

Inventing History

This is a story about the invention of history to substantiate the future. At its center is the exploitation of a graphic device to validate the adoption of an entirely new building material, not once but twice, and a trope which influenced the birth of the modernist city. This deceit was entirely in the service of the advancement of architecture, to the profit of a few very motivated men. Today, this device continues to promulgate a narrative that filters the truth.

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For the designer, this paper presents an example of how history can be framed to lay the foundation for the advancement of contemporary practice. It also emphasizes how an awareness of allied fields can be used to substantiate such advances. For the student of history, this paper presents a critical reading of drawings that were developed for the purpose of authenticating new ideas and methods. The illustrations presented in this paper construct a very particular interpretation of the history of history, and analysis of them reveals how underlying motivations are captured in these artifacts.

TURNER CONSTRUCTION AND VALIDATING CONCRETE AS A CONSTRUCTION MATERIAL

In 1902, Henry Turner established Turner Construction in New York City as a company specializing in the newly invented material of reinforced concrete. In 1900, the entrepreneur, Ernest Ransome employed Henry Turner as an engineer to aid in the design of buildings. Two years later, amid financial misfortune, Ransome sold his company to Turner. This allowed Ransome to return to a life of inventing and consultancy, while Turner began establishing his new company as the source for the Ransome system on the East Coast. Holding the patents to Ernest Ransome's concrete reinforcing method, Turner quickly became the leader in constructing reinforced concrete in the northeast, where he maintained and grew an active client base. Turner's method of construction became synonymous with a building typology which Reyner Banham termed the "daylight" factory, itself invented by Ransome in the Pacific Coast Borax, Phase 2, Bayonne New Jersey (completed in 1903) and the United Shoe Machinery Company, Beverly Massachusetts (constructed from 1903-06). Ransome conceived this building morphology as comprised solely of a concrete frame, and a resulting series of large openings, spanned by transparent glazing set in steel window frames, creating light-filled floor plates. Henry Turner built numerous examples of this typology, and with its success, planned to grow the company nationally.

At the same time that Turner was establishing his company, a number of other builders were gaining market share with their own reinforced concrete systems. C.A.P. Turner held a 1908 patent for spiral mushroom system (the mushroom column) and Albert Kahn was

constructing factories in Detroit using the Kahn Trussed Bar. Hennebique introduced stir-rip shaped reinforcing rods connected to a beam's reinforcing rods in 1892, and had set up offices in the United States to spread his empire. By 1910, these competitors had an additional issue to consider. Both the American and European courts were invalidating patents for specific reinforcing techniques, because these patented proprietary techniques were now considered public knowledge within the reinforced concrete industry.

To distinguish Turner Construction from competitors, and to gain market share for reinforced concrete over more traditional masonry and timber systems, Henry Turner developed a host of innovative advertising strategies. Seeking regional awareness across the country by extending advertising to local newspapers, Turner developed advertisements which presented a photograph of a local building recently completed by Turner Construction plus reasons to consider the company for future construction. The company advertised in trade journals such as *Engineering News* and *Engineering Record*, *American Architect* and the *Journal of the American Institute of Architects*. In 1913, the company mailed penny postcards, with images of recently constructed projects and the text "such buildings as this can be built of concrete more economically than they can be built of any other material" to prospective clients, engineers and architects. "Turner for Concrete" became the firm's slogan in 1914, and was used until 1920's.¹

Prior to all of this, in 1910, Henry Turner conceived of his most innovative advertising strategy—Turner City. In this depiction of a fictitious city, Turner represented the construction firm's completed buildings and its impressive client base in a single aerial perspective. To construct this drawing, Turner employed Richard Rummell, who was known for his aerial perspectives of American Universities, to draw a bird's eye perspective of Turner City. This fictional composition included every building Turner Construction had completed between 1902 and 1910, making the city, and thus Turner Construction's operations seem as large and impressive as possible. This single image visually depicted the benefits of reinforced concrete, Turner Construction's speciality: the breadth of typologies for which it could be used; its ability to produce buildings of enormous scale; and the rate at which this relatively new technology was being embraced by industry, albeit inflated by inclusion of eight years of construction into a single image. Supposedly, Henry Turner conceived of the drawing when he saw tourists on top of the Singer building taking panorama photographs of the New York skyline. It is unclear how Turner came to know Rummell or his work.

AERIAL PERSPECTIVE AS ADVERTISEMENT

As an advertisement, this type of drawing was not unusual. Panoramic or aerial maps were a popular way to depict American cities and institutions in the late 19th century. Commercial flight first occurred in 1909, and while aerial photography could occur with the aid of hot air balloons prior to aviation, these drawings were typically constructed as perspectives by hand. These images showed off the breadth of development in an urban area, showcasing a city's monuments but also depicting individual neighborhoods and residences. These single format drawings included high levels of detail. Unlike photographs, which suffered from atmospheric blurring, all of the buildings in the drawings were in focus, allowing even miniscule edifices at the horizon to remain recognizable. Developed as engravings, the maps could be easily and cheaply reproduced, so they could be used as promotional materials, widely distributed and reproduced for media ranging from magazine advertisements to penny postcards. One of their greatest benefits was that the drawings could be edited embellishing views with new visions of development, or framed to enhance particular buildings or areas within the view.

Panoramic maps not only showed the existing city but sometimes also depicted areas planned for development. Real estate agents and chambers of commerce used the maps to promote sales to prospective buyers of homes and business properties.²

By 1910, Richard Rummell (1848-1924) was well known for his aerial perspectives of university campuses across the United States. These included drawings of all of the IV league schools, state schools such as University of Pennsylvania, University of Tennessee and University of Michigan, and a variety of private institutions such as Wesleyan, Lehigh, Miami University, and Bowdoin College. In addition, he drew the campuses of Philips Academy, Kansas State Agricultural School and Westpoint. He emphasized and enhanced these campuses by using trees and landscaping to edit out adjacent neighborhoods. As a result of this technique, the drawings singularly focused upon each institution. He removed the adjacent urban fabric and portrayed the university as within an enhanced bucolic environment, ivy draped, and singularly focused on higher learning. Overall, the lushly colored images promoted a vision of historic and established bastions of education.

When called to emphasize technology or industry, Rummell's perspectives took on a decidedly different character. For example, in his drawings of the Harvard Medical Campus and the Sargent Lock Company Campus, he replaced the bucolic, soft character typically found in his university campus drawings with an emphasis on the ordered and powerful clean lines of the buildings. It was this language that Rummell employed when depicting Turner City, decidedly presenting Turner's reinforced concrete buildings as modern, streamlined, and clean.

DRAWING TECHNIQUE

Rummell's Turner City drawings were constructed as oblique perspectives, drawn at a low angle to emphasize building elevations, and de-emphasize roof tops. The grid was rotated so that two elevations of each building were easily delineated. Every building had its own block, creating a gently warped street grid that responds to the building footprints. The street grid was organized to accommodate larger buildings, with half blocks, or smaller streets inserted to provide siting for smaller scale buildings. All buildings were oriented so front entrances faced towards the viewer. The drawings were organized to appear as a dense urban sector of taller edifices surrounded by lower lying buildings, and were ingeniously constructed so that each receding layer of buildings was not eclipsed by previous constructions. To achieve this, empty lots were inserted so that smaller buildings could be placed at enough depth to be seen. At the horizon, meadows and hills were depicted, placing the urban fabric within reach of bucolic surroundings. (Figure 1)

From its inception, Turner City depicted a utopian image of what industrialization and capitalism could bring to urban centers. Through abstraction, early Turner City's collection of buildings presented the image of a city entirely constructed of reinforced concrete. The drawings implied that reinforced concrete was appropriate for architectural application to all typologies at a scale previously unconsidered.

The rendering technique made the buildings look clean and white, in a world where coal dust and smoke prevailed. The drawing scale of the individual buildings meant that variation in materials, such as masonry infill at the spandrels, was erased in favor of representing the concrete structure alone. Because no commercial or residential typologies were represented in the early drawings, the amalgam of styles and ornament prevalent in late Victorian age was stripped clean. Finally, these drawings brought the scale of industrial operations into focus. Hidden from view at ground level, these districts were now centralized, creating large scale blocks of buildings situated on an entirely new scale of urban grid.

LE CORBUSIER AND THE VISION OF THE MODERN CITY

To place the first publication of Turner City in context, its distribution predates the publication of the ideal cities of both Tony Garnier and Le Corbusier. While Tony Garnier began his drawings in 1899, the first publication of the Cité Industrielle is in 1917, seven years after the initial Turner City advertisement. In 1922, Le Corbusier presented drawings for his Ville



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an accentuation of form ... This geometry terrifies the architects of to-day... Let us base our present observations on the ground of actual needs: what we need is towns laid out in a useful manner whose general mass shall be noble (town planning). We have need of streets in which cleanliness, suitability to the necessities of dwellings, the application of the spirit of mass production and industrial organization, the grandeur of the idea, the serenity of the whole effect, shall ravish the spirit and bring with them the charm that a happy conception can give.... Surfaces, pitted by holes in accordance with the necessities of their destined use, should borrow the generating and accusing lines of these simple forms. These accusing lines are in practice the chessboard or grill—American factories. But this geometry is a source of terror.”⁴

Perhaps Le Corbusier was uninterested in revealing that this image was an advertisement by an American construction company, or providing it as source material for inspiration to other architects. Or, perhaps, Le Corbusier’s slight-of-hand actually indicates that Turner City influenced his own urbanistic aspirations. Banham goes on to state “layouts and perspectives from Tony Garnier’s visionary Cité Industrielle and from Le Corbusier’s own urbanistic projects do the visual work in the much longer second part of the argument, which is entirely concerned with applicable solutions to current city planning concerns. The two preceding “industrial” rappels have no “applications” content of this sort; they are pure statements about the nature of architecture.”⁵ Could it be that, instead, at least one image from the section on surface directly motivated Le Corbusier’s ideas on city planning?

While it is difficult to definitively substantiate that Turner City influenced Le Corbusier’s designs and representational strategies, it is true that Le Corbusier’s submission to the 1922 Salon D’Automne—which later garnered a famous critique by Auguste Perret in the Paris Journal—included several aerial perspectives of the Ville Contemporaine. Two watercolor perspectives presented in the exhibition use construction principals similar to Turner City: taller buildings are centered in the drawings, halfway into the depth of the image; lower density buildings are arranged around these skyscrapers. The entire city is shown in a bucolic environment devoid of any other buildings and which recedes to a hilly landscape at the horizon. The layout of the city grid differs from Turner City in that it is presented more frontally, to emphasize the main boulevard which bisects the city. In addition, the perspective is

Figure 2: 1918 Turner City, image courtesy of the National Building Museum

taken at a lower elevation. The chiaroscuro used on the watercolors renders the right facing facades and the roofs as white. The front facing facades depict the consistent window pattern of American “daylight” factories. The entire composition is set within a medium toned grey landscape, using the contrast between the landscape and more brightly rendered buildings to emphasize the architecture, following a tonal strategy similar to the 1918 Turner City. While Le Corbusier would use aerial perspective in later drawings of note, specifically in the Plan Voisin of 1925, he generally favored perspectives drawn at ground level that were line drawings; the Ville Contemporaine drawings distinguish themselves as different in character from most of Le Corbusier’s drawings, and, perhaps, not so far removed from their inspiration.

A CENTURY OF TURNER CITY AND ITS REPRESENTATION OF CONTEMPORARY ISSUES

Both Henry Turner and Le Corbusier used the pictorial narrative of Richard Rummell’s aerial perspectives as a way to establish reinforced concrete as a viable building material, and the daylight factory as a typology, not only for industry, but as an architectural solution that introduced the superblock to urban fabric across the globe. Since those early drawings, Turner Construction has published over one hundred Turner Cities as advertisement for the company. Each city provides a narrative composed from the history of the previous year’s completed buildings.

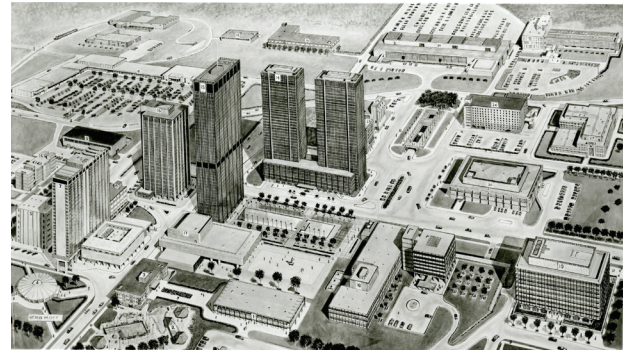
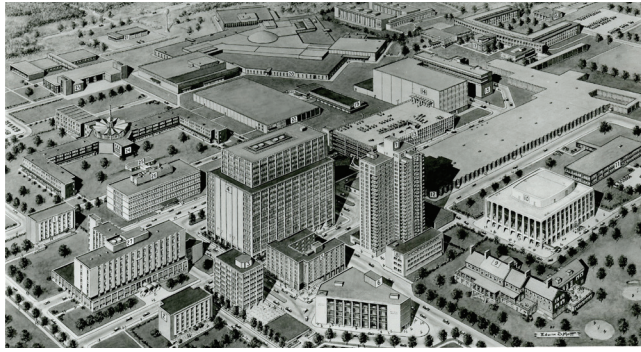
Turner Construction has grown with the US economy, and also diversified with that economy. Each Turner City includes every project completed during the year—no project is edited out because it is deemed too small or too insignificant. As a result, the Turner City archive acts as a lens focusing upon the role of commercial enterprise, the government, and contemporary infrastructure on urban development in the United States during the 20th century. The drawings reveal trends that directly relate to economic up turns and down turns, the influence of war, the proliferation of new building typologies, and globalization. Analyzing the construction of the Turner City drawings in terms of today’s issues, they touch upon several contemporary themes: sprawl; democratizing architecture; and de-territorialization. Turner City has taken very particular attitudes with regard to each of these subjects.

URBAN DENSITY AND SPRAWL

Unlike the historic development of urban fabric across the United States, Turner City has consistently presented an image of dense urbanism. It is difficult at first to identify what makes this density, which is so different from our own experience of the city. A three year anomaly reveals the source. Six artists have drawn Turner City: Richard Rummell (1910–24); Edward Spofford (1925–28); Edwin Mott (1929–62); Herbert Mott (1963–66); Ben Palagonia (1967–97); Ben and John Palagonia (1994–97); John Palagonia (1998–present). Herbert Mott was the only artist to include parking lots in the drawings. The Turner Cities under his tenure have a noticeable suburban character as a result. When Ben Palagonia assumed the helm, the parking lots disappeared, and the city returned to its invented density.

While Turner City was consistently formatted for print, the size of the image remained the same, 11x14. During times of recession, when fewer buildings were constructed, Turner City still appeared to “fill the page,” by increasing the scale at which the buildings were represented. During times of economic boom, the scale of the buildings decreased, showing less detail and resolution. But always the representation has shown the city advancing toward the horizon. As Turner Construction has become a larger and larger international company the scope of the city has taken on the scale of a megalopolis, with the sheer square footage constructed per year resulting in miniscule buildings that are barely distinguishable

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DEMOCRATIZING ARCHITECTURE

From its inception, Turner City has democratically shown the progress of commerce, depicting every building completed each year, from architectural icons to chain stores and manufacturing facilities. The formatting places numbers on the buildings, providing their name, location, and designer in an index. Prestigious clients are not given priority positioning. This disassociation of information, mixing of typologies, and rendering of buildings designed by unknown (or no) architect as rubbing shoulders with the world’s great icons, mirrors the messiness of the actualities of urbanism, and differs substantially from the way architecture is categorized and edited by academia. It also underscores that this drawing is fundamentally capitalistic: it depicts the construction of square footage. Representing the entire cadre of constructed buildings occurred consistently over the hundred years of drawings, with only one exception. During World War II not all of Turner Construction’s projects were represented in the drawings. The 1942 Turner City simply states: As a member of a group of 8 contractors, the Turner Construction Company participated in the construction of the naval fleet and air bases on various islands in the Pacific principally in the Hawaiian group—due to censorship none of this work is shown herein.

Turner City 2014 begins to separate itself from this democratization. With an entirely digital format, now advertised as being linked to BIM, the numerical indexing system has disappeared. The user can hover over a building to launch a pop-up window that gives the names of clients and architects. The “interactive” flythrough is a four minute episodic collage of videos of the most noteworthy of the year’s projects. Whereas the continuity of the previous cities de-emphasized the individual clients and architects, and emphasized Turner Construction as an entity, these new methods of representation do exactly the opposite.

DE-TERRITORIALIZATION

Finally, over its history, Turner City has exhibited the unusual ability to collapse space by removing buildings from their context. In the early years, the drawing regularly uprooted buildings from across Manhattan’s five boroughs, and the northeast, to place them adjacent to one another. In contemporary Turner drawings, one cannot help but consider the de-territorialization that occurs as a telecommunications center and Sheraton hotel from the Arab Emirates locate adjacent to an apartment building in Chicago, a Circuit City from Washington state and Detroit’s Comerica Baseball Park, as occurs in Turner City 2000. Turner City makes contiguous different cultures, environmental conditions, and zoning with the stroke of a pen.

This amalgamation continues to occur in the latest version of Turner City, presenting an interesting opportunity for further study. Provided with a nearly undifferentiated city grid, jewel-tone green landscape, and pixel thin materiality, now rendered through BIM, Turner City 2014⁶ offers an equalized urban fabric developed in the hands of multi-national corporations. Despite representing many iconic buildings, there is no there, there.

Figure 3: 1962 Turner City, right; 1964 Turner City, left. 1964 Turner City shows parking lots, creating more suburban character. *Image courtesy of the National Building Museum*



CONCLUSION

Through analysis of the Turner City drawings, this paper begins by revealing an alternate, not quite true, narrative on the adoption of reinforced concrete within the construction industry perpetuated by Henry Turner. It also presents how this narrative was used to substantiate Le Corbusier’s visions of what the modernist city might be. Today, contemporary Turner Cities provide a different historical narrative, replacing the perpetuation of innovative materials and typologies with a vision of total access: Turner Construction, as a multi-national corporation, is able to do anything for anyone anywhere. This new narrative provides a continuum in the way that the drawings have been employed, both framing the history of history, and serving to advance Turner Construction within the profession. Remaining true to capitalistic motives, Turner City continues to re-package its catalog of built works, and filter its history through the lens of its own interests.

The archive of Turner City drawings is held by the National Building Museum in Washington D.C. and Turner Construction continues to produce a new Turner City each year.

Figure 4: 2000 Turner City, image courtesy of the National Building Museum

ENDNOTES

1. Wolf, Donald. *Turner’s First Century*. Greenwich Publishing Group: Lyme, CT. 2002. P 68-69.
2. Hébert, Joseph and Patrick Dempsey. *Panoramic Maps of Cities in the United States and Canada*, Library of Congress: Washington D.C. 1984. <http://memory.loc.gov:8081/ammem/pmhtml/panintro.html>, Accessed 9.22.15.
3. Banham, Reyner. *A Concrete Atlantis*, MIT Press: Cambridge, MA. 1986. P 215.
4. Le Corbusier, *Towards a New Architecture*. Dover Publications: Mineola, NY. 1931. P 37-41.
5. Banham, Reyner. *A Concrete Atlantis*, MIT Press: Cambridge, MA. 1986. P 222.
6. Turner Construction, *Turner City 2014*. <http://www.turnerconstruction.com/turnercity/>. Accessed 9.24.15.