

BGC CRAFT, ART & DESIGN ORAL HISTORY PROJECT

Chris Benedict

Architect and Principal, Chris Benedict, R.A.

Conducted by Andrew Gardner on November 7, 2014 at Chris Benedict's office, New York, New York

Chris Benedict, R.A. is a New York City-based architect who focuses on sustainable building design. Born in Connecticut in 1960, she came to New York to study at the Cooper Union in 1978. Benedict graduated with a degree in architecture in 1986. Initially interested in large public institutional projects, her early work for architectural firms instead focused on affordable housing. In 1995, she opened her own practice where she has continued to work on a range of rehabilitation and new construction apartment buildings in New York City. She has a sustained interest in environmentally responsible architecture, which has influenced her work since the 1980s. While she initially incorporated recycled and reclaimed materials into her projects, Henry Gifford, a heating specialist, encouraged Benedict to look at an entire building as a designed ecosystem, not just a showcase of materiality. Along with Gifford, she began to crusade for system approach building techniques, which lowered environmental costs by increasing energy efficiency. System approach involves extensive insulation techniques coupled with more innovative heating and cooling systems and advanced interior climate control methods. This approach is also sometimes referred to as "passive house." Benedict's work has been lauded by the New York City mayor's office for its environmentally friendly and affordable design, emphasizing that cost of her buildings is no greater than that of conventional structures.

In this interview, Benedict discusses her early years at Cooper Union and her first job at the Pratt Architectural Collaborative. She discusses what it's like practicing as a female architect in a male-dominated profession and the role that she has created for herself as a sustainable building advocate. Benedict reflects on the first time she met Henry Gifford at the Northeast Sustainable Energy Association and how that chance meeting changed how she looked at

her work as an architect. She goes on to describe the technical aspects of passive housing and the role it plays in lowering energy costs for no additional material or labor costs.

Benedict talks about her experiences traveling abroad to look at new sustainable building techniques and the future of New York City's old buildings. Finally, she addresses the challenges of living in a dense urban environment and the importance of working as an activist in any profession.

Text and Photos of Chris Benedict, 1 hour 24 minutes; Transcript 20 pages

This oral history transcript is the result of a digitally recorded interview. The interviewee has reviewed the transcript and made corrections and emendations. The reader should bear in mind that he or she is reading a transcript of spoken, rather than written, prose.

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Andrew Gardner (AG): This is Andrew Gardner with the Bard Graduate Center and I'm sitting down with architect Chris Benedict in New York City's East Village neighborhood. So Chris, I was wondering if you could tell me a little about yourself—where you're from and sort of how you got to New York City.

Chris Benedict (CB): OK, well, I grew up in Connecticut. At age 13 we went on a family vacation to New York and I totally fell in love with it and I told my mom, "I'm moving to New York." [laughs] So, I was sort of geared towards that. When I was in high school, I was really into art and music, so it seemed like New York was really a place to go. When I applied for colleges, I actually really wanted to go to Pratt Institute. I wanted to study industrial design. But there wasn't enough scholarship money for me to be able to go and I had been accepted to Cooper Union and it was actually my second choice—which is ridiculous—but, yeah, I started in school at Cooper Union. And after two years in art school there, I decided that really I'm not exactly an artist. I'm some funny thing, some hybrid and applied to the architecture school. So, I was accepted into the architecture school at Cooper and I ended up spending eight years at Cooper Union, which was an amazing, amazing thing for me. It was a free school, I had all the facilities, I had a shop, I had photography, I had film, I had painting, I had printmaking, I had the architectural education, so that put me in a really great place. I graduated in 1986, and again, just maybe a little not knowing exactly what I wanted to do and it took me about a year and a half before I settled down and started working as an architect. My first real job was with Pratt Institute—Pratt Architectural Collaborative was the name of the group and it was a joint venture between a private architect and Pratt Institute and their work was low-income housing. And at the time—this was about 1988, 1989—there weren't a lot of jobs for architects. And a lot of architects didn't really want to go into low income housing, but this was my first job and I actually was kind of a snotty, Ivory Tower, Cooper Union-educated architect. And when I first started, I have to say, I wasn't really so

interested in housing. It's since become a real guidepost of my life—what occupying a building and living in a building, all the things around it are about—

AG: Just to back up a little bit to your first moments of transitioning into architecture when you got to Cooper Union. What were you really thinking about in terms of “Where am I going to go with a career?” And then to follow up on that, I assume also that you went on a track that was like a BA into your M.Arch as well, right? So you did a full program then—

CB: It actually was I guess a BA to a B.Arch—

AG: Oh, ok—

CB: Yeah, at that time, Cooper Union didn't offer a masters program—

AG: Got it.

CB: So it was a five-year program undergraduate for architecture. Yeah, so the transition was, it was tough going from—I wouldn't say it was a lack of discipline in art school but there was a different headspace in architecture school. Architecture school was very disciplined—more work than you could imagine that you had to do. You know the idea of the charette [an intense period of design or planning activity] is not a myth. I mean, we did it, over and over and over again in the five years of architecture school. A lot of hard work but one thing that I really appreciated about my education at Cooper Union is that they really drew out of you who you were. And so, you leave there with a sense of, “I have something, it's individual to me and now I will go out into the world and do my best to make that work out in the world.” So I think Cooper Union architecture grads are really well received out in the world because we learn how to think. We don't necessarily have every technical skill but we know how to think and we have a sense of confidence about ourselves and who we are.

AG: So, your first job in affordable housing. Were you imagining that you would be working on big public institutions or were you imagining you would be working on homes? If you could have picked your job in 1986, the moment you graduate, what would have been your job as an architect? What kind of things were you interested in designing?

CB: I think the things I was most interested in were public works—museums, things like that, things that were not only buildings but handled a particular type of subject matter. Those were the things that drew me, especially things like the Exploratorium [in San Francisco] and other types of interactive learning spaces. Stuff like that. Those were things that really drew me because I felt like they kind of like attached to a lot of different interests I had. So going into housing was, like, “Oh okay, alright. It's a job.” [laughs] But as it turned out, it became quite interesting because I realized that buildings where people live are really the place where they probably spend the most amount of time.

AG: Absolutely.

CB: And, the organization, the joint venture that I worked for was very interested in affordable housing. They were very militant. Housing is a human right. And so, I started to look at those aspects as well. Now, I don't consider myself a social engineer by any means and my work is for anyone who hires me to do that work, regardless of income. So my work goes from, you know, low income to market rate. One of the issues that I was confronting a lot when I worked in that realm, was that while people were very interested in the social aspects of housing and this “Housing is a human right” type of idea. There was very little thinking about the environment and I tried in some ways to inject some environmental thinking into the work but it wasn't really the primary goal of the people that I was working for,

or the clients. And so, when I was able to start my own office, that was where I felt I could really make an impact, and so when I started my office in 1995, I immediately started to look at the environmental aspects of building.

AG: So, you started your practice, your own practice, in 1995—

CB: '95, yes. So after I was working at Pratt Institute, this joint venture for a while, the director there was starting her own office. Her name was Cindy Harden and she partnered with someone name Jan Van Arnam and they're two really amazingly talented and hardworking people. They started their office and they hired me, so then it was the three of us. And we were like a little powerhouse. And I was the underling and I got to learn from both of them so much stuff. And because we were three, I was the one who was responsible for my own work. I certainly couldn't pass it off on anybody else. And Jan had been a builder for a bunch of years and also an architect. He knew how to detail like a maniac and so we would actually have competitions detailing, we'd see who could, like, get the most details on the drawing and so it was fantastic and I could work under his tutelage. It was great. Cindy had a great design sense and also a great way of working with the client and — figuring out how to get your way through difficult situations, say at the Building Department or politically with clients. And so I learned so much from her about that. Cindy also had a wicked sense of humor and the two of us would joke a lot about being women architects in the field. We actually put together a number of performances that we would give that were focused on being women architects in a male world. And we would have these parties and we would give these plays and we'd invite the clients and we'd invite the contractors and oh, people—it was just such a fun time. In our plays, we always had this recurring figure—his name was Vick Slick. And he was like the contractor guy, his company was called Buzzard Construction and [laughs]—when Vick Slick came on stage during our performances, everyone would just crack up because they loved Vick Slick. That was their favorite character in our plays.

AG: [laughs]

CB: So anyway, we spent a lot of time like working really closely together. But like most architects, we have ambition built into our personalities so there came a point when I needed to leave there and go to the next place. So when I was working at the next place, I worked there for about six months, someone I had known from working for Cindy and Jan approached me and told me about a job and said, "Would you like to bring this into the office you're in right now?" And "We'd like to work with you." And I said, "Well, how about letting me start my own office?" And they let me start my own office. So in a two-week period, I was working as an architect for someone and then started my own office.

AG: When was that?

CB: That was in 1995. That was February 15, 1995. [laughs]

AG: Before we—so I think a lot of the focus of the next part of the discussion will focus on your own practice. I mean, opening your own practice in '95. But I was curious if you could talk really briefly, while we are on the subject, this idea of being a female architect in a male-dominated world, because I think that's significant. And especially, I would imagine, working in a place like New York City where there is a huge glut of people who are working in the architecture field and I would imagine that most of them are male— what is that like as a woman?

CB: Well, it's certainly not easy. I think there's some kind of glass ceiling. It's a little indefinable. One thing that comes from my experience being a female architect is that I do hire a lot of women. At a bunch of points it's been an all-woman office, which has been great.

I... I often see women put into interiors or presentation and they don't get to be on the job having power, but it is very tough and I would say I am still learning how to be an architect as a woman because even now in 2014, people still turn to the guy and think the guy is the one who knows everything. [laughs] And so, I would say there are probably jobs I haven't gotten because I am a woman architect. There's also a look of an architect. You know, I don't look like the male architect, say with a bow tie or an ascot or whatever it is that they have, I don't have that, obviously. So it's, it's not an easy thing being a woman in this field. Also out on the construction site, for a lot years, I looked incredibly young, it was a big learning experience and it still is. I don't know if it's something I'll master until—or ever, you know. Certainly the thing about architecture is that it's a practice. And so, we are practicing all of these things, working towards mastery.

AG: So would you talk to me about February 15, 1995?

CB: [laughs]

AG: I believe, if I read correctly, that you went into partnership with someone named Henry Gifford?

CB: Ah, well. On February 15, 1995, I didn't know Henry Gifford. I started my office. I bought two machines that I knew were really important. I bought a Xerox machine for four thousand dollars. [laughs] And I bought a blueprint machine, both of which are basically obsolete at this point but [laughs]—and I set them up in my loft down where I lived on Ridge Street, off of Houston [Street]. And I had a drafting table and what else did I have? I had a couple drafting tables because I had a few people who came into my loft to work for me. After a little bit of time, we started to really not have enough space there and I didn't really want to have the office in the space where I was living. So I moved the blueprint machine and the drafting machine to a studio space that was over on Hudson Street, in a building that was an old stables over a nightclub that was called AREA for a long time and I don't know what it is right now. But we would be working there—I was on the second floor, the club was down on the first floor and Saturday night, I'd be in there working, others would be in there working and all of a sudden, the music would come on and the building was shaking and the thud, thud, thud, all night, into the morning. And the smoke machine smoke would come up into the office and fill the office space up. [laughs] Oh man, it was such a funny New York thing. And it always turned out that we had to do something all night on Saturday nights. Something was due on Monday morning. It was a cool space. This old kind of wood planked, exposed heavy timber beam type of building. I think that building is still there and I don't know if there's a club down there anymore or not. But, uh, it might have been Wetlands for a while.

AG: Is it along the West Side Highway?

CB: It's over on Hudson Street, which is a few blocks from the highway.

AG: Ah, yeah.

CB: So I was working there and my—

AG: What was the project you were working on when you first started?

CB: The project was substantial gut rehab of thirteen small multi-family buildings. And these were buildings that were owned by the City of New York. The City of New York had done major renovation work for a lot of residential buildings that were somewhere from six to forty units in size. And they were giving a lot of those buildings to not-for-profits or selling them for a dollar and then putting in money to renovate them. A lot of the work I was doing was

working for firms that did the architecture for those buildings. But all those larger buildings were gone by 1995. And there were a lot of small ones. And the city put together something called the City Homes program where they took groups of them and renovated them and sold them to first time homeowners. I had a group of thirteen. Previous to my starting, there had been a round of about I guess forty or fifty of the buildings renovated and they had basically turned them over to contractors and the contractors renovated them and they were sold to first time homeowners. [But] they were having a lot of problems. And so when I was hired, I was basically told, "You know, we're hiring architects now to get these jobs to be really be good." And so for my first group of thirteen, I had my whole environmental focus, but at the time, I didn't really understand anything about energy. And I thought it was all about materials. In this first group of thirteen buildings, I put in recycled flooring where I could. There was a group up in the Bronx—I'm trying to remember the name of it. David Muchnick was the director up there. Anyway, they took shipping palettes and they were recycling them into wood flooring, so I got some that product in there, I got linoleum in there, I got low-VOC materials in there. And, this is something kind of interesting about the green movement in the world and architects' involvement in it. I think they are immediately entranced by looking at new materials, and so that's how I was sucked into it too. Recycling—it could be poetic. And so I incorporated a lot of those materials into the design and I was able to get them into the jobs.

But it wasn't until a year later that I went to a conference given by the Northeast Sustainable Energy Association. This conference was really more about energy and about how buildings could be built to be energy efficient. Somehow I managed to skate my way through the entire conference and only look at materials, which was really ridiculous. But on the last day there was a class about heating systems. And I said, "I'll take that class. I don't know that much about heating systems." And I ended up sitting next to Henry Gifford, who I hadn't met yet. And Henry and I started talking when there were breaks in the class. He was extremely negative about construction in New York and what you can do and how bad it all is and I'm talking to him and I'm looking at him, and I'm thinking, "This guy is kind of jerk." [laughs] Over the course of the day of the class, he and I discover we are going to be on the same train going back to New York. So I'm thinking in my mind, I'm going to get as far away from this person as I can possibly get. And after the class was over, I grabbed my bag, ran to the train station—this was in Boston—ran to the train station, bought my ticket and then, in the train station, I see Henry getting his ticket, and I make sure he cannot see me, go to the train track, go all the way down to the end of the track and sit down there, but the train doors weren't open. So I'm sitting there waiting for the train doors to open and who comes walking down the platform but Henry? [laughs] I'm thinking, "Oh no, oh no!" So we ended up sitting next to each other for five hours on the train, where we discovered that we had friends in common, we were from the same neighborhood, we both rode motorcycles, we both had this very common interest in making buildings better and it took a week after that to start to work together. He took me around to buildings that offices I had worked for had rehabbed and showed me where he had gone in and pulled out major parts of the heating systems and replaced them because they just weren't working. He showed me stuff that he had done on his own where he was using a lot of the techniques that were done in Europe. And he took me on jobs when I had a little lull time in the office doing architecture work and I'd go out with him—because he was a boiler mechanic at the time—and I would go with him and replace a boiler with him. Install a chimney, solder piping, break open holes in walls for stuff, you know. It was just an amazing education. So I started to get this real sense of what was going on. And duh, the boiler room is where the fossil fuel is being burned. So if you're talking about green architecture, a fundamental piece of that is energy consumption. And the place where the architect never dares to go are the places where energy is being consumed. So, this was

a huge opening for me. Also, I would tell people that I wanted to do something with a solar panel and people would say, "Oh, nice Chris. Great. Very nice. Good idea." And Henry was the first person to say to me, "No, that's not gonna work because of x-y-z." Or "You're not saving energy, because the other side of it is that this much energy is being consumed in order to make that happen." He has this fabulous fundamental understanding of energy and how it works and it was fantastic. So we just decided within that first couple weeks that we were going to work together.

For our first buildings [together]—[after] my first set of buildings where I had basically done a lot of stuff with materials—we made a change order and we changed all the heating systems on all the buildings. We put in a different type of boiler and we put in a different type of heating system that he designed. I had to rally for it, I had to rally for it to the bank and to the City of New York and the not-for-profit that was running this thing and we sold it and we got it done. So that was step one. And after we had finished that, I was awarded a second group of eighteen buildings. For the second group, I basically sold to all the organizations I just mentioned—the bank, the not-for-profit, the city—that we were going to take a holistic view of the renovation that was not only materials, materials didn't even matter to me so much anymore. It was how to get all the building systems to be working in a holistic way. And this was really a new way of thinking. There were a few people in the country who were doing it. It was better known as an idea in Canada and certainly in Europe it was being done already. But you know, for New York City, or the United States, we were very young in really knowing how to do this. The nice thing was, that as Henry and I basically together started to put together the pieces of how to look at a building, we met a lot of people that were working for national labs, who were building scientists, who were in the weatherization [field], parts of different agencies around the country, people in government who were doing studies about all kinds of things. Between all of them, we formulated this thing, and then we had this whole new set of really geeky friends. [laughs] And they started teaching me how to do things like make an air barrier and they were astonished that I would turn around and I would actually do it and they could come and they could test it and they had real life stuff and the stuff started to move from theories for them to actual practice. And Henry likes to say, "When I met Chris, I stopped being in the seats, and I became a player." And that's kind of how it happened. We started to really put out there, in reality, a lot of the theoretical thinking, or stuff that had maybe been done once, we started to put into practice on a larger scale.

AG: When did you and Henry officially enter into a partnership as part of the practice? What was the date?

CB: We actually are not officially partners. We work together. And that's how it works.

AG: And when did you first meet at that conference—Which was—nineteen ninety...?

CB: That was 1996. In March of 1996.

AG: Great. Well I think that this is a good way of maybe for us novices that are not architects—

CB: [laughs]

AG:—for you to maybe, like, to summarize as best as you can what the differences are between passive housing and what is classified as "green" or LEED-certifications. What are the differences between these different types or buildings styles, because I know you talked about this kind of obsession with new materials that are kind of recycled and things like that, but in your case, you're also talking about energy efficiency, you're talking about creating air

seals, you're talking about some of the fundamental building blocks of creating a building. And if you could maybe sum up in a few words what those differences might be?

CB: Okay, I'll try to do it in a few words but I'm not sure— I have to say one thing that was really great was when “passive house” started to be a set of words that people use it to look at all the many things that Henry and I were working on and it put them together into two words that people understood as a brand. And that was really great because here is what we'd do with these buildings: We would create an air barrier, which means that we would make these buildings very nicely sealed up, all the details between different materials all had to have good details that kept them air tight. We would use the best windows we could, although at that time, the windows that were available to us were not very great. And then we would try to do insulation continuously around the buildings as much as we possibly could. And there are numerous techniques for doing that. Once we had our enclosure really nice, that would allow us to have a reduced heating and air conditioning system. And then the heating system, the ones that we started working with, and that are still our favorites are hot water heating systems with radiators in each room, but each room has its own thermostat. So if there's sun shining into one part of the building and that room is warm, that radiator won't turn on. And that allowed our building to become passive solar. It kind of gave the building a life. Then we innovated ventilation systems for the building and are still continuing to do that but we have a different strategy now than we did then. We innovated ways to customize ventilation systems for every apartment in a building so that there wasn't one fan on the roof sucking air out of all the apartments with all the apartments connected together so that smoke and bugs and mice and all kinds of things could travel back and forth between them. We did something called compartmentalization. We took every apartment and we created an air tight bubble around it to stop the movement of these things. Roaches, now bedbugs, mice, smoke, sound, air—this is still in my mind, the nicest thing that anyone could do for an apartment dweller, compartmentalize their apartment. So that's a million words that I just said about what it that we were doing. And then when passive house came in the mid-2000s, we looked at it and said, “Wow, that's pretty similar.” It's more strict than what we were doing but we could just say it in two words.

And then the other thing that was incredibly important to us was that we wanted to be able to bring this much higher level of building performance to buildings without spending additional money. We didn't want it to be stigmatized at all by people saying, “Well, yeah we could do that but it just costs too much or more.” And so we really strive to make it so that there is zero additional cost. And in the late nineties, we did a lot of talks about how we did that. Because when we sold our holistic building design to the bank and to the city and to the not-for-profit who was our client at the time, people were pretty scared that we were changing too many things and that it was going to cost more. We sat down with all the parties and they allowed us to do something that might be a little unorthodox. When we put together the bid sheet for contractors for the job, we gave them a set of drawings, a normal set of drawings for the design and then we gave them a bid sheet that broke out all the normal things—doors, windows, boiler, chimney, all these different items that they have to price as part of the bid. What the bank and the not-for-profit allowed us to do was to take the costs that would normally be in a job and take that amount of money—the pricing for eighteen houses—and substitute in the things we wanted to do. So instead of crappy fiberglass insulation, we got cellulose insulation. Instead of a big boiler with a chimney thirty feet tall, we got a tiny sealed combustion boiler instead. And because we were able to prove from those bid sheets that what we wanted to do and what the contractor had priced for the original job were the same, we were able to get this through. This was big news in the late '90s. Everyone was trying to figure out, “How do we get these jobs going?” And when we

came out saying it costs the same and here's the proof—eighteen buildings that were just renovated in this manner, it was like, “Ah!” It was the start, I think, of a lot of things that happened in the country. And we were being asked to talk at a lot of different conferences with the people who were making decisions about those sorts of things.

AG: Where were those first buildings? Where were those eighteen buildings you are referring to located?

CB: They were in Bushwick and Ocean Hill Brooklyn.

AG: And they were market rate housing or affordable housing?

CB: No, they were sold to first time homeowners who had to income-qualify. A lot of people who bought them were police, firemen—blue collar, working class people. And the way that the program was set up was these people would buy a house that had at least one rental unit, maybe two, that would help them pay the mortgage. And they agreed to stay in the house for a certain number of years. The idea was: let's try to stabilize these neighborhoods where there's a lot of absentee landlords and abandoned buildings and get people in who have a stake in the neighborhood into these buildings. If you go out to those neighborhoods today—a lot of different factors are at play for it, but I think that it really did work pretty well.

AG: I think this is maybe a good opportunity to talk about the distinction between rehabbing buildings, because I know a lot of your projects, especially some of the early projects, were rehabbing buildings, versus designing new buildings and what the kinds of challenges of doing both of those—that kind of work—is.

CB: Okay. Well, I can't say one is easier than the other. I guess in some ways, you could say that maybe new construction is easier because you get to start with a blank slate but you never know what's going underground and that's one of the biggest concerns in new construction—“getting out of the ground.” I was learning about how to make an air barrier and insulate well and get a really good enclosure and doing it on existing buildings and there were certain constraints. Maybe I'll talk more about this later, but we basically had to put all of our insulation on the inside of this building. We would build an inside wall inside the building. Most of the buildings were brick. We'd build a complete inside sheetrock wall throughout the building and then fill between the sheetrock and the brick with cellulose and we'd get that all like a nice blanket completely around the building. But from a building science perspective, a better way to insulate a building is from the outside. Then you get all of the thermal mass of your building inside and it really stabilizes the building thermally and it makes it very comfortable and it also makes it so that all the surfaces inside the building are warm and there's no chance of condensation on any of the places inside walls where mold can grow. So it's a healthier, more comfortable thing to insulate on the outside of a building.

I couldn't wait to try to insulate on the outside of a new construction building, but it was not done when I first started doing this in 1999-2000, when we got our first new construction jobs. So we really had to invent how to build these walls, so what I did invent—with a really savvy Canadian structural engineer, John Straube—was a cavity wall where we would build the walls out of block and then we would have insulation outside of that and then we'd have brick outside of that. And so the building looked like it was a brick building but the building was only one brick thick. The brick was basically like a veneer and the veneer could have been anything. It didn't have to be brick; it could be panels or anything else. But we got our insulation outside of the building. For a building that's made out of block and has concrete floors, all of the thermal mass can be inside of the insulation. That was what I wanted to try

and that is what we were able to do. Again, we did this for the same cost as typical construction and we built four buildings that way. And we got our first energy bills after a year and we crunched the numbers and we saw that we were at about 3.8 BTUs per square foot per heating degree day for heating the building, the data that people had for New York at that time averages 24 BTUs per square foot per heating degree day. [laughs] So, we were just so pleased with the results. Now the owner of these four buildings had a very energy efficient building, less maintenance, happier tenants, all the tenants compartmentalized away from each other. We put out this product that was on another planet compared to what was normally done—and also in terms of lifestyle, inside of the apartment, they had continuous ventilation, customized for their apartment. They had a thermostat on every heating radiator in the apartment so they weren't overheated. The whole feeling of a New York City apartment, which is usually overheated and badly ventilated, was gone. They had fresh air and the right temperature. Oh! Who knew [laughs] that you could actually do this? And we could do things like go through the building with the thermometer and we'd measure every room in a thirty apartment building and they were all 72 degrees. Which is not an easy thing to do in an apartment building.

AG: So two questions. One, how do you actually keep the costs low because it sounds like you need more, more, more material? But also, why doesn't everyone do this?

CB: [laughs] Those are the two questions, right? Well, the first thing is the mechanical systems for the building were much less expensive. The chimney for say, a seven story building, if you had a cellar and a boiler in the cellar, would be 70-foot tall and that's a big-ticket item. So we would put the boiler on the roof where it worked more efficiently and it would be smaller and all the copper would be smaller and all the radiators would be smaller. The fans for the ventilation for the individual ventilation systems turned out to be commensurate in price with the amount of larger fans that we would have to have on the roof. And the ductwork that we used inside each apartment was smaller than the duct work that would be needed to go all the way up to the roof. So those things were basically commensurate with each other. It was basically picking up money from the heating systems and putting it into the enclosure systems. If you take each measure piecemeal, and you don't think about it holistically, you do drive the price up. But if you think about it as one design, then you can deliver these things for the same cost. But it's just a matter of being very persistent and very diligent about making sure that you have those trade offs accounted for. That's how we did it. And in the end, it was a really simple message, but I got to tell you, it was a message that no one wanted to hear. I think, in general, the trend is to make green building more expensive so that people can have a war on energy use and we can spend lots of government money on energy efficiency and people can get grants to study this and that. And it's an industry in and of itself—additional expense to making buildings energy efficient. And it's a shame. [laughs] But it's kind of how all this has played out. So that was one of your questions.

And the other one was why doesn't everyone do this. And maybe what I just said is part of the reason. But also a lot of architects are not interested in doing this. And a lot of the ways that these energy efficiency programs work now is that they bring a consultant in to snap onto the architect. And when that happens, I don't think you get the best project. You get an architect fighting the energy consultant and an energy consultant doesn't really have a lot of power. And the responsibility of it, the delivery of it, is confused. And so the product is not as good. That's, at least, what I've seen. So my hope was, wow, maybe I can change my profession, you know? I can get architects really excited about this aspect of buildings. It doesn't mean you forget about every other aspect of architecture because buildings are amazing and there's so many different things to think about, but I think that in general the

architect profession has rejected the energy piece. They did, unfortunately, embrace LEED [Leadership in Energy and Environmental Design], and so there was a lot of popularity with LEED, I guess, eight to ten years ago. Hopefully that's starting to die down and people are starting to see that that's sort of a folly.

AG: Can you—

CB: [laughs]

AG: I mean, I'd be curious to know your perspective on LEED certification. What's its folly? What's your problem with it and how does it differ from what you are doing with passive housing?

CB: Yeah... I have really basic issues with LEED. When it first started, I saw that it was giving people initials after their names for a very small amount of education. That was annoying, because as architects we work really hard to get an RA after our name and now people are LEED APs. [laughs] And this is not a licensed, professional thing, but it still sounds very official. The point system, I think, is structurally incorrect. You need to approach a building in a holistic systems manner, and not in a point system way where you do a little points here and a little points there. So I think there's some real fundamental structural issues with the approach. Around 2006, U.S.G.B.C. [**United States Green Building Council**] came out with a report done by New Buildings Institute that said that LEED buildings, on average use 35 percent less energy than typical buildings. And I knew from my experience at that time what it takes to save energy in the building and I looked at the LEED guidelines and I knew that there was no way—that what you have to do to get points with LEED could produce buildings that use 35 percent less energy. And I saw some presentations on it and there was a document that was produced from the study. Henry took that study and he started to scrutinize the data and it turned out he found that they had compared the mean of a data set to the median of another data set and concluded this 35 percent savings. But it was an incorrect analysis. And that if you actually did the numbers correctly and compared apples to apples, the LEED buildings use 35 percent MORE than typical buildings. So we kind of kept that under our hats for a little while Henry did some research and then, finally he produced an **article** that went viral that really disclosed what the issues were with the claims. Ultimately, Henry took U.S. Green Building Council to court, not over that particular issue, but with a claim saying that they, the USGBC is hurting practitioners who are actually doing good energy work by making false claims about the amount of energy that LEED can save in a building. And unfortunately, it never went to court. It got dismissed prior to—I don't know the technical term for it—but it got dismissed prior to becoming a case. But it did get a lot of publicity. That stuff is all readily available on the Internet. You can find the documents that document what the case was, about the hearing, and all sorts of legal opinions about it. It got a lot of people thinking. We actually asked USGBC to rescind their statement, but they refused to do it. So, since then, I think they've been trying to play catch up and they've tried to become more energy savvy in their guidelines and frankly, I don't know where they are with it right now. I think they're losing their brand.

AG: Interesting. That's really interesting. I guess I wanted to shift gears a little bit because, you know, I'd be interested in—I was curious whether you could touch on one project that you worked on here in the East Village that I think I've read exemplifies some of the reasons why some of your ideas of passive housing really work really nicely. It was in relationship Hurricane Sandy and just thinking about how you designed that structure and how that

worked in the context of Hurricane Sandy. Because you mentioned you put stuff on the roof and—

CB: Yeah—the buildings in the East Village, the four of them—

AG: Where are they?

CB: There's three of them on East Third Street—228, 227 and 299. And then 242 East 2nd Street. And they're all brick buildings and they look like pretty normal buildings. But they have some secrets behind the brick. [laughs] Let's put it that way. Now, these buildings were built before I really knew about passive house. And so they don't meet the passive house criteria. But they were, really for us, these great steps toward meeting the strictness of the passive house standard. But some things about those buildings: it was actually the owner's idea [to not have cellars], but I thought it was brilliant... She just said, "What are cellars for? To just throw a lot of junk down there and get it all wet and moldy?" So, no cellars in the building. And Henry suspects—but its very difficult to test—that if you don't have a chimney going all the way up through the building, you lose much less heat off the boiler when the boiler is not running. So if you put the boiler on the roof and you give it a short chimney, you have less of a stack effect and less of an ability of heated air leaving that boiler. So when the boiler needs to come on again, it already has heat in it. He was a very adamant about putting the boilers on the roof. And because we didn't have a cellar and because we had the boilers on the roof, after Sandy flooded those areas and the electricity was turned back on at the end of the week, the buildings were immediately functional. They were some of a very few buildings in the neighborhood that were functional. Something very educational for me was that during construction, after we had the windows in and after we had all the insulation on the building—but no heat yet, and no electricity—I noticed in the winter these buildings were 55 degrees inside. And I realized that when we made a good air barrier and when we put the insulation on the outside of building, we were really assuring a resiliency to these buildings, if, for some reason, there was no heat. It was phenomenal to actually feel that.

That was a precursor to passive house. When people started to tell me that the Germans were making these buildings that didn't need heating systems and that the insulation and the air barrier was what was functioning to keep them warm, I kind of got that because I knew from my own buildings that if I stepped it up, I could get to that. So the first four in the East Village were the first steps in learning technically and viscerally how that would work. By the time people told me about passive house in 2005-2006, I was ready to see what that was about. I chared the Northeast Sustainable Energy Association conference in 2005, ten years after meeting Henry there, and then in the following year, I set up a series of sessions about passive house. And I paid for and flew someone from Passive House Institute in Germany and brought Katrin Klingenberg, who was the person here in the United States who was starting to get passive house going. I got all of my geek building science friends together and we did a series of sessions just discussing, "Can we get passive house to work here in the United States?" And we all walked away from that kind of convinced that, yeah, we can and we should really give it a try. So then, of course, my job, was to sell this to a client. 803 Knickerbocker, a building that is being celebrated right now was a product of my first conversations in convincing a client to move to passive house.

AG: Why is 803 Knickerbocker such a seminal moment in your practice? Tell me about it.

CB: Well, 803 Knickerbocker is a building that is a typically built block and plank building. I described previously about getting the insulation on the outside and how you want to do that. In my East Village buildings, we put insulation outside of the buildings and then we covered it in brick. But I had some suspicions that we could do some pretty fun things and as an

architect and an artist I wanted to push the boundaries and ask, "How does all this energy stuff move into aesthetic and conceptual ideas about what a building is?" Of course I'd been wanting to push that.

I knew that there was a material call EIFS [Exterior insulation and finishing system] out there. It was a maligned material. If you've heard of Garden State brickface or dryvit, these are finishes that are looked down on as very cheap and crappy, but looked at that material and I thought it [EIFS] had tremendous sculptural potential and also thought that it would be great to be used as shading of windows. We want to shade windows in the summer to cut down on the solar energy that would be beaming through that glass. It doesn't hurt the daylight in an apartment to shade, and it cuts down on the amount of heated surfaces inside of the building that cause the need for air conditioning. And so my strategy on that building was to sheath it in this beautiful textured skin that was made from a material that most people thought was crap.

And the product is 803 Knickerbocker, which is now kind of the bell of the ball in a bunch of different circles. [See [here](#) and [here](#). The manufacturer of the EIFS system wants to feature it in their promotional materials, and use it as a case study. I think it's going to be in Dwell magazine in the next month or so. We have a ribbon cutting at the end of the month and it's possible the mayor of New York will be there. This was a really fun success story. We took affordable materials and we just made something way good out of all of it. Which is super fun for an architect. [laughs]

AG: Yeah, on that fun note, I was curious if you could talk about what you look to when you're thinking about the aesthetic quality of the building because I know that there are other projects that are in the works that are also new built structures and they're also using different materials on the exterior. What do you look to? What's your kind of reference point? Do you start with the material?

CB: You know, I can't even say. I was in a session at a conference where we were discussing creativity and how it all happens and for some of the facades, like 803 Knickerbocker facade, it took us three years to design the facade because there were people who hated it and we had to change it and blah blahblah. There was A LOT of back and forth. But the one that I showed you—542 West 153rd Street In Upper Manhattan—it's got very funky, different sized windows all placed in funny ways took three minutes to design.

AG: [laughs]

CB: So I can't really say. You get this muse, you get this idea and then... The nice thing about the 153rd Street facade is that with... Working with the passive house software, we've been able to figure out to get large amounts of glass into the facade, which is everyone's fear: "Oh this building's going to be energy efficient, but we're not going to be able to have large amounts of glass." So we've succeeded in getting nice amounts of glass in the facade. But some of the large pieces of glass aren't operable, so they're still reasonably priced. We're able to make the economy part of the aesthetic of the building. We have very large fixed pieces of glass. They perform great thermally and they're affordable and then we have small operable pieces of glass and they are more affordable, too. We and balance the economy, the thermal performance and get this really funky look. There's nothing more fun than to take a huge amount of input and output something that's a product of it, the interpretation of all those different things. That's where we're having our fun in this office these days, is the snap that happens when all these different things come together and it turns into this aesthetic idea that really makes us all smile. [laughs]

AG: So, it's interesting because it seems that you've come full circle in terms of how you know initially started being really interested in designing public institutions but you were pushed into designing housing and you're like, "I don't know that I'm so interested in it." But now you seem to be very immersed in building housing. Why does housing matter to you? Why does passive housing in particular matter to you? Why is this an important issue in 2014?

CB: I've done a lot of thinking about that even for the branding of my own work and what I've come to understand is that I have a very activist spirit and this work allows me to be an activist. And I get a lot of questions from people asking, "What should I do—what do you think I should do with my life?" And what I say to them is, "Wherever you are right now and whatever it is that you're working on, try to be the activist. And work towards that and what you think is going to be an example for the world." So you don't have to do buildings, you could be doing art or you could be doing food or you could be doing transportation or you could be doing whatever it is that you're doing. My job lets me be an activist. And what I realize is that it lets people who live in my buildings be activists too—in the place where they spend the most amount of time and the most amount of their money. So I get to create this spark of activism that can reach out and have a lot of coverage. Over the years, we've fought for a lot of stuff and something's been burning inside of us all of this time saying, let's make this right. And that's what I think people are looking for too in the place where they live. And that's especially true in a city, where as a tenant you don't have a lot of control over your environment, so if you can rent in a building that has a passive house component to it, you get to live the life you want. And this is a great thing that I'm able to provide to people. I think that's why people want to talk to me, why they want to write about my buildings, why they want to interview me—it's because we've been able to give people something more than just a product.

AG: What about housing?

CB: Housing itself...? As an issue?

AG: I do think this is something that Mayor De Blasio is really invested in these days—that is, creating more affordable housing—and it seems to me that that is something that is hugely important in New York City but more broadly is an issue in cities all over the world. How do you approach this issue of affordable housing and building structures for people to live in? What does that mean to you?

CB: Yeah. I said at the beginning when we first started talking that I don't really see myself as a social engineer. I think what my contribution is in making buildings that use way less energy because they really don't have to. And they can actually be better buildings because of that. But in terms of being an affordable housing advocate, I'm not really that. I will use my skills on any level of a building that a client puts me in front of. I have very strong libertarian aspect to me and I think that the market could sort this out—I won't go into a long diatribe about things like rent stabilization, but, it's possible that we could have an affordable city without rent stabilization. Things have been so tilted and manipulated in various ways to create lack of supply and overage of other things that it's really difficult to see our way through what would happen if we didn't have all these regulations. In my work I use of my skills and my intellect to look at what-the-building-is-and-how-it-works rather than at the broader affordable housing issue. I hope that what we've shown over all these years is that we don't have to have subsidies for high performance buildings, and that we can afford to build these things. We can afford to build them at the low income level, we can afford to

build them at the affordable income level, we can afford to build them at the moderate level and we can afford to them at luxury level. That's the news that I deliver.

AG: That's great. I guess this is a good segue into talking about urban density. I know that you've talked a lot about how important dense living environments are. I was wondering whether you could elaborate on your interest in cityscapes and density.

CB: I'm a definite urbanite and I love the density that's produced by that and as you know, we have an aging infrastructure here in New York but certainly an infrastructure that can handle very dense populations. It's interesting, I was just in Sweden and Denmark and both of those countries have either countrywide or localized plans that are responses to climate change. The city of Copenhagen wants to be carbon neutral by 2025. And so when I was there, I was traveling with a group of geeks, talking with architects and city officials about how they were actually going to do. One architect had this really brilliant idea, which I would like to start to see instituted in New York. I've been able to propel other things so who knows where this will go? Basically, he said that Copenhagen is growing and its growing by about 12,000 people a year, and yet there are a lot of buildings that are in decay and they're knocking them down to make more green spaces. Some of those green spaces they need to manage flooding because they've had a series of floods recently, worse than they've ever had before and they're seeing something new with the weather patterns there. Here we have buildings and more people coming and we have the need for these green spaces. So what do you do? There are some height restrictions in Copenhagen but this architect was able to convince the city and also their historic [commission] to allow him to add an extra story onto a building in return for doing a complete energy retrofit of the building. So now the owner of the building gets additional units and they upgrade their buildings. They're helping with the density as well as downing the energy load and trying to meet the city goals. And so that's another little fun question and solution: "How do we root through all these kind restrictions and rules?" And what really needs to be changed in order to be really able to optimize something that's good? I really like that!

What can I say about density? I think the city is the place for density and that we can and it would be nice not to have to crawl through a bunch of suburbs, I guess [laughs] to get to the country. I do have some concerns about it if we were ever to have an emergency situation in the city. I wonder: Are we making the right decisions about making our cities even more dense? Some people dream of powering the city with solar panels, some day. If you start to run the numbers and you look at how much power you can get from a solar panel and compare it to the density of the amount of people in a building, it just... The numbers just don't work. I ran my own calculation for my own life and saw that I would need seven solar panels. One hot water panel and six electric panels to meet the energy loads of *MY* life, if I lived in a passive house. That's all you can fit on the roof of my building, but there's seven other apartments in the building. So this kind of dream that we're going to be able to power the city with renewables is—it's a tough dream. It's one I don't think can actually work. So what happens with a very dense city in a time when we don't have dense fuels like fossil fuels? That's a question I don't know the answer to. Now in Sweden and Denmark their urban centers have district heat where they have a central plant that runs hot water around the city and provides heat to the buildings. One way they've figured to become carbon neutral or work towards carbon neutrality is to switch the fuels at the power plant and go from burning fossil fuels to burning bio-fuels. We don't have that type of infrastructure in New York. We don't have the ability to switch that out. We don't have the ability to become carbon neutral in that way. So it's a big puzzle and I'm sure you're familiar with the amount of discussion about what sorts of energy sources we should be using here. There was a big anti-oil thing, there's a big anti-gas thing because of fracking, electricity is made by burning

coal mostly so to start powering everything by electricity and to stop burning coal, we may have to turn to nuclear power plants. There are no really good solutions to a dense city. In the meantime, though, the buildings I make are going to use as little of any of that energy as they can.

AG: That answers a lot of the questions I had. I guess the only other thing I was thinking about is how you think about building these newer buildings in the context of a city that, as you're saying, is full of aging infrastructure. I'm primarily thinking about issues of historic preservation and how you weigh the design of your building in the context of a city that has many different architectural styles and how that fits into the larger framework of this uber-dense city that is New York?

CB: I'm not sure I'm not going to answer exactly your question. But there is something that I'd like to say about all of that. The job for us moving forward is not the new buildings, it's the existing buildings. So what are we going to do with them? This is what I am hoping I am going to be trying out within in the next few years, and I actually have some contracts to start the work, so in a couple years, we'll have a product. How to renovate existing buildings with tenants in place? The no-brainer solution that's easier said than done is do everything from the outside of the building. And traveling throughout Europe, I've seen some really great examples of how that is being done right now and we're working on bringing that here into the city. It means re-facing buildings with exterior insulation, giving the building a new look, a new identity, running all of the mechanical systems on the outside and going into the building from the outside, putting new windows in from the outside and then spending perhaps one day per apartment inside pulling out the old window, pulling out the old radiator and when you are done you have a complete treatment of these buildings. This is the sort of strategy we're going to start to deploy. The historic building issue, that's a whole other topic, but this can work for existing buildings that may not be distinguished architecturally. There's a lot of potential in this, because the last thing that any landlord wants to do is go into occupied apartments. It's a huge thing with a lot of technical interest and aesthetic potential. So watch this page [laughs] because you'll be seeing a bunch of stuff coming out of our office about that.

AG: Do you think about—especially with existing structures—maintaining as much of the architectural character of, say, a late-nineteenth century tenement building as possible or are you more interested in reinventing the form? The cornice piece at the top, and the brickwork around the windows—are you imagining re-facing these buildings in a completely new context or would you try to maintain its historic look as it were?

CB: Well, the historic buildings I think are a tough one. And I know in Europe, decisions are being made where, buildings that are distinguished aren't getting the rehabs. And that's what will happen I think here too. But there are plenty of buildings that aren't distinguished that are absolutely fine to do something with. You can insulate on the inside of a building, it's just that you'd have to empty that building and you lose a lot of space, like in this tenement building here that we are sitting in. It's 25 feet wide and you're adding four or five inches of insulation and the rooms get smaller and we haven't really come up with any way to really skinny down the insulation in any affordable way. The historic buildings are going to be difficult and maybe will never be done. But you know, until people have the ability to stay warm or cool within their own bodies, something that would set architecture free from that job, I think we're going to be working on our buildings and asking our buildings to do that work for us. [laughs]

AG: That's a good segue into my last question. Why does architecture matter to you as an architect? What keeps you going every day? Why is this such an important part of what you do and what you do for other people?

CB: I can't say exactly but it's almost like for architects, architecture is an addiction.

AG: [laughs]

CB: [laughs] it's something I have to do until people tell me not to do it anymore or I have to stop doing it. [laughs]

AG: Do you ever think about the big picture and what it means to other people that you're reshaping an environment?

CB: Of course. Yeah. It can be pretty frightening.

AG: Yeah.

CB: [laughs]

AG: I've often heard people say it's like... I've been doing a lot of work around issues of modernism in Europe and how, especially during the Soviet period there's a huge effort to basically completely rebuild a lot of cities—Warsaw is a good example—but architecture became kind of like this visual queue to everyone around that this is a new environment, this is— I don't want to use the word propaganda, but this is hugely important to how people live their lives.

CB: Absolutely.

AG: Everyone inhabits these structures and these spaces and they're shared by everybody.

CB: Well I don't know if you saw the movie *My Architect* about Louis Kahn. In the movie, Kahn's son visits many of his father's buildings including his masterwork, the National Assembly of Bangladesh. The architect giving the son a tour of the building explains that his father's architecture showed them that they could be a democracy. And that makes me cry, that there's a power like that in architecture. And to me, it's not a thing, it's a goal. Architecture is a goal that we are trying to get to. [laughs]

AG: That's really great. I love that. Is there anything else you wanted to touch on? It seems like you have a lot of projects in the pipeline.

CB: I do

AG: I assume we'll be hearing more about that as it comes out.

CB: [laughs] I sure hope so.

AG: Excellent.

[end]