

# Event Session

## Climate Prepared Institutional and Commercial Properties: Protecting from Flooding and Extreme Heat

Date: September 12, 2024

00:00:00 --> 00:00:01: I'm David McHenry.

00:00:01 --> 00:00:04: I'm a partner at Dirty McHenry Architecture here in Philadelphia,

00:00:04 --> 00:00:08: and I also chair ULI, Philadelphia's Resilience Committee.

00:00:09 --> 00:00:12: We were formed about 3 years ago and since then

00:00:12 --> 00:00:16: we've posted multiple conversations about developing on the waterfront, how

00:00:16 --> 00:00:21: climate activities, changing our approach to programming public space.

00:00:21 --> 00:00:25: We also worked on a tap in Eastwick that you've

00:00:25 --> 00:00:28: heard a little bit about and we've got last year

00:00:28 --> 00:00:32: we did this, we collaborated with AIA and we're thrilled

00:00:32 --> 00:00:36: this year to have Greenville United and the Preservation Alliance

00:00:36 --> 00:00:37: along with us.

00:00:40 --> 00:00:44: I'd like to begin by thanking our keynote speakers, our

00:00:44 --> 00:00:47: moderators and panelists from previous sessions for giving us a

00:00:47 --> 00:00:52: proper context and include your understanding of the complex interdependencies

00:00:52 --> 00:00:54: between thought, action and impact.

00:00:55 --> 00:00:58: As we look at policy, evolution and community impacts, there

00:00:58 --> 00:01:00: are some key shifts in the resilience perspective that I

00:01:01 --> 00:01:03: think are useful to highlight as we narrow our lens.

00:01:05 --> 00:01:09: Early on resilience focused on recovery after disasters and today

00:01:09 --> 00:01:12: we think and you've heard a lot about perspective that

00:01:12 --> 00:01:16: emphasizes preparedness, adaptation and long term planning.

00:01:16 --> 00:01:19: So we've moved from a reactive recovery to this proactive

00:01:19 --> 00:01:20: adaptation.

00:01:21 --> 00:01:24: And at the same time, we moved from individual action,

00:01:24 --> 00:01:26: an impact to a more systemic approach.

00:01:26 --> 00:01:30: Our focus is expanded to consider the complexities of interconnectedness

00:01:30 --> 00:01:33: and the potential for cascading failures.

00:01:37 --> 00:01:42: Philadelphia, again, like many urban areas, face several resilience challenges.

00:01:43 --> 00:01:46: Philadelphia's vulnerable to flooding both from the rivers and inland,

00:01:46 --> 00:01:47: and storm surge.

00:01:49 --> 00:01:52: Philadelphia experience more frequent heat waves and heat.

00:01:53 --> 00:01:57: Urban heat line effect, excuse me, urban heat island effect

00:01:57 --> 00:02:02: exacerbates this, particularly in the narrow streets up in our

00:02:02 --> 00:02:06: neighborhood where we are, where there aren't trees and where

00:02:07 --> 00:02:10: there are trees there, they're struggling.

00:02:10 --> 00:02:14: Economic inequality and high levels of poverty leave many communities

00:02:14 --> 00:02:17: in Philadelphia with limited access to resources that would help

00:02:17 --> 00:02:19: them prepare for and recover from disruptions.

00:02:19 --> 00:02:23: Low incoming neighborhoods, in particular, often experience more severe impacts

00:02:23 --> 00:02:26: from heat, flooding, and infrastructure failures.

00:02:26 --> 00:02:29: And compromised air quality, which can be worsened by heat

00:02:29 --> 00:02:32: waves, contribute to health problems for vulnerable populations.

00:02:35 --> 00:02:36: These circumstances will not improve.

00:02:36 --> 00:02:40: Our perspective remains narrowly focused on responding to events rather

00:02:40 --> 00:02:43: than more holistic, proactive, and adaptive strategies that take into

00:02:43 --> 00:02:46: account the complex interdependencies across systems.

00:02:47 --> 00:02:51: We must emphasize the importance of thinking ahead, being flexible,

00:02:51 --> 00:02:54: and preparing for both known and unknown challenges.

00:02:55 --> 00:02:59: Let's be clear, interconnectedness does not imply that the responsibility

00:02:59 --> 00:03:02: for community resilience vest solely with governments, or with public

00:03:02 --> 00:03:04: entities, or with agencies.

00:03:05 --> 00:03:10: Each of us as property owners, investors, policy makers, designers

00:03:10 --> 00:03:15: and users, there's an individual and collective responsibility

00:03:15 --> 00:03:20: towards climate action to protect future generations and ensure equity for vulnerable

00:03:20 --> 00:03:21: communities.

00:03:23 --> 00:03:27: We can incorporate green infrastructure strategies that employ natural processes

00:03:27 --> 00:03:30: to manage storm water, reduce our risk from urban flooding

00:03:30 --> 00:03:31: and enhance urban resilience.

00:03:32 --> 00:03:35: We can mitigate greenhouse gas emissions by investing in energy

00:03:36 --> 00:03:40: efficient technologies and buildings and transitioning to renewable energy resources

00:03:40 --> 00:03:42: like solar, wind and hydro.

00:03:42 --> 00:03:47: We can leverage our public transportation infrastructure with transit oriented

00:03:47 --> 00:03:51: development and incentivize cycling, walking, electric vehicles, all to reduce

00:03:52 --> 00:03:53: our carbon footprints.

00:03:54 --> 00:03:58: We can promote sustainable consumption, raise awareness about climate change,

00:03:58 --> 00:04:02: advocate for national and global climate policies, encourage civic involvement

00:04:02 --> 00:04:05: in Environmental Protection efforts, protect and preserve biodiversity.

00:04:08 --> 00:04:09: It's a lot of aspiration.

00:04:10 --> 00:04:14: How do we make all this a reality, a fundamental

00:04:14 --> 00:04:17: part of how we think and act individually?

00:04:21 --> 00:04:23: We want to leave here today with a sense of

00:04:23 --> 00:04:26: purpose and possibility, and that starts with small actions.

00:04:27 --> 00:04:30: Each of us is faced with choices every day that

00:04:30 --> 00:04:34: ripple well beyond that particular decision and move us toward

00:04:34 --> 00:04:37: the interconnectedness that makes those aspirations achievable.

00:04:37 --> 00:04:38: For all of us.

00:04:39 --> 00:04:42: The factors we consider, the weight we give them, and

00:04:42 --> 00:04:47: the discipline and courage we muster to consider the alternatives

00:04:47 --> 00:04:50: rather than the way we've always done things, move us

00:04:50 --> 00:04:54: towards resilient outcomes beyond our resilient individual action.

00:04:56 --> 00:04:59: So in this closing session, we look at 2 projects,

00:04:59 --> 00:05:04: paying particular attention to how the project collaborators face these

00:05:04 --> 00:05:07: choices and decisions, and in a real world context, the

00:05:07 --> 00:05:11: obstacles they faced, the challenges they overcame, the Champions that

00:05:11 --> 00:05:14: help them along, and the lessons learned for all of

00:05:15 --> 00:05:18: you who may find yourselves in the same or similar

00:05:18 --> 00:05:18: circumstances.

00:05:20 --> 00:05:22: We're fortunate to have two individuals who bring a diverse

00:05:22 --> 00:05:25: perspective and a deep expertise in this conversation.

00:05:25 --> 00:05:29: They'll share their insights on best practices, innovative solutions, and

00:05:29 --> 00:05:33: the critical role of collaboration between public and private sectors

00:05:33 --> 00:05:37: and ensuring that our historic and commercial properties can withstand

00:05:37 --> 00:05:39: the challenges of a changing climate.

00:05:41 --> 00:05:43: As the moderator of this discussion, my role is to

00:05:43 --> 00:05:46: guide the conversation, ensure that we address the most pressing

00:05:46 --> 00:05:49: issues, and facilitate an engaging and productive dialogue.

00:05:50 --> 00:05:52: And for that part, I'm going to need some help

00:05:52 --> 00:05:52: from all of you.

00:05:53 --> 00:05:56: I encourage each of you to think critically about the

00:05:56 --> 00:05:59: topics we cover, and I welcome and strongly encourage your

00:05:59 --> 00:05:59: questions.

00:05:59 --> 00:06:02: You guys have been great so far, lots of questions.

00:06:02 --> 00:06:05: So I appreciate that and hopefully you can help me

00:06:05 --> 00:06:06: when we get to that part.

00:06:08 --> 00:06:10: So with that, let me introduce our panelists.

00:06:11 --> 00:06:14: I'll introduce them, but they're going to come up one

00:06:14 --> 00:06:17: at a time, make a brief presentation on their particular

00:06:17 --> 00:06:20: project, then we'll convene together up here.

00:06:21 --> 00:06:23: And have a little bit of a discussion and and

00:06:23 --> 00:06:24: then invite your questions.

00:06:26 --> 00:06:30: Claire Donato is President of Mark B Thompson Associates.

00:06:30 --> 00:06:34: She's a registered architect and the League accredited professional with

00:06:34 --> 00:06:38: over 25 years experience with programming, planning and developing complex

00:06:38 --> 00:06:41: projects for both nonprofit and public institutions.

00:06:42 --> 00:06:45: Claire also has developed an expertise with projects requiring rigorous

00:06:45 --> 00:06:50: technical solutions through the rehabilitation and adaptive reuse of existing

00:06:50 --> 00:06:50: structures.

00:06:51 --> 00:06:53: Claire is going to share with us the adaptive reuse

00:06:53 --> 00:06:56: of the Fairmount Waterworks or firm completed with Philadelphia Water

00:06:56 --> 00:06:57: Department.

00:06:58 --> 00:07:02: Ron Pluto, Vice President of Engineering at Brandywine Realty Trust.

00:07:03 --> 00:07:07: Since joining Brandywine in 2005, Ron has overseen many of

00:07:07 --> 00:07:11: the company's major construction projects and activities relative to building

00:07:11 --> 00:07:16: systems design and construction, including Sierra Center, the historic renovation

00:07:16 --> 00:07:19: of 30th Street Post Office, EVO and FMC Tower, and

00:07:20 --> 00:07:23: the conversion of the Bulletin Building in the lab space.

00:07:23 --> 00:07:27: As Vice President of Engineering, Ron is responsible for Brandywine's

00:07:27 --> 00:07:31: major development projects for building systems design, installation and commissioning.

00:07:32 --> 00:07:35: Ron will be sharing with us Brandywine's Next Generation Life

00:07:35 --> 00:07:38: Science building under construction at 3151 Market St.

00:07:38 --> 00:07:40: which is slated for completion later this year.

00:07:42 --> 00:07:44: Please welcome Claire, who will begin.

00:07:57 --> 00:07:58: Good afternoon.

00:07:59 --> 00:08:01: Happy to be here this afternoon to participate.

00:08:01 --> 00:08:05: On this panel, I'll be presenting a case study looking

00:08:05 --> 00:08:10: at mitigation strategies in response to repetitive flooding at the

00:08:10 --> 00:08:12: Fairmount Waterworks.

00:08:12 --> 00:08:17: We've been involved with planning and implementation projects at the

00:08:17 --> 00:08:23: Waterworks, assisting the Philadelphia Water Department, Philadelphia Parks and Recreation,

00:08:23 --> 00:08:27: and the Fun for the Waterworks for several campaigns since

00:08:27 --> 00:08:28: the early 1990s.

00:08:29 --> 00:08:33: While the lessons learned are important to this individual site,

00:08:33 --> 00:08:36: hopefully they have relevance to other historic sites in our

00:08:36 --> 00:08:36: region.

00:08:37 --> 00:08:40: I want to start with a few points about historic

00:08:40 --> 00:08:43: buildings and why in this region they are particularly exposed

00:08:43 --> 00:08:44: to flooding hazards.

00:08:45 --> 00:08:48: And then we'll give some background on the Fairmount Waterworks

00:08:48 --> 00:08:52: and how it has adapted to changing demands and technologies

00:08:52 --> 00:08:53: throughout its history.

00:08:57 --> 00:09:02: Throughout Pennsylvania's early development, our communities settled along the banks

00:09:02 --> 00:09:06: of the Commonwealth's more than 86,000 miles of streams, rivers

00:09:06 --> 00:09:09: and creeks, function not only as a vital source of

00:09:09 --> 00:09:13: sustenance, but also as sources of industrial power and the

00:09:13 --> 00:09:17: backbone of Pennsylvania's first transportation and commerce networks.

00:09:19 --> 00:09:23: Hastened by the effects of climate change and persistent upstream

00:09:23 --> 00:09:26: development, the early settlement patterns have now led to many

00:09:26 --> 00:09:30: of our oldest communities and buildings to become increasingly flood

00:09:30 --> 00:09:31: prone.

00:09:32 --> 00:09:37: Nearly 1000 historically designated or eligible buildings in Pennsylvania are

00:09:38 --> 00:09:42: vulnerable to flood hazards, and 77% of the population by

00:09:42 --> 00:09:46: county has experienced at least one flood event per year

00:09:46 --> 00:09:48: between 1950 and 2017.

00:09:48 --> 00:09:53: Integrating preservation planning and disaster planning can play a significant

00:09:53 --> 00:09:57: role in community resilience and sustaining community character.

00:10:00 --> 00:10:03: The waterworks in Philadelphia began its life at Center Square,

00:10:04 --> 00:10:07: with the pumping works located centrally to the city but

00:10:07 --> 00:10:08: remote from the source.

00:10:08 --> 00:10:12: After operating at Center Square for approximately 12 years, the

00:10:12 --> 00:10:16: waterworks relocated to the Schuylkill River at Fairmount to join

00:10:16 --> 00:10:18: the pumps and the engines with the water source and

00:10:18 --> 00:10:21: to create an expansive reservoir at the high point of

00:10:21 --> 00:10:22: the city.

00:10:23 --> 00:10:26: 10 years later, the location on the river would provide

00:10:26 --> 00:10:27: the source of power as well.

00:10:29 --> 00:10:31: We may tend to think of the waterworks as an

00:10:31 --> 00:10:34: iconic building, a static presence within the landscape of the

00:10:34 --> 00:10:38: city and inseparable from images of the Schuylkill River at Fairmount, both historic and today.

00:10:38 --> 00:10:40: However, behind the walls of these buildings, they were designed

00:10:42 --> 00:10:46: to be machines.

00:10:46 --> 00:10:47: First powered by steam and then water, the building served

00:10:47 --> 00:10:51:

00:10:51 --> 00:10:53: as a solid engine block to the moving parts of

00:10:54 --> 00:10:54: the machines.

00:10:55 --> 00:10:58: The buildings were designed for the river to flow through

00:10:58 --> 00:11:02: them, and during their evolution, they were constantly adapting to

00:11:02 --> 00:11:03: new technologies.

00:11:07 --> 00:11:11: From 1815 to 1872, the buildings were extensively modified to

00:11:11 --> 00:11:15: adapt from steam engines to water wheels and turbines.

00:11:15 --> 00:11:19: To meet the demands for more water distribution to the

00:11:19 --> 00:11:23: rapidly expanding city and allowing the city to grow and

00:11:23 --> 00:11:24: industrialize faster.

00:11:25 --> 00:11:29: Roofs were raised, exterior areas were enclosed, the river wall

00:11:29 --> 00:11:33: was built out, and the area originally occupied by steam

00:11:33 --> 00:11:35: engines was converted to a public saloon.

00:11:38 --> 00:11:41: After the river was no longer safe for drinking water

00:11:41 --> 00:11:46: and without space to expand for filtration, the buildings adapted

00:11:46 --> 00:11:49: again, this time for new uses as an aquarium, a

00:11:49 --> 00:11:52: swimming pool, a cafe, and leading towards a new vision

00:11:52 --> 00:11:55: for use as a public Education Center.

00:11:57 --> 00:12:01: Between 1997 and 2003, a major restoration campaign was undertaken

00:12:01 --> 00:12:06: to connect the historic public spaces and the surrounding gardens

00:12:06 --> 00:12:09: to views of the river and to create a learning

00:12:09 --> 00:12:11: hub for environmental education.

00:12:11 --> 00:12:15: To adapt the lower level, the former machine level, for

00:12:15 --> 00:12:19: new occupancy, new challenges needed to be addressed to acknowledge

00:12:19 --> 00:12:21: and accept that the spaces would flood.

00:12:24 --> 00:12:28: In evaluating flood proofing techniques 30 years ago, including wet

00:12:28 --> 00:12:33: flood proofing, dry flood proofing, barrier measures, and interior retrofit

00:12:33 --> 00:12:37: measures, we focused mainly on wet flood proofing.

00:12:38 --> 00:12:41: Wet flood proofing means making portions of the building resistant

00:12:41 --> 00:12:44: to flooding and allowing water to enter during during flooding events.

00:12:44 --> 00:12:45: This approach was most consistent with the structural characteristics of

00:12:45 --> 00:12:50: the original construction that remained to make the building resistant

00:12:50 --> 00:12:55: the original construction that remained to make the building resistant

00:12:55 --> 00:12:56: to flooding.

00:12:58 --> 00:13:02: Many issues needed to be anticipated and addressed with either

00:13:02 --> 00:13:04: design or operational responses.

00:13:05 --> 00:13:09: This illustration shows the original area of the Interpretive Center,

00:13:09 --> 00:13:13: which entailed converting spaces that had seen little modernization since

00:13:13 --> 00:13:15: the closure of the aquarium in 1962.

00:13:16 --> 00:13:20: One of the first questions we asked is what survived

00:13:20 --> 00:13:24: and performed well for over 150 years learning from the building.

00:13:24 --> 00:13:24: building.

00:13:25 --> 00:13:29: The design of the Interpretive Center included resilient and durable

00:13:29 --> 00:13:34: traditional building materials like stone and brick masonry, bluestone flooring

00:13:34 --> 00:13:35: and lime plaster.

00:13:35 --> 00:13:40: New resilient building materials included fully grouted masonry units.

00:13:40 --> 00:13:44: Interior floors were sloped to drain towards the river.

00:13:44 --> 00:13:47: Primary program spaces were located at the higher main floor

00:13:47 --> 00:13:48: elevation.

00:13:48 --> 00:13:52: The lowest floor level was reserved for exhibits only with

00:13:52 --> 00:13:53: no public access.

00:13:54 --> 00:13:57: Custom grills were designed for the river door openings to

00:13:57 --> 00:14:01: keep large debris from entering the building during flooding and

00:14:01 --> 00:14:04: exhibit components were designed excuse me, designed to be portable,

00:14:05 --> 00:14:06: submersible or raisable.

00:14:07 --> 00:14:10: Operational strategies and technology also played a role.

00:14:11 --> 00:14:14: A flood alarm system was integrated with the fire alarm

00:14:14 --> 00:14:18: to require evacuation when water submerges a sensor located at

00:14:18 --> 00:14:20: the lowest floor elevation.

00:14:20 --> 00:14:24: Safe alternative means of egress paths were maintained as water

00:14:24 --> 00:14:25: level rises.

00:14:26 --> 00:14:30: A flood management plan sets protocols for monitoring upstream gauges

00:14:31 --> 00:14:34: and procedures for evacuation and shut down of systems.

00:14:35 --> 00:14:38: An electrical disconnect, a trip button, is located above floodwaters.

00:14:39 --> 00:14:42: Mechanical plant and primary equipment is located as high



as possible on the building or on site.

00:14:42 --> 00:14:44: The electrical panels are elevated on floor levels, elevated throughout

00:14:45 --> 00:14:50: the facility wherever possible.

00:14:50 --> 00:14:52: So, you know, these strategies were reasonably manageable for a

00:14:53 --> 00:14:59: time.

00:14:59 --> 00:14:59: But with events like Hurricane Ida, we know that severe

00:14:59 --> 00:15:03: storms will be more frequent.

00:15:03 --> 00:15:05: We are now too familiar with images like these at

00:15:07 --> 00:15:11: the Waterworks and the impact that repetitive flood events has

00:15:11 --> 00:15:15: on the facility and its programs.

00:15:15 --> 00:15:17: In response to ISAIAS in 2020 and Ida in 2021,

00:15:18 --> 00:15:21: the Fund for the Waterworks through its Resiliency

00:15:21 --> 00:15:25: Committee has

00:15:25 --> 00:15:32: been actively pursuing funding opportunities to implement

00:15:32 --> 00:15:33: resiliency improvements for

00:15:32 --> 00:15:33: the Fairmount Waterworks.

00:15:37 --> 00:15:40: This flood gauge is located at the site and tells

00:15:40 --> 00:15:44: the story and the record storms unfortunately continue.

00:15:44 --> 00:15:48: The gauge measures floodwaters above the lowest floor level in

00:15:48 --> 00:15:49: the facility.

00:15:48 --> 00:15:49: This is a floor plan illustrating the varying levels throughout

00:15:51 --> 00:15:54: the lower level of the facility and their exposure to

00:15:54 --> 00:15:57: different severities of flooding events.

00:15:57 --> 00:15:59: The lowest floor elevations, subject to the most repetitive

00:15:59 --> 00:16:04: flooding

00:16:04 --> 00:16:07: with up to three feet of water, are by design

00:16:07 --> 00:16:08: not occupied.

00:16:08 --> 00:16:12: These routine floods have the least impact but still require

00:16:12 --> 00:16:13: resources for cleanup.

00:16:14 --> 00:16:17: The next level of flooding has major impact on the

00:16:17 --> 00:16:19: facility and most program spaces.

00:16:20 --> 00:16:23: This level of flooding requires shutting down the facility until

00:16:23 --> 00:16:23: repairs.

00:16:23 --> 00:16:24: Can be undertaken.

00:16:25 --> 00:16:29: And finally, the level of Ida reached elevated mechanical

00:16:29 --> 00:16:33: spaces

00:16:29 --> 00:16:33: and nearly submerged all elevated equipment at the ceiling.

00:16:35 --> 00:16:38: So it's clear that more needs to be done to

00:16:38 --> 00:16:41: be prepared for the future and the greater impact of

00:16:41 --> 00:16:43: major and severe flood events.

00:16:44 --> 00:16:49: Building elements that had relatively long service life through prior

00:16:49 --> 00:16:51: floods did not survive Ida.

00:16:51 --> 00:16:55: Notably, the stronger forces that came with higher water levels

00:16:55 --> 00:16:58: need to be addressed for the river wall, windows and

00:16:58 --> 00:16:59: doors.

00:16:59 --> 00:17:03: And the amount of systems infrastructure throughout the lower level

00:17:03 --> 00:17:07: of the facility needs to be either reconsidered or further

00:17:07 --> 00:17:07: protected.

00:17:09 --> 00:17:14: So the resiliency planning that we've been involved with has

00:17:14 --> 00:17:19: really taken a comprehensive rethinking of how the lower level

00:17:19 --> 00:17:23: is used and identifying priorities to focus on improvements that

00:17:23 --> 00:17:26: promote health, safety and resilience.

00:17:27 --> 00:17:31: These include creating a base of operations for staff that

00:17:31 --> 00:17:34: is remote or on the located on the upper level

00:17:34 --> 00:17:35: of the facility.

00:17:36 --> 00:17:42: Aligning uses with improved resiliency will include reconsidering how programming

00:17:42 --> 00:17:48: is delivered, reorganizing spaces to provide more open, flexible collaboration,

00:17:48 --> 00:17:53: teaching and meeting spaces, locating staff resources elsewhere and storing

00:17:53 --> 00:17:55: materials off site.

00:17:55 --> 00:18:00: Creating conditioned interior zones for thermal comfort to reduce heating

00:18:00 --> 00:18:04: and cooling demands and reducing the amount of HVAC equipment

00:18:04 --> 00:18:07: and locating it as high as possible where needed in

00:18:07 --> 00:18:08: the lower level.

00:18:09 --> 00:18:12: The plan also includes a more robust use of dry

00:18:12 --> 00:18:17: flood proofing techniques to create localized areas of protection.

00:18:17 --> 00:18:23: This will involve identifying mission critical locations and using reinforced

00:18:23 --> 00:18:26: interior walls that resist flood forces for up to 10

00:18:26 --> 00:18:27: to 12 feet high.

00:18:29 --> 00:18:33: Protecting equipment that does need to remain within these dry

00:18:33 --> 00:18:39: flood proof zones, using structurally reinforced fiberglass exterior windows to

00:18:39 --> 00:18:43: resist the higher forces, and using stop log barriers at  
00:18:43 --> 00:18:46: interior locations to reduce cleanup.  
00:18:47 --> 00:18:50: Following the lead of recent exhibit upgrades, we will  
continue  
00:18:50 --> 00:18:54: with a design aesthetic that relies on digital interventions and  
00:18:54 --> 00:18:57: showcases the building and reduces items that need to be  
00:18:57 --> 00:19:00: moved or designed to sustain flooding.  
00:19:00 --> 00:19:04: The elevator, which is critical for all of the shared  
00:19:04 --> 00:19:08: tenant spaces on site, needs to be upgraded and we'll  
00:19:08 --> 00:19:12: use technology that locates equipment at the upper levels.  
00:19:12 --> 00:19:16: And in future phases, we intend to investigate interventions in  
00:19:16 --> 00:19:20: the river, such as debris Nets, trash deflectors and tidal  
00:19:20 --> 00:19:23: vegetations to also help mitigate impact.  
00:19:26 --> 00:19:30: Opportunities to implement these initiatives were identified  
throughout the facility  
00:19:30 --> 00:19:32: and organized according to priority.  
00:19:33 --> 00:19:36: This is a view from 25 or 30 years ago,  
00:19:36 --> 00:19:40: showing the original arrangement of exhibits in the lobby and  
00:19:40 --> 00:19:44: showing the strategies that were implemented at the time.  
00:19:45 --> 00:19:47: Electronics mounted high.  
00:19:47 --> 00:19:53: Exhibits raised on winches, removable video monitors,  
submersible fixed support  
00:19:53 --> 00:19:54: systems.  
00:19:54 --> 00:19:59: Durable materials, flood grills and and removable furnishings.  
00:20:00 --> 00:20:03: This is a projection or visualization of the same view  
00:20:03 --> 00:20:07: looking at the same direction in the facility with the  
00:20:07 --> 00:20:11: vision for opening up spaces and address additional  
strategies that  
00:20:11 --> 00:20:12: are being planned.  
00:20:13 --> 00:20:16: Again, the idea of removing some of the interior walls  
00:20:16 --> 00:20:21: to reduce interior turbulence, using high density submersible  
panels and  
00:20:21 --> 00:20:24: reinforcing interior walls and using door barrels.  
00:20:24 --> 00:20:25: Barriers.  
00:20:26 --> 00:20:29: We had a great opportunity with the exhibit pool, a  
00:20:29 --> 00:20:33: social history of segregation, which allowed us to test some  
00:20:33 --> 00:20:34: of these ideas.  
00:20:34 --> 00:20:38: We used these high density submersible panels that were  
supported  
00:20:38 --> 00:20:43: on stainless steel suspension systems to provide space for  
graphics  
00:20:43 --> 00:20:45: and content and create spatial dividers.  
00:20:46 --> 00:20:50: We projected content on panels and walls the effective way

00:20:50 --> 00:20:54: and reducing new construction in the space and new exhibit components and the open space, again with minimal divisions, helps

00:20:54 --> 00:20:58:

00:20:58 --> 00:21:02: allow water to move more freely inside the building during flooding events.

00:21:02 --> 00:21:03:

00:21:05 --> 00:21:12: Another visualization view illustrates the concept of providing insulated interior

00:21:12 --> 00:21:17: wall systems that create these smaller localized conditioned interior zones,

00:21:17 --> 00:21:22: with the wall systems being able to be elevated during flood events and providing the type of flexible workspaces with

00:21:22 --> 00:21:27: storage and resource materials being located elsewhere in upper levels

00:21:27 --> 00:21:32:

00:21:32 --> 00:21:34: of the building or off site.

00:21:39 --> 00:21:42: And in wrapping up, I'd like to bring this graphic back.

00:21:42 --> 00:21:43:

00:21:43 --> 00:21:48: Retrofitting historic structures for flood mitigation can be highly intrusive

00:21:48 --> 00:21:52: because of the risk of removing or compromising character defining

00:21:52 --> 00:21:52: features.

00:21:53 --> 00:21:56: We're having them obscured with incompatible materials.

00:21:56 --> 00:22:00: It is possible, though, to design mitigation projects in which important features are preserved in place and retrofitting measures are

00:22:00 --> 00:22:05:

00:22:05 --> 00:22:09: hidden from view or sensitively integrated with new interventions.

00:22:10 --> 00:22:14: Careful selection of mitigation strategies that are appropriate to the

00:22:14 --> 00:22:18: building in the setting, learning from the building and its performance over its history, and aligning uses and operations with

00:22:18 --> 00:22:22:

00:22:22 --> 00:22:26: resiliency goals have all been important aspects of our planning

00:22:26 --> 00:22:26: work.

00:22:26 --> 00:22:28: For the waterworks.

00:22:28 --> 00:22:29: Thank you.

00:22:46 --> 00:22:47: See if I can.

00:22:48 --> 00:22:49: Can you guys hear me?

00:22:50 --> 00:22:52: This screen is way too small for me.

00:22:52 --> 00:22:54: I think I'm going to use the microphone and try

00:22:54 --> 00:22:56: to Glenn had this figured out.

00:22:56 --> 00:22:56: Maybe I can.

00:22:59 --> 00:23:02: So I think this works, right.

00:23:03 --> 00:23:08: So this thing had a pointer too, didn't it?

00:23:09 --> 00:23:10: No, it didn't.

00:23:10 --> 00:23:10: That's fine.

00:23:10 --> 00:23:12: He had a special.

00:23:12 --> 00:23:13: Oh, he had a his own special thing.

00:23:13 --> 00:23:13: OK.

00:23:14 --> 00:23:18: So I'm here to talk about 3151 market relative to

00:23:18 --> 00:23:19: resiliency.

00:23:19 --> 00:23:23: This has been really educational and interesting and I'm going

00:23:23 --> 00:23:27: to move quickly through some of this stuff because I've

00:23:27 --> 00:23:30: got way too many slides for the the time I

00:23:30 --> 00:23:30: have here.

00:23:30 --> 00:23:32: But the I did want to take just a few

00:23:32 --> 00:23:35: minutes to talk about Brandywine and what we've been doing

00:23:35 --> 00:23:38: in University City and on the West Bank to the

00:23:38 --> 00:23:38: Schuylkill River.

00:23:39 --> 00:23:41: I think a lot of it's relevant to what we're

00:23:41 --> 00:23:42: talking about here today.

00:23:42 --> 00:23:48: So Brandywine is was Founded in 1994.

00:23:51 --> 00:23:54: I came to work for Brandywine 20 years ago, almost

00:23:54 --> 00:23:55: 20 years ago today.

00:23:55 --> 00:23:58: So I've been part of all the wonderful projects they've

00:23:58 --> 00:24:01: been doing on the on the West banks of the

00:24:01 --> 00:24:05: Schuylkill and our latest adventure in Schuylkill Yards.

00:24:08 --> 00:24:12: We're a fully integrated real estate investment trust.

00:24:12 --> 00:24:15: We have property management, design, construction.

00:24:15 --> 00:24:16: We have a design group.

00:24:16 --> 00:24:19: We have all the functions that would come with a

00:24:19 --> 00:24:21: fully integrated.

00:24:21 --> 00:24:24: We have a life science group of people.

00:24:25 --> 00:24:29: But all these activities overlap and we all work collaborative

00:24:29 --> 00:24:32: together on all of our projects and assets.

00:24:34 --> 00:24:39: So our University City story started 20 years ago and

00:24:39 --> 00:24:44: it started with A2 acre parcel next to 30th St.

00:24:44 --> 00:24:45: station.

00:24:46 --> 00:24:49: There wasn't a lot over here 20 years ago.

00:24:49 --> 00:24:54: And our CEO Jerry Sweeney had a an amazing vision

00:24:54 --> 00:24:58: for for this area and a very long term vision

00:24:58 --> 00:25:03: that he's been prosecuting here for 20 years.

00:25:04 --> 00:25:07: So our first project was Sierra Center.

00:25:07 --> 00:25:12: We opened that in 2005 and then we did the

00:25:12 --> 00:25:20: historic renovation of the original 30th Street Post office.

00:25:21 --> 00:25:23: It's almost a million gross square feet.

00:25:25 --> 00:25:27: We restored the facades.

00:25:27 --> 00:25:30: We restored the historic corridor through the building.

00:25:30 --> 00:25:34: It was a League Gold project and then we went

00:25:34 --> 00:25:40: on to develop Sierra S between Chestnut and Walnut School

00:25:40 --> 00:25:41: Ave.

00:25:41 --> 00:25:42: and 30th St.

00:25:43 --> 00:25:46: Before we did this development, the post office had what

00:25:46 --> 00:25:47: they call the Truck Terminal Annex.

00:25:47 --> 00:25:53: There was an old 50s building, all impervious, all impervious

00:25:53 --> 00:25:53: surface.

00:25:55 --> 00:26:00: We demoed that developed, created the three pad sites for

00:26:00 --> 00:26:04: the Sierra S garage, the Evo student housing and and

00:26:04 --> 00:26:05: FMC tower.

00:26:06 --> 00:26:12: We had to deliver the garage with the post office

00:26:12 --> 00:26:17: with the GSA lease in 2010, 20 years ago.

00:26:17 --> 00:26:22: We also work on the formation of the Schuylkill River

00:26:22 --> 00:26:28: Development Corporation and we've been participating with

00:26:28 --> 00:26:31: them in terms

00:26:31 --> 00:26:33: of time and, and funding and some of our own

00:26:33 --> 00:26:35: labour out there.

00:26:36 --> 00:26:39: So they've done a great job, you know, over the

00:26:39 --> 00:26:42: decades developing the East Banks and Schuylkill and, and,

00:26:42 --> 00:26:43: and

00:26:44 --> 00:26:48: main, you know, working on the trails and the programming

00:26:48 --> 00:26:51: there.

00:26:53 --> 00:26:54: So that that's kind of the the division or that

00:26:54 --> 00:26:58: was the skyline at that point.

00:26:58 --> 00:27:01: I did want to say a couple things.

00:27:01 --> 00:27:05: We went back after we finished the Sierra S garage,

00:27:05 --> 00:27:08: you know, to get that done, we had to put

00:27:08 --> 00:27:09: a massive storm water management tank in the basement of

00:27:10 --> 00:27:13: that garage or in the in the underground of the

00:27:13 --> 00:27:15: lower level.

00:27:15 --> 00:27:16: But what we did is we went back and added

00:27:17 --> 00:27:19: a park on top of the garage subsequent that a

00:27:19 --> 00:27:20: public park.

00:27:20 --> 00:27:22: It's it's a green roof, but it's also what we

00:27:22 --> 00:27:25: call blue roof.

00:27:25 --> 00:27:28: The water department work with us on that.

00:27:23 --> 00:27:26: So even the impervious areas up there drained back to the soil areas.

00:27:26 --> 00:27:27:

00:27:27 --> 00:27:31: So it effectively did this had the same effect of

00:27:31 --> 00:27:34: that massive storm water tank in the basement, which we

00:27:34 --> 00:27:38: ended up connecting the storm water from Evo to.

00:27:38 --> 00:27:42: So it's so we we, we, we put green roofs

00:27:42 --> 00:27:43: on Sarah S.

00:27:44 --> 00:27:49: So we you know, that whole block between chestnut and

00:27:49 --> 00:27:53: walnut and scoop, we have a 30th, you know, tremendous

00:27:53 --> 00:27:55: impact on storm water.

00:27:55 --> 00:27:57: All that you know, when the truck terminal annex was

00:27:57 --> 00:27:59: there that just, you know, it rained and went straight

00:27:59 --> 00:27:59: to the river.

00:28:02 --> 00:28:08: So our next adventure we're we're embarking on here is

00:28:08 --> 00:28:10: Schuylkill Yards.

00:28:10 --> 00:28:12: I think you guys have all heard of Schuylkill Yards.

00:28:12 --> 00:28:17: It's a a partnership with Drexel University and you can

00:28:17 --> 00:28:21: see that what we call our east and West tower

00:28:21 --> 00:28:24: on JFK are kind of fully designed.

00:28:24 --> 00:28:26: Actually the West towers fully.

00:28:26 --> 00:28:28: We opened that about almost a year ago now.

00:28:28 --> 00:28:34: The Scoop yards W tower with some mixed-use with 360

00:28:34 --> 00:28:35: apartments.

00:28:36 --> 00:28:40: The but this is Schookel yards and 3151 is part

00:28:40 --> 00:28:43: of this that we're finishing up now.

00:28:44 --> 00:28:50: But it's, you know, 1-1 in this programming, you know,

00:28:50 --> 00:28:55: we're, we're programming 6 1/2 acres of green space.

00:28:56 --> 00:29:00: And we actually the first thing we did in scoop

00:29:00 --> 00:29:03: of yards as we built Drexel Square, which is a

00:29:03 --> 00:29:07: the park in front of the Bolton building.

00:29:07 --> 00:29:09: I don't think a lot of you've seen that with

00:29:09 --> 00:29:12: the large Don redwoods and the green space there.

00:29:13 --> 00:29:15: The water department was, was great.

00:29:15 --> 00:29:17: They work with us and and they allowed us to

00:29:17 --> 00:29:20: take some of the storm water credits from that park

00:29:20 --> 00:29:22: and bank them 'cause we're going to some of the

00:29:23 --> 00:29:24: other school yards.

00:29:24 --> 00:29:27: Projects are very challenging in terms of storm water.

00:29:27 --> 00:29:31: You know, when you're building a high rise building and

00:29:31 --> 00:29:36: you've got a limited footprint, you know, there's there's not

00:29:36 --> 00:29:40: always a great opportunity to create a lot of impervious

00:29:40 --> 00:29:40: area.

00:29:40 --> 00:29:43: The sidewalks in some of these areas are full of  
00:29:43 --> 00:29:43: utilities.  
00:29:43 --> 00:29:45: We're talking about trees earlier.  
00:29:45 --> 00:29:47: It's sometimes it's very difficult.  
00:29:47 --> 00:29:50: We'd love to put big trees along all the sidewalks,  
00:29:50 --> 00:29:53: but when you've got pico conduits and fiber and pipes  
00:29:53 --> 00:29:56: and all kinds of stuff in the sidewalk, you know,  
00:29:57 --> 00:29:59: that can be challenging as well.  
00:30:01 --> 00:30:04: So this is just the project to school yard.  
00:30:04 --> 00:30:06: Like I said, we we delivered.  
00:30:06 --> 00:30:08: We first thing we did is we built Drexel Square.  
00:30:09 --> 00:30:12: We, we the lower the the building.  
00:30:12 --> 00:30:15: We opened the Sierra Center, the first building in University  
00:30:15 --> 00:30:15: City.  
00:30:16 --> 00:30:19: We went back and converted the lower floors to life  
00:30:19 --> 00:30:20: science space.  
00:30:21 --> 00:30:24: We built our B labs on two of those floors  
00:30:24 --> 00:30:27: and that's been a huge success.  
00:30:28 --> 00:30:32: 3000 market we we did a renovation there and fully  
00:30:32 --> 00:30:35: leased that building to Spark Therapeutics.  
00:30:36 --> 00:30:40: 3025 JFK we just finished up almost a year ago.  
00:30:40 --> 00:30:41: I can't believe it.  
00:30:41 --> 00:30:45: And then 3151 markets the, the project we're finishing up  
00:30:45 --> 00:30:49: now we're, we're, we've got, you know, we've got temporary  
00:30:49 --> 00:30:52: certificate of occupancy on some of the floors.  
00:30:52 --> 00:30:56: We've got finished work and and commissioning and some  
00:30:57 --> 00:30:57: other  
00:30:57 --> 00:30:57: work to do.  
00:30:57 --> 00:30:59: But we'll be done with that here in the next  
00:30:59 --> 00:31:00: month, month and a half.  
00:31:01 --> 00:31:05: 3001 JFK, we've got that project designed through C DS,  
00:31:05 --> 00:31:09: but it's currently on on hold until we figure out  
00:31:09 --> 00:31:11: when to start that project.  
00:31:14 --> 00:31:16: So it's part of Skoku Yards.  
00:31:16 --> 00:31:20: You know, we've invested over \$16,000,000 in in  
00:31:20 --> 00:31:21: neighborhood engagement  
00:31:20 --> 00:31:21: initiatives.  
00:31:21 --> 00:31:28: We have partners, partnerships with the Enterprise Center,  
00:31:29 --> 00:31:36: Man Manor, Centennial, Parkside, all the Peloton Village  
00:31:36 --> 00:31:43: Civic Association.  
00:31:36 --> 00:31:43: We've, we've also worked on the construction apprenticeship  
00:31:36 --> 00:31:43: preparatory program



00:31:43 --> 00:31:47: with the local young folks in the area.

00:31:47 --> 00:31:50: You can see Chris Franklin's one of our developed executives

00:31:50 --> 00:31:53: with, he's actually doing a class there in some of

00:31:53 --> 00:31:53: our space.

00:31:54 --> 00:31:57: So we, we've helped, you know, work to get some

00:31:57 --> 00:32:00: of the young folks, you know, into those apprenticeship programs

00:32:01 --> 00:32:03: and it's, it's been hugely, hugely successful.

00:32:03 --> 00:32:05: A lot of those folks ended up working on some

00:32:05 --> 00:32:07: of our projects over the years.

00:32:07 --> 00:32:08: So that that was that was great.

00:32:10 --> 00:32:12: So I I need to get moving here.

00:32:12 --> 00:32:16: But some impacts to the talk about investment and how

00:32:16 --> 00:32:18: important that is in jobs.

00:32:21 --> 00:32:25: But you know, in in 3151 market, you know, it's

00:32:25 --> 00:32:31: a lab, life science lab purpose built building, which we

00:32:31 --> 00:32:36: think Philadelphia has a will will have a huge need

00:32:36 --> 00:32:38: for this space.

00:32:39 --> 00:32:40: Philadelphia is in a great position.

00:32:41 --> 00:32:45: I heard earlier people talking about the, the how fast

00:32:45 --> 00:32:47: things move in terms of economics.

00:32:47 --> 00:32:52: But the Philadelphia lifetime we think has a huge potential

00:32:52 --> 00:32:56: for the life science space and cell and gene therapy

00:32:56 --> 00:32:57: research.

00:32:59 --> 00:33:03: So we, we you know we have, we did our

00:33:03 --> 00:33:08: B labs and we've got 3151 market we're opening.

00:33:09 --> 00:33:12: We did a gut and rehab out at 2:50 King

00:33:12 --> 00:33:17: of Prussia Road and Radnor where we created a life

00:33:17 --> 00:33:22: science building and that's 50% leased and 155 Radnor.

00:33:22 --> 00:33:24: We did a build a suit for Arkima.

00:33:25 --> 00:33:28: We've got some labs we built in Rockville and the

00:33:28 --> 00:33:32: Bulletin building we repurpose for laboratory space for mainly

00:33:32 --> 00:33:36: for Spark Therapeutics who loose leases almost all that building

00:33:36 --> 00:33:36: from

00:33:36 --> 00:33:36: us.

00:33:36 --> 00:33:39: So see there's some of our tenants that.

00:33:40 --> 00:33:43: So we've we've gone into the life science arena in

00:33:43 --> 00:33:44: a in a pretty big way.

00:33:46 --> 00:33:52: So 3151 market, you know, looking from the from the

00:33:52 --> 00:33:57: Northwest here, it's, it's just to me, it's an absolutely

00:33:58 --> 00:33:59: gorgeous building.

00:33:59 --> 00:34:02: I think Gensler did a tremendous job on the, on the design and the architecture.

00:34:02 --> 00:34:04:

00:34:06 --> 00:34:09: This is just another view from the same angle from Drexel's woodland walk.

00:34:09 --> 00:34:10:

00:34:13 --> 00:34:15: This is just another same angle in the corner of market.

00:34:16 --> 00:34:16:

00:34:17 --> 00:34:19: We actually did a lease with Starbucks.

00:34:19 --> 00:34:21: So that Cafe is going to be a Starbucks.

00:34:21 --> 00:34:25: Hopefully they'll open early next year.

00:34:28 --> 00:34:33: So one thing interesting is, is we started schematic design of this just a few months into the pandemic.

00:34:33 --> 00:34:37:

00:34:38 --> 00:34:39: So it's probably the first time.

00:34:40 --> 00:34:44: Usually when you're, you know, you got up, you're taking on a project like this, everybody gets in a room, you know, you got the all, all kinds of things to look at, you know, and this is basically, we're doing this over Teams and Zoom and, and it was very interesting.

00:34:53 --> 00:34:57:

00:34:57 --> 00:34:58:

00:34:58 --> 00:35:00: But one of the things, you know, we had, we had to ask is, you know, what do we need to do different?

00:35:00 --> 00:35:02:

00:35:02 --> 00:35:03:

00:35:03 --> 00:35:05: You know, how's the world post pandemic?

00:35:05 --> 00:35:07: What's, what's this world going to be like?

00:35:07 --> 00:35:10: What do we need to do different in this building to make it resilient?

00:35:10 --> 00:35:11:

00:35:11 --> 00:35:15: Make it not only just resilient, but you know what needs to be different about this building in a post COVID pandemic world.

00:35:15 --> 00:35:18:

00:35:18 --> 00:35:20:

00:35:20 --> 00:35:22: So some of the things we did we, you know, we, we just, we, we got touchless entry, we got sliding doors, we got bigger elevators, we got what we call destination dispatch elevators.

00:35:22 --> 00:35:25:

00:35:25 --> 00:35:28:

00:35:28 --> 00:35:30:

00:35:30 --> 00:35:32: So you don't, they hit your floor, you just use your phone or your security access card and it takes you to your floor.

00:35:32 --> 00:35:35:

00:35:35 --> 00:35:36:

00:35:37 --> 00:35:41: The restrooms, we went beyond code in terms of fixture counts and we put individual restroom stalls and each one has its own sink and water closet.

00:35:41 --> 00:35:45:

00:35:45 --> 00:35:48:

00:35:49 --> 00:35:54: We've got floor to ceiling glass, lots of daylight and Gensler, this is a great, great concept Gensler came up with.

00:35:54 --> 00:35:59:

00:35:59 --> 00:35:59:

00:35:59 --> 00:36:03: We wanted some outdoor space for tenants and we came

00:36:03 --> 00:36:06: up with this terrace and eco porch scheme.

00:36:06 --> 00:36:08: And I'll show you on the next slide a little

00:36:08 --> 00:36:08: bit about that.

00:36:08 --> 00:36:12: But basically every other floor, a tenant that leases space

00:36:12 --> 00:36:15: on that North End of the floor would have their

00:36:15 --> 00:36:16: own private terrace.

00:36:17 --> 00:36:20: And if they leased 2 floors, we could, they could

00:36:20 --> 00:36:22: open it up and make a two-story space out of

00:36:22 --> 00:36:23: it, put stairs in there.

00:36:24 --> 00:36:28: The eco space inside there could actually be indoor outdoor

00:36:28 --> 00:36:30: space with operable petitions.

00:36:31 --> 00:36:33: And so it creates, you know, this outdoor area.

00:36:35 --> 00:36:37: You'll see, you know, this is a rendering where you

00:36:37 --> 00:36:41: see the potential tennis there going up to the second

00:36:41 --> 00:36:42: floor and the outdoor terrace.

00:36:42 --> 00:36:44: And that's eco space in there.

00:36:44 --> 00:36:47: You know, that could be either, you know, just part

00:36:47 --> 00:36:50: of contiguous to the rest of the floor or it

00:36:50 --> 00:36:53: could be, you know, this indoor outdoor space.

00:36:55 --> 00:36:57: It's just another rendering of that.

00:36:59 --> 00:37:00: It's our main lobby.

00:37:00 --> 00:37:02: We've got this large living wall.

00:37:03 --> 00:37:06: We'll have live, live plants.

00:37:06 --> 00:37:08: We're we're actually installing that right now.

00:37:09 --> 00:37:12: And we've got the Conference Center program for the

00:37:12 --> 00:37:13: second

00:37:13 --> 00:37:16: floor on this north side.

00:37:16 --> 00:37:18: So you have a dedicated stair that goes up there

00:37:18 --> 00:37:21: and, and, and you know, a lot of these life

00:37:21 --> 00:37:25: science tenants, they're really security conscious.

00:37:25 --> 00:37:26: This gives us an opportunity to have conference space

00:37:26 --> 00:37:28: outside

00:37:28 --> 00:37:32: of the security.

00:37:32 --> 00:37:35: So if tenants want to bring in guests have we

00:37:35 --> 00:37:35: don't have events, not everybody has to be checked through,

00:37:35 --> 00:37:40: you know, a security turnstiles and, and, and and all

00:37:40 --> 00:37:44: that.

00:37:45 --> 00:37:49: So that's just a rendering of that conference space, just

00:37:49 --> 00:37:50: a rendering of some sample office space.

00:37:51 --> 00:37:55: So, you know, a life science building has a lot

00:37:51 --> 00:37:55: of requirements.

00:37:51 --> 00:37:55: You know, there there's they, you need emergency power

00:37:51 --> 00:37:55: redundancy

00:37:55 --> 00:37:58: once through air, you know, you, you've got a, a  
00:37:58 --> 00:38:00: lot of require requirements.  
00:38:00 --> 00:38:04: So we, we wanted to make sure this building was  
00:38:04 --> 00:38:08: top of the market and, and we think, we think  
00:38:08 --> 00:38:09: we did that.  
00:38:10 --> 00:38:15: It's going to be a lead platinum building with the  
00:38:15 --> 00:38:17: Silverwell certification.  
00:38:19 --> 00:38:22: We've got high performance in terms of if you, you  
00:38:22 --> 00:38:27: know, vibration, a lot of lab tenants are sensitive to  
00:38:27 --> 00:38:27: that.  
00:38:27 --> 00:38:31: Certainly if you're going to do vivarium space, it's, it's  
00:38:31 --> 00:38:32: a huge issue.  
00:38:34 --> 00:38:34: But I know.  
00:38:35 --> 00:38:37: So this is a tip the core on a typical  
00:38:37 --> 00:38:38: floor.  
00:38:39 --> 00:38:41: And one of the things we did is if you  
00:38:41 --> 00:38:44: see on that, I don't have a pointer, but on  
00:38:44 --> 00:38:47: the 2 ends, on the North and South ends of  
00:38:47 --> 00:38:50: the building, we have this 2 hour rated shaft.  
00:38:50 --> 00:38:53: And but you see these doors, we have these, these  
00:38:54 --> 00:38:57: little platforms on the corners of the floor.  
00:38:57 --> 00:39:00: So you can, you can go into the shaft.  
00:39:00 --> 00:39:02: It's a 2 hour rated enclosure.  
00:39:02 --> 00:39:04: You go into the shaft, there's railing there.  
00:39:04 --> 00:39:07: But that space adjacent to it is for, for lab  
00:39:07 --> 00:39:10: tenants if they need to run additional utilities up and  
00:39:10 --> 00:39:12: down through to the, to the top of the bill.  
00:39:13 --> 00:39:15: So I want they want to talk, we're talking about  
00:39:15 --> 00:39:18: energy, we're talking about resiliency.  
00:39:19 --> 00:39:22: And as mentioned earlier, you know, our car, our, our  
00:39:22 --> 00:39:26: energy footprint, our energy intensity is one thing I wanted,  
00:39:26 --> 00:39:29: I wanted to talk about is there's really, there's a  
00:39:29 --> 00:39:32: few things we did with our HVAC systems I wanted  
00:39:32 --> 00:39:33: to touch on.  
00:39:34 --> 00:39:37: And there's the other thing we, I want to touch  
00:39:37 --> 00:39:41: on was the storm storm water management, water reclaim  
00:39:41 --> 00:39:41: systems  
00:39:41 --> 00:39:41: we did.  
00:39:42 --> 00:39:44: And I want to talk a little bit about dynamic  
00:39:44 --> 00:39:44: glazing.  
00:39:44 --> 00:39:47: I think I'm running short on time though, so I  
00:39:47 --> 00:39:49: won't get too I know, I know we have a

00:39:49 --> 00:39:52: few engineers here, but I I won't get too technical.

00:39:52 --> 00:39:55: Basically in a life science building, you know you have

00:39:55 --> 00:39:56: to move a lot of air.

00:39:56 --> 00:40:00: You got some of these lab spaces, 1468 air changes

00:40:00 --> 00:40:01: an hour.

00:40:01 --> 00:40:04: So you know the building can move 320,000 cubic feet

00:40:04 --> 00:40:06: a minute and one through air.

00:40:06 --> 00:40:11: So we have 480 thousand CFM supply custom supplier

00:40:11 --> 00:40:15: handlers

00:40:16 --> 00:40:20: and 480 thousand CFM exhaust air handlers and.

00:40:20 --> 00:40:21: This little, just a representation, these are basically these

00:40:21 --> 00:40:26: rectangles

00:40:26 --> 00:40:29: or coil banks.

00:40:29 --> 00:40:30: We did A3 coil bank heat recovery system, which is

00:40:30 --> 00:40:34: is a little bit unique.

00:40:34 --> 00:40:37: And then we did some other unique things.

00:40:37 --> 00:40:40: But basically in the winter, if it's 10?? outside, you

00:40:40 --> 00:40:43: know, we've got a supplier, the building is 60??, so

00:40:43 --> 00:40:44: it allows us to recover close to, you know, over

00:40:44 --> 00:40:48: 11,000,000 Btus from the exhaust air.

00:40:48 --> 00:40:50: And in this situation, in this example, we're adding about

00:40:50 --> 00:40:53: 6,000,000 energy added to do that.

00:40:53 --> 00:40:57: But what we also did is we incorporated this, that

00:40:57 --> 00:41:00: that middle upper rectangle on the supply tunnel represents

00:41:00 --> 00:41:02: the

00:41:02 --> 00:41:04: chilled water coils in the air handler.

00:41:04 --> 00:41:05: And what we actually do, what we can do in

00:41:05 --> 00:41:08: the winter is we can use those as a chiller.

00:41:08 --> 00:41:12: And in this scenario, if we had 309 tons of

00:41:12 --> 00:41:13: internal load in the building, we could actually use that

00:41:13 --> 00:41:17: also as reheat.

00:41:17 --> 00:41:21: So now we're adding 13 million at the Preheat, 4

00:41:21 --> 00:41:22: million at the chilled water coil and only 300,000 at

00:41:22 --> 00:41:23: the reheat.

00:41:23 --> 00:41:27: We're picking up, still picking up over 11,000,000 on the

00:41:27 --> 00:41:31: recovery, but now we only have to add 2 million,

00:41:31 --> 00:41:35: you know, with actual energy, external energy.

00:41:35 --> 00:41:38: So it's really huge benefit.

00:41:38 --> 00:41:43: I won't get into all this, just shows how we

00:41:43 --> 00:41:46: do that this in the summer.

00:41:46 --> 00:41:49: The three coil bank heat recovery system really has the

00:41:49 --> 00:41:52: the the the most benefit in the summer.

00:41:52 --> 00:41:53: You know, traditional 2 coil bank heat recovery, you don't

00:41:57 --> 00:42:00: get a lot of recovery in the summer, but in

00:42:00 --> 00:42:04: the in, in, in the, but with a three bank

00:42:04 --> 00:42:08: we're actually taking, we're taking heat out of the outside

00:42:08 --> 00:42:08: air.

00:42:08 --> 00:42:12: In this case, this example, this is a 95 dry

00:42:12 --> 00:42:14: bulb, 76 wet bulb entering air.

00:42:15 --> 00:42:17: We're taking 600 tons out of precool coil.

00:42:18 --> 00:42:21: We're we're dumping it in the exhaust air right from

00:42:22 --> 00:42:22: the building.

00:42:23 --> 00:42:27: And then we're also using it as free reheat, dumping

00:42:27 --> 00:42:30: 250 tons in the reheat and that that'll also lowers

00:42:30 --> 00:42:34: the water temperature back to the precool.

00:42:34 --> 00:42:36: So we're able to move 250 tons from the reheat,

00:42:36 --> 00:42:40: 350 tons from the exhaust air, which does our precooling

00:42:40 --> 00:42:40: of 600 tons.

00:42:40 --> 00:42:44: So it takes that 600 tons off the chilled water

00:42:44 --> 00:42:48: coils, reduces the chiller load, which is like a 3030%

00:42:48 --> 00:42:51: reduction and actual chiller capacity needed.

00:42:53 --> 00:42:54: Yeah, we're out.

00:42:57 --> 00:42:58: OK.

00:42:59 --> 00:43:01: Yeah, yeah, yeah, we sure can.

00:43:03 --> 00:43:06: I want to let me just show this one slide

00:43:06 --> 00:43:07: before we get into that.

00:43:07 --> 00:43:11: We are recovering all the storm water and, as well

00:43:11 --> 00:43:16: as the condensate from the large air handling units and,

00:43:16 --> 00:43:20: and that basically reduces our municipal make up by

00:43:20 --> 00:43:22: 2,000,000

00:43:23 --> 00:43:29: gallons a year.

00:43:29 --> 00:43:33: And dynamic glass, we're putting dynamic glass.

00:43:33 --> 00:43:36: I don't know how much anybody knows about dynamic glass,

00:43:36 --> 00:43:39: but typically in a, and a development like this building

00:43:39 --> 00:43:43: across the street or FMC tower, we have a, a

00:43:43 --> 00:43:47: fixed high performance coating in the, in the insulated glass.

00:43:47 --> 00:43:47: They give us a solar heat gain coefficient of about

00:43:47 --> 00:43:51: .25.

00:43:51 --> 00:43:55: That means that 75% of that energy is reflected and,

00:43:55 --> 00:43:59: and with dynamic glass, we can actually electric, we can

00:43:59 --> 00:44:01: control the, the, the solar heat gain coefficient building needs

00:44:01 --> 00:44:08: no internal shades.

00:44:08 --> 00:44:09: And and I won't, you know, that's kind of self-explanatory,

00:44:09 --> 00:44:09: OK.

00:44:21 --> 00:44:23: Want to you come up?

00:44:23 --> 00:44:23: Yeah.

00:44:23 --> 00:44:24: Stay here.

00:44:24 --> 00:44:24: You're not.

00:44:26 --> 00:44:26: There you go.

00:44:27 --> 00:44:27: Great.

00:44:27 --> 00:44:28: Thank you.

00:44:29 --> 00:44:31: So we'll get to some questions from the audience in

00:44:31 --> 00:44:32: a minute.

00:44:32 --> 00:44:35: I'm curious, we have a project that's an adaptive reuse,

00:44:35 --> 00:44:38: a renovation and then a new construction.

00:44:38 --> 00:44:42: I'm curious, Claire, what constraints that you face with an

00:44:42 --> 00:44:46: adaptive reuse were the most challenging you wish you could

00:44:46 --> 00:44:47: have avoided?

00:44:47 --> 00:44:51: Maybe, Ron, from your perspective, what constraints do you

00:44:51 --> 00:44:54: wish

00:44:51 --> 00:44:54: you had which would allow you to corral conversations

00:44:54 --> 00:44:56: maybe

00:44:54 --> 00:44:56: a little differently?

00:44:59 --> 00:45:00: Well, with the Fairmont.

00:45:00 --> 00:45:03: Waterworks, as you saw with some of the drawings, it

00:45:03 --> 00:45:07: was really never meant to be building the people occupied.

00:45:07 --> 00:45:09: It was part of the machinery.

00:45:09 --> 00:45:15: So just creating an occupiable building, how to make entry,

00:45:15 --> 00:45:20: accessibility, putting systems in it, I mean those were very

00:45:20 --> 00:45:22: major constraints.

00:45:22 --> 00:45:24: And then you add the flooding exposure.

00:45:25 --> 00:45:30: So it was a lot to overcome, but I'm, you

00:45:31 --> 00:45:31: know.

00:45:32 --> 00:45:32: Constraints are also.

00:45:32 --> 00:45:35: Helpful in coming up with solutions SO.

00:45:38 --> 00:45:41: Ron, any constraints you wish you had a new construction

00:45:41 --> 00:45:41: other than?

00:45:41 --> 00:45:42: That we.

00:45:42 --> 00:45:43: I wish I had.

00:45:43 --> 00:45:43: Yeah.

00:45:43 --> 00:45:43: Yeah.

00:45:44 --> 00:45:46: I don't wish I have any new constraints.

00:45:46 --> 00:45:46: I know.

00:45:47 --> 00:45:48: Constraints I wish I had.

00:45:48 --> 00:45:49: That's a tough one.

00:45:53 --> 00:45:55: Constraints I wish I had.

00:45:57 --> 00:45:58: We'll come back.

00:45:58 --> 00:45:59: You'll come back to that.

00:46:00 --> 00:46:03: Claire, you talked about the dry flood proofing and wet

00:46:03 --> 00:46:06: flood proofing in particular, but I think you had some

00:46:06 --> 00:46:09: hybrid strategies where there were you did some dry proofing

00:46:09 --> 00:46:11: and some wet flood proofing.

00:46:11 --> 00:46:15: I'm curious what what criteria sort of governed which which

00:46:15 --> 00:46:18: category different spaces in the building fell into so.

00:46:22 --> 00:46:26: You know, one question that's asked a lot is why

00:46:26 --> 00:46:30: not just use dry flood proofing to more permanently make

00:46:30 --> 00:46:33: the facility, you know, not allow the water in to

00:46:33 --> 00:46:34: begin with.

00:46:35 --> 00:46:38: And back in the 1980s when the facility was studied

00:46:38 --> 00:46:43: pretty extensively on how to the the challenges related to

00:46:43 --> 00:46:47: adaptively reusing it, which kind of set up the restoration

00:46:47 --> 00:46:49: campaigns that followed.

00:46:49 --> 00:46:54: But it was studied and structurally the building, the original

00:46:54 --> 00:46:58: building the said the water is designed to run through

00:46:58 --> 00:46:58: it.

00:46:58 --> 00:47:03: So it would been really structurally infeasible to just use

00:47:03 --> 00:47:07: the existing walls to hold the water out as.

00:47:07 --> 00:47:08: As you know if.

00:47:08 --> 00:47:10: Water builds up unequally on one side or another.

00:47:11 --> 00:47:13: It will make the walls unstable.

00:47:13 --> 00:47:17: So to really dry flood proof, that facility would require

00:47:17 --> 00:47:22: essentially building a structure with inside inside the

00:47:22 --> 00:47:25: structure, which

00:47:25 --> 00:47:27: would have made it much more like a bunker and

00:47:27 --> 00:47:31: losing a lot of the historic character.

00:47:31 --> 00:47:35: So that's why the decision initially when it seemed like

00:47:35 --> 00:47:40: living with the flooding would be part of the educational

00:47:40 --> 00:47:44: program and part of the demonstration and, and, and

00:47:44 --> 00:47:48: balancing

00:47:48 --> 00:47:49: the downsides with being in this important historic building

00:47:49 --> 00:47:54: and

00:47:54 --> 00:47:58: having it available as the public space, that has just

00:47:58 --> 00:48:00: become too challenging.

00:48:00 --> 00:48:05: So we're now going back to those different techniques and

00:48:05 --> 00:48:09: looking at how can we more locally with inside the

00:48:09 --> 00:48:13: building create hybrid solutions.

00:48:14 --> 00:48:18: So it's really kind of breaking down the building into

00:48:18 --> 00:48:22: these zones that I can use or make use of

00:48:22 --> 00:48:26: and demonstrate all those different techniques.

00:48:26 --> 00:48:30: So I, I think it was Abby who mentioned the



00:48:18 --> 00:48:22: 5% premium associated with resilience and she was challenged on

00:48:23 --> 00:48:23: that.

00:48:24 --> 00:48:26: But I remember when that was the whole sort of

00:48:26 --> 00:48:29: discussion around lead, you know what, how much money do

00:48:29 --> 00:48:31: I have to spend to achieve a particular level lead

00:48:31 --> 00:48:32: certification?

00:48:32 --> 00:48:36: I'm curious as you guys were doing your projects, both,

00:48:36 --> 00:48:40: you know, renovation and new construction for those technologies that

00:48:41 --> 00:48:44: were elective, you know what, what sort of strategies or

00:48:44 --> 00:48:48: arguments did you use to sort of convince your, your

00:48:48 --> 00:48:51: client side to make that investment and it was, you

00:48:52 --> 00:48:55: know, that the payback was there worth worth doing?

00:48:56 --> 00:48:58: What you know, as a, as a real estate investment

00:48:58 --> 00:49:01: trust, we're always up against the economics, right?

00:49:01 --> 00:49:05: Because there's almost an unlimited amount of money you can

00:49:05 --> 00:49:09: spend on a project if you, if you get in,

00:49:09 --> 00:49:12: but there's only so much folks will pay for rent,

00:49:13 --> 00:49:13: right?

00:49:13 --> 00:49:16: So we still have shareholders and we still have to,

00:49:16 --> 00:49:19: to, to make economic sense in the end.

00:49:19 --> 00:49:23: But with that said, we I've been fortunate to be

00:49:23 --> 00:49:28: with Brandon because there's always been a focus on, on

00:49:28 --> 00:49:34: building first class buildings, you know, with efficiency and utility,

00:49:35 --> 00:49:36: long term utility.

00:49:37 --> 00:49:39: So it's, it's been very fortunate.

00:49:39 --> 00:49:41: But there, there are economic limits.

00:49:41 --> 00:49:44: We try to find those things that are, they're really

00:49:44 --> 00:49:48: practical and we try to stretch, you know, to get

00:49:48 --> 00:49:50: things done that, that, that makes sense.

00:49:50 --> 00:49:53: And I think we've done a pretty good, pretty good,

00:49:53 --> 00:49:54: pretty good job at that.

00:49:54 --> 00:49:57: In terms of some percentage, I think that's a little

00:49:57 --> 00:50:01: bit arbitrary because you know, how do you define resiliency?

00:50:01 --> 00:50:04: A lot of that's like dependent and then you know

00:50:04 --> 00:50:06: what degree you take it to, you know, that number

00:50:07 --> 00:50:08: could vary tremendously I think.

00:50:12 --> 00:50:17: I think with the Philadelphia Water Department and the Fairmont

00:50:17 --> 00:50:20: Park Commission at the time and Parks and Rec Now

00:50:20 --> 00:50:24: fund for the waterworks, there's really a commitment to be

00:50:24 --> 00:50:28: in the building and to make it public space.

00:50:28 --> 00:50:33: So those incremental cost increases to make it safe and

00:50:33 --> 00:50:38: accessible are part of making the building available.

00:50:40 --> 00:50:43: If we go to audience, you guys want to manage

00:50:43 --> 00:50:44: either from there?

00:50:44 --> 00:50:45: There's a question here.

00:50:57 --> 00:51:01: First of all, I'm no engineer, but I'm I'm generally

00:51:01 --> 00:51:05: familiar with that Penn and Penn Madison and CHOP have

00:51:06 --> 00:51:10: built in our building major facilities right cheek by jowl

00:51:10 --> 00:51:15: with yours and I realized that hospitals are different from

00:51:15 --> 00:51:17: what you have been building for.

00:51:17 --> 00:51:22: But taking account of that, my question is, are there

00:51:22 --> 00:51:27: has, has there been any opportunity to compare notes

00:51:27 --> 00:51:32: between

00:51:32 --> 00:51:35: those who designed your buildings and those who have

00:51:35 --> 00:51:38: designed

00:51:38 --> 00:51:40: pen and chops buildings to evaluate?

00:51:40 --> 00:51:45: Well, you did this, We think that's a great idea.

00:51:45 --> 00:51:51: You did that, we think that's a great idea.

00:51:51 --> 00:51:56: Well, maybe we should share ideas or do something that

00:51:56 --> 00:51:57: reflects that there's a, a common understanding and what is,

00:51:57 --> 00:52:04: are really good ideas for buildings that are supposed to

00:52:04 --> 00:52:08: last 5000 years.

00:52:08 --> 00:52:13: So I'm, I'm just wondering whether subject to obviously

00:52:13 --> 00:52:17: confidential

00:52:17 --> 00:52:21: information and all that, whether whether there has been any

00:52:21 --> 00:52:26: discussion between Brandywine and pen and a job as to

00:52:26 --> 00:52:28: well, how do you build for different uses conceitedly?

00:52:28 --> 00:52:33: How do you build in the contemporary area buildings that

00:52:33 --> 00:52:37: really are the best design subject to reasonable cost?

00:52:37 --> 00:52:41: Absolutely.

00:52:41 --> 00:52:45: And, and there's been lots of conversations over the years.

00:52:45 --> 00:52:49: We've had a, a tremendous partnership with Penn and, and

00:52:49 --> 00:52:51: hop and and hospital system and, and CHOP as well,

00:52:51 --> 00:52:55: and some of the same engineering firms and design teams

00:52:55 --> 00:52:59: and that that they worked with on the pavilion and

00:52:59 --> 00:53:03: the Research Center across the river.

00:53:03 --> 00:53:08: You know, we've, we work with some of those same

00:53:08 --> 00:53:13: folks and, and we all, you know, there's been some

00:53:13 --> 00:53:18: sharing of lessons learned and, and the conversations, but

00:53:18 --> 00:53:23: certainly

00:53:03 --> 00:53:07: should be more, you know, it's, it's, I think it's

00:53:07 --> 00:53:11: important as a, you know, as a development community that,

00:53:11 --> 00:53:14: you know, we deliver better products.

00:53:14 --> 00:53:17: And I think, you know, even though we're, we're not

00:53:17 --> 00:53:20: really competitors with pen, but even when you, when you,

00:53:20 --> 00:53:23: when you're dealing with your competitors, I think we still

00:53:23 --> 00:53:26: want to find the best way to do things right.

00:53:26 --> 00:53:27: So absolutely.

00:53:28 --> 00:53:30: Maybe we'll go to a slide of the questions.

00:53:30 --> 00:53:30: Sure.

00:53:31 --> 00:53:34: Can these projects plan ahead to include at a later

00:53:34 --> 00:53:37: point emerging resilience methods for future upgrades?

00:53:40 --> 00:53:41: I can take that.

00:53:42 --> 00:53:45: Yeah, we're, we're, that's something we, we talk about in

00:53:45 --> 00:53:47: the design of every building.

00:53:47 --> 00:53:51: You know, it's a question our CEO is guaranteed to

00:53:51 --> 00:53:52: ask.

00:53:52 --> 00:53:54: It's like, what are we doing to, you know, ensure

00:53:54 --> 00:53:58: the utility of this building, you know, decades from now?

00:53:58 --> 00:54:00: It's really kind of unique in the developer world or,

00:54:00 --> 00:54:02: or in the real estate world.

00:54:02 --> 00:54:06: Most developers are looking to figure out what the ROI

00:54:06 --> 00:54:10: is, flip the building, you know, you know, kind of

00:54:10 --> 00:54:14: one and done or maybe I'm exaggerating a little bit,

00:54:14 --> 00:54:18: but it's really been great to work with Brandy one,

00:54:18 --> 00:54:22: because our CEO has had a really long term vision

00:54:22 --> 00:54:26: of creating lasting assets that have long utility and, and

00:54:27 --> 00:54:28: work with the community.

00:54:30 --> 00:54:35: And he's really been a focus on creating neighborhoods that

00:54:35 --> 00:54:40: that work for the communities and assets that that work

00:54:40 --> 00:54:41: long term.

00:54:41 --> 00:54:48: And in terms specifically, I mean, you know, we've been

00:54:48 --> 00:54:55: pushed, we've been doing, we hire Florida floors, one

00:54:55 --> 00:54:58: example,

00:54:58 --> 00:55:01: for flexibility in the future.

00:54:58 --> 00:55:01: That's really at FMC Sierra Center.

00:55:02 --> 00:55:04: We've kind of pushed the market in terms of floor

00:55:04 --> 00:55:05: to floor.

00:55:05 --> 00:55:07: ICE would be one example.

00:55:10 --> 00:55:11: There's a question over here.

00:55:11 --> 00:55:13: I would just add to that while you maybe, oh,

00:55:13 --> 00:55:16: there's a sorry, there's a question here I didn't realize

00:55:16 --> 00:55:16: you had.

00:55:17 --> 00:55:18: David, thanks everybody.

00:55:18 --> 00:55:19: Appreciate the panel.

00:55:20 --> 00:55:22: Lisa Shulock from the Philadelphia Energy Authority.

00:55:23 --> 00:55:25: Little bit of a question and a comment for Ron.

00:55:26 --> 00:55:29: When I look at all of the innovative things you've

00:55:29 --> 00:55:31: done around energy efficiency, I, I, I'm not sure if

00:55:31 --> 00:55:34: I don't think you work on the finance side, but

00:55:34 --> 00:55:37: do you know if there's anybody at Brandywine who's looking

00:55:37 --> 00:55:40: at all of the tax incentives that are available for

00:55:40 --> 00:55:41: those innovations?

00:55:41 --> 00:55:45: Because just for the audience, there's hundreds of thousands

00:55:45 --> 00:55:48: of dollars in there of tax benefits.

00:55:48 --> 00:55:51: And I know a REIT is, doesn't pay taxes, but

00:55:51 --> 00:55:54: the IRA created ways for, for, for those to be

00:55:54 --> 00:55:55: monetized.

00:55:55 --> 00:55:57: So that's more for all of you in the room

00:55:57 --> 00:56:00: who you know work with clients who are doing energy

00:56:00 --> 00:56:04: efficiency and renewable include and that dynamic glass you

00:56:04 --> 00:56:08: talked about that actually is eligible for the investment tax credit

00:56:08 --> 00:56:09: like solar energy is so.

00:56:10 --> 00:56:10: Yes.

00:56:10 --> 00:56:11: And we're practical stuff.

00:56:11 --> 00:56:16: We are pursuing that 3151 market the we need a

00:56:16 --> 00:56:17: tax partner.

00:56:18 --> 00:56:23: Historically, tax energy tax credits haven't been any benefit to

00:56:23 --> 00:56:28: a real estate investment trust because we, you know, we,

00:56:28 --> 00:56:33: we have to distribute our profits to the shareholders in

00:56:33 --> 00:56:34: terms of dividends.

00:56:34 --> 00:56:37: They pay tax on the dividends, but we, we're exclusive,

00:56:37 --> 00:56:39: you know, we're, we don't pay a corporate tax per

00:56:39 --> 00:56:39: SE.

00:56:39 --> 00:56:42: So we really don't have any income to offset.

00:56:42 --> 00:56:45: So it has, you know, historically historic tax credits have

00:56:45 --> 00:56:48: been no benefit to a real estate investment trust.

00:56:48 --> 00:56:52: But but the ITC, there's two projects where there's two

00:56:52 --> 00:56:56: projects we have that qualify at, at 3025 JFK, we

00:56:56 --> 00:57:01: put in two coach combine heat and power micro turbines

00:57:01 --> 00:57:05: that make all the hot water for all the apartments

00:57:05 --> 00:57:08: and make electricity at the same time.

00:57:08 --> 00:57:11: And the ITC has we, you know, it's, it's a

00:57:11 --> 00:57:16: lot of the partners are, are looking, are, are working  
00:57:16 --> 00:57:19: on much bigger projects out there.  
00:57:19 --> 00:57:22: So we've got, we've got to find a historic partner  
00:57:22 --> 00:57:24: that will work on this little micro.  
00:57:25 --> 00:57:26: We're working through that now.  
00:57:26 --> 00:57:27: But it's a it's.  
00:57:27 --> 00:57:29: It's a complicated process.  
00:57:30 --> 00:57:30: Thanks, Lisa.  
00:57:31 --> 00:57:32: Good question here.  
00:57:32 --> 00:57:37: So it's great to be moving sort of into the  
00:57:37 --> 00:57:40: entry level of of LEED silver.  
00:57:40 --> 00:57:45: But are you looking at at working towards the 2050  
00:57:45 --> 00:57:46: challenge?  
00:57:47 --> 00:57:51: And are you aware that high rise passive houses are  
00:57:51 --> 00:57:55: going up, some of the largest in the world are  
00:57:55 --> 00:57:59: going up in Boston, NY and and other places that  
00:58:00 --> 00:58:04: Cornell's dorm and Staten Island is now occupied and has  
00:58:05 --> 00:58:07: been for several years.  
00:58:07 --> 00:58:10: These are all market rate projects that are passive house.  
00:58:11 --> 00:58:13: And then of course retrofits for historic stuff.  
00:58:13 --> 00:58:15: The Marcel.  
00:58:15 --> 00:58:15: Breuer.  
00:58:15 --> 00:58:20: Hotel in New Haven is an exquisite example of retrofitting  
00:58:21 --> 00:58:23: for historic preservation.  
00:58:25 --> 00:58:29: I would be very interested in catching up with, interested  
00:58:29 --> 00:58:31: in catching up with you after this and, and get  
00:58:31 --> 00:58:33: more information on that.  
00:58:33 --> 00:58:34: It sounds intriguing.  
00:58:34 --> 00:58:37: There's been really not much of that in Philadelphia.  
00:58:37 --> 00:58:40: I, I don't know how the market would perceive it  
00:58:40 --> 00:58:41: or, or what exactly the product is.  
00:58:42 --> 00:58:44: I'm I'm not familiar with those projects, but I I  
00:58:44 --> 00:58:46: would I would be very interested in and our.  
00:59:02 --> 00:59:03: Little Bill of Rights.  
00:59:04 --> 00:59:05: You need to know that.  
00:59:11 --> 00:59:12: Where we going next slide?  
00:59:12 --> 00:59:13: We can do one more.  
00:59:13 --> 00:59:14: Is that Kevin?  
00:59:16 --> 00:59:17: Yeah.  
00:59:17 --> 00:59:19: So we have one question for you, Claire.  
00:59:19 --> 00:59:21: What do you consider the greater threat to the waterworks?  
00:59:22 --> 00:59:26: Maintaining the political will to maintain a challenging public

asset,  
00:59:26 --> 00:59:27: or climate change itself?  
00:59:36 --> 00:59:37: They're both huge challenges.  
00:59:38 --> 00:59:42: I think they both really put into focus the need,  
00:59:42 --> 00:59:47: the need to have a public will to make the  
00:59:47 --> 00:59:48: building survive.  
00:59:48 --> 00:59:55: And the water department, the fund for the waterworks, have  
00:59:55 --> 01:00:01: done great jobs of creating programs and new initiative of  
01:00:01 --> 01:00:03: getting teaching.  
01:00:03 --> 01:00:07: Out onto the water is an important aspect of making  
01:00:07 --> 01:00:11: sure people stay connected to the Water Works.  
01:00:11 --> 01:00:15: So I think that's kind of a combination of environmental  
01:00:15 --> 01:00:19: education, how we protect our assets from flooding and and  
01:00:19 --> 01:00:22: connecting with our historic sites.  
01:00:22 --> 01:00:23: So we have one.  
01:00:32 --> 01:00:32: I'm just like now.  
01:00:36 --> 01:00:37: In the inter.  
01:00:38 --> 01:00:40: Director of our office and I just want to say  
01:00:40 --> 01:00:40: about.  
01:00:41 --> 01:00:41: Here you go.  
01:00:41 --> 01:00:43: Let's just so it's sure that I am a very  
01:00:43 --> 01:00:47: receptive audience to preservation and energy efficiency.  
01:00:47 --> 01:00:49: So to the degree that you know, our office can  
01:00:49 --> 01:00:53: have these conversations and facilitate that, I personally, if I  
01:00:53 --> 01:00:56: get to stay, would love, love to do that so.  
01:00:58 --> 01:00:58: Awesome.  
01:00:58 --> 01:00:59: Thank you so much, Liz.  
01:00:59 --> 01:01:02: And I have a feeling there's probably a number of  
01:01:02 --> 01:01:05: connections that still need to be made kind of following  
01:01:05 --> 01:01:07: the formal part of today's program.  
01:01:07 --> 01:01:10: So with that, I'm going to give a big thank  
01:01:10 --> 01:01:14: you to to Dave, Claire and Ron for joining us.  
01:01:18 --> 01:01:21: And to just provide a few closing remarks.  
01:01:21 --> 01:01:24: Let me also welcome Paul from the Preservation Alliance of  
01:01:24 --> 01:01:25: Greater Philadelphia.  
01:01:27 --> 01:01:28: Thank you very much, Kevin.  
01:01:28 --> 01:01:29: Excellent job panel.  
01:01:29 --> 01:01:32: I'm Paul Steinke, Preservation Alliance for Greater  
Philadelphia.  
01:01:33 --> 01:01:36: That's US, one of the four Co sponsors of today's  
01:01:36 --> 01:01:37: program.  
01:01:37 --> 01:01:38: So my job is to get it to Kevin and

01:01:38 --> 01:01:40: then Kevin's going to send you to the bar.

01:01:42 --> 01:01:45: But first, Johnny, would you pull up my PowerPoint please?

01:01:47 --> 01:01:49: Oh, there's no, this is my PowerPoint.

01:01:51 --> 01:01:53: So I just want to make a point about this

01:01:53 --> 01:01:53: brick wall.

01:01:53 --> 01:01:56: You've been looking at screens all day, either up here

01:01:56 --> 01:01:59: on your phones, but if you look at this wall

01:01:59 --> 01:02:02: for a second, everything you're looking at came out of

01:02:02 --> 01:02:03: the earth, right?

01:02:03 --> 01:02:06: Everything that was used to build that wall was extracted

01:02:06 --> 01:02:07: from the earth.

01:02:08 --> 01:02:12: There was energy to turn it into brick and mortar

01:02:12 --> 01:02:13: and to bring it here.

01:02:13 --> 01:02:16: And then there was labor to put it all together.

01:02:16 --> 01:02:20: A hand touched every single one of those bricks, whatever

01:02:20 --> 01:02:21: year that was.

01:02:21 --> 01:02:25: And so that's a good example of why historic preservation

01:02:25 --> 01:02:27: is, and that's my PowerPoint.

01:02:29 --> 01:02:32: Historic preservation is one of the answers to climate change

01:02:32 --> 01:02:33: and global warming.

01:02:33 --> 01:02:37: Because when somebody comes along, takes that wall

01:02:37 --> 01:02:41: down, puts

01:02:41 --> 01:02:44: it in the landfill, all those resources extracted from the

01:02:44 --> 01:02:45: earth, all of that energy and all that labor is

01:02:45 --> 01:02:49: wasted.

01:02:49 --> 01:02:54: And when it's replaced by new concrete, new cement and

01:02:54 --> 01:02:57: steel, well, those three things contribute about 15% of

01:02:57 --> 01:02:59: greenhouse

01:02:59 --> 01:03:03: gas emissions when they're produced worldwide.

01:03:03 --> 01:03:06: That's a lot, 15%.

01:03:06 --> 01:03:10: And the statistics about the amount of concrete, cement and

01:03:10 --> 01:03:14: steel that are being produced every year, not only here

01:03:14 --> 01:03:16: but in rapidly expanding countries around the world, just

01:03:16 --> 01:03:19: staggering

01:03:19 --> 01:03:21: what it's doing to climate change and global warming.

01:03:21 --> 01:03:23: So that's why we got to keep walls like this.

01:03:23 --> 01:03:27: So that's my commercial about historic preservation.

01:03:27 --> 01:03:30: Thank you for listening, Jelani.

01:03:30 --> 01:03:32: You can now take down my PowerPoint.

01:03:32 --> 01:03:37: And I'd now like to move on to closing remarks

01:03:37 --> 01:03:40: and just ask all of the panelists who are still

01:03:40 --> 01:03:43: here to please rise.

01:03:43 --> 01:03:46: Everyone who was up here where I am now today,

01:03:37 --> 01:03:40: let's give them all a round of applause.

01:03:46 --> 01:03:49: And we're also like to acknowledge the sponsors of today's

01:03:49 --> 01:03:54: event, AIA Philadelphia Green Building United, ULI Philadelphia and the

01:03:54 --> 01:03:55: Preservation Alliance.

01:03:56 --> 01:03:58: Every all staff who are here who helped put this

01:03:58 --> 01:04:01: together, please, please rise and be acknowledged.

01:04:09 --> 01:04:11: And now I'm going to hand the mic to Kevin

01:04:11 --> 01:04:12: to send us to the bar.

01:04:14 --> 01:04:15: Awesome.

01:04:15 --> 01:04:15: Thanks so much.

01:04:16 --> 01:04:19: A little bit of a a quick commercial as well

01:04:19 --> 01:04:23: recognizing that this is the commercial break between you and

01:04:23 --> 01:04:23: the bar.

01:04:24 --> 01:04:27: But there was the comment earlier question about sort of

01:04:27 --> 01:04:31: industrial sites and the role that they play, especially I

01:04:31 --> 01:04:34: think the question was tied to the potential for for

01:04:34 --> 01:04:35: solar panels.

01:04:35 --> 01:04:38: And not exactly that topic, but you like Philadelphia recently

01:04:38 --> 01:04:40: launched an industrial local product council.

01:04:41 --> 01:04:44: And one of the conversations they have coming up in

01:04:44 --> 01:04:46: just a couple of weeks are actually looking at the

01:04:46 --> 01:04:50: future of commercial fleets, looking at hydrogen and electrical fleets

01:04:50 --> 01:04:53: and how developers and planners should be thinking about the

01:04:53 --> 01:04:56: integration of those fleets into their industrial sites into the

01:04:56 --> 01:04:56: future.

01:04:56 --> 01:04:59: So I would encourage folks, if you're interested in the

01:04:59 --> 01:05:00: topic to check that out.

01:05:00 --> 01:05:02: I'll also just note that there were a couple of

01:05:02 --> 01:05:05: review sources mentioned about ULI and some of the work

01:05:05 --> 01:05:05: that we've done.

01:05:06 --> 01:05:09: I think, Abby, you mentioned the work that ULI and

01:05:09 --> 01:05:13: OSS partnered on with the Eastwood community.

01:05:14 --> 01:05:16: And Karen, you mentioned the work that you and I

01:05:16 --> 01:05:17: did with the RWC.

01:05:17 --> 01:05:19: So I encourage everyone if you're interested in learning more

01:05:19 --> 01:05:22: about those projects to, to check out our website too.

01:05:22 --> 01:05:24: But again, on behalf of, of ULI and, and all

01:05:24 --> 01:05:27: of the partnering groups, thanks so much for joining us

01:05:27 --> 01:05:27: today.



01:05:27 --> 01:05:30: I think this was a really great conversation.  
01:05:30 --> 01:05:32: And like I said, I hope everyone is leaving a  
01:05:32 --> 01:05:34: little bit more informed and a little bit more inspired.  
01:05:35 --> 01:05:38: And I hope those that, that, that inspiration strikes you  
01:05:38 --> 01:05:40: and, and you, you leave the room today with, with  
01:05:40 --> 01:05:42: a new connection as well.  
01:05:43 --> 01:05:45: Just a couple quick reminders and some housekeeping.  
01:05:46 --> 01:05:50: If you haven't already, but you are interested in earning  
01:05:50 --> 01:05:54: continuing education credits for being here today, make sure  
you  
01:05:54 --> 01:05:57: sign up for those credits at the respective tables in  
01:05:57 --> 01:05:58: the front.  
01:05:58 --> 01:06:01: And then following today's program, we'll send a survey  
around  
01:06:01 --> 01:06:03: to all of your inboxes to get your feedback.  
01:06:03 --> 01:06:05: This is the second annual Resilience forum.  
01:06:05 --> 01:06:07: I'm sure we're all looking forward to the third annual  
01:06:07 --> 01:06:08: Resilience forum.  
01:06:08 --> 01:06:11: And your feedback from today's program is, is really  
important  
01:06:11 --> 01:06:14: to making sure that we're creating and creating content that  
01:06:14 --> 01:06:17: is of most relevance to the, to the practitioner community  
01:06:17 --> 01:06:18: here in Philadelphia.  
01:06:18 --> 01:06:21: So with that, thank you all once again for coming.  
01:06:21 --> 01:06:22: The bar is open.  
01:06:22 --> 01:06:25: There's some refreshments out as well and and I look  
01:06:25 --> 01:06:27: forward to engaging with folks for the next half hour  
01:06:27 --> 01:06:27: or so.  
01:06:28 --> 01:06:28: So thanks again.

---

*This video transcript has been machine-generated, so it may not be accurate. It is for personal use only. Reproduction or use without written permission is prohibited. If you have a correction or for permission inquiries, please contact [\[email protected\]](#).*