Rinek Rope Adaptive Reuse

2021 Capstone Project

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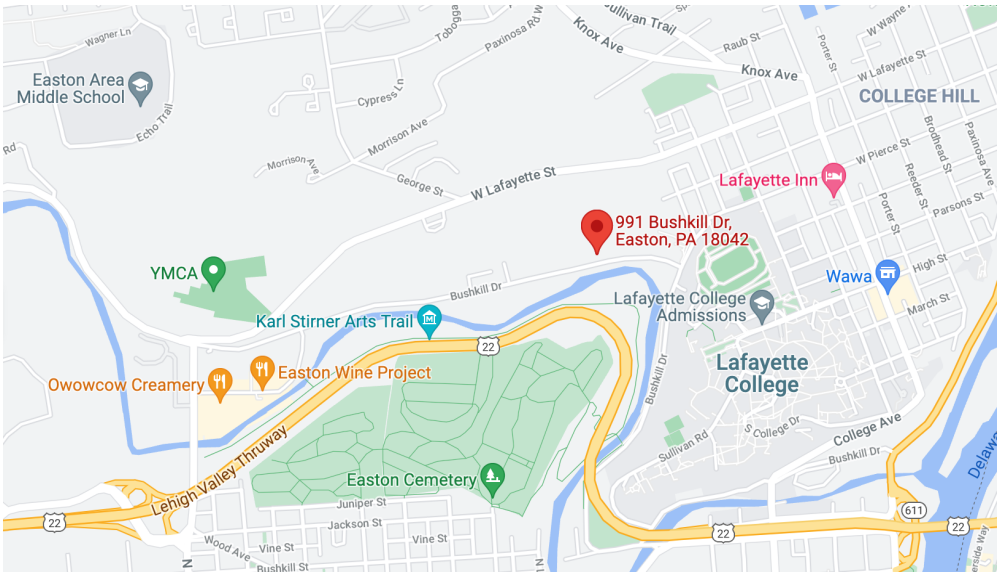
Table of Contents

Introduction

The Rinek Rope factory site is a historically significant manufacturing site Lafayette College purchased and is planning to redevelop. It is located on Bushkill Drive between Lafayette College and the City of Easton, Pennsylvania. The location offers an opportunity to connect these two entities and redevelop the area.



The college's current plan is to largely turn this site into storage space, posing many problems as it both ignores the historical heritage of the site and also does not provide the best use of the space. However, when looking into the redevelopment of this site there are several problems with both the site, Easton, and Lafayette College that need to be considered and addressed.

As it currently sits, the Rinek Rope Factory does not have a use, and is in very poor condition. The site is historically significant, as the cordage it produced played a large part in shaping the Easton we know today, as well as playing a large role in the construction of some of the buildings on Lafayette's campus. As such, the college has deemed its preservation important, making demolition not an option. However, because of this the current site must be restored, and because the site has not been in use for so long the condition of the buildings is very poor and potentially hazardous. An additional issue for Lafayette College when attempting to expand or redevelop is the strained relation it has with the city of Easton. Currently, there is not a lot of common space that both of these entities can coexist in, with it being clear from town hall meetings that the city feels the college is expanding far beyond its limits. However, the reverse of this dilemma is also true. As Lafayette College continues to attempt to expand, the city of Easton does not have the hotel space or infrastructure to house the influx of people coming to visit for things such as campus tours, interviews, and family events such as parents' weekend. Finally, Easton Emergency Services has stressed the need for a station close to campus, as well as college hill, with this site's location being optimal for their needs. The redevelopment of the Rinek Rope site could serve as a change in this narrative, as it has massive potential to both serve the Lafayette College and Easton communities.

All of these issues with Lafayette College and Easton lead to our proposal for the redevelopment of the Rinek Rope site. The Site is currently divided into 4 buildings, listed as A, B, C, and D, in figure 1. For our proposal, the largest building in the complex, building A (see figure 2), would be converted into a hotel. This hotel would provide more places for people to stay while visiting Easton, especially families of students, as well as those of prospective students as the college continues to expand. The middle building of the complex, building C (see figure 3), would function as a café, which would provide a space to eat for people walking the art trail, staying at the hotel, and Lafayette students. This café would serve to extend the duration of peoples visits to the arts trail, potentially turning it into an all-day activity and tourist attraction. Finally, the long single-story building, building D (see figure 4), would function as a 2-part space. The first half of the space would function as an ambulance port for Easton Emergency services, while the second half of the space would serve as storage space for the college, as this is also a pressing need. Each of these buildings will be redeveloped using adaptive reuse, with the project focusing on three adaptive reuse hotel projects within the United States that will be used as case studies. These case studies will serve as a framework for the development of the Rinek Hotel.

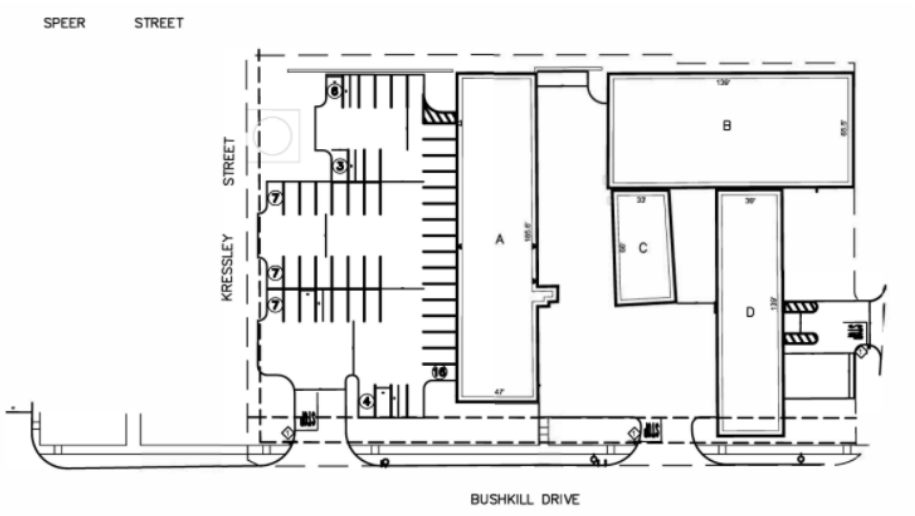
While we do believe this is the best possible solution for the redevelopment of the Rinek Rope complex, it is not without its challenges, with the challenges for this solution being twofold. The first challenge is funding, as the budget for the plan is 2 million dollars supplied from the college. The second challenge is the approval of this proposal by the school, which will require convincing the college to become less attached from turning the complex into a glorified closet, as this is their current plan. Somewhat unrelated is the challenge of connecting the complex to the arts trail. While there are unused bridges across the Bushkill from the arts trail,

they are a way down the street from the Rinek rope complex. A new bridge could be constructed immediately in front of the complex, but this could be an issue with the budget.

While these challenges may seem daunting at first, they are not insurmountable. To overcome the challenge of funding a more in depth look into the condition of the complex will need to be acquired. To make sure the money we have is enough, we will need to get a better understanding of the current condition of the complex, and how much the restoration will cost. In the event that the current funding is not enough, a McCartney dorm situation could be established, with a separate contractor running the site. To ensure approval, a proper pitch will have to be given for our proposal. The importance of the use our proposal will give the college will have to be stressed, as well as how our proposal solves issues that the current plan does not. Finally, the issue of connecting the arts trail to the Rinek Rope complex depends on funding. If there is a lot of funding available a new bridge can be built across the Bushkill. If there is not a lot of funding, then a previously existing bridge can be restored, and a sidewalk can be implemented from the bridge to Rinek Rope. If there is minimal funding, then a sidewalk can be made from Rinek Rope to the Silk Mill complex.

In Summary, we plan to use adaptive reuse in the Rinek Rope complex to turn the former industrial site into a hotel, café, and mixed-use space for Lafayette and Easton Emergency Services. We believe that this will provide the maximum possible utility and value to this site while also fixing some of the problems that Easton and Lafayette have.

Figure 1:



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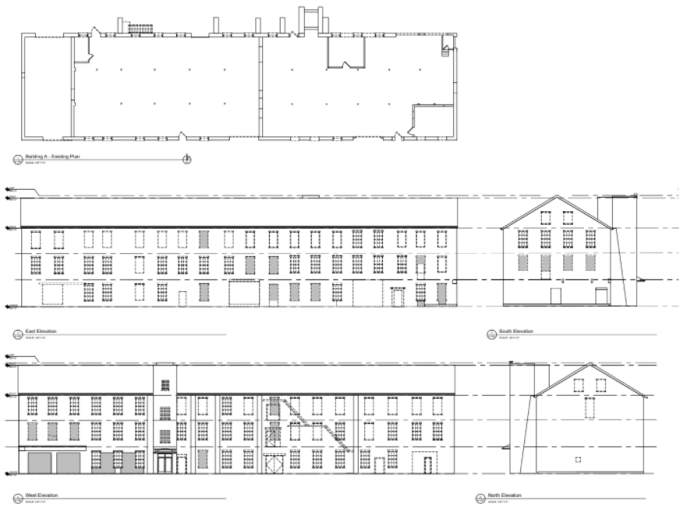

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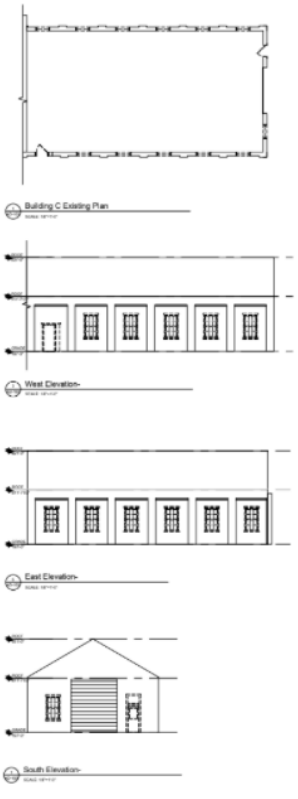

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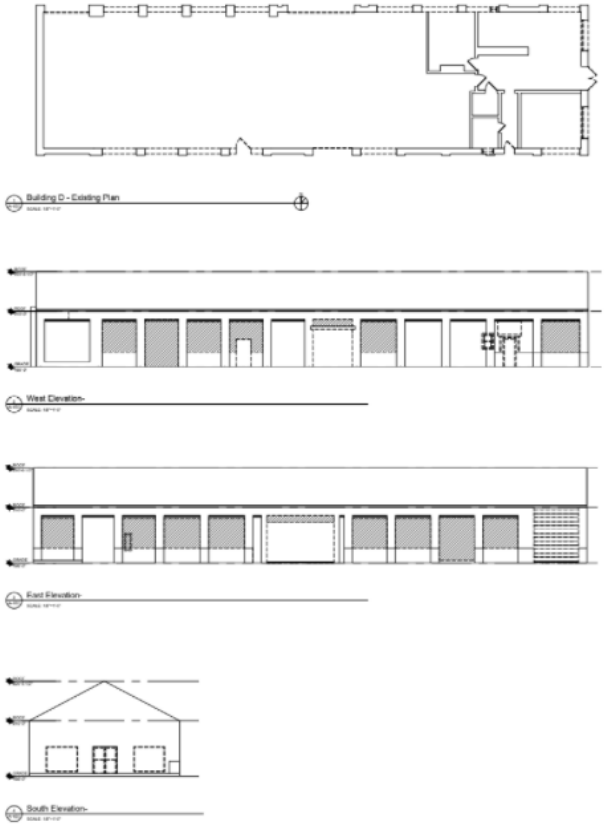

Social Context

The former Rinek Rope industrial site has been purchased by Lafayette College. Our team has formed a proposal on how we think the site can best be utilized. Understanding the social context surrounding Rinek Rope explains how and why our team formed the specifics of our proposal. This section will detail the history of Rinek Rope and why it is important to preserve the history, as well as the clients affected by our proposal and how their needs will be met.

Jacob Rinek was one of the most prominent businessmen in Easton, Pennsylvania. According to records, he came to Easton around 1830 while he was in his early twenties. He had an expert knowledge of both the rope-making trade and business. Rinek Cordage Company was founded in 1840 and the company became one of the most important names in the industry. Jacob Rinek was also instrumental in the manufacture of iron. Due to his prominence, he was heavily influential in building up the west end of Easton. He was connected with many companies focused on municipal improvement, such as the Olive Park Association & Improvement Company. He was also responsible for raising money to purchase land for a county courthouse and jail.

The trend of influencing the city continued throughout generations of the Rinek family. For a time, Rinek Cordage Company was called Rinek & Sons because of the involvement of Jacob's sons, Howard and John. Howard Rinek became president of Rinek Cordage Company in the late 1800s. Howard followed in his father's footsteps by becoming one of the most guiding influencers in Easton. In fact, Howard was responsible for organizing the Edison Illuminating Company after incandescent electric lights were installed in his home on College Hill, the first to

be installed in an Easton residential building. The company installed electricity and trolleys in the city. After his electric company was sold to E. B. Smith & Company, Howard Rinek returned to cordage manufacturing.[1]

Rinek Cordage Company valued quality. They hired master craftsmen to check and test rope before shipping them so customers could expect safe and consistent results. The company supplied ropes for rigging ships, railroads, and many departments of the United States government.[2] Their reach was far beyond Easton, or even the country. They also produced large ropes for ships that aided in building the Panama Canal.[3]

The site also has history in the aviation industry. Norvin Rinek, Howard's son, organized the Rinek Aero Company. He designed and built the first eight-cylinder water-cooled engine in the country, built out of aluminum alloy. The engine was used in an airplane he built just three years after the Wright Brothers flew the first aircraft.[4]

Lafayette and Easton have expressed interest in saving this rich history by restoring the building, instead of demolishing it. Salvatore Panto, the Mayor of Easton, expressed in an article from The Lafayette, "I think it's important that this piece of history is saved, and glad the college is determined to save this one. Usually, the college is very diligent in trying to save buildings".[5]

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[1] Heller, W. J. (1920). *History of Northampton County, Pennsylvania, and the Grand Valley of the Lehigh*. American Historical Society.
[2] Rinek Cordage Co. (1936). *The Romance of Rope*.
[3] https://lafayettestudentnews.com/106408/news/lafayette-to-use-1-million-dollar-grant-to-restore-the-historic-rinek-cordage-company-complex/
[4] Heller, W.J.
[5] https://lafayettestudentnews.com/106408/news/lafayette-to-use-1-million-dollar-grant-to-restore-the-historic-rinek-cordage-company-complex/

The two clients that are affected by this proposal are Lafayette College and the City of Easton. With the current plans, the Rinek Rope complex would be used for storage, Easton Emergency Squad, and a maker space for civil engineers. So, even though the space is in Easton, it would strictly be used for Lafayette purposes. The current proposals ignore the equally important client of the Easton community.

A 2017 Technology Clinic report titled 'Re-envisioning a Future for the Bushkill Corridor' details the current needs of both entities. This report also showcases how the strive for development in the Bushkill area has been worked on for years. Lafayette College is looking to expand beyond College Hill. They also lack a connection between Lafayette and the surrounding community of Easton, especially from Bushkill drive and beyond. Easton is in need of a shared community space. The report explains that there are not many outdoor attractions for residents to use as leisure space. Easton also feels the disconnect between their community and Lafayette. The lack of development keeps the area unsafe and underutilized. The disconnect and

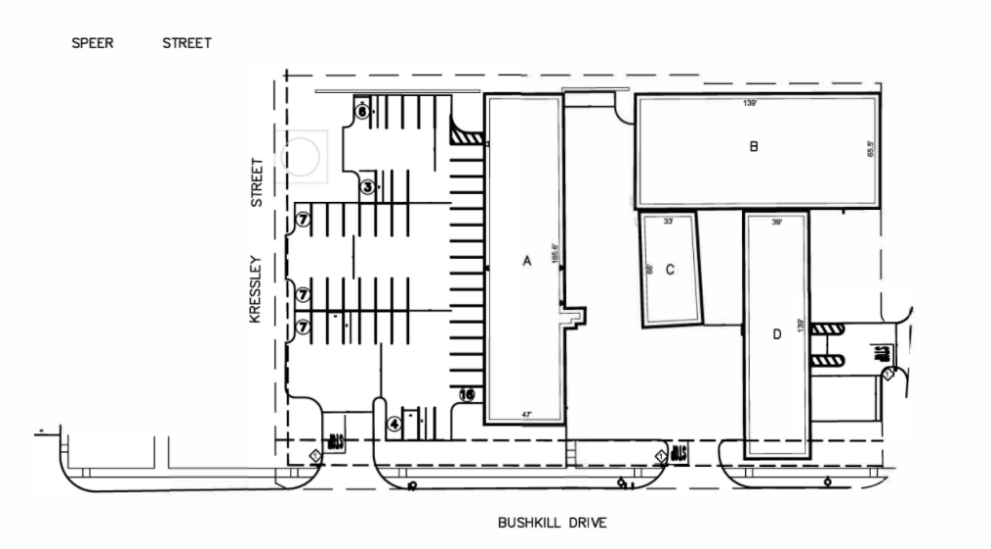
underdevelopment disincentives both Lafayette and Easton residents from using the Bushkill area.[6]

Lafayette wants development along Bushkill Drive, including the Rinek Rope factory, to coincide with their future expansion. Easton wants the area to be used effectively and functionally, and for the area to benefit the greater Easton community. Although a maker space for engineers and a storage space for facility operations would meet the current expressed needs of Lafayette, our team proposes a plan that takes into consideration the problems of both clients to satisfy broader needs.

In recent years, trends of development have started around the Bushkill area, and our proposal is involved in continuing them. The Karl Stirner Arts Trail runs along the Bushkill Creek, an art experience that connects the urban environment to nature and creativity. The Arts Trail also connects with the newly built Easton Silk Mill, a former silk mill adaptively reused for commercial and residential space. We believe that the Rinek Rope complex could be a part of this revitalization of Easton north of the Bushkill Creek, instead of just being a storage closet or maker space for Lafayette College. That is why our proposal is for the Rinek Rope complex to be converted into a hotel, café, and venue space.

[6]https://techclinic.lafayette.edu/2017/01/25/re-envisioning-a-future-for-the-bushkill-drive-corridor/

To recap:



Building A would be the hotel, called ‘The Rinek’.

Building B would be the venue space.

Building C would be the café, called ‘Cordage Café’.

Building D would remain as a place for Lafayette to follow their original plan. It would be used for storage and an ambulance bay for Easton Emergency Services.

We chose a hotel as the main use for the former Rinek Rope Factory because it would be beneficial to both the college and the city of Easton. It would be a catalyst for future development along Bushkill Drive for both communities.

A hotel on Lafayette’s campus would allow for prospective students, alumni, and families to have a place to stay, and provide accommodation for athletic events, academic symposiums and conferences. Hotels on other college campuses provide insight into the strong financial

incentive to develop hotels around colleges. According to Kerry Ranson, CDO of a Georgia-based management company called HP Hotels, university cities are "recession-proof". College towns provide constant demand for hotels because there is always a consistent flow of traffic regardless of the overall economy.[7]

Oberlin College is a private liberal-arts college in Oberlin, Ohio with about 2,600 undergraduate students. It is very similar in size to Lafayette College, which has a total enrollment of about 2,500 undergraduates. Oberlin College opened The Hotel at Oberlin with help from Smart Hotels, a company that specializes in college lodging. Parents were pleasantly surprised at the quality of the accommodations when visiting the school with their high school students. One parent said, "The college obviously put tremendous thought into every detail, from the booking, to the front desk, to the food in the restaurant." A professor at Penn State University and director of the Center for Hospitality Real Estate Strategy, John O'Neill, points to the boutique hotel movement and the economy as evidence why people are willing to pay for good quality lodging when visiting college campuses. The quality of The Hotel at Oberlin is not just for people to be impressed while visiting, but to communicate one of Oberlin's core values – sustainability. Mike Frandsen, vice president for finance and administration at Oberlin, stresses sustainability as a part of Oberlin's story. Oberlin realizes that when people visit their campus, the hotel will be a major part of their experience. Having their values instilled within the hotel is an important way of projecting the image they want to portray to visitors. The Hotel at Oberlin is one of the only hotels in the United States to qualify for LEED platinum certification from the U.S. Green Building Council.[8]

[7] https://www.hotelmanagement.net/development/what-makes- university-town-hotels-recession-proof
[8] https://www.nytimes.com/2016/11/21/business/new-feature-of-the-college-tour-first-class-campus-hotels.html

Sustainability is also a core value of Lafayette College, as expressed on their website. Lafayette prides itself on constructing LEED-certified buildings, investing in renewable energy, and committing to reducing carbon emissions and improving energy efficiency on campus. Rockwell Integrated Sciences Center received a LEED Platinum certification, like the Hotel at Oberlin. The only other LEED certified building on campus is Grossman House for Global Perspectives, with a Gold certification.[9] Emphasizing sustainability through this project with adaptive reuse and striving for LEED certification will give the college more credibility. A LEED certified hotel would be a great way to tell Lafayette's story to prospective students and other visitors.

Pictured: Rockwell Integrated Sciences Center at Lafayette College. This building is LEED Platinum certified, the highest recognition awarded by the U.S. Green Building Council.

[9] https://sustainability.lafayette.edu/

Although there are other hotels in the Easton area, demand for a hotel close to Lafayette College exists. On Lafayette's website, there is a web page with details about hotels in the area, as well as dining and shopping options. Some hotels listed on are the Grand Eastonian Suites Hotel (1.6 mi.), Hampton Inn Easton (6 mi.), Holiday Inn Express (3.8 mi.), and Lafayette Inn (¼ mi.). [10]

Pictured: The Lafayette Inn, a 17 room inn 2-blocks from campus.

The Lafayette Inn prides itself on being just a 2-block walk to campus. It describes itself as "ideal for families visiting the College as well as the Easton Historic District." While this is true, the inn only has 17 rooms. Under the link to the website for Lafayette Inn, this blurb is written:

"Family Weekend and Graduation at The Lafayette Inn:

Due to the high demand for rooms during Family Weekend and Graduation, The Lafayette Inn uses a lottery system to reserve rooms. Parents and other family members of Lafayette Students can put their name on the list to participate in the lottery at any time and they are entered in the

[10] https://campuslife.lafayette.edu/about-easton/hotels-dining-shopping/

drawing an additional time for each night they have stayed at the inn. The Family Weekend drawing takes place the first week of May and the Graduation drawing takes place the first week of September. Winners are notified by phone or email after the drawing."[11]

The high demand for rooms proves that another hotel on campus would be very beneficial for families, members, and colleagues of the Lafayette community. The Rinek would be able to offer significantly more room for accommodations. Lafayette could do away with a stressful lottery system for families to have to reserve rooms to visit their children or attend their graduation.

Johnathan Capps, vice president of revenue at Charlestowne Hotels adds another market college hotels should be interested in – weddings. He sites data from Facebook analysts that found that 28% of married couples met in college. Couples could want to come back to wed where they met.[12] With the assumption that the rest of the Bushkill area will continue development after the hotel is built, there will be a more established connection to the Arts Trail and the Bushkill Creek, and the area will be more picturesque and safer. If the hotel and venue space were revamped to be able to accommodate weddings, that could be another source of business for the hotel.

The hotel would also be a great benefit to Easton, as well. Mayors across the country believe hotels are critical parts of local economic growth, career opportunities, and community development. According to the U.S. Conference of Mayors and the American Hotel & Lodging Association, a 2017 survey shows that 9/10 mayors believe their community would benefit from additional hotels. Hotels provide a valuable source of quality jobs, support for their communities through tax revenue, capital investment, tourism development, charitable contributions, and

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[11] Ibid.
[12] https://www.hotelbusiness.com/market-study-lessons-learned-when-considering-college-towns/

sponsorships. Mayors surveyed expressed that tourism and hospitality are one of the largest sectors of their economies, along with healthcare.[13] A hotel in Easton would boost existing local businesses, like the Silk Mill, and offer opportunities for more businesses to move in around the hotel. Hotels and employees are crucial to show visitors the city's values. With our proposal striving for the Rinek to be LEED certified, the hotel would not just give sustainable credibility to Lafayette College, but Easton as well. A great way for a building to achieve LEED certification is through adaptive reuse, which we will be utilizing in our project.

[13] https://lodgingmagazine.com/study-finds-hotels-beneficial-to- local-communities/

Adaptive Reuse

Adaptive Reuse is the repurposing of old or existing structures for viable new uses and modern functions. This is a great way to breathe new life into an old building while being more environmentally-friendly. There has been rapid growth in the popularity of adaptive reuse with the United States. In fact, in the last 70 years over 2,000 old buildings have been converted into apartments. Of the 2,000, 800 of which were done in the last 10 years. This is an all time high. [14] This approach to development can also positively impact communities. Through adaptive reuse, run-down properties and crime that is often linked with them can be removed, natural resources and habitats can be preserved, historical legacies can be maintained and the unique qualities of communities can be protected. [15]

Environmental:

According to architect and sustainability activist Carl Elefante, the greenest building is the one that is already built. With increasing environmental awareness, many consumers have abandoned the "newer is better" mindset. The building industry, inclusive of the building construction industry, accounts for 38% of all energy related CO2 emissions globally. To provide greater context, in order to stay on track to meet the 2050 net-zero carbon building stock goal, direct building emissions need to fall by 50%. [16] Construction is also responsible for 12% of water consumption [17] and 50% of waste landfill [18]. Therefore, various governmental and environmental

[14] https://www.rentcafe.com/blog/apartmentliving/yesterdays-factories-todays-apartments-70-years-of-building-conversions-in-the-u-s/

[15] https://law.duke.edu/sites/default/files/clinics/cec/cote.pdf

[16] https://www.unep.org/news-and-stories/press-release/building-sector-emissions-hit-record-high-low-carbon-pandemic

[17] https://www.frontiersin.org/articles/10.3389/fevo.2015.00144/full

[18] https://www.sciencedirect.com/topics/earth-and-planetary-sciences/construction-waste

organizations are encouraging more sustainable building practices like adaptive reuse. The Environmental Protection Agency strongly advocates for smart growth which covers a range of development and conservation strategies that help protect our natural environment and make our communities more attractive, economically stronger, and socially diverse. One of their smart growth strategies includes the reuse of existing infrastructure and buildings to take advantage of previous investments and the energy already used to build them. [19] A Life Cycle Assessment of the net environmental impact of an adaptive reuse project by the University of Waterloo, Canada, revealed a 35–38% decrease in Primary Energy Demand, Global Warming Potential, and Water Consumption. [20] This study also revealed that the greatest benefits came from the reuse of the building structure and that building systems were more likely to cause inefficiencies in the adaptive reuse process. Therefore, in the generation of climate change mitigation and adaptation, adaptive reuse is a good solution for decreasing the carbon footprint of the construction industry.

Social & Community:

Every state, city and neighbourhood has qualities that make it unique - the architecture, the art, the music, food, the people. These attributes make up the fabric of the community. It gives residents a sense of pride and belonging. As these communities grow and infrastructure is forced to adapt to the increased population, it is imperative that the expansion doesn't neglect the culture of these spaces or cause urban sprawl. Urban sprawl is the unplanned and rapid expansion of cities and towns. These areas usually have low-density residential housing, single-use zoning, and increased reliance on private transportation. [21] With the expansion of these

[19] https://www.epa.gov/smartgrowth/smart-growth-and-climate-change
[20] https://link.springer.com/article/10.1007/s10669-019-09734-2
[21] https://www.britannica.com/topic/urban-sprawl

cities, there is further destruction in wildlife habitat and other natural biodiversity. Urban sprawl is also associated with increased energy use, pollution, traffic congestion and decline in community distinctiveness and cohesiveness. However, adaptive reuse optimizes the current urban space to meet the needs of a growing population while valuing and maintaining the character of the community.

One problem a lot of developers face is pushback from anti-development groups. These groups want to preserve various aspects of their community, one of which is heritage. Therefore, adaptive reuse projects are often welcomed by these communities. Developers have to ensure that the local community is in sync with the proposed reuse and its potential benefits to avoid any opposition and subsequent project delays.

Economic:

Adaptive reuse doesn't just save the environment and buildings, it can also save money. Demolition expenses can take up a significant portion of a construction budget. However, since the building already exists many adaptive reuse projects forgo demolition expenses. These types of projects typically involve lower labour and material costs. In fact, compared with a new construction, adaptive reuse and restoration can cost 16% less in terms of construction costs and reduce execution time by 18%.[22] Every adaptive reuse project is unique and therefore some projects can still be expensive and in some cases nearly as expensive as a new development. Therefore, it is important to have a contractor assess the condition of the building and create an estimate of how much it will cost. There are local tax incentives and federal tax credit for adaptive reuse projects. These savings can be significant and increase the financial feasibility of the project. The government provides adaptive reuse incentives in the form of federal tax

[22] https://www.tradeandindustrydev.com/industry/embracing-adaptive-reuse-corporate-real-estate-12810

incentive program, known as the historic habilitation tax credit. Through this program, developers receive a credit that directly reduces taxes. The amount of credit is either 10% or 20%, depending on building age and whether it is listed in the National Register of Historic Places.[23] Eligible costs include soft and hard costs directly aligned to the rehabilitation of the building. Hard costs include expenses related to physical construction like labor, materials,mechanical and plumbing. Meanwhile, soft costs are related to developer, legal and architectural fees. Expenses like acquisition costs, site development, furniture and fixtures are not included in the tax credit. [24]

Improving building use, amenities and safety can also increase property valuation significantly. For instance, EverWest Real Estate Investors and CarVal Investors transformed an 185,000-square-foot former shopping center into a single floor creative office space which sold for $46 million in Tempe, Arizona after investing $14 million.[11] The project took approximately two years to complete and was fully leased upon completion.

Adaptive reuse projects can also yield economic benefits to the local community. These projects can also revitalize local economies by lowering vacancy rates, attracting new business, creating new jobs, boosting tax revenue and increasing marketability of neighborhoods. Savannah, GA has been a prime example of how embracing adaptive reuse can economically uplift a community. [25] Work done using the federal historic tax credit has meant an average of 169 jobs and $7.5 million ion labour income each year over the last 15 years. Property values in Savannah's historic district have outperformed the city as a whole. This 'preservation premium' from the faster rate of appreciation provides almost $10 million each year to the county and

[23] https://www.ccim.com/cire-magazine/articles/federal-historic-tax-credit-aids-adaptive-reuse-developers/
[24] https://www.optimumseismic.com/adaptive-reuse/prosperity-through-preservation-the-financial-benefits-of-adaptive-reuse-construction/
[25] https://www.myhsf.org/wp-content/uploads/2019/07/HSF-Beyond-Tourism-Report-2015-FINAL_optimized.pdf

school district. Historic districts are a particular attraction for jobs in the arts and culture and other knowledge industries and small firms and start-up firms disproportionately choose to locate in historic neighborhoods. Adaptive reuse provides financially attractive opportunities for developers and stimulates economic growth within local communities.

All in all, adaptive reuse provides a more environmentally friendly approach to development, helps stimulate local economies and preserve the character of a community.

Case Study 1:

Nashville's Union Station Hotel, Tennessee:

Nashville's Union Station Hotel was once a buzzing train station which served as an integral part of the nation's railway system and essential part of the American economy. The original Roman Revival Gothic inspired building was designed by engineer Richard Montfort.[26] Construction for Union Station began in 1898 and two years later in 1990, the station officially opened. The

[26] https://www.historichotels.org/us/hotels-resorts/union-station-hotel/history.php

station experienced peak usage during World War II when it was a dedicated shipping-out point for ten of thousands of U.S. soldiers and site of USO canteen. [27] However, the station experienced a decline in usage post the second World War as there was increasing popularity of automobiles and airplanes. As such, by the 1960s, it served only a few trains each day and by October 1979, the station was discontinued and entirely abandoned. [13] The station was now in the custody of the United States Government's General Services administration.

In the early 1980s, a group of investors acquired the building out of bankruptcy. With the intention of preserving the station's historical legacy, they completed renovations to transform the train station into a luxury hotel. After the work was completed in 1986, the owners opened the doors of the new luxury destination under the name "Union Station Hotel". In 2015, the hotel became a member of Historic Hotel of America, the official program of the National Trust for Historic Preservation for recognizing and celebrating the finest Hotels.

In 2020, Southwest Value Partners, California-based developer, purchased the historic hotel for $56 million from Pebblebrook Hotel Trust which is roughly $4 million above the purchase price of $52.3 million they paid in 2014. [28] This sale represents around $448,00 per room. The hotel will complement Southwest's Business and Entertainment District, Nashville Yards. Nashville Yards is a 17-acre mixed-use development which will house commercial tenants like Amazon and Pinnacle Financial Partners alongside retail and dining options, multi-tenant office space and residential units. The goal is to bring together the core urban elements that make Nashville unique and create a destination where locals and visitors can live, work and play.[29] The hotel,

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[27] https://digital.library.nashville.org/digital/collection/nr/id/766/

[28] https://www.nashvillepost.com/nashville-yards-developer-to-buy-union-station-hotel/article_61ccd664-e078-519f-a582-23d0db0f822a.html

[29] https://www.wsmv.com/news/davidson_county/nashville-yards-aeg-announce-entertainment-district-concert-venue/article_2bbe1de0-e9aa-11eb-ad8d-df4b301c5f03.html

now rebranded as “The Union Station Nashville Yards”, will be managed by Dimension Development. Cary Mack and Mark Schlossberg emphasized how the Union Station building has shaped the Music City skyline for over 120 years and how valuable it’s history of moving hundreds of thousands of travellers thought the city is.

In preparation for reopening, The hotel received a thorough cleaning and facelift. The building's limestone facade was washed removing four decades of grime build-up. The roof was also repaired and improvements were made to the four-story lobby.[30] There were new elements, such as spa-quality bathrooms with walk-in showers in each of the hotel’s 125 rooms. There is still more to come. Southwest Value Partners will also include a new restaurant that will open at the hotel’s original Broadway entrance and reopen the lobby bar which will offer cocktails and small plates.

Case Study 2:

30 https://www.tennessean.com/story/money/2021/05/20/nashville-union-station-hotel-undergoes-restoration-cleaning/5188340001/

Detroit's Foundation Hotel, Michigan

Detroit's Foundation Hotel was adaptively reused from Michigan's oldest fire station. The fire station was constructed in 1929, designed by architect Hans Gehrke. The five-story building served as the main administrative facility for the Detroit Fire Department for eight decades before the department relocated. Another historic building sits next door, the Pontchartrain Wine Cellars, which was constructed in the 1880s. Pontchartrain was in use for decades as a popular restaurant, but was unusable by the time the fire department relocated. [31]

[31]http://adaptandreuse.com/detroits-fire-department-headquarters-and-an-adjacent-building-evolved-into-foundation-hotel/

In 2013, Walter Cohen partnered with Aparium Hotel Group to undergo a $28 million adaptive reuse project to redevelop both the fire station and the wine cellars into a new hotel. The five-story, 100 room hotel opened in May of 2017.[32]

It was decided to adaptively reuse the buildings to honor Detroit's past and celebrate the promising future of the city. The existing facades of the buildings were restored to maintain their original and unique characters. The original fire-engine red doors were repaired and reused. Decorative terracotta panels were repaired with firehouse themes. The inside was also designed to preserve the history of the sites. The room that used to contain fire engines, is now a restaurant with a private dining room.

The renovation offered opportunities for unique collaborations. The Detroit Foundational Hotel prides itself on collaborating with many local companies to offer guests a unique and distinct experience. Local artists were recruited to help renovate the hotel such as Detroit Wallpaper Co. and Architectural Salvage Warehouse of Detroit. Also, the restaurant prides itself on being unlike any other restaurant in Detroit. Chefs work alongside local farmers and food purveyors to craft the menu. The hotel partners with a local distillery to offer these cocktails, Two James Spirits. Even the cocktails are reminiscent of the site's history. A cocktail called "1929" commemorates the year the original fire station was built. Other examples of local companies involved with the hotel include: Detroit in the New Black, a clothing company that made the staff uniforms, Bon Bon Bon, local chocolate makers, Urban Ashes, a design company crafting pieces from salvaged woods and offering work to ex-felons and the marginalized youth, and many more.[33]

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[32] https://www.architectmagazine.com/project-gallery/detroit-foundation-hotel

[33] https://detroitfoundationhotel.com/collaborators/

Case Study 3:

Hotel Emma, San Antonio, Texas:

Before Hotel Emma was a luxury hotel, it was known as City Brewery founded by Jaroslav Behloradsky who arrived in San Antonio by the early 1880s and started producing larger beer in 1884 [34]. However, after a few years he sold it to business men Oscar Bergstrom, Frederick Hartz

[34] https://www.tshaonline.org/handbook/entries/pearl-brewing-company

and brewer Otto Koehler. They created the SanAntonio Brewing Association and set it on its way to be the largest brewery in Texas.

Otto died in 1914, and his wife, Emma, succeeded him as chief executive and president of the San Antonio Brewing Association [35]. Under her leadership, the business successfully navigated the prohibition and the Great Depression. In fact, it was the only San Antonio Brewery to survive the Prohibition. This was due to Emma's superb business skills. She transformed the brewery by converting operations to dry cleaning, auto repair, producing low-alcohol beer, bottling soft drinks, entering the commercial ice and creamery business and operating an advertising sign company. Emma managed to keep her entire workforce employed while other breweries collapsed. In 1933, prohibition ended and after fifteen minutes one hundred trucks and twenty-five boxcars loaded with Pearl beer left the grounds of the brewery [18]. In the same year, Emma turned over control to her nephew, but remained a formidable presence at the brewery until her death in 1943 .

In 1952 the San Antonio Brewing Association changed its corporate name to the Pearl Brewing Company in an effort to more closely associate itself with its product. The Pearl experienced significant growth, moving into national markets and distributing across the United State. It was subsequently owned by Paul Kalmanovitz, the owner of S&P Company.With changes in consumer preferences and a highly competitive market, The Pearl closed in June 2001 [18]. Charged with the idea of revitalizing the area and preserving the historic structure, Silver Ventures, owned by San Antonio businessman Christopher Golsbury, purchased the 22-acre Pearl Brewery complex in 2002 [36]. A decade later, the San Antonio RiverWalk, a linear park that

[35] https://www.thehotelemma.com/overview/emmas-story/
[36] https://www.nytimes.com/2012/12/09/us/for-pearl-brewing-company-a-second-life.html

winds for thirteen miles, extends to the area. The RiverWalk is a tourist destination and home to hotels, restaurants, and shops. It attracts millions of tourists each year [37]. The area, commonly called the Pearl, includes a San Antonio campus of the Culinary Institute of America, a farmers market,restaurants, shops, upscale apartments, businesses and Hotel Emma, the iconic former brewhouse turned luxury hotel [38]. The Pearl is an area of urban living. The City of San Antonio provided approximately $13.1 million in incentive for two apartment complexes as well as an additional $1.9 million which facilitated 640 new housing units [39]. The City will intern benefit from taxes generated from these entities. The private partnership has led to the creation of over 2,300 housing units.

Case Study 4:

[37] https://www.tshaonline.org/handbook/entries/san-antonio-river-walk-paseo-del-rio
[38] https://sanantonioreport.org/rise-of-the-pearl-how-a-historic-brewery-transformed-a-city/
[39] https://www.businesswire.com/news/home/20141211005539/en/Pebblebrook-Hotel-Trust-Acquires-Union-Station-Hotel

The Simon Silk Mill, Easton, Pennsylvania:

The Simon Silk Mill is a former industrial complex, subject to adaptive reuse, located at the end of the arts trail in Easton, PA. The 300,000 square foot complex was built in 1883 and would be used continuously for the next 80 years, closing down during the 1960s. During its peak, employment reached 1,200 workers manning 1,500 pieces of machinery, helping Pennsylvania have the largest silk industry in the country.[40] However, due to overseas competition, the silk industry in Easton, as well as Pennsylvania would be brought to its knees, forcing the closure of many of the mills used in production, including the Simon Silk Mill.

After being closed down in the 1960s, the silk mill sat abandoned and unused for the next 40 years, until the mayor of Easton at the time, Michael McFadden, brought forth a proposal to tear down most of the site to create an athletic complex and community center.[41] This was believed to be the best use for the site at the time, as the buildings were believed to be in too poor condition to rehabilitate, as well as the site being located extremely close to other industrial

[40] https://www.lehighvalleylive.com/easton/2017/02/the_rise_fall_and_rebirth_of_e.html.
[41] Ibid.

complexes. However, in 2006 a different plan was brought forth, this time for the silk mill to be converted into shops and retail areas.[42]

To begin the implementation of the retail focused plan, the Easton's Redevelopment Authority bought the entire complex for $2.5 million, as well as hiring contractors to oversee the development. However, this would eventually not pan out, with other setbacks occurring such as the discovery of hundreds of barrels of toxic waste located in the site. Various other proposals were submitted and rejected, including the creation of an artistic community space and a neon light show. Eventually, in 2010, Easton reached an agreement with VM Development, and in 2013 their proposal to turn the site into a mixed use residential and retail area was put into action. Their plan called for a $100 million renovation to the site, with the first $60 million of which being spent in 2015 for the purchase of the mill. In 2017, the first shop opened, with the 149 apartments and warehouse space following soon after.

Case Study Summary:

Just like the Union Train Station, The Detroit Fire Station, Pearl Brewery and The Silk Mill, Rinek Rope has a great historical legacy that not only should be preserved but emphasized and proudly displayed. These buildings helped transform communities and fuel local economies, especially in the case of Hotel Emma. The extension of the RiverWalk in San Antonio, Texas created a community and commerce complex that could be inspiration for Easton's very own Stirner Arts Trail. There is already a huge culinary culture present in Easton with Garlic and Bacon Fest that bring over 100,00 people combined to Easton over a two-day period. Furthermore, the Rinek Hotel could be a space for community collaboration. Getting local companies involved would be a really great way of engaging with the community. Local artists

[42] Ibid.

could help connect the arts trail to the hotel and surrounding area. Local farmers can help create the menu for a cafe or restaurant. Local designers could be involved with the architecture or interior design to incorporate the history of the site. There is already a strong historical preservation sentiment present on campus given the renovation and relocation of the new Portlock Black Cultural Center. and in the city, given the Silk Mill.

Easton possesses a rich history and is attractively located at the confluence of the Delaware and Lehigh Rivers. Its architectural fabric and historic sites are an asset for tourism. According to Easton's Comprehensive plan, the local population is set to grow to a peak of 35,000. Given the benefits of adaptive reuse in sustainable development, the city would greatly benefit from the redevelopment of the Rinek Rope. With the local government looking to boost the economy and put Easton on the map as an ideal place to live, work and do business - the adaptive reuse project of the Rinek Hotel could help them do just that. The benefits of adaptive reuse include decreased carbon emissions, preservation of community heritage and revitalization of the local economy. The city is aware of the benefits, as they have recently completed the redevelopment of the Silk Mill. Private-Public Partnership would be key in bringing The Rinek and Cordage Cafe to life. The City of Easton would need to provide incentives to attract investors to the community. Through these partnerships, The Rinek Hotel and Lafayette College could be the catalyst for the revitalization of Easton.

Economic Analysis

The College recently received a one million dollar grant from the Redevelopment Assistance Capital Program (RACP), a Pennsylvania Commonwealth grant program, to assist with funding the renovation of the factory [43]. The program is administered by the Office of the Budget for the acquisition and construction of regional economic, cultural, civic, recreational, and historical improvement projects [44]. The grant is a 100% match, therefore the total budget for the project is two million dollars [1]. Lafayette will secure one million equity funding from their capital accounts, according to Vice President of Finance and Administration and Treasurer, Roger Demareski [45].

The first step in analysing the cost of the overall project is to assess the current building structure. In 2018, The Harman Group, a engineering and construction services company, completed and released a reuse feasibility study which determined possible reuses of these buildings and approximated a rough remediation scheme. The group found that it would cost roughly $176,000 to get the Rope Factory (Building A) and the Rinek Cordage Company building (Building B) back to a good working state, prior to modification and reuse. These estimates were based on observations of exposed views of structural elements. Further and deeper analysis of the structure and materials would be necessary to attain a more accurate cost estimate for the repair of the building.

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[43] https://today.lafayette.edu/2021/02/15/1-million-grant-will-support-lafayettes-renovation-of-rinek-cordage-co-complex/

[44] https://www.budget.pa.gov/Programs/RACP/Pages/Main%20Page.aspx

[45] https://lafayettestudentnews.com/106408/news/lafayette-to-use-1-million-dollar-grant-to-restore-the-historic-rinek-cordage-company-complex/

Given our intention to transform the current site into a hotel and a cafe, our economic analysis will be more geared towards hotel construction and development. There are five key phases to Hotel Development [46]:

- **Conceptual/Planning**

This is the very beginning of the entire process. Here, developers identify the scope, budget and timeline of the project. These will be very rough estimates and are subject to change as more information and details are discovered. Developers also gather their team, determine project objectives and strategize building ownership as well as the financial, developmental and operational structure of the hotel. This where developers consider brands to manage and operate the hotel. This process creates the foundation of the construction process.

- **Feasibility**

Here, the scope, budget and schedule of the project are refined and highly-detailed. The economic, environmental, physical, market and financial feasibility of the project are also analysed. During this phase, many designs of the hotel are created by architects. Out of these designs, the one that best balances financial feasibility and overall quality of the space is chosen. This design forms the basis cost estimates, cash flows and financial documents such as a pro forma. This helps investors evaluate a property's expenses, revenues and potential profit.

- **Procurement**

During procurement, manby aspects of the planning and feasibility phases are finalized. The equity vs debt ratio is decided. This essentially determines how much of their own capital the owners invest and how much money will come in the form of a loan. Financing is secured and the brand which will operate the hotel is chosen. Architect, design, construction contractor,

[46] https://daegroupllc.com/the-hotel-development-process/

owner's representative and construction team are selected. This procurement concludes the preconstruction phase.

- **Construction**

This is when the actual construction occurs. The construction team prepares the site, purchases materials and takes the design from paper and into physical reality. In the case of adaptive reuse, much of the construction will be focused on retrofitting the existing structure to increase safety, durability and match the new purpose of the building. This involves structural analysis calculating and determining the effects of loads and internal forces on a structure. Here, architectural and design teams are responsible for maintaining the overall atmosphere and heritage of the Rinek Rope Factory. This can be done by recycling and repurposing existing materials and factory equipment so that the legacy of the Rinek Family and Easton and the are at the core of the building's design. The rope factory inspired design and architecture is key to the hotel's success. Furthermore, the team is also tasked with completing quality reviews and ensuring that the budget, schedule and scope are adhered to as best as possible. This stage is concluded with the receipt of occupancy permits and approvals.

- **Operational/Asset Management**

In this phase, hotel operations and staffing begin. The hotel management team ensures the front office, housekeeping, food and beverage, and maintenance departments perform their roles amply to deliver a great guest experience and meet revenue and occupancy goals [47]. This is a critical part of the development process as it determines the long term success of the project.

The first three phases fall under the preconstruction category, the fourth is the actual construction and the final is post construction. During the preconstruction phase the costs are driven by hiring professionals with expertise in real estate development, project management,

[47] https://hoteltechreport.com/news/hotel-operations

financial planning and hotel management. The costs in the construction phase are driven by purchasing materials, hiring the physical labour, a general contractor, tools, machinery, equipment and professionals to oversee the construction as well as fees to obtain building permits and approvals. The material costs are especially volatile as they are subject to market conditions. Global supply chain issues caused by the Covid-19 pandemic cause materials like lumber and steel to experience significant increase in prices which seriously impact construction budgets and schedules [48]. Finally, the costs of the last step, asset management, is driven by hiring individuals to manage the property which includes operations, sales and marketing, and maintenance.

Now that a clear understanding of the general development process and cost drivers have been established, we would like to take a more detailed look at what the development of both The Rinek and the Cordage Cafe would cost. We decided to complete a cost-comparison analysis to get actual cost estimates and determine whether this idea would be financially feasible. While no two adaptive reuse projects are the same and each building has unique characteristics and challenges which will lead to varying costs, we believe a comparable cost estimate would achieve a closer economic assessment of what it would take to turn The Rinek into reality. The Foundation Hotel is similar in size and scope to The Rinek, and as such we decided to use it as a comparator to complete a cost comparison. Additionally, the calculations that follow combine the costs of the hotel and cafe.

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[48] https://www.businessinsurance.com/article/20211101/NEWS06/912345470/Supply-chain-problems-plague-construction-firms

Cost Comparison:

According to CRS Data, The entire Rinek lot is approximately 72,745 square feet (1.67 acres) in area and located at 991 Bushkill Drive in Easton. With the help of Professor Almeida, visiting Assistant Professor and professional Architect, we were able to create a sketch of The Rinek. The proposed design is a three story building with approximately 90 rooms. As for the Detroit Foundation Hotel, it is 95,000 square feet in area 5 floor high with 100 rooms. The redevelopment cost for transforming it from a fire station to a hotel was $28 million. Construction costs were totalled $20.5 million which surpassed their $19 million budget [49] . The hotel also features a restaurant and bar, a meeting room, boardroom and an event space on the fifth floor. It should be noted that the original fire station was too small to accommodate the number of hotel rooms that would make the project financially feasible and as such they had to purchase the four-story building next door and join the two buildings. This presented structural challenges and increased the cost of construction. Furthermore, the entire Foundation Hotel building is 95,000 square feet. Meanwhile, the entire Rinek Rope parcel of land is 72,745 square feet and the main factory building is roughly 18,000 square feet in area. The main factory would have to be extended horizontally, as shown in the sketch, so as to improve the financial feasibility of the project. We would dedicate 9,745 square feet to accommodate the Easton Emergency Squad, which would leave us with 63,000 for The Rinek and Cordage Cafe.

[49] https://www.architecturalrecord.com/articles/13279-detroit-foundation-hotel-by-mcintosh-poris-associates

Hotel Comparison	The Foundation Hotel	The Rinek + Cordage Cafe
Rooms	100	90
Square Feet	95,000	63,000
Floors	5	3

Metrics	Cost/Unit	Overall Cost
Per Room	$280,000.00	$28,000,000.00
Per Area	$294.74	$18,568,421.05
Per Floor	$5,600,000.00	$16,800,000.00

Average Estimated Cost: $20,189,473.68

Using the average of the cost per room, cost per square foot and cost per floor and the assumption that Rinek will require similar work per each unit, it is estimated that the cost of the project will be around $20.2 million. With the 10% tax incentive from the historic habilitation tax credit, the cost would decrease to roughly $18.2 million. This certainly supersedes the original $2 million dollar redevelopment budget, however this building will be income generating and this could justify investing the project.

The boutique hotel market has grown into a $12.4 billion market in the United States as of 2019 [50]. While the revenue per available room (RevPAR) for these types of hotels are lower in the short-term for these hotels, they boast increased returns in the long term.

[50] https://www.ibisworld.com/industry-statistics/market-size/boutique-hotels-united-states/

Revenue Metrics	
RevPAC	$100
Average Occupancy	70%
Rooms	90
Days per Year	365
Gross Revenue	**$2,299,500.00**

Using a average RevPAR of $100, which is roughly $14 above the average RevPAR in the United States from 2018 which is 85.96 [51] and average occupancy of 70% , which is 4% higher than the national average, [52] the hotel would generate revenue $2,299,500.00 per year from rooms. We used more optimistic RevPAR and occupancy rates for two main reasons. The first was to account for our positive/bullish outlook on the performance of the hotel given the success of hotels on other college campuses. The second reason was to account for the additional revenue that would be generated by the cafe which will be a singular entity as well as other sources including revenue from food and beverage services, events and gift shops.

Expenses		
Gross Revenue		$2,299,500.00
Operating Expenses	40%	$919,800.00
NOI		$1,379,700.00

Normally, a mortgage is a property's biggest cost. However, since Lafayette owns it, that cost would be eliminated. Other expenses include insurance, taxes, capital expenditures, utility, staff salaries, labor, food and beverage inventory, marketing and technology services such as hotel management software fees. Luxury hotels typically have operating expenses account for

[51] https://www.statista.com/statistics/200161/us-annual-accomodation-and-lodging-occupancy-rate/
[52] https://www.statista.com/statistics/200168/us-lodgings-average-revenue-per-available-room-outlook/

44% of their revenue [53]. Using an operating expense rate of 40, the estimated net operating income for Rinek Hotel would be $919,800.00. This would result in a Net Operating Income of $1,379,700.00 annually.

Payback Analysis	
Initial Investment	$18,170,526.32
NOI	$1,379,700.00
Simple Payback	13.17

Given the initial investment of $18.2 million and yearly cash flows of $1.4 million the simple payback period is 13 years. This means that it will take 13 years for the hotel to recover its initial investment. While this period might be long in the eyes of an average investor, Lafayette is an institution that has been around for 195 years and plans to be around for another 195 years. Therefore, this payback period is feasible for the college and could be made even more attractive by the inclusion of alumni donations, tax incentives and additional local development grants.

53 https://www.cbre.us/cbre%20hotels/research/articles/luxury-hotels-elevated-occupancy-and-expenses#:~:text=Operated%20department%20expenses%20average%2044.0,the%20overall%20Trends%C2%AE%20sample

Technical Analysis

The adaptive reuse of Rinek Rope can largely be broken down into two categories, the restoration, and the ongoing use. The first step of the redevelopment of the Rinek Rope complex is a full restoration, which must take place as the complex is currently not up to code. In the restoration of the site, materials will have to be sourced that are similar to the ones already in use there to preserve the industrial heritage of the site. The buildings must be restored to satisfy all of the building codes, and be able to pass a safety inspection, which they are not able to do in any way right now. However, before restoration even begins steps need to be taken to ensure the area is safe for inhabitation. This site has been an industrialized area for over a hundred years, which could lead to things such as heavy metals contaminating the soil, rendering it a hazardous area.[54]

When it comes to the actual restoration and repair of the Rinek Rope complex, a structural integrity survey of the site has already been done. In early January of 2018, Lafayette commissioned the Harman Group of Structural Engineers to perform a study on the current state of the complex. The Harman group started their study on building B, which is the roofless structure towards the rear of the site. They determined that the structure previously supported a monosloped roof,[55] however this is no longer present on the site. However, besides the lack of a roof, the Harman group was able to determine that the foundation slab of building B was indeed in good condition. The brick-and-mortar work was slightly more complicated, with the entire structure being built of lower strength "common" brick, the condition of which has deteriorated since it was laid.[56]

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[54] Chen, Y.X., J.Y. Shi, W.D. Zhang, Q. Lin, and G.M. Tian. "EDTA and Industrial Waste Water Improving the Bioavailability of Different Cu Forms in Contaminated Soil." *Plant and Soil* 261, no. 1/2 (2004): 117–25. http://www.jstor.org/stable/24124287.
[55] Structural Reuse Feasibility Study - Rinek Cordage Company Building Reuse (The Harman Group Structural Engineers, January 3, 2018).
[56] Ibid.

The Harman Group's study of the site then goes over the condition of building A, the factory building. After stating the nature of its construction, that being cast iron and timber with a brick exterior, the report goes into detail on the condition and ratings of each of the different components. The cast iron columns are able to support 15ksi, with the timber elements being able to support 975psi. The brick work of the factory building is also in much better shape than that of building B, with little to no damage to either the brick or mortar. The only other thing of note about the condition of the interior of the building in the report was that some of the lintels were in poor condition, as well as all of the framing on the 3rd floor being exposed. The exterior of the factory building is in much worse condition than the interior, with sections showing significant weathering. Over half of the lintels visible from the outside have begun to show significant signs of rot, and need to be replaced. Finally, nearly all of the windows themselves are damaged or outright broken.[57]

The feasibility study done by the Harman group also goes on to propose suggested uses for each of the structures, as well as a baseline for how much simply repairing them would cost. The Harman group recommends a new roof and exterior brick repair for Building B, which is estimated to have a repair cost of $50,000. The use of this building will not be limited to anything in particular after this is done, as the foundation slab is still in good condition. As for building A, the Harman Group recommends limiting the use of this structure to purely residential usage, as the floor can currently only support 60 psf. They also go on to state that the cost for repairs of this building will top out at $126,000.[58]

[57] Ibid.
[58] Ibid.


Pictured: Current images from the inside of Rinek Rope, building A.

Through the restoration process, Lafayette has stated that one of their priorities in future developments is sustainability. The current standard for sustainability certification is the LEED system, standing for Leadership in Energy and Environmental Design. The LEED system is split up into two categories, overarching criteria, and regional priorities. Key points in the regional priorities for Easton PA include water use reduction, access to quality public transportation, and high priority site and equitable development.[59] The meaning of the high quality site priority is the development and enrichment of neighborhoods, which is one of the driving goals of this redevelopment project. Ideally, the Rinek Rope could follow in the footsteps of the RISC and become LEED Platinum certified, which is the highest attainable level of certification. However, due to the nature of this redevelopment, being the use of adaptive reuse, as well as budget

[59]https://www.usgbc.org/credits/new-construction-schools-new-construction-retail-new-construction-healthcare-data-centers--9.

constraints, this could prove more difficult. To have a building under the hospitality category qualify for LEED certification, a unique list of criteria must be met.

This could prove incredibly difficult with the Rinek Rope complex, as part of this criteria is based on the exterior of the building, such as wall to window ratio which in large part cannot be changed.[60] However, for the two smaller buildings on the site changes can and will be made. As the restoration progresses, modifications will have to be made to alter the buildings to suit their new purposes, such as removing the garage doors from the middle building and replacing them with windows. This will allow for a space that has the potential to become an indoor/outdoor combo space, allowing for more sustainable use during this time of pandemic.

In addition to keeping sustainability in mind, each building will have to be uniquely modified to suit its new purpose. As of the present moment, the floor plans of each building are wholly unsuited for their new purposes. As such, the current interiors will need to be ripped out and replaced with new floor plans which support the updated uses of the buildings. The main building of the complex will also undoubtedly need significant work done in terms of insulation, as this will become the hotel part of the complex. In terms of the two smaller buildings on the complex, they will need to have each of their garage bays doors modified separately. The building in the middle, slated to be a café, will need these doors removed in favor of windows, while the long single-story building will need these to be converted into functional garage doors to house ambulances for Easton Emergency Services.

[60] https://www.usgbc.org/resources/leed-v4-building-design-and-construction-current-version.

To get an accurate understanding of what the timeline for the restoration of the Rinek Rope complex would look like, the best comparison is the Simon Silk Mill, also in Easton, PA. The Simon Silk Mill was a silk manufacturing plant that operated up until the 1960's, when the pressure of overseas manufacturing became too much. The site was left unused until it began the process of redevelopment in 2003. A definitive proposal and action for redevelopment was not achieved until 2013, with the actual remediation and restoration time taking 4 years. A similar number can be approximated for the restoration of Rinek Rope, with the small caveat that the Silk Mill had the additional challenge of toxic waste removal.[61]

After the restoration itself of the Rinek Rope complex is complete, its use has to be catered towards both the people of Easton and the Lafayette community. Connecting the Rinek Rope complex to the arts trail is the easiest and most efficient way to accomplish the full integration of both of these communities. However, there are issues that must be overcome when considering this option. The Rinek Rope complex sits across the Bushkill Creek from the arts trail, with the closest pedestrian bridge featured as part of the trail located over half a mile away at the silk mill. Ideally, a bridge such as this could be constructed directly across the Bushkill Creek from the Rinek Rope Complex, however this is budget dependent. The Silk Mill bridge cost $375,000 to build[62], severely limiting the $2 million budget Lafayette College has set aside for this project. Another solution is the restoration of a preexisting rail bridge across the Bushkill, and an extension of the art trail or a sidewalk on the other side of the creek. This would potentially be less expensive than the construction of a completely new bridge, but does also leave a less than desirable distance to walk between the bridge and site. A final solution is the

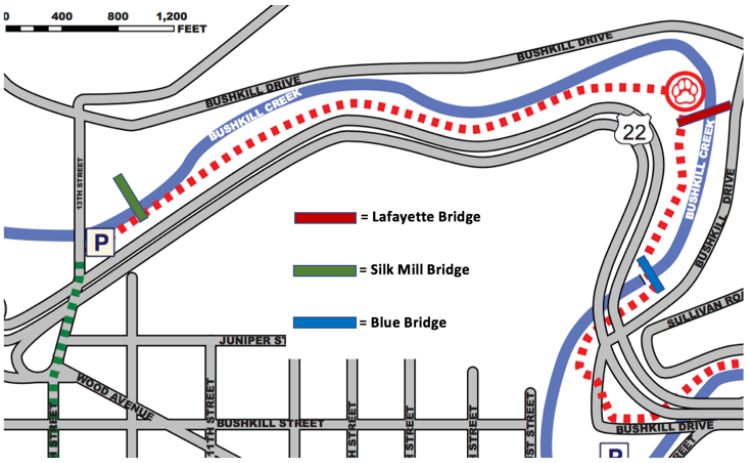
[61] https://www.lehighvalleylive.com/easton/2017/02/the_rise_fall_and_rebirth_of_e.html.
[62]https://www.mcall.com/news/local/easton/mc-nws-easton-karl-stirner-update-20191219-wpit2f36ivbwjnpdtxcq7zghfa-story.html.

extension of the trail in the form of the sidewalk from the silk mill to Rinek Rope. However, this is the least appealing of all the potential solutions, but is the most budget friendly. The connection of the restored Rinek Rope to the arts trail would function to extend the duration of people's visits to the arts trail, by giving them a place to spend time and eat a meal, as well as a nice indoor and outdoor space.

Conclusion

Although the current plans for the Rinek Rope complex would be useful for Lafayette College, the unique location and history of the building gives potential for a place of connection. The Rinek could aid in developing the northern Easton area on Bushkill Drive. The opportunity of the space being beneficial to both the Lafayette and Easton communities should be grabbed. The development of the Rinek Rope building into a connecting space would allow the area to flourish with more businesses and tourism. Our proposal to convert the Rinek Rope building into a hotel would fulfill the goals of developing the area.

In the future, the Karl Stirner Arts Trail could be expanded around the area. The way this could be done is by repurposing an existing bridge that connects the Arts Trail to Bushkill Drive. By using a previous Capstone Seminar project from 2017 focusing on this exact idea, a more clear picture of this project can be visualized.



Pictured: Map of Bushkill area. Proposed bridge to connect the Arts Trail with Bushkill Drive.

The implementation of a bridge would be another way for the area to develop. Also, developing the area could eventually connect it to the Silk Mill, a repurposed factory which is

now a place to eat, shop, and exercise. Since the Arts Trail connects to the Silk Mill already, connecting the location around the hotel would be a great way for Bushkill Drive and Lafayette to connect to the Silk Mill and Easton.[63]

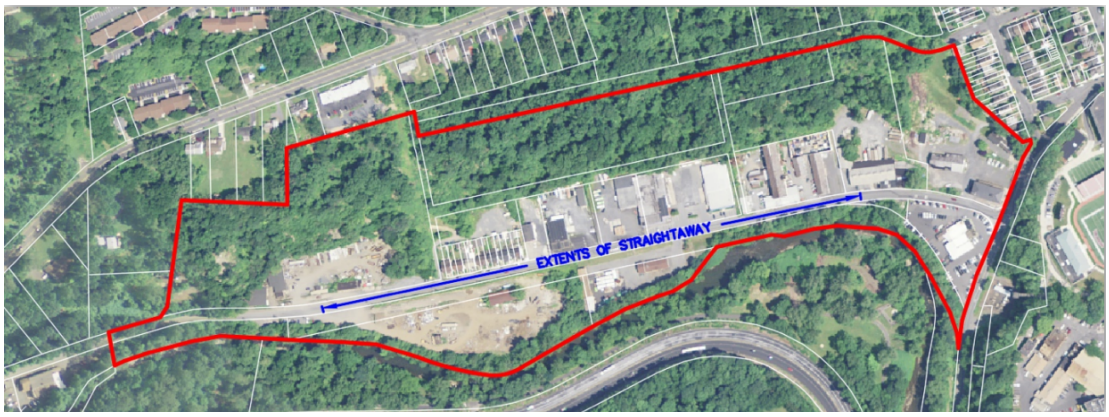
Another thing that could be researched more is how Lafayette students and faculty and members of the Easton community could be involved in the design and construction of the building. Would civil engineers be involved in the project as a way for them to get a hands-on learning experience? Or could art majors incorporate creative ideas on how to showcase the historical aesthetic of the building, as well as how to connect it to the arts trail?

One of the case studies analyzing adaptive reuse was the Foundational Hotel in Detroit, Michigan. They used many local companies and freelance artists to aid them in bringing the hotel to life. Researching local companies and artists around Easton would be a great way to get the community involved. The Lafayette and Easton communities collaborating on the project itself will signify how the hotel will bring the communities together post-construction, too.

The Tech Clinic report from 2017 that re-envisions the Bushkill Corridor details ideas for the future of Easton north of the Bushkill Creek. They call for underutilized space along Bushkill Drive to be used for community leisure space. Parks, hiking trails, and outdoor attractions should be implemented in the area. They also propose a project similar to the Easton Silk Mill called The Rope Walk, a stretch of businesses inspired by the history of the Rinek Rope complex. Another proposal they bring up is changing the layout of the Bushkill Corridor to make it safer. Bushkill Drive currently is a straightaway that encourages speeding. This discourages pedestrians from using the area. If a bridge is made to connect the Rinek to the Karl Stirner Arts

[63] https://sites.lafayette.edu/egrs451-fa17/ksat-footbridge-1/

Trail, the area and road will need to be changed for the safety of walking pedestrians. Better sidewalks will need to be put in place, as well as better signage for both drivers and pedestrians.[64]



Pictured: Bushkill Drive as a straightaway encourages speeding and creates an unsafe walking environment.

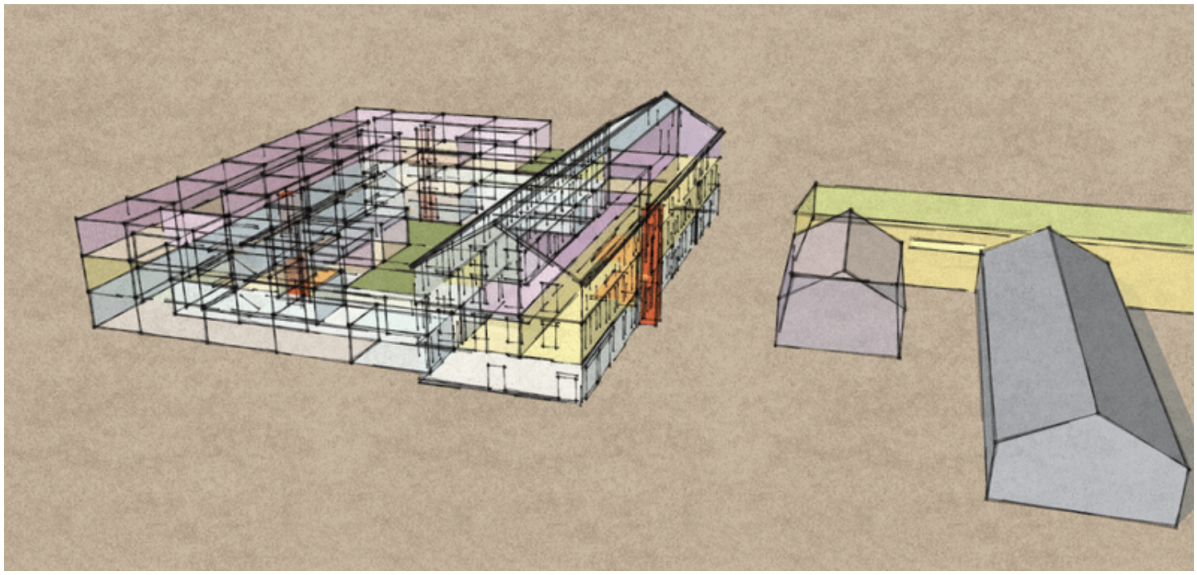
There are many contexts that this project can fit into. The social context is important to understand because it shows us the historical value of repurposing the building and why a hotel would be beneficial to both communities. The economic context is necessary to form a feasible budget to renovate the building while accommodating its intended use and maintaining its history. The technical context is critical to outline the current state of the building and the specific steps that need to be taken in order to satisfy building regulations and complete the project. A major part of the proposal is centered around the social, economic, and technical contexts by implementing adaptive reuse.

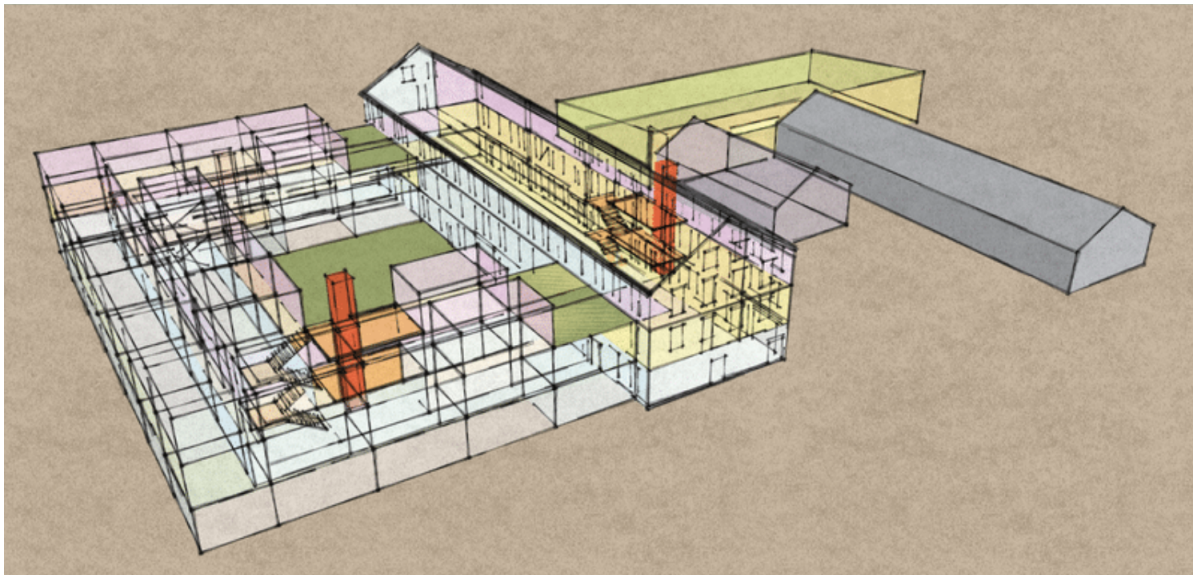
[64]https://techclinic.lafayette.edu/2017/01/25/re-envisioning-a-future-for-the-bushkill-drive-corridor/

Through evaluating these contexts, a proposal for the Rinek Rope building was made to convert the complex into a hotel, a café, a venue space, and a multipurpose space for Lafayette College and Easton Emergency Services. We hope that our proposal has fully expressed our passion and belief in this idea.

Site Sketches

In order for the hotel to reach our 90-room goal, an expansion would have to be done to the current factory building. We owe a special thanks to Professor Nara Almeida for creating these 3D sketches with us to aid in the economic analysis and visualization of how the hotel could look.





Link to Animation Video: [Animation Video]

Bibliography

Adapt + Reuse. (2020, May 18). *Detroit's Fire Department Building Evolved Into Foundation Hotel*. Adapt + Reuse. Retrieved December 24, 2021, from http://adaptandreuse.com/detroits-fire-department-headquarters-and-an-adjacent-building-evolved-into-foundation-hotel/

Blood, Francesca, et. al. *Re-Envisioning A Future for the Bushkill Corridor.* (2017, December 8). Lafayette College Technology Clinic. Retrieved from https://techclinic.lafayette.edu/2017/01/25/re-envisioning-a-future-for-the-bushkill-drive-corridor/

Building sector emissions hit record high, but low-carbon pandemic recovery can help transform sector – UN report. (2020, December 16). UNEP. Retrieved December 23, 2021, from https://www.unep.org/news-and-stories/press-release/building-sector-emissions-hit-record-high-low-carbon-pandemic

Burkhardt, F. D. (2017, May 5). *Embracing Adaptive Reuse for Corporate Real Estate*. Trade and Industry Development. Retrieved December 24, 2021, from https://www.tradeandindustrydev.com/industry/embracing-adaptive-reuse-corporate-real-estate-12810

Business Wire. (2014, December 11). *Pebblebrook Hotel Trust Acquires Union Station Hotel in Nashville, Tennessee*. Retrieved December 24, 2021, from https://www.businesswire.com/news/home/20141211005539/en/Pebblebrook-Hotel-Trust-Acquires-Union-Station-Hotel

Carlino, N. (2020, March 9). *Market study lessons learned when considering college towns*. Hotel Business. Retrieved from https://www.hotelbusiness.com/market-study-lessons-learned-when-considering-college-towns/

Chen, Y.X., J.Y. Shi, W.D. Zhang, Q. Lin, and G.M. Tian. "EDTA and Industrial Waste Water Improving the Bioavailability of Different Cu Forms in Contaminated Soil." *Plant and Soil* 261, no. 1/2 (2004): 117–25. http://www.jstor.org/stable/24124287.

Ciuntu, A., & Sarac, F. (2020, September 30). *Yesterday's Factories, Today's Apartments: Adaptive Reuse Projects at All-Time High in the U.S.* Rent Cafe. Retrieved December 23, 2021, from https://www.rentcafe.com/blog/apartmentliving/yesterdays-factories-todays-apartments-70-years-of-building-conversions-in-the-u-s/

Cohen, Steven, et. al. Analyzing the Feasibility of a New Footbridge at Karl Stirner Arts Trail https://sites.lafayette.edu/egrs451-fa17/ksat-footbridge-1/

Cohn, J. (n.d.). *Federal Historic Tax Credit Aids Adaptive Reuse Developers*. CCIM Institute. Retrieved December 24, 2021, from https://www.ccim.com/cire-magazine/articles/federal-historic-tax-credit-aids-adaptive-reuse-developers/

Collaborators: Detroit Foundation Hotel: Downtown Detroit Hotel. Detroit Foundation Hotel. (2017, August 25). Retrieved December 24, 2021, from https://detroitfoundationhotel.com/collaborators/

Conlin, J. (2018, March 11). *Detroit Foundation Hotel by McIntosh Poris Associates*. Architectural Record. Retrieved December 24, 2021, from https://www.architecturalrecord.com/articles/13279-detroit-foundation-hotel-by-mcintosh-poris-associates

Detroit Foundation Hotel. Architect. (2019, August 22). Retrieved December 24, 2021, from https://www.architectmagazine.com/project-gallery/detroit-foundation-hotel

$1 million grant will support renovation of Rinek Cordage Co. complex - Lafayette Today. (2021, February 15). Lafayette Today. Retrieved December 23, 2021, from https://today.lafayette.edu/2021/02/15/1-million-grant-will-support-lafayettes-renovation-of-rinek-cordage-co-complex/

Ezra, D. A. (2020, October 8). *Hotel Development Process Explained*. DAE Group. Retrieved December 24, 2021, from https://daegroupllc.com/the-hotel-development-process/

Fox, J. T. (2018, May 13). *Why hotels in university towns are recession-proof*. Hotel Management. Retrieved from https://www.hotelmanagement.net/development/what-makes-university-town-hotels-recession-proof

Gorce, T. L. (2016, November 21). *New feature of the College Tour: First-class campus hotels*. The New York Times. Retrieved from https://www.nytimes.com/2016/11/21/business/new-feature-of-the-college-tour-first-class-campus-hotels.html

Heller, W. J. (1920). *History of Northampton County, Pennsylvania, and the Grand Valley of the Lehigh*. American Historical Society.

"High Priority Site and Equitable Development." U.S. Green Building Council. LEED Regional Priorities v4.1, n.d. https://www.usgbc.org/credits/new-construction-schools-new-construction-retail-new-construction-healthcare-data-centers--9.

Historic Savannah Foundation, Inc. (2015). Historic Preservation in the Economy and Life of Savannah and Catham County. *Beyond Tourism*. https://www.myhsf.org/wp-content/uploads/2019/07/HSF-Beyond-Tourism-Report-2015-FINAL_optimized.pdf

Hotel Emma. (n.d.). *Emma Koehler's Story | Hotel Emma History*. Retrieved December 24, 2021, from https://www.thehotelemma.com/overview/emmas-story/

Hotels, dining, & shopping. Campus Life Hotels Dining Shopping Comments. (n.d.). Retrieved from https://campuslife.lafayette.edu/about-easton/hotels-dining-shopping/

Jasinski, L. E. (n.d.). *TSHA | Pearl Brewing Company*. Texas State Historical Association. Retrieved December 24, 2021, from https://www.tshaonline.org/handbook/entries/pearl-brewing-company

Kelso, S. (2012, December 8). *For Pearl Brewing Company, a Second Life*. The New York Times. Retrieved December 24, 2021, from https://www.nytimes.com/2012/12/09/us/for-pearl-brewing-company-a-second-life.html

Lagodich, L. (2021, February 26). *Lafayette to use $1 million dollar grant to restore the historic Rinek Cordage Company complex*. The Lafayette. Retrieved December 24, 2021, from https://lafayettestudentnews.com/106408/news/lafayette-to-use-1-million-dollar-grant-to-restore-the-historic-rinek-cordage-company-complex/

LEED v4 for building design and construction - current version. U.S. Green Building Council. (2019, July 25). Retrieved from https://www.usgbc.org/resources/leed-v4-building-design-and-construction-current-version.

Lerner, M. (2021, November 1). *Supply chain problems plague construction firms*. Business Insurance. Retrieved December 24, 2021, from https://www.businessinsurance.com/article/20211101/NEWS06/912345470/Supply-chain-problems-plague-construction-firms

Mandelbaum, R. (2019, December 16). *Luxury Hotels: Elevated Occupancy and Expenses*. CBRE. Retrieved December 24, 2021, from https://www.cbre.us/cbre%20hotels/research/articles/luxury-hotels-elevated-occupancy-and-expenses

McIntosh Poris Associates. (n.d.). *Boutique Hotels in the US - Market Size*. IBISWorld. Retrieved December 24, 2021, from https://www.ibisworld.com/industry-statistics/market-size/boutique-hotels-united-states/

Miller, Rudy. “The Rise, Fall and Rebirth of Easton's Silk Mill (Timeline).” lehighvalleylive. Lehigh Valley Live, February 19, 2017. https://www.lehighvalleylive.com/easton/2017/02/the_rise_fall_and_rebirth_of_e.html.

Morris, C. (2021, July 20). *Nashville Yards, AEG announce entertainment district, concert venue*. WSMV. Retrieved December 24, 2021, from https://www.wsmv.com/news/davidson_county/nashville-yards-aeg-announce-entertainment-district-concert-venue/article_2bbe1de0-e9aa-11eb-ad8d-df4b301c5f03.html

Nashville Post. (2020, June 11). *Nashville Yards developer to buy Union Station Hotel*. https://www.nashvillepost.com/nashville-yards-developer-to-buy-union-station-hotel/article_61ccd664-e078-519f-a582-23d0db0f822a.html

1 Recycling America: Adaptive Reuse in the 21st Century Why Adaptive Reuse? Though the community economic development (CED) move. (n.d.). Duke Law School. Retrieved December 23, 2021, from https://law.duke.edu/sites/default/files/clinics/cec/cote.pdf

Osmani, M. (2011). *Construction Waste*. Retrieved 12 22, 2021, from https://www.sciencedirect.com/topics/earth-and-planetary-sciences/construction-waste

Pennsylvania Office of the Budget. (n.d.). *RACP*. Budget.PA.gov. Retrieved December 24, 2021, from https://www.budget.pa.gov/Programs/RACP/Pages/Main%20Page.aspx

Rafferty, J. P. (2021, November 17). *urban sprawl | Definition, Examples, Problems, Causes, & Alternatives*. Britannica. Retrieved December 24, 2021, from https://www.britannica.com/topic/urban-sprawl

Rinek Cordage Co. (1936). *The Romance of Rope*.

The Role of Urbanization in the Global Carbon Cycle. (2016, January 11). Frontiers. Retrieved December 24, 2021, from https://www.frontiersin.org/articles/10.3389/fevo.2015.00144/full

Sahabi, A. (2019, August 20). *Financial Benefits of Adaptive Reuse*. Optimum Seismic. Retrieved December 24, 2021, from https://www.optimumseismic.com/adaptive-reuse/prosperity-through-preservation-the-financial-benefits-of-adaptive-reuse-construction/

Sanchez, B., Esfahani, M., & Haas, C. (2019, June 14). A methodology to analyze the net environmental impacts and building's cost performance of an adaptive reuse project: a case study of the Waterloo County Courthouse renovations. https://link.springer.com/article/10.1007/s10669-019-09734-2

Smart Growth and Climate Change | US EPA. (2021, April 8). US Environmental Protection Agency. Retrieved December 24, 2021, from https://www.epa.gov/smartgrowth/smart-growth-and-climate-change

Statista. (2021, March 29). • *RevPAR of the US hotel industry 2020*. Statista. Retrieved December 24, 2021, from https://www.statista.com/statistics/200168/us-lodgings-average-revenue-per-available-room-outlook/

Statista. (2021, March 29). • *US: hotel occupancy rates 2001-2018*. Statista. Retrieved December 24, 2021, from https://www.statista.com/statistics/200161/us-annual-accomodation-and-lodging-occupancy-rate/

Structural Reuse Feasibility Study - Rinek Cordage Company Building Reuse (The Harman Group Structural Engineers, January 3, 2018).

Study finds hotels beneficial to local communities – lodging. (2018, October 5). LODGING Magazine. Retrieved from https://lodgingmagazine.com/study-finds-hotels-beneficial-to-local-communities/

Sustainability. Sustainability Comments. (n.d.). Retrieved from https://sustainability.lafayette.edu/

Tatu, Christina. "Workers Install 26-Ton Bridge Connecting Easton's Simon Silk Mill and Karl Stirner Arts Trail." mcall.com. The Morning Call, December 20, 2019. https://www.mcall.com/news/local/easton/mc-nws-easton-karl-stirner-update-20191219-wpit2f36ivbwjnpdtxcq7zghfa-story.html.

The Tennessean. (2021, May 20). *Nashville's Union Station Hotel undergoes restoration, cleaning*. Retrieved December 24, 2021, from https://www.tennessean.com/story/money/2021/05/20/nashville-union-station-hotel-undergoes-restoration-cleaning/5188340001/

The Ultimate Guide to Hotel Operations (2022). (2021, December 7). Hotel Tech Report. Retrieved December 24, 2021, from https://hoteltechreport.com/news/hotel-operations

Turkel, S. (n.d.). *The Union Station Nashville Yaards*. https://www.historichotels.org/us/hotels-resorts/union-station-hotel/history.php

Union Station, Nashville, circa 1920. (n.d.). Nashville Public Library Digital Collections. Retrieved December 24, 2021, from https://digital.library.nashville.org/digital/collection/nr/id/766/