NORWOOD VIVIANO: Mining Industries

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Today, with the ubiquity of GPS, maps appear as impartial arbiters of the surrounding world. Theorists such as David Turnbull, however, caution against the idea that maps are free from human input and interference. Instead, he maintains, maps should be seen as "knowledge spaces" constructed by specialists—politicians, scientists and geographers, mathematicians and cartographers—in service of a particularized point of view.[1] The concept of the map as a "knowledge space" unifying disparate technologies in order to advance contemplation of a specific set of ideas is at the heart of Norwood Viviano's *Mining Industries.*

For the past ten years, Viviano has used tools of mapping and materials of industry—ceramics, glass, steel, computer-aided modeling, and rapid prototyping—to investigate the relationship between industry and population change in American cities. In *Recasting Michigan* (2009 – 2011), Viviano utilizes processes adapted from automotive manufacturing to create solid objects that traced the impact of faltering industries on the populations of manufacturing centers in his home state. *Cities: Departure and Deviation,* (2010 – 2011), takes a broader view depicting population change in twenty-four American cities over the course of their history in precise glass plumb bobs whose fragility underscores the precariousness of our contemporary moment. In the present work, *Mining Industries,* Viviano has synthesized the impulses of his previous series, using transparent glass to chart changes to the landscape caused by the growth and/or collapse of industries in eleven sites across Detroit, Houston, and Seattle over the last half-century.

Just as in the "knowledge spaces" of Turnbull's mappers, the individual works of *Mining Industries* aggregate a diverse array of specialist technologies, from 3D-printed renderings of optical remote sensing data (LiDAR) to aerial photography and hand-drawn Sanborn Maps, in service of their depictions of industrial change. The physical organization of the pieces orients the technologies chronologically, with the newest on the surface and progressively older ones below. This positioning allows each work to contrast the present conditions of an industrial site with its past by superimposing three-dimensional cast glass models of the city over historical images suspended in the glass below. The effect is one of producing a bird's eye view both of the history of these locations and of cartography, simultaneously delivering perspectives of their present and retrospectives of their past.

The past these pieces portray, however, is not immediately discernable. In a shift, from works such as *Cities: Departure and Deviation*, with their Edward Tufte-like exercises in clarifying complex information through visualization, *Mining Industries* complicates rather than clarifies its embedded historical data. For each site, Viviano includes portions of aerial maps circa 1980, 1940 and earlier, that demonstrate the changes wrought by industry—directly or indirectly—in that place. These snapshots are facts, as much as any documentation can be, of individual moments in the development of that particular location. They demonstrate the construction of highways, the razing of housing, the erection of stadiums, parks and factories. Viewed serially from straight on, these images begin to take on a certain logic, a sense that the evolution of the city is an inevitable process outside the realm of individual citizens. But Viviano does not allow a clear view of these images. Instead, he uses the materiality of glass to occlude and complicate

[1] David Turnbull, "Cartography and Science in Early Modern Europe: Mapping the Construction of Knowledge Spaces," Imago Mundi 48 (January 1, 1996): 5–24. See also: David Turnbull, Masons, Tricksters and Cartographers: Comparative Studies in the Sociology of Scientific and Indigenous Knowledge (London: Taylor & Francis, 2004).

their appearance as if to suggest that cities are not autonomous actors; that the processes of their development are far from pristine and clean-cut.

Viviano exploits the optic qualities of glass to undo the smoothing process of history and lay bare the messy, illogicality of city building. Looking through the lens-like surfaces of the pieces sculpted skylines, tract houses, bridges and rail lines—the histories of each site—are remixed.
In the refractive depths of the works, chronology is obscured, sequence thrown off, leaving color as the only hint to progression. From the side, visual aberrations make the photographs disappear entirely, erasing their claims to authenticity. Within each piece, then, the glass fractures received historical narratives into a set of distinct data points out of which viewers are invited to construct their own trajectories of time. This is a subversive use of material, one that upends our contemporary assumption of clear glass—programmed through the ubiquity of phone and computer screens as well as through windows—as a passive conveyor of information, a place where data is resolved.

In a process analogous to that of the unmooring of time within the individual works, Viviano's selection of sites disrupts perceived notions of progress within each city. In the thriving metropolises of Houston and Seattle, the urban centers are pitted against sprawling complexes just outside the city limits: the Exxon Mobile Refinery in Baytown, Texas and the Microsoft Headquarters in Redmond, Washington, respectively. On account of his careful selection of subject matter, Viviano juxtaposes dynamic skylines—the picture of metropolitan health—against minimal, vacuous industrial constructions. In their duality and subject, these works call to mind Robert Smithson's *Site/Non-Site* pieces of the late 1960s, which position the gallery-core against the *terrain vague* of its industrial periphery.[2] Like those pieces, Viviano's pairings seem to engage in an entropic view of the future of the city, one that comes into even greater contrast when viewed against the backdrop of Detroit, home to the remaining seven sites in this installment of *Mining Industries*. Ruptured areas within the metropolitan area itself, all of Viviano's Detroit sites were once vital economic generators, all of which eventually contributed to the current dissolution of the city.

In contrast to Smithson's pieces, with their encoded sense of entropic determinism about the future of the city, Viviano adopts a stance that is neither determinist nor activist. *Mining Industries* becomes a sort of creative reportage, offering views of the issues on the ground, hints to possible directions, but ultimately leaving conclusions to the viewers. These works form a "knowledge space" with the viewer, where only the specialized knowledge of the collective can come together to map the future.

[2] Jennifer L. Roberts, Mirror-travels: Robert Smithson and History, Yale Publications in the History of Art (New Haven: Yale University Press, 2004).