

**National Building Museum
Community in the Aftermath
June 3, 2010**

Patrick Kraich: Good afternoon, everyone. My name is Patrick Kraich and I'm the public programs coordinator here at the National Building Museum. It is my pleasure to welcome you to the museum and this afternoon's program.

Today's program is part of our *Community in the Aftermath* series. The series is sponsored by the U.S. Department of Housing and Urban Development and the Federal Emergency Management Agency in partnership with the National Building Museum. We are truly grateful for their support, and to Dana Bres, who is a research engineer with HUD, for helping us coordinate this series, and you'll hear a little more from Dana in just a few minutes here.

The focus of the series is the Federal Emergency Management Agency's Alternative Housing Pilot Program, which is a grant program to develop more viable, versatile, readily-available, and cost-effective post-disaster housing for the areas affected by Hurricanes Katrina and Rita. And today's speakers are focusing on the challenges of providing this post-disaster housing in Mississippi, an exciting program. Today we're going to hear a little bit about the latest green technology in these cottages as well as get an update on the other Mississippi

cottage projects, so we're going to have kind of a two full programs here so I'm very excited with that.

The next program, scheduled for the fall of 2010, will focus on efforts in Texas. And of course, if you missed the previous programs of the series, transcripts and audio are available on our website, www.nbm.org. And of course, the audio and transcript of today's program will be posted there as well. And please note that we're also filming today's program so you'll be able to view that on our site very soon. So with that, I'm going to welcome to the stage Dana Bres. Dana?

Dana Bres: Talking about the Mississippi Green Project, Mississippi received two grants under the Alternative Housing Pilot Program effort. One was for the Mississippi Cottages which you've heard about in the past and you're going to get an update on today by Randy Kinder. He's going to talk about their continued life and their continued service to the disaster survivors as well as the citizens of Mississippi, and we're going to talk about that. And we're also going to talk about the Mississippi Green Project which has turned into the eco-cottage that was funded as the Mississippi Green Project, and then it is, like many programs, has evolved some to satisfy the needs of the communities and the programs. So with that, the speakers today are myself, Randy Kinder, and Adam Dial. Bios are on your chairs.

Randy's with FEMA and Randy will provide right now a quick update on the second and third lives of many of the Mississippi Cottage Project that were installed originally down in the gulf and are now serving the citizens of Mississippi and a number of other locations.

Randy Kinder: Good afternoon. First of all, some of you attended the MEMA Cottage Program that was done back, I think, sometime in the spring of 2009. Mike Womack came and gave a presentation on exactly what the MEMA cottage consist of and what it was there for. The MEMA Cottage Program originally was designed in a scope to be temporary housing for those that were building back -- land owners, homeowners, who were building back their current houses. The program that MEMA presented to FEMA also showed how they could use these cottages for permanent after the use of temporary.

The pilot program was originally for all Gulf Coast states of the four-year pilot, \$400 million. The original program for MEMA was \$274 million for the first grant. As again, FEMA is part of the original Nation Disaster Housing Strategy and a grant program has an evaluation ongoing with HUD. Five grants were awarded for states but specifically we're talking about MEMA here.

This is the original cottage. This is a park model, 396 square feet, potential for bronze rating from the National Green

Building Standards. It has not been submitted as such. It's not part of the eco-cottage program that we're going to talk about momentarily, but it does meet the bronze standards or that rating. Fiber cement sided, wind-aerated windows, engineered anchors. Traditionally, these anchors for temporary was required eight anchors. MEMA used 24 to ensure that the units would meet the scope which was a 145 mile hour wind load. We even placed some of these units in coastal high-hazard areas to replace FEMA trailers that traditionally won't exceed 70 miles per hour. Those were only done on a take-one-out replacement basis. We didn't add any more units than what was actually there originally.

There were approximately 3000 units constructed. The governor decided that of the 3000, a little over 55 percent of them would be the park model which is roughly 396 square feet, and the use there again was temporary. The people that have these units in place had travel trailers and mobile homes to rebuild back. When the units were deployed and after the reconstruction, then they were brought back in when the people were through and completed, refurbished. MEMA had an obstacle then of "what do we do with them?"

The local units of government had an issue of allowing through their zoning allowing units to that size to be made permanent. Some of the units were installed in mobile home

parks. Those were specifically cottages which roughly are a little over 800 square feet and those were on space-available basis. The units to be recovered and re-used, as they were brought back, approximately a year and a half ago, there was a big issue in several of the counties about allowing this size unit to be permanent and what would have to take place to make it permanent.

Now, the units still will adhere to all the base flood elevations and their own permanent foundations. But local communities were a little bit hesitant, and in some cases, absolutely adamant about, "You're not going to do it." And originally, MEMA had signed agreements with the counties that did only use them for 18 months. That got extended up to as much as 24 to a little over 30 months because people had problems in actually re-building back their houses.

So MEMA came up with a process and a plan to transfer units, not only the individuals but non-profits, for profits, and municipalities, to use these units and even actually looking about selling the units. So it was part of the de-mobilization plan they presented to FEMA. In transferring into non-profits, for profit and municipalities, it was, "Okay. What are we going to do?" And they decided, "Well, we can do this and develop some actual communities where they be rental resource housing or affordable housing." And the issue with the park model that's

only a little over 400 square feet. If you'll see the first picture, that's two park models with an extension added to it. The extension is \$6000; it's a little over a 120 square feet.

This is a community in Ocean Springs, Mississippi that has 75 units in it. It's absolutely adorable, the white picket fences. Everything is accessible from the rear, there're alleys on each one of the units, behind the units. That's where the sanitation, all the traffic is, so it's a walkabout community that was first designed in the [indiscernible] of 2005. It was so noted that through Mercy Housing and a partnership with MEMA, this project, some of the original planners from the [indiscernible] in 2005 have come back and visited the site and were saying this was their vision of the communities that they looked at from the Mississippi. The characteristic of these units, the front porches, blends in perfect with that area of the Gulf Coast region. The units still maintain 145-mile hour wind load. They're not in a floodplain. They're sturdy, stable, and all these 75 units are going to be rental resources at below the fair marker rental value that HUD established for that area. So it's a way to bring back housing to the community.

Just recently in April 24th, Mississippi was impacted by some tornadoes in Central Mississippi. There were several people that their homes were destroyed, several people their

houses needed repair. MEMA approached FEMA and said, "We have units available that we're still trying to de-mobilize whether it be through homeownership programs or whatever. How about letting us have our own permanent housing program in Mississippi?" FEMA always traditionally runs emergency housing. MEMA's suggestion was for those who have homes that are permanently destroyed, totally destroyed, we will sell them a house based on an income basis and lower the price of them and that will be sufficed to their permanent housing needs.

Working through FEMA and through the HPP program, this is being done and it's right now being very successful and cost effective of federal dollars. These units were already in inventory and now there's approximately 70 to 75 units being transported up and installed into Central Mississippi as permanent houses for those who were impacted with the tornadoes.

This demonstrates roles of the state and post-disaster housing. It's something that FEMA is wanting to capture and it is going to capture on how states do their resources and capabilities could possibly maintain their own housing. The National Disaster Housing Task Force is a guidance for how states can establish their own state-led housing task force, and hopefully, some states can even come to the point where they can incorporate housing themselves and just use federal resources whether it be dollars or units. We're transitioning these

people into not only a temporary house but a permanent house that'll be long-lasting and sustainable for years and years to come.

That's the update on MEMA. That's my name, the people involved with this project, Miguel [indiscernible], Naomi Johnson, and we have LA field coordinator, Sharon Jones. We just recently, within FEMA, had a re-organization which gives HPP the opportunity now to not only monitor this program but help incorporate things into the housing mix so we were transitioned in to housing itself and under individual assistance.

And we have a new senior program manager, Katherine Fox, who is here today and taking grasp of everything that's catching up with what's going on with this program. We're very happy and excited about things that are happening, especially the use of the units and MEMA and Mississippi, not only the tag units but the park models and use them for future disasters. We'll answer questions at the end but I'll turn it back over to Dana.

Dana Bres: Originally, this was -- we had invited Mike Womack back to present on this, and for a host of reasons -- many of the things that you've been glued to the evening news every night, you've noticed that Mike as being a little busy. So Mike was unable to join us, so I'm going to provide some background on how we got where we are.

Fundamentally, the state of Mississippi applied in the fall of 2006 as part of the larger Alternative Housing Pilot Program for grant funding for something called the Mississippi Green Mobile. Now that ultimately morphed into the eco-cottage, what you're going to hear today about. But basically, the Mississippi Green Mobile was the initial strategy to demonstrate how we could build disaster housing, housing for disaster survivors that was both environmentally sensitive and performed well.

So we were building on -- they brought together a team for the proposal that drew on the expertise of architects, of engineers, of building scientists, and folks that know the local preferences. And clearly, that's the answer from a design standpoint. You've got to factor all of those things in. So they came up with a proposal to build structures that were environmentally sensitive, that were green. And remember, back in 2006, green wasn't nearly as hot an idea as it is today. And ultimately, the Green Mobile Project has evolved into the eco-cottage.

I'm going to continue to use the term green mobile here because almost as an opportunity to draw distinction between what we're doing and what we planned on doing four-and-a-half years ago. So the key here is that these were units that would support transition to permanence. Our home anchors are for our

families, for our lives, and for the communities. So getting into permanent housing and feeling that you're in a permanent solution is key to that process.

The Green Mobile initially proposed two units, a large and a small, a variant of the Starbucks approach. The large unit was 892-square foot modular and the small was 560 square feet; basically two bedrooms and one bedroom. Initially proposed with new structural insulated panel walls, for those of you that don't know, structural insulated panel is typically a panel of oriented strand board, or in some cases, fiber cement, somewhere between four and eight inches of expanded polystyrene foam, and then another slab of oriented strand board. And that serves as the entire structure for the house. You eliminate the exterior sheathing, you eliminate the studs, you eliminate the interior insulation, you eliminate the -- the only thing you don't -- you still need to do is put up some dry wall on the inside, but basically you have a one-stop shop. Very tight wall, very strong wall, and that's the way [indiscernible] work. And these were going to be modular construction. These were units that were factory built, factory built for all the obvious reasons: construction quality, construction consistency.

Initial elevations, you see the sketch on top showed it in transport mode. Likely, probably, that sketch would've needed a few more wheels. In reality, most of these units have a lot

more axles than that. And then installed on helical anchors with the typical vernacular architectural features that the folks in Louisiana and Texas and Mississippi have grown to accept: porches, windows, able to see their surrounding area.

The initial plan was design these things for the local condition. Address the issue of southern exposure. Design porches that shield the windows when it's hot, then capture the breezes so we can maximize the sensitivity to the environment rather than saying, "Here's a solution. Let's adjust it until it fits onto the property and move on." So this is the sensitive nature of the design process where they're designing to provide daylighting, providing shade, and providing ventilation.

We've discovered through a couple of our projects, particularly the one in Alabama that a lot of the folks that are using the Alternative Housing Pilot Program units aren't used to using air conditioning. I'm not sure I can deal with that concept but then I cannot think -- I've grown up to expect it. So there are families that -- we've ended up having to install screen doors because they want their doors open so they can get ventilation. So the original Green Mobile addressed some of those things, addressed the fact that ventilation was important.

The Green Mobile design, as I said, was factory built and it was built to the international residential code. Obviously

one could build to any of a number of codes. IRC is in use in Mississippi and serves as an excellent touchstone for the design standards. Very much like the other Mississippi cottages that were designed, there were aspects of it that were designed above that. The Mississippi Cottages were designed for 150-mile an hour wind speed even though the code said that a lower wind speed was an acceptable solution. They designed all the units to a certain standard, and it turned out, in quantity, to be a very marginal increased cost. And it would've included Energy Star appliances, solar pre-heat for water, tankless water heaters, photovoltaic, on a net metering basis; no battery packs but just basically photovoltaic to reduce the energy costs. Effective fans and exhaust systems to induce ventilation. Ventilation is critical.

The original grant proposal, remembering that the original grant proposal occurred about a year after the storm, addressed indoor air quality. Indoor air quality was paramount on these units recognizing the fact that they want -- ventilation is the answer; rainwater harvesting for irrigation and for other grey water uses; and a ductless air conditioning system. Basically, in a small unit, a ductless AC system allows you to avoid having to dedicate a lot of interior space to the ducts.

Here was one of the original floor plans: two bedrooms in the back, single bathroom and a very open kitchen, dining room,

living room concept; design concepts that are excellent at making solid use of a relatively small space. Nine hundred square feet is a small house. There is nothing about that. But by doing it in this manner, you maximize the large spaces so you end up with a good-sized living room and dining room and kitchen that's all open so you get the feeling of space. When you magnify that with windows and doors and porches, you end up with a home that's quite livable.

The small version was a one bedroom, pretty much the same concept, the same floor plan, just a little shorter, and again, that common great room in the front. You'll see a number of places where there's -- in the front we have two porches and then a porch off the side. So there are a lot of opportunities to magnify the available space by incorporating the exterior.

The original plan was helical anchors that were installed and then connection for the unit. So basically you have, the unit is constructed concurrently with the infrastructure which then speeds the construction process, and the opportunity for bump outs on the side that would allow you to actually get some more space. And these were systems that were designed to basically adapt themselves to be acceptable to the local residents because everybody's vision of what a house should like is somewhat colored by the local conditions.

Reason we were fond of factory-built construction, host of reasons, biggest reason is one that -- the first one there is if you're trying to do rapid reconstruction, the cost of having to sustain the home builders in a disaster area means that you're having to feed extra people. Because remember, a lot of the infrastructure has been strained. So if you're having to bring fuel in to run the pickup trucks and the generators, if you're having to bring extra food in or extra lodging in or you're just creating competition for those products between the response workers and the reconstruction workers, it raises costs and makes the process more difficult. So, by moving a lot of the construction out of the immediate disaster area, maybe 50, 100, 150 miles away, upstate -- in the case like Louisiana and Mississippi, it'll be just basically on the northern half of the state. There are grocery stores that continue to operate. There are hotels and motels and restaurants and apartments and gas stations, all those things are just available on the market so the responders, the response organizations aren't then responsible for providing those logistics. So it just makes life a little simpler.

And if you're doing something creative, photovoltaic, and you're doing it in an area where you might not have a lot of photovoltaic experts, you can concentrate those experts in one spot and the work can come to them. So you can magnify the

value of those folks while they're training other folks. You get a very consistent quality. You can dial the quality in. It's just like making an automobile. You can decide the quality level you'll set and you can dial it in and achieve it very consistently.

Most of these plans, everything is under the roof. Nothing's ever gets wet. So the first time the plywood goes outside is when it has siding on it. And that's a really nice touch because it's not getting gray like it does on a lot of construction sites. Plus you can speed the process because you have parallel operations. You can be doing the infrastructure, water sewer, while you're building the house. On a normal site-built construction process, you end up with conflicts.

Ultimately what that does by speeding it all up and providing a better house, it ultimately provides the benefit to the residents, and that's really the goal of this whole process is the benefit of the resident is the stability. If we can stabilize the families, make them feel like they're home, make them feel like they're recovering, then the community begins to recover more quickly.

Like all good designs, this one evolved. Like all good projects, this one evolved, and that's natural in construction particularly in something that's iterative. So what we did was the project then evolved from the Green Mobile, what you've seen

here, to the eco-cottage, which Adam will discuss, and that evolution is quite natural. It's particularly when you're doing something iterative. We expect we should learn from the process and it also factors in the great idea when it comes time to execute it, you can only execute the plan that somebody can do, so the home builders and the communities have to get input.

And the communities have their own expectations. The communities in the gulf have realized that they have skin in this game so they are articulating their wants and needs and desires with respect to these units, and we would be remiss if we didn't take that into consideration. So that's how we got to where Adam is today. And we will take questions at the end.

Adam Dial: Good afternoon. I'll give you a moment to get acclimated to my voice. I know that the southern dialect is universally recognized as the most intelligent-sounding dialect so I really only use this when I travel away from home. I don't sound like this at home.

Now, thank you all for coming. Patrick, thank you for having us, Randy and Dana. Thank you for letting me be a part of this. It's very special to me. This has been a passion of mine for the last, probably year and a half now, and for the next year, it will continue to be my passion.

My name is Adam Dial and I'm one of the two eco-cottage coordinators for Mercy Housing. Mercy Housing is a non-profit

housing entity in Coastal Mississippi that's been doing a good work for about 30 years now, and these are just two of the many projects that they have, and Joe and I work with them solely on these two projects.

As Dana mentioned earlier, the eco-cottage process is evolving. They've given you a lot of the history. I'm just going to roll through some photos and talk to them for just a minute. You've all seen picture of FEMA neighborhoods. These are necessary in certain instances. This is kind of the, hopefully, a new evolution that we're going to be constructing in the communities of Ocean Springs and Pass Christian in Coastal Mississippi.

The inspiration from my perspective was the Katrina Cottage. The Katrina Cottage was designed and the concept developed in October of 2005 after Hurricane Katrina during the design [indiscernible] that occurred on the coast. Andres Duany and a number of the Congress for New Urbanism architects helped birth this concept. Marianne Cusato, I believe, is actually the architect that I attributed this design to.

Cottage Square is a development in Ocean Springs that houses the original Katrina Cottage that I showed a moment ago. It's important to this conversation today because it is the property that is immediately adjacent to one of the projects that I'm going to talk to you about. It's actually the

inspiration for that project. I was the civil engineer that was involved in this project from a site development standpoint and it's really what got me interested in traditional neighborhood development and the use of cottages as a real answer to energy-efficient, affordable housing in the downtown setting.

Here are some photographs of that development, Cottage Square. These were taken right after it was built. It's actually more mature-looking now with mature landscaping and that sort of thing. But great attention was paid to the detail throughout this project. A lot of good examples of coastal vernacular, coastal cottage architecture.

The architect that designed this project is the same architect who's designing the eco-cottages to be very consistent. His name is Bruce Toler. He has been a member of the Congress for New Urbanism for some time and he is the cottage king on the Mississippi Coast.

Modular construction comes in many shapes and sizes. The projects will basically seek proposals from modular manufacturers, systems built manufacturers as well as stick builders, so we'll be able to compare across the spectrum the proposals as they come in and see what is the best option for these two projects.

I included the photo to the right because it's a modular example of a two-story, narrow cottage, and our eco-cottage

designs as you'll see in a moment are very similar to that. The picture of it completed on the right.

These photos are Mississippi cottages that were mentioned by Randy. This is the beginnings of -- these were some earlier concepts of the eco-cottages themselves. The design is still being finalized, we suspect by the end of probably next week, we'll have some finished documents to actually seek bids on for the construction of the cottages themselves.

There're basically two models: There's a two bedroom, two bath that's a little more than a 1000 square feet. There's a three bedroom, two bath that's about 1200 square feet. Three bedroom, two bath has a double porch on the front, first floor and a second floor porch. Two bedroom, two bath has a first floor porch. And each of the two models, the three bedroom, two bath, and the two bedroom, two bath, will have five different architectural versions, five different elevations. You'll see them here. And there are slight variations on the architectural detail, mostly exterior, to help break up the neighborhood. So we'll use different cladding, different siding, slightly different rooflines so that you're not looking at the same product over and over again, but at the same time, for the purpose of keeping them down to two floor plans is to keep the modular efficiency assuming a modular company can really compete

on the project. So we try to keep them competitive during the process.

In addition to having five different elevations for each of the two models, there will also be some sight-specific adaptations. The project in Pass Christian will require the cottages to be elevated about eight feet. The project in Ocean Springs is at elevation 20 so it's well above the 100-year floodplain and we'll have about an 18-inch foundation so that's the differences in the elevations that you're seeing there.

This project wouldn't be -- from my perspective, they wouldn't be so significant it weren't for the locations of the developments themselves. They are both located in downtown settings. They're within walking distance to all of the services, retail, the churches, banks, schools. The one in Pass Christian doesn't have as many amenities around it because they were washed away by the storm. The site in Ocean Springs has a lot more because it's a more developed city that is essentially a little higher than the city and it's naturally a more populated city. But you'll see the property boundary in red, it's about three acres. It's on the main street in the downtown of Pass Christian, about a quarter of a mile off the beach. The site elevation is about 10; elevation 10 means sea level. The first finish floor of the homes will be about elevation 19.

This aerial photograph shows basically a quarter-mile radius, a half-mile radius, and a one-mile radius, with the quarter mile being the yellow, and that shows you the proximity to the beach. The asset that you see in the lower left part of the screen is the harbor in Pass Christian. It's kind of the gathering place for the community. It houses several hundred boats and there's actually a harbor expansion in place right now that'll add another 150 slips.

Basically, if you'll just notice over to the right-hand side, the distance column, this shows you the proximity, the distance to each of these different banks, churches, retail, goods and services that I was describing earlier. It's all very walkable, quarter mile, half mile, tenth of a mile, et cetera. And that's for the project in Pass Christian. You'll notice in a moment when we get to the project in Ocean Springs, you'll notice the list is much longer.

This is the site plan for the project in Pass Christian that I just showed you there a photo of. It's going to consist of 45 cottages all together. Twenty of them will be Mississippi cottages that are already constructed. You saw Randy's photos earlier. Twenty-five of these 45 cottages will be newly built eco-cottages that the design is being completed on right now. The eco-cottages will be LEED silver certified. They'll have just a tremendous amount of design thought that's going into.

This is just another version of that site plan. This is the one that the city actually approved. As you can see, rear entry to each of the cottages. The parking will be underneath the cottages in Pass Christian because they're elevated to the proper height. The front of the cottages will be screened and everything that's logical to be screened will be, such that we're really making a place here, not just building a development. And you'll see a central corridor that runs through the middle of the development. We intend for that to be a gathering place, have it heavily landscaped, be a place within the community.

If you'll notice on the top portion of the plan, there's actually a side street that comes in, that those cottages will front that side street. From the far right-hand side, you'll see five cottages that front the main street. Many mature trees on the property that are being protected and saved. There was actually a five-foot diameter live oak tree on the property that's just magnificent.

The other project is in Ocean Springs. It'll be a community of 30 homes. For 40 years, it's been a mobile home park. It's a mobile home park that was built right before Hurricane Camille struck the Mississippi Coast in 1969. When we purchased this property, there were actually four mobile homes on it that were still there from the '60s, manufactured in the

'60s, still on the site, they've been there for 40 years. Several of them were given to tenants by -- prior to FEMA being established, the emergency efforts were led by a different agency --

Male Voice: [Indiscernible].

Adam Dial: That's right. So these 50-foot long by 10-foot wide trailers were given to these people from Hurricane Camille and they remained here for 40 years. We disposed of them after purchasing so. You built them well. They lasted 40 years.

Another bird's eye view of the Ocean Spring's property. It's about a half mile from the water. Elevation of the site is about 20 mean sea level. And as you can see, it's just within proximity to everything. It's across the street from the elementary school in town. It's next door to the boys and girls club. It's two blocks from the grocery store. Everything's within walking distance. And that's just a list of those things that I was describing, banks, anything you can imagine.

This is an early site plan. I'll leave it in here because it shows the evolution of thought. The main street in Ocean Springs is called Government Street, that's it on the right-hand side of the screen. We'll have five three-bedroom, two-bath cottages that face Government Street, provide a real nice, neat, clean entrance to the property. And once again, we'll have a central gathering area. Cottages will be oriented towards the

center so that there'll be a meeting place, if you will. All of these cottages will be rear access. Parking will be behind them to keep the street's gate clean.

Once again, there'll be 30 cottages here. Ten of them will be existing Mississippi or MEMA cottages that have already been constructed. Twenty of them will be eco-cottages that are being designed right now. And this site will be the ones where the cottages are on 18-inch foundations because they're already high enough. We just want a traditional, clean look. You'll also see on this site plan that it has a number of mature trees as well and they all will be protected. We designed around all the protected trees that are protected by the city of Ocean Springs and we'll only be removing a few of the trees that are not protected.

Other interesting note is, if you'll remember, I was telling you about Cottage Square which was my inspiration. It's actually the property to the west which connects in the lower left-hand portion of the screen. So there'll be connectivity between the development that was built two years ago with the original Katrina Cottage in it and cottages at our park which will be the next generation. So all together, there will be about 50 structures within about four acres of land in the downtown. All of ours will be residential but Cottage Square is

about half commercial and half residential so it's a nice mixed use community.

I've summarized this all together. We're talking about 75 affordable, energy-efficient, long-term rental properties in Coastal Mississippi which there is a tremendous need for that in our downtowns right now. It's planned to be LEED silver certified, both the buildings and the neighborhoods, and it's planned using traditional neighborhood design like I was telling you.

Two real main points to pull off of this slide, the project in Ocean Springs was a blight to the community, the mobile home park that was there, that was definitely not consistent with the surrounding properties. It was a terribly inefficient. The peak power bill for the worst mobile home in that park was about \$450 during the summer month; that's for a 1000-square foot mobile home. We anticipate the annual power bill, typical average power bill on one of these eco-cottages to be less than \$100, so just a significant difference in efficiency.

Project in Pass Christian, it will truly provide a significant boost to that city. The city has been really devastated by Katrina, had a population of 6500 pre-Katrina; currently, they have about 4000 people and everybody shows up for the count and their downtown really needs some rooftops to

support retail and they're struggling to come back so this will be a real boost to that city.

As we talked about, there's just a tremendous need. I would point to the middle bullet point here, affordable housing in the downtown provides a walkable situation which there's truly not a lot of in Coastal Mississippi. I mean, I know you think that I might be talking a lot about walkable and here we are in a very walkable city. But in Coastal Mississippi, it is not a real walkable place. We have 500,000 thousand residents that are spread out over an 80-mile wide coastline so that puts it into perspective in terms of how sparse the population is. So little pockets of walkable areas are gems for coastal Mississippi.

And then I would just add that the city will truly benefit -- both cities will benefit from a tax standpoint and just from the re-development that'll occur. I did not mention that both sites are infill and re-development sites. They were formally -- the one in Ocean Springs was formerly a mobile home park, the property in Pass Christian was formerly several residential homes pre-Katrina, and they're both just right in the downtown.

I have a few pictures. This was the mobile home park in Ocean Springs. It had 21 mobile homes on two-and-a-half acres. Many of them had been there for a long time. It was truly in need of re-development. The '60s and the '70s were very well

represented in our mobile home stock on this property. As you can see, some of the size is 50 x 10, 50 x 12, so 500-, 600-square foot mobile homes. That was probably the worst picture so I thought we'd make an impact statement with that picture.

And the eco-cottages themselves will be LEED silver certified. You all probably know this -- it was new to me to discover that 35 of our 50 needed points to reach LEED silver on this project could be attained from the site characteristics itself, partly because we selected properties that were in the downtown, that were infill, in need of re-development. We were going to take a very proactive stormwater approach to the development of the site infrastructure itself, but it was just baffling to me that such a significant portion of the LEED score could hinge upon what property is selected. And we're really excited about the energy efficient nature of the construction that we're going after.

The populations that'll be targeted, Mercy Housing has a pipeline of people in need of homes. They'll be certainly our targeted population. We also think there's a real need for seniors. Most of the studies that have been conducted at the state level show a real need for senior housing on the coast and employees of businesses in the downtowns.

You know, there's a component of affordability that I think is often overlooked in this walkability factor and I haven't

seen anything that really quantifies it very well yet for me, but to be able to be in a walkable situation where you can walk your kids to school, walk to your job, walk to the goods, retail, services, et cetera, it's just a whole other element of affordability that has been often overlooked in Mississippi. It might not be in other places but it's been very overlooked in Mississippi and these two properties address that overlooked obstacle.

So, just to kind of summarize a few things. We'll be directly impacting 75 families in Coastal Mississippi and through nice, affordable rental that's very energy efficient. Local small businesses, we'll have an option for affordable, attainable housing and the cities will see increased sales and [indiscernible] taxes.

And I'm very excited that this is a proactive approach from Mississippi in collaboration with federal partners to take a new look at affordable housing in the wake of a disaster.

This last slide really just summarizes the relationship between Mercy Housing and the eco-cottage coordinators. We're basically providing turnkey properties for Mercy Housing, and you can see that goes through the administration and management of the project through the land acquisition and design engineering of the site as well as the design engineering of the cottages and foundation construction, construction of the

cottages themselves, the MEMA cottage placement because those cottages are already constructed, have to be placed on site on permanent foundations, LEED for homes and LEED for neighborhood certification, as well as the landscaping, tenant recruitment placement on through property management. And with that, I used about twice my 20-minute allotment. Any questions?

Patrick Kraich: Speakers situated on the stage and we'll open the Q&A. And, one, actually folks, wait until I reach you with the mic. We are recording this program so please wait until I come with the mic and take it from there.

Male Voice: Thanks. This question is for you, Adam. We did understand you by the way.

Adam Dial: I'm sorry. I couldn't hear you.

Male Voice: I said we did understand you [cross talking].

Adam Dial: Great.

Male Voice: The dialect and all. A couple of quick ones; one, is this for-sale housing or tenant housing?

Adam Dial: It is tenant housing. There is a tremendous need for long-term rental actually right now. The economy probably exacerbated the insurance situation that already existed in Coastal Mississippi. Insurance is one of our greatest challenges right now, you probably heard about it, the cost of insurance. And so when the credit markets collapsed,

you had a compounding of two problems that made long-term rental more -- it exacerbated the existing need.

Male Voice: Okay. My other question was the lot sizes. Now, you may have done this as a condo project then or multi-family; is that how it was subdivided, as a multi-family project?

Adam Dial: Each property is different. The property in Pass Christian -- Pass Christian was the only coastal community really out of the 13 in Coastal Mississippi to adopt the SmartCode wholesale [sounds like], and so it's my understanding from our dealings going through that process that a land subdivision had to occur for this project to occur under the SmartCode. And so the city approved that and they were small lots. I mean, there're 45 homes on almost three acres so it's probably 20 by 80, 30 by 80-type lots.

Male Voice: Did you have a problem with that getting through the process?

Adam Dial: No. Both the city of Pass Christian and the city of Ocean Springs are the champions for cottages in Coastal Mississippi and that was part of the reason why we went to those communities. There was a real need there but they were also the ones who were welcoming of the project.

Male Voice: Thank you.

Female Voice: You mentioned that you were using rainwater, recycling; I assume these were not 50 gallon pickle barrels. Could you talk a little bit about what you're doing basically about the soil in that area because you are so close to the ocean? Average rainfall?

Adam Dial: Certainly. And I think Dana actually mentioned rainwater harvesting but we are taking a very proactive approach to the stormwater. Both communities require it. Our state government requires it as well as the federal mandate has come down through the EPA. Probably one of the key things I would mention is both of these sites were formerly developed and so the site in Ocean Springs, our post-development runoff flow from the site is actually less than what it will be pre-development because there were more rooftops, more concrete and asphalt drives, patios, sidewalks, and parking aprons, prior to development. So we actually have a net gain in pervious space post-development in Ocean Springs.

And in Pass Christian, we don't have a net gain but we basically get a fair amount of credit because there were four homes with sidewalks and driveways and parking pads prior to the storm. The storm washed those structures away. Well, it didn't wash them away but took them away. It did not, but we are re-developing the site infrastructure on both properties entirely. New water distribution system, new sanitary sewer collection

system, new pervious roadways on both properties. Probably the pervious aspect of our surfaces is the greatest stormwater practice that we're taking there. We also have very limited underground piping that's all through bioretention swales and bioretention features. Just a very low impact approach to the storm water on the site.

Dana Bres: With respect to the rainwater harvesting, places like Coastal Mississippi might be the ideal places to do rainwater harvesting because around here we get three inches of rain a month just about every month so you're not having to create vast storage containers like you would out west where you'd expect people would do rainwater harvesting because here you're only storing the water for, at most, a couple of weeks where out west you might need to store it for significantly longer to get through the drought. So rainwater harvesting is frequently not considered in places that get a lot of rain but that's probably where it would work the best, where it would be most efficient.

Male Voice: I'm just curious about the disposal plan or re-assignment plan of mobile homes that are actually on the park road. Are they just going to be thrown into waste or --

Adam Dial: Most of the debris that -- almost all of the debris that were taken from the site were segregated and recycled. We took a very careful approach to that. We probably

spent more -- well, I know we spent more money segregating individual pieces of steel, aluminum, plastic, glass, in order to properly dispose of it. And then anything that couldn't be readily recycled was disposed of in a landfill proper manner, but we did take a very proactive approach to recycling what was on the site. And we haven't to date demolished the existing roadways but that should be happening here in the next few weeks and our plan is to recycle all the concrete and asphalt and that sort of thing. That's actually an item that's very cost effective to recycle in South Mississippi because it's difficult for us to import aggregate. All of our aggregate comes from Kentucky and places that are a long way from Mississippi.

Randy Kinder: Also the residents that were there were re-located and will have an opportunity to come back to these new cottages.

Female Voice: I'm actually with FEMA on the Alternative Housing Pilot Program, and one of the things that we've learned so far in the early assessments on the evaluation is that people pushing to reporting disabilities particularly with mobility disabilities are reporting that they're very content with the units in comparison the FEMA units that some of the design features, just in terms of larger spaces in the bathroom, turning radius and stuff like that, are a vast improvement from those. I'm wondering if that has also been looked, the

accessibility portion, the siding for ramp additions, especially for the senior development, whether it's looked at, considered tenants of universal designs so you've got larger doorframes that can make it easier to accommodate people with disabilities. Has that all been looked at too?

Adam Dial: Both of these developments will have, like we said, a combination of MEMA and eco-cottages and we've been able to secure all UFAS -- forgive me for not being able to state what that acronym stands for.

Female Voice: Uniform Federal Accessibility Standards.

Adam Dial: There you go. All of our two bedrooms will be UFAS units so we'll have a significant ADA accessibility in both developments.

Male Voice: I was very impressed with the architectural vocabulary that was drawn in your elevations. We saw a lot of gable features and the porches -- not the porches but the siding and window features and other features that really made it quite homey. They didn't -- did they all make it -- I mean, there were even shutters. Did that make it into the final product or is that just [indiscernible] in early stages?

Adam Dial: Well, there're probably two answers to that question. The MEMA cottages that have already been constructed, I guess they were two years ago, the construction for those was completed, maybe more, you guys know better than I do. I think

some of the subtle detail work was probably value engineered out of it. That was long before I had any involvement with it, and I can't guarantee that it won't happen this time but we have been very proactive about trying to retain the character that makes these level homes homey like you said. They haven't been -- we received proposals at the end of the month on this project, on the eco-cottages and end of the month, first of next month. And so we'll have to see what we get from the variety of modular builders, systems builders, stick builders, in terms of where do we shake out in relation to the budget that we have to build the projects. We believe that we're going to be able to maintain that same character. But you know how there --

Male Voice: Both of the communities look like they're going to be tremendous and quite beautiful. How did you go about identifying and acquiring the land? And, do you have any estimates on how much the units are going to cost?

Adam Dial: Thank you for the complement. The two properties were very carefully selected based on existing zoning as well as what we thought the potential zoning could be for each property. There're 13 municipalities in the three coastal counties of Mississippi. They're all very different. They're all governed differently. They all have a different set of zoning regulations that all read very differently. And each of those 13 communities have a different perspective on cottages

and whether they think cottages are mobile homes or they're something in between. I mean, just very different outlooks on things.

We knew which two communities were the most agreeable and welcoming of such projects and so we looked in those two communities and then we looked within those communities at which property would be properly zoned, which property had the best elevations that we could get in that locale, et cetera. We basically created a matrix and found the best properties that we could. It's very expensive to develop internally like that in a downtown setting. The property is almost always much more expensive, and in this case, relatively expensive property in both instances.

But the property in the Ocean Springs was quite literally - that 40-year-old mobile home park was quite literally almost without question the only property in the city of Ocean Springs that this project would fit on and it worked out. So cost per unit, if you factor in land cost and the cost of construction, it'll be approaching \$100,000 a unit, a little more probably.

Randy Kinder: And adding to that, FEMA's grant for the eco-cottage green mobile, when they solicited this out to Mercy Housing and we also have not only these two projects but one in St. Louis which was with Habitat, part of their response was what could they bring to the table, so it's not all federal

funds. It's also the partners utilizing some of their funds whether it be for infrastructure or the land purchase or whatever. So it's a collaborative effort between not only federal and the non-profits but getting the best use out of the federal dollars.

Female Voice: Actually, I had a followup question on that. The cottages themselves, the Mississippi cottages, how much did those cost? Because we only got a figure for the addition portion to make it a permanent housing solution. So I was curious in terms of the original cost of the original cottage.

Adam Model: The park model, that's -- now, this is just the cost. We're not talking about infrastructure and land. The park model is roughly \$33,000. The cottages themselves are right at \$57,000 which is a little over 800 square feet. Now there was also one of those I forgot [indiscernible] ran by it, not only the park model connected. There was a tag unit of the Mississippi cottage with an additional 240 square feet that was done by Habitat that was a \$12,000 add-on for that tag. Now, that's not including -- and there again, when they partnered out after use of the cottages with temporary, they asked for solicitation and received several, and they rated them based on what can you bring to the table whether it be Habitat, Mercy Housing, and there's other entities involved also that are putting together these small developments or communities.

Dana Bres: It's important to note like Habitat is going to spend all the money they have building housing. And if we can take a \$35,000 asset, that tends to magnify that or amplify the Habitat efforts in the local community and that's going to benefit the community for years to come, so it's a great re-use of the buildings.

Randy Kinder: And Habitat in Bay St. Louis is going to have a less cost because they're going to look at volunteers also. They're volunteer-based so the one in Bay St. Louis averages roughly 100 people per week that are volunteering still to this day. So they can get quite --

Female Voice: Did that include the photovoltaic that you mentioned? The pricing that you just mentioned?

Adam Dial: I'm sorry?

Female Voice: The photovoltaic panels that you mentioned earlier for the electricity? It was one of the items that you had listed in terms of what was included in the housing.

Adam Dial: The photovoltaic panels?

Dana Bres: The PV was part of the original proposal where they said basically it was -- and like a lot of brainstorming sessions, which is what occurred when the proposal were due was what can we do to make this really green and so everybody was championing their own thing. So photovoltaics were originally proposed as a strategy to do that. Obviously, the approach of

just hardcore energy conservation is on a dollars-per-kilowatt hour a whole lot cheaper. Saving the energy is a lot cheaper than making it. So the approach that they're using of making really energy efficient units is probably a cheaper and more durable strategy.

Randy Kinder: And the Green Mobile Project, of all the proposals that were submitted, 29 of them, was the highest rated, but there've been changes based on as Dana said, you have a vision but how do you actually get the vision to completion. So there have been changes to the scopes, still keeping the concept together of what LEED silver being the original intent.

Male Voice: First of all, I'll start out by saying that myself and my colleague are both Mississippian so we appreciate what you're doing, and my accent has changed a little bit; I've been washed in for a little too long. But I wanted to followup on your lead statement. You said green building is very important and I'd like to ask you, what role do your hardwood products play in the building of the new cottages? LEED notoriously has left out what products mostly? And I'm just wondering, it's the most natural resource we have for green building, I just wanted to see what's going on with that.

Adam Dial: We currently have spec-ed some wood flooring. In terms of other hardwoods, we've taken a very green approach to our cabinet work. Cabinet work is so dependent upon

adhesives and other things. We've tried to take a very, how do we create a set of LEED cabinets, so we've given a lot of thought to that and we're really looking towards locally produced wood products for our cabinets. It's surprising the percentage of cabinet-grade plywood that is imported from China, it's really significant. So we certainly are addressing that. I wish I had a few more details for you.

Male Voice: Thanks again. The story Dana told about the household that didn't want to turn on the AC and would rather have the natural ventilation of the house I think is a great one and actually sort of begs the question, is somebody monitoring how much the occupants understand about the homes that they're getting? Do the green qualities actually make a difference to their knowledge or their acceptance of the homes aside from the accessibility features and potentially the architectural design features?

Adam Dial: I'd like to give a brief comment and then I'm sure you've got [indiscernible] you'd like to say.

Several of the LEED points that we're currently targeting are the tenant education component of their home as well as the property manager's education of the home and all of the pertinences of the home. So from our perspective, we do want to educate and want to have a process in place to educate the

homeowner and the property manager about what they have, what the asset is. Dana?

Dana Bres: I don't think there'll be monitoring in that direct sense. The advantage we're going to have with a property owner like Mercy is they're in it for the long term, and because they're involved with the residents, they'll be able to provide some sustainment to that. Where we're certainly on a straight purchase basis under the LEED program you provide them with a really nice notebook and you say, "Have a nice rest of your life," and the notebook, like most of the manuals that I have at home, gets displayed nicely on the shelf and may not ever get read or may not get embraced. So in a rental property, there may be actually more compliance or greater benefit because there's an ongoing relationship between the folks that own the property who are committed to this and the tenants.

Adam Dial: One other comment with regard to that, an example of how we'll be continually interacting with the tenant, the city in Ocean Springs is requiring one master meter for the water service to the property. So we have one master meter at the street. In theory, we wouldn't have to meter each house. We've opted to meter each house in order so that the tenant knows what they're using. To me, it would almost be we would be doing a disservice to the tenant for them to not understand how much water they were using. So that's actually been designed

into the project. It'll be double metered, metered at the street and metered at the house.

Male Voice: Imagine seeing your housing, how do you accomplish that when the first floor is ten feet off the ground?

Adam Dial: In Pass Christian, it will be more difficult to accomplish than in Ocean Springs but it can still be accomplished in Pass Christian through either external manlift-type structures or pretty extensive -- yes.

One of the benefits that we have is if you noticed from the rendering, two of the elevated cottages will share a stairwell. So if you did have an external elevator, it could essentially be used for two units and you wouldn't likely need -- I mean, if we've got 45 units in Pass Christian, we might need five external elevators. If we used five elevators, that would give us ten ADA-compliant units.

Patrick Kraich: Can I just have the last question over here.

Male Voice: What will you be charging in rent?

Adam Dial: The rents are proposed to be about -- it'd be different at each property. They'll all be less than 120 percent of AMI. Many of them will be less than 80 percent AMI. But the rents will range in the \$600 per month range for a one-bedroom unit, probably \$800 a month for the two's and three's,

maybe a little more than that for the three's. And it's obviously different for the different properties.

Patrick Kraich: All right, folks. Let's have another hand for our presenters. Of course, I'd like to thank you all for coming out and stay tuned to our website and as we prepare for the program in the fall. Thank you.

[End of transcript]