

Redefining the Space of Sugar Production: The Imperial Sugar, Sugar Land, TX

Gabriela Campagnol, Ph.D.

Assistant Professor, Department of Architecture, Texas A&M University

Project Summary

The project aims to study and document the physical remains and changes of the Imperial Sugar Company, a former industrial complex for sugarcane production in Sugar Land, Texas. It will investigate the development, typological aspects, and the preservation issues to adaptive reuse the industrial campus. Sugar Land flourished as a model company town for the Imperial Sugar Company in the early 20th century. During the 1950s, this status dramatically changed. As a result of the expansion of the city of Houston, the company houses and lots at the plantation were sold. The population demographics of the town had been changed: employees for local industries were moved out to a new subdivision called Imperial Estates. In 2002, the activities in the sugar factory and refinery were ended and the campus remained abandoned. In 2007, Johnson Development Corporation commissioned the Texas-based firm TBG Partners to envision a master plan on 650-acre site surrounding the plant. The plan proposes the adaptive reuse the historic Imperial Sugar, which also calls for retails, hospitality, restaurants, office, residential, 235 acres of open spaces, wetlands, and parks. In early 2010, demolition work began on the former refinery site for structures that are not part of the preservation plans; in December industrial buildings were partially imploded – with no documentation of the original buildings. The City of Sugar Land has been conducting public hearing and amendments to the original plan have been proposed, such

The goals is to produce a series of architectural and measured drawings, diagrams, physical and digital model of the industrial zone, and site analyses of the transformation from a company town model to a postindustrial town located in the suburban Houston. The results of this project will serve as both archeological documents and aid the broad community to achieve understanding of the industrial heritage. The project will be based in three main activities: (1) Fieldworks, which will cover the analysis and documentation of the physical remains; (2) Documentary research, which will include interviews conducted with professionals in charge of the redevelopment plan for the Imperial Sugar; (3) Developing measured drawings of the facility using CAD (Computer-Aided Design), analytical diagrams and models of the transformations, and 3D model and virtual reality models from the survey data.

My local collaborators for this project are the Center for Heritage Conservation (CHC) of the Texas A&M University, Prof. Robert Warden, director of the CHC, and Dr. Mark Clayton, professor in the department of architecture at Texas A&M University, and fellow of the CRS Center for Leadership and Management in the Design and Construction Industry. A preliminary documentary research of the historic Imperial Sugar Company Town was initiated in 2011 as part of the international and interdisciplinary research project carried out since 2007 under the lead of Prof. Luigi Fontana at the History Department of Padua University, Italy. This project, entitled Company Towns in the World: Origin, Evolution, and Rehabilitation (16th-20th Centuries), aims at underling the most significant experiences between the 16th and 20th centuries in Europe and other areas of the world as an online database and virtual atlas on the company town phenomenon. My collaboration comprises of 30 entries of company towns of sugarcane, 27 in Brazil, one in Cuba, and two in the Unites States (Imperial Sugar in Sugar Land, Texas, and Cinclare Sugar Company in Brusly, Louisiana).

C. Application Narrative

1. Documentation of need for the Project: What is the proposed project's significance to industrial heritage?

The project aims to study and document the physical remains and changes of the Imperial Sugar Company, a former industrial complex for sugarcane production in Sugar Land, Texas. It will investigate the development, typological aspects, and the preservation issues to adaptive reuse the industrial campus. Sugar Land flourished as a model company town for the Imperial Sugar Company in the early 20th century. During the 1950s, this status dramatically changed. As a result of the expansion of the city of Houston, the company houses and lots at the plantation were sold. The population demographics of the town had been changed: employees for local industries were moved out to a new subdivision called Imperial Estates. In 2002, the activities in the sugar factory and refinery were ended and the campus remained abandoned. In 2007, Johnson Development Corporation commissioned the Texas-based firm TBG Partners to envision a master plan on 650-acre site surrounding the plant. The plan proposes the adaptive reuse the historic Imperial Sugar, which also calls for retails, hospitality, restaurants, office, residential, 235 acres of open spaces, wetlands, and parks. In early 2010, demolition work began on the former refinery site for structures that are not part of the preservation plans; in December industrial buildings were partially imploded – with no documentation of the original buildings. The City of Sugar Land has been conducting public hearing and amendments to the original plan have been proposed, such as a drastic reduction in the number of proposed luxury apartments.

The reasons for conserving industrial buildings and the best approaches to re-purposing such structures remain central and as-yet-unresolved issues within regional development and urban renewal initiatives. While adaptive reuse has become popular jargon for developers transforming old industrial buildings into shopping centers or trendy condominiums, it has often served as new creative platform that challenges architects, planners, and preservationists. The Domino Sugar plant located in Brooklyn's industrial waterfront in New York is a significant reference for this project. Once one of the world largest sugar refinery in the world, the plant opened in 1884 and operated until 2003. Soon later, a New York-based firm – Beyer Blinder Belle Architects – was given the task to convert the 12-story-tall building, which was declared a landmark in 2007, into residential complex comprising 241 apartments, with shops, a community center and a multilevel rooftop structure that would rise as high as four stories. Since 2008, the plans to the landmark Domino Sugar drew criticism from preservationists as “architecturally incongruous.”

As a sector of the agro-industry, sugarcane exerted a substantial influence on land-use and settlements from the seventeenth through the mid-twentieth century. Grand complexes were established across the American continent for the production and refining of sugar. The sugar industry established a large range of architectural expressions: settlements, an assortment of houses and buildings targeted for collective uses. This approach meant that the private sector provided for and thus controlled all worker housing in a set of practices unique to the sugar industry, but in some instances common to the broader category of the company town. Since the 1960s, however, many settlements were changing profoundly.

2. What research methods will you employ?

Objectives of this study are (1) investigate the transformations in the sugar-cane industry and the impact on the built environment as means to preserve the industrial heritage; (2) document and analyze the physical remains of Imperial Sugar plant, architectural aspects and urban typology for sugar production and its potential for reuse; (3) examine proposals for disabled industrial areas for sugar production of both historical and architectural value in metropolitan areas.

The project will be conducted based in three main activities:

1. Fieldworks, which will cover the analysis and documentation of the physical remains of the Imperial Sugar complex, in Sugar Land, Texas. This will comprise of visual inspection, recordation, and data collection (sketching, photograph, photogrammetry, scanning, and measurement activities).
2. Documentary research, which will include interviews conducted with professionals in charge of the redevelopment plan for the Imperial Sugar (including a proposal for the adaptive reuse of the industrial buildings), and research in historic archives and museum in Sugar Land. A trip to New York City will assure a visit to the Domino Sugar Refinery in Brooklyn's industrial waterfront, and the conduction of interviews with New York-based architects and planners (Beyer Blinder Belle Architects, and Rafael Viñoly Architects) in charge of its adaptive redevelopment and adaptive reuse project.
3. Developing measured drawings of the facility using CAD (Computer-Aided Design), analytical diagrams of the transformations, physical and 3D models and virtual reality models from the survey data. We will produce a 3D model using CAD and BIM (Building Information Modeling) technology.

The research is summarized below with expected durations of tasks, start days and completion days.

| Task Name | Duration | Start | Finish | Expected Outcomes |
|--|-----------------|--------------|---------------|---|
| Theoretical Foundation Research | One week | September 02 | September 06 | Documentary research on sugar refineries, history and theory of industrial architecture, and adaptive reuse of industrial buildings. Survey of a project network/contact: professionals, archives, Imperial Sugar Company, Sugar Land City Hall, Domino Sugar |
| Data Collection: Sugar Land, Texas | Ten days | September 16 | September 20 | Visual inspections - Sketches, Measurements (A3D scanner), Photographs |
| Interviews with Texas-based professionals | One week | September 23 | September 27 | Interviews; documentary research about redevelopment projects and proposals for adaptive reuse. |
| Data Collection and Interview in New York | One week | September 30 | October 05 | Sketches, Basic Measurements, Photographs of Domino Sugar Refinery in Brooklyn, NY. Interviews with Beyer Blinder Belle Architects, and Rafael Viñoly Architects. |
| Analyzing Data Cad drawings, models | Three weeks | October 07 | October 28 | Technical Drawings, Diagrams, and 3D Model and Renderings of the Imperial Sugar Complex |
| Presenting Data | Two-Four weeks | October 29 | November 15 | Technical and analytical report and journal article |

3. Who is responsible for your project?

This project will be an extension of the interdisciplinary research that I have been conducting for more than 12 years (refer to my CV). I have been working extensively on the documentation and analysis of the built environment for sugar production, mostly in my home country, Brazil. Besides a vast documentation, this research resulted a master's thesis (2003), book (2004), doctoral dissertation (2008), and publications. I am currently investigating the more recent history, transformations, and the preservation issues, such as adaptive-reuse of this industrial heritage. The documentation of the sugar company towns and industrial heritage of sugarcane production has thrown up several questions about the future of this heritage and led me to look into the documentation and preservation of this heritage in the United States. The future of the historic Imperial Sugar Refinery buildings, in Sugar Land, Texas, which were partially imploded for redevelopment in December 2010, deserves further investigations. This is especially significant in light of the current transformations and redevelopment proposal for the site. This has drawn my

attention on the proposals for the adaptive reuse of industrial heritage in the USA in general, and on the case of the sugar heritage in particular. Currently, I am studying two new proposals for adaptive reuse of sugar heritage factories in Brazil, which were announced in September 2009 and January 2010. These projects are great resources to investigate the feasibility and sustainability of the adaptive reuse of industrial towns. In the long run, they can also be used as prototypes for industrial adaptive reuse projects in the United States. The recent proposal for the adaptive reuse of Domino Sugar Refinery in New York City is a significant reference for this project. The architect Rafael Viñoly designed the transformation master plan for what is known as the New Domino, while Beyer Blinder Belle, the architectural firm, drew up the plans to convert the 12-story refinery building (once the world's largest refinery), which was declared a landmark in 2007, into 241 apartments, with shops, a community center and a multilevel rooftop structure that would rise as high as four stories. The city's land-use review for this project began in 2010 with a public hearing and the project is scheduled for completion in 2021. Moreover, the investigation of other cases of rehabilitation of similar building type – such as the sugar factory in Parma, Italy, which was converted in 2002 into a concert hall, by the world-renowned architect Renzo Piano - will offer further indications to evaluate the adaptive reuse proposal for the sugar industrial heritage site in Texas. The study on the adaptive reuse of industrial areas can provide valuable insights for the preservation and reuse of sugar heritage such as those detailed above and can lead to further projects, such as comparative studies between the US and Brazil.

My local collaborators for this project are the **Center for Heritage Conservation (CHC)** of the Texas A&M University, **Prof. Robert Warden**, director of the CHC, and **Dr. Mark Clayton**, professor in the department of architecture at Texas A&M University, and fellow of the CRS Center for Leadership and Management in the Design and Construction Industry. The CHC supports research of planned and built environments with particular emphasis on their continued use and care. Dr. Clayton is an expert in BIM (Building Information Modeling) and information technology. He is knowledgeable of issues relating to historic preservation pertinent to hurricane Katrina relief and recovery efforts.

The support from CHC for this project will be threefold: (1) Collaborative and supervisory support from Prof. Warden; (2) Technical support for data collection and recording using 3D scanner, total station, and photogrammetry; (3) Human resources – graduate students/ assistantship to conduct visual inspections and to process data. Dr. Clayton will offer collaborative and the technical support during the construction of the 3D model. He will be assisting with the undergraduate and graduate students in his research group at the CRS Center.

4. What tangible products do you expect to produce with this project?

This project will produce:

1. Photographs, architectural and measured drawings (site plans, building plans and sections, diagrams), and a physical and 3D model of the Imperial Sugar facility using CAD and BIM technology.
2. Survey of the historic documentation (maps, plans, and photographs) of the site and buildings (industrial buildings, worker housing, community building of the company town).
3. Survey and analytical diagrams of the proposals for preservation/ adaptive reuse of the industrial campus.
4. Ultimately, the results should be presented in a peer reviewed journal article or conference paper.

D. Budget

“What is the quantum of grant required?”

This project will focus on the documentation and study of the preservation plan for a significant historic site for sugar cane production in Texas. To complete this project, I propose to conduct fieldwork to document the Imperial Sugar Company in Sugar Land Texas. In Sugar Land, with the collaboration and technical support from the CHC (Center for Heritage Conservation) and scholars from the Department of Architect of Texas A&M University. I will initiate the documentation of the Imperial Sugar buildings and investigate the proposal for their reuse. The trips to Sugar Land will comprise of site visits for visual inspection and research in local archives. While in Texas, I will visit and conduct interviews with architectural firms in charge of the redevelopment plan and rehabilitation project. I also propose to travel to visit the Domino Sugar Refinery in New York City. While in New York, I will investigate preservation plans for adaptive reuse of this industrial landmark. The current request builds on my prior work. In 2011, I was granted \$3,500.00 to investigate the transformations in the sugar company towns and the eventual preservation plans and adaptive reuse projects in Brazil, \$1,500.00 for investigative course to document pioneer examples for the rehabilitation of the industrial heritage, with a particular interest in the Paganini Concert Hall, Parma, Italy, which is an example of an adaptive reuse of a sugar factory. I am also collaborating in the international and interdisciplinary project “Company Towns in the World” to

document company towns of sugar in Brazil and the United States, which has considered Sugar Land and the Imperial Sugar Company.

I am requesting \$3,000 with matching funds from my department, for a total of \$3,957.50.

Budget:

| | |
|--|-------------------|
| Ground transportation College Station – Sugar Land: 10 trips @200 miles/trip | \$630.00 |
| Ground transportation College Station – Austin, Houston: 6 trips @ 250 miles/trip* | \$425.00 |
| Per Diem - Texas: 17 days @ \$25.00/day | \$472.50 |
| Domestic airfare College Station – New York, one round trip | \$550.00 |
| Lodging in New York: 6 nights @\$ 55.00/night | \$330.00 |
| Per Diem - New York: 6 days @ \$25.00/day | \$150.00 |
| Assistantship for education purpose (student work) with drawings and models – 120 hours @ \$10.00/hour | \$1,200.00 |
| Miscellaneous (photocopies, sketch book, editing, etc) | \$200.00 |
| Total: | \$3,957.50 |
| Total requested from SIA Grant | \$3,000.00 |

* This is an estimation of six trips maximum to Austin and Houston area to conduct research and interviews in architecture firms. We may need to travel less than anticipated.

College Station, March 01 2013.