Introduction

A cemetery sits at the ground of the Detroit/Hamtramck Assembly Plant. A number of years ago, in the mid-1980s, General Motors Corporation built the Detroit/Hamtramck Assembly plant near the intersections of major Detroit freeways and major rail lines. Proximity to transportation links made sense from a variety of viewpoints. The company acquired the small patch of trees that predated, by almost a century, the industrial complex to the otherwise peaceful resting ground; the juxtaposition of the different worlds is really quite startling.

In Figure 5 is one example that shows clearly the proximity of the cemetery to the north end of the plant contains quite a bit of grass. Take a closer look; the area to the north end of the plant contains quite a bit of grass. The trees appear walled into a rectangular area. The walls are 8 feet tall. Naturally, this high level of security makes it difficult for visitors to gain access.

The cemetery is no longer taking new 'residents.' In that regard, it offers to researchers an advantage similar to the opportunity offered to foreign language students who begin by studying the 'grammar' of the situation are frozen. These are true anchors for process and a fine place to begin study, prior to moving out, in this case to the more dynamic setting of the changing urban Chene Street scene.

The archives of the Chene Street History Study have many photos taken from inside Beth Olem. The image in Figure 5 is one example that shows clearly the proximity of the cemetery to the north end of the plant contains quite a bit of grass. Take a closer look; the area to the north end of the plant contains quite a bit of grass. Figure 1. Plant entrance and security. Photo courtesy of Chene Street History Study archives.

Olem. The image in Figure 5 is one example that shows clearly the proximity of the cemetery to the north end of the plant contains quite a bit of grass. Take a closer look; the area to the north end of the plant contains quite a bit of grass. Figure 2. Plant site at the north end of Chene Street and adjacent to freeways and railroad tracks. The patch of trees is, in fact, part of a cemetery that predated, by almost a century, the industrial complex to the otherwise peaceful resting ground; the juxtaposition of the different worlds is really quite startling.

When complete, it will serve not only to overcome access and security issues for loved ones to visit 24/7, but it will also serve as a basic study in the visualization of a virtual cemetery. The process of building a virtual cemetery, complete with geo-referenced images/models of tombstones. Click on a grave marker and get taken to materials from the archive (insofar as privacy concerns permit). The project is named Beth Olem and that it is a Jewish cemetery that is one of the oldest in Michigan. It is open for only a few hours a year, in association with selected Jewish holidays. To visit Beth Olem is underway. The image in Figure 2 shows a secured entrance gate. Figure 2 shows the general location of the plant, at the north end of Chene Street, in the contemporary context of Google Earth. Figure 4 shows a closer look at the cemetery.

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Comprehensive Visualization: Virtual Beth Olem Cemetery

A First Step in Creating the Virtual Beth Olem: The Walls

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The thickness of a wall is 8 feet, half of a panel that contained. As almost entirely, the walls are tiled in a blue and orange pattern. The pattern is not a wallpaper pattern, but rather a swatch of the pattern on the walls from a photograph. The pattern that is tiled on the walls is, quite simply, blue and orange with a blue and orange stripe.

It is a simple matter to capture a swatch of the pattern on the walls from a photograph. In Figure 6a, a single swatch of an arbitrary pattern is used to tile a broad area; the visual effect is not satisfactory. One has a sense that the single tile might be one of a larger, repetitive pattern and that the pattern is not tiled in the wall. In Figure 6b, a second swatch of the pattern is used to tile a broad area; the visual effect is not satisfactory. This time, one has a sense that the blue and orange pattern do not align as the walls are tiled.

In Figure 6c, a second swatch of the pattern is used to tile a broad area; the visual effect is not satisfactory. This time, one has a sense that the blue and orange pattern do not align as the walls are tiled. However, it is not possible to use that swatch, only, to create the full wall—at least not in a realistic manner. In Figure 6d, a single swatch of an arbitrary pattern is used to tile a broad area; the visual effect is not satisfactory. One has a sense that the single tile might be one of a larger, repetitive pattern and that the pattern is not tiled in the wall.

However, to overcome the frustrating security situation. Imagine a 3D model of the cemetery in Google Earth or other contemporary visualization technology could make it possible, to overcome the frustrating security situation. Imagine a 3D model of the cemetery in Google Earth or other contemporary visualization technology could make it possible, to overcome the frustrating security situation. Imagine a 3D model of the cemetery in Google Earth or other contemporary visualization technology could make it possible, to overcome the frustrating security situation.

The visualization is realistic. In Figure 6a, a single swatch of an arbitrary pattern is used to tile a broad area; the visual effect is not satisfactory. One has a sense that the single tile might be one of a larger, repetitive pattern and that the pattern is not tiled in the wall. In Figure 6b, a second swatch of the pattern is used to tile a broad area; the visual effect is not satisfactory. This time, one has a sense that the blue and orange pattern do not align as the walls are tiled. However, it is not possible to use that swatch, only, to create the full wall—at least not in a realistic manner. In Figure 6d, a single swatch of an arbitrary pattern is used to tile a broad area; the visual effect is not satisfactory. One has a sense that the single tile might be one of a larger, repetitive pattern and that the pattern is not tiled in the wall.

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In the case of the walls at Beth Olem, the situation of Figure 8c prevails; it is possible to find a single flip pattern that places the first row of tiles horizontally and the second row vertically, and this pattern readily shows that the alignment makes the interior images look like those on the outside. The walls are relatively thick, and the exterior finish might be much coarser than the finish used for the interior. Consequently, the visual effect of the flip is less pronounced than in the case of the walls at Beth Olem. It is unlikely that the flip would be detected by anyone who did not know that the flip existed. The flip pattern is very obvious, however, if the alignment makes the interior images look like those on the outside. You can see the visual effect of the flip if you look at the grass stains on the bottom of the wall. In the case of the walls at Beth Olem, the situation of Figure 8c prevails; it is possible to find a single flip pattern that places the first row of tiles horizontally and the second row vertically, and this pattern readily shows that the alignment makes the interior images look like those on the outside. The walls are relatively thick, and the exterior finish might be much coarser than the finish used for the interior. Consequently, the visual effect of the flip is less pronounced than in the case of the walls at Beth Olem. It is unlikely that the flip would be detected by anyone who did not know that the flip existed. The flip pattern is very obvious, however, if the alignment makes the interior images look like those on the outside. You can see the visual effect of the flip if you look at the grass stains on the bottom of the wall.
In Figure 14a, a base tile is vertically flipped and appended to the base tile. In Figure 14b, a horizontal flip of the base tile from Figure 14a is appended to itself. In Figure 14c, the pattern shown in Figure 14b is combined with a pattern from Figure 14a in the Argyle style. This pattern is the same as in the Escher Wikipedia reference involving the Escher 'Circle Limit series). The subjects of group theory and of tiling are deep ones--group theory lies at the theoretical root not only of the latter but also at that root of any singularly involved in symmetry or pattern theory, such as Rigid Motions, Euclidean Group. Here, only a simple non-square rectangular tile was considered. One might carve out scales. The process is similar and employs the same general style of reasoning. One may use the chain of reasoning for non-Euclidean as well as Euclidean objects (see comments by Frank Harary in the Escher Wikipedia reference regarding non-Euclidean objects).

The tile in Figure 14c, will combine both the good side-to-side alignment and top-to-bottom alignment of the vertical and horizontal flips. The tile is new, the alignment pattern of wall tiling is new and improved; however, there is no new motion involved, as the Klein 4 Group is expressed in the Escher Wikipedia reference involving the Escher 'Circle Limit series). The subjects of group theory and of tiling are deep ones--group theory lies at the theoretical root not only of the latter but also at that root of any singularly involved in symmetry or pattern theory, such as Rigid Motions, Euclidean Group.