



# BUILDING CODE BOARD OF APPEALS REGULAR MEETING AGENDA

500 W. Big Beaver  
Troy, MI 48084  
(248) 524-3344  
[www.troymi.gov](http://www.troymi.gov)  
[planning@troymi.gov](mailto:planning@troymi.gov)

Theodore Dziurman, Chair; Gary Abitheira  
Teresa Brooks, Brian Kischnick, Andrew Schuster

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**February 4, 2015**

**3:00 PM**

**LOWER LEVEL  
CONFERENCE ROOM**

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1. ROLL CALL
2. APPROVAL OF MINUTES – January 7, 2015
3. HEARING OF CASES
  - A. **VARIANCE REQUEST, JAMES R. GIRLING, 3959 NASH** – This property is a double front corner lot. As such it has a required front setback along both Nash and Ogden. An inspection of this property on November 11, 2014 revealed the existing 30” high wood fence in the front setback along Ogden has been modified to a 44” high non-obscuring split rail wood fence. The petitioner is requesting a variance from the Board to allow the altered 44” high fence in the Ogden front setback.
- CHAPTER 83**
- B. **VARIANCE REQUEST, BEAUMONT HOSPITAL, 44201 DEQUINDRE** – For the continued relief of Chapter 7, Section 717.5.5 of the 2012 Michigan Building Code to omit smoke dampers in ductwork penetrating smoke barriers throughout William Beaumont Hospital Troy campus.
4. COMMUNICATIONS
5. PUBLIC COMMENT
6. MISCELLANEOUS BUSINESS
7. ADJOURNMENT

**NOTICE:** People with disabilities needing accommodations for effective participation in this meeting should contact the City Clerk by e-mail at [clerk@troymi.gov](mailto:clerk@troymi.gov) or by calling (248) 524-3317 at least two working days in advance of the meeting. An attempt will be made to make reasonable accommodations.

Chair Dziurman called the Regular meeting of the Building Code Board of Appeals to order at 3:00 p.m. on January 7, 2015 in the Lower Level Conference Room of the Troy City Hall.

1. ROLL CALL

Members Present:

- Theodore Dziurman, Chair
- Teresa Brooks
- Brian Kischnick
- Andrew Schuster

Absent:

- Gary Abitheira

Support Staff Present:

- Mitch Grusnick, Building Official/Code Inspector
- Kathy L. Czarnecki, Recording Secretary

Also Present:

Attached and made a part hereof is the signature sheet of those present and signed in at this meeting.

Chair Dziurman welcomed Andrew Schuster to the Board.

2. APPROVAL OF MINUTES

- Moved by: Brooks
- Support by: Kischnick

**RESOLVED**, To approve the minutes of the December 3, 2014 Regular meeting as submitted.

- Yes: All present (4)
- Absent: Abitheira

**MOTION CARRIED**

3. HEARING OF CASE

- A. **VARIANCE REQUEST, JAMES R. GIRLING, 3959 NASH** – This property is a double front corner lot. As such it has a required front setback along both Nash and Ogden. An inspection of this property on November 11, 2014 revealed the existing 30” high wood fence in the front setback along Ogden has been modified to a 44” high non-obscuring wood fence. The petitioner is requesting a variance from the Board to allow the altered 44” high fence in the Ogden front setback.

Mr. Grusnick reviewed the variance request. He reported the department received three responses to the public hearing notices; one favorable and two objectionable. Mr. Grusnick indicated members have received copies of the comments.

James Girling said the additional height in the fence is needed to contain their new puppy. Mr. Girling detailed the construction and materials used to heighten the existing 30" fence. He informed the Board he was not aware of the ordinance relating to fences on double front lots until he received notification from the City that a variance must be sought and granted to go forward with the work.

Mr. Grusnick circulated photographs he took of the fence. He said the Zoning Ordinance stipulates that fences may be constructed of metal, wood or masonry.

There was discussion on:

- Aesthetics of the fence construction.
- Lack of uniformity in construction materials and color.
- Site relationship of public comments to subject site.  
(Map circulated by Mr. Grusnick)
- Alternatives in construction materials; modification of existing fence.
- Aesthetics can be a determining factor in the Board's finding.
- Existing fence (as altered) meets ordinance requirements with respect to construction materials and is non-obscuring.

Chair Dziurman acknowledged there was no one present from the public to speak.

Moved by: Brooks  
Support by: Schuster

**RESOLVED**, To approve the request for the increase in the fence height. The petitioner has presented a hardship and/or practical difficulty relating to the existing split rail fence. Let the record reflect that public comments have been received regarding the aesthetics of the fence and that the petitioner be mindful of that.

Discussion on the motion on the floor.

Mr. Kischnick asked how the applicant might be mindful of the aesthetically-related public comments and if the applicant had entertained alternative construction methods.

Mr. Girling said he extensively researched construction materials that would be fitting and secure with the existing split rail fencing. He assured the Board he would maintain the fence in the same manner as his exterior property because his home is an investment for himself and the neighborhood.

Vote on the motion on the floor.

Yes: Brooks, Schuster  
No: Dziurman, Kischnick  
Absent: Abitheira

**MOTION FAILED**

Discussion followed with respect to filing another application in the future with consideration to alternative construction materials and aesthetics of the fence. It was the consensus of the Board that painting the fence or utilizing split rail materials to obtain uniformity of the fence would be a sufficient change.

4. COMMUNICATIONS

None.

5. PUBLIC COMMENT

None.

6. MISCELLANEOUS BUSINESS – Election of Chair

Mr. Kischnick nominated Theodore Dziurman as Chair. No other nominations were placed on the floor.

Moved by: Kischnick  
Support by: Brooks

**RESOLVED**, To elect Theodore Dziurman as Chair for 2015.

Yes: All present (4)  
Absent: Abitheira

**MOTION CARRIED**

7. ADJOURNMENT

The Regular meeting of the Building Code Board of Appeals adjourned at 3:25 p.m.

Respectfully submitted,

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Theodore Dziurman, Chair

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Kathy L. Czarnecki, Recording Secretary

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3. HEARING OF CASES

- A. **VARIANCE REQUEST, JAMES R. GIRLING, 3959 NASH** – This property is a double front corner lot. As such it has a required front setback along both Nash and Ogden. An inspection of this property on November 11, 2014 revealed the existing 30” high wood fence in the front setback along Ogden has been modified to a 44” high non-obscuring split rail wood fence. The petitioner is requesting a variance from the Board to allow the altered 44” high fence in the Ogden front setback.

# Building Code Board of Appeals Application

Fence Code

Chapter 83, Section 2, Paragraph A

James Girling

3959 Nash Dr

Troy, MI 48083

January 12, 2015

# Application Index

- Completed application
- Fence permit rejection letter
- Plot plan with fence line shown
- Detailed plan of construction materials and method of construction
- Impact of the request on the area
- Justification of the request

# Completed Application

**CITY OF TROY BUILDING INSPECTION DEPARTMENT  
CITY OF TROY PLANNING DEPARTMENT  
BUILDING CODE BOARD OF APPEALS APPLICATION**

**SIGN APPEALS**  
FEE: \$50  
CITY OF TROY PLANNING DEPARTMENT  
500 W. BIG BEAVER ROAD  
TROY, MICHIGAN 48084  
PHONE: 248-524-3344  
FAX: 248-689-3210  
E-MAIL: [evanspm@troymi.gov](mailto:evanspm@troymi.gov)  
<http://www.troymi.gov/CodeEnforcement/>



**CONSTRUCTION OR FENCE CODE APPEALS**  
FEE: \$50  
CITY OF TROY BUILDING DEPARTMENT  
500 W. BIG BEAVER ROAD  
TROY, MICHIGAN 48084  
PHONE: 248-524-3344  
FAX: 248-689-3210  
E-MAIL: [GrunickME@troymi.gov](mailto:GrunickME@troymi.gov)  
<http://www.troymi.gov/BuildingInspection/>

**NOTICE TO THE APPLICANT**

REGULAR MEETINGS OF THE BUILDING CODE BOARD OF APPEALS ARE HELD ON THE FIRST WEDNESDAY OF EACH MONTH AT 3:00 P.M. AT CITY HALL.

PLEASE FILE A COMPLETE APPLICATION, TOGETHER WITH THE APPROPRIATE FEE, **NOT LESS THAN TWENTY-ONE (21) DAYS** BEFORE THE MEETING DATE.

A COMPLETE APPLICATION THAT MEETS CODE REQUIREMENTS IS PLACED ON THE NEXT AVAILABLE AGENDA OF THE BUILDING CODE BOARD OF APPEALS.

- ADDRESS OF THE SUBJECT PROPERTY: 3959 Nash Dr  
ACREAGE PROPERTY: *Attach legal description if this an acreage parcel*
- PROPERTY TAX IDENTIFICATION NUMBER(S): 88-20-23-130-030
- CODE NAME (e.g. "BUILDING CODE", "SIGN CODE", "FENCE CODE") AND SECTION(S) RELATED TO THE APPEAL:  
Fence Code Chapter 83, Section 2, Paragraph A
- REASONS FOR APPEAL/VARIANCE: *On a separate sheet, please describe the reasons justifying the requested action. See Submittal Checklist.*
- HAVE THERE BEEN ANY PREVIOUS APPEALS INVOLVING THIS PROPERTY? YES  NO

**6. APPLICANT INFORMATION:**

NAME James R Girling  
COMPANY \_\_\_\_\_  
ADDRESS 3959 Nash Dr  
CITY Troy STATE MI ZIP 48083  
TELEPHONE (248) 420-9381  
E-MAIL girlingjr@aol.com

**7. APPLICANT'S AFFILIATION TO THE PROPERTY OWNER: Same**

**8. OWNER OF SUBJECT PROPERTY:**

NAME James R Girling  
COMPANY \_\_\_\_\_  
ADDRESS 3959 Nash Dr  
CITY Troy STATE MI ZIP 48083  
TELEPHONE (248) 420-9381  
E-MAIL girlingjr@aol.com

The undersigned hereby declare(s) under penalty of perjury that the contents of this application are true to the best of my (our) knowledge, information and belief.

The applicant accepts all responsibility for all of the measurements and dimensions contained within this application, attachments and/or plans, and the applicant releases the City of Troy and its employees, officers, and consultants from any responsibility or liability with respect thereto.

I, James R Girling (PROPERTY OWNER), HEREBY DEPOSE AND SAY THAT ALL THE ABOVE STATEMENTS AND STATEMENTS CONTAINED IN THE INFORMATION SUBMITTED ARE TRUE AND CORRECT AND GIVE PERMISSION FOR THE BOARD MEMBERS AND CITY STAFF TO CONDUCT A SITE VISIT TO ASCERTAIN PRESENT CONDITIONS.

SIGNATURE OF APPLICANT *James R Girling* DATE 1/12/15  
PRINT NAME: James R Girling

SIGNATURE OF PROPERTY OWNER *James R Girling* DATE 1/12/15  
PRINT NAME: James R Girling

*Failure of the applicant or his/her authorized representative to appear before the Board, as scheduled, shall be justifiable cause for denial or dismissal of the case with no refund of appeal fee(s). If the person appearing before the Board is not the applicant or property owner, signed permission must be presented to the Board.*

*The applicant will be notified of the time and date of the hearing by electronic mail.*

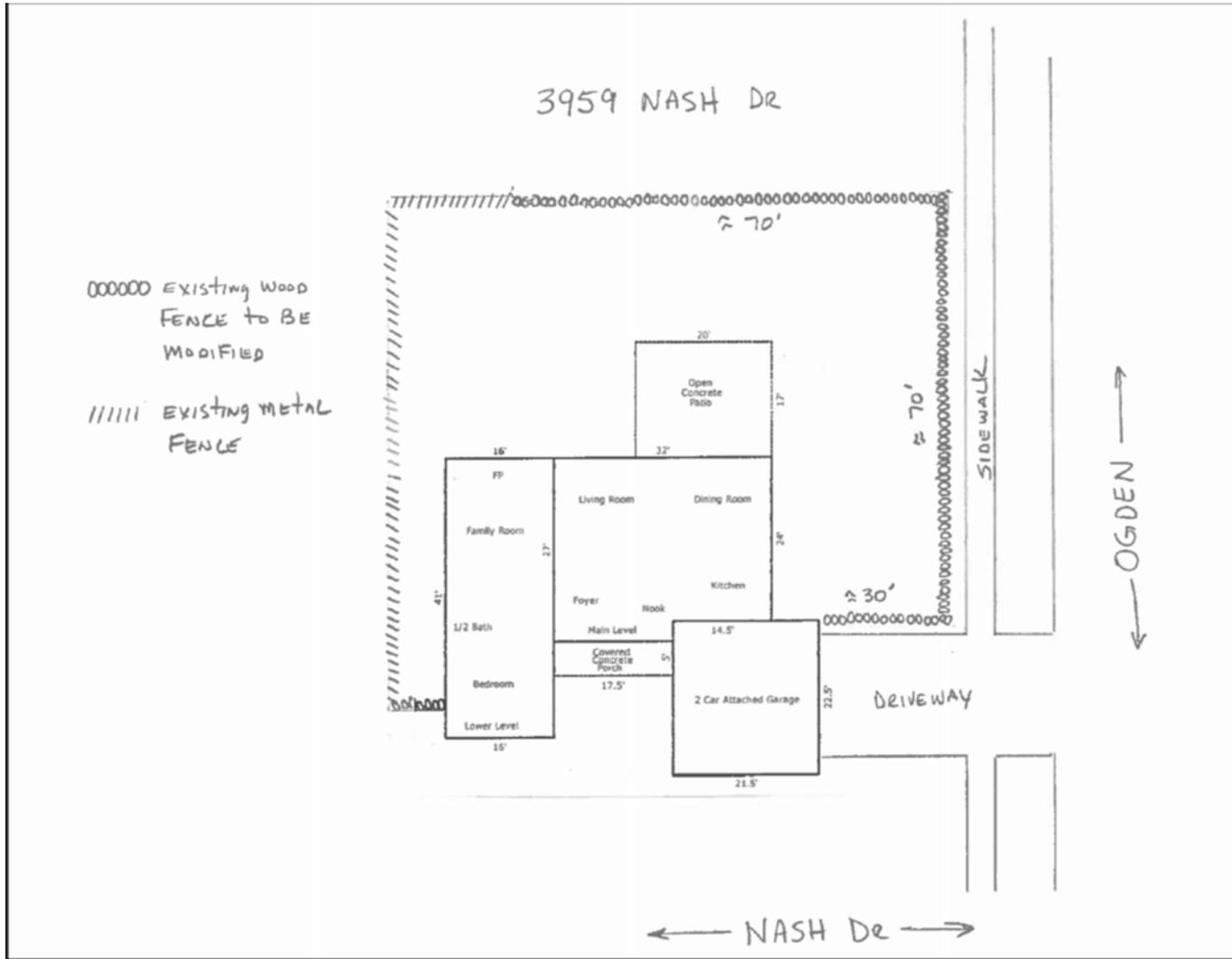


# Plot Plan with Fence Line

- Modified existing wood fence
- Existing metal fence



# Plot Plan with Fence Line



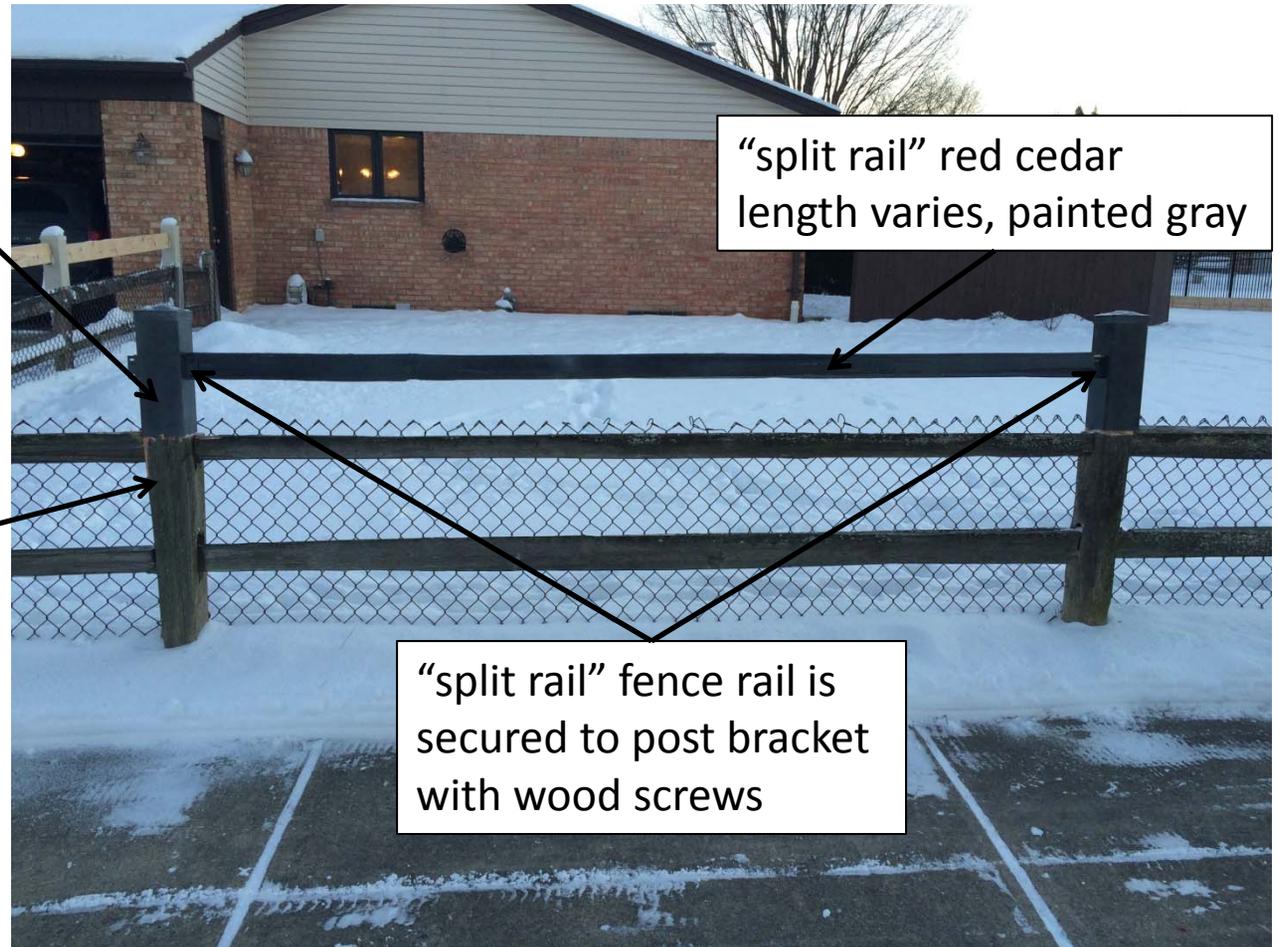
# Construction Method and Materials

5"x5"x15" vinyl post  
w/brackets and cap  
Color: Painted gray

"split rail" red cedar  
length varies, painted gray

Vinyl post is slip fit over  
existing wood post and  
secured with wood  
screws on four sides

"split rail" fence rail is  
secured to post bracket  
with wood screws



# Construction Method and Materials



# Impact on Area

- Proposed added rail at a height of 42”–44” has little to no impact on surrounding area
- Open fence style provides adequate visibility for both pedestrians using the sidewalk and vehicles entering and exiting the driveway
- Many examples of both open and closed fence variances of this nature approved throughout the city of Troy

# Impact on Area



44" high  
double front setback

# Justification

- Safety of both our dog, pedestrians and other dogs being walked
- Little to no visibility issues for both pedestrians and drivers
- Significant number of similar appeals/requests approved by the Building Code Board of Appeals in the city of Troy

Thank you!

From:  
Lindi



## Kathy Czarnecki

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**From:** Patricia Serafini <pattiserafini@msn.com>  
**Sent:** Friday, January 23, 2015 2:33 PM  
**To:** Planning  
**Subject:** 3959 Nash Building Code Board of Appeals

Dear Mr. Grusnick,

I reside across the street from the Girling family at 1413 Ogden Drive.

I would like to express that our family doesn't mind the modification of their fence to 44".

Sincerely,

Patricia and Phil Serafini

3. HEARING OF CASES

- B. VARIANCE REQUEST, BEAUMONT HOSPITAL, 44201 DEQUINDRE – For the continued relief of Chapter 7, Section 717.5.5 of the 2012 Michigan Building Code to omit smoke dampers in ductwork penetrating smoke barriers throughout William Beaumont Hospital Troy campus.

**CITY OF TROY BUILDING INSPECTION DEPARTMENT  
CITY OF TROY PLANNING DEPARTMENT  
BUILDING CODE BOARD OF APPEALS APPLICATION**

**SIGN APPEALS**

**FEE \$50**

CITY OF TROY PLANNING DEPARTMENT  
500 W. BIG BEAVER ROAD  
TROY, MICHIGAN 48084  
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FAX: 248-689-3210  
E-MAIL: [evanspm@troymi.gov](mailto:evanspm@troymi.gov)  
<http://www.troymi.gov/CodeEnforcement/>



**CONSTRUCTION OR FENCE CODE APPEALS**

**FEE: \$50**

CITY OF TROY BUILDING DEPARTMENT  
500 W. BIG BEAVER ROAD  
TROY, MICHIGAN 48084  
PHONE: 248-524-3344  
FAX: 248-689-3210  
E-MAIL: [GrusnickME@troymi.gov](mailto:GrusnickME@troymi.gov)  
<http://www.troymi.gov/BuildingInspection/>

**NOTICE TO THE APPLICANT**

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PLEASE FILE A COMPLETE APPLICATION, TOGETHER WITH THE APPROPRIATE FEE, NOT LESS THAN TWENTY-ONE (21) DAYS BEFORE THE MEETING DATE.

A COMPLETE APPLICATION THAT MEETS CODE REQUIREMENTS IS PLACED ON THE NEXT AVAILABLE AGENDA OF THE BUILDING CODE BOARD OF APPEALS.

1. ADDRESS OF THE SUBJECT PROPERTY: Beaumont, Troy 44201 Dequindre Rd Troy, MI 48085  
ACREAGE PROPERTY: *Attach legal description if this an acreage parcel*
2. PROPERTY TAX IDENTIFICATION NUMBER(S): 80-20-01-200-018
3. CODE NAME (e.g. "BUILDING CODE", "SIGN CODE", etc.) AND SECTION(S) RELATED TO THE APPEAL:  
2012 Michigan Building Code, Chapter 7, Section 717.5.5. 2006 NFPA 101, Chapter 19, Section 19.3.7.4
4. REASONS FOR APPEAL/VARIANCE: *On a separate sheet, please describe the reasons justifying the requested action. See Submittal Checklist*
5. HAVE THERE BEEN ANY PREVIOUS APPEALS INVOLVING THIS PROPERTY? YES  NO

6. APPLICANT INFORMATION:

NAME Jake Meadows  
COMPANY Jones Lang LaSalle at Beaumont Health System  
ADDRESS 44201 Dequindre Rd  
CITY Troy STATE MI ZIP 48085  
TELEPHONE Desk - 248-964-9935, Mobile - 586-747-7467  
E-MAIL jake.meadows@beaumont.edu

7. APPLICANT'S AFFILIATION TO THE PROPERTY OWNER: Owners representative for Real Estate and Development

8. OWNER OF SUBJECT PROPERTY:

NAME Nancy Susick  
COMPANY Willaim Beaumont Hospital  
ADDRESS 44201 Dequindre Rd.  
CITY Troy STATE MI ZIP 48085  
TELEPHONE 248-964-5000  
E-MAIL \_\_\_\_\_

The undersigned hereby declare(s) under penalty of perjury that the contents of this application are true to the best of my (our) knowledge, information and belief.

The applicant accepts all responsibility for all of the measurements and dimensions contained within this application, attachments and/or plans, and the applicant releases the City of Troy and its employees, officers, and consultants from any responsibility or liability with respect thereto.

I, Nancy Susick (PROPERTY OWNER), HEREBY DEPOSE AND SAY THAT ALL THE ABOVE STATEMENTS AND STATEMENTS CONTAINED IN THE INFORMATION SUBMITTED ARE TRUE AND CORRECT AND GIVE PERMISSION FOR THE BOARD MEMBERS AND CITY STAFF TO CONDUCT A SITE VISIT TO ASCERTAIN PRESENT CONDITIONS.

SIGNATURE OF APPLICANT Jake Meadows DATE 01-06-15

PRINT NAME: Jake Meadows

SIGNATURE OF PROPERTY OWNER Nancy A. Susick DATE 01-08-2015

PRINT NAME: NANCY A. SUSICK

*Failure of the applicant or his/her authorized representative to appear before the Board, as scheduled, shall be justifiable cause for denial or dismissal of the case with no refund of appeal fee(s). If the person appearing before the Board is not the applicant or property owner, signed permission must be presented to the Board.*

*The applicant will be notified of the time and date of the hearing by first class mail.*

**SUBMITTAL CHECKLIST FOR APPEALS NOT RELATED TO SIGNS**

*FOR SIGNS, PLEASE USE SUBMITTAL CHECKLIST ON NEXT PAGE*

**REQUIRED   PROVIDED**

- |                                     |                                     |  |
|-------------------------------------|-------------------------------------|--|
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | COMPLETED THE APPLICATION FORM   |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <b>1 COPY OF SUPPORTING DOCUMENTS DESCRIBING THE REQUEST, CONSTRUCTION AND/OR WORK INCLUDING BUT NOT LIMITED TO:</b> <ul style="list-style-type: none"><li>▪ PLOT PLANS DRAWN TO SCALE, SHOWING THE SHAPE AND DIMENSION OF LOT(S).</li><li>▪ LOCATION ON THE LOT OF FENCES, OR OTHER STRUCTURES CONCERNING THE REQUEST.</li><li>▪ DETAILED PLANS SHOWING CONSTRUCTION MATERIALS AND METHOD OF CONSTRUCTION.</li><li>▪ PHOTOS, DRAWINGS, OR RENDERINGS AS NECESSARY TO ACCURATELY DESCRIBE THE REQUEST.</li></ul> |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | ANY ADDITIONAL INFORMATION INCLUDING REPORTS OR ACCREDITED TESTING AGENCIES, INCLUDING ACCREDITED AGENCIES RECOGNIZED BY THE INTERNATIONAL CODE COUNCIL AND ACCEPTED ENGINEERING PRACTICES SHOULD ACCOMPANY YOUR APPEAL.   |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <b>1 COPY OF INFORMATION THAT CLEARLY EXPLAINS THE IMPACTS OF THE REQUEST ON THE AREA.</b>   |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <b>A WRITTEN EXPLANATION OF THE REASONS JUSTIFYING THE REQUEST. IF APPEALING AN ICC CONSTRUCTION CODE, PLEASE EXPLAIN ALTERNATIVES THAT WOULD BE EQUAL TO WHAT THE CODE REQUIRES.</b>  |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <b>MINIMUM SIZE OF ALL DOCUMENTS 8.5" X 11".</b>   |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | A COMPACT DISC CONTAINING AN ELECTRONIC VERSION OF THE APPLICATION AND ALL SUPPORTING DOCUMENTATION.   |



Date: 01-09-15

City Of Troy  
Safe Built  
Building Department Services  
500 West Big beaver Rd  
Troy, MI 48084.  
**Mr. Rick Kessler**  
**Plan Examiner/coordinator.**

Dear Mr. Kessler,

I am writing this letter to inquire a Code Variance on smoke dampers within ductwork penetrating smoke zone barriers at William Beaumont Hospital, Troy. Our previous variances (attached) were reviewed and approved at the Building Code Board of Appeals on April 6<sup>th</sup>, 2005 and September 5<sup>th</sup>, 2012.

As the code editions associated with this variance have been superseded (Michigan Building Code), it has been requested that we re-submit for the variance based on the latest code editions. Below is our summary documenting the request for variance based on the latest code editions.

Currently, the hospital is protected with a supervised automatic sprinkler system that is approved by the state of Michigan as well as the City of Troy fire department. In addition, the campus is also protected throughout with a fire alarm system, which is interconnected with the sprinkler system. Also, the sprinkler heads used in the system are listed quick-response type. Furthermore, the heating ventilating and air conditioning systems are fully ducted throughout the site. Based on these conditions, the life safety code NFPA 101, 2006 edition, section 19.3.7.4 lists that smoke dampers are not required in duct penetrations of smoke zone barriers.

Being under your jurisdiction, the hospital falls under the 2012 International Building Code, which was adopted by the City of Troy and requires smoke dampers within smoke zone barriers under section 717.5.5. This difference between the two codes is again similar to the difference in 2005 and 2012 when the previous variances were requested and approved.

Based on the above facts we feel eliminating the smoke dampers from ductwork penetrating smoke zone barrier walls has no effect on the safety of our patients, staff and visitors. In line with the variance's approved in 2005 and 2012, we are again requesting a variance submitting the use of quick response heads within the facility as an alternative to meet the building code requirement for smoke dampers in ductwork penetrating smoke zone barrier walls. We appreciate your support in this matter and would like to thank you in advance for your efforts to assist us.

Sincerely,

A handwritten signature in blue ink that reads 'Jake Meadows'.

Jake Meadows

Program Leader

Jones Lang LaSalle at Beaumont Health System

from the air-handling appliance or equipment to the air outlet and inlet terminals.

**717.5.4.1 Corridors.** A *listed smoke damper* designed to resist the passage of smoke shall be provided at each point a duct or air transfer opening penetrates a *corridor* enclosure required to have smoke and draft control doors in accordance with Section 716.5.3.

**Exceptions:**

1. *Smoke dampers* are not required where the building is equipped throughout with an *approved* smoke control system in accordance with Section 909, and *smoke dampers* are not necessary for the operation and control of the system.
2. *Smoke dampers* are not required in *corridor* penetrations where the duct is constructed of steel not less than 0.019 inch (0.48 mm) in thickness and there are no openings serving the *corridor*.

**717.5.5 Smoke barriers.** A *listed smoke damper* designed to resist the passage of smoke shall be provided at each point a duct or air transfer opening penetrates a *smoke barrier*. *Smoke dampers* and *smoke damper* actuation methods shall comply with Section 717.3.3.2.

**Exception:** *Smoke dampers* are not required where the openings in ducts are limited to a single *smoke compartment* and the ducts are constructed of steel.

**717.5.6 Exterior walls.** Ducts and air transfer openings in fire-resistance-rated *exterior walls* required to have protected openings in accordance with Section 705.10 shall be protected with *listed fire dampers* installed in accordance with their listing.

**717.5.7 Smoke partitions.** A *listed smoke damper* designed to resist the passage of smoke shall be provided at each point that an air transfer opening penetrates a smoke partition. *Smoke dampers* and *smoke damper* actuation methods shall comply with Section 717.3.3.2.

**Exception:** Where the installation of a *smoke damper* will interfere with the operation of a required smoke control system in accordance with Section 909, *approved* alternative protection shall be utilized.

**717.6 Horizontal assemblies.** Penetrations by ducts and air transfer openings of a floor, floor/ceiling assembly or the ceiling membrane of a roof/ceiling assembly shall be protected by a shaft enclosure that complies with Section 713 or shall comply with Sections 717.6.1 through 717.6.3.

**717.6.1 Through penetrations.** In occupancies other than Groups I-2 and I-3, a duct constructed of *approved* materials in accordance with the *International Mechanical Code* that penetrates a fire-resistance-rated floor/ceiling assembly that connects not more than two *stories* is permitted without shaft enclosure protection, provided a *listed fire damper* is installed at the floor line or the duct is protected in accordance with Section 714.4. For air transfer openings, see Section 712.1.8.

**Exception:** A duct is permitted to penetrate three floors or less without a *fire damper* at each floor, provided such duct meets all of the following requirements:

1. The duct shall be contained and located within the cavity of a wall and shall be constructed of steel having a minimum wall thickness of 0.0187 inches (0.4712 mm) (No. 26 gage).
2. The duct shall open into only one *dwelling or sleeping unit* and the duct system shall be continuous from the unit to the exterior of the building.
3. The duct shall not exceed 4-inch (102 mm) nominal diameter and the total area of such ducts shall not exceed 100 square inches (0.065 m<sup>2</sup>) in any 100 square feet (9.3 m<sup>2</sup>) of floor area.
4. The *annular space* around the duct is protected with materials that prevent the passage of flame and hot gases sufficient to ignite cotton waste where subjected to ASTM E 119 or UL 263 time-temperature conditions under a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water at the location of the penetration for the time period equivalent to the *fire-resistance rating* of the construction penetrated.
5. Grille openings located in a ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly shall be protected with a *listed ceiling radiation damper* installed in accordance with Section 717.6.2.1.

**717.6.2 Membrane penetrations.** Ducts and air transfer openings constructed of *approved* materials in accordance with the *International Mechanical Code* that penetrate the ceiling membrane of a fire-resistance-rated floor/ceiling or roof/ceiling assembly shall be protected with one of the following:

1. A shaft enclosure in accordance with Section 713.
2. A *listed ceiling radiation damper* installed at the ceiling line where a duct penetrates the ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly.
3. A *listed ceiling radiation damper* installed at the ceiling line where a diffuser with no duct attached penetrates the ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly.

**717.6.2.1 Ceiling radiation dampers.** *Ceiling radiation dampers* shall be tested in accordance with Section 717.3.1. *Ceiling radiation dampers* shall be installed in accordance with the details *listed* in the fire-resistance-rated assembly and the manufacturer's installation instructions and the listing. *Ceiling radiation dampers* are not required where either of the following applies:

1. Tests in accordance with ASTM E 119 or UL 263 have shown that *ceiling radiation dampers* are not necessary in order to maintain the *fire-resistance rating* of the assembly.

CHAPTER 18 • New

CHAPTER 19 • Existing

- (4) Open-air parking structures protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7

**18.3.7.3** Smoke barriers shall be provided on stories that are usable but unoccupied.

**18.3.7.4** Any required smoke barrier shall be constructed in accordance with Section 8.5 and shall have a fire resistance rating of not less than 1 hour, unless otherwise permitted by the following:

- (1) This requirement shall not apply where an atrium is used, and both of the following criteria also shall apply:
  - (a) Smoke barriers shall be permitted to terminate at an atrium wall constructed in accordance with 8.6.7(1)(c).
  - (b) Not less than two separate smoke compartments shall be provided on each floor.
- (2)\* Smoke dampers shall not be required in duct penetrations of smoke barriers in fully ducted heating, ventilating, and air-conditioning systems.

**A.18.3.7.4(2)** Where the smoke control system design requires dampers so that the system will function effectively, it is not the intent of the provision to permit the damper to be omitted.

This provision is not intended to prevent the use of plenum returns where ducting is used to return air from a ceiling plenum through smoke barrier walls. Short stubs or jumper ducts are not acceptable. Ducting is required to connect at both sides of the opening and to extend into adjacent spaces away from the wall. The intent is to prohibit open-air transfers at or near the smoke barrier walls.

**18.3.7.5** Materials and methods of construction used for required smoke barriers shall not reduce the required fire resistance rating.

**18.3.7.6** Accumulation space shall be provided in accordance with 18.3.7.6.1 and 18.3.7.6.2.

**18.3.7.6.1** Not less than 30 net ft<sup>2</sup> (2.8 net m<sup>2</sup>) per patient in a hospital or nursing home, or not less than 15 net ft<sup>2</sup> (1.4 net m<sup>2</sup>) per resident in a limited care facility, shall be provided within the aggregate area of corridors, patient rooms, treatment rooms, lounge or dining areas, and other low hazard areas on each side of the smoke barrier.

**18.3.7.6.2** On stories not housing bed or litterborne patients, not less than 6 net ft<sup>2</sup> (0.56 net m<sup>2</sup>) per occupant shall be

**19.3.7.3** Reserved.

**19.3.7.4** Any required smoke barrier shall be constructed in accordance with Section 8.5 and shall have a fire resistance rating of not less than ½ hour, unless otherwise permitted by the following:

- (1) This requirement shall not apply where an atrium is used, and both of the following criteria also shall apply:
  - (a) Smoke barriers shall be permitted to terminate at an atrium wall constructed in accordance with 8.6.7(1)(c).
  - (b) Not less than two separate smoke compartments shall be provided on each floor.
- (2)\* Smoke dampers shall not be required in duct penetrations of smoke barriers in fully ducted heating, ventilating, and air-conditioning systems where an approved, supervised automatic sprinkler system in accordance with 19.3.5.7 has been provided for smoke compartments adjacent to the smoke barrier.

**A.19.3.7.4(2)** Where the smoke control system design requires dampers in order that the system functions effectively, it is not the intent of the exception to permit the damper to be omitted.

This provision is not intended to prevent the use of plenum returns where ducting is used to return air from a ceiling plenum through smoke barrier walls. Short stubs or jumper ducts are not acceptable. Ducting is required to connect at both sides of the opening and to extend into adjacent spaces away from the wall. The intent is to prohibit open-air transfers at or near the smoke barrier walls.

**19.3.7.5** Reserved.

**19.3.7.6** Accumulation space shall be provided in accordance with 19.3.7.6.1 and 19.3.7.6.2.

**19.3.7.6.1** Not less than 30 net ft<sup>2</sup> (2.8 net m<sup>2</sup>) per patient in a hospital or nursing home, or not less than 15 net ft<sup>2</sup> (1.4 net m<sup>2</sup>) per resident in a limited care facility, shall be provided within the aggregate area of corridors, patient rooms, treatment rooms, lounge or dining areas, and other low hazard areas on each side of the smoke barrier.

**19.3.7.6.2** On stories not housing bed or litterborne patients, not less than 6 net ft<sup>2</sup> (0.56 net m<sup>2</sup>) per occupant shall be

Exception No. 3: In buildings protected throughout by an approved, supervised, automatic sprinkler system utilizing quick response sprinklers in accordance with 12-3.5.3, the area of the atrium opening shall not be included in the area limitations of the smoke compartment.

Revise 12-3.7.3 (13-3.7.3) by adding the following exception:

Exception: In buildings protected throughout by an approved supervised automatic sprinkler system utilizing quick response sprinklers in accordance with 12-3.5.3 (13-3.5.3) smoke dampers shall be permitted to be omitted from duct penetrations of required barriers separating smoke compartments.

Revise 12-3.7.5 by adding the following exception: Exception: In buildings protected throughout by an approved supervised automatic sprinkler system utilizing quick-response sprinklers in accordance with 12-3.5.3, 34 in. doors and 68 in. clear openings shall be permitted.

SUBSTANTIATION The Subcommittee on Health Care Occupancies has determined that the new technology of quick response sprinklers provides a new, effective method of protecting the patient in the room of fire origin. Recognizing that the new technology provides a level of safety, at least equivalent to the objectives of Chapters 12 and 13 without an increase of construction cost, yet with a major decrease in the maintenance and operation of the building construction life safety features, the Subcommittee has revised Chapters 12 and 13 accordingly.

With automatic sprinkler protection installed throughout new health care facilities and quick response sprinklers installed in smoke compartments containing patient sleeping rooms, the Subcommittee is of the opinion that a fire and its life threatening by-products will be reduced to acceptable levels thereby allowing the "defend in place" concept to continue. The Subcommittee in its deliberations considered the potential weaknesses of maintaining the proper integrity of the essential life safety elements and is of the opinion that the probability of a sprinkler system operating as designed is equal to or greater than other life safety features. Long standing construction alternatives consistent with complete automatic sprinkler protection and other modifications installed to inhibit the fire and its by-products from spreading beyond the room of origin or to adjacent smoke compartments have been included as part of this proposal.

The revisions to 12-1.6.2 are felt to be justified in the fact that the built-in fire resistance is sufficient in itself to allow for evacuation.

The new exception to 12-1.6.6 is justified since the built-in fire resistance is sufficient in itself to allow for evacuation.

The reduction of door sizes in several of the paragraphs is substantiated since the provision of quick response sprinklers reinforces the protect in place philosophy of the Code. The potential evacuation of persons in bed is too remote so as to eliminate the need for wide doors.

The new exception to 12-3.1.1 is based on the following:

The provisions of 6-2.4.4 with the additional modifications herein, including the fact that the building must be fully sprinklered, that the communicating space has quick response sprinklers, and the limitation to two stories rather than three stories, will provide adequate life safety in a health care facility.

The additional exceptions to 12-3.6.1 and 13-3.6.1 are based on the following:

The installation of complete automatic sprinkler protection provides an adequate alternate to the protection of life threatening fires by staff in attendance at the location of the open space. The activation of quick response sprinklers installed throughout the smoke compartment or smoke detection installed in the open space in corridors is intended to provide an acceptable level of early warning to the occupants of that compartment.

The new exception to 12-3.7.1 is based on the following:

The area of the floor opening adds neither fuel load nor occupant load to the smoke compartment and the presence of quick response sprinklers should significantly limit the amount of smoke being generated. The revisions to 12-3.7.3 and 13-3.7.3 are based on the following:

Quick response sprinkler provisions in 12-3.5.3 limit the potential impact of smoke and fire to a level allowing the omission of these dampers.

COMMITTEE ACTION: Accept in Part.

Of the actions proposed by the Submitter, do only those applicable to Chapter 13.

Do not revise Chapter 12 as recommended.

COMMITTEE STATEMENT: See Proposal 101-385 (Log #883) on 12-1.6.2, et. al. which will mandate sprinklering of new facilities.

101-385 - (12-1.6.2, 12-1.6.2 Exception, 12-2.2.2.6, 12-2.3.5, 12-2.6.2, 12-3.1.1, 12-3.2.1, 12-3.2.5, 12-3.3.1, 12-3.5.1, 12-3.5.2, 12-3.5.3, 12-3.5.4, 12-3.6.1, 12-3.6.2.1, 12-3.6.2.2, 12-3.6.2.3, 12-3.6.3.1, 12-3.6.3.3, 12-3.6.3.5, 12-3.7.3, A-12-3.5.1, A-12-3.6.2.1 (New)); Accept

SUBMITTER: Technical Committee on Safety to Life

RECOMMENDATION: In Chapter 12, New Health Care Occupancies, do the following:

- 1. In 12-1.6.2 remove single and double daggers and associated notes from Table 12-1.6.2.
2. In the Exception to 12-1.6.2 delete the last sentence which currently reads: "To qualify for this Exception, the attic or other space so developed shall either be unoccupied or protected throughout by an approved automatic sprinkler system."
3. In 12-2.2.2.6 remove the words "if provided" and the word "required" from the sentence beginning "The automatic sprinkler..."
4. In 12-2.3.5 delete all four Exceptions and reword the base paragraph to read: "The minimum width of doors in the means of egress from sleeping rooms; diagnostic and treatment areas, such as x-ray, surgery, or physical therapy; and nursery rooms shall be 36 in. (91 cm)."
5. In 12-2.6.2 delete the Exception and change "100 ft (30 m)" to "150 ft (45 m)" in (a) and "150 ft (45 m)" to "200 ft (60 m)" in (b).
6. In 12-3.1.1 revise the base paragraph to read: "Any stairway, ramp, elevator hoistway, light or ventilation shaft, chute, and other vertical opening between stories shall be enclosed in accordance with 6-2.4 with construction having the following minimum fire resistance ratings:
(a) 1-hour in buildings required to be of 1-hour construction.
(b) 1-hour for enclosures connecting not more than three floors.
(c) 2-hour for enclosures connecting more than three floors in buildings required to be of more than 1-hour construction.
Delete Exceptions No. 1 and No. 3.
Re-number Exception No. 2 to be Exception No. 1.
Re-number Exception No. 4 to be Exception No. 2.
Re-number Exception No. 5 to be Exception No. 3.
Re-number Exception No. 6 to be Exception No. 4.
7. In 12-3.2.1 revise the hazardous areas list to read as follows:

Table with 2 columns: Description and Separation/Protection. Rows include Boiler and fuel-fired heater rooms (1-hr), Employee locker rooms (See 12-3.6.3.4), Gift/retail shops (See 12-3.6.3.4), Handicraft shops (See 12-3.6.3.4), Laboratories that use hazardous materials which would cause classification as severe hazard in accordance with NFPA 99 (1-hr), Central/bulk laundries more than 100 sq ft (9.3 sq m) in area (1-hr), Paint shops employing hazardous substances and materials in quantities less than which would cause classification as severe hazard (1-hr).

Physical Plant Maintenance Shop 1-hr  
Soiled linen room 1-hr  
Storage rooms more than 50 sq ft (4.6 sq m) in area but not more than 100 sq ft (9.3 sq m) in area storing combustible material. See 12-3.6.3.4  
Storage rooms more than 100 sq ft (9.3 sq m) storing combustible material 1-hr  
Trash collection rooms 1-hr

8. In 12-3.2.5 delete the words "and is protected throughout by an approved automatic sprinkler system" from subparagraph (a). Rerword subparagraph (b) to read: "Separated from a lobby or corridor with nonfire-rated walls." Delete subparagraph (c).

9. In 12-3.3.1 revise the base sentence to read: "Interior finish of walls and ceilings throughout shall be Class A or B in accordance with Section 6-5. The provisions of 6-5.7.1 shall not apply."  
In Exceptions No. 1 and No. 2 change "Class A or B" to "Class C".

10. In 12-3.5.1 retain the current Exception but rerword the base paragraph to read:  
12-3.5.1 Buildings containing health care facilities shall be protected throughout by an approved supervised automatic sprinkler system installed in accordance with Section 7-7. Quick response sprinklers shall be installed throughout all smoke compartments containing patient sleeping rooms.

11. Delete 12-3.5.2 in entirety.  
12. Delete 12-3.5.3 in entirety.  
13. Delete 12-3.5.4 in entirety.  
14. Replace current 12-3.6.1 and its six Exceptions with the following:  
12-3.6.1 Corridors shall be separated from all other areas by partitions complying with 12-3.6.2 through 12-3.6.4 (also see 12-2.5.5).  
Exception No. 1: Smoke compartments normally subject to patient occupancy may have spaces that are unlimited in size open to the corridor, provided:  
(a) The spaces are not used for patient sleeping rooms, treatment rooms, or hazardous areas, and  
(b) The space and corridors are protected by an electrically supervised, automatic smoke detection system installed in accordance with 12-3.4 or the smoke compartment in which the space is located is protected by quick response sprinklers, and  
(c) The space does not obstruct access to required exits.  
Exception No. 2: Smoke compartments or floors not normally subject to patient occupancy may have spaces that are unlimited in size open to the corridor provided:  
(a) The space is not used as a hazardous area, and  
(b) The space does not obstruct access to required exits.  
Exception No. 3: Space for nurses' stations.  
Exception No. 4: Gift shops may be open to the corridor where protected in accordance with 12-3.2.5.  
Exception No. 5: In a limited care facility, group meeting or multipurpose therapeutic spaces, other than hazardous areas, may be open to the corridor, provided:  
(a) The area does not obstruct any access to required exits, and  
(b) The area is equipped with an electrically supervised, automatic smoke detection system installed in accordance with 12-3.4 or the smoke compartment in which the space is located is protected by quick response sprinklers.

15. Delete 12-3.6.2.1 and its two Exceptions in entirety.  
16. Renumber existing 12-3.6.2.2 so as to become 12-3.6.2.1 and rerword so that it will read:  
12-3.6.2.1 Corridor walls shall form a barrier to limit the transfer of smoke. Such walls shall be permitted to terminate at the ceiling when the ceiling is constructed to limit the transfer of smoke. No fire resistance rating is required for corridor walls.  
17. Delete 12-3.6.2.3 and its Exception in entirety.  
18. Rerword 12-3.6.3.1 to read:  
12-3.6.3.1 Doors protecting corridor openings shall be constructed to resist the passage of smoke.  
Delete Exception No. 1 to 12-3.6.3.1.  
Renumber current Exception No. 2 to 12-3.6.3.1 so that it becomes Exception.

19. Delete 12-3.6.3.3 and its Exception in entirety.  
20. Delete 12-3.6.3.5 and its Exception in entirety.  
21. In 12-3.7.3 renumber current Exception as Exception No. 1 and add a new second Exception to read: Exception No. 2: Smoke dampers may be omitted from duct penetrations of required smoke barriers.  
22. Create an Appendix note A-12-3.5.1 to read:  
A-12-3.5.1 The requirements for use of quick response sprinklers intends that quick response sprinklers be the predominant type of sprinkler installed in the smoke compartment. It is recognized, however, that quick response sprinklers may not be approved for installation in all areas such as those where NFPA 13, Standard for the Installation of Sprinkler Systems, requires sprinklers of the intermediate - or high-temperature classification. It is not the intent of the 12-3.5.1 requirements to prohibit the use of standard sprinklers in limited areas of a smoke compartment where intermediate - or high-temperature sprinklers are required.  
Where the installation of quick response sprinklers is not practicable in patient sleeping room areas, appropriate equivalent protection features acceptable to the authority having jurisdiction should be provided. It is recognized that the use of quick response sprinklers may be limited in facilities housing certain types of patients, or due to the installation limitations of quick response sprinklers.

23. Create an Appendix note A-12-3.6.2.1 to read:  
A-12-3.6.2.1 It is the Code's intent that there be no required fire resistance nor area limitations for vision panels in corridor walls and doors.  
**SUBSTANTIATION:** The numbering of the individual substantiation items follows that of the above 23 recommendations.

1. All new buildings will require supervised automatic sprinkler protection so the Exceptions will no longer apply.  
2. All new buildings will require supervised automatic sprinkler protection so the sentence will no longer apply.  
3. All new buildings will require supervised automatic sprinkler protection so the words will no longer apply.  
4. The mandatory inclusion of quick response sprinklers reinforces the protect in place philosophy in the Code. The potential for evacuation of persons in beds is so remote so as to eliminate the need for wide doors.  
5. In view of the mandatory requirement for sprinkler protection, the travel distances allowed for sprinkler protected buildings will now become the base requirement.  
6. The proposed change is an adjustment to recognize total sprinkler protection as required by 12-3.5.1.  
7. In view of the mandatory requirement for sprinkler protection, the criteria for sprinkler protected buildings will now become the base requirement.  
8. Editorial to be consistent with 12-3.5.1.  
9. All new buildings will require supervised automatic sprinkler protection so the Exceptions will no longer apply.  
10. The Committee on Safety to Life has determined that with the new technology of quick response sprinklers, a greater probability of protecting the patient in the room of fire origin now exists. Recognizing that the new technology increases the level of life safety without an increase of construction costs, yet with a major decrease in the maintenance and operation of the building construction life safety features, the Committee has revised Chapter 12 accordingly.  
With automatic sprinkler protection required throughout new health care facilities, and quick response sprinklers required in smoke compartments containing patient sleeping rooms, the Committee is of the opinion that a fire and its life-threatening by-products will be reduced to acceptable levels thereby allowing the defend in place concept to continue. The Committee in its deliberations considered the potential weaknesses of maintaining the proper integrity of the essential life safety elements and is of the opinion that the probability of a sprinkler system operating as designed is equal to or greater than other life safety features. Longstanding

**CITY OF TROY BUILDING INSPECTION DEPARTMENT  
CITY OF TROY PLANNING DEPARTMENT  
BUILDING CODE BOARD OF APPEALS APPLICATION**

**SIGN APPEALS**  
**FEE \$50**  
CITY OF TROY PLANNING DEPARTMENT  
500 W. BIG BEAVER ROAD  
TROY, MICHIGAN 48084  
PHONE: 248-524-3344  
FAX: 248-689-3210  
E-MAIL: [evanspm@troymi.gov](mailto:evanspm@troymi.gov)  
<http://www.troymi.gov/CodeEnforcement/>



**CONSTRUCTION OR FENCE CODE APPEALS**  
**FEE: \$50**  
CITY OF TROY BUILDING DEPARTMENT  
500 W. BIG BEAVER ROAD  
TROY, MICHIGAN 48084  
PHONE: 248-524-3344  
FAX: 248-689-3210  
E-MAIL: [GrosnickME@troymi.gov](mailto:GrosnickME@troymi.gov)  
<http://www.troymi.gov/BuildingInspection/>

**NOTICE TO THE APPLICANT**

REGULAR MEETINGS OF THE BUILDING CODE BOARD OF APPEALS ARE HELD ON THE FIRST WEDNESDAY OF EACH MONTH AT 3:00 P.M. AT CITY HALL.

PLEASE FILE A COMPLETE APPLICATION, TOGETHER WITH THE APPROPRIATE FEE, **NOT LESS THAN TWENTY-ONE (21) DAYS** BEFORE THE MEETING DATE.

A COMPLETE APPLICATION THAT MEETS CODE REQUIREMENTS IS PLACED ON THE NEXT AVAILABLE AGENDA OF THE BUILDING CODE BOARD OF APPEALS.

1. ADDRESS OF THE SUBJECT PROPERTY: Beaumont, Troy 44201 Dequindre Rd Troy, MI 48085  
ACREAGE PROPERTY: *Attach legal description if this an acreage parcel*
2. PROPERTY TAX IDENTIFICATION NUMBER(S): 80-20-01-200-018
3. CODE NAME (e.g. "BUILDING CODE", "SIGN CODE", etc.) AND SECTION(S) RELATED TO THE APPEAL:  
2009 Michigan Building Code, Chapter 7, Section 716.5.5. 2006 NFPA 101, Chapter 19, Section 19.3.7.4
4. REASONS FOR APPEAL/VARIANCE: *On a separate sheet, please describe the reasons justifying the requested action. See Submittal Checklist*
5. HAVE THERE BEEN ANY PREVIOUS APPEALS INVOLVING THIS PROPERTY? YES  NO

6. APPLICANT INFORMATION:

NAME Jake Meadows  
COMPANY Jones Lang LaSalle at Beaumont Health System  
ADDRESS 44201 Dequindre Rd  
CITY Troy STATE MI ZIP 48085  
TELEPHONE Desk - 248-964-9935, Mobile - 586-747-7467  
E-MAIL jake.meadows@beaumont.edu

7. APPLICANT'S AFFILIATION TO THE PROPERTY OWNER: Owners representative for Real Estate and Development

8. OWNER OF SUBJECT PROPERTY:

NAME Nancy Susick  
COMPANY Willaim Beaumont Hospital  
ADDRESS 44201 Dequindre Rd.  
CITY Troy STATE MI ZIP 48085  
TELEPHONE 248-964-5000  
E-MAIL \_\_\_\_\_

The undersigned hereby declare(s) under penalty of perjury that the contents of this application are true to the best of my (our) knowledge, information and belief.

The applicant accepts all responsibility for all of the measurements and dimensions contained within this application, attachments and/or plans, and the applicant releases the City of Troy and its employees, officers, and consultants from any responsibility or liability with respect thereto.

I, Nancy Susick (PROPERTY OWNER), HEREBY DEPOSE AND SAY THAT ALL THE ABOVE STATEMENTS AND STATEMENTS CONTAINED IN THE INFORMATION SUBMITTED ARE TRUE AND CORRECT AND GIVE PERMISSION FOR THE BOARD MEMBERS AND CITY STAFF TO CONDUCT A SITE VISIT TO ASCERTAIN PRESENT CONDITIONS.

SIGNATURE OF APPLICANT  DATE 8-1-12

PRINT NAME: Jake Meadows

SIGNATURE OF PROPERTY OWNER  DATE 8-1-12

PRINT NAME: NANCY SUSICK

*Failure of the applicant or his/her authorized representative to appear before the Board, as scheduled, shall be justifiable cause for denial or dismissal of the case with no refund of appeal fee(s). If the person appearing before the Board is not the applicant or property owner, signed permission must be presented to the Board.*

*The applicant will be notified of the time and date of the hearing by first class mail.*

## **SUBMITTAL CHECKLIST FOR APPEALS NOT RELATED TO SIGNS**

FOR SIGNS, PLEASE USE SUBMITTAL CHECKLIST ON NEXT PAGE

**REQUIRED**   **PROVIDED**

- |                                     |                          |  |
|-------------------------------------|--------------------------|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | COMPLETED THE APPLICATION FORM   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <b>1 COPY OF SUPPORTING DOCUMENTS DESCRIBING</b> THE REQUEST, CONSTRUCTION AND/OR WORK INCLUDING BUT NOT LIMITED TO: <ul style="list-style-type: none"><li>▪ PLOT PLANS DRAWN TO SCALE, SHOWING THE SHAPE AND DIMENSION OF LOT(S).</li><li>▪ LOCATION ON THE LOT OF FENCES, OR OTHER STRUCTURES CONCERNING THE REQUEST.</li><li>▪ DETAILED PLANS SHOWING CONSTRUCTION MATERIALS AND METHOD OF CONSTRUCTION.</li><li>▪ PHOTOS, DRAWINGS, OR RENDERINGS AS NECESSARY TO ACCURATELY DESCRIBE THE REQUEST.</li></ul> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | ANY ADDITIONAL INFORMATION INCLUDING REPORTS OR ACCREDITED TESTING AGENCIES, INCLUDING ACCREDITED AGENCIES RECOGNIZED BY THE INTERNATIONAL CODE COUNCIL AND ACCEPTED ENGINEERING PRACTICES SHOULD ACCOMPANY YOUR APPEAL.   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <b>1 COPY OF INFORMATION</b> THAT CLEARLY EXPLAINS THE IMPACTS OF THE REQUEST ON THE AREA.   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <b>A WRITTEN EXPLANATION OF</b> THE REASONS JUSTIFYING THE REQUEST. IF APPEALING AN ICC CONSTRUCTION CODE, PLEASE EXPLAIN ALTERNATIVES THAT WOULD BE EQUAL TO WHAT THE CODE REQUIRES.  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <b>MINIMUM SIZE</b> OF ALL DOCUMENTS <b>8.5" X 11"</b> .   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | A COMPACT DISC CONTAINING AN ELECTRONIC VERSION OF THE APPLICATION AND ALL SUPPORTING DOCUMENTATION.   |

Date: 7-31-12

City Of Troy

Safe Built  
Building Department Services  
500 West Big beaver Rd  
Troy, MI 48084.  
**Mr. Rick Kessler**  
**Plan Examiner/coordinator.**

Dear Mr. Kessler,

I am writing this letter to inquire a Code Variance on smoke dampers within ductwork penetrating smoke zone barriers at William Beaumont Hospital, Troy. Our previous variance (attached) was reviewed and approved at the Building Code Board of Appeals on Wednesday, April 6<sup>th</sup>, 2005.

As the code editions associated with this variance have been superseded, it has been requested that we re-submit for the variance again based on the latest code editions. Below is our summary documenting the request for variance based on the latest code editions.

Currently, the hospital is protected with a supervised automatic sprinkler system that is approved by the state of Michigan as well as the City of Troy fire department. In addition, the campus is also protected throughout with a fire alarm system, which is interconnected with the sprinkler system. Also, the sprinkler heads used in the system are listed quick-response type. Furthermore, the heating ventilating and air conditioning systems are fully ducted throughout the site. Based on these conditions, the life safety code NFPA 101, 2006 edition, section 19.3.7.4 lists that smoke dampers are not required in duct penetrations of smoke zone barriers.

Being under your jurisdiction, the hospital falls under the 2009 International Building Code, which was adopted by the City of Troy and requires smoke dampers within smoke zone barriers under section 716.5.5. This difference between the two codes is again similar to the difference in 2005 when the original variance was requested.

Based on the above facts we feel eliminating the smoke dampers from ductwork penetrating smoke zone barrier walls has no effect on the safety of our patients, staff and visitors. In line with the variance approved in 2005, we are again requesting a variance submitting the use of quick response heads within the facility as an alternative to meet the building code requirement for the smoke dampers in ductwork penetrating smoke zone barrier walls. We appreciate your support in this matter and would like to thank you in advance for your efforts to assist us.

Sincerely,

Jake Meadows  
Program Leader  
Jones Lang LaSalle at Beaumont Health System

CHAPTER 18 • New

CHAPTER 19 • Existing

(4) Open-air parking structures protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7

**18.3.7.3** Smoke barriers shall be provided on stories that are usable but unoccupied.

**18.3.7.4** Any required smoke barrier shall be constructed in accordance with Section 8.5 and shall have a fire resistance rating of not less than 1 hour, unless otherwise permitted by the following:

- (1) This requirement shall not apply where an atrium is used, and both of the following criteria also shall apply:
  - (a) Smoke barriers shall be permitted to terminate at an atrium wall constructed in accordance with 8.6.7(1)(c).
  - (b) Not less than two separate smoke compartments shall be provided on each floor.
- (2)\* Smoke dampers shall not be required in duct penetrations of smoke barriers in fully ducted heating, ventilating, and air-conditioning systems.

**A.18.3.7.4(2)** Where the smoke control system design requires dampers so that the system will function effectively, it is not the intent of the provision to permit the damper to be omitted.

This provision is not intended to prevent the use of plenum returns where ducting is used to return air from a ceiling plenum through smoke barrier walls. Short stubs or jumper ducts are not acceptable. Ducting is required to connect at both sides of the opening and to extend into adjacent spaces away from the wall. The intent is to prohibit open-air transfers at or near the smoke barrier walls.

**18.3.7.5** Materials and methods of construction used for required smoke barriers shall not reduce the required fire resistance rating.

**18.3.7.6** Accumulation space shall be provided in accordance with 18.3.7.6.1 and 18.3.7.6.2.

**18.3.7.6.1** Not less than 30 net ft<sup>2</sup> (2.8 net m<sup>2</sup>) per patient in a hospital or nursing home, or not less than 15 net ft<sup>2</sup> (1.4 net m<sup>2</sup>) per resident in a limited care facility, shall be provided within the aggregate area of corridors, patient rooms, treatment rooms, lounge or dining areas, and other low hazard areas on each side of the smoke barrier.

**18.3.7.6.2** On stories not housing bed or litterborne patients, not less than 6 net ft<sup>2</sup> (0.56 net m<sup>2</sup>) per occupant shall be

**19.3.7.3 Reserved.**

**19.3.7.4** Any required smoke barrier shall be constructed in accordance with Section 8.5 and shall have a fire resistance rating of not less than ½ hour, unless otherwise permitted by the following:

- (1) This requirement shall not apply where an atrium is used, and both of the following criteria also shall apply:
  - (a) Smoke barriers shall be permitted to terminate at an atrium wall constructed in accordance with 8.6.7(1)(c).
  - (b) Not less than two separate smoke compartments shall be provided on each floor.
- (2)\* Smoke dampers shall not be required in duct penetrations of smoke barriers in fully ducted heating, ventilating, and air-conditioning systems where an approved, supervised automatic sprinkler system in accordance with 19.3.5.7 has been provided for smoke compartments adjacent to the smoke barrier.

**A.19.3.7.4(2)** Where the smoke control system design requires dampers in order that the system functions effectively, it is not the intent of the exception to permit the damper to be omitted.

This provision is not intended to prevent the use of plenum returns where ducting is used to return air from a ceiling plenum through smoke barrier walls. Short stubs or jumper ducts are not acceptable. Ducting is required to connect at both sides of the opening and to extend into adjacent spaces away from the wall. The intent is to prohibit open-air transfers at or near the smoke barrier walls.

**19.3.7.5 Reserved.**

**19.3.7.6** Accumulation space shall be provided in accordance with 19.3.7.6.1 and 19.3.7.6.2.

**19.3.7.6.1** Not less than 30 net ft<sup>2</sup> (2.8 net m<sup>2</sup>) per patient in a hospital or nursing home, or not less than 15 net ft<sup>2</sup> (1.4 net m<sup>2</sup>) per resident in a limited care facility, shall be provided within the aggregate area of corridors, patient rooms, treatment rooms, lounge or dining areas, and other low hazard areas on each side of the smoke barrier.

**19.3.7.6.2** On stories not housing bed or litterborne patients, not less than 6 net ft<sup>2</sup> (0.56 net m<sup>2</sup>) per occupant shall be

- 2.3. An exhaust fan is installed at the upper terminus of the shaft that is powered continuously in accordance with the provisions of Section 909.11, so as to maintain a continuous upward airflow to the outside.
3. *Smoke dampers* are not required at penetration of exhaust or supply shafts in parking garages that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
4. *Smoke dampers* are not required at penetrations of shafts where ducts are used as part of an *approved* mechanical smoke control system designed in accordance with Section 909 and where the *smoke damper* will interfere with the operation of the smoke control system.
5. *Fire dampers* and *combination fire/smoke dampers* are not required in kitchen and clothes dryer exhaust systems when installed in accordance with the *International Mechanical Code*.

**716.5.4 Fire partitions.** Ducts and air transfer openings that penetrate *fire partitions* shall be protected with *listed fire dampers* installed in accordance with their listing.

**Exceptions:** In occupancies other than Group H, *fire dampers* are not required where any of the following apply:

1. Corridor walls in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 and the duct is protected as a *through penetration* in accordance with Section 713.
2. Tenant partitions in *covered mall buildings* where the walls are not required by provisions elsewhere in the code to extend to the underside of the floor or roof sheathing, slab or deck above.
3. The duct system is constructed of *approved materials* in accordance with the *International Mechanical Code* and the duct penetrating the wall complies with all of the following requirements:
  - 3.1. The duct shall not exceed 100 square inches (0.06 m<sup>2</sup>).
  - 3.2. The duct shall be constructed of steel a minimum of 0.0217 inch (0.55 mm) in thickness.
  - 3.3. The duct shall not have openings that communicate the *corridor* with adjacent spaces or rooms.
  - 3.4. The duct shall be installed above a ceiling.
  - 3.5. The duct shall not terminate at a wall register in the fire-resistance-rated wall.
  - 3.6. A minimum 12-inch-long (305 mm) by 0.060-inch-thick (1.52 mm) steel sleeve shall be centered in each duct opening. The sleeve shall be secured to both sides of the wall and all four sides of the sleeve with minimum 1½-inch by 1½-inch by

0.060-inch (38 mm by 38 mm by 1.52 mm) steel retaining angles. The retaining angles shall be secured to the sleeve and the wall with No. 10 (M5) screws. The *annular space* between the steel sleeve and the wall opening shall be filled with mineral wool batting on all sides.

**716.5.4.1 Corridors.** A *listed smoke damper* designed to resist the passage of smoke shall be provided at each point a duct or air transfer opening penetrates a *corridor* enclosure required to have smoke and draft control doors in accordance with Section 715.4.3.

**Exceptions:**

1. *Smoke dampers* are not required where the building is equipped throughout with an *approved* smoke control system in accordance with Section 909, and *smoke dampers* are not necessary for the operation and control of the system.
2. *Smoke dampers* are not required in *corridor* penetrations where the duct is constructed of steel not less than 0.019 inch (0.48 mm) in thickness and there are no openings serving the *corridor*.

**716.5.5 Smoke barriers.** A *listed smoke damper* designed to resist the passage of smoke shall be provided at each point a duct or air transfer opening penetrates a *smoke barrier*. *Smoke dampers* and *smoke damper* actuation methods shall comply with Section 716.3.3.2.

**Exception:** *Smoke dampers* are not required where the openings in ducts are limited to a single smoke compartment and the ducts are constructed of steel.

**716.5.6 Exterior walls.** Ducts and air transfer openings in fire-resistance-rated *exterior walls* required to have protected openings in accordance with Section 705.10 shall be protected with *listed fire dampers* installed in accordance with their listing.

**716.5.7 Smoke partitions.** A *listed smoke damper* designed to resist the passage of smoke shall be provided at each point that an air transfer opening penetrates a smoke partition. *Smoke dampers* and *smoke damper* actuation methods shall comply with Section 716.3.3.2.

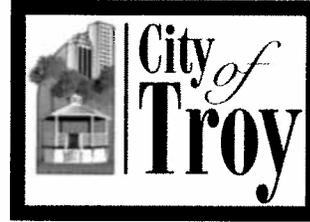
**Exception:** Where the installation of a *smoke damper* will interfere with the operation of a required smoke control system in accordance with Section 909, *approved* alternative protection shall be utilized.

**716.6 Horizontal assemblies.** Penetrations by ducts and air transfer openings of a floor, floor/ceiling assembly or the ceiling membrane of a roof/ceiling assembly shall be protected by a shaft enclosure that complies with Section 708 or shall comply with Sections 716.6.1 through 716.6.3.

**716.6.1 Through penetrations.** In occupancies other than Groups I-2 and I-3, a duct constructed of *approved materials* in accordance with the *International Mechanical Code* that penetrates a fire-resistance-rated floor/ceiling assembly that connects not more than two *stories* is permitted without

500 W. Big Beaver  
Troy, MI 48084  
(248) 524-3300

The City of Tomorrow...



...Today

October 9, 2012

Jake Meadows  
Jones Lang LaSalle at Beaumont Health System  
44201 Dequindre  
Troy MI 48085

**Re: 44201 Dequindre**

Dear Mr. Meadows:

At their Regular Meeting of September 5, 2012, the Building Board of Appeals acted upon a request for variance. The following is an excerpt from the meeting minutes:

For relief of Section 716.5.5 of the 2009 Michigan Building Code to omit smoke dampers in ductwork penetrating smoke barriers throughout William Beaumont Hospital Troy campus.

Moved by: Carolan  
Seconded by: Abitheira

**RESOLVED**, To approve the variance based on the following:

1. The Fire Department has no objections; and
2. Approval was granted on the same variance request in 2005.

Yeas: All present (5)

**MOTION CARRIED**

Sincerely,

Mitch Grusnick  
Building Official

cc: File/ Building Board of Appeals  
File/ Correspondence

G:\Building Code Board of Appeals\Appeals\44201 Dequindre\Applicant Letter\_BBA Resolution.docx

Fee \$50.00

CASE # \_\_\_\_\_

**CITY OF TROY  
APPLICATION  
BUILDING CODE BOARD OF APPEALS**

Request is hereby made for permission to erect, alter, modify or extend a structure or facility or substitute material therefore, either contrary to the provisions of the Building Regulations enacted by the City Council, including but not limited to: the Building Code, the Existing Structure Code, the Electrical Code, the Plumbing Code, the Mechanical Code and the Fence Ordinance, the Sign Ordinance or ~~contrary to the decision rendered by the Building Official in denying an application for a permit as~~ described below. (does not include Zoning Ordinance)

**7 COPIES REQUIRED**

Applicant: BEAUMONT SERVICES COMPANY, L.L.C  
(owner or duly authorized representative)

Phone Number: (248) 293-1010

Address: 44201 DEQUINDRE ROAD TROY, MI 48085

Name of Owner: WILLIAM BEAUMONT HOSPITAL Phone Number: \* (248) 964-5000

Address: \$\$\$! 44201 DEQUINDRE ROAD TROY, MI48085

ADDRESS OF STRUCTURE/FACILITY: \_\_\_\_\_

Zoning District: CF Sidwell # 88-20-01-200-014

Lot # NA Subdivision: NA

Present Use: \_\_\_\_\_

Proposed Use: \_\_\_\_\_

Has there been a previous appeal involving this property? \_\_\_\_\_ If yes, state Case Number and particulars: \_\_\_\_\_

Outline below your appeal, listing sections of the Code for which relief is sought and outline your proposals that are contrary to the Code or Building Officials decision. Indicate your hardships if a variance is not granted and explain your alternatives that would be equal to what the code requires:

2003 MBC, Chapter 7, Section 716.5.5. In conjunction with NFPA 101,

2000 edition, Chapter 19, Section 19.3.7.3, and based on performance of

the quick response sprinklers, we are requesting to omit smoke dampers from

ducts penetrating smoke barrier walls.

City Of Troy  
Building Department  
500 West Big beaver Rd  
Troy, MI 48084.

Date: 2-11-05

Attention:

Mr. Richard Kessler  
Plan Examiner/coordinator.

Dear Mr. Kessler,

I'm writing this letter to inquire a Code Variance on smoke dampers on ductwork penetrating smoke zone barriers at the William Beaumont Hospital Troy.

Currently, the hospital is protected with a supervised automatic sprinkler system that is approved by the state of Michigan as well as the city of Troy fire department. In addition, the campus is also protected throughout with a fire alarm system, which is inter-connected with the sprinkler system. Also, the sprinkler heads used in the system are listed quick-response type. Furthermore, the heating ventilating and air conditioning systems are fully ducted throughout the site.

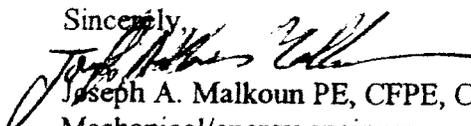
Based on these conditions, the life safety code NFPA 101, 2000 edition, section 19.3.7.3 lists that smoke dampers are not required in duct penetration of smoke barriers. Also, other codes such as BOCA and Southern agree with NFPA. This issue seems to be a conflict between IFC and other codes. Being under your jurisdiction, the hospital falls under the IFC, which was adopted by City of Troy. However, the State of Michigan, office of fire safety, enforces the life safety code NFPA 101, while the City Of Troy does not being under IFC 2003.

As you know, here at William Beaumont Hospital the safety of our patients is our priority regardless of the cost. However, in this situation and based on the above facts eliminating the smoke dampers from ductwork penetrating smoke barrier wall has no effect on the safety of patients, staff and visitors.

Therefore, I would like to request a code variance exempting the installation of smoke dampers in ductwork penetrating smoke barrier walls.

Finally, I appreciate your support in this matter and I would like to thank you in advance for your efforts to assist us.

Sincerely,

  
Joseph A. Malkoun PE, CFPE, CFI

Mechanical/energy engineer  
Beaumont services company.

Exception No. 3: In buildings protected throughout by an approved, supervised, automatic sprinkler system utilizing quick response sprinklers in accordance with 12-3.5.3, the area of the atrium opening shall not be included in the area limitations of the smoke compartment.

Revise 12-3.7.3 (13-3.7.3) by adding the following exception:

Exception: In buildings protected throughout by an approved supervised automatic sprinkler system utilizing quick response sprinklers in accordance with 12-3.5.3 (13-3.5.3) smoke dampers shall be permitted to be omitted from duct penetrations of required barriers separating smoke compartments.

Revise 12-3.7.5 by adding the following exception: Exception: In buildings protected throughout by an approved supervised automatic sprinkler system utilizing quick response sprinklers in accordance with 12-3.5.3, 34 in. doors and 68 in. clear openings shall be permitted.

**SUBSTANTIATION** The Subcommittee on Health Care Occupancies has determined that the new technology of quick response sprinklers provides a new, effective method of protecting the patient in the room of fire origin. Recognizing that the new technology provides a level of safety, at least equivalent to the objectives of Chapters 12 and 13 without an increase of construction cost, yet with a major decrease in the maintenance and operation of the building construction life safety features, the Subcommittee has revised Chapters 12 and 13 accordingly.

With automatic sprinkler protection installed throughout new health care facilities and quick response sprinklers installed in smoke compartments containing patient sleeping rooms, the Subcommittee is of the opinion that a fire and its life threatening by-products will be reduced to acceptable levels thereby allowing the "defend in place" concept to continue. The Subcommittee in its deliberations considered the potential weaknesses of maintaining the proper integrity of the essential life safety elements and is of the opinion that the probability of a sprinkler system operating as designed is equal to or greater than other life safety features. Long standing construction alternatives consistent with complete automatic sprinkler protection and other modifications installed to inhibit the fire and its by-products from spreading beyond the room of origin or to adjacent smoke compartments have been included as part of this proposal.

The revisions to 12-1.6.2 are felt to be justified in the fact that the built-in fire resistance is sufficient in itself to allow for evacuation.

The new exception to 12-1.6.6 is justified since the built-in fire resistance is sufficient in itself to allow for evacuation.

The reduction of door sizes in several of the paragraphs is substantiated since the provision of quick response sprinklers reinforces the protect in place philosophy of the Code. The potential evacuation of persons in bed is too remote so as to eliminate the need for wide doors.

The new exception to 12-3.1.1 is based on the following:

The provisions of 6-2.4.4 with the additional modifications herein, including the fact that the building must be fully sprinklered, that the communicating space has quick response sprinklers, and the limitation to two stories rather than three stories, will provide adequate life safety in a health care facility.

The additional exceptions to 12-3.6.1 and 13-3.6.1 are based on the following:

The installation of complete automatic sprinkler protection provides an adequate alternate to the protection of life threatening fires by staff in attendance at the location of the open space. The activation of quick response sprinklers installed throughout the smoke compartment or smoke detection installed in the open space in corridors is intended to provide an acceptable level of early warning to the occupants of that compartment.

The new exception to 12-3.7.1 is based on the following:

The area of the floor opening adds neither fuel load nor occupant load to the smoke compartment and the presence of quick response sprinklers should significantly limit the amount of smoke being generated. The revisions to 12-3.7.3 and 13-3.7.3 are based on the following:

Quick response sprinkler provisions in 12-3.5.3 limit the potential impact of smoke and fire to a level allowing the omission of these dampers.

**COMMITTEE ACTION:** Accept in Part.

Of the actions proposed by the Submitter, do only those applicable to Chapter 13.

Do not revise Chapter 12 as recommended.

**COMMITTEE STATEMENT:** See Proposal 101-385 (Log #883) on 12-1.6.2, et. al. which will mandate sprinklering of new facilities.

(Log #883)

101-385 - (12-1.6.2, 12-1.6.2 Exception, 12-2.2.2.6, 12-2.3.5, 12-2.6.2, 12-3.1.1, 12-3.2.1, 12-3.2.5, 12-3.3.1, 12-3.5.1, 12-3.5.2, 12-3.5.3, 12-3.5.4, 12-3.6.1, 12-3.6.2.1, 12-3.6.2.2, 12-3.6.2.3, 12-3.6.3.1, 12-3.6.3.3, 12-3.6.3.5, 12-3.7.3, A-12-3.5.1, A-12-3.6.2.1 (New)); Accept

**SUBMITTER:** Technical Committee on Safety to Life **RECOMMENDATION:** In Chapter 12, New Health Care Occupancies, do the following:

1. In 12-1.6.2 remove single and double daggers and associated notes from Table 12-1.6.2.

2. In the Exception to 12-1.6.2 delete the last sentence which currently reads: "To qualify for this Exception, the attic or other space so developed shall either be unoccupied or protected throughout by an approved automatic sprinkler system."

3. In 12-2.2.2.6 remove the words "if provided" and the word "required" from the sentence beginning "The automatic sprinkler . . ."

4. In 12-2.3.5 delete all four Exceptions and reword the base paragraph to read:

"The minimum width of doors in the means of egress from sleeping rooms; diagnostic and treatment areas, such as x-ray, surgery, or physical therapy; and nursery rooms shall be 36 in. (91 cm)."

5. In 12-2.6.2 delete the Exception and change "100 ft (30 m)" to "150 ft (45 m)" in (a) and "150 ft (45 m)" to "200 ft (60 m)" in (b).

6. In 12-3.1.1 revise the base paragraph to read: "Any stairway, ramp, elevator hoistway, light or ventilation shaft, chute, and other vertical opening between stories shall be enclosed in accordance with 6-2.4 with construction having the following minimum fire resistance ratings:

(a) 1-hour in buildings required to be of 1-hour construction.

(b) 1-hour for enclosures connecting not more than three floors.

(c) 2-hour for enclosures connecting more than three floors in buildings required to be of more than 1-hour construction.

Delete Exceptions No. 1 and No. 3.

Renumber Exception No. 2 to be Exception No. 1.

Renumber Exception No. 4 to be Exception No. 2.

Renumber Exception No. 5 to be Exception No. 3.

Renumber Exception No. 6 to be Exception No. 4.

7. In 12-3.2.1 revise the hazardous areas list to read as follows:

Description	Separation/Protection
Boiler and fuel-fired heater rooms	1-hr
Employee locker rooms	See 12-3.6.3.4
Gift/retail shops	See 12-3.6.3.4
Handicraft shops	See 12-3.6.3.4
Laboratories that use hazardous materials which would cause classification as severe hazard in accordance with NFPA 99	1-hr
Central/bulk laundries more than 100 sq ft (9.3 sq m) in area	1-hr
Paint shops employing hazardous substances and materials in quantities less than which would cause classification as severe hazard.	1-hr

Physical Plant Maintenance Shop 1-hr  
Soiled linen room 1-hr  
Storage rooms more than 50 sq ft (4.6 sq m) in area but not more than 100 sq ft (9.3 sq m) in area storing combustible material. See 12-3.6.3.4  
Storage rooms more than 100 sq ft (9.3 sq m) storing combustible material 1-hr  
Trash collection rooms 1-hr

8. In 12-3.2.5 delete the words "and is protected throughout by an approved automatic sprinkler system" from subparagraph (a). Rerword subparagraph (b) to read: "Separated from a lobby or corridor with nonfire-rated walls." Delete subparagraph (c).

9. In 12-3.3.1 revise the base sentence to read: "Interior finish of walls and ceilings throughout shall be Class A or B in accordance with Section 6-5. The provisions of 6-5.7.1 shall not apply."  
In Exceptions No. 1 and No. 2 change "Class A or B" to "Class C".

10. In 12-3.5.1 retain the current Exception but rerword the base paragraph to read:  
12-3.5.1 Buildings containing health care facilities shall be protected throughout by an approved supervised automatic sprinkler system installed in accordance with Section 7-7. Quick response sprinklers shall be installed throughout all smoke compartments containing patient sleeping rooms.

11. Delete 12-3.5.2 in entirety.  
12. Delete 12-3.5.3 in entirety.  
13. Delete 12-3.5.4 in entirety.  
14. Replace current 12-3.6.1 and its six Exceptions with the following:  
12-3.6.1 Corridors shall be separated from all other areas by partitions complying with 12-3.6.2 through 12-3.6.4 (also see 12-2.5.5).  
Exception No. 1: Smoke compartments normally subject to patient occupancy may have spaces that are unlimited in size open to the corridor, provided:  
(a) The spaces are not used for patient sleeping rooms, treatment rooms, or hazardous areas, and  
(b) The space and corridors are protected by an electrically supervised, automatic smoke detection system installed in accordance with 12-3.4 or the smoke compartment in which the space is located is protected by quick response sprinklers, and  
(c) The space does not obstruct access to required exits.  
Exception No. 2: Smoke compartments or floors not normally subject to patient occupancy may have spaces that are unlimited in size open to the corridor provided:  
(a) The space is not used as a hazardous area, and  
(b) The space does not obstruct access to required exits.  
Exception No. 3: Space for nurses' stations.  
Exception No. 4: Gift shops may be open to the corridor where protected in accordance with 12-3.2.5.  
Exception No. 5: In a limited care facility, group meeting or multipurpose therapeutic spaces, other than hazardous areas, may be open to the corridor, provided:  
(a) The area does not obstruct any access to required exits, and  
(b) The area is equipped with an electrically supervised, automatic smoke detection system installed in accordance with 12-3.4 or the smoke compartment in which the space is located is protected by quick response sprinklers.

15. Delete 12-3.6.2.1 and its two Exceptions in entirety.  
16. Renumbr existing 12-3.6.2.2 so as to become 12-3.6.2.1 and rerword so that it will read:  
12-3.6.2.1 Corridor walls shall form a barrier to limit the transfer of smoke. Such walls shall be permitted to terminate at the ceiling when the ceiling is constructed to limit the transfer of smoke. No fire resistance rating is required for corridor walls.  
17. Delete 12-3.6.2.3 and its Exception in entirety.  
18. Rerword 12-3.6.3.1 to read:  
12-3.6.3.1 Doors protecting corridor openings shall be constructed to resist the passage of smoke.  
Delete Exception No. 1 to 12-3.6.3.1.  
Renumbr current Exception No. 2 to 12-3.6.3.1 so that it becomes Exception.

19. Delete 12-3.6.3.3 and its Exception in entirety.  
20. Delete 12-3.6.3.5 and its Exception in entirety.  
21. In 12-3.7.3 renumber current Exception as Exception No. 1 and add a new second Exception to read: Exception No. 2: Smoke dampers may be omitted from duct penetrations of required smoke barriers.  
22. Create an Appendix note A-12-3.5.1 to read: A-12-3.5.1 The requirements for use of quick response sprinklers intends that quick response sprinklers be the predominant type of sprinkler installed in the smoke compartment. It is recognized, however, that quick response sprinklers may not be approved for installation in all areas such as those where NFPA 13, Standard for the Installation of Sprinkler Systems, requires sprinklers of the intermediate - or high-temperature classification. It is not the intent of the 12-3.5.1 requirements to prohibit the use of standard sprinklers in limited areas of a smoke compartment where intermediate - or high-temperature sprinklers are required.  
Where the installation of quick response sprinklers is not practicable in patient sleeping room areas, appropriate equivalent protection features acceptable to the authority having jurisdiction should be provided. It is recognized that the use of quick response sprinklers may be limited in facilities housing certain types of patients, or due to the installation limitations of quick response sprinklers.  
23. Create an Appendix note A-12-3.6.2.1 to read: A-12-3.6.2.1 It is the Code's intent that there be no required fire resistance nor area limitations for vision panels in corridor walls and doors.  
**SUBSTANTIATION:** The numbering of the individual substantiation items follows that of the above 23 recommendations.

- All new buildings will require supervised automatic sprinkler protection so the Exceptions will no longer apply.
- All new buildings will require supervised automatic sprinkler protection so the sentence will no longer apply.
- All new buildings will require supervised automatic sprinkler protection so the words will no longer apply.
- The mandatory inclusion of quick response sprinklers reinforces the protect in place philosophy in the Code. The potential for evacuation of persons in beds is so remote so as to eliminate the need for wide doors.
- In view of the mandatory requirement for sprinkler protection, the travel distances allowed for sprinkler protected buildings will now become the base requirement.
- The proposed change is an adjustment to recognize total sprinkler protection as required by 12-3.5.1.
- In view of the mandatory requirement for sprinkler protection, the criteria for sprinkler protected buildings will now become the base requirement.
- Editorial to be consistent with 12-3.5.1.
- All new buildings will require supervised automatic sprinkler protection so the Exceptions will no longer apply.
- The Committee on Safety to Life has determined that with the new technology of quick response sprinklers, a greater probability of protecting the patient in the room of fire origin now exists. Recognizing that the new technology increases the level of life safety without an increase of construction costs, yet with a major decrease in the maintenance and operation of the building construction life safety features, the Committee has revised Chapter 12 accordingly.  
With automatic sprinkler protection required throughout new health care facilities, and quick response sprinklers required in smoke compartments containing patient sleeping rooms, the Committee is of the opinion that a fire and its life-threatening by-products will be reduced to acceptable levels thereby allowing the defend in place concept to continue. The Committee in its deliberations considered the potential weaknesses of maintaining the proper integrity of the essential life safety elements and is of the opinion that the probability of a sprinkler system operating as designed is equal to or greater than other life safety features. Longstanding

## CHAPTER 18 • New

## CHAPTER 19 • Existing

**18.3.7\* Subdivision of Building Spaces.**

**A.18.3.7** See A.18.2.2.

**18.3.7.1** Buildings containing health care facilities shall be subdivided by smoke barriers as follows:

- (1) To divide every story used by inpatients for sleeping or treatment into not less than two smoke compartments
- (2) To divide every story having an occupant load of 50 or more persons, regardless of use, into not less than two smoke compartments
- (3) To limit the size of each smoke compartment required by (1) and (2) to an area not exceeding 22,500 ft<sup>2</sup> (2100 m<sup>2</sup>)

*Exception:* The area of an atrium separated in accordance with 8.2.5.6 shall not be limited in size.

- (4) To limit the travel distance from any point to reach a door in the required smoke barrier to a distance not exceeding 200 ft (60 m).

*Exception No. 1:* Stories that do not contain a health care occupancy, located totally above the health care occupancy.

*Exception No. 2:* Areas that do not contain a health care occupancy and that are separated from the health care occupancy by a fire barrier complying with 7.2.4.3.

*Exception No. 3:* Stories that do not contain health care occupancies and that are more than one story below the health care occupancy.

*Exception No. 4:* Open-air parking structures protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

**18.3.7.2** Smoke barriers shall be provided on stories that are usable but unoccupied.

**18.3.7.3** Any required smoke barrier shall be constructed in accordance with Section 8.3 and shall have a fire resistance rating of not less than 1 hour.

*Exception No. 1:* Where an atrium is used, smoke barriers shall be permitted to terminate at an atrium wall constructed in accordance with Exception No. 2 to 8.2.5.6(1). Not less than two separate smoke compartments shall be provided on each floor.

*Exception:* For rooms protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.2, the aggregate area of openings per room shall not exceed 80 in.<sup>2</sup> (520 cm<sup>2</sup>).

**19.3.7 Subdivision of Building Spaces.**

**19.3.7.1** Smoke barriers shall be provided to divide every story used for sleeping rooms for more than 30 patients into not less than two smoke compartments. The size of any such smoke compartment shall not exceed 22,500 ft<sup>2</sup> (2100 m<sup>2</sup>), and the travel distance from any point to reach a door in the required smoke barrier shall not exceed 200 ft (60 m).

*Exception No. 1:* Where neither the length nor width of the smoke compartment exceeds 150 ft (45 m), the travel distance to reach the smoke barrier door shall not be limited.

*Exception No. 2:* The area of an atrium separated in accordance with 8.2.5.6 shall not be limited in size.

**19.3.7.2** For purposes of the requirements of 19.3.7, the number of health care occupants shall be determined by actual count of patient bed capacity.

**19.3.7.3** Any required smoke barrier shall be constructed in accordance with Section 8.3 and shall have a fire resistance rating of not less than ½ hour.

*Exception No. 1:* Where an atrium is used, smoke barriers shall be permitted to terminate at an atrium wall constructed in accordance with Exception No. 2 to 8.2.5.6(1). Not less than two separate smoke compartments shall be provided on each floor.

CHAPTER 18 • New

*Exception No. 2:\* Dampers shall not be required in duct penetrations of smoke barriers in fully ducted heating, ventilating, and air conditioning systems.*

**A.18.3.7.3 Exception No. 2** Where the smoke control system design requires dampers in order that the system functions effectively, it is not the intent of the exception to permit the damper to be omitted.

This exception is not intended to prevent the use of plenum returns where ducting is used to return air from a ceiling plenum through smoke barrier walls. Short stubs or jumper ducts are not acceptable. Ducting is required to connect at both sides of the opening and to extend into adjacent spaces away from the wall. The intent is to prohibit open-air transfers at or near the smoke barrier walls.

**18.3.7.4** Not less than 30 net ft<sup>2</sup> (2.8 net m<sup>2</sup>) per patient in a hospital or nursing home, or not less than 15 net ft<sup>2</sup> (1.4 net m<sup>2</sup>) per resident in a limited care facility, shall be provided within the aggregate area of corridors, patient rooms, treatment rooms, lounge or dining areas, and other low hazard areas on each side of the smoke barrier. On stories not housing bed or litterborne patients, not less than 6 net ft<sup>2</sup> (0.56 net m<sup>2</sup>) per occupant shall be provided on each side of the smoke barrier for the total number of occupants in adjoining compartments.

**18.3.7.5\*** Doors in smoke barriers shall be substantial doors, such as 1¼-in. (4.4-cm) thick, solid-bonded wood core doors, or shall be of construction that resists fire for not less than 20 minutes. Nonrated factory- or field-applied protective plates extending not more than 48 in. (122 cm) above the bottom of the door shall be permitted. Cross-corridor openings in smoke barriers shall be protected by a pair of swinging doors or a horizontal sliding door complying with 7.2.1.14. Swinging doors shall be arranged so that each door swings in a direction opposite from the other.

The minimum clear width for swinging doors shall be as follows:

- (1) Hospitals and nursing homes—41.5 in. (105 cm)
- (2) Psychiatric hospitals and limited care facilities—32 in. (81 cm)

The minimum clear width opening for horizontal sliding doors shall be as follows:

- (1) Hospitals and nursing homes—83 in. (211 cm)
- (2) Psychiatric hospitals and limited care facilities—64 in. (163 cm)

CHAPTER 19 • Existing

*Exception No. 2:\* Dampers shall not be required in duct penetrations of smoke barriers in fully ducted heating, ventilating, and air conditioning systems where an approved, supervised automatic sprinkler system in accordance with 19.3.5.3 has been provided for smoke compartments adjacent to the smoke barrier.*

**A.19.3.7.3 Exception No. 2** Where the smoke control system design requires dampers in order that the system functions effectively, it is not the intent of the exception to permit the damper to be omitted.

This exception is not intended to prevent the use of plenum returns where ducting is used to return air from a ceiling plenum through smoke barrier walls. Short stubs or jumper ducts are not acceptable. Ducting is required to connect at both sides of the opening and to extend into adjacent spaces away from the wall. The intent is to prohibit open-air transfers at or near the smoke barrier walls.

**19.3.7.4** Not less than 30 net ft<sup>2</sup> (2.8 net m<sup>2</sup>) per patient in a hospital or nursing home, or not less than 15 net ft<sup>2</sup> (1.4 net m<sup>2</sup>) per resident in a limited care facility, shall be provided within the aggregate area of corridors, patient rooms, treatment rooms, lounge or dining areas, and other low hazard areas on each side of the smoke barrier. On stories not housing bed or litterborne patients, not less than 6 net ft<sup>2</sup> (0.56 net m<sup>2</sup>) per occupant shall be provided on each side of the smoke barrier for the total number of occupants in adjoining compartments.

**19.3.7.5** Openings in smoke barriers shall be protected by fire-rated glazing; by wired glass panels and steel frames; by substantial doors, such as 1¼-in. (4.4-cm) thick, solid-bonded wood core doors; or by construction that resists fire for not less than 20 minutes. Nonrated factory- or field-applied protective plates extending not more than 48 in. (122 cm) above the bottom of the door shall be permitted.

*Exception: Doors shall be permitted to have fixed fire window assemblies in accordance with 8.2.3.2.2.*

## FIRE-RESISTANCE-RATED CONSTRUCTION

**716.5.4.1 Corridors.** A listed smoke damper designed to resist the passage of smoke shall be provided at each point a duct or air transfer opening penetrates a corridor enclosure required to have smoke and draft control doors in accordance with Section 715.3.3.

### Exceptions:

1. Smoke dampers are not required where the building is equipped throughout with an approved smoke control system in accordance with Section 909, and smoke dampers are not necessary for the operation and control of the system.
2. Smoke dampers are not required in corridor penetrations where the duct is constructed of steel not less than 0.019-inch (0.48 mm) in thickness and there are no openings serving the corridor.

**716.5.5 Smoke barriers.** A listed smoke damper designed to resist the passage of smoke shall be provided at each point a duct or air transfer opening penetrates a smoke barrier. Smoke dampers and smoke damper actuation methods shall comply with Section 716.3.2.1.

**Exception:** Smoke dampers are not required where the openings in ducts are limited to a single smoke compartment and the ducts are constructed of steel.

**716.6 Horizontal assemblies.** Penetrations by ducts and air transfer openings of a floor, floor/ceiling assembly or the ceiling membrane of a roof/ceiling assembly shall be protected by a shaft enclosure that complies with Section 707 or shall comply with this section.

**716.6.1 Through penetrations.** In occupancies other than Groups I-2 and I-3, a duct and air transfer opening system constructed of approved materials in accordance with the *International Mechanical Code* that penetrates a fire-resistance-rated floor/ceiling assembly that connects not more than two stories is permitted without shaft enclosure protection provided a fire damper is installed at the floor line.

**Exception:** A duct is permitted to penetrate three floors or less without a fire damper at each floor provided it meets all of the following requirements.

1. The duct shall be contained and located within the cavity of a wall and shall be constructed of steel not less than 0.019 inch (0.48 mm) (26 gage) in thickness.
2. The duct shall open into only one dwelling unit or sleeping unit and the duct system shall be continuous from the unit to the exterior of the building.
3. The duct shall not exceed 4-inch (102 mm) nominal diameter and the total area of such ducts shall not exceed 100 square inches (0.065 m<sup>2</sup>) in any 100 square feet (9.3 m<sup>2</sup>) of floor area.
4. The annular space around the duct is protected with materials that prevent the passage of flame and hot gases sufficient to ignite cotton waste where subjected to ASTM E 119 time-temperature

conditions under a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water at the location of the penetration for the time period equivalent to the fire-resistance rating of the construction penetrated

5. Grille openings located in a ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly shall be protected with a ceiling radiation damper in accordance with Section 716.6.2.

**716.6.2 Membrane penetrations.** Where duct systems constructed of approved materials in accordance with the *International Mechanical Code* penetrate a ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly, shaft enclosure protection is not required provided an approved ceiling radiation damper is installed at the ceiling line. Where a duct is not attached to a diffuser that penetrates a ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly, shaft enclosure protection is not required provided an approved ceiling radiation damper is installed at the ceiling line. Ceiling radiation dampers shall be tested in accordance with UL 555C and constructed in accordance with the details listed in a fire-resistance-rated assembly or shall be labeled to function as a heat barrier for air-handling outlet/inlet penetrations in the ceiling of a fire-resistance-rated assembly. Ceiling radiation dampers shall not be required where ASTM E 119 fire tests have shown that ceiling radiation dampers are not necessary in order to maintain the fire-resistance rating of the assembly. Ceiling radiation dampers shall not be required where exhaust duct penetrations are protected in accordance with Section 712.4.2, where exhaust ducts are located within the cavity of a wall, and where exhaust ducts do not pass through another dwelling unit or tenant space.

**716.6.3 Nonfire-resistance-rated assemblies.** Duct systems constructed of approved materials in accordance with the *International Mechanical Code* that penetrate nonfire-resistance-rated floor assemblies and that connect not more than two stories are permitted without shaft enclosure protection provided that the annular space between the assembly and the penetrating duct is filled with an approved noncombustible material to resist the free passage of flame and the products of combustion. Duct systems constructed of approved materials in accordance with the *International Mechanical Code* that penetrate nonfire-resistance-rated floor assemblies and that connect not more than three stories are permitted without shaft enclosure protection provided that the annular space between the assembly and the penetrating duct is filled with an approved noncombustible material to resist the free passage of flame and the products of combustion, and a fire damper is installed at each floor line.

**Exception:** Fire dampers are not required in ducts within individual residential dwelling units.

**716.7 Flexible ducts and air connectors.** Flexible ducts and air connectors shall not pass through any fire-resistance-rated assembly. Flexible air connectors shall not pass through any wall, floor or ceiling.



500 West Big Beaver  
Troy, Michigan 48064  
www.troymi.gov

April 26, 2005

Area code (248)  
Assessing  
524-3311  
Bldg. Inspections  
524-3344  
Bldg. Maintenance  
524-3368  
City Clerk  
524-3316  
City Manager  
524-3330  
Community Affairs  
524-1147  
Engineering  
524-3383  
Finance  
524-3411  
Fire-Administration  
524-3419  
Human Resources  
524-3339  
Information Services  
619-7279  
Law  
524-3320  
Library  
524-3545  
Parks & Recreation  
524-3484  
Planning  
524-3364  
Police-Administration  
524-3443  
Public Works  
524-3370  
Purchasing  
524-3338  
Real Estate & Development  
524-3498  
Treasurer  
524-3334  
General Information  
524-3300

Beaumont Services Company, LLC  
44201 Dequindre  
Troy, MI 48085

RE: Variance Request - 44201 Dequindre

Gentlemen:

Your request for relief of Section 716.5.5 of the 2003 Michigan Building Code was heard before the Building Code Board of Appeals at their Wednesday, April 8, 2005 meeting.

The following is from the minutes of that meeting:

MOVED, to grant Beaumont Services Company, LLC, 44201 Dequindre, relief of the 2003 Michigan Building Code to omit smoke dampers in ductwork penetrating smoke barriers throughout William Beaumont Hospital Troy campus.

- Variance is not contrary to public interest.
- Variance will not compromise the public safety.

Yeas: All - 5

MOTION TO GRANT VARIANCE CARRIED

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Stimac".

Mark Stimac  
Director of Building & Zoning

MS/pp