Board of Appeals Meeting
12 Murphy Dr, Nashua NH
10/06/2016

Begin: 2:30 pm

Attendance:
Board of Appeals members;
John Rudolph
Daniel Bergeron
Kevin Slattery

Representing Building Safety Dept, City of Nashua
Sarah Marchant, Community Development Director
William McKinney, Building Official
Mark Collins, Plans Examiner
Jeff Richard, Mechanical Inspector
Dawn Michaud, Permit Technician
Tim Cummings, Economic Development

Representing Appellant
David Lozeau
David Boisvert, Attorney
Elliot Hall, J. Lawrence Hall
Mike Haase, J. Lawrence Hall
Jillian Shedd, Northpoint Construction

> **Purpose**: Appeal by David Lozeau (Applicant) Elks BPOE 720 (Owner) 12 Murphy Drive (Sheet 140, Lot 60) from Section 403.2 Exception: Engineered Ventilation Design, Table 403.3 Minimum Ventilation Rates: Smoking Lounges and Section 403.5 System Operation: Demand Control Ventilation. Appealing the need for additional outside make up air.

Sarah Marchant starts proceeding by stating the purpose of the BCBA

To consider an application for an appeal based on the true intent of the code or the rules adopted thereunder have been incorrectly interpreted, the provisions of the code do not fully apply, or a good or better method of construction is proposed. The board shall have no authority to waive the requirements of the State Building Code or the State Fire Code.

David L. clarifies the current adopted code is 2009 ICC. Sarah M. agrees but refers the State RSA for creation of BCBA.

Introduction of Attendees.

Call to order, 3 Board Members present, no present Chair.
Daniel Bergeron to Chair meeting.

Kevin S. motion
Dan B. second
All in favor

David L. brings up State RSA that requires 5 members on the Board. Sarah M. answers the 3 members make a quorum, and currently Nashua is down 2 members. Proceed with quorum.

Begin with Appellant case.
David L, representing Elks Lodge, gives a brief history of decision to have a smoking lounge. Approximately 10 months ago, the Elks had best attendance meeting in the history of the Lodge. Membership close to 1,000. Typically, 20 gather at meetings. The current location of the Elks Lodge allows for smoking anywhere in facility other than function room. Through several meetings and discussions, Elks decided to invest $85k to create a smoking room out of courtesy for members who do not smoke. Several bids came in and decided to pick J. Lawrence Hall as Mechanical Contractor because they proposed the only Engineered project. The affected area amounts to 4000 sq feet, and total project cost amounts to $400k. Not proposing any work in kitchen area and not proposing any additional seating. Therefore, all costs are for smoking lounge and function hall. When Engineers came to site, they proposed to add 8.5 tons of air conditioning to room. That work has been done, adding to the existing 5 tons. Concerns from neighbors arose. One neighbor being a Medical Facility, had concerns with the smoking room being adjacent to them, J. Lawrence Hall'S solution was to add to design a Sanuvox Air Purification system and get them approved by a 3rd party Engineer. David states the Building Safety Dept. addressed the Sanuvox air purifier and asked for Certification that the use of the equipment as an air purifying system can reduce the amount of outside air required by code, then the Elks can use it.

Bill M. does not fully agree with statement, asked to clarify. He responds that the request was for a Third party testing data that proved that this piece of equipment could be used in replacement of the required outside air, then the City would accept it.

David L. goes on to say he sought out an Engineer to certify the use of the unit and was told that the Sanuvox was not necessary in the design and was purely "icing on the cake". He received testimonials, white sheets on the unit, but could not find any certification existing. Turns conversation to his Engineers.

Mike H. from J. Lawrence Hall passes out handouts. One is a version of the stamped drawing of the smoking room itself. The concept of the design is based on the code requiring 60 cfm of airflow from outside fresh air for every person in the room and exhaust that air plus 10%. With the occupant load being at 23, the requirement for exhaust would be 1320 cfm, being an Engineer background, it was bumped up to 1800

cfm of exhaust. Which is 150% of required air to come into that room. The exception to 2009 International Mechanical Code, **section 403.2**, ***Outdoor Air Required*** is cited:

> **Exception:** Where the registered design professional ***demonstrates*** that an engineered ventilation system design will prevent the maximum concentration of contaminants from exceeding that obtainable by the rate of outdoor air ventilation determined in accordance with Section 403.3, the minimum required rate of outdoor air shall be reduced in accordance with such engineered system design.

Mike H. goes on to state that the air required by a humans respiratory system is between 5 and 10 cfm per person. Even operating rooms require only 30 cfm. The proposed use is Assembly and has sufficient outside air for all occupants and is basically a "clean environment", It's not an industrial environment where chemicals are present. He considers the required outside air has no need to be from outside and "clean air" is acceptable. Refers to Table 403.3 and the requirements for other uses with higher chemicals present and believes the assembly use to be a clean environment. He states there is no Engineering purpose for that to be outside air and the code specifically states using transfer air for smoking lounges.

Mike H. points to the Sanuvox literature in bold writing that they don't certify it as much as one would like, but the standard for outside air for the system may be reduced by 2/3rds. Doesn't know if he completely agrees with that statement. Exhaust is still moving through the room.The concept of their design is just purging air through the room and not treating the smoke. There is nothing in the code that requires that to be outside air and the alternative is clean air from the adjoining room. J. Lawrence Hall and the stamping Engineer believes it to be acceptable to reduce the outside air to 20 cfm being brought directly into room, where the code says when an Engineer is involved you may reduce that.

Mike H. describes the Sanuvox unit as a purifier where it turns tar from smoke and turns into a powder and doesn't coat everything with a tar substance. He compares the amount of air flow to data provided in a school environment and states the unit removed 66% of contaminants from the air in a clean environment, and believes it would do more in a smoking lounge. He points out the System operation section 403.5 if the 2009 IMC and regards it as demand control for the amount of occupants currently within a space. Mikes proposal to monitor this is with a V.O.C. sensor which measures where the safe level is operates accordingly. Above and beyond, a possible solution would be for an alarm for an overloaded system as an extra safety factor. He repeats the idea of bring the clean air from the assembly area into the room as required outside air.

Elliot H. builds on Mike's argument about transferring air from the adjoining room which is being required for the occupancy already, and instead of bringing in 1800 cfm of raw air from outside and treating it, this seemed more energy efficient.

David L. adds that if any neighboring properties or patrons complain or even if system fails, they will no longer have a smoking room. It is their obligation. He conveyed that to the Engineers and the engineers assured him that they would not be affected. He stated once again that the Sanuvox was added as icing on the cake and it senses any troubles in the room, and he thinks that is an extra added benefit.

Mike H. asks for any questions.

Dan B. inquired about if the kitchen area was taking into consideration when doing calculations.

Mike H. answers the kitchen is not part of the design and has its own exhaust and makeup air.

Dan B. asks about the maintenance of the unit.

Mike H. responds by saying that is the purpose of the alarm. It is one of the pitfalls of the unit.

Jillian S. comments that the design also allows for accessibility to the unit through the ACT ceiling for maintenance for the servicing company.

John R. asks if J. Lawrence Hall is the servicing company.

Elliot H. responds that they will most likely be.

Kevin S. asks why there are no recirculating provisions being made to meet the code. Is there some factor with the building design that prevents being compliant with the code? He points out the elevated amount of cfm required in a smoking lounge compared to other areas. He says there seems to be no certification stating that this will perform what they are proposing. Is there something prohibiting the install to meet code?

Mike H. answers that they do believe it does meet the intent of the code. He brings up 2015 IMC, even though it has not been adopted, and the code change that allows under 403.2.1 #3 to now take air from contained completely from such spaces shall not be prohibited. He believes even without the Sanuvox unit they are meeting code by bring 1/3rd of the required air from outside and 2/3rds being transferred from the adjoining space.

Kevin S. asks for clarification on the other air being brought in from the other areas.

Mike H. describes all the air that is being brought into the room for its occupants and recirculating it and passing it through to the smoking room will be sufficient enough to meet code.

Kevin S. asks if you are bringing the recirculated air into the larger area and then proposing to draw part of that into the lounge?

Mike H. agrees.
Kevin S. asks if there is ever any co-mingling that happens.

Elliot H. responds saying that the smoking room is at a negative pressure and the only leakage of air is through its own direct exhaust.

Mike H. shows the design drawing and shows the flow of air coming from the clean area purging through the room and going into the exhaust or the purifier itself. There will never be any exfiltration.

Jillian S. remarks that Northpoint made provisions to avoid that situation.

John R. poses a question if the 2015 codes were being enforced, would this be an issue?

Mike H. affirms that it would still be. The code is extremely strict on smoking lounges and it's difficult to achieve the air flow rate.

Dan B. asks if the City has any comments or questions.

Bill M. begins by speaking for the record that the Building Safety Dept takes pride in recognizing newer technology as it comes out, but it must prove that it meets the intent of the code. Although, in this case, we don't feel the data we need, the 3rd party testing and such has been provided to us. It really doesn't substantiate the claims that you can reduce your air by 2/3rds.

Bill M. provides some background information.

Plans were received on August 24, 2016, we have gone through their design, we have contacted the company, spent a great amount of time on the phone and on the internet researching this and trying to obtain data that would provide to us the information we needed to provide support to allow this piece of equipment.

On September 9, 2016 an email was sent with the basis of our denial. In our eyes it appears as a fancy smokeeater, and according to the code, smokeeaters are technically not allowed because they circulate air. It states you must bring in the required amount of outside air and then if you want to cleanse the air, that is permissible**.**

The design is relying on section 403.2 exception that states if a registered design professional is involved and it must be accepted, we disagree with that. It is very clear in that same section that the design professional must *demonstrate* compliance.

Bill M. continues saying the dept had contacted the manufacturer of the Sanuvox unit and they were not able to provide any testing data, other than a 3rd party acceptance of the fan in the unit itself and certification from the Canadian Electrical Code. Therefore, there has not been any proof that this unit will do what the claims are in the paperwork. He feels that this unit may work well in a medical environment with the UV lights, but there

still does not exist any testing data on how it works on smoke. Therefore, we feel strongly that the Sanuvox does not comply with the mechanical code and it's not providing the required amount of outside air. We heard that you have reduced the size of the room, this department has not received any documents showing that smaller room.

Jillian S. responds that one wall moved inward 6 inches.

Bill M. continues that they certainly can use the unit , but the room must still be provided with the required outside air. It's clear to us that the Sanuvox does exactly what it can't do, and that's recirculates air, and does not provide the cfm's required.

Bill M. asks if the design is exhausting 1800 cfms of air, how is that being made up?

Mike H. answers that its being brought in from the rooftop units and the balance is being transferred from the adjoining room.

Jeff R. comments that its not technically outside air. If the intent of the code was to bring in clean air, it would state that, but it says specifically outside air, and he doesn't believe that is meeting the intent of the code. That is what we are basing our denial on.

Mike H. feels that the code is out of balance, with 60 cfm required in a smoking lounge and the rest being much lower. His interpretation of the code is that it wants clean air to be brought into the area. With additional safety factors, like the purifier and additional exhaust, it seems that the 60 cfm is being met.

Bill M. clarifies the discussion about the 2015 code that was brought up earlier. He says that the 2009 code clearly states that you can not at all recirculate air within a room. The 2015 states that you are allowed to recirculate if the outside air requirement is already met. So, you're trying to recirculate the air in that room, but not meeting the requirement of the code for outside air.

Dan B. asks what would be involved in coming into compliance with the code?

David L. answers an large amount in their energy bill and an additional 215k for the additional make up air units needed.

Dan B. asks what's the additional maintenance cost on this proposed unit?

Mike H. personal opinion is if they have the V.O.C. sensor and the demand control unit and purifier, it should never meet the limit. Therefore, it would be just ordinary maintenance such as changing the filters and bulbs and the amount of labor.

Dan B. asks if there is further questions. He asks for the votes from the board if the system is in compliance with the 2009 IMC. He reminds the Board that they do not have the authority to waive the code requirements, but to be sure the provisions are being met by the proposal, and this alternative meets the intent of the code.

Dan B. vote is in order.
John R. asks for further discussion. He asks why the difference between the 2009 and the 2015 code? Why, if it's acceptable in the 2015, why is it not being allowed?

Bill M. responds by repeating his earlier statement about the allowance in the 2015 code of the recirculated air, but as long as the exchange rates requirement is met.

Dan B. asks if it's possible to get certification?

Mike H. responds that the design is on the basis of considering the clean air being drawn from the adjacent room meets the intent.

Bill M. defines outside air in the definitions of the code book.

Dawn M. inquires if there is a definition of clean air, Bill M. answers there is not.

Mike H. is curious to know why they added a provision to the 2015 code to allow recirculated air within a space. He believes it's not an addition, just a clarification.

Discussion continues with a debate about recirculation of air and outside air.

Kevin S. interprets it as you can recirculate the air as long as it contained in a space and not drawn from another space.

In order to move proceeding along, Kevin S. speaks about smoking being a sensitive environmental concern. He worries about the abutting neighbors making complaints and him, as a board member, has a fiduciary responsibility to protect the health and welfare of the citizens. Without a stamped, certified plan, he is reluctant to approve the use of the unit to make up the 2/3rds of outside air. Once again he asks what the estimated cost would be to be compliant.

Jillian S. replies $22,500 to add the hvac install in the smoking room, 10,000 of that for the Sanuvox unit.

Kevin S. continues on that if its $15,000 to comply, how much is being saved and why is the board sitting at the table? He is still concerned about any future repercussions about possibly waiving the code requirement for something that has not been proven.

David B. refers a question the Building Dept. The discrepancy here is if the air comes from the outside or from the inside space, we are told it's recycled air. There are exceptions to the code. His question is… What is the harm if it was allowed to take the air from the adjoining space?

Dan B. replies that the manufacturers of the unit themselves can't provide definite evidence that it meets the intent of the code. Getting it to comply with the code is only a matter of dollars and cents.

Dan B. asks for a motion to deny the appeal.

Kevin S. can't support it without the information that was presented today.

Jon R. agrees.

Dan B. asks again for motion to deny or to table until further evidence is submitted, although they have had sufficient time to do so.

Kevin S. suggests leaving it open to give them the option to demonstrate through an engineered drawing that you can offset the requirement of the outside air exchange.

Discussion goes back and forth about the specific language of outside air vs clean air. The appellant is unable to get certification because they believe it's more of an interpretation of the code.

Jeff R. repeats that he had spoken with representative of Sanuvox unit and being in the business for 25 years, he had never been asked the question about replacing the 2/3rds of outside air. To the best of his knowledge, there isn't a manufacturer that can reduce that requirement.

Mike H. adds that the Sanuvox had it in writing in their paperwork. It seems as if the manufacturer is not standing behind their claim.

Dan B. asks once again if they can obtain proof that this meets intent.

Mike H. No, because it's an interpretation of the code.

Kevin S. reads the literature about the elimination of E.T.S.- environmental tobacco smoke and the claim that the unit will reduce the microbials, but not completely.

Mike H. poses the question about does this design make sense? Is there really that much of a difference between 20 cfm of outside air and 60% of clean air from adjoining space vs 100% of the air coming directly from the outside?

David L. addresses the fact that the smoking room will be non-existent if they receive any complaints.

Dan B. is more concerned with the occupants of the smoking lounge. He feels that if documentation can show that the air will be safe and healthy for the occupants, he would be more likely to accept the proposal. But, there is not any such data.

Kevin S. repeats the monetary issue and states it's not the issue at hand but the deviation from the code is.

Elliot H. states that it wasn't about the money, it was more of an energy concern.

Jon R. makes motion to agree with the city to deny the application, with the opportunity to revisit the board with additional documents necessary to prove it meets the intent of the code.

Kevin S. seconds motion.

All in favor

Appeal is hereby denied.

Meeting adjourned at 3:55 pm