

The Chairman, Ted Dziurman, called the meeting of the Building Code Board of Appeals meeting to order at 8:30 A.M. on Wednesday, March 7, 2007 in the Lower Level Conference Room of the Troy City Hall.

PRESENT: Ted Dziurman
Rick Kessler
Bill Nelson
Tim Richnak
Frank Zuazo

ALSO PRESENT: Mark Stimac, Director of Building & Zoning
Pam Pasternak, Recording Secretary

ITEM #1 – APPROVAL OF MINUTES – MEETING OF FEBRUARY 7, 2007.

Motion by Nelson
Supported by Richnak

MOVED, to approve the minutes of the meeting of February 7, 2007 as written.

Yeas: All – 5

MOTION TO APPROVE MINUTES AS WRITTEN CARRIED

ITEM #2 – VARIANCE REQUEST. BASEMENT EXPERTS, 6688 GRANGER, for relief of the 2003 Michigan Residential Code to finish a basement.

Mr. Stimac explained that the petitioner is requesting relief of Section R 305 of the 2003 Michigan Residential Code to finish a basement. The plans submitted indicate the existing basement has a 7' height to the bottom of the joist and a dropped I-beam and ductwork with 6'-4" clear height. The proposed finish materials would lower the main ceiling height to 6'-10" and the drops under the I-beam and ducts to 6'-3".

Mr. Steve Attar, representing Basement Experts was present. Mr. Attar explained that they would attempt to bring the ceiling as close as they possibly could to the bottom of the joists. Mr. Attar also stated that they would not have any 90-degree angles, but would change the corners to be 45 degrees so there would not be any sharp corners.

Mr. Kessler asked what the proposed use of this basement area was. Mr. Attar said they have two children and plan to make this a play area for the children. There will not be any bedrooms in this basement.

Motion by Kessler
Supported by Richnak

ITEM #2 – con't.

MOVED, to grant Basement Experts, 6688 Granger, relief of the 2003 Michigan Residential Code to finish a basement that will result in the main ceiling height to be 6'-10" where 7' is required; and the drops under the I-beam and ducts to 6'-3".

- All 90-degree angles are to be changed to 45-degree angles.

Yeas: All – 5

MOTION TO GRANT VARIANCE CARRIED

ITEM #3 – VARIANCE REQUEST. TROY GYMNASTICS, 1600 W. MAPLE, for relief of Section 803.2 of the International Fire Code.

Mr. Stimac explained that the petitioner operates a gymnastics facility in an existing building in the City of Troy. The petitioner has constructed a pit within the floor of the building that is to be used for a landing area from some of the gymnastics equipment. The pit is approximately 28' long, 16' wide and 6' deep. The top approximately 4' of this pit is filled with foam plastic cubes used to cushion the fall of the users of the apparatus. The bottom 2' of the pit has a trampoline-like suspension device to further cushion the impact. There are approximately 7000 of these 6" square foam cubes in the pit or approximately 1800 cubic feet of the foam.

Section 803.2 of the International Fire Code requires that exposed foam plastic material used in assembly use buildings have a maximum rate of heat release of 100 kilowatts (kW) when tested in accordance with Underwriters Laboratory test standard #1975-96. Our inquiries with the manufacturer of the foam failed to show that the material complies with or has been tested in accordance with this standard.

The manufacturer has submitted information that they did their own test on the foam and that it passes the California Technical Bulletin 117 test for materials used in upholstered furniture. Part of that test criterion is that the average afterflame (the amount of time that the specimen continues to burn after the burner flame is removed) of 5 test specimens shall not be more than 5 seconds. It further requires that the maximum afterflame time of any test specimen not exceed 10 seconds. Members of the Troy Fire Department did a field test on a sample of the material from the site and the results showed that the material did support flame, dripped flaming material and did not self extinguish for at least 30 seconds after the heat source was removed.

The petitioner is asking that this foam material be permitted to be used in the building.

Toby Buechner and his wife, owners of this property, the manager of this facility and a patron were present. Mr. Buechner said that he had a video from the University of Michigan showing how this pit was used and offered to show it to members of the Board on his laptop. Mr. Buechner stated that the United States Gymnastics Association

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promotes the use of this product. He also brought in a letter from a former Olympian endorsing this foam and stated that these foam squares are used worldwide. These foam squares are used so that when children fall on them they are not injured. Mr. Buechner went on to say that the building is sprinklered per the City Code and there is constant supervision. The foam is contained in a cement pit and he does not see how a fire would even start. His children will be using it also, and if he felt there was a safety concern he would not let them use it. Colleges all over the country use it in their foam pits and he does not see why this would be problem. Mr. Buechner asked if the Fire Code was different in other parts of the county.

Chief Nelson stated that he thought that colleges are exempt from most local control.

Mr. Stimac said that the City of Troy in Chapter 93 and references the 2003 International Fire Code. The standard was the same in 2000 but he did not go back any further. The requirements in the 2000 Code are the same. The results of the studies by the manufacturer do not apply to displays, decorative spaces and foam that is directly exposed to the environment.

Mr. Dziurman clarified that this is an issue of Fire Prevention rather than impact safety.

Mr. Stimac said that the City is concerned about all the safety of all residents in buildings. The main concern in this issue is the question of flammability. Provided in each members packet was a material safety data sheet from the manufacturer, page 1 of 2, section 4 that addresses NFPA fire and explosion hazards and states that this has a sprinkler classification of extra hazard. Upholstery with foam establishes different classifications and is considered an ordinary hazard. Sprinkling systems are different for ordinary hazard and extra hazard classifications.

Mr. Dziurman asked if there was anything that would tell the Board what the requirements would be to design the system for the extra hazard.

Mr. Stimac said that he did not know but that the design criteria used for the existing system was ordinary hazard.

Mr. Dziurman asked if extra sprinklers would be required over this area only. Mr. Stimac said that was correct.

Mr. Stimac said the Fire Department conducted their own tests and their results did not produce the same results as the results the manufacturer indicates. Material tests should be conducted by an independent third party agency that has no vested interested in this material.

Mr. Buechner said that he did not see how a fire could possibly start at this area is usually used by 5 to 8 year olds. There is no smoking in the building and the children

ITEM #3 – con't.

are always supervised. The lights above this pit have a plastic shroud around them to protect anyone in the area if one should burst. Mr. Buechner said that if anyone took an open flame around this building, a fire could be started in any area.

Mr. Dziurman said that was not the point. The point was that this foam did not meet the requirements of the Fire Code.

Mr. Buechner said that he had spoken to a number of experts in this field and they state that these foam cubes are the best.

Mr. Dziurman asked if there were other cubes that they could use that would meet the Fire Code.

Mr. Richnak said that the Board was not here to debate whether or how something could catch fire and it is not this Board's job to tell them that something is or isn't going to happen. The Board has to determine what can be done to make that building safe. They cannot in good conscience say that a fire will never start here. There is nothing personal against the gymnastics profession but there are certain guidelines that they have to follow. One of the changes that could be made would be to change the sprinkler to a high hazard. Mr. Richnak said that he does believe there are other foams that could be used that would meet the requirements of the Fire Code.

Mr. Dziurman asked if Mr. Buechner owned the building and he stated that he did.

Mr. Stimac clarified that even if the sprinkler system was upgraded, the Code states that the foam has to meet the test standards. If this Board approves the exception to the Building Code to allow this foam, Mr. Buechner would still be required to add the extra sprinkler system to protect the foam.

Mr. Buechner asked if he would have to beef up the sprinkler system. Mr. Dziurman said that would be one part of it, but a variance would still be required to allow him to use the foam.

Mr. Buechner said that the pit is essential in the gymnastics field.

Mrs. Buechner asked if the Fire Code was different in Troy. Mr. Dziurman stated that this Board is not aware of what is required by other states.

Mr. Buechner said that he does not believe other states would take a chance of something happening to the people that use these facilities and also said that perhaps the Code is too strict in the City of Troy. Mr. Buechner also said that the company he works for is thinking about leaving Troy because of issues with foam and the regulations the City is putting on them.

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Mr. Stimac addressed Mr. Buechner's remark and stated that the issue is the fact that the company Mr. Buechner works for is in fact storing foam in 12' to 16' high racks in an office building. On its' own, this foam is probably safe, but when stored in this quantity could certainly be deemed a hazard.

Mr. Nelson said that this is a use group issue. This company has taken an office building and is using it as a storage facility.

Chief Nelson went on to say that the International Fire Code is in effect in the entire United States. What has probably happened is that other people do not use due diligence. The City of Troy has a lot of research facilities and the Fire Department is in tune with the processes that are used. Chief Nelson apologized that Mr. Buechner got caught in Troy but this Fire Department does due diligence. There is other material available that they can use that would meet the standards.

Mr. Buechner said this is the most expensive and is the best foam in the business.

Chief Nelson also said that an independent lab, a third party that has no vested interest should test the foam. The manufacturer of the foam has a vested interest.

Mr. Buechner said that his insurance agent tests the foam and it seems like the specifications here are more difficult.

Chief Nelson said that he had spoken to the manufacturer and this issue has come up before at least three times in the last year.

Mr. Buechner said that he does not believe the Olympics would take the chance and use this foam if it was not safe.

Mrs. Buechner said that the foam is used for the protection of the children when they land in this pit.

Mr. Buechner said that if he took a flame to a chair or window blind it would burn the same way.

Chief Nelson said it would not burn in the same manner this foam would burn. This foam would meet the standards if it was covered. The foam in a chair is covered and almost everything they deal with is tested. There is other foam available that would meet the Fire standards.

Ms. Moore, whose daughter uses this facility, was present. Ms. Moore asked if anyone could let them know where they could get this other foam. The manufacturer they are dealing with wants people to buy their product and would be reluctant to endorse another product.

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Erin Pettid, Manager of this facility was present and stated that they cannot use a foam square that is harder due to the density involved in the makeup of the square. Furthermore, it would not make sense to cover the squares as a cover would create a hard surface that the children would land on and could create the possibility of broken bones. This foam was specifically chosen because of the safety factor for children to fall into. This foam is used in pits all over the country and the only time she has heard of a problem with fire is when it is used for BMX motorbikes. As far as she knows there is only one other foam that they could use and it is much heavier, and would create a chance for the children to be hurt when landing in it due to the heavier density. This Board is faced with a unique situation and she would like to know how to get it safe for usability.

Ms. Moore said that this pit is contained by concrete walls and does not believe this facility would have a problem with fire because it is a supervised environment. She has never seen anyone smoking in the building. There is always a risk with gymnastics but she does not believe fire is one of those risks.

Mr. Buechner said that he has not heard of any instance of a fire happening in any gym in the country.

Mr. Kessler said that Codes go in to find ways to abate hazards. He was hoping that this Board was going to look at the product and look at the hazards associated with it and would find a way to safeguard the blocks from a fire. Mr. Kessler asked about the sump pump at the bottom of the pit and what safeguards were in place. The Board needs to know that the floor is non-combustible and if the sprinkler system would be able to handle a fire in this pit. Mr. Kessler also asked if Mr. Buechner had an Electrician look over the area to determine if there were any hazards.

Mr. Buechner said that the sump pump has a hard plastic cover and the Electrician stated that it would not be a problem.

Mr. Kessler asked what the ratio was regarding supervision. Mr. Buechner said that it is usually eight children to one coach.

Mr. Kessler asked if the kids sink when they land in the pit. Ms. Pettid said that they do not sink, but often a couple of the cubes will come up and go over them.

A discussion began between Mr. Buechner and Ms. Pettid regarding the time it would take for a child to get out of the pit and Ms. Pettid said that she thought it would be about five seconds.

Mr. Kessler said that they are concerned about the smoke and amount of flame involved. Mr. Kessler asked if smaller children sink deeper in this pit.

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Ms. Pettid said that they move the cubes around weekly in the pit because it does compact. Every Friday they change the foam squares. They also provide instructions on how to get out of the pit. The only thing she is concerned about is how to get someone out of the pit if they are injured as they would have to be extremely careful.

Mr. Kessler confirmed that the pit is 16' wide and asked if the majority of the children landed in the center of the pit. Ms. Pettid said that was correct. Mr. Kessler said then they would have about 8' to get out of this pit. Mr. Kessler asked what the height of the ceiling was and Mr. Buechner said that in that area it's 30' high. The overhead lights have a hard protective cover on them.

Mr. Richnak asked what type of testing Mr. Buechner's Insurance Agent had done on this type of material. Mr. Buechner said that he would have to double check with him to see what type of testing he has done. Mr. Buechner's Insurance Agent said that California has the strictest testing in the country.

Mr. Stimac asked if Mr. Buechner had any results from a third part testing facility and Mr. Buechner said that he did not.

Lieutenant Rod Bovensiep of the Fire Department was present and stated that he had spoken to a foam expert who informed him that there is a similar foam that has a better flammability rating. Lieutenant Bovensiep said that he gave this information to Mr. Buechner but he was not interested in pursuing this. The California 117 test states that this foam is to be used with a thermal barrier.

Mr. Buechner said that the other foam was too dense and could cause injury.

Mr. Dziurman commented that this foam is good for people but does not meet the fire safety standards.

Mr. Kessler stated that even if there is extra training and extra sprinklers around the pit, people can vandalize and destroy property. All the codes out there do not prevent fires. Hazard is higher when people are not aware of the hazards. Mr. Kessler asked what Mr. Buechner thought about the idea of adding extra sprinklers.

Mr. Buechner said that he would have to look into it and would need to know what the City wants him to do. He can guarantee that these activities are 100% supervised.

Mr. Kessler then asked if extra sprinklers would be required. Mr. Nelson said that the sprinklers would end up in a 15' perimeter around the pit; however, he doesn't know what would be required, as they do not know how much heat would be released.

Mr. Richnak why they there aren't any test results regarding this issue.

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Mr. Stimac said that the Fire Department had spoken to the manufacturer and they have not run these types of tests.

Chief Nelson said that because there are no test results they do not know how many extra sprinklers they would need or if they would work.

Mr. Kessler said that they don't have other buildings with the same ceiling height and Chief Nelson said that the higher the ceiling, more heat is required to trigger the sprinklers.

Mrs. Buechner said that there is a huge door right next to the pit so the Fire Department would have easy access if there was ever a fire.

Mr. Buechner said that he had purchased the building two (2) years ago and has added the fire system. The kids would be able to get out very quickly and the building is very safe.

Mrs. Buechner went on to say that even if there was a fire in the pit it would not jump out of the pit and would be easily extinguished. Mr. Buechner said that even if there was a bonfire in the pit it would not go anywhere.

Mr. Kessler asked if there was a special fire extinguisher that was used strictly for foam products.

Lieutenant Bovensiep said that all fire extinguishers are designed to put out fires of foam plastics.

Mr. Buechner asked if a solution would be to put in more extinguishers and provide training in the use of these extinguishers.

Mr. Kessler said that they do not want the children using the fire extinguishers.

Lieutenant Bovensiep said that a fire doubles in size every twenty (20) seconds and Chief Nelson said that their concern would be to get the people out of the building.

Mr. Kessler said that the manufacturer mixes the fire retardant properties in the foam. The burn characteristics are all different and not consistent throughout the product.

Lieutenant Bovensiep said that he had spoken to the manufacturer about the inconsistency in the test results and was told that they didn't know why that happened but thought it might be due to contamination of the product.

Mr. Kessler explained that two (2) out of eight (8) foam cubes stopped burning immediately. Six (6) cubes kept burning.

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Mr. Stimac explained that the Fire Department test results did not match the results of the California 117 test reported by the manufacturer although this was a totally different test conducted here.

Mr. Dziurman said that obviously this pit is similar to pits used around the country and there are no other foams that meet this City's requirements.

Mr. Buechner showed pictures of different pits used around the country and by Olympians.

Chief Nelson asked what the life of the foam was.

Ms. Pettid said that it is approximately two (2) years. This is one of the reasons they would rotate the foam cubes on a weekly basis.

Mr. Buechner said that the pit is set up for all types of kids and if he is not allowed to use it he will lose customers.

Mr. Kessler said that they don't want to have an incident where this Board approves the use of this foam and someone gets hurt.

Mr. Buechner said that he would be willing to sign a waiver not holding the City responsible if someone were to get hurt. The City knows more about the codes but he has been to gyms all around the country and believes if this foam was a problem he would have heard about it by now.

A discussion continued for some time regarding how to provide safety around this pit. Chief Nelson said that they are trying to work with Mr. Buechner and come up with some type of compromise.

Mr. Buechner said that the building was made of concrete and steel and he did not see how it would burn.

Motion by Nelson
Seconded by Richnak

MOVED, to approve the request of Troy Gymnastics for relief of Section 803.2.1 of the International Fire Code with the following conditions:

- The relief is granted for a period not to exceed two years.
- A 24" deep draft curtain, constructed of non-combustible material, will be installed at the ceiling line to enclose the area of the foam pit.
- The sprinkler system will be modified to meet the requirements of the extra hazard sprinkler category of the foam material.

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- Smoke detectors be installed in accordance with NFPA 72 and connected to the fire alarm system in the area of the foam pit.
- A training program is developed and a log of training activities be maintained for employees of the facility that will instruct the employees about the hazards of the foam and the special precautions that should be taken in the event of a fire.
- That a training program for employees on the use of fire extinguishers is implemented and a log of training activities be maintained.

Further discussion followed regarding these stipulations. Chief Nelson explained that at 1200 degrees, steel would bend and the integrity of the building would be in jeopardy. Smoke detectors within the draft curtain would enable the sprinklers to catch any type of fire in the early stages.

Chief Nelson also said that they are writing an article regarding the flammability properties of this foam so that there will be national exposure.

Mr. Buechner said that each manufacturer will promote their own product and as they go from gym to gym no one has ever heard of anyone having a problem with fire and these foam squares.

Mr. Stimac asked if they rent this building out and Mr. Buechner said that they have had overnight parties in the building but have always had them supervised by his staff.

Chief Nelson also stated that he would have to contact a sprinkler contractor and ask them to come and determine what type of sprinklers would be necessary and if there was enough water pressure to be able to sustain extra sprinklers under the classification of extra hazard. Chief Nelson also said that in his opinion the present sprinkler system would not be able to put out a fire in this foam pit.

Lieutenant Bovensiep said that they would have to provide a 15' perimeter around an area that is considered an extra hazard. He went on to say that the thing they have to consider is the amount of time between when the fire starts and the water gets on it.

Chief Nelson thought it may be a better idea to postpone the decision on this request until Mr. Buechner could find out if he would be able to meet the conditions presented.

Mr. Kessler said that it would be ideal to be able to reach a decision today so that this part of the facility could be opened. He felt that perhaps the extra sprinklers would provide the extra protection needed.

Lieutenant Bovensiep stated that when you have a sprinkler system that is designed with more sprinkler heads; the heads will go off but the water pressure will go down and the only thing happening is that you are over loading the sprinkler system.

ITEM #3 – con't.

Subsequently another motion was made:

Motion by Nelson
Seconded by Richnak

MOVED, to postpone action on the motion to approve the request of Troy Gymnastics for relief of Section 803.2.1 of the International Fire Code for thirty (30)-days or sooner if the petitioner can show that the proposed conditions can be met.

Yeas: All – 5

MOTION TO POSTPONE ACTION ON THIS REQUEST CARRIED

The Building Code Board of Appeals meeting adjourned at 10:22 A.M.

Ted Dziurman, Chairman

Pamela Pasternak, Recording Secretary