774
Mission Statement taken from their website:

> The Center of Green Building is taking a logical approach to making your home a sustainable place. We believe every person makes a difference. Our mission is to provide products that are safe for the people manufacturing them, safe for the people exposed to them and safe for the environment in which we share.

For a list of products please visit:
http://www.centerforgreenbuilding.com/MediaArticles/CFGBProductList.pdf
For pricing please visit their website listed above.

AlwaysBuildGreen.com (marked as K on map)

http://www.alwaysbuildgreen.com/index.htm
167 Main St. Norwalk CT
203-846-6060
Their Philosophy taken from their website:

> We believe the build environment is a reflection of the relationship we have with our planet. As both designers and builders, we feel responsible to participate in the growing consciousness about how our actions and life styles affect the environment. Therefore, we strive in our design, planning, product choices and construction to provide simple, functional, healthy structures that are earth friendly, and based on sound use of the world's resources.

For a list of products please visit: http://www.alwaysbuildgreen.com/greenproduct.htm

Green Supplier in New Hampshire

Your Home Your World

138 N. Main St. Concord, NH
603-223-9867
Mission Statement taken from their website:

> Our mission is to provide options for people who are concerned about the environment inside and outside of their home, but do not want to sacrifice beauty, comfort and convenience. We support businesses that promote positive social and environmental change while producing high quality products.

For a list of products please visit: http://www.yourhomeyourworld.com/products.html#home
Recommended