

HELLO INTECH -

We have many exciting updates to announce since our last issuance. The winter 2019 edition of Sustainable News features a Q&A with Andres Stell - the LEED consultant from the 3675 Market Street project, a report on how Philadelphia's carbon footprint goals are impacting the construction industry, and case studies from three notable INTECH projects - New College House West, Brandywine Realty Trust Office Fit-out, and 3675 Market Street. As usual, let's start with an update on INTECH's current LEED projects and some INTECH current events.

INTECH LEED PROJECT UPDATES:

INTECH continues to add to our impressive LEED project portfolio:



Brandywine Realty Trust Headquarters
LEED Gold Certified
Completed:
September 2017

Awesome!



Subaru - National Service Training Center
Target: Certified
Completion Date:
August 2018



University of Pennsylvania Hill College House
LEED Gold Certified
Completion Date:
August 2017

Great Job!



3675 Market Street
Target: LEED Gold
Completion Date:
December 2018



Museum of the American Revolution
LEED Gold Certified
Completion Date:
September 2016

Way To Go!



Camden Waterfront Hilton Garden Inn
Target: LEED Silver
Completion Date:
March 2019



University of Pennsylvania Richards MRL Renovations
LEED Silver Certified
Completed:
August 2015

Finally!



Sora West
Target: Certified
Completion Date:
December 2020



University of Pennsylvania New College House West
Target: LEED Silver
Completion Date:
April 2021

INTECH STAFF & LEED ACCREDITATION

Please congratulate Ben DiGrazia, Brendan McGowan, Jason Lyons, Millie Stefanowicz, Pat Spadaro, and Zac Silverstein, on recently passing the LEED Green Associate exam! Be sure to also wish the following employees luck on their upcoming exams: Colleen Mills, Gianna Rogari, Ian Braciszewski, Jasmine Branham, Kim O'Toole, Scott Butikis, and Sean McMullen.



Ben DiGrazia



Brendan McGowan



Jason Lyons



Millie Stefanowicz



Pat Spadaro



Zac Silverstein

INTECH currently has 18 Legacy LEED APS, 4 staff members with LEED APs with specialties, and 25 employees with LEED Green Associates. For those of you that are not Legacy LEED APs, please log on to USGBC.org to check the status of your continuing education hours. CE hours are required to be updated every two years. Please let Ed Rowe know if you have any questions regarding your CE status.



USGBC CONTINUING EDUCATION - STAYING UP TO SPEED

All non-Legacy LEED AP USGBC accreditations have continuing education requirements. These requirements must be satisfied in two year terms. There are several ways to achieve CE credits. The most common activities include taking a class, attending a seminar, passing an online course, and logging project experience on a LEED project. Both LEED AP's and GA's are required to provide LEED-specific hours to satisfy CE requirements (6 out of 30 hours for AP's and 3 out of 15 hours for GA's).

There are free courses available at the following link:

https://www.greence.com/Free_Courses/Newest

DO NOT LET ACCREDITATION EXPIRE! Please log on to USGBC.org to check status of your CE hours. Reach out to Ed Rowe if you have any questions.

PHILADELPHIA'S AMBITIOUS CARBON FOOTPRINT GOALS PRESENT OPPORTUNITIES IN CONSTRUCTION INDUSTRY

Philadelphia continues to be one of the best cities in the country with regards to sustainability. In October of last year, Philadelphia was selected as a winning city in the Bloomberg American Cities Climate Challenge, which offered opportunity for "Leadership Cities" to spur local innovation around efforts to mitigate climate change. Philadelphia was selected because of our city's ambitious climate action plans to reduce air pollution and citywide carbon emissions as well as a commitment to ensuring the benefits of climate action reach every Philadelphian.

As a Leadership City, Philadelphia receives a full-time staff person and access to technical assistance to help support and scale-up efforts to reduce carbon emissions from buildings and transportation. This will be critical to meeting Mayor Kenney's goal of cutting carbon emissions at least 80% by 2050.

The aggressive goals being set by the mayor's office cannot be ignored by the construction industry. There is a tremendous opportunity for our industry as 79% of the Philadelphia's carbon footprint can be attributed to buildings. All projects, both new construction and renovations, will have a focus on smarter, more efficient design to minimize the city's carbon footprint.



INTECH does perform best practices when delivering projects - i.e. maximizing recycling of construction waste recycling, implementing erosion and sedimentation plans, and protecting absorptive materials on site. However, INTECH's responsibility in the sustainability arena is not limited to just the building process. Our company must continue to help clients make educated choices to design, build, and operate buildings with a true life-cycle approach to sustainable construction.

Efficient building systems, specifically HVAC systems, are the most significant way to reduce the carbon footprint of a project. INTECH can offer expertise on BAS/HVAC systems during all major phases of the project - estimating, construction, and turnover. This ability gives INTECH an advantage over our competition as the demand for complex building systems increases.

Philadelphia's focus on optimizing energy use is highlighted by a recent RFP that was sent out by the City of Philadelphia's Energy Office (part of the Office of Sustainability). The RFP seeks to implement a building monitoring system that will pull information from the BAS infrastructure of over (600) city buildings to enhance their efficiency, contribute to reducing energy use, and increase thermal comfort of the occupants. While this is obviously a massive undertaking, this clearly demonstrates the city's desire to continue to be innovative and at the frontier of sustainability in major US cities.



olaya studio
arquitectura

Andres Stell, LEED AP
Olaya Studio

INTERVIEW WITH ANDRES STELL OF OLAYA STUDIO. ANDRES IS THE LEED CONSULTANT ON THE 3675 MARKET STREET PROJECT.

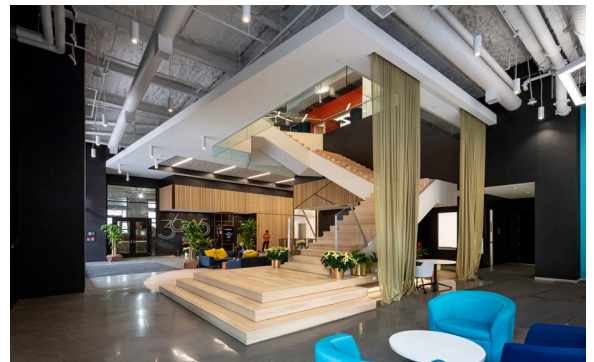
Q1 - Within the AEC (architecture/engineering/construction) industry, construction appears to always be lagging behind architecture and engineering with respect to adopting sustainable practices. What can general contractors/construction managers do to stay ahead of the “green” curve and be on pace with the architects and engineers?

General contractors/construction managers can have more staff LEED registered, and have an active participation in all sustainability related meetings, as the construction industry has a first-hand experience of what it takes to be sustainable on the construction site. It would be great to get feedback to what the contractor has seen firsthand during the construction on the various sustainable measures.

Q2 - Where do you see the future of LEED? Do you foresee the bar continuing to be raised by the USGBC and owners continuing to place the priority on LEED Certification or do you see a time when building owners begin taking it on themselves to design sustainability into their buildings without pursuing LEED - because it is the environmentally conscious thing to do?

I personally see a move towards building owners take design sustainability upon themselves without pursuing LEED, because it is the environmentally conscious thing to do, regardless if they pursue a LEED certification. The market is seeing a forward looking view, realizing that methods that worked in the past will not be sustainable in the future.

Q3 - LEED Certification has been such a major focus for the construction industry over the past several years. However Sustainable construction practice and the pursuit of LEED Certification are not necessarily one in the same. Are building designers making a point to design certain baseline sustainable features (above base building code) into their buildings regardless of whether the owner is looking to pursue LEED Certification? If so, what would an example of these features be? When an owner decides not to pursue LEED, how do you change your design approach?



Yes, I have personally seen building designers making a point of incorporating sustainable features into the building regardless of whether the owner is looking to pursue LEED certification. Some of these features are the use of recycled content, building insulation beyond base requirements, shade features incorporated into design and sustainable landscaping. I personally try to design a building that is as sustainable as possible that fits within the owner's budget.

Q4 - It appears that LEED v4 has not been adopted as quickly as previous iterations of LEED. What is the main contributor to there not being a large number of LEED v4 projects?

From what I have heard so far, it is the changes in the electrical code criteria that seems to be a significant change that led projects to opt for using LEED v2009 when possible.

Q5 - When acting as a LEED consultant on a project, what are some recommendations you make to the general contractor/construction manager to streamline the LEED documentation process?

To make sure the owner is a part of the process from the beginning, which helps with a smoother process through the project. Hold regular meetings in which the owner is a participant, to make sure that the LEED design and documentation is moving forward as both the design team and the owner want.

MODIFICATION TO EXTERIOR PANEL ASSEMBLY AT NEW COLLEGE HOUSE WEST CONTRIBUTES TO LEED EFFORT

By Jasmine Branham



New College House West at the University of Penn, has broken ground just three months ago, yet is already making efforts toward its LEED Silver Certification; emphasizing waste management, sustainable site design and thermal performance in its early construction stages. The 250,000 SF building located at 40th and Walnut Streets will be a U-shaped dormitory with two six-story wings, and a 13-story tower along Walnut Street.

Complete with a green roof, courtyard, and green space, this building aims to maximize its sustainability efforts, while maintaining open

spaces on an urban campus. Doubling as storm water management systems, rain gardens, planter boxes, and porous pavement, are integral parts of these open spaces. These added features are steps toward achieving 95% rain water retention, and additional LEED credits.

New College House West has faced issues early on with the thermal performance of the prefabricated ACM and terra cotta panels that make up its exterior envelope. The project team was challenged with balancing architectural design with the project's sustainability aims. The original panel design was a 6" stud cavity, with batt insulation in the cavity, exterior sheathing, air/vapor barrier with 3 ½" of continuous exterior insulation directly behind the finished terra cotta and ACM panels. The project team engaged CDC to complete a thermal model of the base design, with results showing approximately R-14, for the longer thinner panels, and R-20 for the larger panels. Averaging out to be well short of the basis of design, which is R-20.

Over several months the team looked at various insulation options within the stud cavity, unfortunately we learned that even though some insulations (such as spray foam) have a higher design R-value per inch, the thermal loss caused by the heavy gauge studs minimizes those benefits of any insulation we looked at installing inside the stud cavity. We looked at ways to introduce a thermal break to the panel perimeter including, wood blocking and gypsum sheathing, both of which created issues with sealing the panels. Ultimately, the team decided to place a continuous Koralath shim around the perimeter of the entire panel, which would increase the R-value at the longer thinner panels by roughly 2 points.

In addition to the shims, we elected to increase the thickness of the exterior insulation to 4" (from 3 ½") and the stud thickness from 5 ½" to 6". Once we were able to confirm this material change didn't pose any issues with the structural integrity of the panel system and didn't create any detailing issues with the adjacent window wall and curtain wall details, we re-ran the thermal model. While the performance of the longer/narrow panels, which make up a large portion of the exterior envelope, wasn't as good as the larger panels, the team was able to come to an overall average R-value of R-18.81. Still short of the project goal, but the team was able to confirm that this decrease would have no impacts on the mechanical system. A greater R-value indicates better insulating effectiveness, which in turn would lead to less energy usage for heating and cooling in the winter and summer months. Due to the reduced R-value it was determined that the Owner would see a 0.2% overall increase to their energy cost, which they deemed acceptable. At R-18 the energy cost saving will put us just over the threshold to claim 7 credits for EA2, Optimize Energy Performance pushing us closer toward LEED Silver Certification.

LEED v4.1 AT BRANDYWINE REALTY TRUST CORPORATE OFFICE FIT-OUT

By Phil Rinaldi



INTECH completed the Interior Fit out of the new Brandywine Realty Trust Corporate Offices in August of 2017. Located on the 16th and 17th floors of the FMC Tower at 2929 Walnut Street. The project team was seeking LEED Gold certification for LEED Version 4 for ID+C for Commercial Interiors.

A few of the credits that were pursued include Surrounding Density and Diverse Uses, Access to Quality Transit, Indoor Water Use Reduction, Optimize Energy Performance, Enhanced Commissioning, Construction Indoor Air Quality Plan – During Construction, Construction and Demolition Waste Management and Low-Emitting Materials.

This project was completed when Version 4.1 was relatively new to the design team, subcontractors and many of the product manufacturers. The project schedule was eighteen weeks from award to occupancy which created a major hurdle in obtaining LEED documentation and product procurement.

Due to the newness of LEED Version 4.1, the aggressive schedule and overall subcontractor and vendor unfamiliarity with the new version INTECH spearheaded the effort by working directly with the manufacturers to obtain the required sustainability documentation. One example would be Low-Emitting



Materials. Many of the manufacturers producing the adhesives and sealants such as duct sealant, carpet and LVT adhesives, PLAM glue, wall covering adhesives and paint had not caught up on documentation to be Version 4.1 compliant. We found by reaching out to the manufacturers directly we were able to provide alternates to the commonly used products that complied with Version 4.1 and had the proper documentation.

INTECH was able to comply with all we were documenting and the project is anticipating LEED Gold.

3675 MARKET STREET - PROJECT CASE STUDY - SSC3 BROWNFIELD REDEVELOPMENT

By Tom Tardy



INTECH recently completed the Core and Shell of the new 3675 Market Street building. Located just down the street from our office, 3675 Market Street is a new 15-story Core & Shell building designed for mixed use lab/office space. The project team is seeking LEED Gold certification for LEED 2009 C&S. One uncommon LEED credit that INTECH/Perryman, a JV, was responsible for was SSC3: Brownfield Redevelopment.

Brownfield Redevelopment is unique in that the project site must fit strict guidelines in order to qualify for the credit. A brownfield is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. For LEED, this means to rehabilitate damaged sites where development is complicated by environmental contamination and to reduce pressure on undeveloped land. In the case of 3675 Market Street, Pennoni conducted a clean fill investigation at the site and generated a report based on its findings. Three composite non-volatile organic compound soil samples and three discrete VOC soil samples were collected and analyzed for every 3,000 yards of material. The soil samples were then transferred to a lab for scientific testing. The testing revealed that the contaminated

soil contained higher than acceptable levels of mercury, cobalt, and petroleum odors. Pennoni recommended the areas where the samples were extracted be delineated to determine the true extent of impact. Once delineated, the areas of soil that were still deemed contaminated were segregated into a large pile and kept on site. The areas of soil that safely met the Clean Fill Concentration Limits were excavated and transported off site by a 3rd part, Clean Earth, to be used as clean fill for other construction projects.

CONSTRUCTION WASTE MANAGEMENT REPORT

INTECH Construction, LLC

Period From January 1, 2018 through December 31, 2018

	Total Waste (TONS)	Total Diverted (TONS)	Percent Diverted from Landfills
William J. Green Federal Building	30.10	25.13	83.49%
American Heritage Federal Credit Union - Red Lion Road	56.80	46.09	81.14%
Pod Philly Hotel	62.12	51.63	83.11%
3675 Market Street	637.78	520.45	81.60%
DuPont Building / Chemours	1,324.02	509.42	38.48%
Lincoln Square	10,074.88	8,359.83	82.98%
Newman Center	76.76	68.76	89.58%
Parx Casino - Beer Garden	18.81	14.76	78.47%
Jefferson - Ronson Health and Applied Science Center	40.29	37.46	92.98%
Springside Chestnut Hill Academy - New Lower School	130.14	127.24	97.77%
Subaru of America - National Service Training Center	344.90	306.18	88.77%
View II	1,269.46	1,170.21	92.18%
GRAND TOTALS	14,066.06	11,237.16	79.89%

Congratulations to the INTECH project teams for achieving a 79.89% diversion rate for 2018 – Well done!

CALENDAR OF UPCOMING GREEN BUILDING UNITED EVENTS

Please see link for upcoming Green Building United Events: Green Building United Events and Events Calendar:

<https://greenbuildingunited.org/events>

There is a Spring Happy Hour on March 7th. Please let me know if you are interested in attending the happy hour or any of the other events.

I hope you enjoyed this edition of Sustainable News.



Ed Rowe, LEED AP

Director of Sustainability / Project Manager