

City of Leawood
Planning Commission Work Session
August 13, 2019
Building Materials

Planning Commission Members in Attendance: Belzer, Elkins, Coleman, Block, McGurran, Hunter, Stevens

Staff in Attendance: Mark Klein, Planning; Richard Coleman, Community Development; Ricky Sanchez, Planning; Jessica Schuller, Planning, Brian Scovill, Public Works; Marcy Knight, Legal; Debbie Brenner, Planning.

Mr. Klein: We want to talk about building materials and colors. We want to talk about the reasons we get into the different materials, which is usually done at the time of Final Plan. During Preliminary Plan, we look at layout of the development, traffic, setbacks, and zoning. Final Plan is approved with more specific details such as materials, light fixtures, manufacturers, and dimensions. That is what we want to discuss tonight. The Leawood Development Ordinance (LDO) has a list of prohibited and permitted materials. Prohibited materials include such elements as aluminum siding, which you would therefore not see in a presentation. We'll talk to the applicant and look for alternative materials. Some of the items are more difficult. We've had experience with them in the city, and they aren't listed as a prohibited material. We take these on a case-by-case basis, and some have been allowed into the city, but after a period of time, we found issues with some of the materials. An example of this is the cultured stone, which has been an issue. Around 2005, cultured stone was allowed into Leawood on developments such as Cornerstone, Nall Valley Shops, and a couple other developments. Klover Architects liked to use cultured stone. Originally, the city was excited about it. We thought it would add a variation to brick and cast stone; however, we noticed that it started to fade over time. Also, if it broke off, it didn't look good on the inside because the aggregate was visible. The major issue was the material falling off the building. After noting these issues, we have pushed to not allow it anymore and would like to propose formally adding it to the prohibited materials list. Some claim to be color-through, but stone has a variation and texture, which looks different. Cast stone is another product we have evaluated. We also want to talk about composite panels, which are not listed as prohibited or permitted. We'd like to get your input on those. Lastly, we'd like to talk about the weight of roofing material. There are certain weight requirements for laminated composite shingles, which are asphalt. We'd like to talk about that as a possible change.

The section of the LDO that has permitted building materials is Section 16-2-10.3 – Permitted Materials. It includes stone and brick. Exterior Insulated Finish System (EIFS) has been allowed on detailing rather than fill material.

Mr. Coleman: It's something like acrylic over Styrofoam with a mesh attachment. It's lightweight and is used pretty extensively in some building applications. It is made to look like stucco.

Mr. Klein: We also have finished concrete, copper, plaster stucco (cementitious stucco), clear glass, metal for detailing, awnings for detailing, wood, vinyl soffits, and vinyl windows that meet certain requirements.

Comm. Block: Is this residential and commercial?

Mr. Klein: This is residential. It doesn't really break out the difference between residential and commercial. The roofing section does.

Comm. Block: So, this is both then?

Mr. Klein: This is both. Then we go to prohibited building materials, which is vinyl siding and details including spouts, plastic columns, and for other than residential use, aluminum siding. Concrete and masonry units may be used for structural support, but they have to be faced; they can't be exposed. Corrugated metal, reflective or mirror glass, and steel siding are all prohibited. We talked about alternatives to aluminum siding. Steel siding is also prohibited, so we recommend stainless steel siding. Some of the people we've talked to have switched over to that.

Chairman Elkins: When you see these ads on TV for siding for homes, they show vinyl and aluminum. Are there other materials that are prohibited? It seems that, in my neighborhood, there are two houses that recently had siding put on. I didn't look closely enough to see what they were putting on. Are there materials for siding other than what we see on here?

Mr. Klein: We've seen Hardie Board, which is a name brand for cementitious siding material. They can make it look like lap siding or shingles. It is a little more durable and goes right over the top. It can be painted. Vinyl siding can break up in a storm and is not typically painted. Steel siding is also advertised heavily and is not allowed in Leawood.

Chairman Elkins: Are residents required to pull a construction permit when they have a project like that?

Mr. Coleman: Yes, all construction requires permit unless it is cosmetic projects such as carpet or cabinet installation. Anything that has to do with plumbing, electrical, or structural alterations require a permit. Sometimes, the building code plays a part in these materials. Originally, traditional stucco is close to an inch thick, but it has gotten thinner and thinner as additives have been added to make it more flexible. This is something we might want to talk about because we ran into a couple projects that were approved with stucco. Most of the buildings around here have plywood backup. The code specifies that the backup dictates how many layers of stucco and how thick it needs to be. We've asked for three-part systems for the project across the street and some others that have three or four stories. They have concrete platforms, but the backup is plywood. Those are required to have a three-part system according to the current building code. It does allow for a building official to grant a substitution if he determines it is equal to that. We have had

developers say they want to do a two-part or one-part system. The one-part system is about 3/8" thick, and we've denied that. That gives you some background.

Chairman Elkins: How do you distinguish corrugated metal from steel?

Mr. Klein: The corrugated metal is shown in the pattern of the metal.

Chairman Elkins: Isn't corrugated metal created by the finish on the metal?

Mr. Coleman: No, it is the shape of the metal. We actually have some in the city that City Council agreed to try for a special project. Corrugated metal has a big use in industrial and farm products. Butler does their corn bins with corrugated metal. It's crinkled by the strength.

Chairman Elkins: I thought the coating on to prevent rust made the difference.

Mr. Coleman: It is either galvanized or a core tin steel. Galvanized is a zinc-type of application to steel to prevent corrosion.

Chairman Elkins: But it is on the list of prohibited materials, right?

Mr. Coleman: We don't allow steel siding right now.

Chairman Elkins: I mean corrugated metal.

Mr. Coleman: Corrugated is prohibited. It's actually become quite popular as of late in design.

Chairman Elkins: I know a retail space in Overland Park is using it.

Mr. Coleman: It's pretty popular right now. In some cases, it looks perfectly fine. It's sort of like the skill of the designer that determines how it looks. There was an awning over retail shops that was corrugated metal on a steel framework, and it frankly didn't look good at all.

Comm. McGurren: Where was the example that had been allowed within the city?

Mr. Coleman: Crate & Barrel has corrugated metal, but it has a high-end finish on the metal with a paint application. You really don't see it as corrugated metal.

Comm. Stevens: I'm guessing it was added to the list not so much for the faulty material, but it was more the appearance for a warehouse or rural structures.

Mr. Coleman: Exactly; and on the prohibited side, there are some applications and products in that section that could look perfectly fine with the right application and designer, but they also could be just terrible. I think the city wanted to be on the safe side.

We could get some very unattractive structures. On the reflective or mirrored glass, we probably need to get more detailed about it and actually specify the limits of light transmission and reflectiveness just because almost all glass now has some reflective quality in it for energy conservation. You'll probably see a building coming in with mirrored glass with a request to change it to vision glass, but it will still have some energy-saving properties to it. On some of these, we can't vet them all. There are a lot more building materials now than there were just ten years ago and even more than 20 years ago. Some have shown that they are good materials; some, maybe not so much. It's very difficult for staff to vet every material that comes through because certain materials might have designated manufacturers with varying qualities that are fine, but with another manufacturer, they are not.

Comm. Stevens: With the comments about the reflective glass, was glass in the approved list?

Mr. Klein: Clear glass is allowed, and we see that in storefronts and office buildings.

Mr. Coleman: Some of these, we probably should get more specific. In some cases, applicants don't want to change a storefront framework with glass, but they want to black it out for whatever reason. They're doing something on the inside, and it's more expensive to change it to a wall than just blacking out the glass. It gets tricky.

Mr. Klein: One of the items we sometimes get interest in but is not listed in either list is a composite panel. Rather than a single layer of metal like the steel or aluminum siding, it has the finished layer and a composite in the middle with a backing. It is in an effort to make it lighter and stronger. It can be faced with aluminum, wood, or stone. (shows examples)

Comm. Coleman: What are you doing with those requests currently?

Mr. Klein: We try to review and evaluate what they have. Again, this isn't listed in either section.

Mr. Coleman: Some of them, we've approved; some, we haven't, or we've asked them not to do it. Not having the aluminum at the time was a good thing on Church of the Resurrection because originally, the roof was aluminum panel system. After discussion, we recommended that they go with the zinc panel that had nothing in the LDO to prohibit. Ultimately, they went with that, and I think it was an improvement over the original roofing concept.

Comm. Coleman: That is a system like this, where it's a layered product?

Mr. Coleman: Exactly; the system on there is a composite panel roofing system. I think it looks really good.

Mr. Klein: We'd like to talk about manufactured versus cast stone. They are both manmade, but they have different properties. I would say that a lot of these products have improved. There are some manufacturers that do a good job. The problem is if we approve something, we have no way to keep out the lower-quality manufacturers. We either allow a material, or we don't.

Mr. Klein: I'll pass around a sample of architectural cast stone. You'll see detailing on this. City Hall has this around the windows and along the cap of the brick wall. It looks like limestone. A lot of the variations have a finer grain to them. They seem to hold up very well. They have different properties as far as compression strengths and that kind of thing. Cast stone is a little bit different (shows example). This is supposed to resemble a painted brick, but if you look at the end where it is cut, you can see the aggregate. It's not quite as strong.

Chairman Elkins: This is manufactured stone?

Mr. Klein: They're both manufactured stone.

Mr. Coleman: Architectural cast stone.

Chairman Elkins: What is the difference in the manufacturing process between the two?

Mr. Coleman: Architectural cast stone is manufactured under higher pressure. It's still cast, but the higher pressure gives a much harder product. It has less water absorption, and it's just stronger.

Chairman Elkins: Neither one is a natural stone?

Mr. Coleman: Neither is natural. They both make use of stone in their manufacturing process.

Mr. Klein: Here's another example of the cultured stone. It is made to look like a rough-hewn stone on the outside, but on the inside, you can see all the aggregate. This is what shows when it breaks.

Chairman Elkins: I keep getting myself confused. We have cast stone, manufactured stone, and now cultured stone.

Mr. Klein: Manufactured stone is the overarching category in which cast stone and cultured stone are in. They are both manmade stone, and there are two different process. The cast stone is under a bit more pressure and looks more like a limestone. It is typically used as accents on buildings. The cultured stone is also a manmade stone; however, it is not under as much pressure. It is typically used as a fill material on building, so whole walls will be composed of it. They tend to try to make the outside have the variation of the stone. The stone has the natural color that runs through. The outside of the cultured stone has colors as much like that as possible, but on the inside is the composite.

Chairman Elkins: Part of my confusion is your slide compares manufactured stone to cast stone as if they're two different things. What I hear now is that it is all manufactured stone with cast stone and cultured stone under that umbrella.

Mr. Klein: That is correct.

Comm. Block: In other words, that can be used as a structural component; whereas, the other can be used only as a veneer?

Mr. Klein: Typically, we try to use the cast stone primarily as accents. It may be possible to see it on larger panels.

Mr. Coleman: Cast stone is used more as a brick.

Comm. Block: Or it could be used as a base of a column as a structural piece.

Mr. Coleman: A lot of columns are cast stone with one seam along the edge.

Comm. Block: That could be used for windows, sills, and things like that; whereas, you would want to use a veneer for that.

Mr. Coleman: Yes, but they do manufacture them for that. We're mostly talking about commercial properties. We have kind of exempted single-family residential, so we don't even get into that. We've only gone there for multi-family homes. If you want manufactured stoned on the house, we have allowed it.

Comm. Block: How do you do that if it's a prohibited material?

Mr. Coleman: It's not at this point.

Mr. Klein: You might also see cultured stone used inside buildings.

Mr. Coleman: We've just basically done most of it through persuasion.

Chairman Elkins: The problems we had with Cornerstone were with this, where we started seeing the problems.

Mr. Coleman: CVS has manufactured stone, too. It's faded. CVS has been there for more than ten years.

Mr. Klein: With regard to cultured stone, we typically try to push them toward natural stone. There is thin-set natural stone with a process that the face of the stone is cut off to make it thinner. We met with some of the people that actually sell the different stones and asked about the difference between the two. Natural stone has the same texture and color if it is broken, and it is more durable. With the thin-set stone, it is applied in the same

manner as the cultured stone, but a stone mason is required to put up the natural stone; cultured stone can be installed by unskilled labor. When we mentioned problems with cultured stone, they said that it is probably application by unskilled laborers. For the most part, we've been able to push people toward thin-set natural stone because it's cheaper than having a full natural stone, but it still has many of the aesthetic properties.

Comm. Hunter: You referred to cultured stone. Does that mean that you can have unskilled labor do any type of manufactured stone?

Mr. Klein: From what they indicated to us, yes, and that is probably what caused the problems we have seen.

Mr. Coleman: But not cast stone.

Comm. Hunter: So, the cultured but not the cast, but it's all under the manufactured umbrella.

Mr. Coleman: Right.

Comm. Block: Who polices that? It's not like it can't be bought if it's not installed by a professional.

Mr. Klein: You're right.

Mr. Coleman: The contractor.

Mr. Klein: We have a comparison chart between the cast stone, architectural precast, limestone, and calcium silicate. It shows the PSIs. Absorption is another factor. Cultured stone has more absorption of water than cast stone has.

Chairman Elkins: I'm still struggling with the chart.

Mr. Coleman: This would be about 2,500 PSI, and you can see that cast stone is 6,500 PSI. Water absorption in cast stone is 6%, and this would be in the neighborhood of 20%.

Comm. Block: You said there are higher quality versions available?

Mr. Coleman: Well, some of the manufacturers have gotten better at making manufactured stone. It's been around maybe 30-40 years, and over time, the formulations have gotten better.

Comm. Block: So, we're getting PSIs up to what?

Mr. Coleman: It's going to be in the 2,500 range. The water absorption has some that are lower at about 12-14% versus 6%. In this area of the country, that is important. We have considerable expansion and contraction here because we have such great temperature

swings. It's what makes it hard for us to maintain our roads. It's expanding and contracting on a daily basis; whereas, in Minneapolis, at some point, the place is frozen and just stays frozen. It doesn't expand and contract all the time.

Mr. Klein: We also want to talk about the weight of roofs. Currently, the LDO divides roofing into two parts, including everything except single-family and single-family districts. What we want to talk about tonight is laminated composite shingles, which is also referred to as asphalt shingles. These won't be in projects that come before you because they aren't allowed on commercial buildings. Typically, what you'll see is concrete tiles, synthetic slates, standing seam metal, and those types of materials; however, we want to bring forward an amendment to you with regard to the asphalt shingles on single-family and two-family dwellings. There are two version of composite shingles, which I will refer to as asphalt shingles. They include impact-rated shingles and not impact-rated. The city used to only allow wood roofs, and when the city chose to allow asphalt due to fire hazards, the goal was to keep the aesthetics as much as possible. This led to limitations on asphalt shingles being installed on single-family homes, including weight of the shingle. Shingles that aren't impact-resistant are 300 pounds per square, which is 100 square feet. The idea is that the heavier shingles would have greater depth and would look a bit more like the wood roofs. Additionally, the shingles have to be a minimum of 3/16 at the back end of the shingle, creating a shadow line to add depth. (Shows example) We have a minimum of five color granules within each to give variation and depth. It also has to be installed on solid wood decking. All this together is to try to make them look like wood as much as possible, similar to cedar shake. We typically see variations of grey and brown. There are many manufacturers with many different materials, and the city has a list that indicates whether they are approved or not. We review them on a case-by-case basis, and the applicants must meet the International Code Council (ICC) requirements. As far as requirements for regular and impact-rated asphalt shingles, everything is the same except for the weight requirement. Probably around 2003, we started seeing impact-rated shingles, and the insurance companies would give homeowners a break for them because they had a polymer called SBS, which helped with leaks. Malarkey was the only company that had these, and they were only 275 pounds per square. The city still wanted to allow Leawood residents an alternative so they could get the insurance break, but we also still wanted to make sure that we had the aesthetic quality. We went down to 275 pounds per square for impact-rated shingles. What has happened over time is some of these have gotten a little bit lighter. Malarkey no longer uses just SBS, which is a polymer; they actually use three other polymers. The manufacturing has gotten a little lighter. We want to lower the weight requirement for the impact-related shingles to take this into account.

Mr. Coleman: Many of the manufacturers have been advertising their weight, so it's harder for us to know what a square actually weighs in order to meet our code requirements.

Chairman Elkins: Is the heavier the weight the better?

Mr. Klein: Heavier weight usually means higher quality. They used to have longer warranties.

Mr. Coleman: They had a 50-year warranty, 355-pound residential shake IR; whereas, maybe the highland slate at 140 pound would only be 25-year warranty. That is how they rate them.

Chairman Elkins: Do you still think it's a good idea to drop it from 275 to 270?

Mr. Klein: We're thinking there really is not much difference. Really, it comes down to materials being used to make it impact resistant are maybe a little bit lighter. It would still have the shallow line, the five-color granules, the 3/16 at the end.

Chairman Elkins: Based on your chart here, though, it's only going to add one more to your list.

Mr. Klein: It would add a little bit more. This is not a complete list. We were having trouble getting the weight. About five years ago, they stopped publishing the weight. We used to be able to call and ask; now, we find that some won't even give us the weights on the phone. We will have to address this as well.

Chairman Elkins: If that's the case, why does it make sense to have the weight be a metric at all?

Mr. Coleman: I think it is because of the durability of the shingle.

Chairman Elkins: Yes, but if you can't get the weight from the manufacturer, it makes it hard to use that as a metric.

Comm. Block: Why don't you use years of guarantee?

Mr. Coleman: Warranties are different. Some say it's a 50-year roof, but the warranty is only for ten years. Some might have a lifetime warranty.

Comm. Block: What you want is a roof that lasts a long time, or what are you trying to accomplish?

Mr. Coleman: There's aesthetics.

Comm. Block: The 3/16, you get that.

Mr. Coleman: Then there's durability. The higher the weight, the thicker the shingle is, and it affects the aesthetic issue, too. We don't want to go too low because then we start moving toward flat, three-tab shingle roofs.

Comm. Block: That's why I wondered if you could go with 20-year and up.

Mr. Coleman: That would include those three-tab shingles.

Comm. Block: I don't know what the threshold is.

Mr. Coleman: I don't know. That's part of why we didn't want to just say it's a 30-year minimum because a lot of the much lighter-weight shingles have that.

Chairman Elkins: I like the idea of the weight.

Mr. Coleman: It's not an easy thing to deal with.

Chairman Elkins: It's been in the works, right?

Mr. Coleman: It's been more difficult because the manufacturers aren't as upfront with what they're doing.

Mr. Klein: Whenever a roofer came in, they would think Leawood only allowed a 50-year shingle. Now, we're talking about how warranty doesn't have anything to do with it. At one point, the manufacturers actually started shifting their warranties, so the 40-year became the 50-year. They moved it down a tier. At that time, the city thought they were too fluid. It's just up to the manufacturer to decide the warranty. That is what we're struggling with.

Comm. Block: Isn't architectural laminate a common term that will exclude three-tab shingles?

Mr. Coleman: Architectural is a marketing term they use for one of the grades of shingles by some manufacturers.

Comm. Block: I thought they had the shadow line and were one in the same.

Mr. Coleman: Well, there are more products now that might fall into that. They have solar reflective shingles now, trying to save energy. They have algae-resistant shingles. They all come in different styles. We're just trying to set a benchmark. With the IR shingles, which use a lamination process with fiberglass reinforcement, it creates strength in the impact part of it. The Class 4 has to do with dropping a steel ball on it and the effect. It's not easy to figure out where that line is. With the impact, it would be a lighter weight, so we want to allow room. We could lower it to 265, which would add a couple more. We could look at those and come back to you with a recommendation.

Chairman Elkins: The ones on the list that don't have IR in them are not impact resistant?

Mr. Klein: They are. Malarkey confirmed it.

Mr. Coleman: Why does it have IR for some and not for others?

Mr. Klein: If you look at Malarkey Legacy and Legacy XL, they put the IR on there. I don't know why they decided to do that.

Mr. Coleman: Legacy Vista is an IR?

Mr. Klein: That's what he said. He said it's almost like a three-tab shingle, but it's an IR. Malarkey was the one who caught me up on it. This guy remembered when we allowed the first one in. When I called, he knew exactly what Leawood was. That was completely luck of the draw.

Mr. Coleman: Malarkey used to not be in the Kansas City area, and then they moved into the area. We could have different manufacturers move in here. I think they're from the west coast. Certainteed and GAF have been around here for generations. There's one called Atlas, but I'm not familiar with them. Do you have some other thoughts on this?

Comm. Block: What I was trying to get to was taking the weight out of it and having other aspects with the depth, thickness, shadow lines, and colors. We could have another standard so we're not coming back here in a month needing to change it.

Mr. Coleman: I see what you're saying, but I thin to some extent, weight is important. We're trying to measure the thickness of the shingles.

Comm. Block: We're talking about 3/16 inch and 20 feet.

Mr. Coleman: Right. I don't want to rely just that.

Comm. McGurren: Is there a chance that the weight, while not marketed, has to be reported to some agency?

Mr. Coleman: We can figure it out. When I've called, I've gotten the actual weight by saying, "I'm putting ten squares up on this roof, and I need to know how much a square weighs so I know the roof will support it." Just to let you know, we do this roof thing that almost no other city is doing.

Comm. Hunter: You mean like other cities don't require a certain type of roof?

Mr. Klein: They don't have the same restrictions.

Comm. McGurren: Have they dropped them over time, or did they never have them?

Mr. Klein: They never had them.

Chairman Elkins: We were unusual for a long time because we had the requirement for wood roofs.

Mr. Coleman: One thing I've run into a lot is people wanting black roofs, and we don't allow it.

Comm. Block: I thought slate was an option.

Mr. Coleman: Artificial slate is allowed.

Comm. Block: I mean an asphalt shingle.

Mr. Coleman: They're basically the same color that they call slate.

Comm. Block: I thought the shape was different.

Mr. Coleman: They have a polymer plastic shingle.

Comm. Block: I know about those. I thought there was a slate not just in color but in shape.

Mr. Coleman: They multi-layer the shingles to try to make it look like slate. It looks more like a tile to me and not like a slate.

Comm. Block: Is that approved?

Mr. Coleman: Just color, so black is not a color that we allow.

Comm. Stevens: You could do dark charcoal.

Mr. Coleman: You could do whatever color you want with real slate. We also allow concrete tile roofs. Roofing is interesting. The library roof is the artificial slate, and City Hall is real slate. It will be interesting to see because the cost to put the real slate on City Hall was only \$10,000 more than plastic slate. The real slate will last a lot longer.

Mr. Klein: We'd like to get your input, so we'll take your comments here and continue to research and bring it back to you either at a work session or as an LDO amendment.

Mr. Coleman: If there are any materials you think we should or shouldn't do, shoot us an email.

Comm. Coleman: I know we talked about other cities.

Comm. Hunter: You mean with the stone?

Mr. Klein: There are a lot of other cities I need to get material boards for. Overland Park does, and there are a number that do. There are cities across the country that don't limit

materials much at all. It's usually the cities that tend to care a bit more about how things look that get more detailed to make sure it's quality product.

Mr. Coleman: Aesthetics are very difficult to legislate. To add something like this to the code, we have to spend time on it so that we don't say one thing and get another. Most of the cities don't go there at all.

MEETING ADJOURNED