

**CLAY COUNTY BUILDING COMMISSION & BOARD OF APPEALS  
MINUTES**

**August 1, 2012**

Clay County Building Codes Commission and Board of Appeals, 3<sup>rd</sup> Floor Commission Hearing Room, Clay County Administration Bldg., One Courthouse Square, Liberty, MO

Members Present: Jim Carlson, Louie Freeman,  
Andy Inzerillo, and Bob Pence Jr.

Members Absent: Larry Larson

Staff Present: Mark Manville  
Matt Tapp

Call to Order at 2:00 pm  
Roll Call

**Jim Carlson:** I would like to call to order the Wednesday, August 1, 2012, Clay County Building Codes Commission and Board of Appeals. I will call to order with a roll call.

**Mark Manville:** Jim Carlson?

**Jim Carlson:** Present.

**Mark Manville:** Louie Freeman?

**Louie Freeman:** Present.

**Mark Manville:** Bob Pence?

**Bob Pence:** Present.

**Mark Manville:** Andy Inzerillo?

**Andy Inzerillo:** Present.

**Mark Manville:** Larry Larson?

**Larry Larson:** No Answer.

**Jim Carlson:** Okay the roll call will show that Larry Larson is not present.

**Mark Manville:** And we have a quorum.

**Jim Carlson:** Okay we have a quorum so we can take action. I would like to call for a motion to approve the August 11, 2010 BC Committee Meeting Minutes that we have here in hand, do I have a motion?

**Louie Freeman:** I will make a motion.

**Jim Carlson:** Okay.

**Bob Pence:** I second.

**Jim Carlson:** Louie Freeman made the motion to accept the minutes and Bob Pence made the motion to second it. All those in favor of approving the minutes say aye.

**Mark Manville:** I will call off the roll call. Jim Carlson?

**Jim Carlson:** Aye.

**Mark Manville:** Louie Freeman?

**Louie Freeman:** Aye.

**Mark Manville:** Bob Pence?

**Bob Pence:** Aye.

**Mark Manville:** Andy Inzerillo?

Andy Inzerillo: Aye.

**Final Vote: 4/0/0      Approved      August 11, 2010 Minutes**

**Jim Carlson:** Now I will turn this portion over to the staff to do their reports.

**Mark Manville:** My name is Mark Manville I have been here since the first of April and I am the Building Official for the County. I was the Building Official for St. Joe for 12 years and for the past 10 years I have been a home builder in St. Joe and I am still building some. So I am on both sides of the issues. George and I, when I first met George I was president of Home Builders Association in St. Joe we partnered with the Kansas City Home Builders for a while and so I'm sympatric to the impact the codes have on us in this industry and I think maybe I a little, obviously I have a different take on them then a lot of people do. I still believe the codes are necessary, I don't buy into all of them 100% none of us do, but I think we will be able to have some pretty good discussions and what I want to do first, I will pass some of these things out. Just too kind of bring you up to speed. This is the breakdown of the code changes that were made when the 2006 codes were adopted. To just kind of refresh your memory as to what was done here in Clay County, this is in Clay County. I don't know the background for all the changes maybe some of you guys will remember where they came from and those are the changes to the international code and then this is the residential code and this is for the building code.

**Jim Carlson:** Did you review this Mark? Did you see anything that you had questions about?

**Mark Manville:** These are the old ones. I was just kind of wanting you to see what had been done in the past, because it probable been three or four years since you were involved in those discussions. I thought it might be useful for you to look at them. And then what I have today for us to begin this discussion I realize that we won't probable make any decisions today nor do I really want us to. I just want to get the dialogue started on what we want to do and where we want to end up. I have the changes that Overland Park, KS and Kansas City, MO have already made. They both have passed ordinances adopting the 2012 addition of the code with their local amendments and I think both of them go into effect October 1<sup>st</sup>. And what I would like to propose is that we're going to have a total of three public meetings and then at that time, hopefully we will be ready to make some recommendations to our County Commission for approval and then I would like to see and effective date, we can go ahead and get the ordinance past, but maybe have an effective date of the changes of January 1 of 2013. That would everyone time to, if they are bidding work, and if any of these changes have an impact on your budget that would give you a chance to kind of work them into your budget. Plus it will give people an opportunity to just to become familiar with them and kind of work through them in that regard.

**Matt Tapp:** Just a note on that, we will probably have at least one if not multiple information meetings for the professionals, the architects, engineers, builders fill in the blank. Between this and our reason massive changes to our Land Development Codes. I think we will have some form of informative meeting with all professionals. This will kind of tie it to that. Probable between the times we approve the amendments here til January 1<sup>st</sup> towards the end of the year, probable. Just a heads up.

**Mark Manville:** And you know really, Chris you and George can come up here and sit I think you are the audience.

**Jim Carlson:** You have used as the Matrix the Overland Park and Kansas City together?

**Mark Manville:** Yes.

**Jim Carlson:** I see most of these are

**Mark Manville:** They are all very similar. When I talked to Tim Ryan this morning I believe what happened is that Overland Park began the study of what codes changes they were going to pursue of what they thought would be important and at the point that Kansas City, MO decided to start the process, I think they called Overland Park and said where are you and Overland Park supplied them the work they had done to that point. So as you go down through there they virtually run parallel now there are some changes, there are some places where Kansas City deviated from what Overland Park did and vice versa so they are not 100% an exact but probable 90% of them are the same.

**Jim Carlson:** Just for instants on the one there about the third line down, both cities have adopted this code change that Kansas City has made it optional for the blower door test.

**Mark Manville:** Right they made it optional.

**Jim Carlson:** I hate to see us to have to be required to have a blower door test on every house.

**Mark Manville:** Right and that is some of the things that we are going to talk about. I am going to share some of the information I have with you on that. What Kansas City and you guys jump in anytime, what Kansas City is doing at this point is they're doing voluntary testing and they have, I think they have, some grant money don't they George that is available for some of blower door test? Do you remember hearing that?

**George Schluter:** I know the details on it.

**Mark Manville:** And so what they are doing is they're kind of taking the sampling of how things are being built in Kansas City right now. And they are going to kind of figure out what the base line is and see how the builders are performing and if they are performing well then I think it will continue to be mandatory except on an as needed bases if they have a builder that is dropping the ball they can probable go in and force him to do something. But I don't think it is their intention to every make it mandatory across the board.

**George Schluter:** What Kansas City, Missouri did was adopted requirements for blower door test to at least the five air changes per hour or below to be effective January 1, 2014. In the mean time they had some grant money that they got from the Feds on whatever that '09 economic recovery or whatever they called it. And they asked us if we builders could supply them some houses in the corporate city limits in Kansas City, MO that they could test to see where they were against it. And we got about eight or ten houses that we gave them as possible houses. Chris may have been on the list. I know they have done something, they had to use the money real quick in June and July because that's when their grant ran out. So they were going to test six, eight houses as many as they could get done to look and see where it was. Then that was just kind of a baseline to see where we were because there were not requirements for it. We had told, we the Home Building Industry, had told Kansas City, MO that we felt and we told Overland Park as well, that we felt what we were doing today with house wrap coverage that we would probable meet the five air changes per hour. I have not seen the official results the test have been done but I happened to had a rater who was doing three of the houses in Kansas City, MO at my house this morning on some stuff I was doing and Bruce told me that the three houses that he had tested all pasted the five air changes per hour just the way they were

built today without any additional requirements on it. Kansas City, MO ordinance which takes effect October 1 allows a period from October 1 of '12 until December 31 of '13 for the city to randomly sample houses that permits have been pulled on and they are going to Blower Door tests. Home Building community agreed to allow a small increase in the fees in order to cover that cost only for that period of time then it will go away. And we think it's going to come in and show that we are meeting the five air changes per hour. That is one of the changes that both Overland Park and Kansas City made the twelve code calls for three air changes per hour or less and we changed it to five air changes or less, thinking that three were too tight. I believe very strongly that we are going to see it pass and the way it is set up in Kansas City, MO the Director of Codes Administration Greg Franscic has the authority that after he's seen the results he will decide whether they are going to require for every house or whether they are just going to after January '14 just periodically do a sample or not do any and go with it. So that is the story on what happening with that. Overland Park kind of did the same thing but they did not put it in any formal language they're trying to figure out what they are doing. Jerry Anderson and Tim Ryan still have not come up with a program to try and do something on it but I imagine they will look at what happens in Kansas City, MO and follow the same light.

**Mark Manville:** And it is kind of mentioned in there that they are in the process. They did formalize though at five air changes vs. three just like Kansas City did.

**George Schluter:** Correct both cities did.

**Mark Manville:** Now George and I two or three weeks ago took a tour of a house, there were three houses, same model same builder. The finished house had a blower door test done on it and it passed. Then the middle house they were doing a blower door test on it that day, it was not finished but they were doing a blower door test to show us what they do and to discuss it. And the third house was one they had framed and insulated, they had not insulated, well they had rough I mean they had done a little bit.

**George Schluter:** They had done some ceiling.

**Mark Manville:** Yeah but not much and I walked through that house and I compared it to what I am use to seeing up here and if that house passes I feel pretty comfortable, given the practices we are doing here in Clay County and in St. Joe for that matter, that our houses will pass. Because I did not see anything really outstanding about that house anything extraordinary that they had done. It was pretty much a standard house.

**George Schluter:** Yeah it will be finished with double skin construction and that is about the only thing. No USB input, it is an entry level, it a couple entry level houses in the Kansas City, MO Platte County, Tom Woods built them. And entry level houses in the 180 to 200,000 price range. So you can't do a whole lot on them. The one house that Mark referenced that we saw that was pretty much finished but hadn't really been tuned, that they did a blower door test on that passed there were still things in it for example they did not have the hot water heater set. So here is a 3 inch open suction right in so in that since the blower door was not a valid test. I told the guy you ought to cap that then see what it does on the thing. But they did not do it.

**Mark Manville:** The wastes in vent system on the plumbing were standing open. So there were a lot of holes in that.

**George Schluter:** The water was not on in the house so the p traps had not been filled.

**Mark Manville:** You were getting sick sucking sewer gas in that house.

**George Schluter:** And it still passed under the blower door test. So I think it shows that the building community has been responsive to what we are trying to do in terms of

reducing air changes. Our big concern in the industry is, don't make the house too tight because we don't know all of the problems are, we don't have enough experience with it. The Feds basically they United States Department of Energy came in a forced the 2012 Energy Code on building officials. I mean basically, I was at the hearing, they basically said if you don't adopted this we are going to go do it through Federal Register some way and force you to do it. So the building officials did it. And it was a special interest group who strictly in my mind trying to force their own agenda through without a hold lot of good thought on the thing. And as a result we are seeing across the country radically changes to the '12 code especially in the energy area just like we saw after the '09 code when a special interest group the Fire Sprinkler Collation put the fire sprinkler code in the requirements and not 37 states across the country have passed law that says you cannot require fire sprinklers in single family houses. Only two states currently require the state of Maryland and state of California, but that is a situation you are dealing with, that is the reason you are going to hear a lot of stuff about the need to amend and change and modify what is in these national codes. I mean one nightmare that is on the screen up there, and it doesn't affect me as a home builder but this thing on system conditioning that is in the building code for commercial buildings literally this would require a two year up to a two year period of time to analyze the structure as to whether it was meeting it and doing these things, somebody passed it without any thought and to how they were going to do it. Tim Ryan set up, hey I got to give that builder his certificate of occupancy because the permanent financing for that commercial structure is tied to having certificate occupancy once I give it to them then how do I go back and take it away from them?

**Mark Manville:** Right and that unfortunately, Tim and I have had the conversation; I have not been to a code change hearing for ten years. Prior to that I was on about 12 different committees at National level and I went to a lot of them and I sat on the panels and listened to these changes, the thing that is becoming apparent to me is a lot of these changes are being driven by manufactures and suppliers and not necessarily (builders).

**George Schluter:** Special interest groups.

**Jim Carlson:** Like Simpson.

**George Schluter:** Yeah that is a very good example Jim. And you got one of them in the 12 code I will talk to you about it if you want to hear about it.

**Mark Manville:** So we as an industry, and when I say we I am talking collectively, and I think the Building Department is part of the construction industry. I don't think it is an us versus them kind of environment I don't think it should be. That we need to work together to use the code book to educate people on how to build a house and/or building and work together on this. You know the other thing I keep telling Matt this, Matt has not been involved in this as long, though when I first got involved with the building industry back in the '80's we had one book and it was about this big and that thick and that covered everything, except for the National Electric Code and NFPA and now look at what we have.

**George Schluter:** That is the residential code not the building code

**Mark Manville:** Right, and some of it, Tim Ryan and I had this conversation this morning, you will see it is reflected in some of these changes where they are saying we have to insure that they are using particular light bulbs. Well we are not, I don't think we are going to buy into that that is a maintenance issue and is not a permanent part of the building. So we'll, hopefully this is going to be a good exercise for all of us. And I wish I could say it would be nice to make everything simpler. I don't know if we will ever see those days again.

**George Schluter:** The Kansas City Home Builders Association wants to see good reasonable codes for life safety past and enforced and done. As a builder who I believe builds above code I want a least my competitors to have to build a good sound reasonable house. If I want to do something more and beyond and my customer wants to pay for it fine, but it shouldn't be dictated to everybody. One of the things I think all of us need to keep in mind is that one of the best things we could have in this United States is home ownership and if drive the price of new housing such that people can't afford new housing and we force them to live in apartments or some other means they are not building any equity they are not being part of the American system, we really need to do that and so while I want to see good fair codes I don't want us to go off the deep end, I will pick on California, I wish the earthquake would happen and drop them off. They are so far, it is ridiculous. I have a builder friend in my networking group and when I look at the cost that they go through versus what we do, it is unbelievable. They are double with even turning around before you start talking about options. I am sorry I digress. The Kansas City HBA participated in both the Overland Park and Kansas City, MO hearings there were some things. The City of Overland Park developed a committee of which there were some home builders on it, I was not on it but I got to attend some of the meetings and make some presentations, I was on the Kansas City, MO committee and there is some, I think we have reach some reasonable things in what were adopted in Overland Park and Kansas City. There are a few that I disagree with and I think there are going to be some problems. When you get into nuts and bolts I will be glad to mention some of those because I think there are something's that could lead to some other problems down the road for people in houses and I don't know how far you want to go. A lot of them have to do with energy I will be real honest there is not to much that don't deal with energy that I see as problem but there are a few.

**Mark Manville:** I think we also Chris and George, well all of us in this room I am sure have said, the housing recovery is still fairly fragile.

**Jim Carlson:** That is an understatement.

**Mark Manville:** And so in the energy code has been something that has been bothering me for some time. Because I don't want, if we believe that we need to do something to make the houses more energy efficient beyond what we have been doing in the past two years, I don't believe that we could adopted the code provisions as they are written. I think it is going to drive the cost of the homes up and some of them, quite honestly, I don't even think you could build a house and include some of the things they are asking for. Like the thirteen and the five you know the requirements on the exterior walls and those things. So we need to look at that and Overland Park and Kansas City both really kind of water it down and took it back to what 2006 or 2009 level, I think, on the insulation. If we want to do something different I had had talked to a couple of different people if we believe we need to do more then maybe we could get a utility company involved and have them do some kind of analogist and say if you do this and this you will have enough energy savings to recoup that cost in five years. The homeowner will be able to recoup that additional expense in five years. Is that reasonable? I don't know. I am just saying if we want to go down that road there is probable other options available to us.

**Bob Pence:** A lot of our homes in Clay County are powered by the Platte-Clay. There for a long time they started the blower door testing so everybody trying to raise hell about it so they quit, but I think they are willing to participate in a lot of things.

**Mark Manville:** I have not met any of those people yet. So I might what to visit with them.

**Bob Pence:** They were doing free blower door testing.

**Mark Manville:** Okay well good. Well let me I just got a kind of real brief break down of the things that I have thought about that we might want to discuss. On most of them are already in these changes that I gave to you. The one of the things I want to talk about, well I will just go down through the list, and we will talk about them. One of our past local amendments has been smoke detectors in the garages and in the mechanical rooms. Do any other communities in the Kansas City area ask for those?

**George Schulter:** Not that I am aware of.

**Jim Carlson:** Charles felt like that in being in such a rural fire service we need to have protection out there because that where cinder block fires are and he just wanted it in, so we put it in.

**Mark Manville:** Okay, well that is something we might consider down the road. One is the exhaust fans in the bathrooms, a lot of the subcontractors are just running the duct up into the attic and not taking it to the outside.

**George Schulter?:** I have seen a lot of problems from the outside.

**Mark Manville:** Okay,

**George Schulter?:** The cold air returning back in and all of a sudden we have a two and a half spot around the ceiling situation from the cool dropping into there and obviously you are going to have heat lost up through that ceiling and then all of a sudden cold/heat anything over a 25 degree differential is going to make moisture.

**Mark Manville:** Well one of the things that I have done in the past and we could certainly look at is if you take the duct up and then have a positive slop to the outside when that water condenses it will run that way instead of back into the house. Some of the subs have said we could take it up to the roof, well I don't think that is appropriate to have another hole in the roof and I am not sure those little bath fans are strong enough to push.

**Bob Pence:** 50 CFM will not make that elevation. It won't.

**Mark Manville:** But the code does require that they terminate to the outside, so that is one of the things we need to address.

**Jim Carlson:** We have drop a lot of them into the soffit vent. This is what has been done for a number of years is take it from the bath fan over to a soffit vent and put it over it and it does the job. Some builders still take it up to where there is a roof vent high on the thing and I think either one but I don't want to cut one more penetration into a roof to potentially lead to another leak.

**Mark Manville:** Oh I agree with you. And if it is 12 feet above that fan it is not going to push, that little fan is not going to push it up that high.

**George Schulter:** No you are going to have to put in a better fan.

**Mark Manville:** Then the moisture will run straight back down into the ceiling. The other one is energy efficiency chapter 11 talk about the, there is language in the new code that requires sheetrock on the bottom of floor joist that are smaller than 2x10's that has been dealt with in these documents.

**Jim Carlson:** Do you have that list that you're looking at.

**Mark Manville:** No these are just my own notes. But we are going to go through them.

**George Schulter:** Overland Park exempted, the requirement in the IRC is that if you use other than 2x10 lumber for your floor joist if you have to have a fire protection i.e. ½

inch sheetrock to the bottom of it. But it says no matter what you use, if you use 2x8's you still got to do it.

**Mark Manville:** Yeah it says anything smaller than 2x10 has to have it.

**George Schulter:** Overland Park allowed I joist because we brought it in and showed them test results that showed that the burn rate through I joist is very close to 2x10's. Kansas City, MO through the whole thing out because the IBC does not require this requirement and you could build a house under the IBC so Greg Francine said we are not going to deal with it and he through the whole thing out. So you can build with, in Kansas City, MO you can build with I joist open web joist or lumber and not have to do it. Overland Park if you use an open web joist you have to put ½ inch rock on it. It does not have to be taped and sealed but you have to wrap all your pipes and duct work and everything else.

**Mark Manville:** And if you soffit down it causes a whole bunch of different problems that you don't think about. Here is one of those things where one things leads to the next. You know. And then Chris has the only in Clay County that meets this provision a self-closing door between the house and the garage that is part of the 2012 code. Chris has one of them. Then the requirements for carbon monoxide detectors, the whole house.

**Jim Carlson:** How many carbon monoxide?

**Mark Manville:** Well that is not really discussed.

**George Schulter:** That is the problem. And what type? Plug in or what?

**Mark Manville:** And if you know it is an all-electric house?

**George Schulter:** No it exempts all electric.

**Mark Manville:** Okay it does.

**George Schulter:** It does, yeah.

**Mark Manville:** I did not see that. So if we have an all-electric house.

**George Schulter:** What it says is you will locate carbon monoxide detectors near the bedrooms. That is was the code actually says. Now that is the most worthless code language that I ever seen, either you specify where it goes and tell me I want it 12 inches from the ceiling or 12 inches out from the corner or four feet off the floor or where it is going to be. Don't just tell me that I can put it anywhere I want to in the vicinity of a bedroom.

**Jim Carlson:** So it doesn't even say each bedroom it just says...

**George Schulter:** It says in the vicinity of the bedroom.

**Jim Carlson:** That is pretty vague.

**Bob Pence:** There is a lot that do that like propane you wouldn't want it high you would want it low.

**George Schulter:** Carbon Monoxide mixes with air and you really cannot tell if you test a house it doesn't drop like propane does it doesn't rise like smoke does or natural gas combustion so locating it half way between, at the ceiling, at the floor nobody knows for sure.

**Mark Manville:** I think it is more of a you know it is missing like an atom or something. Carbon Monoxide is missing like an atom and so combines with another gas where it can pick up that other atom I believe.

**George Schulter:** If you are going to put Carbon Monoxide Detectors in, in my opinion and I have one in my own house its located half way between where my water heater is and my furnace is. Because I have a natural gas systems, but the way it is written in the code it's crazy. Now a lot of this is going to get solved because in May of 2013 we will be required to put in 90% plus furnaces in all houses, thanks to the Department of

Energy. You won't have a chose for 80% naturally aspirated furnace, so your flue for your furnace is going to be...

**Bob Pence:** Is it retrofit also?

**George Schulter:** They are going to do away with them. You will not be able to buy and install them after May 1, 2013. So I don't know what a Carbon Monoxide Detector is going to do other than to check maybe for the hot water heater.

**Bob Pence:** Then the industry (*inaudible*) did away with the R22 they figured out a way to continue making a vehicle that can be a R22 because they put nitrogen in. That is why I am asking you if they cannot manufacture or they just cannot be installed.

**George Schulter:** They cannot manufacture or install them. Trane has already said that starting in January or February they're going to cut the production of naturally aspirated furnaces on a gradual scale so they will not have any, so they will not have to junk them.

**Bob Pence:** If they had a hundred of them they can put them in.

**George Schulter:** No you will not be able to install them or manufacture them after May 1.

**Bob Pence:** May 1 of ?

**George Schulter:** 2013. That is next May.

**Mark Manville:** Another thing I have on my list is whole house mechanical ventilation, which George briefly touched on. Drafts documents, floor trusses we kind of touched on that also. Window fall protection and that is one of those things where the bedroom window is on the second floor and we tell the occupants, we tell the builder that we need to have 5.7 square feet when that's clear opening, when we say people are falling out of those windows and if they are far off the ground they get hurt so now we have to address that. So I think we got away with the deal with that.

**George Schulter:** Can I comment on that, I sat in on the Overland Park hearing when this came up Brian Danner who is the Fire Chief for Overland Park and the Fire Marshall was also there and they said we train our kids to know what to do in a fire and how to get out of the house I will train my kid how to bypass your 4 inch limiting device when you have a window that is above the 72 inches off grade outside. I will teach them how they can bypass that thing and I probable will bypass it anyway on the window so they could get out if there was a fire. So what are we trying to protect? The kid from climbing over there and opening the window and falling to the ground or the kid burning up in the house because he cannot open the window far enough to get out. It is another crazy thing.

**Mark Manville:** Unfortunately we are seeing more and more of that because these changes are not being driven by us.

**George Schulter:** They are being driven by special interest groups.

**Mark Manville:** So we can visit about that. The one thing that really surprised me that I thought there would be a lot of push back on, but there isn't is on the changes to the brace wall systems. But neither Overland Park nor Kansas City really debated that, they adopted them as written.

**George Schulter:** The provision in the 12 code is so much better than what was in the '06 or '09. The '09 was a complete mess as far as residential wall bracing. In this part of the country we don't really have a big problem as far as wall bracing but it is probable something to do that would help you if your house is a block from when a tornado goes through may help stiffen some if a tornado comes over it forget it. No matter what we brace it with is going to do it. But the '12 wall bracing requirements they have some

additional requirements in it we felt like it was better than what was in '06 or what was in the terrible stuff in '09.

**Mark Manville:** Okay well good. And then we will need to look at making some modifications to the chapters in the residential code deal with electrical insulations and make some changes so that they kind of correlate with the National Electric Code and some provisions in there. But Kansas City and Overland Park only had about five total changes to the electrical provisions and they dealt with arc fault and basically the long and the short of it is the new addition of the code says if it is not on a GFI then it is on an Arc fault. That is it.

**George Schulter:** Right in Kansas City. Everything that isn't GFI is Arc fault.

**Mark Manville:** Or anything that is not on a dedicated, like a refrigerator.

**George Schulter:** No it does not say that, it says anything.

**Mark Manville:** Okay that might be something that we will look at maybe put refrigerators on

**Bob Pence:** Those two items can't run on an arc fault or a GFI.

**George Schulter:** I don't disagree, but Kansas City, MO and Overland Park both took this out of the code and left it as it was in the '06 or bedroom receptacles only and then Kansas City, MO and Overland Park did away with the tamper resistant plugs that were required in the '12 code. They also added outlets that were not covered in the code that could be installed without GFCI's to include smoke detectors, garage door operators, sump pumps and a dedicated circuit for refrigerator or freezer located in the basement or the garage.

**Bob Pence:** The National Electrical Code said that those items can't, a motor driven appliance can't be on an Arc fault or a GFI that's in the national code.

**George Schulter:** Unfortunately the residential part says it will be Bob under the '12. I don't think it makes sense but that is what is in there.

**Mark Manville:** So those are, that's kind of a highlight of some of the thing I think we will be discussing and we can kind of go through now what we have from Overland Park and Kansas City and like I say today I am not anticipating that we make a lot of decisions. Just kind of prepare us, we have another meeting coming up next week and then we have a meeting in two weeks. So this will give us an opportunity between now and then to kind of digest all of this stuff and be thinking about the impact it could have on us as an industry and we can discuss it further next week and then maybe you can give me some guidance on where you want to be for the last of the meetings in two weeks. Now we are required to have three public meetings. I don't know if we are necessarily limited to that. You know if we are not comfortable making our recommendation at the end of that third meeting I don't think we are compelled to do anything different we can have more. And I would be more than happy and all of you everybody, nobody here is going to be afraid to speak up, if it has an impact on you.

**Jim Carlson:** What I would like to do is have George review it and tell us what he thinks and we will agree.

**Mark Manville:** Well George has seen it twice already.

**George Schulter:** And so has Chris. I will not be able to be here next week because five cities in Johnson County plus the unincorporated section of Johnson County are having one on the 8<sup>th</sup> but they are having it in the morning so maybe I could make it.

**Mark Manville:** Well I will give you my card before I leave to you could e-mail me.

**George Schulter:** I will be glad to go through it; I don't want to talk to the IBC code. I don't build under it so I don't know, I think the things that Overland Park and Kansas

City did that is the first page that you are looking at what they did makes sense. I like to talk about and I would be glad to go through them just as soon as Mark.

**Mark Manville:** Well let's just kind of go through them in order, if you don't mind. And I am not saying, and I would be more than happy to discuss any of this, I am not saying we have to do any of this. That we have to go with any of these changes we can do different things. This is just information that is available to us as a starting point. I am also on a committee of the Metro, I don't even know what the name of it really is, but it is a bunch of Building Officials that are getting together to make sure that the Metropolitan area is using the 2012 code and that, not that the changes are going to be identical but maybe they are similar. So if you go from here to Olatha, and I don't know like for example one of the things you will see in these changes is that Overland Park and Kansas City both deleted provisions in there for alternate energy. But out here in the country we may want alternate forms of energy we may want a windmill we may want solar arrays on our house. You know those decisions are probable driven more by zoning and density than by geography, so we may not buy into that notion but those are two of the changes they made.

**George Schulter:** That had to do with the commercial or the IBC code, Mark and what it was after you had done step one and step two then you had to do step three in a commercial building and one of the several things you could do was to supply and alternate means of energy. So that is the reason they took it out they did not make it mandatory they took it out as far as mandatory obviously if a builder or a commercial owner wanted to do that they could do that whether it is solar power or windmill or whatever but this was actually in the codes requirement that after you met all the insulation requirements all the ventilation requirements that were called for in the building code then step three was you had to adopted one of several things and one of them was alternate energy. It was strictly on the commercial side.

**Mark Manville:** Okay that is going to be good to have George and Chris around because I haven't been involved in these kinds of discussions in the past ten years. And so I have to make up a lot of ground too. Well the first one probable does not have a whole lot to do with us. We will adopt the International Building Code but we don't so a lot of commercial work around here and what Matt tells me is that about the time that we do have a commercial project come up then the city annexes that area and they get it. So the chances are we won't do a lot of commercial stuff. But this one relates to a manual fire alarm system in educational use groups and it says that at the point that they are activated if they are also, let's see what does it say, communications for all group E occupancies having an occupant load greater than 30. And then they deleted custodial care and daycare. Now custodial care is a term that must be unique to Overland Park, KS because it's not a term we use in the building code. It is not defined and it is not used, I mean I think we understand what the implication is, but that must be unique to them. And then daycare it can be an adult daycare or it could be for children. But in any event they deleted that provision. Now here is one where it talks about the window stills and needing the guards and this is one of those conflicts that we talked about earlier, and it says that one of the things that they are doing is that they are raising the bottom of the still from 24 inches to 36 inches so that you don't have to have the guard. Now if you chose to go along with along with that change and then we also need to change in the International Residential Code so their languages are compatible.

**George Schulter:** I am sure Jim will recognize this but maybe the other people won't, eight foot plate line come down 12 inches for a header come up 36 inches now I got to

get a 5.7 square foot window in it? It don't work unless you are going to put a glider window in, which is the most energy inefficient window you could asked for. It is flawed gentlemen, I am sorry.

**Mark Manville:** Yeah both Kansas City and Overland Park adopted this.

**George Schulter:** But it is only in the IBC not the in the IRC they left the 24 inch in IRC.

**Mark Manville:** Okay good.

**George Schulter:** In my opinion this is a flawed area. I don't build apartments or townhouses, well I build townhouses, I don't build a high rise apartments and condos so I didn't get into it but it is a flawed thing it shouldn't have been, in my opinion, left in.

**Mark Manville:** Okay good. And we have the energy code and this is the one it says completed buildings shall be tested and the air leakage rate of building envelope not to exceed .4 cubic feet per minute per square foot. Both cities adopted this change but Kansas City, MO made it optional or not required.

**Jim Pence:** What does a test cost?

**Mark Manville:** You know I don't know, I have heard \$500.

**George Schulter:** For a house but it will not work for, picture a ten story building and it has got individual living units in it or individual offices and you are going to test every one of them. It's an unfinished shell and you have only finished the first floor and you have not finished the top eight how can you test it? I am sorry I am not a commercial builder but it don't make sense.

**Mark Manville:** Additional Efficiency Package Options this section supplements previously stated requirements. The designer has the option of choosing to enhance energy efficiency through one of three areas; HVAC, lighting or on-site supply of renewable energy.

**George Schulter:** That is what I was talking about earlier.

**Mark Manville:** Yeah, right and both of them deleted that code change. Now the building commissioning or the system commissioning that George was talking about and Tim Ryan and I talked about this this morning there is that provision and there is also the provision of the, oh what do you call it, where you are putting the system on line for the first time, I think I got it here back here in my notes. But anyway we won't see that probable but that is the one once the certificate of occupancy is issued we really have no bases to go back in a year or two years to find out how the system is working.

**Jim Carlson:** Except to condemn it.

**Mark Manville:** Yeah well that is right and think that Tim Ryan made a comment like that at a public hearing what do you want me to do once the people have moved in and they started making mortgage payments and you want me to walk in there two years later and say oh it is not performing properly. The fenestration that is basically windows, now George you will have to help me with this one because it says maximum area of vertical fenestration is reduced to 30% but can be increased to 40% under certain conditions. And then in their amendments they say both cities amended to change language from 30% to 40%. So they just reiterated what it was already saying.

**George Schulter:** No, now I am not a commercial builder so I may get this wrong, but as I understood it there are certain classifications in the International Building Code for different types of buildings and certain ones only allow you to have 30% fenestration and others allow you to have 40% this amendment by Overland Park and Kansas City allowed all building in the commercial thing to have up to 40% glass area.

**Mark Manville:** Okay. Now in the last one it deals with really the commercial side deals with changes to the table basically taking you back to the 2009 requirements and for wood frame wall for example they're specifying R13 for insulation. Now the next page really begins the discussion of the changes to their residential code and the first one basically it says that if you are put a strap on either side of a plate when you cut through it they want you to use eight, ten penny nails on each side and the building guys are saying that is too many nails to try to get into that space and we want to reduce it to four. And that seems logical to me but again these are out there for your consideration today not going to make any changes. The next one deals with the fire protection of the floors.

**George Schulter:** You skipped the foundation range.

**Mark Manville:** Oh I am sorry I skipped over that one; okay what they are asking there is as an alternative to using a filtered membrane as to use additional crushed rock.

**George Schulter:** The 2012 IRC requires that a filter membrane be used either on the drain tile (i.e. a sock) or covering the gravel you put in. There are two manufactures of water proofing systems who in this part of the country because of our clay soil will not warrant their water proofing system if you use a filter membrane on it and so Overland Park and Kansas City said we will just increase the gravel my personal opinion is you should just strike this whole new section out of the code.

**Chris Ragland:** And wasn't the gravel 12 inches?

**George Schulter:** It increased it an additional 12 inches. So what you may in up doing is you're going to have 18 inches of gravel on top of your filter thing. That is what Kansas City, MO and Overland Park did in my opinion you should strike the whole thing about the filter membrane and continue to require the gravel.

**Jim Carlson:** Gravel has always worked.

**Mark Manville:** As you said as a normal practice in Clay County that we use an unsocked drain tile and gravel? Has anyone put a sock on?

**George Schulter:** I do. I put it on for years, but that's just my idiosyncrasy and the fact that I want to spend additional money.

**Mark Manville:** It is optional you can go either way. In Buchanan County but we don't have the clay problem up there that we have down here.

**Chris Ragland:** We have never had any issues, have you ever had any issues?

**Bob Pence:** No ever since Kansas City has required the gravel I have never had a single basement call back.

**Mark Manville:** And you don't use the sock on your rain tower?

**Bob Pence:** No would have to think why but there are several reasons why the sock has never been as effective. I think it actually fills.

**Mark Manville:** In my understanding...

**George Schulter:** That is the reason the water proof manufactures said they don't want it because it can block the water flow and that can lead to pressures on their water proofing systems. Of course most of us use hot tarp on the poured wall and that all you need is damp proofing.

**Mark Manville:** I thought that the, one of the reason for the gravel was so it kind of collected and filtered out those fine partials before it got to drain tile.

**George Schulter:** That is exactly right.

**Mark Manville:** So it is maybe one of those systems where we have a redundant system and now someone is crying foul about it.

**Jim Carlson:** It lets the water move better, I know.

**Mark Manville:** Right.

**George Schulter:** Mark if you really want to take this on you can go out and strangle Jim Jorgenson for me. Jim Jorgenson is the one who put this in without bothering to check with the manufactures. Jim Jorgenson is a former Co-Administrator for Lenexa and now he works for Shawnee.

**Mark Manville:** Oh he does?

**George Schulter:** I told Jim that he is crazy he does not know what he is dealing because he did not deal with the practical. He was trying to solve some other problems but he made it too involved. I spoke very much against this at the National hearing on it but it didn't do any good.

**Mark Manville:** So you think if we delete that and just leave the code language as is.

**George Schulter:** What you have is calls for the gravel over...

**Mark Manville:** Okay.

**Chris Ragland:** The City of Liberty do they? I always put it in, do they even require drain tile or gravel? I don't think they do in the City of Liberty. I always put it in.

**Jim Carlson:** Do you build in Liberty right now?

**Chris Ragland:** No.

**Jim Carlson:** I am pulling building permits today I think I am the only one who is building in Liberty.

**George Schulter:** I know Doby says he has not done much in a long time. He was going to be here except he had a continuing Ed class going on.

**Jim Carlson:** First house in Liberty in for a while they did not even know what the permit was going to cost. They were going to try and make deals.

**Mark Manville:** Well the next one we touched on earlier is for the ½ inch drywall on the underside of joists unless they are 2x10 or larger. And that brings up a whole liny of issues in my mind. Overland Park amended to read if you use open web floor joists you have to do it. Kansas City deleted the entire provision. I can see it would be a framing nightmare if you have to go out there because you have to sheetrock and then go back and do your fernouns and well I guess you would not have to.

**George Schulter:** The mechanical contractor installing equipment.

**Mark Manville:** Right. And I don't think there is anything that really supports it. I guess that is the bottom line here. Are we really seeing this as a problem it is like the fire suppression systems? The national fire history and local fire history does not support the requirements for sprinkling single family houses. We build a safe house and we have...

**George Schulter:** There has been so much improvement especially in the electrical and the mechanical areas and the fire blocking we do and have been doing for 15 – 20 years that we don't see those kind of problems happening that you see in older structures. I don't disagree in some of the older structures some of these things are good they have gotten too carried away with.

**Mark Manville:** But, you know, this the code provision for sprinkling new houses isn't going to get at that 100 year old inventory that we have so it is not addressing the true problem. And that is like this you know it takes a long time for a 2x10 to burn through and I don't know that we are having a lot of fires in basements. Is it really much of an issue so something we should look at and as we go down through this if you guys figure out you want to put an issue to rest and you say just delete it then that is what we will do.

**Jim Carlson:** Delete it.

**Louie Freeman:** Delete it.

**Bob Pence:** Delete it.

**Bob Pence:** It is a huge cost too. Then it will be tore off on to people remodeling.

**Mark Manville:** Right. The next code session deals with Flashing and oh yeah the Self Closing Door. Now they have been requiring those in St. Joe since 2006 I thought it was part of the code but it was a local amendment that they made and I made Chris do it on one of the first houses I did file down here. And then after I started researching it I found out it really wasn't a code, but a local amendment. And basically what that is it's a standard door that we all use but you can buy them with spring loaded hinges on them and set them with an allen wrench.

**George Schulter:** It is not an expensive item. I built quite a bit in Platte County and Platte County has required it since the '06 code and every homeowner I have when we go through our walk troughs, "why can't I keep this door open?" And I tell them it is required by the code and I say I can't change it but the hinges we took off are in the kitchen drawer and I will tell you every house I have gone back to later on they have been removed. The reason is people are walking in with a little kid in their arm groceries in their arm and it is a head ache. Now I understand the theory behind having a garage door closer on it we want to stop potential carbon monoxide if you start your car in the garage and you don't open the door from getting into the house. But at some point people have got to use common sense and agree this is a small item it probable costs the builder less than \$50 total because the way I order out the regular one then I have the millwork guy send them out with the hardware and my trim carpenter changes them out when he hardwares the house. It is a small item but from a logical practical stand point it does not make sense to me to tell people they cannot be able to have their door open when they are bring in their kid, their groceries and from the garage to the house you are allowed to have two rises, three rises actually without a handrail so if the door is trying to close and you are trying to carry. I think ... but it is a small item and it is not one I am going to make a big issue out of with you all we did bring it up at both Kansas City, MO and Overland Park and there was a dived vote by both groups on it but both groups said to leave it in so that is what they did. I will let you do what you want on it.

Mark Manville: There again I'm not aware of problems or there is any documents of problems associated with not having the spring loaded hinges. Any commends?

**Jim Carlson:** I recommend to delete.

**Louie Freeman:** I second that delete.

**Bob Pence:** I agree.

**Mark Manville:** Okay. Now the next one deals with Flashing specifically as it relates to the sill pans under the doors and windows. Now I have not had problems with windows or doors leaking.

**George Schulter:** We want a clarification, let's start with Overland Park, we want a clarification of what they were calling a sill pan when we are doing a window? He has the tie back system which you wrap and turn down does that satisfy a still pan? If you read the technical definition of a still pan it doesn't that is a still flashing. So we want it understood and clear and Overland Park said we have no problem with you doing it that way and we recognize on some sliding glass doors because they are only a three and a quarter inch door frame you can't put a four and a half inch still pan on it so we will accept whatever you do on the thing and not have a problem. That is where the whole discussion came up. We don't have a problem; we want to have the proper flashing to get water away from the window still or the door still out of the house. It was just that the terms still pan when you look at the definitions it talks about a ridged material that is used for flashing on it.

**Mark Manville:** That is what I thought there where ...

**George Schulter:** That's what we tried to clarify, make clarified they have any problems with the tie back system or if you modify something. So there really is no change.

**Mark Manville:** Alright, I thought that is what they were saying we had to buy something.

**Jim Carlson:** The still pan is what you buy.

**George Schulter:** It is the definition of the still pan is what we got into. You can look at the thing as long as how you feel you interpret is fine. I don't think it is a big issue.

**Mark Manville:** Okay I am going to put a note here to kind of clarify. I am going to read that code section and kind of clarify in my own mind what it is saying and then we will look at the language next time.

**George Schulter:** And Mark several cities have done this several jurisdictions have written the thing, here is what we mean by this or here's how we're interpreting this which helps the builder when they come in to know this is what is required in this jurisdiction to do on the thing.

**Mark Manville:** We have a (*inaudible*)

**George Schulter:** I know I am just saying it's a good thing to help the people understand what they are doing with it.

**Jim Carlson:** I wish could recommend it here because I only had problems on house that have doors facing West. Because we get most our wind and the still pan up and we don't have the warped wood floors. But if you have a covered entry that let's say the door is six foot back under an enclosed entry why do you need a still pan. To require it in all doors is not really right.

**Mark Manville:** Well I will read through that and we will take that up next time. The next section is on the Energy Code and basically the first one, two, three there is probable six like the first six code passages basically deal with deleting chapter one of the International Residential Code which is the Administration and using the provisions in International Building Code. I think that is a fairly standard practice.

**George Schulter:** The International Energy Conservation Code calls for residents plans to have electrical and mechanical and plumbing details like you would see on a commercial building.

**Bob Pence:** Would an architect have to do that?

**George Schulter:** That is what I mean, and so they threw the whole thing out because of that that we recognize you don't need that in single family buildings and that is the reason all these deletions are for. It was just a provision that didn't make sense. And it would become very costly if I have to take my set of house plans not to an architect to a Mechanical Engineer. I am already doing it for the structural but now I got to do it for a Mechanical and Electrical Engineer and a plumbing. Again our great Federal people who really take care of us just trying to get into our pockets some more. The one on the top of the page I want to talk to you about.

**Mark Manville:** The basement walls, yeah good is that the one, now the floor slabs we are going to talk about is that the next one?

**George Schulter:** We need to talk about the basement wall and the floor slab.

**Mark Manville:** That intersection.

**George Schulter:** What we did under the first one you are seeing the frame walls direction on the outside under the 12 code call for R20 which means if you're doing a 2x4 wall you got to put an inch of foam board on the outside and you get structural problems because of wind and everything else. And so both Kansas City, MO and Overland Park went back to the R 13 sidewall requirement and that is what most of the

cities and jurisdictions are indicating to us. I want to talk a little about basement insulation. Up until the 2012 code we've been in most jurisdictions not requiring insulation of the basement wall until such time as a person would finish the interior of the basement the 12 code calls for insulating the basement concrete wall as well as if you have a walk out slab that walk out provision on it in terms of the concrete that is a least two foot below the grade. I don't have a problem with two foot below the grade as long as you all understand and will approve a system that does not compromise the structural integrity when we tie a vertical wall with a keyway in it to the floor resting on it. Under the energy code you are supposed to insulate that to R10 which you can't do without pouring a 10 inch wall and making it unbelievable big pocket to put two inches of foam in. And then you got the problem of your setting your wall on top of it and what are you doing. When you get to the interior, we will call these concrete basement walls in a house, the code requires you to put R10 insulation on it. If you adopted which Kansas City, MO and Overland Park have done, what the builder will do is the least expensive route is to hang a vinyl blanket that has R10 insulation from the mud still that will hang down over the wall at the bottom. He may or may not tact that to the concrete wall. Now stop and think about what happens to condensation in a basement when you don't have air circulating and you don't have air circulating behind this blanket and what is going to happen in the degradation that is going to take place and the mold and gross you're going to have. Now I am strong, I am a personal strong proponent in insulating that basement wall I will not do it on the outside because of the termites we have in this part of the country, I do it on the inside. When I'm building upper bracket homes and I can afford to do some other things there are two other ways to do it but they are very expensive. One is to frame it and insulate it and then cover it with a water vapor barrier so that water cannot get to it. The insule safe 3 optimums system or putting six mil plastic on it or something like that. Or buying a product called Thermax which is the only one that doesn't have a flame spread that you could use on a basement wall. But those are very expensive propositions and I think you all, I am not telling you to do it or not doing it, but you need to think about what is going to happen if every basement, full in ground basement, got these blankets hanging around it in a couple of three years. I'm scared, if it were my house I would be concerned with my homeowner and what kind of air quality he is going to have in that house, when I have already reduced the air changes to 5 air changes or less.

**Mark Manville:** So this is saying in otherwise on unfinished basement. Well the one thing that has always bothered me about this provision is we know that heat moves from areas of high concentration to a low concentration and if the ground is 50 degrees and the basement is 60 degrees how much heat lost do we really have across that wall? So this has never been proven to me to be that critical of an issue, maybe I am looking at it wrong. But that has always been my take on it and this would be, this would apply to an otherwise unfinished basement.

**Jim Carlson:** To me it is similar to putting the drywall on the ceilings it is going to create the same amount of work, you would pretty much have to finish your basement to do it right.

**Mark Manville:** Yeah and it really kind of fouls up the homeowner down the road when they want to finish the basement, they are going to have to tear a lot of it out. And where do we stop if we start framing it then does the electrical inspector come in and good well you need to have and outlet every 12 feet. I mean at point?

**Jim Carlson:** So we are we going to delete this as well?

**Mark Manville:** Yeah someone make a motion, someone throw it out there.

**Jim Pence:** I move we delete it.

**Louie Freeman:** I will second it.

**Mark Manville:** Now the provision that George was talking about on the walk out slab, you know where you have that trench footing across the back of the house and the slab comes over to it. If you look at the details that someone provided it shows that this piece of foam comes clear up past the top of the footing. It breaks, it intrudes into that slab area and there are two ways to do it you could run the piece of foam, excuse me George I don't mean to steal your thunder, what George is concerned about and I agree with him too, is if you pour this slab here, we obviously don't want this piece of foam sticking up here. We want to stop it here which is what the code telling us we shouldn't do or the other provision I guess we could use I don't think it says anything why we couldn't run it this way. But what George is concerned about is this region right in here. He is not saying we shouldn't do one or the other just that we have to pay attention to that detail. Is that right?

**George Schulter:** I think that is correct. If you follow what the code says what to do, if we are putting this two inches of insulation we come up and go in here and go up here so not I have foam board in this area and I am going to set my wall on top of it I got foam board underneath there I got potential structural problems for now. If you exempt the requirement at the keyway and put the two inches either horizontally or vertically which the code allows that is probable a good move.

**Mark Manville:** Well now you don't have to even approve that you can delete that section. This is just something that is in the code and if it is going to be an issue of money or of getting the subs broken into doing it.

**Louis Freeman:** We could do optional not required.

**Mark Manville:** Like George says, we build and the day will come when we will have starter home neighborhoods again in Clay County. But right now we don't, we are building higher end homes for the most part and so far what I have seen of the local builders we are meeting or exceeding many of the code requirements. So again it is whatever you guys want to do on the .....

**Jim Carlson:** I will second Louis to make it optional.

**Mark Manville:** To make it optional. Okay this is one on the Building Cavities, using Building Cavities as ducts. Historically we have been using the stud pockets on interior wall anyway for cold air returns. Now one of the seminaries I went to they were saying well people do it on the outside walls. Well not in our location, I have never seen that done.

**Bob Pence:** That doesn't work.

**Mark Manville:** You have a

**George Schulter:** I have had an occasion or two over the last 20 years where I either needed to get a supply or return on an outside wall and I filled it foam insulation and caulked it and sealed it. That doesn't happen very often, but what this does, it does you cannot use any joists bay or any wall stud cavities for return airs. Now it has been thrown out by both Overland Park and Kansas City. Kansas City said we suppose to caulk or seal it up. We will see how well that works or not. But this is another one of the Department of Energy things and I don't disagree theoretically that it would be great if we could do it but you are talking about adding several thousand dollars to the cost of the HVAC contractors going to charge me for running everything in metal pipe or what will happen is that we will go to central return systems which are not as efficient especially

for bedrooms. But that is what is done in a lot of parts of the country and they're poor systems. They're either they are a great big return in the hallway floor or ceiling and it is a central return

**Bob Pence:** Mobil Home Specials.

**George Schulter:** Yeah and it's just not good conditioned air for the..

**Bob Pence:** When you metal line a joists space too all of a sudden your electrician is eliminated. You eliminate your electrician completely your electrician says what the hell is this.

**George Schulter:** That is one I have not thought about Bob. So he drills through it.

**Bob Pence:** There you go he makes his own hole.

**Jim Carlson:** I make a motion to delete.

**Mark Manville:** Okay

**Louie Freeman:** I second that.

**Jim Carlson:** Does anyone object? Okay. Let's accept it.

**Mark Manville:** The next one deals with R3 insulation on mechanical piping. Aren't we already doing some of that? Are you guys insulating your water lines, is that what they are talking about.

**George Schulter:** No they are talking about your refrigerant lines and air conditioner.

**Mark Manville:** The suction and return lines on that, alright.

**George Schulter:** I have talked to...

**Mark Manville:** Are you doing that?

**Bob Pence:** Yeah but it is already R2

**George Schulter:** Its R2 right now the manufacturers are changing they will have R3 supposedly the first of the year. At least that is what I got feedback from two HVAC distributors I talked to CFM and Wholesale said that it would be that because they are doing it across the country nationally, so I don't think this is a big item, I think you can live with it.

**Bob Pence:** It is R2 now.

**George Schulter:** Yeah it is R2 now and they are calling of R3 in by the first of the year they said all manufactures on line sets will have it.

**Mark Manville:** Okay.

**Bob Pence:** Why did they call it hot water pipe for?

**George Schulter:** Well I will talk about that, it is another.

**Mark Manville:** That's on the circulating system. Now this is one that kind of gets me.

**Bob Pence:** Did you want to okay that one since we were there.

**Mark Manville:** Yeah do we want to delete it, do we want to okay it knowing the industry is going to change to a R3.

**Louie Freeman:** Motion that we okay it.

**Bob Pence:** Second

**Jim Carlson:** Anybody disagree?

**George Schulter:** Okay circulating hot water systems, what it says is if you have a circulating hot water system and you have a pump you have to have a switch on it.

**Jim Carlson:** What about gravity?

**George Schulter:** It doesn't speak to gravity. So in my mind if the code doesn't speak to it you can do it and when I put in my hot water circulating systems I always use gravity. I have only had one occasion in 30 plus years that I had to put a pump on it.

**Jim Carlson:** Right and pumps don't work very well anyway.

**George Schulter:** It is up to you if you want to have it or not because most builders and most plumbers can figure out how to do a circulating hot water system without having a pump. If you read the actual language it says the motor has to have a switch to it, so you shut it off. But if you have a gravity working system in my mind you don't have to have it. So I don't know whether you want to delete or understand what it really means. I would suggest you delete it.

**Andy Inzerillo:** I delete because electrical code took care of the switch. If the motor is installed you utilize the shut off.

**Mark Manville:** Well I have one at home mine's on an aqua stat so it kicks on and off I mean it is electric.

**George Schulter:** So it is not a three pipe system it is just a two pipe system/

**Mark Manville:** No it is a three pipe but it has an aqua stat on it that shuts it down then the electrician also put a timer on it so like it shuts it off at night.

**Jim Carlson:** Interesting.

**George Schulter:** No added expense in that.

**Jim Carlson:** I would like to make a motion to delete this

**Mark Manville:** Okay.

**Jim Carlson:** Any objections?

**Andy Inzerillo:** Even if it has a motor in it?

**Jim Carlson:** Yes. What do you think you are the electrician?

**Andy Inzerillo:** Well any kind of motor should have a switch next to it in case, for safety sake. In case the motor is going bad.

**Mark Manville:** So if we say circulating hot water system that employs a pump

**George Schulter:** Should have a switch. What if you actually read the code it says a readily accessible switch, which basically means you are going to put the switch in the master bedroom or you are going to put it in the kitchen rather than beside the motor and I agree with what Andy is saying you should have it by the motor but they want to have it where you can shut it off when you are not using the circulating system.

**Andy Inzerillo:** It says within 50 feet of the motor.

**George Schulter:** That is not how I see it.

**Andy Inzerillo:** Won't the electrical code cover the pump though? Is there any word in here?

**Bob Pence:** What now?

**Andy Inzerillo:** The electrical code cover the switch on the pump?

**Andy Inzerillo:** It should but within sight.

**Mark Manville:** That is for personal safety isn't it?

**Andy Inzerillo:** Right.

**Mark Manville:** And this is more for energy conservation or something or is it not? Well I agree with you if you are going to put a switch on it I think it should be by the pump.

**Andy Inzerillo:** I do to, adjacent to the pump.

**Bob Pence:** For working on the motor.

**Andy Inzerillo:** In case the motor goes bad you can shut it off right there.

**Mark Manville:** Okay, I will put within, what do you think will be a reasonable distance? 50 feet's a long way that is clear across the basement.

**Andy Inzerillo:** Yeah it is and should be in sight.

**George Schulter:** That is what they call sight line. Means the pump and switch have to be in sight of each other without moving.

**Andy Inzerillo:** Usually you put them in an unfinished basement anyway.

**Mark Manville:** I will come up with some language on that.

**George Schulter:** Here is what it says circulating hot water systems; mandatory circulating hot water system shall be provided with an automatic or readily accessible manual switch that can turn off the hot water circulating pump when the system is not in use.

**Mark Manville:** What provision, what section are you in there?

**George Schulter:** That provision

**Mark Manville:** Eleven yeah that is the energy that is related to the energy efficiency and not the personal safety. And see that is the thing why mine is on a timer because at night there is no reason for it to be cycling on and off if you have a manual switch at least at my house we turn it off and would not think about it again until my wife started yelling at me because she didn't have hot water.

**George Schulter:** With the new efficiencies that we are getting out water heaters and the improvement in it we are talking about a small amount of energy savings here we're getting into it is so minor it is unbelievable why they get hung up on. Now if I am on the East Coast and I am paying 20 cents a kilowatt and I have to have electric hot water heater because they don't have natural gas maybe it makes sense but I don't think it makes sense out here in our low cost natural gas which most of our hot water heaters are until you get out where I don't have natural gas available why I usually put in propane in for my furnace and hot water heater.

**Mark Manville:** When I built this house I went with Ameriathon Electric and I don't know why I ever thought I should use electricity to heat water. And that Ameriathon is 85 gallons and it is nice but with the way my wife uses hot water it seems like I can't keep...

**Bob Pence:** That would spin the meter pretty good.

**Mark Manville:** Alright now we are talking about hot water pipes and we will insulate we will knock off here whenever you guy want. I am not proposing that we get through all of this today. So some of you are getting antsy about sitting in here so you let me know when you are ready.

**George Schulter:** There's a formula in the code book but basically it boils down to it says you will insulate all hot water lines that supply bathroom hot water to kitchens or bathrooms and you will supply any hot water line that get over some combination of things. Basically it means you are going to insulate all hot water lines.

**Bob Pence:** Are these the R-3 or the R-2.

**George Schulter:** R-3

**Mark Manville:** It says R-3

**Jim Carlson:** What is your feeling on this?

**George Schulter:** When I put water lines underground I insulate them I think everybody does. My own house I came back and insulated the ones that were in the basement that I could get to just to see what it did for me. I'm not so sure it did that much. I don't have a circulating system in my house. So it did not help me in bathroom or my kitchen I don't know for sure if I gained anything one way or the other. It's going to be more a nuisance than anything else. You think about your water line tacked to the bottom of the floor joist and now we're going to you know it is going perpendicular to the floor joist not parallel now you got to try and get insulation wrap around it.

**Jim Carlson:** Instead of drilling a hole for the ½ inch pipe you are drilling a hole for the insulation.

**George Schulter:** Right.

**Jim Carlson:** What about pex pipe, you know plastic you don't have that much heat lost.

**George Schulter:** You don't have as much lost from pex as you do from copper which most builders today are using pex because of the cost of copper.

**Louie Freeman:** Delete or optional?

**Mark Manville:** You know if we don't discuss it it becomes optional almost automatic.

**Jim Carlson:** Anybody can do it.

**Mark Manville:** There's no reason, this is just the minimum requirements. Anyone can exceed them.

**Louie Freeman:** I think we can make it optional that way we don't seem like we are negative.

**Mark Manville:** Right. We will go through the rest of these kind of quick. Lighting equipment talks about the lamps that you are going to put in your lights. That's a maintenance issue it is not something we are going to deal with at a county level. We will delete that.

**Louie Freeman:** Yeah get it out of there.

**George Schulter:** They're not going to make the bulbs anymore anyway.

**Mark Manville:** Now the next one deals with ducts that are located outside the building envelope and I think probable all of us are already insulating our ducts when they are outside. I have had a couple interesting conversations about that recently. One is that the industry now has decided that insulation shouldn't be inside the ducts it should be outside.

**George Schulter:** I have seen both theories on that.

**Mark Manville:** I don't know which accurate.

**Jim Carlson?:** What has happen to the duct work is the normal factor of the size of the duct work you know two pound or three pound whatever they want they have actually moved it up so it is this thick now and now they have to have such large duct work to house the duct work because you have so dang much insulation inside. That is why a lot of people putting it on the outside instead of the inside.

**George Schulter:** The big problem here is not so much the insulation area it's the requirement for the duct testing if you have duct work located in an unconditioned space. That is where you are going to get into a problem I will tell you right now the houses that Kansas City, MO is testing at the same time they are doing the blower door they are doing duct testing and none of the houses are passing the duct blaster test even when they have the ceiling of the units. But the typical ceiling we have been for the last two or three years. I think we have nightmare on our hands if we adopt this requirement for the duct blaster testing. I think you're basically going to drive every mechanical contractor to raise his prices something unbelievable. I know of two who are doing them now because they are doing Energy Star houses, which 3.0 requires it. And those guys are ready to bail out and never do another house that is under Energy Star because of the nightmare of trying to meet this duct blaster test that they written into this thing.

**Jim Carlson:** Does a little bleed off hurt?

**George Schulter:** Yeah Jim where do you stop with it? If we got an insulated duct that hasn't been crimped and closed right in an attic we are going to lose a lot of cooling through it. There is no question about it. We are going to lose a lot of heating through it in the wintertime. But if it's been insulated and it's done a pretty good job of sealing it.

**Bob Pence:** You're not but you require sealant pin now, you know Clay County requires sealant pin now to screws and the same thing in the attic they're going to require seal up there when do you put the supper tape on the outside that is what I call the foil tape once it is sealed and it will last.

**George Schulter:** Get rid of the test. Get rid of the duct blaster test is what I am telling you.

**Jim Carlson:** Delete the testing.

**George Schulter:** Delete the testing requirement, require the insulation.

**Mark Manville:** Well the other thing I hear about the insulation too and this is more antidotal than anything the people had an insulated duct in the attic and somehow the inside of it got wet and it started growing stuff.

**Jim Carlson:** It will start growing some really neat stuff. And if it gets wet it's a really bad thing.

**George Schulter:** Well you get a water line break on a house and the systems are on it could suck quite a bit of moisture into your return air system or a supply system.

**Jim Carlson:** There is no way to get that out of there is a problem too. You cannot get the cleaner to go in there; they are just going to tear it all out of there.

**Mark Manville:** Programmable Thermostat and it says seven days independent setting.

**George Schulter:** That is a requirement?

**Mark Manville:** That's what, now this is clearly being driven by the industry. Why do we care?

**Bob Pence:** Let's say in a typical situation like, well this isn't typical, but let's say where normal temperature is 86 to 87 degree that is a humid temperature not this thing we deal with. You can't save anything by turning up and down an air-conditional, you can't. All of a sudden the minute you stop dehumidifying and let the moisture reenter your fabric of your chairs and your upholstery you are screwed you are right back where you start again and all a sudden half of the horse power of your air-conditioner is involved in redoing all that taking all the moisture back out. You can't go up and down. Okay with a gas furnace teamed up a pump or something like that you know got situations where maybe that is okay. But in an air-conditioning situation half of a year which is five and half months forget it, it is not going to work. Programmable thermostat is not going to work.

**Mark Manville:** You are just better off to set it at a constant temperature and leave it alone.

**Bob Pence:** Be comfortable and forget it. That is the most important thing because it takes so long to rebuild as soon as you let moisture reenter. And it will reenter.

**George Schulter:** On the cooling side Bob is absolutely right there is no question about that. There is some benefit on the heating side and especially if got two people living in the house and the both work you could have it set where it would drop off at 8 o'clock in the morning and come back on at four in the afternoon. And a programmable thermostat can cost anywhere from 50 to 120 bucks. It is not a real big item; I think that is the reason.

**Louie Freeman:** I think we could make it optional.

**Mark Manville:** I did a custom home for a family they were both in their 70's and they called me in about two weeks and said come get this thing out of here.

**George Schulter:** We have one and it is set in the summertime at a set point and it runs there and in the wintertime we do drop it down.

**Mark Manville:** Okay we can make it optional. When your air-conditioning the biggest thing you are doing is dehumidifying the air anyway. Now the next section deals with fireplaces, I think they are speaking more to masonry fireplaces here or are they talking about manufacture units?

**Bob Pence:** Either.

**Mark Manville:** With tight fitting flue dampers and outside combustion air. I have always been a strong believer in outside combustion air.

**George Schulter:** All of your manufacture ones are made that way now.

**Mark Manville:** We just did a house and this is the wildest thing these people bought a \$4,000 insert to use in their fireplace they got the metal flue going up through the roof and then there is this other duct that comes off the roof over here and ties to the side of it and I said what is that and he said that brings cool air in to keep the duct cool as the hot air is going up and out of it, by convection you know. That was not the combustion air this was a spate thing just to keep that duct washed with cool outside air. I never seen and he said this thing burns hot and this thing is efficient.

**Jim Carlson:** But they all spiral it has to spiral or it is not going to actually leave the flue. I think that would disturb the spiral.

**Bob Pence:** I think it would be hard to keep the furnace off if the fireplace is off too you are pulling more cold air into the house.

**Mark Manville:** Well this had gasketed doors that close and lock in place. I mean this really a nice system. They weren't going to get any air leakage around this. So I don't have any problems with what they are talking about on fireplaces. But you guys tell me. I think again that probable gets back to the performance of the some kind of test, blower door test I would guess for leakage around the flue, the outdoor combustion air.

**Bob Pence:** Well typically than when you would issue a permit it says that requirement for a third party inspection. So you as a county person can go ahead and inspect for the blower door they would have to hire somebody and you would have to approve who they hire.

**Mark Manville:** And that is the other thing that I have not figured out yet is what qualifications does a third party tester have to have? It is like home inspectors in Missouri are regulated. You know I could go out tomorrow and start advertising myself as a home inspector and so ....

**George Schulter:** Here is the dilemma there are a lot of raters out there and basically this is the resonant organization which has come about and they do the testing and they do the rating. But anyone can go through their training program and get qualified so Bob could hire a person to be the rater and he is also going to put in the equipment. That is where I have a problem with this thing. You really truly if you are going to have someone examine and inspect you want somebody completely independent from it. Now if I am a builder and I hire one of you four who have a rating inspection am I going to get a really independent or am I going to say hey Louie this is alright come on let's not get carried away here. You know you want to keep doing the next ten houses I got coming or not.

**Mark Manville:** Or when it fails you can call Louie and say what do you mean I am not, Louie I got your bill here and my house failed. What do you think is going to happen with his bill?

**George Schulter:** I think there is a lot of potential problems here. I think we are doing the industry is going to do a good job and we shown it already just with the houses that we have checked in Kansas City, MO that weren't built to meet this air filtration code.

My suggestion to you all is modify it, delete it, take it out do something. So Mark does not have a nightmare to try and interpret how he is going to deal with it.

**Bob Pence:** Even if you have an employee within the Clay County it would be a terrible thing to keep track of what's going on.

**George Schulter:** Now is Clay-Platte Electric do they have raters who do it. The first one I ever had done was done by Clay-Platte up in Northern Platte County.

**Mark Manville:** I will call them and see. The other thing I was thinking about after seeing the house that we went through a couple of weeks ago I am just convinced the work that we do in Clay County is going to pass. Honestly I was kind of appalled by some of the stuff I saw.

**George Schulter:** I was too. Doby and I went through it and Doby and I concluded we cannot afford build \$200,000 houses because we could not compete the way they framed it the way they did stuff. But hey that builder is fulfilling a need that exists in the community and he is doing an okay job. He is getting it not perfect but it is passing.

**Mark Manville:** But I think there is a conflict between the rater and the builder there regardless. But what I was going to suggest and I am going to talk to Clay-Platte, Louie you build so far you have built a half a dozen units of that one floor plan. Maybe if we talk to Clay-Platte and see if they would do a test on one of them just to see how it preforms and if we know it performs well and you are going to build it 12 more times. I wouldn't suggest we make everybody that builds a house in Clay County do it.

**Bob Pence:** Well what will happen all of a sudden you will make a whole bunch of people get in the business all of a sudden.

**George Schulter:** Then you have some potential conflict of interest, but real honestly guys I believe the industry is responding to this and we are going to build a good house. Now I am not going to say there isn't going to be somebody out there who doesn't care who doesn't know but by and large I think it is going to happen. Our industry we don't want people coming back to us and saying your house does not preform we are unhappy with your house, it leaks like a sieve. No we don't want to hear that because that person is going to tell our perspective client we are not going to get the next one. I don't know how you want to work this section, but I don't think you need to do a whole lot of this stuff on it.

**Bob Pence:** Optional

**Louie Freeman:** Optional or delete it.

**Bob Pence:** Let's delete it.

**Louie Freeman:** Okay I will second that.

**Jim Carlson:** Everyone okay with that?

**Mark Manville:** Now the one thing too and I don't think it will be an issue because we also and maybe some of you guys were involved in it the green building program that they worked on a year ago. We are going to finally get that thing kicked into gear and a though it doesn't, I don't know if it requires a blower door test it is going to give people an avenue to do the things beyond what we would do in a normal construction environment to achieve the rebate through that green building program.

**Louie Freeman:** That makes it all optional.

**Mark Manville:** Yeah right. Insulation and Fenestration basically they just went back to the R-13 provision for the wood frame walls as oppose to the R-13 plus five or R-20. And I think the key and I think George kind of touched on this earlier, the key to making a lot of this stuff work is that we use house wrap. We are sealing our penetrations we caulking our connection between the studs and the bottom plate. I was amazed I saw a

thermal picture of a house and I always thought the biggest source of heat lost is through the roof, it's along that plate. I couldn't believe it. The plate between the bottom plate and the floor the wood floor, the main level and they caulk that. But you are right on the ceil plates they are starting to insulate those things back a little bit to cut down on that. Anyway they are just saying we're going to stick with the R13 what we have been doing. The R-13 plus the five that where they are talking about a 2x4 stud wall and putting two inches of foam board on the outside of it, well how are you going to but your windows in there and get it sided and everything else. It just wasn't going to work. So we are okay with the 13 the R-13. Okay skylight fenestrations.

**George Schulter:** When doing skylights all the manufactures are making it now so it is not a factor.

**Mark Manville:** Alright. R ceiling the ceiling R value I think we are probable; all of us are doing it R-38 anyway at a minimum. This might where we make it optional or get an average because what is killing them is if you stick frame your roof or if you use a conventional trust where you don't have that deep heal you can't maintain that R value out over the top of the walls. I don't know honestly George how critical that is?

**George Schulter:** If you have done everything else yeah it would be nice to be able to put R-49 over your outside plate but when you start doing a ratio trust now you get into some structural problems, its how are you going to brace that trust and everything else. I am blowing now as much, I am blowing R-49 in my attics but I'm not dealing any differently at the outside plate. And I am hoping that on average it probable comes out that I'm getting an R-40 or an R-44 and satisfied. Blowing in additional insulation from R-38 to R-49 in the attic as long as you try and measure it out over the outside wall is probable a good thing and not real expensive to do and probable going to save the homeowner some money over the long run. But don't make a requirement that they have to build a ratio trust because then you are going to have structural problems to deal with when you start trying to brace that.

**Louie Freeman:** In a 4 12 pitch or something like that too you are not going to get it in there.

**Mark Manville:** Right or if you stick frame your roof.

**George Schulter:** And that is what most custom builders are stick framing, most production builders are using trusses today. But I don't know whether they are using raised steel and if they are you got some real potential problems with wind loading aspect on it that you got to start dealing with. I think what you ought to do is just aim it at something like an R-38 or R-49 as you can get it in the attic.

**Louie Freeman:** Like Overland Park did there.

**Mark Manville:** Yeah, that language seems to work for me. R-49 on average or average with and do the best you can over the exterior walls basically as the framing allows you to.

**Bob Pence:** Let's just keep it at that.

**George Schulter:** The solar heat gain that's okay. That is what everyone is supplying as far as windows.

**Mark Manville:** Now on the air barrier and insulation they modified it, the code says that they should be insulated the corners and the headers should be insulated and the cities modify it to say sealed. Now if you are building a California corner you can insulate it but the header I know if you are using like two 2 bys to build your header you are not going to get those insulated.

**George Schulter:** That is correct, that is why we said seal it.

**Mark Manville:** Sealed makes sense to me. Junction of top plate and top of exterior walls to be sealed are they talking about where the siding butts up against the ....

**George Shulter:** No they are talking about on the inside where you got your double top plate that you're caulking the joint with the double top plate the interior. That is what they are talking about.

**Mark Manville:** Okay, well most people are doing

**Bob Pence:** Why did Overland Park delete that?

**George Schulter:** They did not think it was that big of deal. I mean really when you get down to it you got two 2x4's and compression up there, they are going to be nailed pretty on the thing, they did not think it was that big of deal. I wasn't personal sitting in the meeting but that is what I concluded from what they said. Kansas City, MO said well it doesn't take much to run a bead of caulk down it so we didn't argue about it with them.

**Andy Inzerillo:** I think sealing it is a good deal. We have been doing it.

**Mark Manville:** Okay then we will okay that one. Rim joist to be insulated and include air barrier, Overland Park deleted the part that said insulated but they did maintain that they wanted the air barrier, which I think if you put your house wrap on the outside you run it down to the bottom of the boxing anyway.

**George Schulter:** The IRC defines materials that can be an air barrier and 7/16 OSB or tie backs either one meets the air barrier requirements so if you lapping your exterior sheathing over your rim you got an air barrier.

**Andy Inzerillo:** Do you think it should be insulated?

**George Schulter:** Yeah it should be insulated on the inside.

**Bob Pence:** I guess I wasn't doing it when I was using the component walls because the sit the wall unit down on the floor so the rim was outside and exposed. The tie backs covered it.

**George Schulter:** Well it depends on your building practice and how you want to do it. Here is where the issue came the energy people were saying that when you put the piece of insulation inside in the joist bay you should seal it. We said no that's where this all contrived and twisted and everybody said no that getting stupid on the thing. But the theorist on insulation says it should be protected on all six sides of the insulation. So they wanted us to come in and fit some kind of foam board or piece of plywood and caulk again over the piece of insulation you are putting in the rim joist. I think Mark ought to read it and see how he wants to interpret it for you all to have it.

**Mark Manville:** I know our standard practice is to tie back on the outside and to insulate the pockets around it.

**George Schulter:** Right but most of them use unface fiberglass to fit in there and the real theorist say that is not going to work. I don't agree.

**Mark Manville:** Okay alright.

**Bob Pence:** Better than nothing.

**George Schulter:** The next one on fireplaces to have gasketed doors the reason it got deleted was that there got a bunch of confusion and this is one of these that took it out of one place but didn't take it out of another and they meant to take the gasketing out and just go back to the requirement for the tight fitting damper and the outside air so that is why both cities deleted it.

**Mark Manville:** As I read that I thought that it was for masonry fireplaces not manufactures. Is that the case?

**George Schulter:** It does not say that.

**Mark Manville:** Okay for some reason that keeps coming up in my mind.

**George Schulter:** That is where I would interpret it to be Mark but it doesn't say that. But any way both cities deleted it because they think it was a mistake that they deleted the gasketing when they put in the outside combustion air and the tight fitting damper in one section but missed it in another table or section.

**Mark Manville:** Okay I will look at that again. Can lights to unconditioned space should be sealed to drywall.

**Bob Pence:** Does that mean we caulk it?

**George Schulter:** Either caulk or there's a gasket available that your electrician can put on in the trim stage. It is not a big deal. I just went back and did them in my house and surprisingly. I took my can trims off and it was surprising I had some spacing that were that big and when we caulked around it, Kansas City, MO had some money available I was getting that from them. That is the reason Bruce the tester was out today he was doing a blower door test and I cut about 130 cfm by sealing every one of the can lights that was unconditioned space. I had about 15 of them so it made a difference. I didn't do the ceiling fixtures or the pavel wheel fans, I did not drop those down and seal them just did the can lights.

**Andy Inzerillo:** It probable not a bad thing.

**George Schulter:** It's not a bad thing to do. I am going to write it into my spec for my painter that he does it before he paints the ceiling. So I don't have to mess with it.

**Mark Manville:** The next one we got the attic access it says it needs to be weather striped and insulated to the same level as the attic. Knee walls I don't remember, I assume that is talking, that is the only reference I have in there, but I am assume that talking about insulating the knee walls.

**George Schulter:** It was talking about backing.

**Mark Manville:** Oh backing.

**George Schulter:** The backing for the knee wall so that the air doesn't come up right against it. You got whether it is tie backs or whether it is a piece of OSB or a piece of foam board or something so that you don't have the air infiltration from the attic in the space backing the stud and the bat of insulation.

**Mark Manville:** I'll work on that language for next time. Insulation around pipes and wiring I think we kind of have touched on the pipes, were all foaming are we not? Isn't everyone pretty much foaming their penetrations now?

**George Schulter:** Mark what they were trying to get at this and it's a workmanship issue. If you are using bat insulation and you got a wire running horizontal through your walls it's usually in the middle of a wall and if you are going, typically what an insulator does he stuffs it behind it and so you are compressing the insulations so you are not getting a good job. What he should do is the cut the insulation and fit it over the wire so you get it done right. That's what they are trying to address there with that issue. The same thing with a plumbing vent pipe going up an outside wall that you don't just stuff it around it you cut it and fit it to it so it insulates. Now if guys doing blow in wall insulation it is not a factor. But that is what they were trying to address there.

**Mark Manville:** I will look at that. I'll come up with some better language on that item too. And then the last few of these, this is kind of a deviation from what we have done in the past the last time you adopted the codes you adopted the uniform plumbing mechanical codes and now when we are proposing to adopt the International family, the total International Family so we know we don't have any conflicts in the language in the uniform verses the International. The last two times the 2003/2006 I think there was some issues with the International Plumbing and Mechanical Codes that people did not

like. I think they got those issues resolved now. I have talked to other jurisdictions in this area and they are opting to go with the International family now verses Uniform.

**Jim Carlson:** Charles got lobbied real hard by the Unions. They were out here to our meetings and they convinced him.

**Mark Manville:** Well evidential now as I talked to someone else about that I think some of the Unions are buying into the notion now of going with the International.

**George Schulter:** Overland Park uses the International Plumbing Code.

**Mark Manville:** So I would suggest that we do that and we will see what comes out of the woodwork. We're going to continue to use the International Electric Code. Now the International Residential Code has provisions in it that deals with electrical insulations equipment devices those kinds of things. And we want to make sure there is a correlation between those provisions and the National Electric Code. I am not sure how to do that originally I thought we would delete all of those chapters and just adopt the National Electric Code and that maybe the correct way to do it. I don't think that is the way some of the other jurisdictions are doing it.

**George Schulter:** Mark it is an identical publication of the NEC in the IRC so an agreement between ICC and NFPA is an exact duplication to the word. They just lifted out and put it in the IRC for the electrical section so residential builders only have one book to deal with rather than four or five books. So however you want to do it, it's really not going to make a difference. The big thing here that you all got and I want to talk about then I need to get going too. You need to seriously look at this RM2 on sizing you are going to, if you adopt it, you see Kansas City, MO adopted as written but they're going to leave a lot of flexibility in it. This is going to be a nightmare for builders if every builder has to do a manual J and we have to use it to what is written in the Ashray book we designed summer temperature for 93 degrees with a 17 degree differential now walk outside today at 100 degrees and whoever adopts this you are, give me your cell phone number so my customer can call you when he cannot cool his house at 100 degrees.

**Jim Carlson:** They are terrible undersized both ways. The manual J is a joke.

**George Schulter:** That is what I am saying, but people think it's the greatest thing in the world.

**Mark Manville:** Can you give me some guidance on that.

**George Schulter:** Yes anyway guys it is a nightmare.

**Mark Manville:** Because Overland Park referred it back to the committee.

**George Schulter:** I know they got a real problem with it and basically Kansas City, MO Greg Francen is a very reasonable co administrator and easy to work with, he's going to come up with a way we can solve this. But he knows.

**Bob Pence:** Manual J is not an answer to homes.

**George Schulter:** No it is not an answer and it could be a nightmare.

**Bob Pence:** It is undersized both directions. It is just not on the heating but the cooling also.

**George Schulter:** You all need to look at that. The other thing, this make up air results to it you are looking an \$800 to \$1,000 if you have over 400 cfm or you got to but in makeup air to it. And once you get above the basic standard little hood anything you buy from Thermo Door, Viking, Bosh is going to be over 400 cfm you need to decide what you are going to do with it, cause that is going to be an expensive proposition.

**Mark Manville:** But if you don't carry that one step farther, if we don't provide something to make up for that exhaust it's going to be stealing if from somewhere else in the house.

**George Schulter:** That is true; you got to figure out how you are going to do it. And you got collective good heads there and then the whole house ventilation I really, what Kansas City, MO and Overland Park did they changed from five air changes to three air changes before you have to have the whole house mechanical ventilation.

**Mark Manville:** And if you read through that section I think it still allows you to have individual bath fans. You don't have to have one system, I think.

**George Schulter:** If a builder is cheap and he has to provide or make up additional air and he can follow the code he can stick a 60 cfm bath fan in and wire it for continuous running and have no other intake air just have it and that will satisfy the code if you got a 2,000 square foot house. That would be the worst thing we will do and will happen is when the homeowner moves in he'll get up there and take the bath fan apart and disconnect it and it won't be running. So you need to move the thing down to three air changes per hour and at that point let the builder if he builds a house at three air changes per hour let him deal with how he is going to do it, whether he is going to put an ERV, HRV or whether he is going to run a duct into his return air.

**Mark Manville:** That is what I was going to say.

**Bob Pence:** That is expensive.

**George Schulter:** Yes it is.

**Bob Pence:** You have to heat it.

**Mark Manville:** To run a duct into a return? Because you are bring unconditioned air into the system. But if you bring it in the return, yeah you do.

**George Schulter:** I don't know what they do. What

**Bob Pence:** It falls across the coil, for a lack of a better word, you got to have the heated air coming in to. You just can't have a intake air coming in you have to heat it or you got all kinds of problems.

**George Schulter:** What I do, I go to the farthest point of my return air main duct in the basement and then I go as far I can to outside wall and I put a four inch supply into it and let it feed into the system.

**Bob Pence:** It's like a laundry vent kind of but a 4 inch.

**George Schulter:** Only it got a wire screen on it instead of a flapper. Now what happens is I am putting a little bit additional load in air conditioning season and as soon as the temperature is 90 degrees I tell the homeowner to close the duct cause you are loading your system to much or when the temperature goes below 20 degrees outside in the winter time I tell them to close the duct because you are putting additional load on your heating system. That is a cheap way to do it but I did it in my own house because I build my own house pretty dam tight and I found that was an easy inexpensive way to do it, because I spent \$120 with my HVAC contractor to come back and retro fit this and I had about 15 feet from the return air drop of main duct work and then I ran about 20 feet of four inch pipe to pull it in. It does a good job, satisfies 90% of the requirements as long as the homeowner knows to shut it off in extremely hot or extremely cold weather. I appreciate your time.