

ARCH 384: LIVE-MAKE COMPETITION ESSAY

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When presented with a new design project, one of the first steps is to start thinking about previous projects that have accomplished similar goals. Whether this thought process is manifested externally – taking out books from the library, researching online, etc. – or whether it is more internal – thinking about buildings you have visited or have previously seen in class or in journals – the underlying intention is that these precedents help initiate the design process. For the design of an Industrial Arts Center in the Over-the-Rhine district of Cincinnati, Ohio, the goals we wanted to accomplish quickly became clear under the project description for the Live-Make Competition, and the types of precedents we researched fell under the key themes within this description. The primary objectives were the adaptive re-use of an old industrial building, the incorporation of sustainable strategies and natural elements, and the embracing of modern technologies in a re-emerging neighbourhood. These themes form the basis of design for the facility that we have called the ‘Brewery District Arts Center’.

RE-USE OF AN OLD INDUSTRIAL BUILDING

*“Preservation, Renovation, Demolition: Over-the-Rhine’s architecture is cherished for its history, but what is the future of the district’s history regarding architecture built today? Entrants should carefully choose how to engage a historical neighborhood and the existing building while embracing a new architectural language.”*¹

This theme led us to our primary set of precedents, which were the various re-uses of old industrial buildings; more specifically, the re-uses of brick industrial buildings from the early 1900s, as the existing building on the site also fit this condition.²

The new offices for the Botín Foundation by MVN Arquitectos in Madrid, Spain is an example of re-use that focuses on material choice and increasing the amount of light entering the building. The project exists within a



Figure 1: Combination of new and old materials (Botin Foundation).³

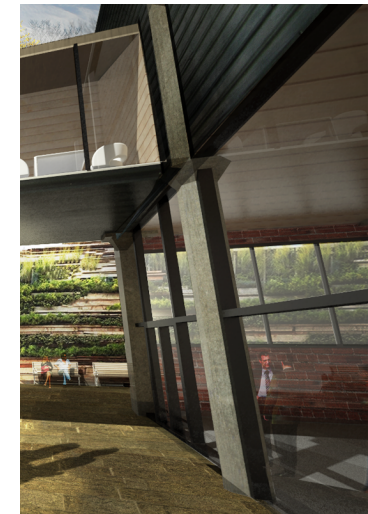


Figure 2: Combination of new and old materials (BDAC).

¹ "Project Introduction." [LIVE·MAKE Industrial Arts Center Cincinnati](http://iaccincinnati.com/#c8f). <http://iaccincinnati.com/#c8f>

² "Project Details." [LIVE·MAKE Industrial Arts Center Cincinnati](http://iaccincinnati.com/#952). <http://iaccincinnati.com/#952>

³ "New offices of the Botín Foundation / MVN Arquitectos." [ArchDaily](http://www.archdaily.com/284283/new-offices-of-the-botin-foundation-mvn-arquitectos/). <http://www.archdaily.com/284283/new-offices-of-the-botin-foundation-mvn-arquitectos/>

1920s brick industrial building and “aims to reveal the historical changes of the building by exposing the original steel and brickwork; the various alterations in the past; and by contrast, the new construction work whose finishes are mainly oak, steel and glass.”¹ With the Brewery District Arts Center (BDAC) we took a similar approach, revealing the original brickwork when possible and maintaining the original concrete columns within the building, while also integrating newer materials such as perforated metal panels, dark steel columns and exterior cladding, light wood panel ceilings, and glass (see Figures 1 and 2). The combination of materials points towards a new future while also maintaining the ties to the past life of the building. Increasing the amount of natural light became a primary concern for us, since users of the building could be working long hours in the workshops and access to natural light would provide a more desired working environment. Opening up the infilled windows, as in many other re-use projects, became an obvious choice, but getting light to the spaces on the north side of the building, where there is less access to the sun, required more thought. We drew inspiration from the angled projection on the skylight in the Botín Foundation building, but altered it to serve a more functional purpose, whereas the Botín skylight seems to be more of an aesthetic choice since it actually limits the spread of light entering through the skylight. By researching the sun angles in Cincinnati at various times throughout the year², we created an angled building form that allows light to enter into the outdoor work yard and penetrate to the surrounding spaces – the workshops and the offices (see Figures 3 and 4).

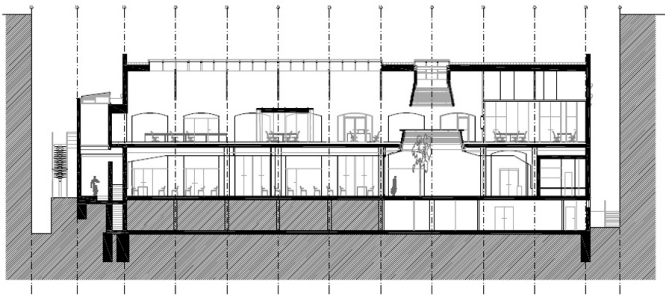


Figure 3: Section through building showing angled skylight (Botin Foundation).¹

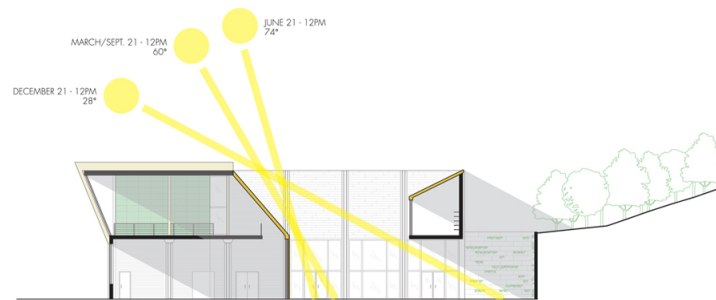


Figure 4: Inspiration from Botin Foundation skylight resulting in angled profile. Form allows sunlight into work yard throughout year (BDAC).

The modification to a Victorian industrial brick building³ on Shoreham Street in England displays a more parasitical approach to reuse. The architects, Project Orange, had to increase the amount of programme within the project, and decided to build upwards to accomplish this. Their choice of material and form for the extension embodies the opportunities that exist to contrast and compliment the original form and materials of the building. The dark metal of the addition above compliments the dark mullions of the large windows below, and this idea is replicated in the BDAC and carried further with the bronze/copper-coloured metal “ribbon” that also compliments the red hues of the

¹ “New offices of the Botín Foundation / MVN Arquitectos.” *ArchDaily*. <http://www.archdaily.com/284283/new-offices-of-the-botin-foundation-mvn-arquitectos/>

² “Cincinnati, Ohio - Sunrise, sunset, dawn and dusk times for the whole year.” Gaisma. <http://www.gaisma.com/en/location/cincinnati-ohio.html>

³ “Shoreham Street / Project Orange.” *ArchDaily*. <http://www.archdaily.com/214007/shoreham-street-project-orange/>

original brick (see Figures 5 and 6). The architects could have simply taken the form of the existing building and extruded it upwards for the addition, but the choice to create a mass that “bites into”¹, hangs over, and recedes from the box below creates a form which engages with the street and emphasizes both the new and old features of the project. The brief of the Live-Make competition desired for an “emphasis on new methods of production [to be] a key feature of [the] facility”², and so a similar strategy to Shoreham Street was taken to make the digital fabrication lab of the BDAC become a prominent feature. The structure is angled out towards and overhangs the street, and this bold street presence clearly showcases the “make” aspect of the project and the aspirations for a digital future (see Figures 7 and 8).

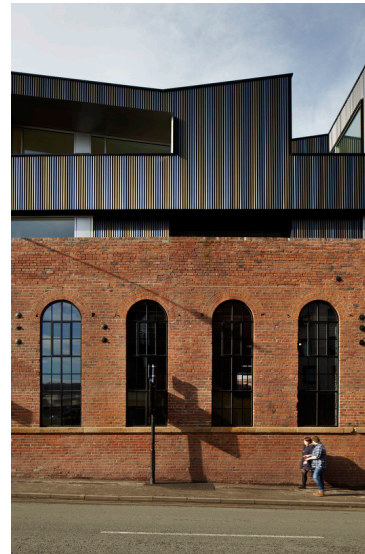


Figure 5: Dark metal addition complimenting dark mullions (Shoreham Street).¹

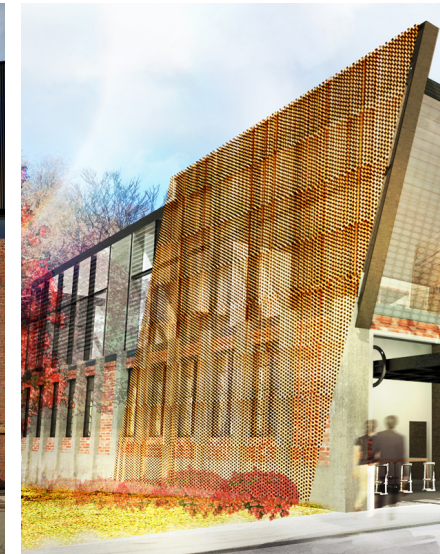


Figure 6: Bronze panels complimenting red brick (BDAC).



Figure 7: (Left) Addition hanging over existing building (Shoreham Street).¹

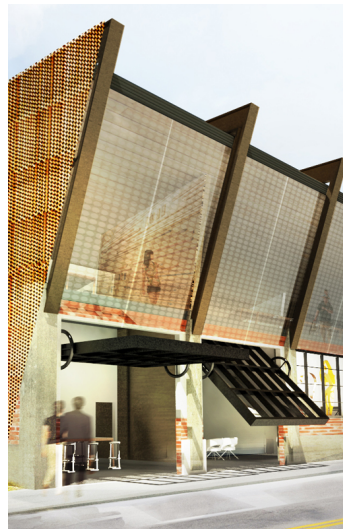


Figure 8: (Right) Digital fabrication lab angled out over street (BDAC).

INCORPORATION OF SUSTAINABLE STRATEGIES AND NATURAL ELEMENTS

*“Sustainable Micro-Environment: In addition to the re-use of the existing building, entrants should make environmentally conscious decisions...”*³

The multiple precedents regarding building re-use that we looked at helped to guide us on questions surrounding the possibilities for showcasing and contrasting the original building, but also led us to conclusions on what the precedents failed to accomplish. Though there could be many similarities with

¹ “Shoreham Street / Project Orange.” *ArchDaily*. <http://www.archdaily.com/214007/shoreham-street-project-orange/>

² “Project Details.” *LIVE·MAKE Industrial Arts Center Cincinnati*. <http://iaccincinnati.com/#952>

³ “Project Introduction.” *LIVE·MAKE Industrial Arts Center Cincinnati*. <http://iaccincinnati.com/#c8f>

the exterior material presence of the building, there are divergences when it comes to the interior. The precedents were located in warmer climates than that of Cincinnati¹, and so the concerns for refurbishment of the walls beyond aesthetic upgrades were perhaps not as pressing. In the case of the BDAC, where the desire for a more sustainable building exists, the thermal performance of the wall as well as strategies such as sun shading and rainwater collection, become important.

The brick walls were altered in many places throughout the building to increase the insulation, and therefore the R-value, of the

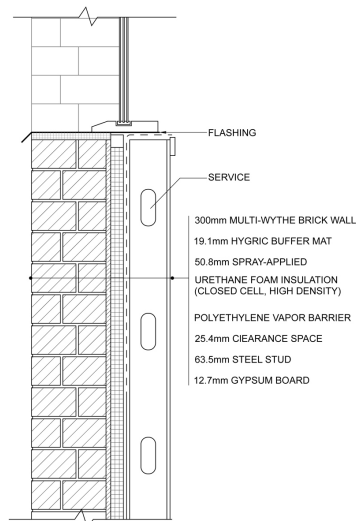


Figure 9: Retrofit brick wall section (BDAC).

assembly. Information was collected to guide the design of the refurbished walls² (see Figure 9) and the new green roof assembly³. Strategies for solar control such as ceramic frit glazing on the angled glass of the digital fabrication lab, sun-shading blinds and deciduous plantings on the East and West façades, and sun-shading blinds on some of the South façade were drawn from projects such as the Manitoba Hydro building by KPMB Architects⁴, the Bank of America Tower at One Bryant Park by Cook + Fox Architects⁵, and a multitude of others (see Figures 10 and 11). Other sustainable strategies drawn from these precedents include rainwater harvesting, operable windows for increased ventilation, radiant-floor heating, high efficiency glazing, and photovoltaic panels on the roof to offset some of the energy costs that a production facility such as the BDAC would create.

In addition to these perhaps less noticeable strategies, we wanted to incorporate natural elements that added to the sustainability of the facility in a bold and obvious way. The “ribbon” that wraps the building is split into the “industrial ribbon”, which includes the featured metal components of the building, and the “green ribbon”, which consists of living wall panels, plantings in the retaining wall around the outdoor work yard, and the green roof. The primary inspiration for the living wall panels came from the Aquaquest Learning Centre at the Vancouver Aquarium and the Vancouver International Airport (see Figure 12), both by Sharp & Diamond Landscape Architecture. The living wall utilizes a

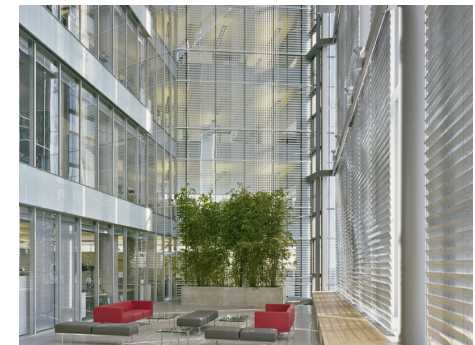


Figure 10: (Top) Sun-shading blinds (Manitoba Hydro).⁴

Figure 11: (Bottom) Ceramic frit glass (One Bryant Park).⁵

¹ "Climate Cincinnati, Ohio." US Climate Data. <http://www.usclimatedata.com/climate.php?location=USOH0188>

² Straube, John. "BSD-114: Interior Insulation Retrofits of Load-Bearing Masonry Walls In Cold Climates." *Building Science Corporation*. <http://www.buildingscience.com/documents/digests/bsd-114-interior-insulation-retrofits-of-load-bearing-masonry-walls-in-cold-climates>

³ "Recommended Readings." Greenroofs.com: The Resource Portal for Green Roofs. <http://www.greenroofs.com/readings.htm>

⁴ "Manitoba Hydro / KPMB Architects." *ArchDaily*. <http://www.archdaily.com/44596/manitoba-hydro-kpmb-architects/>

⁵ "Bank of America Tower at One Bryant Park / Cook + Fox Architects." *ArchDaily*. <http://www.archdaily.com/247880/bank-of-america-tower-at-one-bryant-park-cook-fox-architects/>

series of modular panels with native plantings, and collects water run-off from the green roofs above.¹ The living wall also mediates the micro-climate, which is a significant benefit for the outdoor lounge (see Figure 13), and helps to purify the air, which helps with the indoor air quality of the BDAC where the programmatic elements can cause this to become a concern. These precedents show not only that living walls can be done in North America, but also that they can be done at a large scale (the living wall at the Vancouver International Airport measures 17 metres high by 11 metres wide²), and be functional as well as aesthetically pleasing.

A full living wall for the retaining wall around the outdoor work yard would not likely be as successful because of the reduced solar exposure at the back of the building. However, we

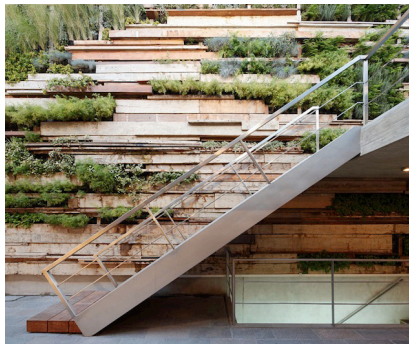


Figure 14: Plantings and recycled materials forming a wall (3D Vertical Garden).³

wanted to continue the aesthetic and some of the functional features to this portion of the building, so we opted for a system with plantings that were sparser and more resilient. The 3D Vertical Garden in Lima, Peru by Gonzalez Moix Arquitectura served as a fitting precedent for the use of plantings and recycled materials³ (see Figure 14). This wall, similar to the more dense living walls elsewhere in the building, would serve the purpose of helping to purify the air, and would act as the backdrop for a space that is inviting for both work and recreational purposes.



Figure 12: (Top) Living wall (Vancouver International Airport).²

Figure 13: (Bottom) Outdoor lounge with living wall (BDAC).

EMBRACING MODERN TECHNOLOGIES

“Design for Innovation: The entrants should consider the future of evolution of tools and how this facility might adapt to these changes. This will require uniquely designed spaces that allow users to take advantage of available tools to modify the space.”⁴

For the design of the Brewery District Arts Center, we wanted to create a space that could easily adjust and transform with the changing needs of the facility and its users, and reap the benefits from the incorporation of modern technologies. The Charles Smith Wines Tasting Room & World Headquarters by Olson Kundig Architects is, similar to previously mentioned precedents, the re-use of an old brick

¹ Martin, Frank Edgerton. "North America's first modular living wall installation opens in Vancouver." *Fabric Architecture*. http://fabricarchitecturemag.com/articles/1109_la_modular.html

² Newcomb, Tim. "Green Monster." *Metropolis Magazine*. <http://www.metropolismag.com/story/20101020/green-monster>

³ "3D Vertical Garden in Lima, Peru." *Inthralld - Interior Design, Home Ideas & Architecture*. <http://inthralld.com/2012/10/3d-vertical-garden-in-lima-peru/>

⁴ "Project Introduction." *LIVE-MAKE Industrial Arts Center Cincinnati*. <http://iaccincinnati.com/#c8f>

building, but is one that incorporates modern technologies that can alter the spaces within the building. A structure inside, dubbed the “Armadillo” by the architects, contains a conference room and workspaces for fourteen people, and has metal panels on a track that slide to either open up or close off the space to the adjacent tasting area¹. This concept was replicated in the BDAC with bronze panels that slide to close off rooms as conference rooms, or open up to extend the adjacent office space (see Figures 15 and 16). Further flexibility is achieved at Charles Smith with “floating “rafts” that serve as a seating area/stage, [and] tasting tables that dock together to form a dining table”¹. This inspiration of flexibility continues into the BDAC with desks and chairs in the office area that can be moved to open up the space or be grouped together, and perforated bronze panels on wheels that can segment off spaces, act as boards to pin up presentations, or work as mobile storage units for hanging tools. The flexibility of the spaces encourages collaboration and a multiplicity of uses. The Charles Smith Headquarters encourages interaction with the street with large hand-cranked pivot doors that form awnings for outdoor seating¹. The BDAC accomplishes a similar goal with this method, replacing the existing folding garage doors at the loading bays with pivot doors that encourage people to permeate through the building at various points, display the inner workings of the facility at street level, and allow people working in the building to push their work out to the street.

The Delhi Art Gallery re-design by Vertex Inc./Abhaya Narkar is a precedent that looks more towards using modern technologies to create a desired artistic effect (see Figure 17). In the case of the BDAC, drawing inspiration from the laser-cut metal panels of the Delhi Art Gallery serves both a functional and an aesthetic purpose, acting as sun-shading for a portion of the West façade and as a sort of “billboard” for the possibilities that the tools and machines in the facility create (see Figure 6). The panels of the Delhi Art Gallery are fixed, but with the BDAC, the opportunity exists for the users of the building to fabricate their own replacement panels and have the façade change as the technologies that produce it change. In both projects, the metal panels create a feature wall, and the juxtaposition of materials – the Delhi Art Gallery with



Figure 15: (Top) Moveable panels and “rafts” (Charles Wine HQ).²

Figure 16: (Bottom) Portion of ground plan showing sliding panels for conference rooms and adjacent open office area (BDAC).

¹ "Projects - Charles Smith Wines Tasting Room & World Headquarters." *Olson Kundig Architects*. <http://www.olsonkundigarchitects.com/Projects/1621/Charles-Smith-Wines-Tasting-Room-38-World-Headquarters>

² Benschneider, Benjamin. "Charles Smith Wines Tasting Room & World Headquarters By Olson Kundig Architects." *Designalmic | design + signal + dynamic*. <http://designalmic.com/charles-smith-wines-tasting-room-world-headquarters-olson-kundig-architects/charles-smith-wines-tasting-room-world-headquarters-by-olson-kundig-architects-31-benjamin-benschneider/>

the metal panels outside and stone walls inside¹ (see Figure 18), and the BDAC with the metal panels and old brick walls adjacent to each other – create a contrast that defines the facilities.



Figure 17: Laser-cut metal panels (Delhi Art Gallery).¹



Figure 18: Interior stone walls to contrast metal panels (Delhi Art Gallery).¹

Going through the design process, it is clear that precedents not only help initiate the process, but also continually guide you along the way. As decisions are made regarding the overall scheme of the project, and certain aesthetic or functional goals are created, narrowing the precedents down to specificities helps you to realize if your proposals are reasonable, or if you can improve upon projects that already exist. As we developed the design of the Brewery District Arts Center, broad ideas about the types of precedents we wanted to look at quickly filtered down to the specific projects and aspects of those projects mentioned above. It became clear which aspects were working well, and which aspects were not, and in the end, resulted in a project that both learned from the follies and harmonized the merits of its predecessors.

¹ “Delhi Art Gallery Re-Design / Abhay Narkar.” *ArchDaily*. <http://www.archdaily.com/156154/delhi-art-gallery-re-design-vertex-design/>

WORKS CITED

- "3D Vertical Garden in Lima, Peru." Inthralld - Interior Design, Home Ideas & Architecture. <http://inthralld.com/2012/10/3d-vertical-garden-in-lima-peru/>
- "Bank of America Tower at One Bryant Park / Cook + Fox Architects." ArchDaily. <http://www.archdaily.com/247880/bank-of-america-tower-at-one-bryant-park-cook-fox-architects/>
- Benschneider, Benjamin. "Charles Smith Wines Tasting Room & World Headquarters By Olson Kundig Architects." Designalmic | design + signal + dynamic. <http://designalmic.com/charles-smith-wines-tasting-room-world-headquarters-olson-kundig-architects/charles-smith-wines-tasting-room-world-headquarters-by-olson-kundig-architects-31-benjamin-benschneider/>
- "Cincinnati, Ohio - Sunrise, sunset, dawn and dusk times for the whole year." Gaisma. <http://www.gaisma.com/en/location/cincinnati-ohio.html>
- "Climate Cincinnati, Ohio." US Climate Data. <http://www.usclimatedata.com/climate.php?location=USOH0188>
- "Delhi Art Gallery Re-Design / Abhhay Narkar." ArchDaily. <http://www.archdaily.com/156154/delhi-art-gallery-re-design-vertex-design/>
- "Manitoba Hydro / KPMB Architects." ArchDaily. <http://www.archdaily.com/44596/manitoba-hydro-kpmb-architects/>
- Martin, Frank Edgerton. "North America's first modular living wall installation opens in Vancouver." Fabric Architecture. http://fabricarchitecturemag.com/articles/1109_la_modular.html
- Newcomb, Tim. "Green Monster." Metropolis Magazine. <http://www.metropolismag.com/story/20101020/green-monster>
- "New offices of the Botín Foundation / MVN Arquitectos." ArchDaily. <http://www.archdaily.com/284283/new-offices-of-the-botin-foundation-mvn-arquitectos/>
- "Project Details." LIVE·MAKE Industrial Arts Center Cincinnati. <http://iaccincinnati.com/#952>
- "Project Introduction." LIVE·MAKE Industrial Arts Center Cincinnati. <http://iaccincinnati.com/#c8f>
- "Projects - Charles Smith Wines Tasting Room & World Headquarters." Olson Kundig Architects. <http://www.olsonkundigarchitects.com/Projects/1621/Charles-Smith-Wines-Tasting-Room-38-World-Headquarters>
- "Recommended Readings." Greenroofs.com: The Resource Portal for Green Roofs. <http://www.greenroofs.com/readings.htm>
- "Shoreham Street / Project Orange." ArchDaily. <http://www.archdaily.com/214007/shoreham-street-project-orange/>

Straube, John. "BSD-114: Interior Insulation Retrofits of Load-Bearing Masonry Walls In Cold Climates." Building Science Corporation.
<http://www.buildingscience.com/documents/digests/bsd-114-interior-insulation-retrofits-of-load-bearing-masonry-walls-in-cold-climates>

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