

**City of Leawood
Planning Commission Work Session
Solar Panels and Rain Barrels
Tuesday, September 13, 2011**

SOLAR COLLECTORS / PANELS:

Mr. Klein: Currently, the City of Leawood ordinance states that all components servicing the collector or panel are concealed, and all exposed metal shall be finished in warm earth tones or black. That is allowed in the zoning districts as an accessory use. The ordinance is geared to the aesthetics to make sure that everything blends within the residential neighborhood.

Comm. Ramsey: Have you guys cross walked this to the green requirements for roofs at all?

Mr. Coleman: Right now, we don't have green requirements for roofs, other than following and meeting energy codes for the buildings.

Comm. Ramsey: What I'm getting at is for the LEED certification, there are certain types of roofs that they look to, like a California roof or even a vegetated roof. Would this come into play at all with these as well?

Mr. Klein: This looks at the panels. Roofs are currently dealt with strictly, and it has been that way since before the current ordinance. Basically, there is an approved list of roofing materials with product name, color and material. Then there are certain qualifications those products have to meet.

Comm. Ramsey: I understand that, but if someone wants to build a LEED-certified building, the major component of that building is the roof. Are those types of roofs allowed in Leawood?

Mr. Coleman: In residential sections, a vegetated roof would not be allowed.

Comm. Ramsey: I'm talking about a commercial setting.

Mr. Coleman: It depends on what the roof is because there is a lot of variation in roofs that would meet the LEED standard. If you have Macy's, for example, with a parapet wall that goes up with a flat roof, you could put a LEED-certified light roof on top of that building and comply. You could not have a white EDPM roof on a house because it is not allowed.

Comm. Ramsey: Right, because what you're talking about in terms of solar collectors is primarily in residential.

Mr. Klein: Yes, this work session is the residential. We will be focusing on accessory uses on the roof, such as solar-powered attic fans. Roofing would be another work session because there is a wide variety out there.

Mr. Coleman: You can get shingles that are solar collectors. There are hot air solar collectors and hot water solar collectors. They're becoming more and more sophisticated. They're trying to integrate them more into the roof structure. In Kansas City, we're at 43-degree latitude, which is the ideal angle for solar collectors. Most of our houses probably have 30-degree pitch in the roof.

You have a differential there, and to optimize the collectors, they build a framework and prop these up. If it's hot water or air, you could have these exposed components. That is one of the issues. The other is what Mark said about different components, including attic ventilators with solar panels attached to them. You could have a solar power that powers some other equipment or that charges a battery. We haven't addressed much of what solar panels could entail. You could have ground-mounted solar collectors that are structures. Today, we are focusing on the roofs.

Comm. Pateidl: You touched on the issue of hot water in collectors. I recall a visit that I made in the residential district of Las Vegas. The collectors were a series of what looked like hoses running across the top of the roof. There were several houses with these collectors, and quite frankly, they were really quite ugly. Do we have a good, clear definition of collector panel or components? For example, if that hose is considered to be the collector panel, then it's not a component servicing the collector panel; it is the collector panel. How do we address that? I'm not certain that the definition clarifies that.

Mr. Coleman: In our glossary, we do not have a definition for solar panel. That might be something we want to define.

Comm. Pateidl: It's all in the language and somebody's interpretation. Having seen that and knowing what it looks like, I think it is something to think about.

Comm. Ramsey: The larger question is if we even want to allow solar collectors on roofs.

Mr. Coleman: We do right now.

Comm. Ramsey: Why?

Comm. Jackson: Sustainability, reduced use of expensive forms of energy; why wouldn't you want to use it?

Comm. Ramsey: Because you're at odds with all the work we go into in terms of aesthetics and demanding people only have certain types of roofs and certain looks to their roofs.

Comm. Jackson: So we might have to broaden that a little bit.

Comm. Strauss: We want the sustainable aspect, but we have to find the aesthetic balance.

Comm. Ramsey: My mother lived in Vegas for 45 years. You go around Vegas and see these solar panels on these small homes out there. It takes up the whole roof. They're ugly as hell. You want to do that in a subdivision with half million dollar homes just to be sustainable?

Comm. Jackson: There has to be some give and take there.

Comm. Ramsey: What's the give?

Comm. Jackson: The give is you have to allow some of these things. It is ridiculous, in my mind, not to. Let's look at some and see what is out there currently. I don't have any understanding of what you're talking about.

Mr. Klein: Technology has changed quite a bit. I have seen the big ones that are basically a bracket system that covers the entire roof. We were not going to get into that detail on the roofs at this meeting because it is an entire work session in and of itself. We have been approached by someone who creates asphalt shingles. As a component of them, there is a solar component of collector panels. It tries to look like an asphalt roof with a solar panel that is flush. There are some others out there that try to look like a tile, and they're also flush with the roof. The technology has been changing pretty rapidly over the last couple years. We would like to put together a presentation to show you what some of these products are so you can see the quality products that maybe will fit. We weren't going to cover that tonight because it is a huge issue. We have spent a great deal of time on roofing the way it is currently written, and it would have to be significantly modified to allow solar components. Currently, if somebody wanted a bracket system, it would be allowed as long as they met the criteria under the current ordinance. We haven't seen a whole lot of those come through. We have gotten calls about solar-powered attic fans and things like that. That's not to say we're not going to have people want to use some of these newer roofing materials that incorporate these solar elements. It's good to look at it in a separate work session.

Mr. Coleman: If electric cars really do take off, I could see that people would really want these to charge their car from the panel system at some point.

Comm. Strauss: We want to maintain that it looks like a roof.

Mr. Coleman: It is a panel, so it looks technical. There are ones that are almost seamless and fit right in to the roofing. It's possible.

Mr. Klein: This is the current ordinance in place right now. The city has received requests regarding solar-powered attic fans. They are on top of the roof and will vent the hot air in the attic, using solar power.

Comm. Roberson: Where is the solar panel?

Mr. Klein: It will be located on top.

Mr. Coleman: They do have ones that are separate and are just wired to a fan. Most of them are integrated.

Mr. Klein: These are becoming popular in Costco or Sam's Club. Here is an example of two different ones located on the roof. The solar panel is to provide power so that the vent can actually operate and vent the hot air out of the attic. The primary difference between these is that the one on the left has more of the white, reflective areas. The other one tends to have the darker solar panels. We want your input as far as how it looks on the roof. These would be part of the roof on top, so if we wanted to ensure the entire panel looked dark and blended with the roof itself, the ordinance would have to be modified to allow solar collectors and solar-powered attic fans, provided

that all components servicing the fan and collector panel are concealed and all exposed materials, including the collector panel, are finished in warm earth tones or black.

Comm. Jackson: Is there a big cost difference?

Mr. Coleman: There could be a cost difference; I don't know that it would be huge.

Mr. Klein: Do you have objections to the attic fans on the roofs?

Comm. Ramsey: I don't object to that.

Comm. Roberson: Do we allow attic fans now on roofs?

Mr. Klein: I think we have a prohibition against them. Many roofs have vents.

Mr. Coleman: You wouldn't see the fan. It would be located in the middle of your house.

Comm. Roberson: I'm talking about the one on the roof.

Comm. Ramsey: It is integrated.

Comm. Roberson: Do we allow attic fans on the roofs now?

Mr. Coleman: Yes, it is just that they are static. Most of them are not powered; they're simply passive. You'll see a row of them at the ridge.

Comm. Roberson: You're missing my whole point. Attic fans come without solar panels. You stick them on your roof, and they suck the air out. They work off a thermostat. Do we allow those?

Mr. Coleman: Yes.

Comm. Roberson: Do we allow wind turbines?

Mr. Coleman: Yes.

Comm. Roberson: I'm not sure I understand the issue with solar-powered attic fans at this point, other than the fact that we want it to look nice.

Mr. Coleman: It is based on the current ordinance that says all components should be dark. Is it okay to have a silver solar collector on the fan? If you don't have a problem with the one on the left, we would change the ordinance to allow silver.

Comm. Williams: If the one on the left is on the back of the house and not visible from the street, do we really care?

Mr. Coleman: I don't know if the neighbors care.

Comm. Pateidl: If you lived behind them, you might care.

Comm. Roberson: I wouldn't allow it on the front of the house.

Mr. Coleman: What if they're on the side of the house? The other thing is these usually don't come as one; you'll probably have three or four of them.

Comm. Williams: The whole idea is power, so you would have fewer of these than you would have the static.

Mr. Coleman: You might have eight along your ridge and four of these.

Comm. Ramsey: Do you require the current ones to be this color?

Mr. Coleman: No.

Comm. Ramsey: Most of the new ones going in are matching, but there are still a lot of them that are galvanized.

Mr. Coleman: Yes, there are some that are galvanized, and we only regulate the solar ones.

Comm. Ramsey: If we don't regulate that color, why would we care about the solar color?

Mr. Coleman: Right now, the solar panel ordinance says, "dark bronze and components." That's why we are bringing this to you. You can decide if you want to care or not care.

Comm. Jackson: Isn't the wave of the future supposed to be white roofs anyway?

Mr. Coleman: I don't know about that in Leawood. I don't see that happening anytime soon.

Comm. Jackson: Tastes change with money issues and sustainability issues.

Mr. Coleman: Maybe. Have at it.

Comm. Williams: Wouldn't this be more of a roof accessory, like the turbines we were talking about and other venting products where they need to be more in the roofing ordinance and not in the solar power panel ordinance?

Mr. Coleman: No, because you have some that are not solar power or are powered through interior, and you don't have this component on it.

Comm. Roberson: You're talking about in-house attic fans that you flip on and suck air throughout the house. Let's stick with the ones on the roof at this point in time. If you don't regulate these attic fans that are not solar powered, why would you regulate these or vice versa? Shouldn't we be regulating the color of the ones that are not solar powered?

Comm. Williams: And in so doing, put it in with the roofing.

Mr. Coleman: You could do it either way. We have already had the solar component. If you have a little solar panel like the one on the left, why not have a big one?

Comm. Ramsey: My preference would be to take this to the roofing section, say that it has to match the color of the roof and require that, if it is going to be a solar device, it is flush.

Comm. Williams: I don't think you can say that it has to match the color of the roof. I think taking the approach of warm tones and black is appropriate, in part because that's what these products are manufactured to be. Of the different roof colors that are allowed, most are warm tones. You do get some that are a blue product, and they're not going to be able to match it unless they spray paint it.

Mr. Klein: We don't allow black roofs, but I understand.

Comm. Williams: My neighbor has a green roof, and he can't buy one of those in green.

Comm. Roberson: I don't think we ought to allow the galvanized ones, personally.

Comm. Pateidl: If you take this to the roofing section, over a period of time in re-roofing, you'd get rid of the galvanized ones. I'm inclined to agree that, as far as these solar-powered attic fans are concerned, it's where it ought to go. I don't think we're talking about the fans; we're talking about the collector panel color. I would disagree with Ken. If there were half a dozen of those things on the back of my neighbor's house, and I'm looking over the landscaped back yard at a half a dozen of those white squares on the guy's roof, I would object.

Comm. Roberson: I understand; I disagree with that one on the left.

Comm. Pateidl: I don't think we should allow the one on the left. By limiting the color of the collector panel, you get away from it.

Comm. Roberson: We were talking about galvanized fans; I don't think they ought to be allowed. We should allow this with or without a solar panel in warm colors.

Comm. Jackson: Why does it matter that the solar collector is hooked to a fan? What is the ordinance now?

Mr. Coleman: It doesn't really matter because you can get the panel completely separate from the fan, so you could have a solar panel on your roof running three fans, and it's connected to a thermostat.

Comm. Jackson: Doesn't that actually cover the fan?

Mr. Coleman: It depends on the collector panel.

Comm. Ramsey: But if we go with this, it covers it because of the color.

Comm. Jackson: It seems to me that we would have to change it to allow the one on the left.

Mr. Coleman: Yes, and that is the question: do you want to change it to allow the one on the left?

Comm. Roberson: I don't think so.

Comm. Williams: The language you've got up there will be fine.

Comm. Roberson: But once again, we're talking about attic fans here. The fact that it's solar powered is irrelevant. What color do you want to allow on the roof at this point? We currently allow galvanized metal fans. Do you want to do that?

Comm. Ramsey: No.

Comm. Pateidl: I would be very much in favor of making this a blanket adjustment to the roofing side in which roofing fans have to be compatible with the roofing material.

Comm. Strauss: I've never seen them in anything other than the galvanized metal.

Comm. Williams: I haven't, either.

Comm. Ramsey: In the first place, I suspect they're probably more expensive than the other ones, and they don't fit in; they're not the low profile. Who wants those sticking up?

Comm. Roberson: I'll tell you, they're all over.

Comm. Pateidl: They've been all over a long time.

Comm. Roberson: I had one on my house in Leawood South; my neighbors all had them.

Mr. Klein: I hear that it should be addressed in the roofing ordinance for all of them, solar or not, that the attic fans are compatible with the roofing material and earth tones or black. Is there consensus on that?

Comm. Strauss: It's taking this and putting it in the roofing section.

Mr. Klein: This part of the ordinance would maybe still have to be modified since it does deal with the solar panel. We would definitely have it in the roofing section because it would have to deal with other attic fans and not just solar. That definitely would be a component, but there is a chance there would be a tie to this as well.

Comm. Roberson: I think any decision with respect to any of the solar collectors would need to have examples for us to see. I didn't prepare to have that conversation.

Comm. Williams: It probably needs to be done in a work session like this so we have time to discuss it and study it.

Mr. Klein: Right; and part of it is getting input, and then obviously, you want to see not only the solar but all the other items on the roof.

RAIN BARRELS

Mr. Klein: The city has received a request for the rain barrels. The current LDO does not regulate them at all. Rain barrels come in a huge variety. I went to the Costco and Sam's Club sites to see what people could get online. If you flip through this, you'll see a variety of decorative and plain barrels. People can also make these. This is an example of two rain barrels showing the difference in decoration. The majority of them are between 50- and 70-gallon containers 3-5 feet in height. Most of them have a hole at the bottom of the spigot where you can attach a hose. The top of the rain barrel has a hole for the downspout to run into. Typically, there is a screen in that top hole to keep mosquitoes and debris from falling into that rain barrel. There are also pellets and things you can buy to put in the barrel to discourage mosquito breeding. The recommendation is to clean them out at least once a year. In the winter, they recommend that you empty them and store them inside because freezing would damage the rain barrel. A lot of them are placed on a platform to allow better access to that spigot located at the bottom of it. Most of them also contain overflow, which is located up toward the top. If the rain barrel gets full, instead of just running over the top, it will go out that one hole and drain to a certain area. You can have multiple rain barrels attached to each other, and I think the way that works is the overflow will continue on through the series.

We looked at the location. Obviously, they need to go by a downspout. In our recommendation, we want to talk about that because we don't want to see an instance of a rain barrel that is 5 feet away from the house and an elaborate channeling system. They do need to be placed on level ground, such as pavers or a hard surface. Construction materials can be of a wide variety. Some people can make these out of plastic or wood barrels. What you saw earlier was constructed out of plastic, made to look like a potting plant. Some of them actually have it to where you can have plants in the top.

The sizes vary from 40-70 gallons. Some cities allow these under 100 gallons, with the larger ones needing an administrative permit. The LDO does not address them at all. The recommendations from staff are that the rain barrels should be located in the side or rear yard. We didn't want to just limit them to the rear yard because sometimes you might have a garden on the front of the house. This would not allow a rain barrel in the front. The rain barrel should be no greater than 70 gallons. Most we have seen are in that range. There is also a rain bladder you can put under the deck. It sounds like they could be many hundreds of gallons.

Comm. Pateidl: Have you ever seen one, David?

Comm. Ramsey: The military has them. They haul water on flatbed trucks with 5,000-gallon bladders.

Comm. Pateidl: "No greater than 70 gallons" ought to take care of that.

Mr. Klein: The other recommendation is the rain barrel is fed by a downspout and is located within six inches of the house. We are also recommending that the rain barrel be decorative in design in a color that is complementary to the color of the house. However, in no case shall the color of the rain barrel be primary. As you can see in the ones that got passed around, they make them in terra cotta and wood. There are some that are the green that dumpsters are made of or other

bright colors. It seems like a lot of them recommend that you try to fit them in with landscaping. In addition, we feel that the rain barrel should be permanently fitted or constructed with an inset guard to prevent mosquitoes from breeding. The intent of the ordinance is to allow these as an accessory use but to regulate them in such a way that they don't become intrusive visually. The other thing we would like to regulate is that the rain barrel should be elevated no more than six inches above adjacent grade. The reason for that is we are trying to prevent 8-inch concrete blocks that you can set down, elevating the rain barrel. We feel it may not look as nice. There may be an additional regulation to limit the number to be connected or the total number.

Comm. Pateidl: I've got a rain barrel out at the farm, and it's attached to the shop building, which is maybe 800 square feet. It amazed me; we had a fast rain hit that wasn't 1/0 of an inch of rain, and it filled up that rain barrel just like that. Then you have run over with the little overflow hose that won't work because it's going to flow over the top of the barrel because it comes out with too much force out of the downspout for that little hose to move that from one barrel to the next. Based on that personal experience, I think the incorporation of no more than one rain barrel per downspout would be my recommendation. If we do this, who is going to enforce it? People will not need a permit to put one in.

Mr. Klein: No, but there are lots of things that don't require a permit. When we complain that somebody isn't doing anything right, the city basically says, "Well, you've got to work it out yourselves." Who's going to enforce them?

Mr. Coleman: Me.

Ms. Shearer: Codes enforcement goes out to look at it.

Comm. Pateidl: Will the city do that?

Ms. Shearer: We do it with all kinds of things.

Comm. Pateidl: That has not been my experience.

Mr. Coleman: We have lots that we regulate. Grass and fences are the two big ones.

Comm. Strauss: Can we back up? I still don't understand the purpose of the rain barrel. It's reusing the water?

Mr. Klein: It is reusing the water. The advantages are to be able to reuse water that is not chlorinated and capture water before it goes down the storm sewer in order to water a garden. Some say that it allows more natural ground water recharge to go in naturally that way. Some say that it actually cleans the water because it keeps it from going over pavement and through the storm sewer. Others say it helps with the amount of storm water; however, the Public Works department has said that it is a very insignificant amount.

Comm. Pateidl: More appropriately, I think it is to redirect the water. It fills up my rain barrel, and I take a hose and let it drain on my raspberry bushes.

Comm. Strauss: But those got water from the rain also.

Comm. Pateidl: Yes, but after a week of no rain, I use the water from the barrel.

Mr. Coleman: I think most people that get them are going to use them for a garden.

Comm. Strauss: It is better water than from the hose.

Comm. Jackson: It is cheaper.

Comm. Strauss: This one blends in well. It seems like we ought to regulate the number of rain barrels for a house. It shouldn't just be the number per downspout, but rather a total number.

Mr. Coleman: How many?

Comm. Pateidl: You somewhat regulate when you limit to the side and rear of the house.

Comm. Jackson: Most houses do not have an inordinate number on the sides or back.

Comm. Ramsey: I've got five downspouts that would apply to this.

Comm. Williams: I've got eight, and I don't have a big house, either.

Mr. Coleman: You must have a lot of corners.

Comm. Williams: Yes, and some of the downspouts don't even drain a roof area as big as this table.

Comm. Pateidl: Then you wouldn't want to put a rain barrel in.

Comm. Williams: Probably not, but then again, I wouldn't have to worry about overflow, either.

Comm. Ramsey: I don't think my neighbors would really care for me going around and putting 70-gallon barrels on all the downspouts. I don't think that would fly.

Comm. Strauss: That's where I am having an issue, too. I am all for sustainability and green, but when the name says "barrel." I picture an oil barrel. It doesn't sound good to me, but I'm trying to think green. That's why I was asking about the purpose. I'm having a tough time with it.

Comm. Ramsey: About fifteen years ago, the big deal was backyard composting.

Mr. Coleman: I grew up with a composter, and that was 50 years ago. It's been going on for ages.

Comm. Ramsey: This is the urban response to a cistern.

Mr. Coleman: You could put in a cistern, but then you would need a solar panel to pump the water.

Mr. Klein: Is there support for allowing them at all?

Comm. Williams: Yes.

Mr. Klein: Is there support for allowing them as currently proposed, or do you have changes you would like made?

Comm. Ramsey: I am concerned that they have to be decorative; I'm not sure what that is.

Comm. Jackson: I've seen them hand painted, but that may not be decorative to you.

Comm. Ramsey: I'm thinking about my 14-year-old out there with a permanent marker.

Mr. Klein: Should it require that it look like a planter?

Comm. Ramsey: Or should it be screened? I'm torn on this because we don't require them to screen air conditioning units.

Mr. Coleman: But we do require them to screen back-up generators.

Comm. Jackson: I say we don't require screening, especially if they're close to the house.

Ms. Shearer: I would agree that "decorative" is somewhat vague from an interpretation standpoint.

Comm. Williams: I think you take that out and say that it needs to be a color complementary to the house, while not allowing primary colors.

Mr. Coleman: Black and white probably should be eliminated, too.

Comm. Williams: With black, I think it depends on the color of the house.

Mr. Coleman: We can eliminate white.

Mr. Klein: It seems like we have general consensus: they should be allowed. We need to work on the definition of decorative. Do we want these screened?

Comm. Williams: I don't know that we need to do that. If we're concerned about mosquitoes, what about the gutters?

Comm. Pateidl: I do think a limitation on sequencing the barrels is important, and I also agree on limiting the number of barrels per residence. I'm good with two.

Comm. Jackson: I think we could give more leeway on numbers and the six inches from the house.

Mr. Coleman: Why?

Comm. Jackson: People have different things up next to the house.

Comm. Williams: I think you're right.

Mr. Coleman: How far do we want the downspout to extend away from the house?

Comm. Williams: I think 12 inches gives them plenty of room.

Comm. Strauss: If you give them 12, they'll take 18. If you give them 6, they'll only take 12.

Comm. Williams: Again, without them getting a permit for this, we won't know until there is a complaint and someone from the city comes out to look at it.

Comm. Jackson: They would be measuring it.

Comm. Pateidl: To be realistic, these plastic rain barrels aren't very heavy. If you don't have them anchored to the house, they'll blow away. They're being fed by the gutter, which is right up next to the house, anyway. That's almost a moot point, but it also begs the question of if the rain barrel should be anchored to the house.

Mr. Coleman: Maybe it should just be anchored.

Comm. Pateidl: The problem is you've got the gutter coming down into it or resting on top of it. The wind blows the thing out in the middle of your back yard. Now you've got the downspout poking out.

Comm. Jackson: You're trying to save people from themselves. Are you going to mandate that they put their umbrella down before they go to bed? You can only regulate so much.

Comm. Pateidl: A lot of people know how to run an umbrella, but it was only after I chased my rain barrel across a field that I figured out I needed to anchor it. You tell me if I'm regulating somebody's life.

Comm. Williams: Going back to the attachment, it is a good point that they need to be stable and secured in some fashion, but there are water collectors that don't look like barrels that are square, lower profile. Yes, a tornado is going to blow them away, but as far as heavy winds, no, they're not going anywhere, especially if you've got water in them. Your barrel is lighter construction.

Comm. Pateidl: Mine is square and low profile, and it doesn't weigh anything. If it doesn't rain, it doesn't have water in it. If it does rain and you empty it, it doesn't have water. 90% of the time, the barrel is going to be empty and vulnerable to wind.

Comm. Williams: Maybe we put in a provision to say it needs to be secure and anchored to prevent blowing away in the wind.

Comm. Jackson: I like calling it a rain collector instead of a barrel.

Mr. Coleman: That's a good point.

Mr. Klein: That is really all we had.

Mr. Coleman: How many barrels does a house get?

Comm. Roberson: Why don't we compromise on three and leave it at that?

Comm. Jackson: Done.

Comm. Williams: This raises a question, only because of water bladders. I'm suddenly interested in this. Not that I want one sitting out in my yard, but I've got a raised deck that would be perfect for one of these. I've got an overall water problem, and this would allow me to deter some of that runoff, just like a detention pond. Collect it there and release it slowly to control that water. The water I can't control can go and wash off.

Ms. Shearer: I think Richard gets the most phone calls about water running off one person's property on to another.

Mr. Coleman: I am astounded by how many complaints there are.

Comm. Williams: In Kansas City, MO BZA, there would always be problems with water runoff.

Comm. Ramsey: I used to get a lot of calls when I was in Olathe on water issues. Some guy would build a fence and divert water over. The pump is sending water over.

Mr. Coleman: We regulate those. You can't have your sump pump discharge any closer than 15 feet to your property line.

Comm. Ramsey: Right, but the natural water would cause it to be soggy all the time.

MEETING ADJOURNED