CITY OF NEWARK
DELAWARE

PLANNING COMMISSION
GREEN BUILDING CODE WORK GROUP
MEETING MINUTES

March 26, 2019

3:30 p.m.

Present at the 3:30 p.m. meeting:

Chairman:	Will Hurd
Members Present:	Jeremy Firestone Rob Jadick Tim Poole Reid Rowlands
Members Absent:	George Irvine Stacy McNatt Ben Prettyman Vacancy (Conservation Advisory Commission)
Staff Present:	Planning and Development Department represented by Tim Poole
Guest Speaker:	Andrew McDowell, ReVireo

Mr. Will Hurd called the Green Building Code Work Group meeting to order at 3:30 p.m.

1. **INTRODUCTIONS**

Mr. Will Hurd: Alright, we're staring the Green Building Code Work group meeting of Tuesday, March 26, 2019. I guess we'll just go around the table and introduce ourselves so that Michelle knows what we all sound like. I'll start. Will Hurd, Chair.

Mr. Rob Jadick: Rob Jadick, Bancroft.

Mr. Andrew McDowell: Andrew McDowell with ReVireo.

Mr. Jeremy Firestone: Jeremy Firestone, professor at University of Delaware

Mr. Reid Rowlands: Reid Rowlands, World Class Supply.

Mr. Tim Poole: Tim Poole, City of Newark Code Enforcement.

2. **CHAIR'S REMARKS**

Mr. Hurd: I don't really have much in the way of remarks for today because it's kind of self-evident what we're going to be doing.

3. **MINUTES OF THE JANUARY 22, 2019 AND FEBRUARY 26, 2019 GREEN BUILDING CODE WORK GROUP MEETINGS**

Mr. Hurd: We have emails, sorry, minutes of the last two meetings have been emailed to the members. Does anyone have any additions or corrections they want to make to them? Are we okay with them? Alright.

THE MINUTES OF THE JANUARY 22, 2019 AND THE FEBRUARY 26, 2019 GREEN BUILDING CODE WORK GROUP MEETINGS ARE APPROVED.

Mr. Rowlands: Did anybody read them?

Mr. Firestone: It came in a nice package.

Mr. Hurd: It did.

Mr. Rowlands: Sixty pages verbatim minutes that you have to review and approve.

Mr. Hurd: Well, that's a separate conversation . . .

Mr. Rowlands: Yep.

Mr. Hurd: About which one is better because with summary minutes, you lose stuff, too, because you can be like, I don't recall that being said that way. Well, it doesn't come through in the summary. Anyway . . .

Mr. Rowlands: You should have both. But you should not approve . . . let's move on.

Mr. Hurd: Exactly.

4. **HERS RATING SYSTEM PRESENTATION**

Mr. Hurd: Alright, let's start with Andrew. Or do you prefer Drew?

Mr. McDowell: Drew is what I go by.

Mr. Hurd: Okay, we'll go with Drew, and his HER rating system presentation.

Mr. McDowell: Thanks, Will. So, this is a very informal presentation so if you have any questions along the way, please stop me and we can talk about it. Here goes.

[Secretary's Note: During his discussion, Mr. McDowell referred to a PowerPoint presentation being displayed for the benefit of the Work Group and public. A copy of the presentation can be accessed via a link at the end of this document.]

Just a brief introduction to my company. We're in New Jersey but we do code compliance and HERS ratings throughout the State of New Jersey, up into New York, Pennsylvania, and Delaware. I don't know if we've been to Maryland yet but . . .

Mr. Rowlands: You're going to get there.

Mr. McDowell: And this is who I am. I've been doing this for about 10 years as both a HERS rater and energy auditor. I recently passed the ICC exam for residential energy inspector plan examiner.

And so, what is HERS rating, and I think that's the reason I'm here. You guys want to find out more about what it is and if you're going to be recommending or requiring this, or incentivizing a HERS rating, you should probably know what it is. This is what I do all week long. This is about all I do. We start out modeling the house from plans and then we do two inspections and then we revise the model based on the inputs from the inspections, it gets QA'ed and then we have a HERS rating.

So, what is it? It's a national program. The organization that started this up and is running it is a non-profit called RESNET, Residential Energy Services Network, and it's for evaluating the energy performance of homes and for labeling homes.

Mr. Rowlands: Do you see labeling coming on a little bit more, to be more important or have value to the consumers at all?

Mr. McDowell: Well, I don't know if it's any more or less than it has been. I've worked with builders that's all they hired me to give them a label, a HERS index. They wanted to be able to use that as a . . .

Mr. Rowlands: As a marketing tool.

Mr. McDowell: Marketing tool, yes. Just the HERS rating. Nothing more, nothing less. I've also had builders using me only as QA, quality assurance. So, when we break down a HERS rating, there are kind of, well there's more than two types, but basically there's two types. There is a PHERS, which is projected, and then once the home or building is confirmed, then it's a CHERS, confirmed HERS. PHERS is based on plans or, if we don't have plans, if we're doing an existing home, we can do a rating on an existing home and you base it on measurements that you take to get the geometry of the house. So, we're modeling all the exterior walls, floors, ceilings, and windows, everything that leaks energy to outside conditions.

Mr. Rowlands: An existing project would be a CHERS? Or it could be either?

Mr. McDowell: So, a PHERS is just the preliminary . . . I like to call it preliminary. It's what you use to get started. Now it's being used quite often for code compliance. We deliver this PHERS to a code officer saying this house intends to meet code by doing this. This is what, as long as they pass the blower door and duct leakage and ventilation testing, then this home will pass. But the projected HERS is what gets you in the door for the code official. And then the CHERS is the confirmed. It actually passed.

Mr. Firestone: What if the CHERS doesn't confirm and it comes out worse?

Mr. McDowell: Then it doesn't pass. So, let's say for instance in New Jersey the code is three air changes per hour for UA pathway, and we get it down to it just meets the UA pathway, but the blower door comes in at a 3.2 air changes per hour. This home is not going to pass until it comes down to three air changes. So, as a rater, I'll stay with the builder a certain amount of time extra to say let's find the leaks, seal them up, and if it goes beyond a half-hour or 45 minutes, I can call the office and say, let me know what I should do. Do you want me to stick around or do you want me to go to the next job site, because I've got more than one a day to do? But if it doesn't pass, then I'll come back a different day until it passes.

Mr. Jadick: Usually it's not passing because of a design error. It has to do with installation?

Mr. McDowell: I consider everything a design error.

Mr. Poole: That's the problem with the blower door test. It's a post-construction test. If somebody drops the ball somewhere in the past, you've got to find the ball.

Mr. Hurd: Right.

Mr. McDowell: That's right.

Mr. Poole: And you've got to find out where someone didn't do something quite right and sometimes that easy and sometimes that's hard. That's the problem with post-construction.

Mr. Rowlands: Is there a time when you would accept the blower door? I mean you don't want to wait to do one after drywall is up because then you can't fix a leak. So, before drywall is up at some point, and even before insulation is in, but all mechanicals should be in, you can do your preliminary and/or final?

Mr. McDowell: So, there are two inspections typically in any HERS rating. There's the pre-drywall inspection and then there's the final inspection. The final inspection is when the blow door and the duct leakage and mechanical ventilation, air flow, is measured. We also get data on the lights and appliances, you know, LEDs basically, the percentage of lights that efficient lighting. Refrigerator, mechanical, hot water heater, etc., those are usually not done at the pre-drywall. What the pre-drywall does is we evaluate the insulation. So, is it, and we'll get into that again later, but there's the grading. There are three grades of insulation and then is it an R19, an R13? What are the walls? Two by four, two by six. What are we talking about? Is there exterior insulation? All those things are done at the pre-drywall stage. So, we generally don't do any blower door testing during pre-drywall. In fact . . .

Mr. Poole: The building is not sealed up enough really to do it at that point. I mean, you couldn't get any real number.

Mr. McDowell: Yeah. I have done it but generally, for the most part, 99.9% of the time you won't do a blower door at that time.

Mr. Poole: Well you said mostly the pre-drywall test is a visual inspection looking for problems. You know, we identify this issue, it's not quite the way it shows on the plan, so it's needing to be corrected. And, as a third party, they're there to verify that as part of their rating.

Mr. Hurd: And good point there, also, about verifying the actual insulation. It's actually, that is what was installed.

Mr. Rowlands: Okay so most, almost all blower door tests are at the final . . .

Mr. McDowell: Yes.

Mr. Rowlands: Which it's definitely harder to fix any leakage once drywall is up.

Mr. McDowell: Yeah, you know, if you can get it done before the drywall is up, I would recommend it. But again, does that mean there's two tests?

Mr. Rowlands: Right.

Mr. McDowell: And most often, I mean, so if the drywall is not up and there's typically a vented attic, then there's no way you can do a blower door test because the soffit is . . .

Mr. Rowlands: Yeah.

Mr. McDowell: For production builders . . .

Mr. Hurd: Right, so it's a sequencing issue because you have to make sure that the shell is done . . .

Mr. McDowell: Yes.

Mr. Hurd: But you have enough internal seal of large spaces, but not, but you're right, the exterior walls being open is great because that's where you can hit all the . . .

Mr. Rowlands: Yeah, I mean that's three ACH. If you're trying to get to down to Passive at 0.6, there's a lot of guys doing blower tests pre-drywall.

Mr. Hurd: Oh yeah. They own their own blower.

Mr. Rowlands: Yeah, a lot of them. Absolutely.

Mr. McDowell: So, the . . . I'm sorry, getting back to this . . . the PHERS is not anything that is formalized. There is no QA on it. It's just something that as a rater, it's my initial steps of building this energy model to get the HERS rating and it can be submitted to my QA. So, we send it in and they would see if it matches what's on the plans. So, it's a thing but it's nothing that, probably not legal like if, when you talk about a HERS rating, that's just the first step.

Mr. Poole: Right.

Mr. McDowell: But it's an important part.

Mr. Poole: But if they were to propose to construct a house under the performance pass or under the ERI, then that's what they would, they would submit that to say this is what our plan is. This is what we anticipate the performance of this to be. And then, at the end, they have to confirm that that's what they actually got.

Mr. McDowell: And that's what the CHERS is. So, it's confirmed with a pre-drywall and a final inspection and often the energy model is changed based on what's found in the field. Did it match everything that was in PHERS? And then the next step would be submitting it to our QA. So, we get QA'ed on a percent basis and before any print permissions are given, before something is submitted to the code official, it's got to be sent back to us from our provider, our QA provider, that it's gone through the process.

And this is just the slide saying a rater just can't make stuff up. We'd get in trouble if we did that and our calibration on our equipment is checked annually, so I would say it's rigorous. It seems rigorous to me. This is just a fancy slide. So, these are the three tests we do, again, usually at the final stage. And the blower door test, or infiltration test, is done and there's a standard for that. There is an ANSI standard for how you set the house up for a blower door test. What doors are open, what doors are closed? Fans, if they're not continually running, they cannot be taped up. Dryer exhaust fans should not be taped up. Things like this.

Mr. Rowlands: Do you infiltrate and exfiltrate and average, or just in?

Mr. McDowell: In general, no. Again, 99.9% of our tests do depressurization. So, if it was a dryer damper, it would suck it shut rather than blow it open.

Mr. Poole: Fifty pascals.

Mr. McDowell: Yeah, 50 pascals. But again, for Passive House it's done in both directions and averaged. So, it depends on what the requirement is. And this stuff is evaluated also at a rating, a HERS rating, so the insulation quality, thickness, you know, is it in all walls, floors and ceilings as required? And the location, the climate zone of the house, two identical houses, one in Mississippi and one in Fairbanks, Alaska would have two different numbers. Even the orientation. The same two houses in the same city block, if one is rotated north and the other is facing south, they can be different.

Mr. Rowlands: Infrared is not part of the . . .

Mr. McDowell: Infrared is not part of the HERS rating. So, this is the process that I think we talked about everything here already. We start with a PHERS and then the next step would be the pre-drywall inspection, final testing, and then QA and CHERS.

Mr. Rowlands: So, this traditionally is a two-visit process?

Mr. McDowell: Yes.

Mr. Rowlands: Sometimes three.

Mr. McDowell: Right.

Mr. Poole: Plus, the beginning of the project where they have to model the home, which is probably the largest portion of the work.

Mr. McDowell: It depends. Some homes are fairly simple. It's beautiful when you can get through modeling and PHERS in under an hour. That's nice. Sometimes it's three hours and you're still scratching your head and wondering why the architect did this and did that.

Mr. Hurd: Why are you looking over here?

Mr. McDowell: But, yeah. But that's done in the office, nothing in the field. And a lot of times the rater that's in the field is not the same person doing the modeling. It can be two different people. So, again, it's used for EnergyStar for homes. It's required for EnergyStar. Any time you see a house that's been rated, has EnergyStar, it's gone through the HERS process. The same with LEED. LEED does not require a HERS rating. There are other ways to get around getting LEED certification, but I think for the most part they use HERS. Passive House its definitely required and can be used for code compliance. National Green Building Standards can use it. If you're doing an energy audit, you can use the HERS rating for that.

And what is the HERS index? So, the index is a scale and it's 0 to infinity. Actually, it's negative infinity to positive infinity, and the home that uses zero energy would a score of zero. So, the lower the number, the more efficient or better use of energy. And when this HERS index was adopted or brought about, it was 2006. Actually, it started around 2004 but that's a different story. It's based on a code home just built to the minimum code in 2006. So, as the codes get better, the minimum legal house that can be built, the HERS scores are being driven lower and lower. Today, the general home is earning mid-60s and we still see some in the low 70s.

Mr. Rowlands: For a code-compliant home?

Mr. McDowell: Code-compliant home.

Mr. Rowlands: Shouldn't that be then just scaled to the 100?

Mr. McDowell: So, code changes every three years. So, if we were to do that, the HERS index would have to change every three years.

Mr. Rowlands: So, you don't change it. It's . . .

Mr. McDowell: It's been static since 2004.

Mr. Rowlands: Okay.

Mr. Poole: And what they do it under the performance path, they'll change that number that you have to meet in order for it to be code-compliant in the 2018 codes and then, again, it will get revised again in the 2021 codes. They just set that number for what it is based on your area.

Mr. McDowell: Yeah, it's funny you say for performance, right? So, performance compliance is actually based on dollars, right?

Mr. Poole: Yes.

Mr. McDowell: It's not based on the HERS index.

Mr. Poole: The ERI is a different path.

Mr. McDowell: Yeah, ERI is . . .

Mr. Poole: There are three paths.

Mr. McDowell: Yes.

Mr. Poole: One is prescriptive, one is ERI, and one is performance. And that's your three opportunities. The ERI is when you've got a HERS rater who reviews the house or some other compliance method, HERS is the largest and most common one, that evaluates the house, again, against the 2006 standard and says this is the number, this is the rating we give this house. And then they verify it.

The performance path, somebody does a similar audit but ultimately, it's about the energy and the cost of the energy to operate that house. So, that's your different paths under the Energy Conservation Code.

Mr. McDowell: And the prescriptive is based on the UA or U x A. It's based on the envelope of the house plus some tests. But they all, the HERS rating can be used on all three. And this is my last slide. It says, if you can't measure it, you can't improve, and that's a guy named Peter Drucker, who might be famous. So, if you're somebody building homes and they say I've got a great home, it's really energy-efficient, I put XY and Z into the house, and Builder A and Builder B says I did three different things, but mine is more efficient. How do you now, right? You can't base it on utility bills because House A might be two people living in it and House B might have 15 people living in it, and they might use the energy very differently. This HERS rating is not, it's not, it's an asset. It's not based on the house itself, ignoring all occupants.

Mr. Firestone: And now if we can just regulate the users.

Mr. Hurd: I'm not even going to step into that one.

Mr. Rowlands: A human HERS rating.

Mr. McDowell: Well, that's true. If you can't measure it, you can't improve. So, if you work to improve, let's say, gee, I think this $3,000 investment into this whatever it is – insulation, geothermal, solar panels, whatever you want to talk about – let's put it into the model and let's see where it comes out. That's how you measure it. Or, you know, my house is coming in at three air changes. You know, the other house right across the street is coming in at 1 ½. How valuable is that? Let's put it in the model and see. Let's measure it.

Mr. Rowlands: Have you ever done two identical, once you modeled one, have you every thrown a number, okay, we got 3 ACH and this one is 1 ½?

Mr. McDowell: We do it all the time. That's how you learn. That's how you learn, when somebody asks you, you know, my windows have a U-value of .3. I want to buy some .25 windows. What's that . . .

Mr. Rowlands: Is it worth it?

Mr. McDowell: Is it worth it? If you can give me a cost and you give me the utility rates, I can tell you exactly if it's worth it. I can tell you the year and the month it will break even.

Mr. Hurd: Yea, I've done that. I've used BeOpt . . .

Mr. McDowell: Oh, yeah.

Mr. Hurd: For that exact kind of thing. Someone's like we're thinking about ground source heat pumps or this thing or that thing, and it's like well let's run it. Here are ground source heat pumps and here is your energy in cost use. And here's where we made the shell tighter or more insulation and it really does, you start to see where the money, where is it best to start

spending that first chunk of money and then where do you spend the rest of it. Which I think it much better than, I mean, if you do that enough your gut gets tuned, but until you are, you're sitting there going, I don't know. Air or insulation, which one is better. Let's run the numbers.

Mr. Rowlands: And the more you run them, the more your gut can tell you how to design a building.

Mr. Hurd: Yeah. Alright. Thanks so much, Drew.

Mr. McDowell: You're welcome.

Mr. Hurd: Did that cover everyone's questions, thoughts?

Mr. Rowlands: Well, cost a little bit. To have a short discussion on cost . . .

Mr. Hurd: Sure.

Mr. Rowlands: It's always cost.

Mr. Hurd: It's always cost.

Mr. Rowlands: And most of these codes, not all, but most of these situations will be the student housing. That's mostly what we're developing around this town.

Mr. Hurd: Some, I mean we've had a few, I think you said, subdivision developments that were either standalone homes or townhomes for . . .

Mr. Rowlands: Oh no, for sure.

Mr. Hurd: But single-family homes . . .

Mr. Poole: The vast majority of our development is related to student housing.

Mr. Rowlands: So, you have that small development that comes in and it's subdividing a lot to two homes. You'll give them a slight slack on price because you're there for two at the same time or something. But when you get student housing, each one has to be done and you've got 20 or 30 or 8 or 10. What's the cost we're trying to add to these people at that point?

Mr. McDowell: That's a great question but it's something that if you're, you know . . .

Mr. Rowlands: I'm not looking for a firm quote here.

Mr. Hurd: No.

Mr. McDowell: And it's hard to come up with a number because like if you're familiar with a builder, like if the rater and the builder have been working a couple of years already and you know the process, the builder knows . . .

Mr. Rowlands: Yeah, right.

Mr. McDowell: Like there's a lot of learning that goes on here in this who process. So, if it's a brand-new builder and they've never been through it, you know, there's going to be a lot of hand-holding . . .

Mr. Poole: It's going to take a bit more of your time than somebody that knows exactly what you need when you get there, exactly how it should be prepped so that then you spend less time. Time is money. Time is money for you. Time is money for them.

Mr. McDowell: And any company that does it, you know, we're not non-profits so we've got the overhead and everything else to worry about.

Mr. Rowlands: How much do you think a difference in price between somebody that gets it, been there, done it, and if you get a call from a brand-new guy, you're going to throw a price that . . .

Mr. McDowell: With this company that I work for now, I don't, I'm not involved in the pricing, but of course I've done pricing in the past and you definitely add a premium onto . . .

Mr. Jadick: So, what do you think the total hour investment per unit would be though? If you're thinking about the first step is your modeling exercise, which could be as simple as an hour or, like you said, it could be let's just say four. And then you've got two visits and a lot of times it's a four-hour minimum or whatever, you know, just because of inefficiency of you're leaving from wherever you're coming from, going, doing your thing, and . . .

Mr. McDowell: So, distance is a big factor . . .

Mr. Jadick: Right.

Mr. McDowell: And complexity of the model.

Mr. Jadick: So, I immediately went to, okay, like 12 hours would be maybe a mid-range estimate for those three steps. Now, of course, I don't know what the cost is per hour on that, but maybe I'm oversimplifying . . .

Mr. McDowell: Well how much, so how many hours in transportation? It took me about 50 minutes to get here. I mean how many HERS raters are in Newark?

Mr. Hurd: I have no idea.

Mr. Rowlands: You should move.

Mr. Firestone: After we require it, then . . .

Mr. Rowlands: There you go.

Mr. McDowell: Yeah, absolutely. That's what drives demand, right?

Mr. Hurd: I think I do want to just note that the way we're currently looking at the checklist, we're saying if you want to go down sort of the stretch code path and do something 20% better than Code and demonstrate it, that bypasses, at least the way it's currently set up, all the other requirements in the energy section. So, to my mind, it's like are you willing to spend the money to shorten that sort of review process or shorten the information to give to the code official to say I'm just going to build it, verify it, and I'm going to get all my points that way.

Mr. Rowlands: How much more work is it to not do the HERS rating . . .

Mr. Hurd: I don't know. I don't know, but I think it's more like we're not saying, we're saying here's two paths, but we're saying sort of the stretch code path has an advantage in that you don't have to fill out the checklist, you don't have to get it reviewed, you don't have to select your points, you don't have to do all that. You just demonstrate that it hit the goals and you get it all. And for some developers and builders, that might be worthwhile to say, yeah, it's worth spending whatever it is to just knock that, to just take care of that.

Mr. Rowlands: Right.

Mr. Hurd: So, I'm less concerned about it's the cost it's imposing because it's still a choice. We're not saying you've got to have a HERS rating. We're saying if you get a HERS rating, then you get to go down this pathway . . .

Mr. Rowlands: Yeah, but I also don't want to throw this whole thing in, get done with it, and no one is ever going to do a HERS rating because it's not what we're going to do. Cost-wise, they don't know what it is yet, they haven't learned what . . . I don't know.

Mr. Poole: Well, as it becomes more and more commonplace, which with the way that the Energy Conservation Code is being adopted almost universally these days because it's really being pushed by the federal government, this is becoming more and more commonplace.

Mr. Rowlands: Right.

Mr. Poole: Even folks that are a couple of code cycles out are still having to meet this, even if it's not the latest and greatest. They're still having to meet it under the 2006, under the 2009, under the 2012. Even if they're not in the 2015 or 2018, they're still having to get there.

Mr. Hurd: Right.

Mr. Poole: And while the requirements are as strict, it's still a requirement. They still have to have the blower door test. They still have to have the duct test. So, it's becoming more commonplace, so there's more demand.

Mr. McDowell: One of the things that you might consider also is the fact that Pennsylvania has adopted 2015 and the date is April 1 when all . . . that's the permit date. For any homes permitted after April 1, so coming up in the next 3-6 months you're going to see a flood of homes in Pennsylvania, for the first time, ever getting a blower door and/or duct leakage testing, because it's required. The 2009 allowed them, allowed the blower door test but did not require it. So, I've done plenty of testing in Pennsylvania but now it's going to be required, so there's gong to be a lot of raters in Pennsylvania doing work. So, I think that may be . . .

Mr. Firestone: How is the HERS scale? Is it just a 1 is 1% of . . . how does the scale work?

Mr. McDowell: So, it is a percent from 0 to 100. And, again, that 100 would be based on the 2006 Code and 0 uses no energy. And I've done ratings that are negative because they got solar panels. So, you can have a negative number, as well.

Mr. Firestone: And do we know what a typical house in Newark would be under code now?

Mr. Jadick: I think you said it was . . .

Mr. McDowell: Mid-60s would be for the 2015 Code.

Mr. Poole: We're under 2012.

Mr. McDowell: 2012 is close.

Mr. Poole: We're probably in the 70s. I know that, I think the discussion I heard under the 2018 Code was that you're going to have to make a 58.

Mr. McDowell: That's the ERI pathway. So, that was the 2015 ERI pathway. In 2018, those numbers bumped up but it's not going to be any better because the way they got those numbers are changing and it's complicated. We can talk about it later. But, yes, that's probably the reason why the ERI pathway is, as far I'm concerned, is rarely being used. Because it's very difficult to meet those 55 in climates over 4.

Mr. Firestone: So, if we're at, just say, 70 and you're going to be at 20% less, you have to be at 56?

Mr. Hurd: Yeah, in the 50s.

Mr. Firestone: Is that how you're . . .

Mr. Hurd: Yeah, and I think we're going to have to nail that number down because we can say 20% above Code, which is currently how it's worded, but what's that Code basis? If we're using a HERS rating, if I say it's 20% better than a 2018-developed building, what that number? Because we can't, because otherwise it's 20% of . . .

Mr. Rowlands: Well, we can also break it down to specific 20%. What portions of 20%? Continuous insulation we want 20% more. Or blower door we want 20% more.

Mr. Hurd: Well, and that's, when we get into the points part you can see I've done a little bit of that sort of thinking in the breakdown because I kind of did it the way LEED does, which is they say, you know, you meet this energy standard or this reduction in energy usage, or you do all these things. You improve the insulation, you improve the shell, you improve the, you know, and its sort of you can do any one of those things or in combination or whatever.

Mr. Rowlands: But any one of those things on that 20% better require Drew to come down and test and verify.

Mr. Firestone: I mean couldn't we just pick a HERS number . . .

Mr. Rowlands: Maybe.

Mr. Firestone: And then have it decrease every couple of years . . .

Mr. Hurd: Well, that's what I'm saying. I think we're going to have to . . .

Mr. Firestone: Rather than, then you don't have to get involved in going back and figuring out what the baseline is.

Mr. Rowlands: I don't think you have to have it decrease it every year if you just tie it to 20% better than the current code.

Mr. Hurd: But if the current code doesn't have a baseline number . . .

Mr. Firestone: You can say in year 2019 you have to be at 56 and then if you get your permit in 2021, you have to be at 54. You know, you just set it up like that. I mean it can always get changed later but then you don't have to . . .

Mr. Rowlands: I don't understand, I just thought we were scaling it like that. If we, in 2018 if it gets adopted, that HERS rating would be a 50 or something. Or 55 maybe.

Mr. McDowell: So, I hate to tell you this, but it gets complicated.

Mr. Hurd: Of course it does.

Mr. McDowell: When somebody is trying to make something . . . so, in 2015 was the first year, the 2015 IECC was the first year they adopted this ERI pathway. And I was working in the rebate program in New Jersey, it gave rebates if you built to EnergyStar. And there was a, we had a table. If your HERS was 65, you got so many dollars. If it was 60, you got more. Every five HERS points you got more money. Well, the ERI pathway came out and they said this is one of the pathways for code compliance and you need to earn a 55. So, imagine what that does to the rebate program. Why would you pay somebody to earn a HERS 60 when, by code, it's 55?

It's a question that doesn't make any sense, I mean an answer . . . it's a question that doesn't have a good answer.

Mr. Hurd: It's interesting that the ERI pathway, that number is so much lower than a house doing prescriptive or performance compliance. Is that on purpose or is that just sort of how it worked out? I mean is the ERI a more restrictive pathway?

Mr. Poole: Yes.

Mr. McDowell: No, I don't think they're trying to be. I think it's just what the people that developed it came up with. It's just . . . and again, here's something, if I can show you what this looks like with the HERS rating, in a minute, I'll pass this computer around.

Mr. Hurd: So, for 2018, what's the ERI pathway number? Is it 58 or . . .

Mr. Poole: I thought it was 58 but, again, I'm . . .

Mr. McDowell: So, this is a table, this is the software, this is the table of all the things that it can pass on at least our code compliance. You'll see down here this is what this particular house is, a HERS rating of 61. For 2015, to pass, it is actually a 62. But 2018 ERI is a 64. Why is 2015 and 2018 different?

Mr. Hurd: What?

Mr. Poole: From what I understand, from the discussion that I've heard, is that people were having trouble and people were thinking that it was being unreasonable to have to improve over performance path by that much.

Mr. McDowell: Yeah, actually no. So, the HERS rating uses lot of things to get that number. One of the things they use is a ventilation standard and it's an ASHRE 62.2 ventilation standard. Originally, it was based on 2010. When ASHRE changed their standard from 2010 to 2013, they went from 1% of the floor area, one CFN per 100 square feet, right, so if you had a 1,000 square foot home, you needed 10 CFN plus others based on [inaudible], but it was based on 1%. In 2013, they went up to 3%. So, this represents the change in the requirement that 2018 requires a less stringent HERS score because the ventilation rate has gone up. Does that make sense?

Mr. Hurd: Yes. Well, you'd have to because your moving more air around.

Mr. McDowell: It's a healthier house. People are more, less asthma, more fresh air and so forth. And a more durable house because there's less mold and the house isn't going to rot out in 75 years. Maybe it will, but that's the reason for the code change from 2015 to 2018. So, if you're going to make 2018 code, it means your ventilation rate has to be a lot higher.

Mr. Hurd: Okay.

Mr. McDowell: So, I feel for your, what you're trying to do here. I've been through it and it's not an easy practice because this ERI pathway, like you're telling me I have to do 20% better than some number that you pick, say a HERS of 65, but this other pathway I'm required to have a HERS of 55. Make up your mind. Which is it?

Mr. Rowlands: So, what do you do?

Mr. McDowell: I mean I don't know the answer.

Mr. Hurd: Okay, so 2018 . . .

Mr. McDowell: I think the 2018 code for climate zone 4 is 61. Sixty-one or 62, I can look it up.

Mr. Hurd: Oh, so it tops at 64, you think?

Mr. McDowell: Yeah, that's not the, that number in that software is what this house would earn under that . . .

Mr. Hurd: I got you.

Mr. McDowell: It's a different number than the HERS rating. That's another, something I don't even want to talk about.

Mr. Hurd: Oh, so the HERS number is different than the ERI pathway rating . . .

Mr. Poole: Yes.

Mr. McDowell: Yes, it's not the same number. There are three different numbers.

Mr. Hurd: Oh, so a 61 HERS is a 64 ERI.

Mr. McDowell: Yes.

Mr. Hurd: Okay. Was the intention to have the same number or are they actually different on . . .

Mr. McDowell: I think the intention wasn't, we had some code people that messed up. That's my understanding.

Mr. Hurd: Shocking. Somewhere else along the line someone got it wrong.

Mr. McDowell: So, I was at the RESNET conference a couple of weeks ago and they, a lot of the sessions, we talked about this.

Mr. Hurd: I'm sure.

Mr. McDowell: And so, RESNET and ICC are two different bodies.

Mr. Hurd: Right.

Mr. McDowell: And that's the problem.

Mr. Rowlands: So, have you seen stretch code used much?

Mr. McDowell: So, in Massachusetts, at least half of the state is a stretch code and it's up the local township whether they want to adopt it or not. It's a statewide code, so every township that approves it, you come under that statewide code. You don't have to rewrite the code for every different township.

Mr. Rowlands: And is that 20%?

Mr. McDowell: I think it changes . . . I'm not sure because I don't work in Massachusetts.

Mr. Hurd: I can look that up because they might have good language. Hopefully they've got good language for how to . . .

Mr. Rowlands: Yeah.

Mr. McDowell: I would definitely recommend talking to somebody in Massachusetts because they've been doing this now for how many years? Five years. Around five. So, they've been through the trouble of ironing out all the problems.

Mr. Hurd: Right.

Mr. Rowlands: I don't know if you've looked, well you haven't looked at our thing here but we're more than just energy points system. Some of these points in here get into the stretch and then require third-party verification and that's what we're wrestling with. How much does that cost and how much are we adding to their burdens. Were we going to go through this whole list?

5. **CLARIFY THE GOALS OF THE GREEN BUILDING CODE**

Mr. Hurd: We were kind of, one thing I wanted to just, before we got too much into the points, because I think it does affect our thinking about it, was to just, I think last month, I don't know that we're fully clear about, and I don't want to say quite our goals, but the goals of the code in terms of what things that we're trying to actually reduce or deal with. Because you had brought up carbon sequestration as an item and, you know, it's a much more complicated conversation than we can really do justice to here. But, in general, you can say, you know, wood has some advantages because it absorbs carbon and then holds it, so it's a carbon store and it sits there and as long as you don't burn it or whatever, you're doing good. And then you have steel which creates a lot of carbon when you make it but then it's also recyclable and it's durable. And its sort of like how do you, what's the thing that we're more concerned about? Are we more concerned about reducing carbon production and sequestering carbon, in which case we would want to tilt this more towards wood and away from metals and plastics and things. Or, are we more concerned about recycled elements or being able to recycle it post, you know, during the demolition of when this building comes down, in which case we then head towards metal as just one piece . . .

Mr. Rowlands: Right or indoor air quality or water resource or . . .

Mr. Hurd: Right, or durability. Are we looking for 100-year buildings or 50-year? I just wanted to kind of put it out there because I think having a little bit of clarity about what we're trying to aim for . . .

Mr. Rowlands: I agree.

Mr. Hurd: Will help, one, sort of evaluate things, two, explain it when it comes time to explain it, to say we went this way because we felt, whichever one, was a more important thing to be focused on. And then, at least, we have a leg to stand on to say while LEED is going to talk about alternates to wood or things like that, we felt it was more important to talk about, you know, sequestering carbon and not producing more in the production of the building. And so, that's why we went this way, as an example. And that's sort of in the materials section because obviously energy is all about reduce the energy usage as much as possible and, as much as possible, allow for the generation of energy onsite, those two things.

Mr. Rowlands: Which is also reducing the carbon.

Mr. Hurd: Right.

Mr. Rowlands: Which to me is, personally, I mean that's like the ultimate goal.

Mr. Hurd: Right.

Mr. Rowlands: How you get there, reduce energy . . .

Mr. Hurd: Right, every bit of energy that you don't pull off the grid is something that's not being burned over there so, yeah. And then the indoor environmental quality is more about the durability and health thing, and that's its own sort of piece.

Mr. Poole: Before we get into that, I'd like to thank Andrew for his time . . .

Mr. Hurd: Oh, absolutely, I'm so sorry.

Mr. Poole: And give him an opportunity to get out of here is that's what he wishes.

Mr. McDowell: Thanks, I'm actually going to stick around.

Mr. Poole: Okay.

Mr. Jadick: Is that slide available if we . . .

Mr. McDowell: Yeah, I can email it to you.

Mr. Hurd: Actually, Michelle would like to get a copy of the presentation, if possible.

Mr. McDowell: Sure.

Mr. Jadick: I appreciate that. It may be something that some of our PMs have an interest in.

Mr. Hurd: Actually, I guess it's loaded up on there, right?

Mr. McDowell: It's on the laptop. Should I leave it on the laptop up there?

Mr. Hurd: Yeah, she should be able to get it from that.

Mr. Poole: Or if you emailed it to me, that would be one of the easiest ways to do it.

Mr. McDowell: Sure.

Mr. Hurd: That would be awesome. Because she just wants to be able to, she can take that then, link it to the agenda . . .

Mr. Jadick: It becomes part of the . . .

Mr. Hurd: It becomes part of the record.

Mr. McDowell: Yeah, sure

Mr. Rowlands: Yeah, I invited Drew to stick around put two cents worth of his wisdom in this process.

Mr. McDowell: I am a LEED for Homes rater, as well. So, I've been through the LEED process and know what that's about.

Mr. Hurd: But before Tim did the thing that I should have been doing, who was about to talk about something? Reid, were you about to say something about . . .

Mr. Rowlands: I'm always about to say something. We were talking about whether or not, what's the goals of this effort.

Mr. Hurd: Right. And I mean we can even do a straw poll and be like who thinks reducing carbon is more important and who thinks recyclability is more important.

Mr. Rowlands: Reducing carbon I don't think is a buzzword that Council will vote this thing through on.

Mr. Hurd: Okay.

Mr. Rowlands: If you just talk about reducing energy and you're going to get the reduction in carbon, so we can mention it, but I don't think it should be . . .

Mr. Hurd: Okay, well if we broaden the definition of energy to . . .

Mr. Rowlands: Even though, for me, it really is.

Mr. Hurd: Well, I guess if we broaden the concept of the, basically it's embodied energy is what we're expanding it to. Just sort of saying reducing the amount of energy that is required to create the house, then that's the thing. Jeremy, you're . . .

Mr. Firestone: How much of a lifecycle of energy goes into the house versus the occupancy?

Mr. Poole: Depends on your occupant.

Mr. Firestone: Yeah, I know, but just on average.

Mr. McDowell: The energy consumed during the 75- or 100-year age of the home is by far . . .

Mr. Hurd: Yeah.

Mr. Firestone: Yeah.

Mr. McDowell: It just blows away everything that . . .

Mr. Hurd: Yeah, and even for commercial buildings, it's even further than your lifespan of a commercial building. Operational costs generally outweigh . . . I mean, you don't want to discount this.

Mr. Poole: Even when you're overcoming bad occupants, it's still . . .

Mr. Firestone: So then, that means we want to focus on occupancy more than construction.

Mr. Hurd: So, consumption of energy than . . .

Mr. Firestone: Consumption.

Mr. Poole: And that's what I think we've set up.

Mr. Hurd: Yeah, I mean there's a few spots in materials where we had, there was some discussion last time about alternates to wood, structural alternates to wood and whether that was something we really did want to go in that direction or was that counter to the intention of the . . . that's partly why I'm bring this back up is to, clearly we weren't all of a single mind on that point.

Mr. Rowlands: No, it was an interesting conversation we were having. You know, LEED was pushing engineered lumber and all, but yet mass timer is going to sequester more carbon and less formaldehyde and adhesives, so which should we be pushing?

Mr. Hurd: Right. And maybe it may even be a regional difference, too. Say some places might be easier for them to get engineered lumber than raw timber because you have to truck it so far or something, so you have to start going, alright, I don't know, Florida or Arizona . . .

Mr. Rowlands: Yeah, right.

Mr. Hurd: You know, if I'm bringing in lumber, if I'm shipping it in, I'm going to ship in the most efficient thing I can. I'm not trucking 2 x 12s. In the Pacific Northwest, go to town.

Mr. Rowlands: Well, we are talking zone 4, so I don't think that's a conversation we need here. To me, personally, the goals of this is to reduce carbon or is to reduce the energy. And I'm a believer that we're a man-made climate change and we need to reduce that faster than we are. So, the water resource, while that's definitely needed and good, it's not my focus. I don't know if it should be at all this group's focus. I mean if we're . . .

Mr. Hurd: I will only add that I was on a LEED committee several years ago during the regional priority points and the research that we were working on showed that the water quality and quantity was sort of the next big issue.

Mr. Rowlands: Oh, I agree.

Mr. Hurd: To some, more than energy, you know, being able to get energy and everything, so we really ended up pushing regional points onto water, you know, reduction of water usage and . . .

Mr. Rowlands: But, again, we're now talking Newark, Delaware. If we were in Tucson, Arizona or Yuma, Arizona, water would be the biggest thing and we don't care about energy.

Mr. Hurd: No, no, but this is regional to here.

Mr. Rowlands: Really?

Mr. Hurd: Yeah.

Mr. Rowlands: Well, I now water is definitely the next issue.

Mr. Hurd: Mostly because all the stormwater goes so far away and never comes back into the aquifer and it's drained out.

Mr. Rowlands: Well, if you don't fix this climate issue, we won't be worried about water anyway, is my thought process.

Mr. Hurd: Yeah.

Mr. Rowlands: But we've also scaled it to where the emphasis is already going to be on energy and . . .

Mr. Hurd: Absolutely.

Mr. Poole: If we could, one thing that, before we get into the points, we had also talked about an opt-out if someone were to meet LEED standard or some other standard that, before we get into the points, we should probably discuss and maybe add. If we're looking at the only alternative pathway being LEED or if there is another alternative pathway that someone wants to recognize that would include all of our concerns and not just energy, that we would want to include . . .

Mr. Hurd: Yeah, we have to remember that it's going to be different for commercial and residential, for sure. Because LEED certainly covers the commercial, it covers those areas. Green Globes is energy and it's materials, and it's . . .

Mr. McDowell: Green Globes is sort of similar to LEED. It's more used in Europe and it's not at the single-family home level. It's more multi-family. NGBS is another standard that's similar.

Mr. Hurd: Right. Isn't that residential?

Mr. McDowell: Yeah.

Mr. Hurd: Yeah, that's what I thought. Okay. And I think in the stuff I was looking at, in terms of commercial, you've got basically LEED and then for standards you've got the 186 ASHRAE, and you've got the International Green Construction Code. That's about it for commercial level. And then for residential you have the Green Building Standard, you've LEED for Homes, you've got Green Globes, you've got some more options.

Mr. McDowell: And ASHRAE 90.2.

Mr. Hurd: That was, that's the . . .

Mr. Firestone: It seems to me that we're a relatively small place, I don't know if it makes sense to have multiple alternative ways. I mean . . .

Mr. Hurd: I was just trying to make sure that we didn't end up sort of going it's LEED or nothing, to give it . . .

Mr. Rowlands: I would be opposed to giving an opt-out for even a LEED gold, let alone platinum.

Mr. Hurd: Really?

Mr. Rowlands: I've seen reports on a LEED platinum project that is just an energy hog.

Mr. McDowell: So, yeah, LEED, you know, energy is a focus and it's a big focus, but it's not the sole focus. So, you can poorly, you can do mediocre in energy and still earn . . .

Mr. Rowlands: Right.

Mr. Hurd: Yeah.

Mr. McDowell: Platinum.

Mr. Rowlands: But you can also put all these bells and whistles into these mechanicals and get points . . .

Mr. McDowell: Yes.

Mr. Rowlands: And then thermal bridge everywhere and I would not like to see an opt-out for a LEED . . .

Mr. Hurd: Alright, it's ASHRAE 189.1 is the standard for design of high-performance green buildings.

Mr. McDowell: Okay.

Mr. Rowlands: What is it? 189.1?

Mr. Poole: I was just . . .

Mr. Hurd: But the challenge of pulling something like that in is because you're going to say basically it will be commercial and there's going to be an engineer attached, but you're going to say, you, the engineer, have to basically produce a report or something that says you've designed by this standard and it's going to comply with it and it's going to do all these things, so

you can go, okay. I mean it has to be something that you will accept if we go this alternate path.

Mr. Rowlands: Yeah.

Mr. Hurd: Something that you'll say, yes, it will, you know, get us there.

Mr. Poole: Again, the big thing is while we're trying to focus most of our effort into energy, we're not focusing it all into energy.

Mr. Rowlands: No, right.

Mr. Poole: And if we're going to have an opt-out, we can have an opt-out like it's proposed where you're only opting out of the energy, but meanwhile if we want to opt-out of the whole things, we've got to have something that is conclusive for our other concerns.

Mr. Firestone: Could we have an opt-out for LEED but that in order to make LEED platinum, you have to have points relatively allocated in a similar manner to the code so that you . . .

Mr. Rowlands: That sounds complicated.

Mr. Poole: I think that if we're going to accept someone else's standard, we have to defer to them.

Mr. Rowlands: If you put in opt-out for Passive certification and you're going to have indoor air quality, you're going to have . . .

Mr. Hurd: Oh, sure. I mean I think residential is almost easier to choose an opt-out path because you can say, maybe not the LEED for Homes, because again you can say I'm going to put all my points in these areas which is easier than that, but yeah, a Passive House home, you know it's going to hit those things.

Mr. McDowell: The thing that concerns me with LEED is like you'll get points for something that you're going to do anyway like location . . .

Mr. Hurd: And that's partly why we're here is because, it was based on the version 3 LEED that the original code adapted and there are some things in there, especially . . .

Mr. Rowlands: Most.

Mr. Hurd: Not most, but if a developer comes to us and wants site plan approval, which is a way of getting relief from some zoning requirements in exchange for density because they're giving something, and one of the criteria that they can use is improved energy performance. So, they'll come and say we're going to do LEED-certified. And it's like, awesome. They go, I got 10 points because I'm redeveloping this lot in the center of town. So, I'm like 10 points on my way to my 45. It's like you didn't do a thing . . .

Mr. Poole: Except buy an expensive piece of property that's very desirable.

Mr. Hurd: Right, but you know . . .

Mr. McDowell: It's good to drive the development where you want it . . .

Mr. Hurd: It is, but you started at 10. And then they're all like, we're doing EnergyStar appliances and we're doing this, and they almost never put anything into the shell or into some of the things we'd like to see them do, because they hit their 45 or 49 points with landscaping and such, and it's all around the edges.

Mr. Poole: But that's why this is good because we can put the points where we want them.

Mr. Hurd: Right, so some of that frustration from planning and such came into this process and has come down to this and is partly why we're kind of looking at it more pointedly.

Mr. McDowell: Thanks.

Mr. Firestone: Well, some of it can be resolved by having some specific mandates, too, and not just having points.

Mr. Poole: So, you want points and specific requirements?

Mr. Firestone: Yeah, or you narrow, you have categories of points and you have narrow categories and you've got to get so many points within a category . . .

Mr. Rowlands: Well, we're working towards that.

Mr. Firestone: To try to . . .

Mr. Poole: Again, just for a starting point, I categorized into three categories. If you'd like to further refine that, certainly we can do that.

Mr. Rowlands: So, in these categories you have to get X amount of our . . .

Mr. Poole: Right, like I said . . .

Mr. Rowlands: Whatever, 100 points or whatever we're going to required, X amount has to come from this, X amount from that . . .

Mr. Poole: Just for a starting point, as I said in the email, I calculated this based on a 50 point must. Okay, you must get 50 points and you have to get 25 in energy, 10 in conservation and recycling, I think it was, and then the third one was indoor environmental quality where you had to get 10. Which left you 5 to get wherever you want.

Mr. Hurd: Right, and that's the other way to keep people from taking some of the easier ones.

Mr. Poole: So, that's why you have different colors for different things and, again, this was just a place to start the conversation.

Mr. Hurd: I'm going to say I'm not hearing a lot of support for a direct opt-out path, at least at the moment. And maybe when we have a better sense of what our checklist is trying to achieve, we might be able to say is there a way to say it's a LEED goal or above with a minimum of, like with 50% of your points in energy.

Mr. Rowlands: But again, I like Tim's. If you're going to say opt-out with this code, this is the code. And I would still, you know, I didn't think too far as far as opting out with a Passive certification, but if we were to decide to put that in there, if anything, half of the people will look at it, what is Passive, Google it, and they're going to get educated. And that's a good thing.

Mr. Hurd: And half of those are going to say never . . .

Mr. Rowlands: But if they keep going down that path and I get, I mean, I'm a supplier of all these materials, and I get people ten times more than I did a year ago, ten times more than two years ago again. They're wanting to build better products. They're looking for information. So, the more we get that wording out there, and maybe you throw out LFI. If you do that, you can opt-out.

Mr. Hurd: What's that?

Mr. Rowlands: Living Building Challenge.

Mr. Hurd: Oh, LBI, yeah.

Mr. Rowlands: Living Futures Institute, as they like to be called.

Mr. Hurd: Oh, yeah.

Mr. Jadick: So, right now we're not even at the point where we're 100% that we want an opt-out.

Mr. Hurd: I think that . . .

Mr. Jadick: We'll come to that . . .

Mr. Hurd: I'm not seeing a strong consensus around, yes, we should make sure we have an opt-out path. We might come to that after we've kind of chewed through the . . .

Mr. Poole: After we've got our checklist down, maybe we'll look at what the alternatives can be. But right now, we're working on our checklist because we, again, in earlier meetings we decided there's nothing really that works perfect for us. We're looking in these different areas and there's nothing that's really a good alternative path that incorporates everything we're looking for, so we're seeking pieces of all different paths and creating our own list.

Mr. Hurd: And thinking just sort, and probably the last thing I'll say on this, for the opt-out path we have to be sure also that it's a path that gives you the results at the point when you need to issue a certificate of occupancy.

Mr. Poole: Right.

Mr. Hurd: Which is where LEED has its issues. Because you might go, so in six months after everything is evaluated, you'll find out if you got your LEED gold or platinum. Well, they already occupy the building and now we find out what they actually got. And if they didn't hit it, now what?

Mr. Rowlands: Right. LFI, you have to be there a year of monitoring before you get that, so that doesn't work at all.

Mr. Hurd: Right. So, you go, it's really, I mean that's one reason why we sort of came to the checklist because these are things that can be evaluated either at the review stage or during construction.

Mr. Rowlands: Or both.

Mr. Hurd: But that's the cut-off. It's like . . .

Mr. Rowlands: Well, Passive House still meets that.

Mr. Hurd: Then that's fine, but I'm saying the challenge with some of the other standards, other rating systems, is that they are a post-occupancy, down-the-road . . .

Mr. Rowlands: Yep.

Mr. Poole: We want something that says you've met our requirements, here's your certificate of occupancy.

Mr. Jadick: I think the checklist is starting to shape up as the preferred tool that anybody would want to use in lieu of an opt-out. I think it has a lot to do with the way that you've categorized

this, and I think that ultimately that's where we want it to be, right? We want this, someone to look at this and go, I'm not really interested in an opt-out happening.

Mr. Poole: Right, have it reasonable, strict enough that it's like how am I going to do this, but reasonable enough that it's like, okay, I can do this, I can do this, I can do this, and find their path.

Mr. Hurd: Right, and certainly we want it formatted in a way that it's clear what we're asking them to do, as well. We say insulation, this is what we're looking for you to do, and you can hit that at the design stage and it's not complicated.

6. **POINT ASSIGNMENT FOR COMMERCIAL PROJECTS**

Mr. Hurd: Alright, with that said, and you've got 25 minutes.

Mr. Jadick: Yeah, I'm a little more flexible than I thought, but thank you.

Mr. Hurd: So, we've got about an hour, a little less, and I just wanted to go through the commercial list and just kind of double-check it.

[Secretary's Note: A copy of the Green Building Code Concepts List can be accessed via a link at the end of this document.]

Mr. Hurd: What I had done after our last meeting is I've kind of structured this so that there's a goal, tactic, criteria, and point, because the criteria, of course, is what's going to get evaluated on, the tactic is sort of the process for achieving the goals, so some goals will have more than one tactic, and for like energy I took a lot of this from the NBI, the New Building Institute's documentation for doing stretch codes. They basically have it outlined to say, okay, if we're going to try to hit the 20% energy stretch code, this is the overall system, this is the U-value you should be looking for in various levels of your . . .

Mr. Rowlands: And who is this?

Mr. Hurd: The New Building Institute. It was in the packet for January, I think I had that in there. So, they basically wrote a model stretch code that is for new commercial that's tied to IECC 2015 and ASHRAE 90.1, and there's a lot of stuff in there where it breaks down kind of like to say, okay, you know, for equipment, this kind of equipment needs to have this kind of rating. So, they've defined what performance they're looking for to get you the 20% kind of thing. So, that's why I took a lot of their stuff because it's kind of like we say we want, you know, certified 20% above code or this pathway of criteria that should get you to also something like 20%.

Mr. Rowlands: Gotcha.

Mr. Poole: So, do we like the 50 points? Is that a number that we think we can build this checklist from?

Mr. Rowlands: Should we build the checklist and see where the number falls?

Mr. Firestone: I think we can figure out . . .

Mr. Rowlands: Maybe it's 100, who knows.

Mr. Firestone: We don't have to decide the number right now.

Mr. Poole: Well, we do to be able to place values on these to meet that. I mean if we're looking at the bulk of our points to get from energy, we sort of have to know how many points we need to get in order to place values, don't we?

Mr. Hurd: Somewhat, yeah.

Mr. Firestone: No, I mean we just have relevant values and then we can figure it out. I mean, if we need more, you can double all the energy credits. I mean, I, you know, the numbers are somewhat of a . . .

Mr. Hurd: Well, I think, I see Tim's point. I see both points. Part of it is to say if, say, we're saying 50 points total and 30 is in energy, say, as a starting point, you want to be sure that you either have, you don't want to have like 30 individual items on the checklist because that might be too many, but you want to be sure that you're putting more points on the things that you really want to push.

Mr. Rowlands: They both have merit. Which came first, the chicken or the egg?

Mr. Poole: I'm just saying that in order to assign points, we need to have an overall goal because we don't want to say this should be 1/50 of our total. If we want to say, okay, well our total is going to be 50 and we're going to try to get 25 from energy because we want the most points from energy, which has been clear in what I've gotten from this committee, that's why when we also were looking at for a 20% stretch code being the opt-out, that's why I said, well, we'll give 30 points if you get there. Because that gets all your energy points and that's what we were looking for.

Mr. Hurd: Right. So, remind me again, Tim, how you broke this down. You had 50 points . . .

Mr. Poole: Fifty points total, minimum 25 from energy . . .

Mr. Hurd: Okay.

Mr. Poole: Minimum 10 from recycling and conservation, and a minimum 10 from indoor environmental quality.

Mr. Hurd: Okay and then 5 elsewhere.

Mr. Poole: And then 5 mostly from energy just because those are where you're probably going to get the points. That's where we have the most options.

Mr. Hurd: Right but that gives you site and let's you do the . . .

Mr. Poole: But if you got 3 from energy and 1 from this and 1 from that, we don't really care so long as you got your 25 from energy and your 10 from here and your 10 from there. And I tried to have enough points assigned in each category that you could get there without having to do all of them.

Mr. Hurd: Right, because that's the flip side. You don't want to say it's an alternate path or everything on the checklist.

Mr. Poole: Right, so meanwhile we may want to go through and say, you know what, we really want that one so we're going to give that one 5 points, because then everybody goes for that because it's a lot of points.

Mr. Hurd: Right.

Mr. Firestone: Right, well, I mean, I think there's also the possibility that we might want to be even more prescriptive on some things. I think these are things that we need to talk through before moving forward. I mean the points are good but there are other overlays that you can put on it.

Mr. Rowlands: So, if I understand this correctly, the energy is light blue.

Mr. Poole: The energy is light blue. I put the dark blue as the opt-out just because it was blue.

Mr. Rowlands: So, in energy, if I added my number up, I get 47 total points.

Mr. Firestone: I got the same number.

Mr. Rowlands: So, then we're good. But you're required to get 30.

Mr. Poole: You're required to get 25.

Mr. Firestone: Twenty-five.

Mr. Rowlands: Oh, 25, sorry.

Mr. Poole: So, you have to . . .

Mr. Rowlands: Yeah, yeah, so we can just start to go through keeping in mind 25 is what you need out of these things.

Mr. Hurd: Right, and if I'm calculating this right, we've got five sub-categories – envelope, mechanical systems, service water heating, lighting, and electric.

Mr. Firestone: There's a problem with the renewable energy one.

Mr. Hurd: Yes. It's standing out by its own.

Mr. Firestone: Three points per megawatt. A megawatt is a lot, so . . .

Mr. Hurd: I'll say I was the one who put in points per megawatt because I wasn't sure how to start it.

Mr. Firestone: I'm just saying the Field House is 0.85. The solar park is 0.23.

Mr. McDowell: Yeah, a megawatt is many homes.

Mr. Firestone: It's about a thousand, it's about 100 megawatt hours a month, it's basically 100 homes per megawatt.

Mr. Hurd: Alright, so what's the unit we should be using? Kilowatt?

Mr. Poole: Yes.

Mr. Firestone: Yes.

Mr. Hurd: Okay.

Mr. McDowell: Residential size is 5 or 10 kilowatts.

Mr. Firestone: Yeah, so a 5-kilowatt would probably be, on the residential side that would be sort of a typical size where you could offset a decent amount. I mean this is on the commercial side, but you still need to figure out . . .

Mr. Hurd: Yeah.

Mr. Poole: To scale it where they're getting the right points for it.

Mr. Firestone: Yeah, because . . . at 3 points per megawatt, no one is going to do it because . . .

Mr. Poole: It's not worth it.

Mr. Firestone: Well, most people would not have enough space . . .

Mr. Poole: Nobody is going to generate a megawatt.

Mr. Firestone: Right.

Mr. Hurd: Well that's why you're here because I was just grabbing things. Alright, so I guess the easiest way is just go through this. Envelope, there's three main goals here, as I saw it, which is reducing heat loss through your windows, reducing heat loss and heat gain, increasing the insulation level in the envelope, and increasing your air barrier performance.

Mr. Rowlands: So, the envelope, and then you have mechanical systems . . .

Mr. Hurd: Which are basically equipment efficiencies.

Mr. Rowlands: That's fine. And then hot water heating and lighting controls . . .

Mr. Hurd: And lighting controls and electric, we can almost combine as sort of a conceptual, it's using less electricity through controlling, better controls or design.

Mr. Rowlands: Coming from the Passive House mentality, the envelope should be like heavily weighted in this group.

Mr. Hurd: Yeah. This being commercial, the envelope is part of it. I think the mechanical systems is going to be a more, is going to be a higher energy user.

Mr. Rowlands: Not if you've increased that envelope efficiency so much, the mechanicals are going to be much smaller, in general.

Mr. Hurd: True, but I think commercial you run into the issue of that's harder sometimes to push the envelope performance too much further. I mean look at some of the buildings on the STAR Campus, you know, glazed curtain walls and things like that, you can only . . .

Mr. Rowlands: Well, you shouldn't be able to glaze curtain walls but that's a different issue. Actually, I've seen some pretty cool glass coming out that is better than an opaque wall.

Mr. Firestone: Should we figure out the relative points in the bigger category, sub-category?

Mr. Rowlands: The envelope, to me, should be heavily weighted is all.

Mr. Firestone: So that we figure out the relative weight between envelope and mechanical systems and lighting and . . .

Mr. Rowlands: Yeah, we could . . . I mean you've got 25. If we know break it down what we'd like in theory, we could change it.

Mr. Firestone: Right.

Mr. Poole: And, again, these are just starting points. If we say, no, we want them to do that, then we assign point values accordingly.

Mr. Hurd: Yeah. I would definitely agree that envelope and mechanical systems on a commercial building are the two places where we can make the biggest impact.

Mr. Rowlands: So, at least half.

Mr. McDowell: So, 12 points in envelope and 18 in mechanicals?

Mr. Firestone: Yeah.

Mr. Hurd: No, that's all our 30.

Mr. Firestone: Yes. Well, right now there's 12 in envelope . . .

Mr. Hurd: Oh, right now there's 12.

Mr. McDowell: I'm just reading off this table.

Mr. Firestone: Eighteen in mechanical, 6 in service water heating, 6 in, no, 7 in lighting, and 4 in electric systems. Now I wasn't clear on this efficient equipment. Do we have to put them, do you have to have EnergyStar on everything? Or is that like per . . .

Mr. Hurd: I'd have to look at the exact thing. I think the intention was probably . . .

Mr. Poole: In the electric systems, the efficient equipment kitchen?

Mr. Firestone: Yes, so it's everything in the kitchen?

Mr. Poole: That's the way I read it.

Mr. Firestone: Okay, anyway, we just need to be clear on that. You don't get 3 points for putting in a . . .

Mr. McDowell: Correct, and I'd like to see an and or an or in that somewhere.

Mr. Poole: Everything in that category is EnergyStar-compliant. And I figure with the number of restaurants we get, having efficient kitchen equipment as opposed to . . .

Mr. Rowlands: Yeah.

Mr. Poole: Is big. Which is why I assigned it 3 points. So, if you're going to get all of that equipment efficient . . .

Mr. Firestone: Yeah.

Mr. Poole: It will make a difference.

Mr. Hurd: Right.

Mr. Poole: If you're not getting it all, you don't get the points.

Mr. McDowell: One of the biggest losses in the kitchens is . . .

Mr. Rowlands: Ventilation.

Mr. McDowell: The fact that they're not balanced correctly with ventilation. Do you ever go into a restaurant and go in the door and you can't open the door?

Mr. Poole: Usually that's because the make-up air is not working.

Mr. McDowell: Right, and so there probably is no make-up air, so who knows what's . . . there should be a dedicated supply, like pathway for the air to come and go. So, you could do a point for having your kitchen balanced.

Mr. Poole: Well, again, that's part of the construction. The problem is when the make-up air unit goes or in older restaurants that it's been in effect for a while . . .

Mr. McDowell: Yeah.

Mr. Rowlands: But that's a good point. We don't have anything in here as far as balance.

Mr. McDowell: And commissioning. I think commissioning is really important on commercial buildings. Because you can build a building, as you know, and then they walk away, and nothing works right.

Mr. Rowlands: So, somewhere in here we've got duct leakage that we could also throw in wording of balancing. It might be a good place to put it.

Mr. Poole: We could add a category. It's our checklist.

Mr. Rowlands: Just sneak it in there, and balanced.

Mr. McDowell: Or commissioned, you know . . .

Mr. Poole: I thought there was some commissioning in here.

Mr. Hurd: I think that, we sort of talk about ventilation systems and the ERV and such. That could be where you talked about, or improving . . .

Mr. McDowell: Design fans to be controlled based on actual loads or occupancy rather than continuous uncontrolled operation. I like that one.

Mr. Hurd: Alright so we want to see balancing or commissioning . . .

Mr. Jadick: Just as a separate category?

Mr. Poole: Balancing and commissioning for mechanical equipment?

Mr. Hurd: For the whole HVAC system.

Mr. Rowlands: But you don't need balancing and commissioning. Commissioning includes balancing. But Drew's also got a good point as far as 18 points for mechanical systems and only 12 for the envelope, so it should almost be reversed in the weight.

Mr. Poole: I don't know. I think with the commercial buildings, you've got so much in and out that your envelope matters less than the actual equipment efficiency.

Mr. Hurd: That's been my experience is that it's . . .

Mr. Rowlands: Maybe.

Mr. Hurd: Commercial buildings are more equipment, energy is more in the equipment than in the . . .

Mr. Rowlands: Yeah.

Mr. Poole: And that's not that if we want to add something in envelope, we can't add them.

Mr. Hurd: Right. I'm just saying I think it's also easier to push the mechanical efficiencies and such a little further than you can push the envelope in a typical commercial building. And certainly, it's going to be a bigger chunk of the energy use is that there's a lot going on there.

Mr. Poole: Where is our thermal bridging? I'm not seeing that either.

Mr. Hurd: It's not in here directly. They're looking for an overall U-value in the wall, that's why this is set up this way. Their code was written using a U-value for the walls, not R. But they didn't, at least for the commercial, they didn't talk as much about, you know, designing to reduce thermal bridging and such. It just talked about basically increasing the . . .

Mr. Poole: Do we want to add that in?

Mr. Rowlands: You mean reduce thermal . . .

Mr. Poole: Yeah.

Mr. Hurd: Oh actually, okay, they do talk about minimizing thermal bridges. I think we just hadn't pulled it as an item.

Mr. McDowell: I'm not certain how you would qualify reducing thermal.

Mr. Poole: Provide thermal bridging at, you know, metal components, you know, penetrations of the wall assembly . . .

Mr. Hurd: They way they phrase it is that any structural elements that comprise a direct uninsulated path to the building exterior and have a surface area that exceeds 1% of the area of the envelope component which they are part of, shall be included as discreet building areas in the area weighted average calculation of envelope thermal performance. So, basically you don't get to ignore it once it goes over 1%.

Mr. Poole: Sounds like a plan.

Mr. Hurd: Okay.

Mr. Rowlands: I'll leave it to them that the 1% is the correct number to calculate.

Mr. Hurd: Well, again, it's, you know, that's often when I look at these and I go, a bunch of people sat down and kind of figured this out and . . .

Mr. Rowlands: Oh, no, absolutely. I'm not going to rethink that.

Mr. Poole: Right.

Mr. Hurd: So, that's things like wall-to-wall corner interfaces, slab edges of projecting balconies, and mechanical fasteners even come into that.

Mr. Rowlands: Should we start going through, and I'm looking at the first one in the envelope under windows, and the only thing that we may want to add is the air infiltration. That's a specific number that is given to windows, tested windows.

Mr. Poole: Well, then would you also get the last one?

Mr. Rowlands: Where?

Mr. Hurd: So, there's an air infiltration . . .

Mr. Rowlands: Depends on how many windows.

Mr. Hurd: Yeah, so this . . .

Mr. Rowlands: Maybe that covers it anyway.

Mr. Poole: Right. That's what I'm saying. We don't want to give them points in two areas for the same thing.

Mr. Rowlands: No, you had them, you have a U-factor of a 0.3 and a solar heat gain of 0.35 and an air infiltration factor of . . . to get that 2 points, they should be picking a window that has an air infiltration factor of X. I don't know what X is.

Mr. Hurd: It talks a little bit about . . .

Mr. Rowlands: Because each window does have these ratings listed and one of them in the air infiltration.

Mr. Hurd: Air leakage rate, yeah.

Mr. Poole: The next thing is, do we want to be going through the wording in each of these or did we want to work on points?

Mr. Rowlands: Just points.

Mr. Firestone: Let's just work on points.

Mr. Hurd: Yeah, either one of those is going to distract us a lot.

Mr. Poole: Right.

Mr. Rowlands: Well, we have a half-hour and we haven't started, so . . .

Mr. Hurd: Seriously.

Mr. Rowlands: So, I'd like to see the 12 on the envelope go up.

Mr. Poole: Where do you want to add them?

Mr. Jadick: If you're going to add thermal bridging, that will bump it up.

Mr. Poole: We'll add thermal bridging. We'll weight that to get them 2 or 3 points.

Mr. Rowlands: Yeah.

Mr. Poole: Because thermal bridging is big. It's where we get huge heat loss.

Mr. Rowlands: Absolutely.

Mr. Jadick: So, if that's 3, that takes you up to 15.

Mr. Hurd: So, if there's 15 total and we're looking at like 7/8, so that we get 50% of these achieved? If there's 15 available points in the envelope, are we just trying to set a minimum of points in the envelope, or are we trying to also set a minimum number of points . . . sorry. We're trying to set a minimum number of points that we want them to achieve in envelope or are we just trying to make sure that envelope has a lot of points and some things don't have a lot of points?

Mr. Poole: Right. I think we're mostly trying to weight the things that we want them to do at this point.

Mr. Rowlands: Right.

Mr. McDowell: So, we're keeping the 50-point lid, right?

Mr. Poole: At this point.

Mr. Hurd: Okay. Well, if we're doing that, maybe we should look at making mechanical essentially the same 15 total points in there somehow.

Mr. Jadick: We just added commissioning, which is going to increase it further.

Mr. Hurd: Yeah, I know.

Mr. Jadick: I think it's okay.

Mr. Poole: Again, I'm less concerned about exactly where the points are. It's just that if they're going to get 25 points in energy, they're going to have to get them somewhere.

Mr. Rowlands: Well, you have automatically controlled shades 1 point.

Mr. Poole: Yep, because I don't see them as that valuable.

Mr. Rowlands: And/or no one is going to do them. They're just too costly. So, should you have given it an extra 2 points because they cost a whole lot more and nobody does it. And how important are they . . .

Mr. Poole: Like I said, if you've got good windows, how important are the shades?

Mr. Hurd: And I would say . . .

Mr. Rowlands: [inaudible] design.

Mr. Poole: Right, but again, it's all in what's going to cost and what's going to be durable, and automatically controlled shades, I don't know how long they last.

Mr. Hurd: Right. I'd almost, in the list of things, I almost want to say more points to the windows, like 3 points to the windows, 2 for the exterior shade, and 1 for the automatic shade in terms of sort of order of effectiveness.

Mr. Rowlands: Windows are a big hole in the wall.

Mr. Poole: If you want to put 3 for . . .

Mr. Rowlands: You could put 3 on windows but I want to go back and do some homework on the numbers you have there. This came out of that New Buildings Institute?

Mr. Hurd: The model stretch code provisions, yeah. I mean I can . . .

Mr. McDowell: Did the numbers also come out of there?

Mr. Hurd: Yeah.

Mr. McDowell: Gotcha.

Mr. Poole: Yeah, I think we should all go through these and add some suggestions that we're all prepared to do.

Mr. Rowlands: Right.

Mr. Poole: Rather than let's spitball it here at the meeting.

Mr. Hurd: Certainly, we're not going to . . . but that came from them, yes.

Mr. Rowlands: Well, I'm going to look at the window numbers here and see if they're that hard or that easy to get. I don't see them as that hard to get but I need to do some more homework. And windows should have a bigger factor possibly. So, maybe a 3 on the windows?

Mr. Poole: I'm good with 3. Like I said, I just started it . . .

Mr. Rowlands: It's a big hole in the wall.

Mr. Hurd: It is.

Mr. Jadick: Are we devaluing the inclusion of the automatically controlled shades to the point where maybe it doesn't belong on the list?

Mr. Hurd: I think it's a thing that if you have it, you have it.

Mr. Poole: If you have it, there's value to it.

Mr. Hurd: True.

Mr. Poole: But there's not a lot of value to it and that's going to be a building owner preference more than anything else.

Mr. Jadick: Absolutely.

Mr. Hurd: And they may get this because they decided to use controlled shades to do daylight controls for instance, because that comes later. They might be like, hey, I got it for the shades. I just know that when I was studying this back in school, the rule we were taught was that the first thing you want to do it keep the heat out of the building in the first place. So, you want to stop it like with an exterior shade or something. Once it's inside the building, that interior is less effective.

Mr. Rowlands: Oh yeah, exterior is definitely better.

Mr. McDowell: They're a great idea.

Mr. Rowlands: Now you want to keep that out in the summer. In the wintertime, I want to let it in.

Mr. Hurd: Right, so that's one reason why you want the control.

Mr. Poole: But most of the time when you get that, you're talking about a building that's got a huge amount of building automation. It's got, you know, 72 things that automatically happen.

Mr. Hurd: Yeah, and the other thing to remember, commercial buildings also are predominantly, they're cooling-dominated because they're producing heat almost all year-round. So, they're less affected by solar heat gain and envelope issues that a house would be affected by because they're just, in general, producing heat. Now, when they're big enough, you have a perimeter and a core issue. You have to have that kind of zoning. Alright, insulation. I tend to agree that we want to hit roofs harder than walls and maybe the same as floors.

Mr. Poole: I mean do we want to add . . .

Mr. Hurd: I almost want to bump them all up because you really want to say if you make the walls more efficient than the things, you get, you know . . .

Mr. Poole: With the current values in the Energy Conservation Code, how much are you going to gain by increasing over R-49 in the attic? How much heat loss are you getting at R-49 and if you go to R-100, how much do you really gain?

Mr. Hurd: Well, this is less about going to R-100 but, I mean, I know there is a diminishing point of return on insulation and it's the subject of endless debate . . .

Mr. Poole: Yes.

Mr. Hurd: Of what's the point at which it becomes . . .

Mr. Poole: Certainly, as you lose and gain more heat through the roof, that's why I weighted the roof insulation higher, I think maybe we can also talk about continuous insulation over cavity and things like that. If we want to add something else into envelope is to put continuous on the walls. Give them a point or 2 for that.

Mr. Rowlands: I would definitely give 2 points for continuous. Absolutely.

Mr. Poole: I mean if we want to look at insulation and add some points into envelope, that's some place that we can add them where there's value.

Mr. Rowlands: So, right now we have nothing in here for continuous insulation.

Mr. Poole: Correct.

Mr. Hurd: So, it's . . .

Mr. Rowlands: I think it should be there. And then it's a matter of do you two-step it and does one inch get you a point and three inches or two inches gets you another point?

Mr. Poole: I think the value is almost in the thermal bridging and just having that sealed envelope and, you know, whether it's one-inch or two-inch . . .

Mr. Rowlands: Yeah, but you're also gaining insulation where there is no thermal bridge, so it's all insulation . . .

Mr. Poole: Right.

Mr. Rowlands: If they're going to do continuous. I mean what is continuous? One-inch, five-inches? It's what we make it, I guess.

Mr. Hurd: Well . . .

Mr. Rowlands: It's very common to put a three-quarter-inch sheet on the outside. That's not much.

Mr. Hurd: Yeah, that's not. They don't explain it much in here but at least what I'm familiar with is when they're talking about a U-value for an assembly, it is the total assemblies' total number.

Mr. Poole: Right.

Mr. Hurd: So, in some ways the continuous and the cavity, you know, you get a different number when you have a cavity and a stud as opposed to a, you know, but it doesn't explicitly say, because it doesn't, like the IEC, say it's this if it's cavity, it's this if it's continuous on the

exterior and a cavity insulation, because it currently does that in the walls. It says it's R-21, I guess . . .

Mr. Poole: R-20 or R-13 plus 5.

Mr. Hurd: Plus 5, right.

Mr. Poole: But meanwhile, I would propose that we add a category where we say if you have continuous insulation over 75% of your walls, then you get 2 points or 3 points

Mr. Hurd: But you want it to be the right amount of continuous.

Mr. Rowlands: Why 75?

Mr. Poole: What?

Mr. Rowlands: Why just 75%?

Mr. Hurd: it's a starting point.

Mr. Poole: Because there may be something that you're trying to get around. Or there may be some feature that you're trying to get . . .

Mr. Rowlands: An external chimney . . .

Mr. Poole: Yeah.

Mr. Rowlands: I would just, I mean I don't know if I want to have a percent of the building envelope that's continuous. It's just continuous, and that's not going to count windows, it's not going to count something that's . . .

Mr. Poole: Right and that's what I'm saying. If you want to make the number 90, but you have to leave a little room for something that may . . .

Mr. Rowlands: Or it's just 100% and then there are things that don't count, like windows or . . .

Mr. Poole: Okay, that's fine. Like I said, however you want to do it. I'm just saying that there's got to be . . .

Mr. Firestone: I like the way of . . .

Mr. Rowlands: Actually, once they're doing continuous, they're going to do it everywhere that they can.

Mr. Poole: And that's fine.

Mr. Firestone: And then it's just how the term is interpreted.

Mr. Poole: Right. So, if we want to add something for continuous and we want to give it some weight at 2 or 3 points . . .

Mr. Hurd: Right, and I can, I think that this will obviously need a little more explanation when we get to this criteria because it's got to be clear that we're talking about the U-value for the total wall assembly, which is different than the R-value that you stuck inside the wall which, as I understand it, people often use the U-value because it could be calculated more effectively as an assembly than R-value can.

Mr. McDowell: I think some of the numbers on your floors might not be right, maybe a decimal off. Because the slab-on-grade unheated is an R-2 and the slab-on-grade heated is an R-1.5. So, there might be like a zero between the decimal point in the first one.

Mr. Hurd: Non-residential and residential, I may be on the wrong side.

Mr. McDowell: For the floors, 0.468 . . .

Mr. Hurd: No, unheated was 0.468 and . . .

Mr. McDowell: That's an R-2.

Mr. Hurd: And heated was 0.65.

Mr. McDowell: And heated at 0.65, which is not even an R-2. It's R-1.5.

Mr. Hurd: Yeah, that's what they put down. But that's based on 2015 IECC, I don't know if that's . . .

Mr. McDowell: Maybe that's wrong.

Mr. Hurd: But that's consistent across there, their numbers.

Mr. Rowlands: So, we do have to rethink that they're smart . . .

Mr. Poole: We're going to have to go through all of these and, like I said, if we get into that now, we're not going to be very productive and we're going to waste the rest of this meeting.

Mr. Rowlands: But highlight that because it doesn't sound right. So, continuous insulation. Just two inches they get it? Or do you want to make it one inch for 1 point and three inches for 3 points?

Mr. Hurd: Well, here's the thing. Exterior continuous insulation really needs to be evaluated for dewpoint and for, at least for dewpoint. So, how much goes on the outside is very much dependent on how much is on the inside that's going to be effective. Well, not effective, but is going to reduce condensation and safe . . .

Mr. Rowlands: Well, we're really not changing their wall assembly too much.

Mr. McDowell: But your point is well taken.

Mr. Hurd: That's why it's like R-5, you've got to start at R-5 on the exterior, that keeps you safe around here.

Mr. Rowlands: Right.

Mr. Poole: So, a minimum of R-5.

Mr. Rowlands: But if you're building it without any, where is that dewpoint right now? If you add, you're only helping push it further out. So, is there any harm?

Mr. Poole: Like I said, just put in continuous insulation, minimum R-5, and give them some points. Or at least that's a starting point for where we are.

Mr. Rowlands: Yeah, but that can be like one inch.

Mr. Poole: Right.

Mr. Hurd: Yeah.

Mr. Rowlands: Is it worthwhile to double that and they get double the points or something? So, there are two levels?

Mr. Poole: We can discuss that later. Like I said, let's start with something . . .

Mr. Hurd: And if they're smart, they're going to get the zip plus 5 sheathing and they're going to get their air barrier at the same time. They're going to get the continuous and they're going to get the air barrier.

Mr. Rowlands: So, for R-5 you get 1 point or 2?

Mr. Poole: Two, at least. Again, if we want them to do continuous, give it value.

Mr. Hurd: And it is more effective.

Mr. Poole: That's the big thing. Let's build a more effective building.

Mr. Rowlands: Yep.

Mr. Hurd: Okay. So, their measure of air leakage is, of course they're using a different criteria than air changes. They're looking at a total leakage number in this language.

Mr. Rowlands: I know we don't want to dive deep into the numbers in here but maybe we just take it to the 50 pascals. It's more commonly known.

Mr. Hurd: Yeah.

Mr. Rowlands: And if it's 3, do we want to put 2?

Mr. Hurd: Or is it 2.5?

Mr. McDowell: Army Corp of Engineers uses a 75-pascal standard.

Mr. Hurd: Does anyone else use 75 or is that just sort of . . .

Mr. McDowell: I think the bigger the building, the higher the number. So, if it's like a multi-family low-rise, that kind of thing, they're still using the 50 pascals. But if it's a large building, they're . . .

Mr. Rowlands: Which you're not getting in Newark.

Mr. Hurd: Well, but this, again, this is commercial, so that low-rise is going to fall under the residential three stories or less.

Mr. Poole: If they get somebody in to evaluate it . . .

Mr. Rowlands: They'll know what they're doing.

Mr. Poole: Let's just use the standard number. Let's not overthink it.

Mr. Hurd: Yeah, and I can double-check against what the IECC has for air changes for commercial and see if we can do an alternate just to say we want, you know, two or something. Mechanical systems, basically it's all about increased efficiency or the systems with more efficient distribution. So, that's why we have things like tankless water heaters . . .

Mr. Rowlands: I thought we had heat pump water heaters in there also.

Mr. Hurd: It is. Heat pump water heater.

Mr. Rowlands: Oh, heat pump. It was staring me in the face.

Mr. Poole: But meanwhile we don't use a whole lot of energy on water heating in comparison to the rest of the building so that's why the number is lower.

Mr. Hurd: This would probably come into play if you have a hotel or something and you wanted to put spot water heating or something.

Mr. Rowlands: Like the pool on top of that hotel. We know they're going to heat it.

Mr. McDowell: Are electric tankless any more efficient than electric non-tankless?

Mr. Hurd: The efficiency is in the non-heating water and keeping it at a constant temperature.

Mr. Poole: Yes. But electric is the least efficient way to . . .

Mr. Hurd: It is.

Mr. Rowlands: So, what was your point again on electric tankless?

Mr. McDowell: It just says tankless. It' doesn't say gas or electric, so I don't know if you wanted to . . .

Mr. Rowlands: My sense is, I think, to require electric.

Mr. McDowell: No, I mean there's a big difference between tankless gas and tankless electric in terms of efficiency, energy use, and so forth.

Mr. Hurd: There is. I guess for me, at least, just shifting to a tankless system as opposed to tanks is already a step up in efficiency if they're going to make that jump. The fuel source they use is going to be almost, well, I mean they're going to have both available. If it's say a hotel and they're having point sources or office buildings and they're just going to have little ones in the restrooms, it's going to be electric because it's not big enough to be gas. There's a scale aspect to that, as well.

Mr. Poole: Right. I've only seen three electric tankless water heaters.

Mr. Hurd: Wow.

Mr. Rowlands: Mostly gas you see?

Mr. Firestone: But don't we want to be encouraging a move in that direction?

Mr. Poole: No, I don't think so.

Mr. McDowell: That's a good question. Everything has its advantages . . .

Mr. Hurd: Well, in residential, if I'm doing a tankless system for my whole house, it's going to be a gas system because that's how I can get the energy into the water faster. But if I'm looking at distributed hot water, small hot water systems throughout a larger building then maybe electric is the scale that I need because they're little small things at the sink.

Mr. Jadick: Are you talking about like an electric instant hot?

Mr. Hurd: Yeah.

Mr. Poole: Point of use.

Mr. Jadick: Yeah, I mean I've seen a lot commercially in bathrooms, mostly.

Mr. Poole: Right, but they're not super-efficient. They get their efficiency from not storing the water and not piping water . . .

Mr. Jadick: Right, not because of the energy . . .

Mr. Poole: Seventy-five feet, but not because you're saving the energy heating the water. It's more about not heating water you're not using.

Mr. Hurd: It's a volume of water that electric can heat effectively. You know, it's when you start getting into several fixtures, then you go, well, it had better be gas because I have to move a lot of hot water through it.

Mr. Poole: The only big commercial one I've seen was at the East Campus utility plant and that was a big one, electric.

Mr. Hurd: The HVAC equipment, I found at least two tables that have basically broken this down in much more detail which I didn't want to repeat here. One was in the model stretch code and one was in the Green Construction Code. Because they break it down by type. They're like, you know, gas-fired boilers . . .

Mr. Poole: I think we pick one of them and line up, just put that language in there.

Mr. Hurd: That's fine.

Mr. McDowell: Yeah, to have two different ones is an option.

Mr. Poole: Right. We want to make it easy for them and easy for us.

Mr. Hurd: Right, so we can go offline, and we can talk about which one seems to have a better format. I mean the IGCC has the advantage that it's within the ICC code family and that's sort of where we're . . .

Mr. Poole: I envision, and this is just me, that when we're done with this, we've got a standalone document that says meet this. That's you're not looking for reference materials.

Mr. Hurd: Okay. I guess we'll pull in the language. Cooling towers, I guess how are people feeling about the points spread? I think obviously the ERV is a big piece of something that we would like them to do so I can see 3 points there. I guess I'm getting the sense that it's sort of 1, 2, or 3 points is sort of our standard spread, so far at least, in terms of what we're trying to . . .

Mr. Poole: Again, if we want to grab something that we say we definitely want them to do, we'll give it 5 points. Again, I have no problem with pushing people to try to get points in a certain area.

Mr. Hurd: Probably the only one I would push harder on maybe is the ERV. And then what was your concern about the guest room that you had here in red?

Mr. Poole: Not all commercial buildings have guest rooms.

Mr. Hurd: This is specifically for hotels, motels and things. Because very few commercial buildings will have discreet spaces where you can turn on and off the equipment.

Mr. Poole: Yeah, but if you have it tied to occupancy sensors, then you can get buildings that shut down whole areas. And, like I said, it's been my experience with the building automation that when buildings go into unoccupied mode, they save a lot of energy.

Mr. Hurd: Okay, so maybe we should have a separate criteria for . . .

Mr. Poole: Unoccupied spaces.

Mr. Hurd: Occupancy . . .

Mr. Poole: Where we've got heating and cooling based on when the building is occupied, then I think there is value there.

Mr. Hurd: Yeah. And then if you're doing a hotel, it would be ideal if you could basically have a system override on the guest room that says the guest room is unoccupied or unrented and it goes down to its setback.

Mr. Poole: Right.

Mr. Hurd: So that you don't have to hope that somebody goes through and pushes the buttons.

Mr. Poole: And you said building automation is good. It's really good with energy savings.

Mr. McDowell: It's got to be commissioned.

Mr. Hurd: Yeah.

Mr. Poole: Right.

Mr. Rowlands: Can we go back up to gas- and oil-fired boilers shall have a minimum thermal efficiency of 94.5%?

Mr. Poole: Yeah.

Mr. Rowlands: Three points?

Mr. Poole: That's about as efficient as they get.

Mr. Rowlands: I know. Is that, do people normally put those in?

Mr. Poole: No. Normally, you get 90 to 92.

Mr. Rowlands: So, it's a stretch to put that in. Nobody is doing it.

Mr. Poole: In a commercial building, it doesn't happen.

Mr. Rowlands: Okay.

Mr. Poole: It just plain doesn't happen. Most of the time in a commercial building, you get a lot of 80%s. It's on the roof, it vents itself, it's not bothering anybody, and I'm not paying the bill.

Mr. Jadick: Right, so is that a waste of 3 points if no one is going to go chasing it?

Mr. Poole: Well, again, when you've got to get 50 points, you have to get them somewhere.

Mr. Jadick: Right.

Mr. Poole: And if they choose that one, if we want to pump that number up, put that number at 5, put the ERV at 5, you know, say, hey look, this is what we want. We want an ERV and we want super-efficient equipment. You know, if we said we want a super-tight envelope and start putting points there, that's what we want.

Mr. Rowlands: You said on the gas-fired stuff that you've seen 90% or whatever. Is it much more expensive to go 94.5?

Mr. Poole: Yes, because then you're looking at a lot of things like variable speed drives and . . .

Mr. Rowlands: Right, so it's not something that people are going to do lightly. So, 3 points . . .

Mr. Poole: No, you're adding 20% to the cost of the equipment. The installation is the same, but the actual equipment cost is more.

Mr. Hurd: Right, and you're probably for sure bringing everything inside the building. You're not putting it on the roof.

Mr. Poole: No, it's probably . . .

Mr. Hurd: So, you're making a mechanical room and giving up space . . .

Mr. Firestone: Is 3 too low?

Mr. Hurd: Three might be too low.

Mr. McDowell: Are there parts of Newark that don't have access to natural gas?

Mr. Poole: There are some, but not downtown.

Mr. McDowell: I was just wondering about crossing off that oil-fired option.

Mr. Poole: Find me an oil-fired boiler that's getting there. They can have it.

Mr. Firestone: Well, the question is whether we should just delete the word, I mean, do we really want anyone to put in an oil-fired boiler?

Mr. Hurd: Do you want to just say boilers?

Mr. Rowlands: Or just put gas boiler.

Mr. Hurd: Or just say boilers.

Mr. Poole: If we want to lose oil-fired, I'm fine with that.

Mr. Hurd: Well, if we lose oil-fired and say gas boilers, if you put in a gas boiler . . .

Mr. Jadick: It makes sense to just say boilers.

Mr. Hurd: Just boilers. I'm going to pencil in that that's a 5, just as a starting point. Maybe 3 points for the occupancy sensors and zones. I think that and ERVs have similar kind of systemic energy efficiencies that last the life of the building.

Mr. Poole: Where are you at?

Mr. Hurd: Well, I was adding, above the one about guest rooms, I'm adding one called occupancy sensors for zones or whatever language. I was thinking of giving that 3 points, as

well, like the ERV. Because I think like those things, like a commercial building is unoccupied almost half the day or more.

Mr. Poole: Sixteen hours.

Mr. Hurd: Right, depending. Maybe 12, but still a big chunk. So, if we have something that really cuts back on the energy use when it's not being occupied, that has a big impact.

Mr. McDowell: Anything about monitoring systems because not only does the building have to be commissioned properly, but not you can tell what's [inaudible].

Mr. Poole: From my perspective, I'm not coming back next year. I'm issuing a CO this year and . . .

Mr. McDowell: Well, not you but let's say they put in a system that's functioning and people can tell . . .

Mr. Poole: I'm lucky if I can get them to fix the heater. I mean that's my perspective.

Mr. Rowlands: But here's the place to put it in and say, hey, you have to do this. You have to have a system that monitors. And then you're done. Here's the CO.

Mr. Poole: Yeah, if you want to put it in, propose it . . .

Mr. Hurd: I think we can get through at least the energy before we run out of time.

Mr. Poole: I think so. We'll move quick. Be efficient.

Mr. Hurd: I did have one thing I wanted to talk about before we go. Anyway, service water heating, so there's flow, supply lengths, on demand recirculation pumps for occupancy control, and heat recovery. Does anyone have issues with how that's weighted? Want to add anything now that we're looking at it?

Mr. Poole: Like I said, I don't know that you spend enough energy on heating water that we want to add more points to that.

Mr. Hurd: it's not a huge piece, I understand, I do agree. I'm okay with the points the way they are. Lighting, this is where it gets fun. We have occupancy controls, that's a no-brainer, power allowances. Again, we're going to have to pick one of those tables and then actually put that language in there. But the way it functions, it's kind of like you imagine. It breaks it down and it says, okay, offices have to be this much . . .

Mr. Poole: So many watts per square foot.

Mr. Hurd: Basically, yeah.

Mr. Poole: And right now, the numbers are so low, it's hard to really put in too many inefficient fixtures and it's hard to really get that much farther than you're already going to be. So, I don't know that there's a whole lot . . .

Mr. Hurd: Yeah, so like they're talking about gymnasiums are 0.68, it says lighting power density, well I'm assuming that's watts per square foot but it's not actually clear about that. I think we talked briefly about a lighting allowance to say you get so many watts per square footage of energy for lighting. Daylight responsive controls is really cool, and I can see where we might want to give that more points if we want to go there. Exterior lighting, you know, efficient lights and controls. Make sense?

Electric systems have some of the similar things. The occupancy control I thought was an interesting one because it's basically saying, you know, there is certain equipment that you could have physically switch itself off for the times when no one is in there, and it's not going to be a problem.

Mr. Poole: I don't ever see anybody using that.

Mr. Hurd: I know but it's an interesting idea.

Mr. Poole: It is an interesting idea.

Mr. Hurd: To just go, hey, half those outlets just . . .

Mr. Poole: They just shut off when nobody is there.

Mr. Rowlands: Tim, do you not see any EnergyStar fryers, dishwashers in these kitchens going in?

Mr. Poole: It's less about that than just about anything. No, they're getting, it's not about, you know, they want to get something more efficient . . . they use a lot of energy in kitchens. If we can reduce that demand there, I think there's a lot of value there. And most of the time it's about what's cheap, what's available, and what's doable.

Mr. Rowlands: And they're not cheap to begin with.

Mr. Poole: No, they're not cheap to begin with but the difference between one that's efficient and one that's not efficient is 25%.

Mr. Rowlands: Right, and they're already not cheap so . . .

Mr. Jadick: So, is that category where maybe you just want to entice them and bump that up another point? Maybe?

Mr. Poole: Three points is big.

Mr. Rowlands: I mean it's already 3. That's pretty good but . . .

Mr. Poole: Three points is big and again, durable equipment. Most likely that stuff is going to last for years so if we get them to put the efficient stuff in, we're good. That's why I weighted it pretty much as high as anything.

Mr. Rowlands: That's why the envelope is really . . . it's there for longer than that kitchen equipment.

Mr. Poole: I don't disagree with that. Hey, we made it through energy.

Mr. Firestone: Except for renewable.

Mr. Hurd: Well, renewable energy is its own category.

Mr. McDowell: It doesn't fall under energy?

Mr. Poole: No, it does. It's still blue. And, again, we might have to rearrange a few things, but I wasn't fooling with the table too much. I was just assigning points.

Mr. Firestone: My thought is that for whatever reason, developers in this town are allergic to renewable energy. None of them make proposals, a lot of them don't even consider, I mean

they don't even look at it and evaluate it. And my concern is that if it's just points like this, it's going to be status-quo, and no one is going to really look at it seriously and evaluate it.

Mr. Poole: What do you propose?

Mr. Firestone: Well, either you have some sort of additional mandate, I mean my own view is that we should be moving towards a rebuttable presumption that you install photovoltaic systems. You have to sort of show why, given your particular piece of property, it doesn't make sense and to offset some of your . . . and it may be because you're in a heavily treed area and maybe because the way you have to orient your building, it doesn't really work. So, I mean there could be exceptions. I am concerned that with all these other opportunities to get points, we're going to be still in a situation in this city where no one . . . not only are they not putting it on, they're not looking at it or evaluating it.

Mr. Hurd: Maybe we could put negative points on there. That if you didn't install, like the conduit, that's minus 2 points.

Mr. Poole: See, I don't find a lot of value in putting the conduit in. I just plain don't.

Mr. Hurd: Okay, so with Ben it seems like that something that they're doing.

Mr. Poole: They're doing it on speculation that someday they may want to put panels on that roof.

Mr. Firestone: Yeah . . .

Mr. Poole: I don't find any value in putting in a piece of pipe.

Mr. Rowlands: Putting a piece of pipe in is $5.

Mr. Poole: Right, and they get 1 point for that. If we want to give them 3 points per 10 kilowatts on renewables, on actual solar installs, I'm good with that.

Mr. Firestone: Yeah, I mean I don't think we should be giving any points to have an energy-ready . . .

Mr. Poole: Well, the building may change ownership and the new owner may find it more palatable if the path is there. But, like I said, until they use it, that pipe is useless.

Mr. Hurd: Yeah.

Mr. Firestone: Yeah.

Mr. Hurd: This is where we have to advance. I hear you, Jeremy. To my mind, it would be great if we had, in the Code we said, you know, basically you provide, at a bare minimum, there's an assumption that you're installing it and even if you think that you can't install the equipment, you're installing the conduit and the preparations for it. That's just a bare minimum that there's a conduit running up there. You don't even get a point for that, it's just required.

Mr. Rowlands: That's just a requirement.

Mr. Hurd: We want to see that, that there's a conduit from the panel to the attic, you know, bare minimum. I don't know how to phrase it or structure it or whatever to sort of say that there's a presumption of installation . . .

Mr. Firestone: I mean some places, you know, California is now going to mandate everyone to do it with no presumption. You just do it.

Mr. Rowlands: That's what I'm saying, put it in there.

Mr. Firestone: And our presumption is less than that. There are jurisdictions that are going to start requiring everyone to do it. So, it's not an impossible mandate.

Mr. Hurd: So, maybe that needs to come out . . .

Mr. McDowell: Do we want to have . . .

Mr. Firestone: There's this big, on residential building there's a big issue with concerns over aesthetics, too. That people aren't going to want to rent my building if it has panels on it. That is the vibe I've gotten when, you know, sitting on the Commission for three years.

Mr. Poole: I don't think that that's, I think that's just double-talk. I think that's just their excuse for not doing it because it's not particular cost-effective to them to save their tenants money.

Mr. Rowlands: I think times have changed, too. Five or ten years ago, they didn't want to see them necessarily. Now, it's not that . . .

Mr. Poole: I see a point value for putting that in because running a pipe up five stories in a five-story building, that's problematic in the future. It's easy to do when the building is under construction so, yeah, there's value in putting that in, but not so much that you're going to get a bunch of points for it.

Mr. Hurd: Certainly not.

Mr. Rowlands: So, can we make it . . .

Mr. Poole: But meanwhile if we want . . . what?

Mr. Rowlands: Can we make it a requirement as part of this code?

Mr. Firestone: It's just a building code . . .

Mr. Poole: I'm concerned about putting prerequisites in. Again, if somebody else wants to look at it from a different perspective . . .

Mr. Rowlands: We're not adding a lot of dollars of expense to this at all.

Mr. Poole: No, and that's not what I'm trying to do, it's just . . .

Mr. Rowlands: Where do you stop? Let's put another one in.

Mr. Poole: Right. And if we're trying to set up some sort of matrix where they can choose what they want within guidelines, then that's one thing. If we're going to put in a bunch of prerequisites as well, then why don't . . . well . . .

Mr. Rowlands: Let's just keep it on the table. Maybe it's the only one.

Mr. Hurd: And maybe this is something that we have to have, be prepared to kind of explain when we present up to Planning to say we could not come to an agreement as to how to fully implement this because we have different opinions on this and kind of bump it up to the next pay grade to say, you can maybe decide. Maybe that's problematic too because . . .

Mr. Rowlands: I'd rather say this is it.

Mr. Hurd: Yeah, take it or leave it.

Mr. Firestone: I think we should try . . .

Mr. Jadick: I'm in favor of it the way it is right now. Not a prerequisite, carrying one point. I think it makes sense for the builder to have that choice.

Mr. Poole: And, again, is it a cheap point? It sure is. But there's other cheap points in here, too. But meanwhile would there be value in it in the future? Yes, there would. I would rather get them here. Get them where they're actually installing a photovoltaic system. Let's give them enough incentive to do that. You know, like I said, do we want to give them 3 points for 10 kilowatts? That seems a little high.

Mr. Firestone: For a commercial building.

Mr. Hurd: Yeah.

Mr. Poole: But could we give them 1 point for every five/

Mr. Firestone: We would have to do the math.

Mr. Hurd: Yeah, I certainly did want to do it based on kilowatts delivered rather than percentages of expected energy use.

Mr. Poole: Like I said, let's not make it hard. Let's not make it where they have to calculate well this building is going to use 100 kilowatts a year and . . .

Mr. Firestone: We could do it so much per square foot. I mean, you can do it that way so that it has some relationship to how much . . .

Mr. Hurd: Okay, I'm going to say that we're probably going to have to come back and revisit this some because in my mind it really, part of it falls into stuff that we already do in the City. We say, you now, if you touch more than 50% of the building, you're putting in sprinklers. Someone at some point felt that residential sprinkler systems were important enough to say at a certain point, you put it in. And so, it's kind of like do we feel that there's enough importance to this to say at a certain point, you put it in? Do we say that, is it a square footage so say, okay, if your building goes over 10,000 square feet, there's an expectation of photovoltaic? So, maybe, so we're not saying every single one but some cut-off . . .

Mr. Poole: You're saying every single one over 10,000 square feet.

Mr. Hurd: But again, it's like there's a demarcation that says, you know, so we're not going to say that little bank is going to have it. That may not make as much sense. That larger development over there, yes. You know . . .

Mr. Poole: The bank is the one that's more likely to put it in. Like I said, it's better to say you produce this much solar power, you're taking that much less from the grid, we'll give you a point for it. Whether you say that number is 1 kilowatt, 5 kilowatts, 10 kilowatts, let's give them a point.

Mr. Rowlands: And if the building can't [inaudible] any, they're just not going to go for that point.

Mr. Poole: Right. And if they can't do it, at least we're taking that much energy demand out of the grid and they get a point for it.

Mr. Rowlands: The point system is hard. Okay, 1 kilowatt, nobody does 1 kilowatt, but . . .

Mr. Poole: No, 1 kilowatt is not enough.

Mr. Firestone: Well, that would be for say a 2,000 square foot house.

Mr. Rowlands: Yeah, so you could . . .

Mr. Poole: It's 5-10 depending on your energy usage.

Mr. Firestone: I mean in that range.

Mr. Poole: Right.

Mr. Rowlands: At 5 kilowatts, you get a point. At 10, you get 2 points.

Mr. Hurd: I'd say we do like 3 points because a 5-kilowatt system gives you 3 points.

Mr. Poole: No, that's too much.

Mr. Hurd: Why?

Mr. Poole: Because then they could get 30 points by putting in a . . .

Mr. Rowlands: Then why don't we make it 53 points?

Mr. Hurd: I mean it's partly what's enough to get them, what's the points that gets them started on this and what's the points that we want to kind of cap it at, and that's how we have to look at that range.

Mr. Rowlands: But is a 5kW and a 10kW, those are too nice?

Mr. Firestone: Yeah. Part of what you can do is you can say you get 3 points on renewable energy and you can do it by green car offset or you can do it . . . anyway, I mean we can have some subgroupings if we want to encourage and still leave some flexibility.

Mr. Poole: Yeah.

Mr. Hurd: Alright, so maybe that's the other way to do it is to say there's a minimum number of points you need to get in this category and you can get it by either buying offsets or by producing energy. You get to make a choice.

Mr. Rowlands: So, next month we get a presentation from [inaudible].

Mr. Hurd: Alright, so I'm going to try to pull that out as a separate item just to talk about because I think we're expanding outside sort of building code and into policy and into what the Sustainable Newark group is trying to do. We're hitting a lot of different things and I don't know if we can solve it today right here.

We're getting close to the end of our 6-month expected lifespan and we're nowhere near the end of this thing. So, we're looking out . . .

Mr. Rowlands: I thought this was a year. It's six months only?

Mr. Hurd: Well, we started, we didn't start until . . .

Mr. Poole: This is our fourth meeting, isn't it?

Mr. Rowlands: No, our time limit was six months that we were supposed to get something done?

Mr. Hurd: Yeah.

Mr. Rowlands: I thought it was a year.

Mr. Hurd: I had said six months because I thought we'd be . . . I said six months probably because I thought we were going to pick a standard and kind of tweak it and be done. And we didn't do that. So . . .

Mr. Firestone: Should you give an update to the Commission next meeting?

Mr. Hurd: I probably should.

Mr. Rowlands: Should we meet twice a month?

Mr. Hurd: No.

Mr. Firestone: There going to meet in like a week from now.

Mr. Hurd: Oh, the Commission is? Yeah.

Mr. Firestone: Yeah, the Planning Commission.

Mr. Hurd: The one for May, the meeting for May, the scheduled meeting for May would be the Tuesday after Memorial Day, which I think the City is either closed or that's just a bad day for people, but Council Chamber is available on the 21st, which is the third Tuesday in May. And I don't know if people can check their calendars now or just do you need me to send an email to check on that.

Mr. Firestone: May what?

Mr. Hurd: Twenty-first.

Mr. Firestone: Twenty-first. That will work for me and I'm out of town on the 28th, so it solves that for me right away.

Mr. Poole: I'm available on the 21st.

Mr. Jadick: Things have a tendency to change but it looks good now.

Mr. Hurd: It's good for me, too. Okay, so we'll say that that's okay. Michelle has tentatively reserved the room for the 21st because it books up fast, but she wanted me to check that. And then if we're looking at least extending to June, the 25th is the fourth Tuesday so we've got it booked for then.

Mr. Rowlands: I'm sorry, are we talking April 21?

Mr. Jadick: No, May.

Mr. Hurd: May 21.

Mr. Rowlands: What happened to April?

Mr. Hurd: April is still the fourth Tuesday.

Mr. Firestone: That's still our normal schedule.

Mr. Rowlands: Okay, alright.

Mr. Firestone: And then when are you talking about in June?

Mr. Hurd: June, the fourth Tuesday is the 25th, so she's booked the room for June. April or May we should have an understanding of, we should be starting to figure out when we're going to wrap this thing up.

Mr. Firestone: So, you're talking June 25?

Mr. Hurd: Yes.

Mr. Firestone: Okay, so I don't have that on my calendar.

Mr. Hurd: Well you wouldn't because we were supposed to be just six months which stopped, I think, in May. So, I can let Michelle know we're okay with those dates.

7. **GENERAL PUBLIC COMMENT**

[Secretary's Note: There was no general public comment.]

8. **ITEMS FOR NEXT MEETING**

Mr. Hurd: Alright, so next month I think we're just going to bang this out.

Mr. Rowlands: Blow through those points.

Mr. Poole: Yeah.

Mr. Hurd: Finish the commercial and do the residential. And then, I don't know, I don't know what the next step is clean it up and then present it.

Mr. Poole: Yeah, like I said, I think everybody should review the list and find where you think there's issues and maybe work on something to propose.

Mr. Hurd: Yeah, certainly anything you've got issues with, send me a note so I can go digging into it, unless you want to propose an alternate standard or criteria or something, I can dig into that. I'll know which ones to dig in more deeply . . .

Mr. Rowlands: Right, right.

Mr. Hurd: To go let's go find established criteria. Because I'm just crimping from LEED, I'm crimping from the Green Building Code, I'm crimping from . . .

Mr. Rowlands: Alright, so we have homework. We should go through this and throw some comments to you.

Mr. Firestone: Yeah.

Mr. Poole: Say, hey, I don't like this. And at least then we'll have some discussion points prepared rather than trying to . . .

Mr. Hurd: Sitting here going, I don't like that number but where are we going to find a better number? I don't know I need to go research it.

Mr. Poole: And then we just wasted five minutes.

Mr. Hurd: Right. Alright, thank you gentlemen.

Mr. McDowell: Thank you. It was a pleasure to meet you all.

There being no further business, the Green Building Code Work Group meeting adjourned at 5:45 p.m.

As transcribed by Michelle Vispi
Planning and Development Department Administrative Professional

Attachments
Exhibit A: HERS Rating System Presentation
Exhibit B: Green Building Code Concepts List with Points - Draft