

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

BUILDING DEPARTMENT

Please Read Application And Notes, if Any, Attached

PERMIT

Permit Number: 030999

This is to certify that Shalom House Inc /Thaxter Corporation

has permission to Add 3 mechanical/storage rooms in existing space

AT 184 Auburn St L 374 A023001

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine and of the ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and written permission procured before this building or part thereof is altered or closed-in.
HEAVY NOTICE IS REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

OTHER REQUIRED APPROVALS

Fire Dept. [Signature]

Health Dept. _____

Appeal Board _____

Other _____

Department Name

[Signature] 9/30/03
Director - Building Inspection Services

PENALTY FOR REMOVING THIS CARD

FAX COVER

To: Mike Nugent

Company : City of Portland Inspection Services

Fax Number : 8748716

From : John Shields

Company : Archetype

Fax Number : 207 772 4056

Subject : Heat Conversion - Shalom Apts., 180 Auburn St.

Pages including cover page: 2

Date : 9/25/2003

Time : 4:11:50 PM

MESSAGE

Hello Mike - attached is my response to your questions. Please call me at 772 6022 if you have any questions.

Thanks - John Shields

September 17, 2003

Mike Nugent
City of Portland
Inspector of Buildings
City Hall
Portland, Maine 04101

Re: Heat Conversion, The Shalom Apartments, 180 Auburn Street, Portland, Maine

Dear Mike,

Following are responses to your comments dated September 17, 2003.

1. To insure that Storage Room separation walls are (1) hour rated Note #9 on Drawing A.1 will be amended to read: "Typical Mech. Rm. & Storage Room Separation Wall, (2) layers 5/8" FireCode G.B. – ptd.
2. Until the build-out of the apartment complex occurs (construction start date estimated as early 2004) Unfinished Unit 302 will be closed to the elements, unheated and unoccupied. Per plan it will receive no slab floor, no interior finishes, no plumbing or electrical. The only reason it is being constructed as part of the Heat Conversion is to allow for the roofing of Mechanical Room 300 and Storage Room 301. There is no good way to roof the mechanical and storage rooms without it. See the Location Plan on the Cover Sheet for the roof plan.
To provide access to this space the plans will be amended to add a door from Unfinished Unit 302 to the exterior.
3. UL 305 is the (1) hour separation assembly.
4. The Use Group of the apartment complex is Residential R-2. Table 705.2 requires fire rated exterior walls in an R-2 use when the fire separation distance is greater than 10'. The Heat Conversion construction does not result in two buildings being closer than 20 feet, nor does the build-out construction. The closest condition is between Unfinished Unit 302 and the existing Community Building housing Mechanical Room 400. This distance is 21 feet.
5. Anchor bolts – ½" bolts, 12" from corners per 2305.17.
6. Per item 2 above Unfinished Unit 302 is part of the Heat Conversion construction, it is not existing.

If you have any questions, please email (shields@archetypepa.com) or call me at 772 6022.

Sincerely,

John Shields
Architect

Cc: Bill Floyd – Shalom House, Steve Keltonic – The Thaxter Company

PLATZ ASSOCIATES
 tel 207 784 2841 Architects • Engineers
 fax 207 784 3856 Construction Managers
 Two Great Falls Plaza, Auburn, Maine 04210
 www.platzassociates.com

FAX TRANSMISSION

TO: Michael Nugent
C of Portland Code Enforcement
 FROM: Sheri Shaw

FAX NO.: 874-8716
 DATE: 9.26.03
 JOB: Both Savings Institution
 PAGES TO FOLLOW: 0

- Urgent For Review Please Comment For Your Information

COMMENTS: Michael- Don Peterson called me this morning
after he spoke with you. I wanted you to know
that we will do everything possible to answer
any questions you may have about the above
project. The contractor is very anxious to keep
moving.

Please feel free to call the office. If in the
event I am not available Craig Webber will be
able to field any questions and get back to you.
If you end up with a list of questions do not
hesitate to fax to both Craig and myself.

If for any reason you require a copy of
the State Fire Marshall's Building permit we have it
on file.

Sheri

cc: _____

Hard Copy To Follow

City of Portland, Maine - Building or Use Permit

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 03-0999	Date Applied For: 08/15/2003	CBL: 374 A023001
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Location of Construction: 184 Auburn St	Owner Name: Shalom House Inc	Owner Address: Po Box 560	Phone: () 874-1087
Business Name:	Contractor Name: Thaxter Corporation	Contractor Address: 55 Bell Street Portland	Phone: (207) 878-5553
Lessee/Buyer's Name	Phone:	Permit Type: Alterations - Multi Family	

Proposed Use: Multi-family dwelling w/3 mechanical/ storage rooms built in existing space	Proposed Project Description: Add 3 mechanical/storage rooms in existing space
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Dept: Zoning **Status:** Approved with Conditions **Reviewer:** Marge Schmuckal **Approval Date:** 08/22/2003**Note:** **Ok to Issue:**

- 1) It is understood that there is no change of use nor any addition of new dwelling units. The heating conversion is located within the existing building structures.
- 2) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.

Dept: Building **Status:** Pending **Reviewer:** **Approval Date:****Note:** **Ok to Issue:**



Ste # 2003 0165

03-0999

Commercial Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: 180 Auburn Street, Portland, Maine		
Total Square Footage of Proposed Structure 1,393 square feet	Square Footage of Lot 176,918 square feet	
Tax Assessor's Chart, Block & Lot Chart# 374 Block# A Lot# 23 374 A 7	Owner: Bill Floyd Shalom House, Inc. P.O. Box 560 Portland, ME 04112	Telephone: (207) 874-1087
Lessee/Buyer's Name (If Applicable)	Applicant name, address & telephone: Bill Floyd Shalom House, Inc. P.O. Box 560 Portland, ME 04112	Cost Of Work: \$140,000.00 Fee: \$ 1,003.00 <i>Rldg Fee 1,981.00</i>
Current Specific use: <u>Apartment</u>		
Proposed Specific use: <u>Apartment</u>		
Project description: Conversion of existing electric heat to gas heating system. <i>Construct three wood framed mechanical / storage rooms to accommodate new heating equipment # 1 is 10' x 20' # 2 is 10' x 24' # 3 is 24' x 36'. All are attached to existing units</i>		
Contractor's name, address & telephone: Thaxter Corp. 55 Bell Street Portland, ME		
Who should we contact when the permit is ready: <u>Steve Keltonic</u>		
Mailing address: Thaxter Corp. 55 Bell Street Portland, ME 04103		
Phone: (207) 878-5553 <i>X105</i>		

Please submit all of the information outlined in the Residential Application Checklist. Failure to do so will result in the automatic denial of your permit.

At the discretion of the Planning and Development Department, additional information may be required prior to permit approval. For further information stop by the Building Inspections office, room 315 City Hall or call 874-8703.

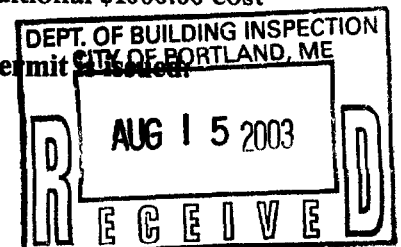
need 11' x 17'

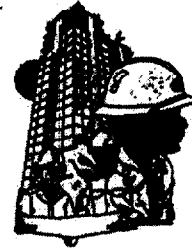
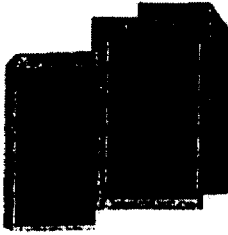
I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature of applicant: <i>Stephen J Keltonic</i>	Date: <i>8/15/03</i>
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Permit Fee: \$30.00 for the first \$1000.00 Construction Cost, \$7.00 per additional \$1000.00 cost

This is not a Permit; you may not commence any work until the Permit is issued.





**CITY OF PORTLAND
BUILDING CODE CERTIFICATE
389 Congress St., Rm 315
Portland, ME 04101**

TO: Inspector of Buildings City of Portland, Maine
Department of Planning & Urban Development
Division of Housing & Community Service

FROM: David Lloyd, Archetype, P.A.

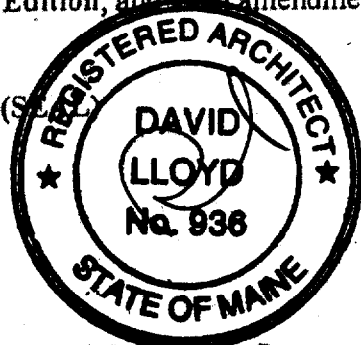
RE: Certificate of Design

DATE: 8/7/03

These plans and/or specifications covering construction work on:

Shalom Apartments, 180 Auburn Street, Portland, ME

Have been designed and drawn up by the undersigned, a Maine registered architect/engineer according to the BOCA National Building Code/1999 Fourteenth Edition, and local amendments.



Signature DL

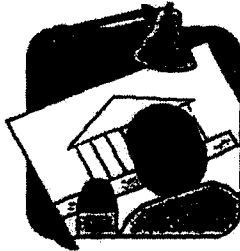
Title Architect

Firm Archetype, P.A.

Address 48 Union Wharf, Portland, ME 04101

As per Maine State Law:

\$50,000.00 or more in new construction, repair, expansion, addition, or modification for Building or Structures, shall be prepared by a registered design Professional.



CITY OF PORTLAND MAINE

389 Congress St., Rm 315

Portland, ME 04101

Tel. - 207-874-8704

Fax - 207-874-8716

TO: Inspector of Buildings City of Portland, Maine
Planning & Urban Development
Division of Housing & Community Services

FROM DESIGNER: David Lloyd
Archetype, P.A.
48 Union Wharf
Portland, ME 04101

DATE: 8/7/03

Job Name: Heat Conversion - Shalom Apartments

Address of Construction: 180 Auburn Street, Portland, ME

THE BOCA NATIONAL BUILDING CODE/1999 Fourteenth EDITION

Construction project was designed according to the building code criteria listed below:

Building Code and Year 1999 Use Group Classification(s) R2

Type of Construction 5B Bldg. Height 23' Bldg. Sq. Footage 1,393 Total

Seismic Zone AV = 0.11 Group Class 1

Roof Snow Load Per Sq. Ft. 42 Dead Load Per Sq. Ft. 15

Basic Wind Speed (mph) 85 Effective Velocity Pressure Per Sq. Ft. 18.5

Floor Live Load Per Sq. Ft. 40

Structure has full sprinkler system? Yes _____ No x Alarm System? Yes _____ No x
Sprinkler & Alarm systems must be installed according to BOCA and NFPA Standards with approval from the Portland Fire Department.

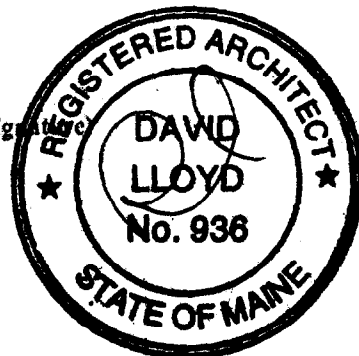
Is structure being considered unlimited area building: Yes _____ No x

If mixed use, what subsection of 313 is being considered N/A

List Occupant loading for each room or space, designed into this Project.

PSH 6/07/2K

(Designers Stamp & Signature)





**CITY OF PORTLAND
ACCESSIBILITY CERTIFICATE**

Designer: David Lloyd, Archetype

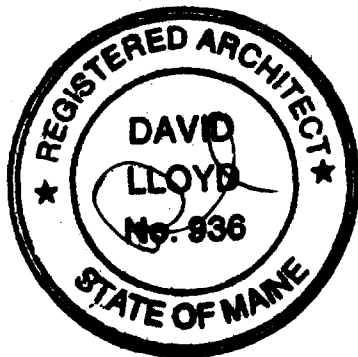
Address of Project Shalom Apartments, 180 Auburn Street, Portland, ME

Nature of Project Conversion of heating system from electric
to gas.

Date 8/7/03

**The technical submissions covering the proposed construction work
as described above have been have been designed in compliance with
applicable referenced standards found in the Maine Human Rights Law and
Federal Americans with Disability Act.**

(SEAL)



Signature 

Title Architect

Firm Archetype, P.A.

Address 48 Union Wharf

Portland, ME 04101

Telephone (207) 772-6022

**HEAT CONVERSIONS
SHALOM APARTMENTS
180 AUBURN STREET
PORTLAND, MAINE**

August 13, 2003

SPECIFICATIONS

**PREPARED BY
AWM ENGINEERING, INC.
88 STATE STREET
GORHAM, MAINE 04038**

**PHONE: (207)839-2167
FAX: (207) 839-2168
E-MAIL: stuf@awmeng.com**

SECTION 15010 - BASIC MECHANICAL REQUIREMENTS

PART 1: GENERAL

1.01 WORK INCLUDED

- A. The work of this section consists of furnishing all labor, equipment and materials, and performing all operations necessary to complete new boiler heating and domestic hot water work in accordance with these specifications.
- B. Work includes, but is not limited to:
1. Fin Tube Radiation
 2. All removals and alterations to existing domestic hot and cold water and remove existing electric hot water tank.
 3. New package cast iron pressurized natural gas fired boilers.
 4. Hot water heating supply and return piping, materials, and heating specialties.
 5. Sheetmetal work and materials for combustion air to each new boiler room.
 6. Insulation: Hot water heating supply and return piping; hot, cold and recirculating hot water domestic piping.
 7. Circulator pumps and control.
 8. Domestic hot water and cold water piping tank heaters and plumbing specialties within building.
 9. Sprinkler work in new boiler room off domestic cold water with bronze, quick response upright head.
 10. Prefabricated chimney stacks.
 11. Testing.
 12. All other items indicated on the drawings, specified herein, or needed for complete and proper systems' installation.

1.02 GENERAL CONDITIONS

- A. Related Documents: The General Conditions and other documents of the contract apply to the work specified in this section.
- B. Guarantee: All work executed under this section shall be guaranteed for one (1) year as stated in the General Conditions.
- C. Permits and Laws:
1. Obtain and pay for all required permits, inspections, licenses, etc.
 2. Execute all work to conform to the requirements of all local, state and federal laws, regulations, etc., applicable to the work.
- D. Drawings:

- b. **Design:** Equipment and accessories not specifically described or identified by manufacturer's catalog numbers shall be designed in conformity with ASHRAE, ASME, IEEE, AWWA, ANSI, ASTM, ASSE, PDI or other applicable technical standards, suitable for maximum working pressure and shall have neat and finished appearance.
 - c. **Installation:** Erect equipment in neat and workmanlike manner; align, level and adjust for satisfactory operation; install so that connecting and disconnecting of piping and accessories can be made readily, and so that all parts are easily accessible for inspection, operation, and maintenance and repair. Minor deviation for indicated arrangements may be made as approved.
 - d. **Welding:** Before any welder performs any welding, submit a copy of the welder's certification as a certified welding mechanic. All welding shall be executed using the best practices of the trade.
4. **Site Visit:** The Contractor estimating and submitting a bid for the work covered by this section of the specifications shall visit the site, and view conditions as they exist prior to submission of a bid. The submission of a bid shall be taken as evidence that the bidder has examined the existing conditions and has satisfied himself as to the various requirements, obstacles and advantages of performing the work. No subsequent allowances will be made in this respect due to failure of the Contractor to meet the full requirements of these specifications.
5. **Protection of Equipment and Materials:** Responsibility for care and protection of all materials and mechanical work rests with the Contractor at all times until the entire project has been completed, tested, and the project is accepted.
6. **Foundations:**
- a. **Ceiling Mounting:** Where ceiling mounting is indicated or specified, use suspended platform or strap hangers, bracket or shelf, whichever is most suitable for equipment and its location. Construct of structural steel members, steel plates, rods, as required, brace and fasten to building structure or to ensure as approved.
 - b. Structural steel required to support equipment shall be furnished.
7. **Shop Drawings:** The Contractor shall, after the award of Contract, and before installation, submit for approval shop drawings and Owner's manuals and operating instructions of equipment to be furnished under this Contract. After shop drawings have been given final approval, three (3) copies of shop drawings shall be retained by the Architect/Engineer. The following items of equipment shall be submitted for approval:
- a. New fin tube radiation and accessories.
 - b. Hot water specialties including valves, etc.
 - c. Package cast iron fired boilers.
 - d. Prefabricated chimney stacks.
 - e. Insulation.
 - f. Circulators and control.
 - g. Plumbing specialties.

1. Seals: Pumps shall be cartridge type specifically designed for indicated service, rated 220 degrees F at 125 psig continuous operation.
 2. Material: Bronze fitting with non-metallic impeller, hydraulically and dynamically balanced.
 3. Motor: Motor of size and with voltage characteristics as scheduled on the drawings, shall not exceed 3,250 rpm.
 4. Operating Characteristics: Pumps shall be non-overloading throughout entire operating range.
- C. Pumps for the recirculation of domestic hot water shall be all bronze construction.
- D. Other Requirements:
1. Supports: Provide additional supports for pumps as required to insure correct installation.
 2. Submittals: Provide pump curves for each pump with the shop drawings.
 3. Disconnects: Furnish for each pump.
 4. Controls: Provide Honeywell T-87F (40° F-90° F) low voltage thermostat with fixed temperature range stops, relays, transformers, wiring, etc., and as required to provide a complete job.
 - a. Thermostat shall be located as indicated on drawings and shall control respective circulator pump.
 - b. All wiring shall be in accordance with latest edition of National Electric Code and Specification Section 16000.

2.03 BOILER – BURNER UNITS (HOT WATER - GAS FIRED [FUTURE CONVERSION TO OIL FIRED] – CAST IRON SECTIONAL TYPE)

- A. General: Provide integral boiler – burner units of cast iron sectional type, as manufactured by H.B. Smith Model 19A, or approved equal by Burnham.
1. Boiler – burner units shall be rated for not less than the capacities as scheduled on the drawings firing natural gas (future conversion to oil firing).
 2. Unit shall be constructed for 50 psig.
 3. Minimum 85 percent fuel to water efficiency at 100 percent rating.
 4. Units shall be forced draft with breeching sized as recommended by the boiler manufacturer. Provide flue damper to prevent excess draft in boiler if required by boiler furnished.
- B. Boiler Unit: The boiler unit shall be complete with the following standard equipment and / or accessories:
1. Combustion chamber of the water backed design; burner mounting plate with insulation block.
 2. Boiler and burner base on 2" concrete base or rails with 4" minimum height.
 3. Insulated metal jacket of not less than 2" thickness glass fiber insulation. Jacket and all exposed parts shall be neatly painted.

4. Provide all accessories for complete installation (roof thimble, roof cap, support tee tie-in, cleanouts, etc.,).
5. Units shall be sealed pressure tight.

2.05 INDIRECT FIRED DOMESTIC WATER HEATER

- A. General: Furnish and install domestic water heater, Superstor model SS-40.
- B. Main Components and Features:
 1. U.L. Seal of Certification with a hydrostatic work pressure of 150 PSIG (Meet U.L. 174.)
 2. Vacuum Breaker.
 3. Type 316L stainless steel water reservoir shell.
 4. 2" thick, CFC-free, water blown polyurethane foam insulation.
 5. Plastic outer jacket.
 6. 90/10 cupronickel coil heat exchanger, 15 square feet surface area.
 7. Quick-action adjustable immersion-type aquastat and indicator light.
 8. Reservoir capacity: 40 gallons.
 9. Capacity Required: (With 180 degrees F boiler water flowing at 6 GPM) 2.5 GPM (150 GPH) of Domestic Water from 40 degrees F to 120 degrees F.
- C. Shall meet energy efficiency performance criteria set forth by HUD, ASRAE 90A, BOCA, DOE and all local codes
- D. Heater shall be installed to operate in conjunction with two 40 gallon Superstor indirect fired water heaters where scheduled. See drawings for piping.

2.06 PIPING, FITTINGS, VALVES & MISCELLANEOUS

- A. Piping:
 1. Seamless scheduled 40 standard weight black steel, ASTM A-106 National Tube Co. or equal from Bethlehem, U.S. Steel Corp.
 2. Copper tubing shall be Type "L" rigid copper, ASTM standard specification B88.
- B. Fittings:
 1. Schedule 40 Pipe:
 - a. Screwed: 125 lb. best grade cast iron screw pattern with clean-out threads. (150 lb. malleable iron, ASTM B-16.3.)
 - b. Flanged: 150 lb. forged steel, slip-on or welding neck, raised or flat face as applicable.
 - c. Welded: Butt-welded, wrought carbon steel, schedule not less than adjacent pipe.

brass shrouds and end fittings.

5. Air Separators: Furnish and install air separators for the hot water system equal to Taco or Bell and Gossett of size as indicated on the drawings.

2.08 NATURAL GAS PIPING AND ACCESSORIES

- A. General: Provide all piping and accessories for a complete system.
- B. Main Components and Features: Piping to handle natural gas shall be complete, including the following:
 1. Above Ground and Underground Piping shall be Type K, annealed, seamless copper tube complying with ASTM B88. Underground piping may be plastic rated for natural gas service and in accordance with Northern Utilities requirements. Aboveground piping may be schedule 40 carbon steel conforming to ASTM A106 with fittings of malleable iron type.
 2. Fittings shall be copper, brass, or bronze with minimum 80 percent copper content where exposed to soil.
 3. Valves 1/2" through 2" shall be conventional part, bronze or brass ball, screwed ends, bronze or brass body, teflon seat, lever handle, 400 lb. wog. ball valves.

PART 3: EXECUTION

3.01 PIPING - GENERAL

- A. Provide and erect in a workmanlike manner, all piping shown and required to complete the installation intended. Erect piping to allow sufficient clearance for expansion, application of insulation and finish painting with offsets as required to avoid other work.
- B. Sizes and general arrangement, as well as methods of connecting all piping, valves, equipment, etc., shall be as indicated, or so as to meet the requirements of the Architect/Engineer.
- C. All pipe used is to be new material, and all threads on piping must be full length and clean-cut with inside edges reamed smooth to full inside bore.
- D. In the erection of mains, special care must be used in the support, working into place without springing or forcing.
- E. Make such offsets as shown and required to place the pipes and risers in proper position to avoid other work.
- F. Pipes shall be anchored, guided, etc., where necessary, to prevent vibration or to control expansion.
- G. Install a sufficient number of flanged fittings or unions to facilitate making possible future alterations or repairs. Unions shall be installed at all equipment, traps, fixtures and risers.
- H. Piping shall be erected so as to provide for the easy passage and noiseless circulations of water, steam and condensation under all working conditions.
- I. Provide 1/2" minimum size valved draw-offs with hose connection at all low points of the piping systems, apparatus, etc. Copper piping and fittings shall be installed with soldered joints using the following alloy - per ASTM standard B32.
 1. 95-5 tin-antimony solder (200 degrees F at 200 psi).
 2. All domestic water piping shall be made up with non-lead bearing solder equivalent to "Silver-Brite."

specified.

2. Systems shall be tested and proven tight, and surfaces painted where required before application of insulation.
3. Insulation on all piping systems shall include all valves, fittings, flanges and appurtenances to match the piping insulation jacket, vapor barrier, and finish. Prefabricated "Zeston" or equal fittings will be acceptable.
4. All insulation shall have noncombustible vapor barrier jacket applied in accordance with manufacturer's instructions. Seams shall be concealed where possible. Provide 6" high 20 gauge aluminum protector sleeves on all insulation passing through floor on exposed piping.
5. Labels and trademarks shall be removed.
6. Insulation shall be neatly finished at pipe hangers, pipe anchors, and pipe covering protection saddles as specified for fittings and valves.
7. Materials shall be as manufactured by Johns-Manville, Carey, Armstrong, Owens-Corning or Gustin-Bacon.

B. Piping Systems:

1. The entire new hot water heating piping portion including all supply and return shall be completely insulated.
2. All domestic hot water, cold water and recirculating hot water piping shall be completely insulated. Vapor seal all insulation on cold water piping.
3. All piping shall be insulated as follows:
 - a. Generally, piping 7 lb. minimum density glass fiber as a jacket. Fiberglass 25 with ASJ jacket.
 - b. All insulation shall have a flame-spread rating of 25 or less and a smoke developed rating of 50 or less as tested by the ASTM E84 method.
 - c. Minimum pipe insulation size:

<u>Pipe</u>	<u>Supply and Return</u>	<u>Domestic</u>	
		<u>Hot</u>	<u>Cold</u>
1" and less	1"	1"	1"
1-1/4" to 2"	1-1/2"	1"	1"
2-1/2" to 4"	1-1/2"	1-1/2"	1"

4. Insulation shall not be applied to the following:
 - a. Screwed unions.
 - b. Valve hand wheels.
 - c. Vents to atmosphere, discharges from safety and relief valves.

HEAT CONVERSION
SHALOM APARTMENTS
180 AUBURN STREET
PORTLAND, MAINE

- c. In the event repairs or additions are made following the pressure test, the affected piping shall be retested, except that in the case of minor repairs or additions retest may be omitted, when precautionary measures are taken to assure sound construction.
 - d. Because it is sometimes necessary to divide a piping system into test sections and install test heads and other necessary appurtenances for testing, it is not required that the tie-in sections of pipe be pressure tested. Tie-in connections, however, shall be tested with soap solution after gas has been introduced and the pressure has been increased sufficiently to give some indications should leaks exist.
 - e. The test procedure used shall be capable of disclosing all leaks in the section being tested and shall be selected after giving due consideration to the volumetric content of the section and to its location.
 - f. A piping system may be tested as a complete unit or in sections as the construction progresses. Under no circumstances shall a valve in a line be used as a bulkhead between gas in one section of the piping system and test medium in an adjacent section, unless two valves are installed in series with a valved "telltale" located between these valves. A valve shall not be subject to the test pressure unless it can be determined that the valve, including the valve closing mechanism, is designed to safely withstand the test pressure.
 - g. Regulator and valve assemblies fabricated independently of the piping system in which they are to be installed may be tested with inert gas at the time of fabrication.
 - h. The piping system, after isolation, shall hold the test pressure, of not less than 1-1/2 times the proposed maximum working pressure, but not less than 3 psig, for at least eight hours between times of first and last reading of pressure and temperature.
2. Test Medium: The test medium shall be air or inert gas (c.g., nitrogen, carbon dioxide). OXYGEN SHALL NEVER BE USED.
 3. Test Preparation:
 - a. Expansion joints shall be provided with temporary restraints, if required, for the additional thrust load under test.
 - b. Equipment which is not to be included in the test shall be either disconnected from the piping or isolated by blanks, blind flanges or caps. Flanged joints at which blinds are inserted to blank off other equipment during the test need not be tested.
 - c. When the piping system is connected to equipment or components designed for operating pressures of less than the test pressure, such equipment shall be isolated from the piping system by disconnecting them and capping the outlet(s).
 - d. When the piping system is connected to equipment or components designed for operating pressures equal to or greater than the test pressures, such equipment shall be isolated from the piping system by closing their individual manual shutoff valve(s).
 - e. All testing of piping systems shall be done with due regard for the safety of employees and the public during the test. Bulkheads, anchorage and bracing suitably designed to resist test pressures shall be installed if necessary. Prior to testing, the interior of the pipe shall be cleared of all foreign material.
 4. Test Pressure Measurement:

4. Provide approved thermal switches at ceiling over each burner to also stop all equipment.
- B. Piping: Provide all required connections, valves, etc. See other sections of this division and the drawings.
 1. Pipe safety relief valve discharge to floor drain.
- C. Boilers shall set on 2" concrete base.
- D. Start-Up: The burner shall be started up and adjusted by the manufacturer's representative at the time of supplying temporary heat and at the completion of the work.
- E. Instruction: The manufacturer's representative shall provide the instructions to the Owner's representative as to the proper care and operation.
- F. Guarantee: Contractor shall guarantee the entire installation for a period of one year from the date of final certificate of payment and maintain apparatus in satisfactory operating condition for the period of guarantee without additional cost to the Owner.

3.07 INSTALLATION OF MANUFACTURED STACKS

- A. General: Install stacks complete, including all accessories per Code and manufacturer's recommendations for a complete installation.
- B. Main Components and Features: Provide breeching and stacks with cleanouts for the following equipment:
 1. Gas Fired Hot Water Heating Boilers.

3.08 SHEET METALWORK AND MATERIALS

- A. General: Furnish and install all required sheet metalwork, including: manual dampers, collars, sleeves, supports, etc., for the complete installation in accordance with the intent of the drawings and specifications.
 1. Furnish and install all duct work louvers, dampers for combustion air to Boiler rooms, and other equipment furnished under these specifications.
- B. Installation: Fabricate and install in accordance with applicable requirements of the ASHRAE Guide and SMACNA Manual. Ductwork shall conform to 2" SMACNA Pressure Class except where SMACNA requirements are exceeded by these specifications. Ductwork shall be neat, accurate, rigidly constructed and mechanically tight, as well as substantially airtight and shall provide quiet system of air transportation. Offsets of exposed ductwork shall be made on sides opposite to walls and ceilings, unless otherwise shown on the drawings or specified. Sizes, as marked on the drawings, shall be adhered to as closely as possible. The right is reserved to vary the size of ducts and flues to accommodate structural conditions during the progress of the work, without additional cost to the Owner.
- C. Materials: Ductwork shall be of galvanized sheet metal.

3.09 JOB CLOSING

- A. Operating and Performance Tests:
 1. Prior to the final inspection perform required tests and submit the test reports and records.
- B. Testing and Adjusting:

E. Cleaning:

1. After satisfactory completion of pressure tests, before permanently connecting equipment, strainers, and the like, clean equipment thoroughly, blow and flush piping for a sufficient length of time as directed, so that interiors will be free of foreign matter.
2. Fill, vent and circulate the system with approved solution in accordance with boiler manufacturer's recommendations, allowing it to reach design or operating temperatures. After circulating a few hours, the system should be drained completely.
3. The entire system installations including apparatus, motors, etc., shall be left in first-class condition including cleaning, oiling and packing.

F. Instruction and Charts: After completion of the installation work called for in this specification, the Contractor and his Subcontractors shall furnish necessary mechanics or engineers for the adjustment and operation of the systems, to the end that the systems may be perfectly adjusted and turned over to the Owner in perfect working order. The Contractor shall further instruct the Owner's authorized representative in the care and operation of the installation, providing all required framed instruction charts, directions, etc.

G. Painting:

1. All exposed ironwork, including steel supports, hangers, etc., shall be painted two (2) coats of machine gray or equal.
2. Painting specifically noted on equipment.

H. Nameplates: Furnish and install DYMO, or approved equal, embossed vinyl-plastic nameplates, with white letters on black background to identify equipment, controls, etc., furnished under this section of the specifications.

END OF SECTION

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specification sheets covering all component parts of the system and interconnection diagrams.

- D. Certification: Submit certification of system operating test.

1.05 PROJECT CONDITIONS

- A. Regulatory Requirements: Secure and pay for all permits and certificates as required by local and State laws.

1.06 WARRANTY

- A. The Contractor shall guarantee all equipment and wiring free from inherent mechanical or electrical defects for one year from date of acceptance.

1.07 RELATED WORK

- A. Division 15 - Mechanical

PART 2: PRODUCTS

2.01 MATERIALS

- A. Toggle Switches: 20A, 277V, 1-pole, brown specification grade, mount 4' - 0" above finished floor at door entrance.
- B. Receptacles: shall be specification grade, mounted 24" above finished floor unless otherwise noted.
- C. Plates: shall be 302 stainless steel with tamper-proof screws.
- D. Boxes: shall be steel minimum 2-1/2" deep.
- E. Disconnect Switches shall be horsepower rated.
- F. Wiring Materials:
1. Wiring exposed shall be enclosed in electrical rigid galvanized steel, aluminum or intermediate metal conduit sized in accordance with code requirements for the conductors. Electrical metallic tubing may be used.
 - a. Terminations for all conduit shall have insulated bushings or insulated throat connectors in accordance with code requirements.
 - b. All conduits shall be substantially supported with approved clips or hangers spaced not to exceed ten feet on center. Minimum conduit size shall be 1/2".
 2. Flexible metal conduit shall be used for all connections to motors and vibrating equipment and shall comply with Fed. Spec. WW-C-566.
 3. All wiring shall be type THW, XHHW, or THWN, UL labeled, copper conductors with 600-volt insulation, except as otherwise noted. Minimum size wire shall be No. 12 AWG.

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connectors.

4. Provide all disconnect switches required by the N.E.C.
5. Mount disconnect switches and starters at a height of 60" above finished floor unless otherwise noted.
6. A typewritten schedule of circuits, approved by the Owner's Representative shall be on the panel directory cards. Type the room numbers and items served on the cards. Three complete separate copies of all directories, neatly bound, shall be delivered to the Owner's Representative.
7. Revise existing panelboard directories. Furnish new cards as needed.
8. Branch circuit wiring may be non-metallic sheathed cable where concealed and allowed by Code, Type NM. NOTE: All romex shall be Properly Supported. (Provide continuous ground wire.)
9. Feeder circuit wiring shall be in conduit or EMT.
10. All communication locations shall have outlet box with future wiring by Owner to have conduit or EMT terminating above ceiling.
11. In general, conductors shall be the same size from the last protective device to the load and shall have an ampacity the same as or greater than the ampacity of the protective device where the wire size is not shown on the drawings.

B. Grounding:

1. The entire electrical system shall be permanently and effectively grounded in accordance with Code requirements.
2. Connections to junction boxes, equipment frames, etc. shall be bolted.
3. Conduit Systems:
 - a. Ground all metallic conduit systems.
 - b. Conduit systems shall contain a grounding conductor sized per NEC table 250-95 or as shown on the drawings. Increase conduit size where necessary to accommodate the grounding conductor.
4. Feeders and Branch Circuits: Install green grounding conductors with all feeders and branch circuits.

C. Alterations:

1. The Contractor shall study all drawings and specifications and visit the site and acquaint himself with the existing conditions and the requirements of the plans and specifications. No claim will be recognized for extra compensation due to failure of Contractor to familiarize himself with the conditions and extent of the proposed work.
2. The Electrical Contractor shall execute all alterations, additions, removals,

A R C H E T Y P E

August 7, 2003

City of Portland
Inspector of Buildings
City Hall
Portland, Maine 04101

Re: Heat Conversion, The Shalom Apartments, 180 Auburn Street, Portland, Maine

Enclosed is an application for a building permit for the conversion of the existing Shalom Apartments from electric heat to gas heat. This work will become part of a larger project to build out (10) new one bedroom, single story apartment units at the existing complex. The build out of the site required an R3 Contract Zone that was granted by the City Council August 4, 2003. Site Plan Review is still required by the Planning Board; application for Site Plan Review was made August 7, 2003. (Kandi Talbot is the Planning staffer). Pending Planning Board approval construction of the build out is projected for winter 2003. Alex Jaegerman at Planning said that in his opinion the Heat Conversion is a separate project and is not subject to the ongoing Planning Board process.

The future build out is indicated on the Heat Conversion plans because the Heat Conversion boilers are designed to heat the future buildings as well.

If you have any questions, please email (shields@archetypepa.com) or call me. I am on vacation from August 8 – 15. If you have questions during that time you may contact David Lloyd at this office.

Sincerely,


John Shields
Architect

Cc: Bill Floyd – Shalom House