Crescent of Betrayal: Director's Cut

Appendix One (Addenda One through Nine)

Addendum One. Murdoch alone?

Founded in 1991, Paul Murdoch Architects is a modest four person architecture firm in Los Angeles. In 2001, Paul's wife Milena, already an experienced architect herself, joined as Vice President. The two other employees are Eric Cunningham, who came in as a "draftsperson," and project designer Grit Leipert.[1]

Milena, who accompanied Paul to the September unveiling, is the only employee who has been publicly associated with the Crescent design, but all four would likely have been involved in such a large project. That does not mean they all have to have known about things like the Mecca-orientation of the giant crescent.

Murdoch himself has clearly claimed ownership. At the September unveiling, *Post-Gazette* reporter Paula Reed Ward interviewed Paul and Milena:

> "There's a huge emotional investment," said Paul Murdoch, 48, his voice choking.[2]

He also described the crash site in religious terms:

> "There was something unexplained about that place," Paul Murdoch added. "It's like being in a cathedral."

In another interview, he denied that his use of the crescent had any Islamic meaning:

> "This is not about any religion per se," Murdoch said. "It's a spiritual space, and a sacred place, but it's open to anyone." [3]

The guy's got brass.

It is very possible that when I write "Murdoch's design," I should be writing "the Murdochs' design." I just don't know. The only person who is definitely implicated is Paul, so I will continue to refer to the design as his. If feminists suspect that Milena is being cheated of proper credit, they are by all means encouraged to uncover the full extent of her contribution.

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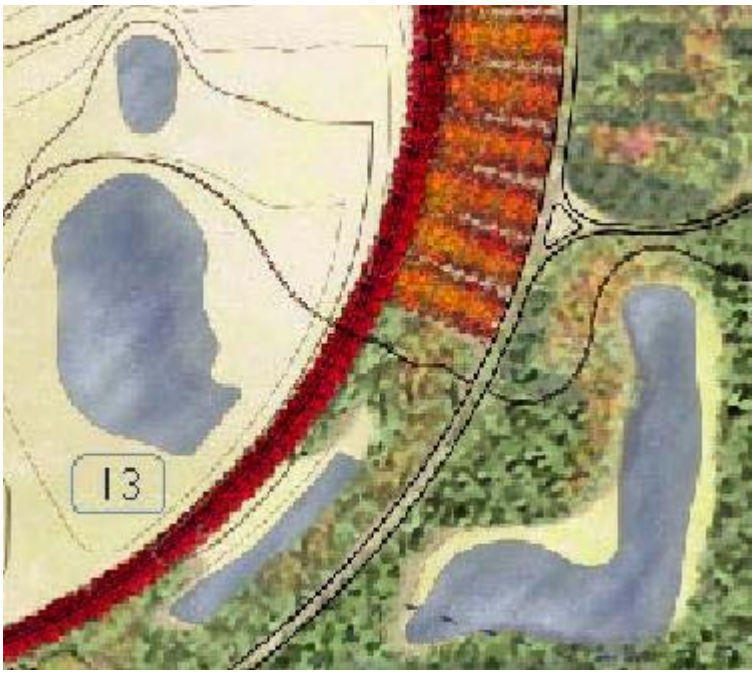
[1] A profile of the company is available at the Paul Murdoch Architects website: http://www.paulmurdocharchitects.com/profile.htm.

[2] "Flight 93 marker design picked," Paula Reed Ward, The Pittsburgh Post Gazette, 9/8/1005 (http://www.post-gazette.com/pg/05251/567702.stm).

[3] "Flight 93 memorial challenged," Kirk Swauger, *Johnstown Tribune-Democrat*, 9/9/2005 (http://www.meadvilletribune.com/art/cnhinsart_story_252000315.html).

Addendum Two. The Mecca orientations of the male and female shaped ablution ponds

Paul Murdoch's crescent design includes ponds, both inside and outside of the Crescent of Embrace, that could be used as ablution waters in an epic mosque design. In chapter 6 of Crescent of Betrayal it is noted that these look rather like male and female figures, possibly in the act of conducting ablutions:



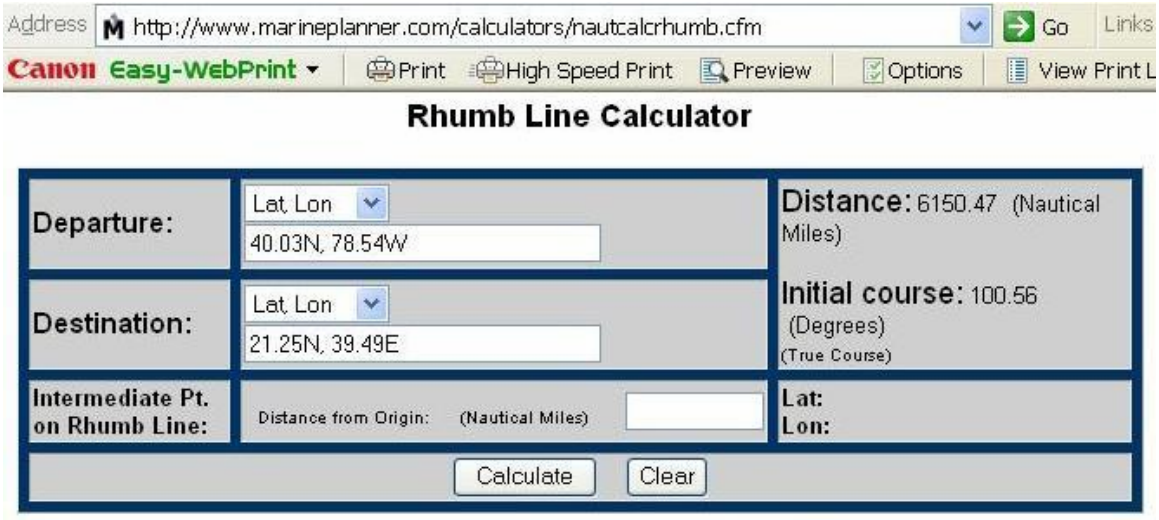
Possible ablution ponds in the crescent design.

Notice that the more feminine shaped figure is in an upright position, giving her a clear orientation, a little bit south of east, which is roughly the rhumb-line direction to Mecca. To check how closely she is facing the rhumb-line direction to Mecca, just connect a line from her "knees" to her "chest" and calculate her orientation mathematically:

Possible abstract kneeling figure, with orientation line super-imposed.

The knee-chest line in this figure has a rise of 114 pixels for every twenty pixels of run. The figure is facing 90° to this line (along a line with rise twenty pixels of fall for every 114 pixels of run), which translates into an angle of 99.95° clockwise from north. (Calculations below.)

Compare this pond-orientation to the rhumb-line direction to Mecca:



The rhumb line from the Flight 93 crash-site to Mecca follows constant compass heading of 100.56 degrees clockwise from north.[4]

Murdoch's possible keeling figure is facing only six-tenths of a degree off the rhumb-line direction to Mecca. The *mullahs* are just going to have to lay down the law to this crazy

[4] From marineplanner.com: http://www.marineplanner.com/calculators/nautcalcrhumb.cfm.

convert. Is Islam ready to be invaded by the "everybody's right" ideology of multiculturalist America? Expect another *fatwa*.

The Great-circle Oriented Pond

If Murdoch is going to have one of his ablution ponds mark the rhumb-line direction to Mecca, the other will have to mark the great-circle direction to Mecca. After all, the rhumb-line direction is the minority view. It can't be the only view represented, and there *is* another ablution pond to work with.

Murdoch is reliable as usual. If one follows the same orienting procedure and draws a line from the "knee" to the "chest" of his more masculine shaped pond, the figure is discovered to be facing exactly at Mecca:

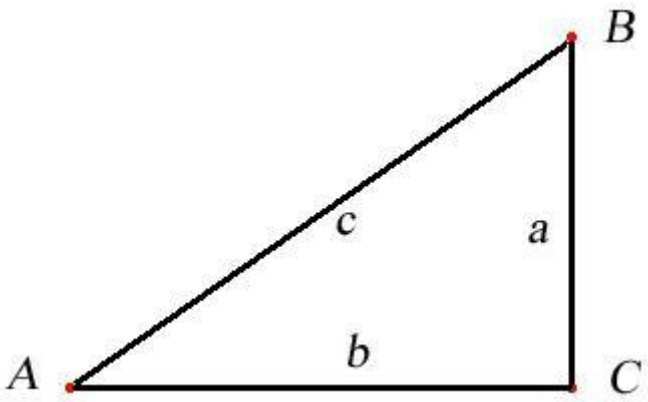
Masculine abluting figure, with orienting line superimposed.

Connecting a line between the "knees" and the "chest" of the second abluting figure yields a line with rise of one hundred pixels over a westward run of seventy pixels. That means the "figure" is facing 55 degrees clockwise from North, or 19/100ths of a degree off the true Mecca-line. Interesting how that keeps happening.

Doing the Math

If you missed the trig formula for translating rise and run in pixels into degrees and want to do the math, here it is, using the male shaped pond as an example.

The trig formula for calculating degrees from north is easy to derive. The tangent function describes the relationship between rise and run and the angles of a triangle:



For any right triangle, the tangent function of an acute angle A is defined as the ratio of the side opposite A to the side adjacent to A. That is: tangent (A) = (a/b).

The arctangent function is the inverse of the tangent function. Applying the arctangent function to both sides of the above equality preserves the equality: arctangent(tangent(A)) = arctangent(a/b).

Applying a function and its inverse to a quantity A just returns A, so the above equation becomes: A = arctangent(a/b), which is just what we need.

For the male ablution pond, just flip the rise and run of the knee-chest line (rise= 100 px, run = 70) to get the direction that the figure is facing: rise = 70, run = 100.

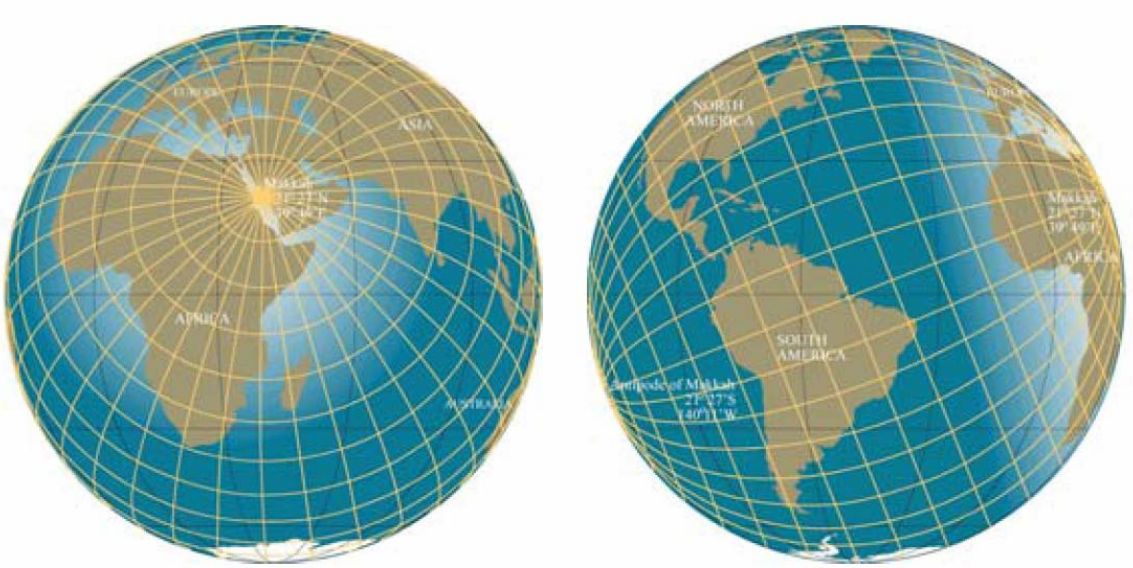
Plugging these measurements the triangle above, we get: A = arctangent(a/b)= arctangent(70/100) = 35°.

A is positioned to give slope in degrees counter-clockwise from east. Global orientations are usually specified in terms of degrees clockwise from north. Degrees down from north and up from east sum to 90, so subtract 35 from 90 to get that the male figure is facing 55 ° clockwise from north. That is only 19/100ths off of the exact direction to Mecca (55.19° from north).

The orientation of the feminine shaped pond can be calculated similarly. The knee-chest line has rise and run of 114 and 20 respectively. That means it's degrees from north can be calculated as arctangent (20/114) = 9.95. Add 90 to get the direction that this female figure (if it is a female figure) would be facing: 99.95 degrees from north.

The great circle vs. Rhumb-line debate

In the 1990's there was actually a somewhat heated debate amongst North American Muslims about the proper way to calculate the direction to Mecca. Geometrically, there can only be one answer. When Muslims make the pilgrimage to Mecca, they form concentric circles around the *Kaaba*, which they all face to pray. When these concentric circles are expanded out around the globe, the direction of a person facing directly into these circles is the shortest-distance direction to Mecca, or the great-circle direction. Ahmad Massasati, at the United Arab Emirates University, urges this concentric circle argument, and has calculated the following map-projection to illustrate:



Ahmad Massasati's prayer-circle maps. Left-hand image shows concentric circles around Mecca. The lines going *towards* Mecca are great-circle lines. Right-hand image shows the same mapping but with the globe rotated about 6 hours to the east, so that North America is visible.[5] [Might be fair use. Image has been altered by switching which image is on which side. Also, the test of Massati's paper seems to offer the image to the public domain: "Using the power of GIS automated cartography, the PC/PDC system (figure 2 [the original of the figure here]) can be printed on any selected projection and used as a tool of education. On the negative side, he mentions something about National Geographic producing such images. Could he possibly be saying that they produced *this* image? It does not seem so, but the relevant sentence seems to have been partly deleted, so it is hard to tell.]

Ahmad Massasati's mappings illustrate the geometric direction to Mecca nicely. But as unambiguous as the geometric direction to Mecca is, there is still tradition to consider, and some Muslim researchers argue that the traditional way of calculating the direction to Mecca is by the rhumb-line method.[6]

The rhumb-line between two points on the globe is the direction of constant compass heading between them. It takes a spiral path up or down the globe. From North America, this spiral path to Mecca circles in a slightly southeasterly direction. The rhumb-line

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[5] This concentric-circle argument is put forward by Ahmad S. Massasati, "Mapping the direction to Maaka: a cartographic perspective," American Journal of Islamic Social Studies, v. 19, no.2, Spring 2002, p.89 (http://iiit.org/AJISS_Final/ALLPDF/V19N2Spring2002.pdf; alternative version, with maps, http://gis.esri.com/library/userconf/proc03/p1086.pdf).

[6] For the rhumb-line argument, see: *The Substantiation of the People of the Truth that the Direction of al-Qibla in the United States and Canada is Southeast*, by Riad Nachef and Samir Kadi, Association of Islamic Charitable Projects, 1414 AH (1993). (A short version is included in a related article on the timing of Ramadan: "The Substantiation of the People of Belief that The Reliance for Fasting Is On Sighting the Crescent of *Ramadan* or Completing Thirty Days of *Sha^ban*," Association of Islamic Charitable Projects: http://aicp.org/IslamicInformation/English/SightingtheCrescentofRamadan.htm.)

direction appeals intuitively because it fits with the north-south map-orientation that most people think in terms of. Because Mecca is south of us, it seems that the direction to Mecca should be to the southeast.

The problem with the rhumb-line is that a person who is facing in the rhumb-line direction to Mecca is *not facing Mecca*. Add that there is also substantial Islamic tradition on the side of using the great-circle direction, and the debate seems to have been won pretty decisively by the great-circle advocates, though some still argue for the rhumb-line direction.[7]

The rhumb-line direction to Mecca and the qibla wall

There is also a logical reason for Murdoch to make the women's ablution pond face in the rhumb-line direction to Mecca. Recall that the crescent mosque's qibla wall is the Memorial Wall, which tracks the flight path that Flight 93 followed to ground. See Chapter Six of the Crescent of Betrayal book for a full explanation of the qibla wall.

In brief, almost every mosque includes a qibla wall, which the congregation faces to face Mecca. This is a plainer version of the mihrab, which a worshipper also faces into to face Mecca. (It is usually much wider than the mihrab, and hence is able to serve the whole congregation, though Paul Murdoch's half-mile wide mihrab reverses this relationship, becoming the larger-number Mecca-direction indicator.)

A person facing the qibla wall does not have to be facing Mecca exactly, because Muhammad's original qibla wall did not face Mecca exactly. Thus the Memorial Wall is able to serve as an adequate qibla wall, even though a person facing this wall is facing about 19° south of Mecca.

Note that this orientation is about half-way between the great-circle direction to Mecca and the rhumb-line direction to Mecca. Since this is prayer-direction indicator for the women (who pray behind the Memorial Wall), it makes sense that the women's ablution pond would include a nod to the rhumb-line direction to Mecca. The result is also satisfying in terms of the inferior position accorded to women in Islam. Those silly women just don't understand geometrical direction as well as men do, so they tend to want to face south in order to face the more southerly Mecca. (True enough, but then women are better than us silly men at remembering where they put things.)

Don't put it past Murdoch to have noted that the women's prayer direction faces somewhat in the rhumb-line direction when he created his rhumb-line facing women's ablution pond. He is very able.

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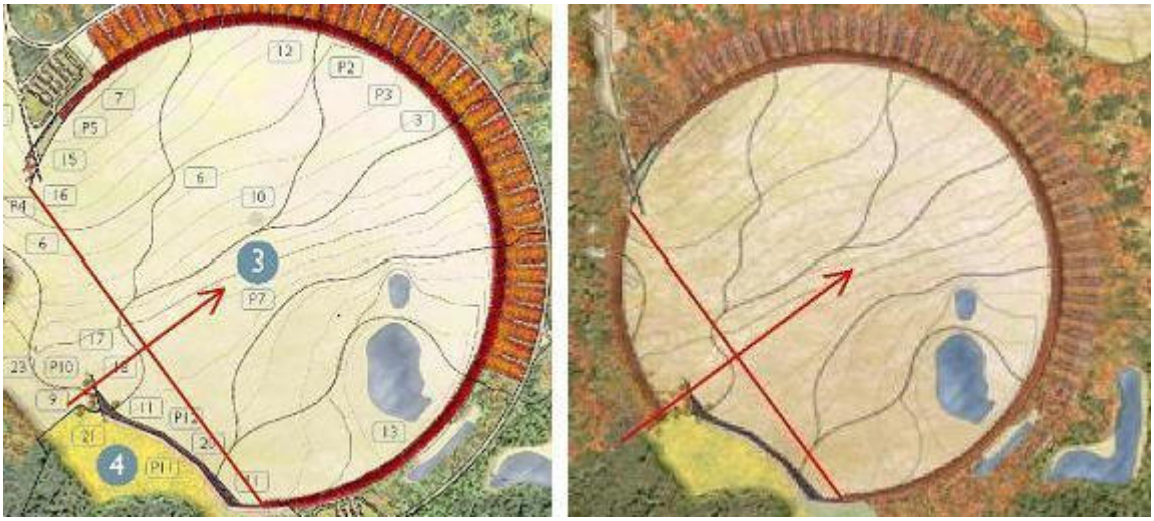
[7] Also on the pro-rhumb-line side, see "Direction of Al-Qibla," by Captain Muhammad Afzal Khan, 2003 (http://www.amislam.com/qiblah.htm). On great-circle side, see also "The correct qibla," by S. Kamal Abdali, 1997 (http://patriot.net/~abdali/ftp/qibla.pdf).

Two publications seem to have placed the rhumb-line advocates in the underdog position from the start. One is the publication of Kamal Abdali's 1978 book *Prayer Schedules for North America* (America Trust Publications). The other is a 1994 advisory issued by the Islamic Society of North America, "Direction for Kabah (mathematical) from anywhere," by Dr.Mohibullah N.Durrani, National Coordinator for Astronomical Information, ISNA (http://www.hilal-sighting.com/Qiblah-Math-1994.html).

Addendum three. Verifying that the redesign did not alter the Mecca orientation of Murdoch's giant crescent

Performing the same calculations on the Bowl of Embrace redesign verifies that the original crescent tips, and the orientation of the Murdoch's central crescent, are unchanged in the redesign.



Crescent-tip-lines and perpendicular bisectors for the Crescent of Embrace (left) and the Bowl of Embrace (right).

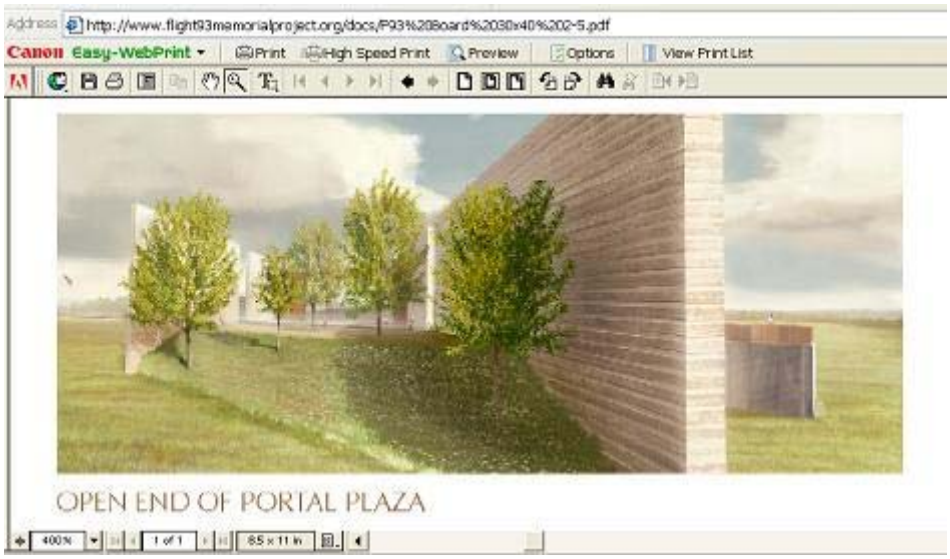
In the Bowl of Embrace image above, the line that connects the last red maple at the bottom to the end of the Entry Portal wall at top was picked to have the same slope as the corresponding line in the Crescent of Embrace image on the left. (The bisector in the Bowl image points 53.47° clockwise from north, versus 53.46° in the Crescent image.[8]) Notice that this line hits the last red maple and the end of the Entry Portal Wall in the exact same way in each image, proving that these crescent tips are unchanged in the redesign.

[8] The line connecting the tips of the original crescent in this image goes down 274 pixels and over 203. Thus the bisector goes over 274 pixels and up 203. Arctangent (203/274) = 36.53 is the degrees of this bisector counter-clockwise from east. Subtract this from 90 to get that the bisector points 53.47 degrees clockwise from north, which is only 1/100th of a degree flatter than the bisector in the Crescent of Embrace image.

[In my files, the image on the right in Figure 8 is titled "BowlTipLine260.471.203.274". The pixel used to designate the lower crescent tip is at (x, y) = (260, 471). As noted in the text, the rise and run to the upper crescent tip are 274 and -203 respectively. For all the graphics used for calculations, this information needs to be collected in an addendum. The graphics can then be posted on the book's website (murderersmosque.com) so that users can copy them into their graphics programs and be able to verify my points for themselves.

The origin points for the image on the left in Figure 8 are (x, y) = (369, 708). Rise and run are 448 and -332. Image title in my files is CrescentFullBisector600.]

The Entry Portal structure is not quite as clear in the redesign image as in the Crescent image because the redesign graphic is lower resolution. There are detailed views, however, released with the redesign, that confirm that no changes have been made to the end of the Entry Portal walls:



From the original Crescent PDF's. Entry Portal structure, showing a close-up of the end of the inner wall (the upper tip of the giant Crescent of Embrace).

From the Bowl redesign, released 11-29-05. This is the same graphic as was contained in the original Crescent PDF's. The Entry Portal walls are unchanged, leaving the upper crescent tip (the end of the inner concrete wall) exactly as it was.[9]

[9] Image is from the redesign, posted on the Memorial Project's media page (http://www.flight93memorialproject.org/media_finalist.asp?area=med) 11/29/2005. Titled "IMAGE--Open End of Portal" (http://www.nasites.com/cmprojects/projects/Flight93_bulibmgr/docs/Open%20End%20of%20Portal.jpg). from the Memorial Project's media page (http://www.flight93memorialproject.org/media_finalist.asp?area=med) .

Yes, these graphics also show the Walkway unchanged, when we know from two other graphics (addendum 1) that the Walkway is changed in the redesign. But the Walkway is in the background here (and its change is already depicted in two other places). The primary feature in the above graphics is the end of the Entry Portal wall, and it is depicted identically in each.

There is one change, however, that should be visible in these views but is not. (See Addendum Four.)

Addendum Four. Repositioning the 44th block

The Entry Portal Walkway

In the introduction, I said that "virtually the only change" made in the Bowl of Embrace redesign was the addition of a few irrelevant trees to the west of the central crescent. Why the hedge word "virtually"? Because there is one other very small but significant change Murdoch made in the redesign. He significantly lengthened the Entry Portal Walkway:

Bowl of Embrace redesign (right) features a lengthened Entry Portal Walkway (where it now extends all the way to the topo line that goes through the "16" in the left-hand image).

The lower resolution image of the redesign, combined with the recoloration along the circle of the crescent, makes the ends of the Entry Portal walls a bit indistinct, but we know from the detail view of the Entry Portal walls (at the end of Addendum Three) that the walls are unchanged in the redesign. What *is* changed is the length of the Entry Portal Walkway, and hence the exact placement of the 44th glass block, which sits at the end of the Entry Portal Walkway.

To see why Murdoch would have done this is gets into some picayune points about the graphical analysis (basically, about the thickness of the lines used in the analysis). It is definitely esoteric, but needs to be addressed for completeness.

Detail views of the Entry Portal Walkway verify that it has indeed been lengthened in the redesing. Here is a view from the original Crescent PDF's. Four zig-zags can be counted going down the railing of the Walkway:

Crescent Walkway short.

Here is a close up of the Western Overlook view of the Walkway/Mimbar from the Bowl of Embrace redesign. Eight zig-zags can be counted going down the Walkway railing:

Bowl Walkway long.

If the 44th block was already exactly positioned to create the exact Mecca-orientation of Murdoch's central crescent, then why change it? What is Murdoch up to?

He is correcting a slight error that both he and I made. Recall that when I drew a line connecting the most obtruding tips of the Crescent of Embrace, I used a fat line, and I let the thickness of the line sit on top of the ends of the projecting features. That means that the actual crescent-tip-line is the outward edge of my fat line, not the whole fat line.

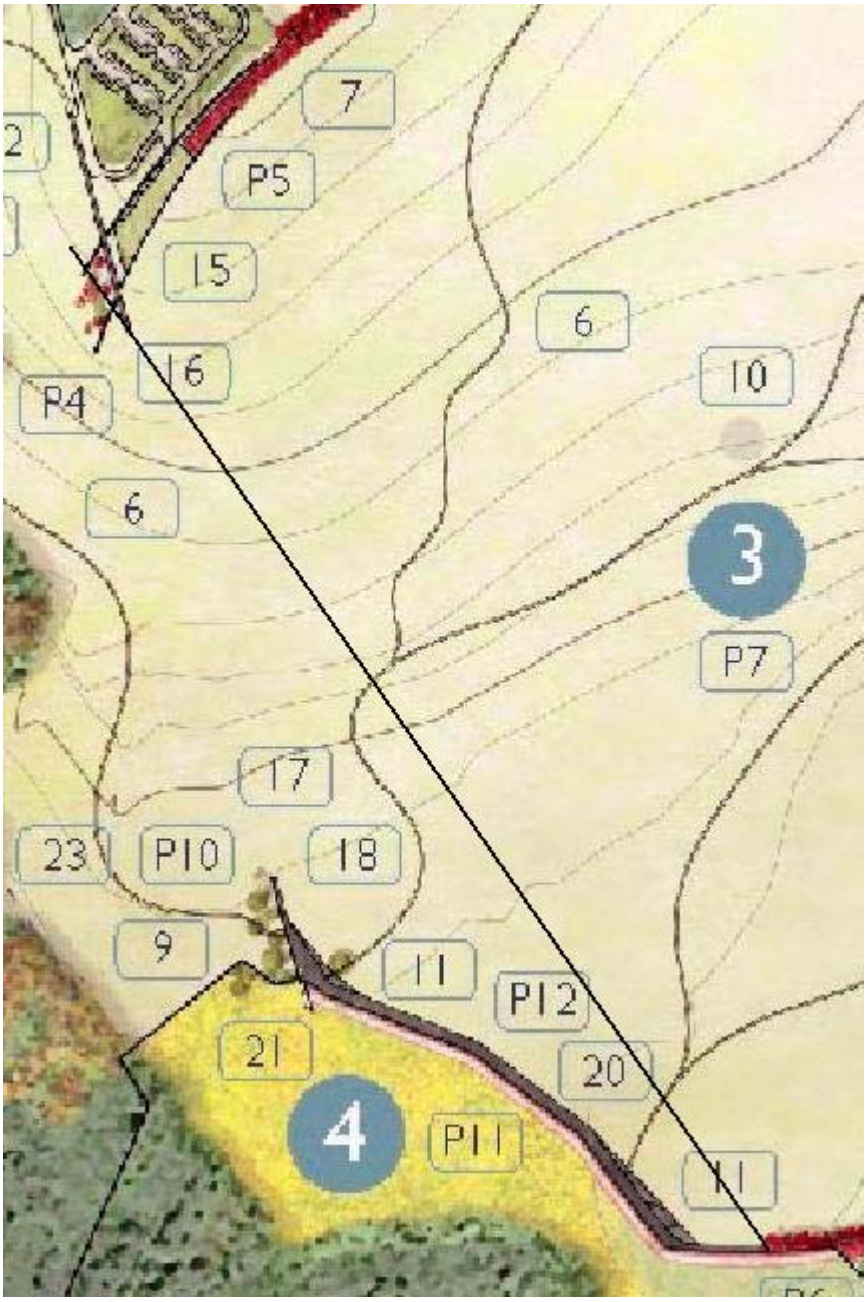
This also holds for the exact Mecca-tip-line I projected starting from the bottom crescent tip. The fat line overlaps the bottom crescent tip. Hence when the fat line happens to cross exactly over the glass block at the end of the Entry Portal Walkway, the abstract Mecca-line is actually passing just outside of the glass block. My impression that Murdoch's Crescent design placed the 44th glass block exactly on the true Mecca-line (thereby using the 44th glass block to mark the true Mecca-line) was incorrect. An abstract line from the bottom crescent tip through the middle of the glass block would actually be rotated a bit further clockwise than my projection of the exact-Mecca-tip-line.

To mark the true Mecca-line, Murdoch would have to push the glass block out further forwards the mouth of the crescent, which is what he does in the Bowl of Embrace redesign.

Using trees to define crescent tips

Murdoch seems to have made the same miscalculation in his original Crescent design that I did in analyzing the Crescent design, and it is easy to see how. My fat line is about the same width in pixels as the radius of one of Murdoch's trees. Most of Murdoch's crescent tips are defined by trees. All of the Tower crescents are defined by trees, and the bottom of the central crescent is defined by the last red maple at the bottom. The only crescent orienting features in the design that are solid are the ends of the entry portal walls. Thus it seems that what Murdoch did, in defining the upper tips of the Crescent of Embrace, was to imagine that he was placing a tree. To do this, he would have had to let the Entry Portal walls run out past the placement of the trunks of his imaginary trees by the radius of one of his trees. He then apparently made the mistake of locating his crescent-tip-connecting-line between the centers of his trees (the last tree at the bottom and the imaginary trees at the ends of the inner and outer Entry Portal walls).

This explains the original placement of the 44th glass block in the Crescent design exactly. Connect a thin line between the trunk of the last red maple on the bottom and a point that is in from the end of the outer Entry Portal wall by the radius of a one of Murdoch's red maples, and it goes directly through the center of the end of the Entry Portal Walkway:



Crescent PDF, with line from the center of the last red maple at the bottom to a point maple-radius in on outer Entry Portal wall: goes directly through glass block at end of Entry Portal Walkway.

This line might look like it is not centered on the last red maple tree at the bottom. That is because what looks like the last round shape at the bottom is actually four red maples (two on either side of the crescent walkway). The superimposed line is connected to the center of the bottom left red maple in that last clump of maples.

The red maples have a radius of about 5 pixels at this 600% blow up, so I came in 5 pixels from the end of the outer Entry Portal wall on top to simulate the center of an imaginary tree at the top.

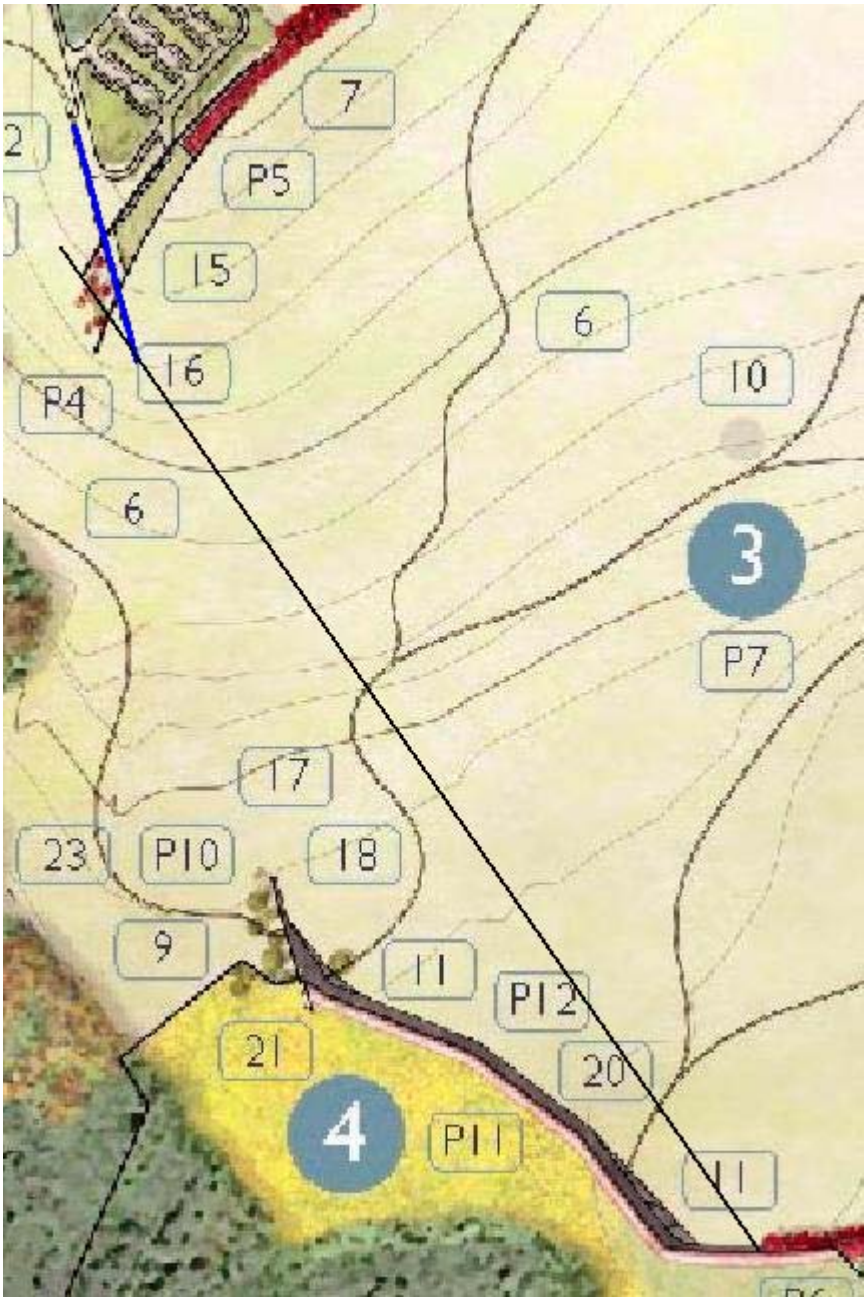
Bingo. The line passes right through the center of the 44th glass block. The bisector (not shown) points 55.13° clockwise from North, which is 6/100ths of a degree north of the exact Mecca-direction. i.e. It points exactly to Mecca, within the accuracy enabled by the pixel resolution of the graphics. Someone with a larger computer screen than mine (1280x1024) could blow the PDF up further and do a more accurate calculation.[10]

Extending the walkway fixes the mistake

Whether or not I have the correct explanation for the placement of the glass block in the original Crescent of Embrace design, the placement of the glass block in the Bowl of Embrace redesign now defines an exact Mecca-orientation for the central crescent when analyzed with abstract lines instead of fat lines.

Figure 81 shows that the redesigned Entry Portal Walkway extends down to just above the contour line that passes the end of the inner Entry Portal wall. Since the contour lines are identical in both the original Crescent site plan and the site plan from the redesign, this extension of the Entry Portal Walkway can be added to the higher resolution image from the Crescent PDF's to get an accurate picture of what the redesign will look like:

[10] The rise and run in pixels of the superimposed line in figure 32 are 501 and 349. The raw graphic I used is titled in my files: "Crescent600DetailRaw." The origin point used for the bottom crescent tip is (x,y) = 382, 622).



The blue line superimposed on the flight path depicts the extended Entry Portal Walkway from the Bowl of Embrace redesign. The thin black line runs *across* the last red maple at the bottom and *across* the end of the outer Entry Portal wall at the top. (It has the same slope as the thin black line superimposed in figure 84, but is shifted five pixels left.)

Instead of passing through the exact center of the new location of the 44th glass block, this abstract connecting line passes through the inside part of the glass block. Thus it seems that Murdoch's Bowl of Embrace extends the Entry Portal walkway a couple of pixels too far for it to define the exact Mecca-orientation of Murdoch's central crescent quite precisely.

Did Murdoch use a fat line across the crescent tips and center the glass block on that fat line? Klutz. That's what I did on the *other* side of the abstract Mecca-connecting-line. (Remember, Murdoch's mistake on the other side of the line was different from mine. He wasn't using fat lines. He was using fat trees. So it is plausible that he could still have made the fat-line mistake.)

In any case, the 44th glass block in the redesign is within a couple of pixels of being centered on the abstract exact-Mecca-tip-line created by connecting the outer edge of the last maple on the bottom to the outer edge of the outer Entry Portal wall. Good enough for government work. Excellent disgusting job Murdoch. You nailed it.

Cutting the sleeve to fit the arm?

Is the fact that I could find a way to interpret Murdoch's placement of the 44th block as creating an exact orientation on Mecca, both when it was in its original position, and after it was moved in the Bowl redesign, proof that if one is looking for something one can find a way to see it?

No. I actually did not notice that the walkway in the Bowl redesign was extended until after I had included in Chapter 4 a section on Murdoch's slightly inaccurate placement of the 44th block, and how it was centered on a fat line, but was off to the side of an abstract line, together with my surmise about how this occurred (that Murdoch used fat trees to locate his crescent tips).[11] Only later, after I was already alert to this imprecision in Murdoch's Islamo-fascist scheme (and was pointing it out), did I notice that he had lengthened the lengthened entry portal walkway in the redesign.

So he fixed the imprecision! Good. That makes discussion of the imprecision moot, so I can move discussion of it to an addendum. Just think of the hay that truth avoiders like Joanne Hanley would make if I had to admit that Murdoch had actually placed the 44th

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[11] Here is what I had included in my chapter 4 discussion of the placement of the 44th block in the Crescent design, before I realized that the point was moot:

> How exact is the placement of the 44th glass block on the line that connects the lower crescent tip to the end of the outer Entry Portal wall? It depends on whether this line is drawn so that its endpoints sit *on* the end of the outer wall and *on* the last red maple at the bottom, or whether it is drawn to go across next to these points, without touching them.
>
> From the beginning I chose to draw my crescent-tip lines so that they landed *on* the crescent tips. Shifting the whole line further left or right would also be accurate in terms of slope. So long as the tip-lines are drawn in a consistent way, they will imply the same orientation of the crescent. That means it will always be possible to shift the tip line inwards enough so that it passes through the 44th glass block. Because of this degree of arbitrariness, I only say above that the projection of the exact-Mecca-tip-line lands "approximately at the end of the outer Entry Portal wall."
>
> Interestingly, if one calculates how far onto the end of the outer Entry Portal wall and onto the last red maple at the bottom a line has to sit to pass through the exact center of the glass block, it turns out to be the pixel radius of Murdoch's red maple trees. Thus it is likely that the slightly imprecise placement of the 44th block (for Islamo-fascist purposes) is due to Murdoch using trees to mark his crescent tips. This is not up to his usual standard of Islamo-fascist precision, but it is very close.

block several pixels off of the exact center of the exact Mecca line? Murdoch's obsession with Islamo-fascist accuracy has voided that difficulty.

Addendum Five: Jihadist heaven

If Murdoch is all about Islamo-fascist precision, why does the bisector of a line connecting the two most obtruding tips of the central crescent pass through the upper memorial wall a few pixels below the center of the wall?

The upper section of memorial wall, from the path coming in from the left to the top of the wall, is 50 pixels long in this screen-shot. The red bisector passes through the wall 20 pixels up from the path, not 25. That means the upper section of Memorial Wall is off the center of the central crescent by 5 pixels, out of out of the crescent's 558 pixel span.

The implication of all the precision that has been discovered so far is that Murdoch developed his design on a CAD program. If he was drafting by hand then it is easy to see how he might place his Islamic star a couple of pixels off-center by mistake. It is very difficult to place elements precisely by hand. But if the design was constructed on a CAD program, anything that was intended to be centered would be centered precisely, and that precision would show up as accurate to the pixel when rendered into a PDF.

It is true that the upper memorial wall (which follows the flight path) is not perpendicular to the bisector (which points just off Mecca), but that wouldn't make it hard to center. Simple symmetry is trivially easy on a CAD program. Plausible deniability is out as an explanation because anyone who has discovered that the upper memorial wall is centered within a few pixels on a half mile wide crescent isn't going to say: "Well, I guess it isn't the star on an Islamic flag then!"

A fourth glass block on the upper memorial wall?

The indication is that Murdoch is up to something. A hint as to what comes form looking at where the bisector of central crescent's exact-Mecca-orientation hits the Memorial Wall:

Black line is the exact-Mecca line that bisects the crescent when the upper crescent tip is defined by the 44th glass block.

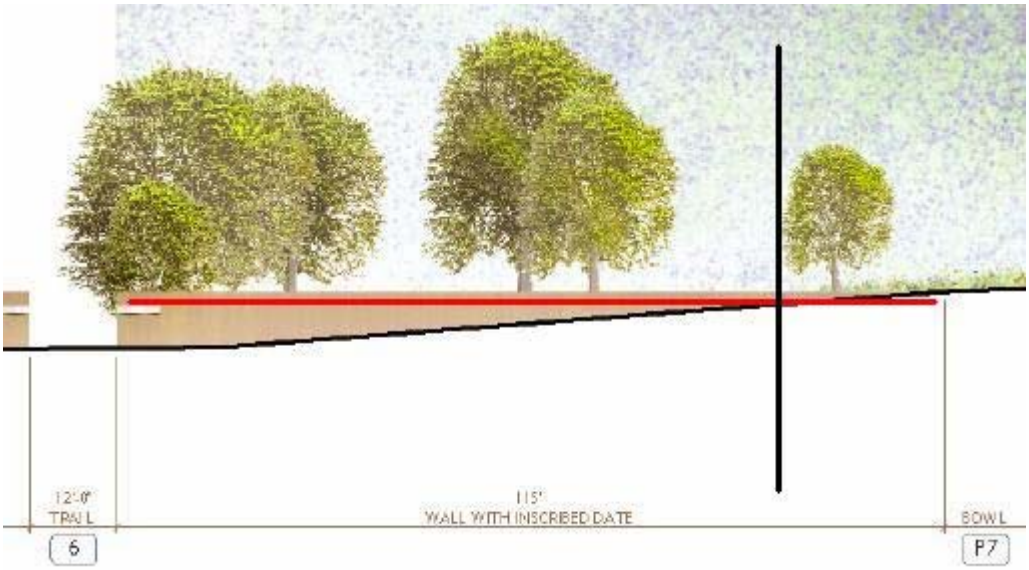
The exact-Mecca-bisector hits the upper section of Memorial Wall 10 pixels from the top, or 1/5th of the way down. The red inexact-Mecca-bisector hit 2/5ths of the way up. Thus the exact Mecca bisector defines a sub-section of the upper Memorial Wall that is exactly centered on the inexact-Mecca-bisector. Hey, don't blame me for how crazy that sounds! Murdoch actually did it, and there is a logic as to why. Defining a subsection of the upper Memorial Wall in this way allows for complete resolution of symbolic meaning of the Murdoch's terrorist-memorial mosque.

It does not fully satisfying, from a terrorist-memorial point-of-view, to have the one of the 44 glass blocks on the flight path be a huge glass block when all the others are small glass blocks. The blocks symbolize individual lives. Was one of the terrorists some special kind of human being? Why should one block be bigger than the rest put together? A giant block dedicated to an individual life even runs the risk of sacralizing that life, in violation of the Islamic prohibition on idolatry.

What Murdoch really needs is a fourth block on the upper section of Memorial Wall. He can't place it where people can see it, or he will lose his plausible deniability. Four glass blocks visible on the upper section of Memorial Wall would make it too obvious that this was a separate terrorist-memorial wall. Even the Memorial Project might get it. Thus Murdoch needs to hide a fourth block, and the perfect place to put it is under the bisector of the exact-Mecca-Crescent.

First, this is the exact point, or within a few feet of the exact point, where Flight 93 first hit ground. Thus it commemorates the traditional Islamic accolade for jihad martyrs: that they are "the point of the spear." Second, it ties the exact and inexact Mecca-orientations of the central crescent in the definition of the precisely centered star on the Islamic crescent and star flag. Third, given the way the wall has been constructed so as to descend into the ground, a block near the upper end of the wall can be hidden by placing it in portion of the wall that has already descended into the ground.

Here is an elevation of the same point:



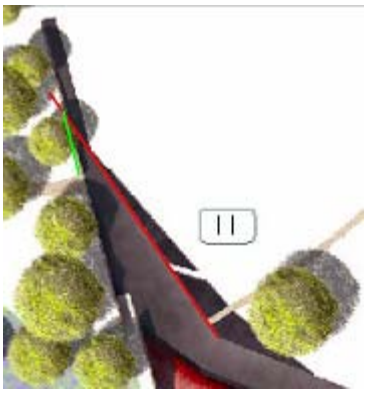
If an architect wanted to hide a fourth glass block on the upper memorial wall itself, the obvious place to do it would be where the level line from the existing line of blocks descends below grade. This point coincides with the point where the exact-Mecca-bisector of the central crescent passes through the upper section of Memorial Wall (1/5th of the way down from the top). Bury a glass block here and no one will ever be the wiser.

Houri heaven

If there is a 4th small translucent block buried under the true Mecca bisector, then the symbolism of the large glass block up at the Entry Portal changes completely. It would no longer represent a 44th individual. All the individual lives, the murderers and the murdered, would already be memorialized by small individual blocks, and if small blocks symbolize individual souls, then a large block must symbolize the Islamic heaven, the place of eternal life, where all the individual lives go, *if* they have earned their way in, by fulfilling such highest obligations as waging jihad against the infidel.

This fits with the placement of the large glass block at the upper crescent tip (where it actually defines the upper tip of the exact Mecca-oriented crescent). The Islamic crescent and star are symbols of the Islamic heavens. The four terrorist memorial blocks would be included in the Islamic star, indicating that the terrorist who are memorialized by those blocks have earned their way into heaven. The infidels don't make it to heaven. They are memorialized further down the flight path, down below the Islamic star.

Having seen how Murdoch thinks, I think it very likely that this is his plan. It resolves all of the remaining symbolic and geometrical imprecisions in his design. Maybe if the FBI will confiscate his computers, we can take a look and see if he ever committed this committed this feature to virtual-paper. But we aren't stuck only with speculation, because as was seen earlier, Murdoch loves to provide redundant confirmation of his intentions, and he provides redundant confirmation here too.



A line drawn along the black stone bench in the memorial wall area has the same slope as the exact-Mecca-tip-line (the line from the bottom crescent tip through the large glass block). Notice that this line hits the upper section of Memorial Wall 2/5ths of the way up, exactly where the inexact-Mecca-bisector of the central crescent hits the wall.[12]

What Murdoch is doing here is proving that it is no accident that the inexact-Mecca-bisector of the central crescent hits 2/5ths of the way up the upper section of Memorial Wall. He is also proving his intention to tie the exact and inexact Mecca orientations of his structure together. Burying a glass block 1/5th of the way down the wall would also accomplish this goal, so the two devices point to each other.

There is no doubt that that the Mecca orientations in Murdoch's plan are intended. The multiple redundancies in the design have already proven his Islamo-fascist intent. Now here is another Mecca-orientation, tying up another of Murdoch's key geometrical points. Talk about overkill, but I guess if the objective is to champion mass murderer, there is no such thing as overkill.

CAD steps to designing the Islamo-fascist features of the Crescent/Bowl of Embrace

Given all the complexity of Murdoch's Islamo-fascist design, it might even seem to be over-determined, in which case it would *have* to be coincidence. A person couldn't do all this on purpose, right? But in fact, the features described above are quite easy to coordinate. There is definitely some serendipity in the fact that the flight path is close enough to perpendicular to the direction to Mecca to serve as a viable qibla wall, so that

when the flight path "broke the circle," as Murdoch puts it, the result could hide a Mecca-oriented crescent. There is also serendipity in the bowl shape of the terrain, also making a crescent seem natural. And there is prodigious ingenuity. No doubt about it. But once Murdoch came up with his design ideas, executing them presents no particular difficulty. Just enter the following sequence of design steps into a CAD program.

[12] Rise and run for the red line in this figure are 408px and 280px respectively. A perpendicular to this line will point arctangent(408/280) degrees from north = 55.54. That is 35/100ths of a degree flatter than the true Mecca line, or very close to exactly the true Mecca line, within the accuracy that the graphics enable.

Start with the flight path, where the dead will be memorialized, and with a circle that the flight path "breaks." Move the circle up or down the flight path until a line from Mecca through the center of the circle projects through the point where the Flight 93 first hit the ground. Move a perpendicular to this Mecca line in or out until it defines a set of crescent tips (intersections with the circle) where the upper crescent tip projects out a little bit beyond where the flight path crosses the circle. The Portal Walkway will then extend out until it hits the perpendicular to Mecca line, and that is where the glass block will be placed.

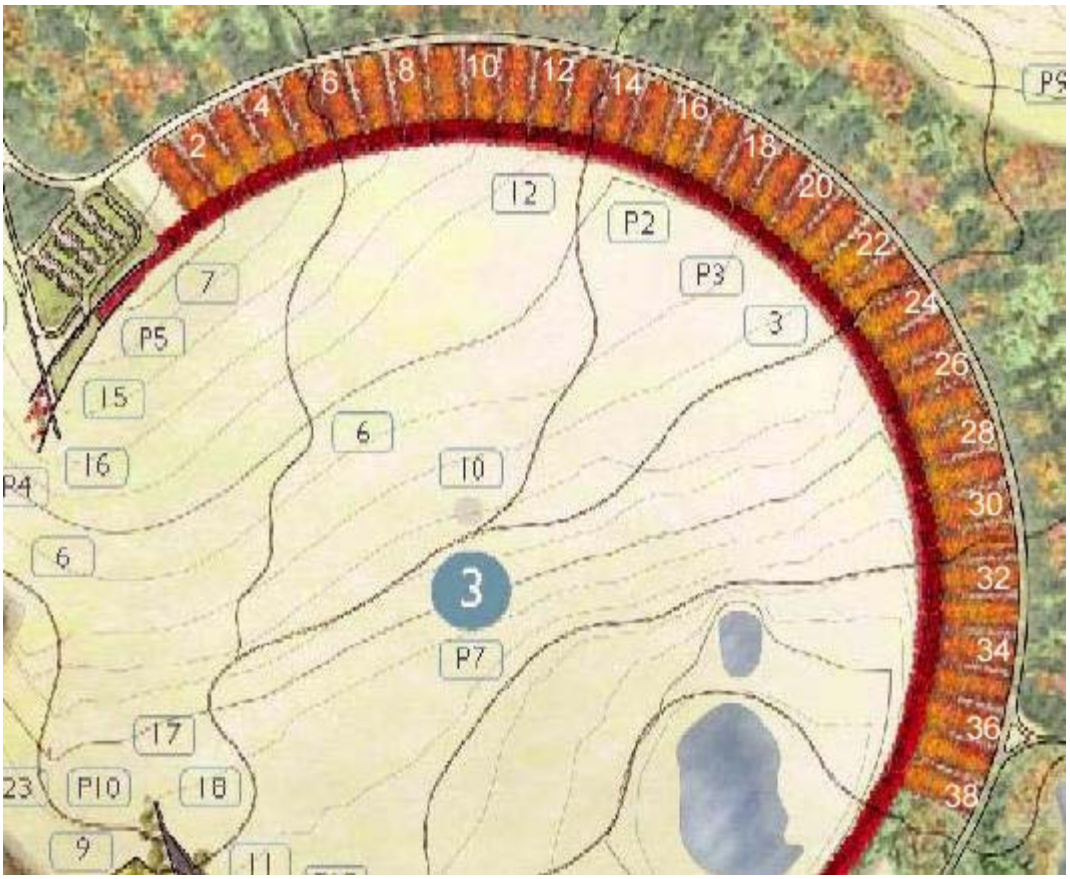
At this point the circle can be moved further across the flight path, or pulled back across the flight path, until the amount of arc included in the resulting crescent matches the amount of arc in an Islamic crescent.

The next step is to extend the Entry Portal wall out beyond the exact-Mecca crescent tip, creating a second, inexact, Mecca orientation. This will define the center the upper section of Memorial Wall. Take the distance from this center of the wall to the point further up the flight path where Flight 93 first hit, and measure that same distance further down the flight path. That will define the bottom of the upper section of Memorial Wall (the point at which the opening for the path to the women's prayer area in the rear begins). And that is it. That is all the critical geometry.

The difficulty was in coming up with such an ingenious design, all dedicated to evil. Perhaps the ingeniousness is not that extraordinary, and it just seems so astounding because one has never seen such art in the service of evil before. It is hard to say. I think there really is extraordinary creativity here. Maybe at some point Murdoch will be willing to speak, and explain how he could be inspired by murder.

Addendum 6: Only 38 Memorial Groves

The Memorial Project touts the Crescent/Bowl design as incorporating "40 Memorial Groves," one to memorialize each of the murdered passengers and crew, but upon counting the number of Memorial Groves actually included in the design, there are only 38:



Only 38 Memorial Groves, instead of the advertised 40.

Is this an example where Murdoch finally ran out of degrees of freedom? Did he lop two of the planned 40 Memorial Groves off so that a line across the tips of his crescent of groves could be made to point to the White House. Certainly this squares with Murdoch's priorities. The entire design is a memorial to the terrorists, not the passengers and crew, so if one had to give way in Murdoch's design, it would certainly be the passengers and crew.

The problem with this explanation is that it looks like Murdoch easily enough could have added one more groves at each end, which would leave the slope of a line across the tips of the fat rear crescent unchanged. It would still point to the White House. Thus it seems that dropping from 40 to 38 groves was intentional in its own right.

The only explanation I can think of is that, amongst the passengers and crew, only 38 were American. Maybe Murdoch thought it would be clever to have the 38 American lives point at the American head that the jihadists tried to chop off. He has already proven himself perverse enough to do much worse than that. The only thing out of character is that excluding the two foreigners from the attack on Washington would be such a picayune gesture. Everywhere else Murdoch is grand in his perversions, not picayune, so maybe there is another explanation, some grand perversion behind the reduction in the number of Memorial Groves, but if so, it remains hidden.

Addendum 7: Shadow calculations and other esoterica from the Tower-sundial

To put together my shadow calculations, I took advantage of a number of very helpful online resources. Most important is J. Giesen's Sun Shadow Applet.[13] Giesen's applet the length and direction of the shadow cast by any gnomon, at any time of the day, at any point on the earth. Just set the applet to 40.03 north latitude and 78.54 West longitude, set GMT to -5, turn off Daylight Savings Time, and set the gnomon height to 28.35 meters (93 feet), which is height of the Tower at the bottom of its crescent shaped top (the highest point of solid shadow, whether or not the slot is in play). Since the bottom of the crescent coincides with the slotted southwest side of the tower, it is this side of the tower that serves as the origin from which shadow length and angle are projected.

Giesen's applet can be used to calculate Islamic afternoon prayer times (asr prayers). For any day, use the applet to find the shortest shadow of the day (somewhere near noon). Add this length to 28.35 meters, and look for the time in the afternoon when the Tower's shadow reaches this length. That is the asr prayer time. Simpler is just to go to one of the Islamic websites that hosts an Islamic prayer time calculator. I used the one at qibla.org. Just plug in the latitude and longitude of the crash site, set GMT to -5, turn Daylight Savings Time off, and the calculator will generate daily prayer times by month and year.

With prayer time for a given day in hand, plug this time and date into Giesen's applet and it will tell you the length of the shadow and the angle of the shadow. It gives the angle by giving the Sun's azimuth in degrees clockwise from north. Subtract 180 from this to get the angle of the shadow clockwise from north. If your graphics program enables polar coordinates, you can plot these lengths and angles directly onto a screen shot of the Tower array. (On a Windows PC, pressing "Alt" and "Print Screen" will copy a screen shot of your active browser window to you clipboard, allowing you to paste it into other programs. To take a screen shot of your entire screen, omit the "Alt".)

If you are using Microsoft Paint you will need to do what I did and convert your polar coordinates (angle and length) into Cartesian coordinates. For this, I used the online coordinate converter provided by Kusashi.com.[14] This calculator assumes that angles are measured counter-clockwise from east, so you will have to subtract your degrees clockwise from north from 90 before using it. Plug this angle into the "argument" box, plug shadow length into the modulus box and press calculate. The real component of the result will be your x coordinate and the imaginary component of the result will be your y coordinate (both in meters, since that was what you inputted in the modulus).

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[13] http://www.jgiesen.de/sunshadow/index.htm

[14] http://www.kusashi.com/polar-cartesian.php?c=88.95&d=49.9&type=de&o=%2B1&x=0&y=0&stage=results

These meters then need to be converted to pixels, according to the number of pixels to the meter in the screen-shot you are using. When I take a screen shot of Murdoch's Tower Plan PDF zoomed to 900%, a pixel count of the scale shows 4.74 pixels to the meter. Thus I multiply my meter measurements by 4.74 to plot them on my Tower Plan graphic. It is a little cumbersome, but pretty simple once you get everything set up. Here are my shadow calculations, (slightly different from the calculations in my original sundial post because I discovered that I had entered the latitude wrong for my original calculations, 40.3 degrees north instead of 40.03 degrees north):

June 16th 2005 (longest day of the year)
Asr = 4:15 PM; (modulus, argument) = (37.39, -.6); (x, y) in meters = (37.39, -.39); (x, y) in pixels = (177, -2).

For the Tower Plan graphic on which I superimposed asr prayer-lines, the critical point is the bottom of the gnomon, which as I constructed it has Cartesian coordinates of (x,y) = (164, 426). (Coordinates are counted down to the right, starting from the origin at the upper left. I chose this point by inscribing the crescent shaped cross-section of the Tower with a circle and projecting a line through the center of the circle that follows the angle of the Tower platform (rise 100, run 70). Where this line cuts the bottom of the circle is the gnomon point.)

[In my files, the raw portion of screen-shot on which I superimposed the prayer lines is titled "ToweRaw50%mid-toneB+W". With the lines superimposed, my file names are "SingleGnomonB+W" and "DoubleGnomonB+W". For the color versions the names are "Tower900rawBig," "SingleGnomon900AsrFull," and "DoubleGnomon900Asr." The color versions use (163, 426) as their origin point. (164, 426) looks more accurate, so I switched to this for the B+W.]

Adding the June 16th run and rise of (177, -2) to the (41, 324) gnomon location puts the end of the June 16th asr prayer-shadow at (341, 428). [Note that Paint counts pixels from the upper left corner of the graphic, so it reads (Δx, Δy) of (177, -2) as (177, 2).]

July 16th 2005
Asr = 4:19 PM; (modulus, argument) = (38.71, 1.8); (x, y) in meters = (38.70, 1.22); (x, y) in pixels = (183, 6), which is very close to the line for June, and just a few pixels longer. The changes become more rapid as the sun gets lower. Upper point at (347, 420). The Asr connecting line ending at this point starts at (341, 428) and travels (Δx, Δy) = (6, -8). [Paint reads (Δx, Δy) = (6, -8) as (Δx, Δy) = (7, -9) because it counts from one instead of zero. You can't draw a line zero px. long in Paint.]

August 16th 2005
Asr = 4:08 PM; (mod, arg) = (43.12, 10.9); (x, y meters) = (42.42, 8.17); (x, y pixels) = (201, 39). Upper point at (365, 387). The Asr connecting line ending at this point starts at (347, 420) and travels (Δx, Δy) = (18, -33).

September 16th 2005

Asr = 3:40 PM; (mod, arg) = (51.86, 24.2); (x, y meters) = (47.30, 21.26); (x, y pixels) = (224, 101). Upper point at (388, 325). The Asr connecting line ending at this point starts at (365, 387) and travels (Δx, Δy) = (23, -62).

October 16th 2005
Asr = 3:06 PM; (mod, arg) = (62.1, 37.9); (x, y meters) = (49.00, 38.15); (x, y pixels) = (232, 181). Upper point at (396, 245). The Asr connecting line ending at this point starts at (388, 325) and travels (Δx, Δy) = (8, -80).

November 16th 2005
For November and December, there are two shadow ends to calculate, one taking the bottom of the top crescent to be the top of the tower and one taking the bottom of the upper slot to be the top of the tower:

Shadow cast from full tower height:
Asr = 2:38 PM; (mod, arg) = (76.63, 49.8); (x, y meters) = (49.46, 58.53); (x, y pixels) = (234, 277). Upper point at (398, 149). The Asr connecting line ending at this point starts at (396, 245) and travels (Δx, Δy) = (2, -96).

Shadow from bottom of upper slot:
82% of (234, 277) is (192, 227). Lands at (356, 199).

December 16th 2005 (not plotted)
Shadow cast from full tower height:
Asr = 2.34 PM; (mod, arg) = (87.15 , 55.4); (x, y meters) = (49.49, 71.74); (x, y pixels) = (235, 340). Upper point at (399, 86).

Shadow from bottom of upper slot:
82% of (235, 340) is (193, 279). Lands at (357, 147).

December 21st 2005 (shortest day of the year)
Full tower height:
Asr = 2.36 PM; (mod, arg) = (86.32 , 55.5); (x, y meters) = (48.89, 71.14); (x, y pixels) = (232, 337). Upper point at (396, 89). The Asr connecting line ending at this point starts at (398, 149) and travels (Δx, Δy) = (-2, -60). [Microsoft Paint does not plot this line segment correctly, so in my graphic I just placed a vertical line starting 1 pixels left of the previous Asr line segment.]

Shadow from bottom of upper slot:
82% of (232, 337) is (190, 276). Lands at (355, 237). The Asr connecting line ending at this point starts at (356, 199) and travels (Δx, Δy) = (-2, -49).

Dividing date between tall and short gnomon heights:

A line along the Tower shadow in Murdoch's Tower Plan detail has a slope of 194 pixels of rise for every 191 px. of run. That is a little less than 45 degrees down from north, 44.55 degrees from N to be exact.

On November 3rd 2005, asr prayers occur at 2:47 PM, when the sun's azimuth is 224.5 degrees from N, projecting its shadow to 44.5 degrees from north, almost exactly the angle depicted in Murdoch's graphic. Since light is reaching the ground through the slot at this angle (as can be seen from the graphic), that means that the lower gnomon height, created by the bottom of the slot, is what determines prayer time on November 3rd.

It appears from the graphic that the light through the slot is about to get closed off as the sun continues westward. Note that the crescent edge, visible at the tip of the Tower shadow, is lined up the thin shaft of light making it through the slot. Any more westward movement of the sun and this crescent edge will block light through the slot from reaching the ground. Since prayers occur later at earlier dates, this means that light through the slot probably does not reach the ground at prayer time just a couple of days earlier. The exact date cannot be determined from the graphic so I used November 1st as a best guess.

To plot the transition, it is necessary to calculate both the tall and short prayer-time shadows for this date.

November 1st 2005
Full tower height:
Asr = 2.49 PM; (mod, arg) = (69.23 , 44.7); (x, y meters) = (49.21, 48.70); (x, y pixels) = (233, 231).

Shadow from bottom of upper slot:
82% of (233, 231) is (191, 189).

Starting from the Tower Detail gnomon position of (x, y) = (163, 426), these tall and short shadow-falls land at (397, 195) and (355, 237) respectively. These points demark the zig and the zag in the prayer-shadow-line, which then connects the dots to the other shadow end points. The zig zag segments are plotted as follows:

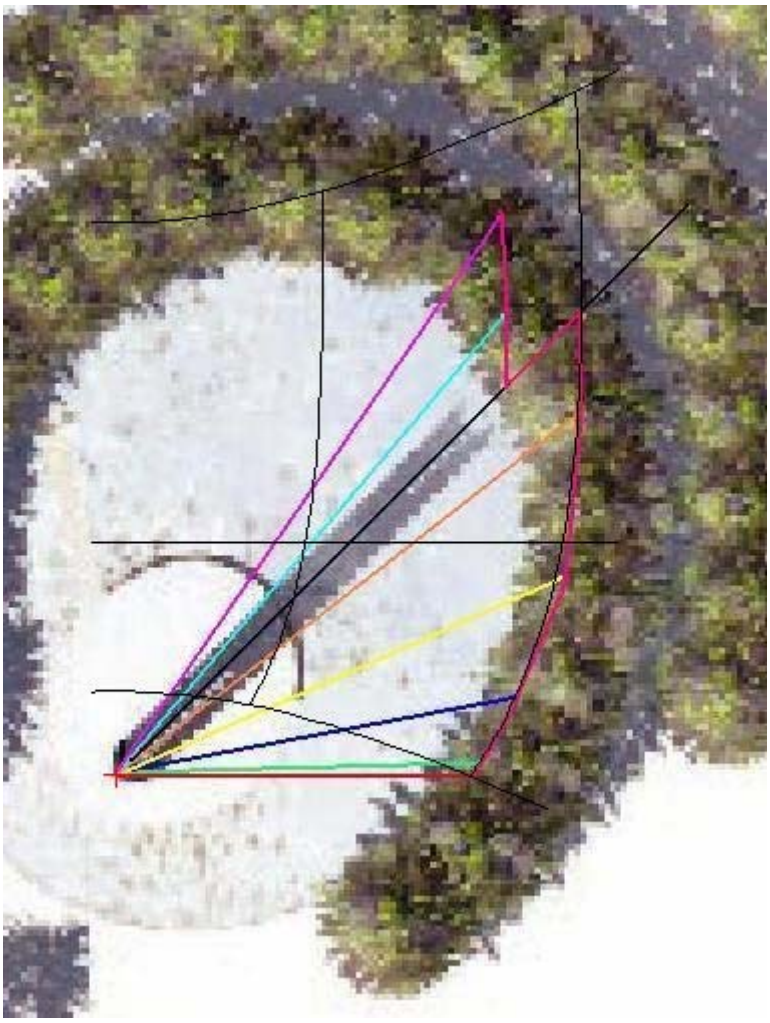
From the Oct. 16th Asr shadow to the upper point of the zig, start at (396, 245) and travel (Δx, Δy) = (1, -50).

The zig line starts at (397, 195) and travels (Δx, Δy) = (-42, 42).

From the bottom of the zag to the Nov. 16th Asr shadow for the short gnomon height, start at (355, 237) and travel (Δx, Δy) = (1, -38).

Fer de Vries computer program

Sundial expert Fer de Vries developed a computer program for calculating Islamic prayer lines for any specified gnomon at any specified latitude. I sent him an early version of my connect the dots derivation of the Tower's asr-prayer-line and he sent it back with his computer generated lines for the specified gnomon height and the Shanksville latitude superimposed:



Fer de Vries' asr prayer-line matches mine almost exactly. The validity of the results still depend on the validity of my assumptions: that the Tower base is at the same level as the trees, and that the slot depth is the 18% indicated by the shadow cast in this graphic. Conditional on those assumptions, Fer's computer program confirms that I got the calculations about right. [15]

The migrating gnomon

For those who want to be completely thorough, note that once light through the slot gets closed off by the westward movement of the sun, the point that casts the bottom of the top of the Tower's shadow will start to move up the westward arm of the Tower's

[15] Fer de Vrie's website has a link to his computer program: http://www.dse.nl/~zonnewijzer/haf-hal.htm.

crescent shaped top. The sunlight that comes over the bottom of the crescent shaped top will, like any sunlight through the slot, get blocked from reaching the ground by the eastern wall of the tower. The two arms of the crescent will create a shadow with a pointed bottom (one side vertical, one side curved out and up) that gets shallower in shape as the sun sets.

Technically, the gnomon migrates clockwise around the tower, starting at the slot and moving around to about due west. This will have very little effect on where the bottom of the top of the Tower's shadow lands at asr-prayer time. Initially, the gnomon point comes around to the west (away from the ellipse of trees) more than it rises. That will pull the asr-prayer line inwards a bit in late October, where it is out towards the outer side of the ellipse of trees, but it will not affect the tip of the zig.

Once the sun reaches due west (where it is at June asr prayer times) the gnomon point will have climbed by about .4 of the radius of the tower. (If the Tower top were sliced at a 45 degree angle and it was pointed north, then the western side of the tower would be the taller than the slot side by the radius of the Tower. As it is, the tower top is sliced at a 30 degree angle, according to the Tower Section view, yielding 2/3s of the height gain of a 45 degree slice. Also, the tower-crescent points 35 degrees clockwise from north. That cuts the rise down by roughly 35/90 = 39 percent, and 61 percent of 2/3s = .41.) At 35 degrees from north, the slot-gnomon is positioned .57r west of the center of the Tower circle (sine or cosine of 35, depending on where you are measuring your degrees from). The due-west gnomon (the June gnomon), is r west of center, so it moves west (away from the ellipse of trees) by about the same amount that it rises: about .4r. Lastly, June asr prayer shadows descend at an angle substantially flatter than 45 degrees (their length of 37.39 meters, compared to the Tower height of 28.35 meters, implies an angle of descent of 36.22 degrees). With the June gnomon rising about the same amount as it moves away from the tree line, this flatter than 45 degree shadow path to earth will push the Tower's asr-prayer time out by a modest fraction of the radius of the tower. Since the prayer-line at that point is a bit towards the inside of the tree line, this moves it a little closer to the base of the trees.

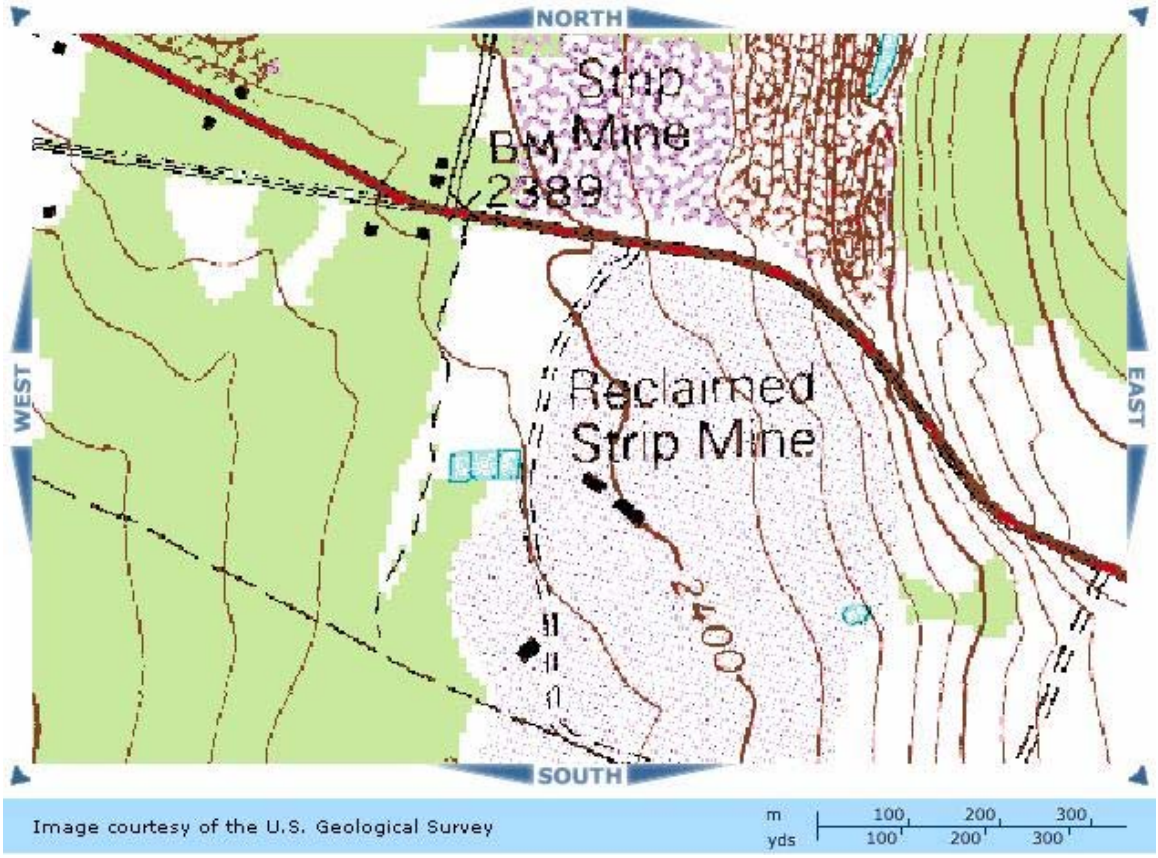
Addendum 8: Discrepancies between different site-plan views in the tower-sundial analysis

Shadow calculations are sensitive to any change in assumptions about the topography of the ground where the shadows are landing, or about the exact dimensions of the shadow-caster. The calculations above require a couple of assumptions, but they both seem to be well justified.

The first assumption is that the bottom of the Tower is at the same level as the inner ellipse of trees (i.e. that the ground is flat). Is this assumption correct? The site-plans include a Tower Section detail that shows the Tower sitting on a raised base, about ten feet above grade. It also depicts the trees in the background as planted at grade-level, below the raised base. If this section view is correct then my assumptions about the topography are incorrect. Instead of sitting at the same level as the trees, the Tower sits ten feet above, and its shadows fall correspondingly further out.

Tower Section view from the Tower of Voices PDF page, shows base of tower well above the grade where the trees are planted behind. If this is accurate, the tower is a good ten feet higher than I was assuming, and its prayer-time shadows will fall out beyond the inner arc of trees. [Med rez image. More rez available in PDF.]

As it turns out, the Tower Section view misrepresents the topography of the site. Terraserver's topo map of the area shows that in the fifty meters from the Tower to the tree line, the grade slopes up about ten feet: just enough to bring the trees up to the bottom of the base of the Tower. The map also shows a topo line running pretty much along the path of the *asr* prayer line, meaning that the line of trees is itself level (not sloping up to the left as depicted in the Tower Section view).



Terraserver's topo map of Tower of Voices site. The Tower is located just about at the last zero in 2400. There is twenty feet of elevation change between contour lines, and the inner arc of trees is about half-way to the next higher contour line to the right, making for an elevation gain at the tree line of about ten feet.[16]

Is Murdoch's Tower Section detail *intentionally* misleading? Having done the shadow calculations himself, Murdoch would know that there are sundial societies like NASS (the North American Sundial Society) with experts on Islamic sundials who could recognize his sundial in a minute if he didn't disguise it.[17] I sent my shadow calculations to Islamic-sundial expert Fer de Vries, who quickly verified my *asr* line. (See Addendum 6 for Fer's calculations.) Thus it makes sense that Murdoch might want to misrepresent the topography of the site so as to throw off the shadow calculations of anyone who tried to investigate. What we can say for certain is that, intentionally or not, the Tower Section view *is* misleading.

Sundial Assumption Two: The Depth of the Slot

A second assumption in my calculations is that the slot depth indicated by the shadow in the Tower Plan drawing (18 percent of the Tower height) is accurate. This information is

[16] From TerraServer's topo map of Shanksville PA, 7/1/1977 (http://terraserver.microsoft.com/). There are also some contour lines, without altitude numbers, in the Crescent site plan. Examination of figure 24 back in chapter 3 reveals a contour line running pretty much exactly along the inner arc of trees.

[17] NASS has a website at http://sundials.org/.

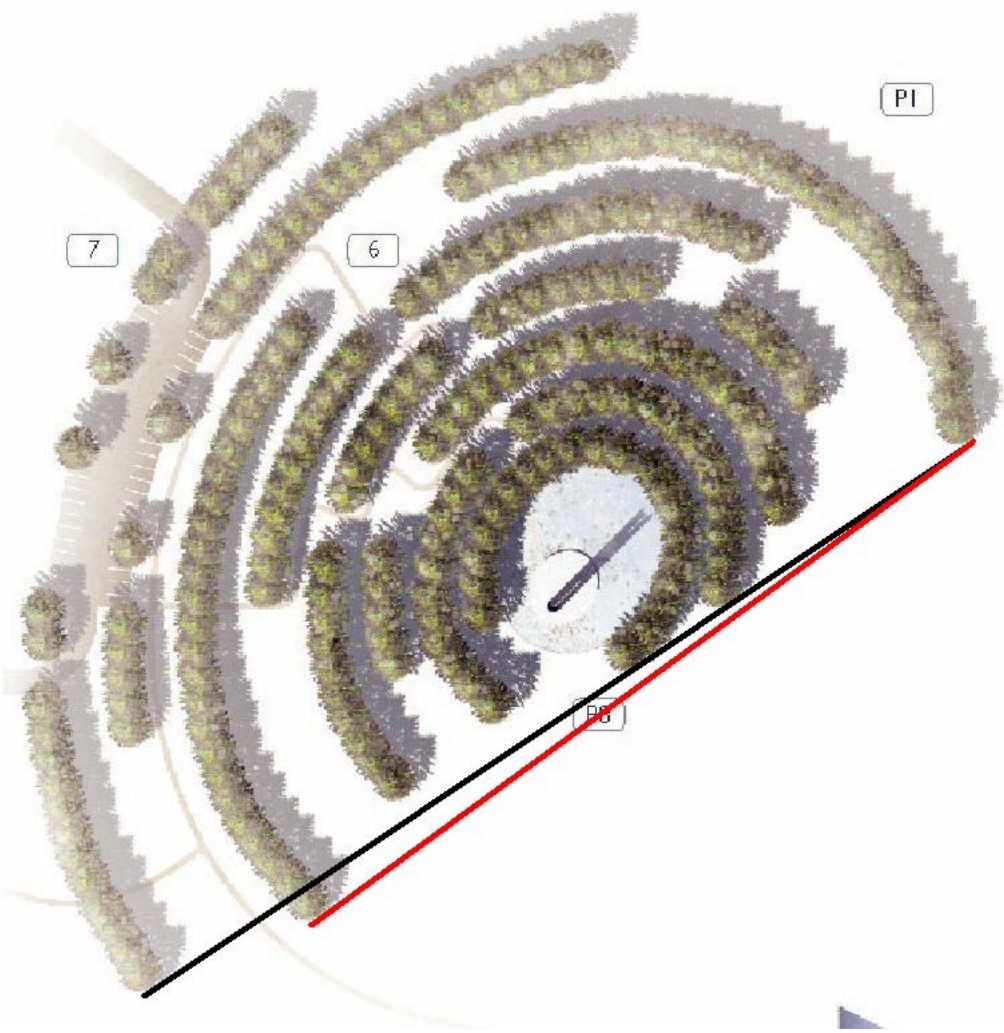
contradicted, however, by the depth of the slot depicted in the Tower Section view (above). Here the slot is claimed to be very short, only 8 percent of the Tower height. So which is the real plan? Short slot or long slot?

A third view is also available, the view up the tower, seen in Figure 40 above. This view depicts the slot coming well down into the field of wind-chimes. Contrast this with the Tower Section view, where the slot is depicted as coming down only to very slightly below the top of the topmost wind chime. It is hard to tell exactly how deep the slot is cut in the up-the-tower view, but it is definitely a lot more than 8 percent (or one-twelfth) of the way.

That makes it two views against one, and the view that indicates the shorter slot has already been proven to contain misinformation about the topography of the Tower site, giving another reason to favor the information in the other two views. Thus the weight of the evidence indicates that the real design is the one that is indicated in the Tower Plan, where a slot descending 18 percent of the tower's height creates a year-round-accurate Islamic prayer-time sundial.

The Mecca Orientation

Finding the Islamic sundial adds meaning to the Mecca orientation of the Tower crescents. When time for afternoon prayers arrives, the Muslim faithful will need some way to determine the direction to Mecca, and Murdoch has provided it. All they have to do is walk out towards the mouth of the inner ellipse of trees, sight down the line of upper crescent tips, and they will be looking towards Mecca:



Tower detail with crescent-tip lines. When these lines were drawn onto the Tower portion of the Crescent site-plan (figure 32 in chapter 4) the black line pointed directly at Mecca. You can see here that this black line is the sight line, along the tips of the Tower crescents in the northeast direction, affording a person coming out from the Tower-sundial a visual reference for Mecca.

Interestingly, this detail graphic of the Tower array seems to be rotated clockwise a small amount *vis a vis* the lower resolution site-plan graphic of the Tower array seen earlier. In the site-plan image, the line across the most obtruding crescent tips (red) points 1.8° north of Mecca, and the line to the further away and more recessed crescent tip (black) points exactly at Mecca. Here the red line points about 1.4° north of Mecca and the black line points about 1° south of Mecca.

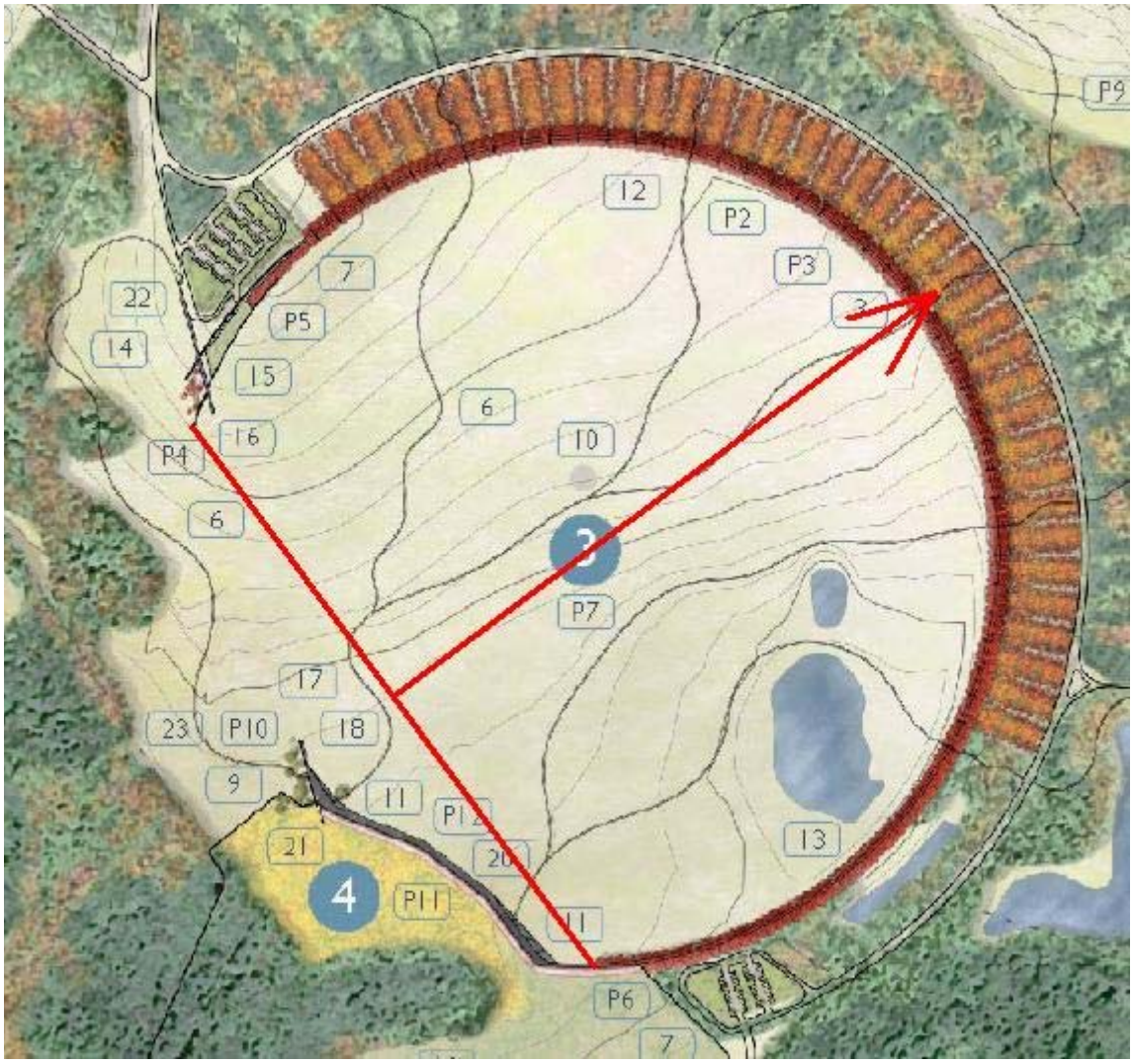
I don't know what accounts for these small discrepancies between the different Tower views. My guess would be that Murdoch decided (finally) to exercise a modicum of caution, as he seems to have done with his misleading Tower Section view. There is no reason he had to include the full Islamofascist precision of his design in the publicly available plans at all. He could have fudged many details and only put the exact plan into the engineering drawings.

What is really surprising is how much he did reveal. The most likely explanation is pride. Why depict the shaft of light passing through the slot in the tower at just the time of day when a little further westward movement of the sun will close this shaft off, changing the effective gnomon height of the tower? If he hadn't done that, I could not have figured out the zig-zag in his *asr* prayer line. But Murdoch *had* to include this key information. After all, if the Crescent of Embrace did not win (and what are the chances that the jury would pick a giant red crescent for the memorial to Flight 93?), the submitted plans would be all anyone would ever see of Murdoch's brilliant creation. He couldn't leave out the key elements that made the design a work of genius.

Those who are looking for any possible excuse not to see the Islamic and *jihadist* elements of Murdoch's design might take the lack of exact consistency in the different views of the crescents of trees that surround the Tower of Voices as evidence that the Mecca orientations of these crescents is coincidental. That is about as much of a reed as the deniers have to hang on: that only one of the two available images of the Tower crescents shows them to be turned exactly 90° from the central crescent, while the other shows them turned *almost* exactly 90°. Maybe a person who focuses hard enough on that small discrepancy can even avoid seeing the year-round-accurate Islamic prayer-time sundial Towering overhead.

Addendum 9: That the 44th glass block defines a second orientation of the Crescent of Embrace, pointed exactly at Mecca, can also be seen in Etaoin Shrdlu's graphic

The overt orientation of the Crescent of Embrace defined by drawing a line across the most obtruding tips of the crescent structure and forming a perpendicular bisector:

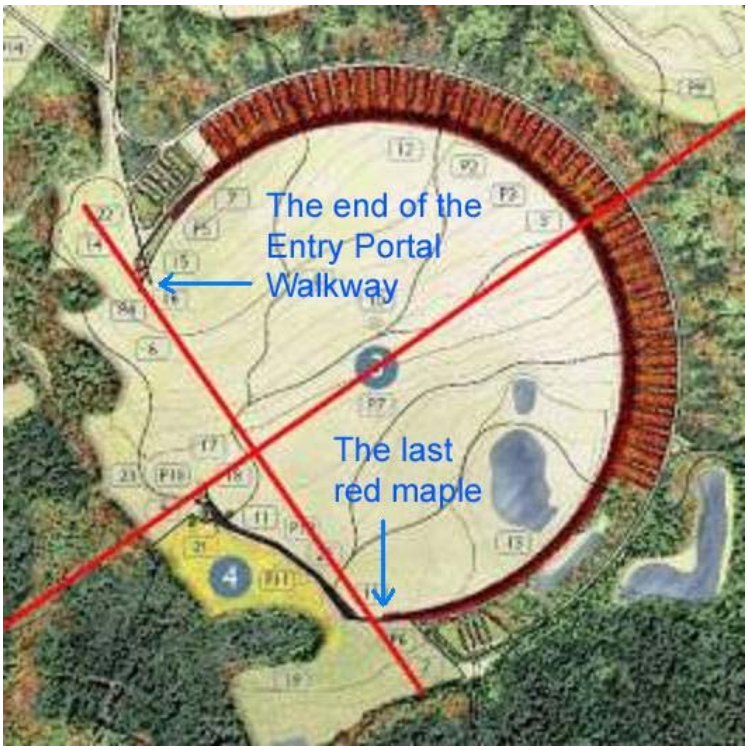


This bisector turns out to point about 1.75° north of Mecca (53.40° clockwise from north, compared to the exact Mecca direction of 55.19° clockwise from north).

Chapter Three of *Crescent of Betrayal* ("The Forty Four Blocks") notes that if instead of connecting from the last red maple at the bottom to end of the inner Entry Portal Wall on top, a line is drawn from the last red maple on the bottom to the end of the outer Entry Portal Wall, its bisector points exactly at Mecca. That this is intentional is verified by the fact that this connecting line passes through the 44th block at the end of the Entry Portal

Walkway, tying the exact Mecca-orientation and the terrorist-memorializing block count together in a feat of Islamofascist precision.

The same thing can be seen graphically in Etaoin Shrdlu's Mecca-orientation graphic. Below is a blow up of the lower left corner of Etaoin's graphic. In Chapter 4 it was noted that, as far as the naked eye can judge, the perpendicular to Eaotin's Mecca-line is the exact same distance from the glass block at the end of the Entry Portal Walkway as it is from the last red maple tree at the bottom of the Crescent. Notice also that it is this same distance from the end of the outer Entry Portal wall:



If Eaotin's perpendicular were shifted a few pixels up the Mecca line, it would come into contact with the last red maple tree at the bottom, with the glass block at the end of the Entry Portal Walkway on top, and with the end of the outer Entry Portal Walkway on top, all at the exact same time.

But perfect Islamofascist accuracy calls for something slightly different. The line across the most obtruding points of the last red maple at the bottom and the end of the entry portal wall on top should pass through the middle of the 44th glass block, instead of passing across just outside of the block. Hence the lengthening of the Entry Portal Walkway in the redesign (Addendum Four).