

# Chicago Green Roof Initiative

## Slide 1: Title Slide

Neelam Patel: As Michael sets up his PowerPoint, I want to take a few minutes to introduce him. Michael Berkshire works in the sustainability office in the Department of Planning for the City of Chicago. He has been involved in the environmental field for 24 years.

He is on the board for the local chapter of the Green Building Council in the Chicago area. And for the City of Chicago, he was on the taskforce in developing the climate action plan. So Michael can speak to you about Green Roof, heat island mitigation, and climate management issues. Michael?

Michael Berkshire: Good afternoon. Thanks so much for inviting me to tell a little story about what we've been doing in Chicago to encourage our construction of Green Roofs. So, for most of the time this afternoon, I'm just going to spend a few minutes talking about our current tool kits that we use, which you'll see is a variety of both sticks and carrots. And there are a couple of grant programs that we had in the past that I would more – I would feel very comfortable in talking about, but I'm not going to spend much time right now. But we can talk about it during the question and answer period. But I'm going to really focus on our current tool kit.

## Slide 2: Chicago City Hall Green Roof

Michael Berkshire: Our first slide is an aerial photograph of our City Hall. So you can see here that the building that City Hall is in is half City Hall; the other side is the County Administrative Office. So only the City Hall side is vegetated in. I just love this photo because it shows the stark contrast between a vegetative roof and a typical black asphalt roof.

And we have been conducting research on temperature differences between the two different roof structures. And on a 90 degree day, the vegetated side on City Hall hovers around 90 degrees whereas the county side, the black asphalt roof, reaches temperatures of over – around 170 degrees at certain points of the day, Fahrenheit. So at certain points of the day, we're seeing about a 90 degree difference between the two sides of the roof. So we are proving that it will impact temperature changes.

## Slide 3: Policy

Michael Berkshire: Really, our driving force behind the Green Roof movement in Chicago has been policy, so more of the stick side. Sorry, this is kind of hard to see, but I would be more than happy to email this to anyone, it is on our website. But this is our sustainable development policy and very simply how this policy works that if you receive any form of assistance on your project – development project in the city, whether that be monetary incentive, such as tax increment financing or if you're buying a piece of property at a reduced price from the city or if you're getting any kind of tax credit – we have very popular industrial tax credit. And then also, if your project is part of a plan development, which means it's a development that exceeds a

certain side whether it's height, square footage, we – it has to go through our department for review. So any of these projects are required to include sustainable elements in them and often times this is – it is a Green Roof.

And this was initially implemented back in 2004. And at that point, it really did primarily just encourage Green Roofs. But in 2008, we expanded the policy. And now if you can see this, we also are requiring LEEDS certification for many of the projects as well as projects that we asked them to exceed our stormwater requirements; energy efficient level – energy efficiency levels, et cetera. So it has been really our most effective tool and driving force behind the number of Green Roofs that we're seeing constructed in Chicago.

#### Slide 4: Stormwater Ordinance

Michael Berkshire: second stick, or regulation, is our stormwater ordinance. It is a newer regulation; it was enacted in 2008. And again very simply, what it states is that you have to keep a half inch of rain on your site, so volume.

And it also – well, there's two ways you can do that. You can keep a half inch of rain. You can provide that through – or prove that through a plan you have to submit or you can increase the perviousness or permeability of your site by 15 percent from existing conditions. And here, not only has it promoted a lot of Green Roof construction but also rain barrels, parkways that are designed to take stormwater as well as a lot of permeable asphalt, concretes and pavers, et cetera.

#### Slide 5: Incentive

Michael Berkshire: And then one of our most successful incentives has been our Green building permit process. As Sara mentioned, quite few cities are implementing this. How it works here in Chicago is that to qualify as a Green building, to go to this program, you typically need some level of LEED certification. But you also have to have either one or two menu items included. And there are – I believe there are around 12 menu items that you can choose from and Green Roofs are one of those menu items. So we have encouraged quite a few projects through that program as well.

#### Slide 6: Incentive

Michael Berkshire: Another successful incentive has been our density bonus. Any project in the downtown area or the central loop area of Chicago, you can build, you know, more square footage, if you include certain amenities and Green Roofs are one of those. I would give – I would – I would – I hope or I wish that it was in a very simple calculation but it's actually a very complicated calculation on what the actual additional square footage you can build based on the square footage of your Green Roof. But it is available on our zoning department website if anyone would like to look at that calculation.

#### Slide 7: Education: [www.chicagogreenroofs.org](http://www.chicagogreenroofs.org)

Michael Berkshire: And very important too is education. We do have a Green Roofs website, [chicagogreenroofs.org](http://chicagogreenroofs.org). We partnered with the School of the Art Institute here in Chicago and a couple of graduate students actually designed this website.

One of the, I think, the neatest features of this, as you can see on the left side of the screen, you can scroll around an aerial photograph of the city and buildings that have Green Roofs – have that green icon. You can click on that icon and information about that Green Roof comes up – you know, whether it's extensive, intensive, the square footage. And if we do have a photograph of the roof, that will show up as well. And we are in the process of updating this website.

#### Slide 8: Green Roofs in Chicago

Michael Berkshire: And so since, you know the – our initiative really began with the construction of the Green Roof on City Hall, which was completed back in 2000, which has also become kind of the icon of not only our Green Roof initiative but also our sustainability initiative in Chicago. It's been very successful. It's been covered in all of the media.

Unfortunately, you can only go up there with a guided tour, but that kind of leads to the interest in it because everybody wants to be able to take a tour up there. And that also points to I think what's been really effective in Chicago, through our green – not only our Green Roof initiative, but also just green building and sustainability is that the Mayor is very interested in the leading by example.

So we try to implement any kind of new initiative or with the city first. And I think having a very successful Green Roof on City Hall has been helpful in asking the private sector to also follow us in some of our efforts. So I think demonstration or, you know, providing demonstration projects as well as leading by example has been a really important aspect to our program.

But all of this has led to – we have over 700 Green Roof projects that are in various stages of development at the moment. Some are still in planning, design and not all are constructed. But once they are constructed, they will total over seven million square feet. And, you know, this is not a static number. It's changing daily as projects come in asking for any kind of assistance. We are just adding to that total all the time.

#### Slide 3: Policy

But I do – I will go back for a minute to talk about the policy. You know, I don't know if this would be an effective tool at the moment to initiate, because of the economic situation. This was first published in 2004 when we had a, you know, a really thriving economy here in Chicago.

But some things that were helpful when we were implementing this policy was that we held a series of focus groups with developers, engineers, architects and also the attorneys that handled projects that would be subject to this policy. And we presented a draft policy to them and received quite a bit of feedback. And at that point, of course, a lot of them were saying that you're going to drive development out of – out of the city, et cetera.

But we did make some modifications to it based on our feedback. One of them was to increase the options for reaching the policy. So we did that. But it was really interesting because once we did publish that policy, I did get a lot of comments from developers saying that they did like it.

Because before they never knew what the city was going to ask for. And publishing this document, they knew before they came in to talk to us what exactly was going to be asked of them. And so they could start building the cost into their pro-formas immediately. And also being open about it, they also knew that they were being treated equitably. You know, they knew that any industrial project that was receiving tips would have the same requirements and that was somewhat a consolation for – I mean, they really did enjoy that. So you do have to take some time if that was something that you're interested in. And you do have to consider the economy at this time.

Slide 9: 168,000 s.f. Fed Ex Building Green Roof

Michael Berkshire: So what I'll end with is this is a photo of actually one of the largest Green Roof projects in Chicago and this is the new Fed Ex building at O' Hare. We're expanding O' Hare Airport and this is 175 thousand square feet of vegetation at that new airport expansion. So with that, I'll conclude. And I look forward to any questions anyone has. Thank you.

Neelam Patel: Great. Thank you, Michael.