

Masonry Heater Association
Occupational Analysis for Masonry Heater Designers and Builders
Version 2 December 2007

TABLE OF CONTENTS

Introduction

1. Work Safely
2. Analyze customer requirements and give advice
3. Develop System Designs
4. Design Masonry Heaters
5. Prepare Job Cost Estimates
6. Review Installation Requirements and Prepare for the Installation
7. Uncrate and Inspect Components
8. Assemble Factory-built Heater Kits
9. Identify, select and use appropriate masonry units and mortars
10. Advise client of proper operating and maintenance procedures

Introduction

Requirements for MHA Certification

- a) A certified Masonry Heater Designer/Builder shall demonstrate proficiency in the skills listed in all sections of this manual
- b) Proficiency in each skill area shall be determined through a combination of the following:
 - (i) verification of relevant past experience,
 - (ii) competency as certified by a current or previous employer or supervisor,
 - (iii) customer endorsements,
 - (iv) relevant educational credits,
 - (v) oral, written or practical testing
- c) See the Heater Mason Training and Certification Program Policies and Procedures Manual for detailed certification criteria.

How to Use This Occupational Analysis

This is the key document that defines the special skills required of those who build masonry heaters. You must be able to demonstrate competency in each of the skills listed in all of the sections of the analysis. This MHA practical and written examinations use the skills listed in this analysis as a guide for their contents. You can use this analysis as a checklist of your own skills as you prepare for certification, and you can use it to assess employees or others whose competency in heater design and construction you are asked to evaluate.

1. Work Safely

- 1.1 Wear eye protection.
- 1.2 Wear foot protection.
- 1.3 Wear ear protection.
- 1.4 Wear protective clothing.
- 1.5 Wear hand protection.
- 1.6 Wear dust masks and respirators.
- 1.7 Wear a hard hat.
- 1.8 Lift and moving heavy objects.
- 1.9 Use forklifts, dollies, hand trucks and motor vehicles.
- 1.10 Secure loads.
- 1.11 Maintain a safe work environment.
- 1.12 Follow health and safety legislations.

2. Analyze customer requirements and give advice

- 2.1 Explain the operational and performance characteristics and limitations of masonry heaters. *high mass, slow response*
- 2.2 Compare masonry heaters with other hearth and heating system options.
- 2.3 Determine the heating, fire viewing, and decor requirements of the customer.
- 2.4 Explain the characteristics of optional facing materials.
- 2.5 Prepare sketches showing location options.
- 2.6 Provide advice on the most effective locations for performance, aesthetics and safety.
- 2.7 Explain limitations of system locations such as outside walls and confined areas.
- 2.8 Identify and explain masonry heater and component options.
- 2.9 Discuss heating capacities of various masonry heater options.
- 2.10 Explain venting requirements.
- 2.11 Discuss the effects of a tight building envelope on the operation of a high-capacity exhaust system.
- 2.12 Discuss effective heat distribution of masonry heaters.
- 2.13 Discuss requirements and procedures for obtaining a building permit.
- 2.14 Determine information that may be required for insurance purposes.

3. Develop System Designs

- 3.1 Determine the type, size and configuration of a heater.
- 3.2 Determine associated components such as bake oven, facing options, water coils, heated bench, wing wall, etc.
- 3.3 Perform heat output calculations.
- 3.4 Specify foundation requirements.
- 3.5 Determine code requirements for masonry heaters.
- 3.6 Determine requirements for clearance reduction systems.
- 3.7 Determine code requirements for chimneys.
- 3.8 Determine access requirements for cleaning of internal passages.
- 3.9 Interpret manufacturer's instructions for factory-built masonry heaters.
- 3.10 Prepare clear and accurate sketches

4. Design Masonry Heaters

- 4.1 Design a firebox.
- 4.2 Design heat transfer passages.
- 4.3 Design access requirements for cleaning internal passages.
- 4.4 Determine the need for a by-pass damper and/or chimney damper.
- 4.5 Design and construct a gas slot. *-Determine need*
- 4.6 Assess the need for an outdoor combustion air supply.
- 4.7 Design a chimney to code requirements.
- 4.8 Determine the facing material.
- 4.9 Design the layout of the heater facing material.
- 4.10 Specify metal components such as doors, lintels and dampers.
- 4.11 Design and construct a bake oven.
- 4.12 Design and construct a heated bench.
- 4.12 Design a capping assembly.
- 4.13 Allow for thermal expansion.

5. Prepare Job Cost Estimates - *how they will be billed*

- 5.1 Evaluate material requirements.
- 5.2 Evaluate labour requirements.
- 5.3 Compile a list of necessary components.
- 5.4 Research and record prices.
- 5.5 Determine shipping costs.
- 5.6 Estimate the time required to complete the work.
- 5.7 Complete a cost estimate.
- 5.8 Provide a cost estimate to the client.

6. Review Installation Requirements and Prepare for the Installation

- 6.1 Interpret installation drawings and specifications.
- 6.2 Assess installation issues prior to work proceeding.
- 6.3 Review all installation requirements.
- 6.4 Obtain local building permits licenses etc.
- 6.5 Determine other trades are on schedule.
- 6.6 Gather all necessary components, tools and equipment.
- 6.7 Load materials, equipment and documentation into the service vehicle.

7. Uncrate and Inspect Components

- 7.1 Inspect unopened crates carefully and record visible damage.
- 7.2 Uncrate components carefully to avoid damage and injury.
- 7.3 Dispose of crate materials safely.
- 7.4 Compare parts list or packing slip to crate contents.

8. Assemble Factory-built Heater Kits

- 8.1 Use hand and power tools.
- 8.2 Inspect existing chimneys.
- 8.3 Gather the necessary tools, components and materials.
- 8.4 Protect building components.
- 8.5 Review installation instructions.
- 8.6 Confirm installation clearances in accordance with manufacturer's instructions.
- 8.7 Assemble the core components.
- 8.8 Install expansion joints.
- 8.9 Install facing materials.
- 8.10 Install metal components.
- 8.11 Install a gas-tight, permanent connection between the heater and its chimney.
- 8.12 Install combustion air supply components.
- 8.13 Meet code requirements.
- 8.14 Observe manufacturer's installation instructions.
- 8.15 Clean the work area.
- 8.16 Record installer's name and date of installation or service in an appropriate location on the appliance or owner's manual.

9. Use masonry units and mortars.

- 9.1 Use masonry units.
- 9.2 Use mortar.
- 9.3 Assemble heater core components.
- 9.4 Install metal components.
- 9.5 Apply the facing material.
- 9.6 Create an expansion joint.

10. Advise Client of Proper Operating and Maintenance Procedures

- 10.1 Provide the client with an operating manual.
- 10.2 Discuss the contents of the operating manual.
- 10.2 Review the heater, break-in instructions.
- 10.3 Explain fueling requirements.
- 10.4 Discuss firing temperatures.
- 10.5 Explain routine system maintenance requirements.
- 10.6 Explain warranty policy and limitations.
- 10.7 Provide the customer with a contact person.
- 10.8 Acknowledge, in writing, that the operating and maintenance instructions and warranty have been received and understood.



Richard Smith - Executive Director

From: Stephen Bushway [sbushway@mac.com]
Sent: Sunday, September 28, 2008 6:46 PM
To: Norbert Senf
Cc: Brian Klipfel; Alex Chernov; Richard Smith - Executive Director;
dhargrave@virginiaradiant.com; jmc@ripnet.com; fishermasonry@yahoo.com;
john@redclay.ca; Marcus Flynn; Pat Manley; bphette@yancey.main.nc.us; William Davenport;
Dave Misiuk; Joel Dick; Mike Gilmore; Solid Timber
Subject: Re: Mike Gilmore's report

Hi all,

I've made a few suggestions to Mike's good work, in case you get a look in the next 15 minutes or so, that I'll bring up on the call.

4. provide rough opening plan drawing, footing specs. if you're not doing.

4.5 determine the need for a gas slot.

5. Or explain to the customer exactly how they will be billed, i.e.

payment schedule tell them your labor rate, travel time, material mark- up etc., if the job is done on a "time and materials" basis.

2.1 ...(substitute for "masonry heater"_of a high mass, slow response heating system.

Regarding skill building.

In order for builders to provide customers with nice looking work, they need to practice facing building skills (brick/stone laying,

stucco), which is a much slower learning curve than core assembly.

They should attempt to match skill level with customer expectation

(i.e., doing first jobs for friends/relatives or themselves) .

Working with experienced masons is a valuable experience and should be encouraged.

Steve

On Sep 28, 2008, at 1:11 PM, Norbert Senf wrote:

> Hi guys:

>

> I am forwarding this message from Dick Smith, in case any of you don't

> have a copy of Mike Gilmore's report, and would like to participate in

> the education committee conference call today at 8:00 pm EST (7:00 pm

> CST)

>

> All you have to do is dial

> 1-866-414-2828

> then when asked, enter the "conference call entry code of 820777,

> followed by # (820777#)

>

> The call is toll-free from the U.S. or Canada.

>

>

> Thanks Norbert

>

>

>> From: "Richard Smith - Executive Director"

>> <mha.association@yahoo.com>

>> To: "'Norbert Senf'" <mheat@heatkit.com>, "Steve Bushway"

>> <sbushway@mac.com

>> >

>> Subject: RE: Mike Gilmore's report

>> Date: Sun, 28 Sep 2008 11:28:45 -0500

>>

>> Hi Guys,

>>

>> Here is a pdf file that Mike sent me. Hope you have a chance to

>> review it.

>>

>> Steve to be part of the conference call at 7 p.m. (cst) dial

>> 1-866-414-2828

>> then enter code # 820777#

>>

>>

>> Richard Smith

>> Masonry Heater Ass'n.

>> Executive Director

>> 520-883-0191

>> 641-453-2255 (fax)

>>

>>

>>

>> -----Original Message-----

>> From: Norbert Senf [mailto:mheat@heatkit.com]

>> Sent: Sunday, September 28, 2008 8:07 AM

>> To: Stephen Bushway; Richard Smith - Executive Director; Mike Gilmore

>> Subject: Re: Mike Gilmore's report

>>

>> Hi Steve:

>>

>> I'll refer your inquiry to Dick and Mike, and hopefully we can get

>> this material to the interested parties before the conference call

>> today.

>>

>> I could not open the original doc that Mike sent. Mike mentioned that

>> he was having problems with Vista, and resent it to me as the body of

>> an email.

>> That

>> is what I put online. I just searched my email records, and can't

>> find another document, or a spreadsheet.

>>

>> Thanks Norbert

>>

>>

>> At 06:29 PM 9/27/2008 -0400, Stephen Bushway wrote:

>> >Norbert,

>> >I just looked at the link you sent and all it seems to show is

>> >Mike's

>> >1 page narrative report, in which he refers to a spreadsheet of

>> >"micro- tasks". Can we look at that?

>> >Best,

>> >Steve

>> >On Sep 26, 2008, at 9:39 AM, Norbert Senf wrote:

>> >

>> >>Hi:

Richard Smith - Executive Director

From: Michael Gilmore [gilmore@sasktel.net]
Sent: Sunday, September 07, 2008 5:08 PM
To: Richard Smith - Executive Director
Subject: Curriculum Document
Attachments: Masonry Heater Association (Norbert OA).doc

Hi Dick,

Here is a start on developing a program of instruction for Masonry Heater Builders. It is a draft Occupational Analysis that I offer for the study and critique of the members of the Educational Committee.

I have some other documentation that we can use as guidance while developing a valid program of instruction, but what is presented today, I hope, is a good start.

There are a number of questions I have for the committee to consider:

1. Who are we training and to what level?
2. It has been suggested that certification may be obtained in each of various types of heaters, Say possibly starting with Heater Kits of various descriptions, moving on to Kachelovens, Grundovens, Russian Heaters with heater builders being certified in each type.
3. Who will do the training?
4. Where will the training take place?
5. How will the trainers be chosen certified?
6. Who owns this valuable documentation we are developing?
7. I would like to discuss the question of an increase in fees for inclusion in other organizations related to Masonry Heaters.
8. We need a plan to proceed with the development of a Program of Instruction which should include, practical/theoretical tests, information sheets, texts, quizzes, check lists, hopefully some educational video, log book, etc, etc.

I apologise for the delay in sending this. I would ask you to forward it to other members so we can start this process.

I look forward to talking with you all tonight.

Mike

David Moore

19606 Cool Hollow Road

gerstown, MD.

21740

Ed Committee

Mike Colman

Mr. Davenport

John McDougall

Albi Riden

Jonathan Stone

Gene Danks

Alex Channer

Credit Card M4

~~Long Break~~
Agenda

- 1) Log BK. for Certification
- 2) Goals
- 3) Certification Standards
- 4) Next mty.
- 5) Budget

5) Budget
4) Next mty.
3) Certification Standards
2) Goals
1) Log BK. for Certification

Clear Desk

Quickbooks On-line
2 months free
Setup

244% - new quality
3.27% - new quality
23¢ per
28¢ later
17.95/no
no 0-20 months
for

Will have mt
Paid
Still Wayne let
Testing

Don't believe to Lou Shans
last week. H237
did not receive mail
for Testing

Don't
with
2,000.27
12/16/07
3-1937
104293
65

Table of Contents

1	Finnish Contraflow (Small room heater 24' x 36')	
2	Kakelugn (Swedish Heater)	
3	Blacksburg Grundofen (Modified)	
4	Detail Option Drawings Including: Damper Options Clean Out Options Outside Air Options Options to Finish the Top (above capping slab)	
5	Six Line Drawings	
6	Generic Heater Building Sequence Step-By-Step	
7	Copy ATR Engineering Masonry Heater Stabilization Report	
8	Copy of Swedish Emissions Report	
9	MHA Homeowner's Safety Manual & Burning Guide	
10	Additional Heaters (2006): Medium Size Corner Finnish Heater Soapstone Heater	



WETT Continuing Education (CE) New Course Application

When to use this form

If you are due for a CE course this year:

- You can take a WETT course, and we will automatically extend your due date for a future CE course.
- If you have not taken a WETT course recently and have taken one of the pre-approved courses listed on the Extension Application Form, you can use that form to request an extension for your CE requirement.
- If you would like to submit a course not listed on the Extension Application Form for consideration for CE course extension, you should complete this form.

Please complete all sections of this form and submit with the appropriate documentation and payment.

Date: _____

WETT Number: _____

Name: _____

Course Name: _____

Date taken: _____ Location: _____

Did the course have an examination? Yes ☐ No ☐

Documentation

You will need to submit documentation with this form to prove that you have taken the course. You must submit one of following:

- Certificate of completion
- Proof of successful completion of the course
- Letter confirming successful completion (provided it shows the date and course name)

You **must** also submit a complete course description as provided by the course provider. **This is mandatory.**

Fee

There is a \$50 + tax (GST/HST where applicable) application fee to submit a CE extension. If you are making payment by credit card, this form and the course documentation can be sent in by fax to 416-968-6818.

Total Paid: \$ _____ Method of Payment: ☐ Cheque enclosed (payable to WETT Inc.) ☐ Visa/MasterCard

Credit Card Number: _____ Expiry Date: _____

Card Holder's Name: _____

Card Holder's Signature: _____

Please note: If the course application is declined your payment will be returned

For office use only

Date received: _____

Current CE due date: _____

New CE due date: _____



WETT Continuing Education (CE) Extension Application Form

When to use this form

If you are due for a CE course this year, you can take a WETT course and we will automatically extend your due date for a future CE course. If you have not taken a WETT course recently and have taken one of the courses listed on page 2 of this form, you can use this form to request an extension for your CE requirement. Please complete all sections of this form and submit with the appropriate documentation and payment.

Date: _____

WETT Number: _____

Name: _____

Course Name: *(note – must match name of course on page 2 of this form)*

Date taken: _____

Location: _____

Documentation

You will need to submit documentation with this form to prove that you have taken the course. You must submit one of following:

- Certificate of completion
- Proof of successful completion of the course
- Letter confirming successful completion *(provided it shows the date and course name)*

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Total Payment: \$ _____

Method of Payment: ☐ Cheque enclosed (payable to WETT Inc.) ☐ Visa/MasterCard

Credit Card Number: _____ Expiry Date: _____

Card Holder's Name: _____

Card Holder's Signature: _____

For office use only

Date received: _____

Current CE due date: _____

New CE due date: _____

Company	Contact	Address 1	City	State	ZIP Code	Country	E-mail
---------	---------	-----------	------	-------	----------	---------	--------



**NATIONAL
FIREPLACE
INSTITUTE**
A CERTIFICATION AGENCY



Application for NFI and CSIA Continuing Education Units (CEUs)

This application allows your course to be considered for CEUs from the NFI and CSIA Continuing Education Programs. Upon receiving the application, the committee from each organization will review your program for applicable content and may award CEUs in each group's corresponding categories. You will receive a separate email from each organization.

NFI and CSIA are independent certification agencies that work cooperatively to serve the needs of their industry's professionals. This joint application reflects the similarity of their interests and their shared commitment to ongoing education.

You must submit your application no later than 30 days before your education event

Course Title	
Sponsoring Organization	Pick a sponsor or add new sponsor
Instructor's Name	Pick an instructor or add new instructor
Anticipated Attendance	
Course Location and date	You must enter a city and date when the course will be first offered. (If there are multiple dates, check the box below.) City _____ state AL _____ January _____ 1 _____ 2008 Tick checkbox if this course will be offered on multiple dates <input type="checkbox"/> (You can add more dates after you submit this form)
WARNING: Without submitting an outline and/or handouts, there is a strong possibility your course may not be approved for CEUs.	
<p>You MUST submit a course outline. (Click the "browse" button to the right and select the file to upload.) <small>Word, Excel, Acrobat, or PowerPoint only.</small></p> <p>Submitted files should be less than 1Mb please</p> <p>When you submit this form, your file(s) will be uploaded to our server. Depending on the file size(s) this can be a lengthy process. You must not close your browser. Let it run until you see an acknowledgment.</p>	<p align="right"><input type="button" value="Browse..."/></p> <p><i>Browse to and select prepared file. Do not write into text box above. Click the Browse button and navigate to the file on your computer. File name should contain no special characters. like: !@#\$%^&*() + etc. The file name must have a file type extension like .doc, .ppt, .xls, etc. The file name must contain only 1 period (.)</i></p> <p align="center">OR</p> <p align="center">Enter Outline of Course below</p>
<p>Handouts file</p> <p><small>Word, Excel, Acrobat, or PowerPoint only</small></p>	<p align="right"><input type="button" value="Browse..."/></p> <p><i>Browse to and select prepared file. Do not write into text box. Follow file naming conventions as outlined above.</i></p>
Length of course	1 _____ 00 _____ Hours (Please include teaching time only and not any breaks and/or lunch.)
Course Objective	

Is this course exclusive to your dealers / members?	<input type="radio"/> Yes <input type="radio"/> No																
Course Summary																	
Special instructions for attendees																	
Please enter the following percentages that best describes your course:	<table><tr><td>0</td><td>% Hands-on / Technical</td></tr><tr><td>0</td><td>% Codes & Standards</td></tr><tr><td>0</td><td>% Communication</td></tr><tr><td>0</td><td>% Liability</td></tr><tr><td>0</td><td>% Business</td></tr><tr><td>0</td><td>% Safety</td></tr><tr><td>0</td><td>% Sales</td></tr><tr><td>0</td><td>% Total</td></tr></table>	0	% Hands-on / Technical	0	% Codes & Standards	0	% Communication	0	% Liability	0	% Business	0	% Safety	0	% Sales	0	% Total
0	% Hands-on / Technical																
0	% Codes & Standards																
0	% Communication																
0	% Liability																
0	% Business																
0	% Safety																
0	% Sales																
0	% Total																

Contact name:	
Contact phone:	
Contact E-mail:	

Click just once. Once submitted your files (if any) will be uploaded. Do not close this window until you see an acknowledgment.

Application Deadline is 30 days prior to course date.

Any incomplete applications will not receive CEU credits.

Hands-on: Formalized, technical hearth training where attendees are personally engaged in activities of installation and/or troubleshooting. Does not include field training.

Codes & Standards/Technical Training: Programs pertaining to product knowledge and standards, building codes, venting principles and design, ventilation and house pressure, fuel knowledge, installation planning, installation guidelines and techniques, tools and gauges, and/or troubleshooting and repair.

Communication: Dealing with general public or customers.

Liability: Pertaining to the potentially dangerous legal issues encountered through business or consumers, especially issues regarding improper installation or maintenance of hearth products.

Business: Any type of business growth or management type of programs.

Health & Safety: Courses regarding employee and customer well-being and safety at the workplace and on the jobsite. Including, but not limited to, CPR, First Aid, OSHA training, etc...

Sales: Courses teaching pricing and profit technique, sales presentation training, marketing, store design, features and benefits, etc.

Mike has worked on an Occupational Analysis document which is an attached file. Please review his document and then answer the following questions:

1. Who are we training and to what level?
2. It has been suggested that certification may be obtained in each of various types of heaters, Say possibly starting with Heater Kits of various descriptions, moving on to Kachelovens, Grundovens, Russian Heaters with heater builders being certified in each type.
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8. We need a plan to proceed with the development of a Program of Instruction which should include, practical/theoretical tests, information sheets, texts, quizzes, check lists, hopefully some educational video, log book, etc, etc.

You have been sent this email because Mike Gilmore (Chairman) has recalled your desire to serve on this committee. If you no longer desire to participate, please email me back so that your name can be taken off the roster.

Last time we scheduled a conference call there were technical problems and it was not held. Norbert and I will test the system this week to make sure it is working properly. Hopefully it will all be working this time. Please dial 1-866-414-2828 you will be asked to enter a code, it is 820777 Just so everyone knows, using this toll free number, you as an individual incurs no cost. MHA is paying for the conference call.

Richard Smith
Masonry Heater Ass'n.
Executive Director
520-883-0191
641-453-2255 (fax)

*Log BK \$15/a
Conf Call - \$35/call*

Richard Smith - Executive Director

From: Jerry Frisch [lopezquarries@verizon.net]
Sent: Saturday, September 27, 2008 1:18 AM
To: Richard Smith - Executive Director; Norbert Senf; Glenn Overk; Albert Barden; Alex Chernov; Michael Gilmore; Jonathon Steele; John McDougall; William Davenport
Subject: Re: Educational Committee Conference Call

Hello Dick and Mike,

Gentlemen, the occupational analysis document that Mike prepared looks GREAT!!! And must have taken a great deal of time. Nice job!!! A couple of things that came to mind, that are not outlined.

On # 1. Work safety, there is no mention of scaffold set up and safe use, etc. Also, on safety there is no mention of fall protection, from roofs, scaffolds or ladders. Should there be? Also, in Washington state electrical cords and equipment are safety checked on a monthly basis and tagged as safe to use or discard.

On # 2. Give advice, sometimes the advice is a simple "no" that will not work and I decline the job. Could be # 2.15-

On # 5. Job costs, should include in detail what is included and what is not, also cost for any extras or possible options, i.e. ovens, coils, heated benches, mantels or extra height, just to name a few.

On # 9. Units & Mortars, cleaning has not been mentioned as in acid wash or other chemical cleaning.

On # 10. Warranty, some statement or disclaimer should be part of the owners manual as to what voids the warranty, as over firing a new uncured unit, that is wet in a new incomplete home. (a big abuse area)

Hope this will save some time on Sunday! !

Jerry Frisch

Lopez Quarries Masonry Heaters/

Firecrest Fireplaces Corp.

111 Barbara Lane, Everett, WA 98203

Phone: 425-353-8963

Cell: 425-422-2447

Fax: 425-742-3361

lopezquarries@verizon.net

www.firecrest-fireplaces.com

----- Original Message -----

From: Richard Smith - Executive Director

To: [Norbert Senf](#) ; [Glenn Overk](#) ; [Albert Barden](#) ; [Alex Chernov](#) ; [Michael Gilmore](#) ; [Jonathon Steele](#) ; [John McDougall](#) ; [William Davenport](#) ; [Jerry Frisch](#)

Sent: Sunday, September 21, 2008 7:36 AM

Subject: Educational Committee Conference Call

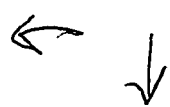
Greetings,

A new conference call for the education committee has been scheduled for Sunday evening, Sept. 28th, at 7 p.m. (CST) which makes it 6 P.M. (EST).

It is our goal to limit the meeting to one hour if possible. A lot to cover, so we have to do some homework prior to the meeting.

Here is the agenda:

1. Certified Mason's Log Book (example of a log book page)
2. Occupational Analysis (this is the attachment, it is important that you read it prior to the meeting)
3. Budget
4. New Business
5. Next meeting



Medium Size Corner Finnish Heater

$$1'' = 1'-0''$$

Agenda

Someone to take Minutes - Send minutes to participants then pass at next mtg.

← MINUTES - What to do with them.
Send to all participants.

1) Log BK.

2) Goals

3) Occupational Analysis from Mike

4) Budgets - Log BK \$22/25 = \$550.00 Phone = \$150

5) Next mtg. -

BALLOTS

vs. 7,003 (855)

10392970-1776

8
20
37
9
7
19
12
18
3
144

Attendance

9/20 - CC

8/29 - CK.

Nov 2
Jury Frisch
Dick Smith
John McDougall
Steve Bushway
Mike Gilmore
Alex Churnov
Glenn Ombak
Norbert Sif
~~Alex~~
~~Norbert~~

Mike Gilmore
Jury Frisch ✓
John McDougall
Glenn Ombak ✓
Steve Bushway ✓
Norbert Sif ✓
Dick Smith



2180 S. Flying Q Ln
Tucson, AZ 85713
(520) 883-0191
email: rsmith@boreal.org

Dear Ferenc Bunja,

Dear MHA Member,

Thank you for renewing your membership in MHA. We value your membership and want to continue working for you. Your annual dues are MHA's main source of funding.

MHA has moved into present age and is communicating more and more via email. The 2008 newsletter was sent out by email, future newsletters will be sent out by email, and notices and reports are available via email. To make the most of your membership, please visit MHA's website often and make sure MHA's emails are coming to your computer. If you change your email address, please notify me. If you do not have email, just let me know and I'll mail you newsletters.

Welcome to MHA. We hope you can make our annual meeting at Wildacres.

Richard Smith
Executive Director

A handwritten signature in black ink, appearing to read 'R. Smith', written over the printed name and title.

Dick presented Agenda -

- Log BK → Mike presented log idea. Dick presented the need → ~~Ben~~

July 7 We adopt a log bk program for CEU's to add doc ent to the ex. Div in every 5 yrs. according to the Occupational Analysis.

Unanimous

Goal - discussion of O.A.

S.B. - Develop a system less access to training and information as many people as possible, make access - by being portable - the program on the road.

N.S. - Put a modular approach starting with basics for all.

S.B. - Creditable source

M.G. - Needs analysis, O.A., Test Questions, Text.

J. McD - What about certification for different types of status?

Everyone getting some information, so much information old & new, Get a core group develop some norms (absolutely correct) develop fundamentally. What should be included. Suggest - find a group sit down with facilitator. Start with core curriculum everyone could agree on.

Get Steps to develop and formalize the steps in Curriculum develop for M.A. Head Course.

② N.S. discussed video production, |

John McDougall sending info on Hoonigan
College Can help MHA.

Private Vocational School? ✓
Jury Trial

Glen Oaks —
Hem Bolen

Seminars at WA.

Everyone O.A. look over, email
suggst to Mike ~~Mike will locate~~
~~for~~

N.S. getting Cost of Video
Production for budget
Dick look into grants.

NIV (2) 3

Elizon
Andru
Red Door Spa

Mark ← 11/25/55
funge work project

Masonry Heater Association
Occupational Analysis for Masonry Heater Designers and Builders
Version 4 March 2, 2007

TABLE OF CONTENTS

Introduction

1. Work Safely
2. Analyze customer requirements and give advice
3. Perform Design Calculations
4. Design a Masonry Heater
5. Prepare Job Cost Estimates
6. Prepare for the Installation
7. Inspect Components
8. Build a Masonry Heater
9. Advise client of proper operating and maintenance procedures

Introduction

Requirements for MHA Certification

- a) A certified Masonry Heater Designer/Builder shall demonstrate proficiency in the skills listed in all sections of this Analysis.
- b) Proficiency in each skill area shall be determined through a combination of the following:
 - (i) verification of relevant past experience,
 - (ii) competency as certified by a current or previous employer or supervisor,
 - (iii) customer endorsements,
 - (iv) relevant educational credits,
 - (v) oral, written or practical testing
 - (vi) See the MHA Learning Guide(s) for detailed certification criteria.

About This Occupational Analysis

This is the key document that defines the special skills required of those who build masonry heaters. You must be able to demonstrate competency in each of the skills listed in all of the sections of the analysis. This MHA practical and written examinations use the skills listed in this analysis as a guide for their contents. You can use this analysis as a checklist of your own skills as you prepare for certification, and you can use it to assess employees or others whose competency in heater design and construction you are asked to evaluate.

1. Work Safely

- 1.1 Wear eye protection.
- 1.2 Wear foot protection.
- 1.3 Wear ear protection.
- 1.4 Wear protective clothing.
- 1.5 Wear hand protection.
- 1.6 Wear dust masks and respirators.
- 1.7 Wear a hard hat.
- 1.8 Move heavy objects.
- 1.9 Use forklifts, dollies, hand trucks and motor vehicles.
- 1.10 Secure loads.
- 1.11 Maintain a safe work environment.
- 1.12 Follow health and safety legislations.

2. Analyze customer requirements and give advice

- 2.1 Explain the operational and performance characteristics and limitations of masonry heaters.
- 2.2 Compare masonry heaters with other hearth and heating system options.
- 2.3 Determine the heating, fire viewing *requirements*.
Determine additional features such as bake oven, heated bench, cook top etc.
- 2.4 Explain the characteristics of optional facing materials.
- 2.5 *Explain available hardware options and their effect on performance and aesthetics.*
- 2.6 Prepare sketches showing location options.
- 2.7 Provide advice on the most effective locations for performance, aesthetics and safety.
- 2.8 Explain limitations of system locations such as outside walls and confined areas.
- 2.9 Identify and explain masonry heater and component options.
- 2.10 Discuss heating capacities of various masonry heater options.
- 2.11 Explain venting requirements.
Explain local building code and manufacturer's clearances and other safety requirements
Explain typical foundation requirements and options
- 2.12 *Discuss the effects of high-capacity exhaust system on tight building envelope.*
- 2.13. Discuss effective heat distribution of masonry heaters.
- 2.14 Discuss requirements and procedures for obtaining a building permit.
- 2.15 Determine information that may be required for insurance purposes.

3. Determine heat output requirements

- 3.1 Determine the nominal heat output
- 3.2 Determine the fuel load
- 3.3 *Design firebox dimensions*
- 3.4 *Design combustion air supply system*
Design overall unit dimension

4. Design a Masonry Heater

- 4.1 Prepare clear and accurate sketches
- 4.2 Design heat transfer passages.
- 4.3 *Design ash removal system*
- 4.4 Determine the need for a by-pass damper and/or chimney damper.
- 4.5 *Determine the need for a gas slot;*
- 4.6 Design and construct a gas slot.
- 4.7 Assess the need for an outdoor combustion air supply.
- 4.8 Design a chimney to code requirements.
- 4.9 Determine the facing material.
- 4.10 Design the layout of the heater facing material.
- 4.11 Specify metal components such as doors, lintels and dampers.
- 4.12 Design and construct a bake oven.
- 4.13 Design and construct a heated bench.
- 4.14 Design a capping assembly.
- 4.15 Allow for thermal expansion.

5. Prepare Job Cost Estimates

- 5.1 Evaluate material requirements.
- 5.2 Evaluate labour requirements.
- 5.3 Compile a list of necessary components.
- 5.4 Research and record prices.
- 5.5 Determine shipping costs.
- 5.6 Estimate the time required to complete the work.
- 5.7 Complete a cost estimate.
- 5.8 Provide a cost estimate to the client.

6. Review Installation Requirements and Prepare for the Installation

- 6.1 Interpret installation drawings and specifications.
- 6.2 Assess installation issues prior to work proceeding.
- 6.3 Review all installation requirements.
- 6.4 Obtain local building permits licenses etc.
- 6.5 Determine other trades are on schedule.
- 6.6 Gather all necessary components, tools and equipment.
- 6.7 Load materials, equipment and documentation into the service vehicle.

7. Inspect Components

- 7.1 Inspect unopened crates carefully and record visible damage.
- 7.2 Uncrate components carefully to avoid damage and injury.
- 7.3 Dispose of crate materials safely.
- 7.4 Compare parts list or packing slip to crate contents.

8. Build a Masonry Heater

- 8.1 Use hand and power tools.
- 8.2 Inspect existing chimneys.
- 8.3 Gather the necessary tools, components and materials.
- 8.4 Protect building components.
- 8.5 Review installation instructions.
- 8.6 Lay-out, dry, the heater and chimney
- 8.7 Confirm installation clearances in accordance with manufacturer's instructions *or ASTM 1602*.
- 8.8 Build a masonry heater
- 8.9 Build *or install* a chimney
- 8.10 Install expansion joints.
- 8.11 Install facing materials.
- 8.12 Install metal components.
- 8.13 Install a gas-tight, permanent connection between the heater and its chimney.
- 8.14 Install combustion air supply components.
- 8.15 Meet code requirements.
- 8.16 Observe manufacturer's installation instructions.
- 8.17 Clean the work area.
- 8.18 Record installer's name and date of installation or service in an appropriate location on the appliance or *in* owner's manual.

9. Advise Customer of Proper Operating and Maintenance Procedures

- 9.1 Provide the customer with an operating manual.
- 9.2 Discuss the contents of the operating manual.
- 9.3 Review the heater, break-in instructions.
- 9.4 Explain fueling requirements.
- 9.5 Discuss firing temperatures.
- 9.6 Explain routine system maintenance requirements.
- 9.7 Explain warranty policy and limitations.
- 9.8 Provide the customer with a contact person.
- 9.9 *Receive written acknowledgement* that the operating and maintenance instructions and warranty have been received and understood.