

Augmenting Jerusalem Sacred Space

By Dr. Yitzḥaq Ḥayut-man, Cyber-Architect

Editors' Note: We regret to report that Yitzḥaq Ḥayut-man passed away between the submission of this article and its publication. We offer our condolences to his family.

Augmented Reality

All art and art media have elements of space,¹ and architecture is not just about building 3D structures, but it is the science and art of forming space. There are several types of space such as sacred/holy space; dark vs. clear space; finite and infinite space. This article discusses several types of space and some of their possible applications:

1. Returning light space and direct space.
2. Space between people.
3. Sacred space.
4. Augmented space.

In the 20th century, photography and video have developed enormously and reached the development of virtual reality art. This also applies to cybernetics, via the use of cyber-art and architecture to augment and enchant the cityscape.

By the 1980s, virtual reality had become the buzzword—and today's buzzword is augmented reality (AR)—the art of adding a non-material layer of lights and information, making the two, the Earthly and the Heavenly, into a meaningful ensemble.² As for cyber-art, its public debut was the Colloquium of Mobiles³ at the ICA, London in 1968, designed by the cybernetician Gordon Pask.⁴

An elementary application for augmenting space is the usage of mirrors. Mirrors fascinate children and artists, and they inspire writers. Many centuries before computers appeared on earth, and when glass was more costly than gold, there was some augmented reality due to the use of mirrors. The Colloquium of Mobiles had a translucent female emitting a glow and some refracted light beams projected by the males, as well as by spectators with flashlights.

This essay presents three works of cyber-art assemblies, going from the most modest to the most ambitious. The first is for a single user, the second is for up to twelve users, and the third is for a myriad of users.

¹ See www.thoughtco.com/definition-of-space-in-art-182464.

² Ultimately, to become as envisioned by Teilhard de Chardin (see later).

³ See www.medienkunstnetz.de/works/colloquy-of-mobiles/.

⁴ The exhibit consisted of five human-size mobiles (three translucent females and two metal males) that kept interacting with each other and with the audience, not by set scripts, but by an object of light beams and mirrors (the show was duplicated in 2018 as a historical art event: vimeo.com/289007415).

One is a kind of mirror that enables you to see yourself in the global perspective of heaven and earth and that shows a sort of *etheric body* around you. The apparatus is studded with LEDs activated by transistors that relate to the human spirit.

The second cyber-artwork is a round table, focused on a picture of Jerusalem's Sacred Rock, supporting twelve tablets, each with a different figure and text—thus broadening the perspective from an individual to a group. These tablets have a figure as their front, and a mirror as their back. By turning a few of the tablets, we can reflect and multiply these images.

The third implement is extremely ambitious: it charts a novel citywide AR as a way to resolve the confrontations of the diverse apocalyptic. It adds to the existing (and explosive) actual Temple Mount a virtual reality Cyber-Kaaba, containing a myriad of virtual cells for spiritual exercises and group rituals in view of the Temple Mount. This third exhibit is markedly different—in intention, in extension (space), and in the extent of actualization—it is a mere sketch. On the other hand, it reflects not just one or two objects that get augmented by multiplying perspectives. It is these things and much more. It is a storehouse of implements, some of which have not yet been invented, and more lights-and-mirrors procedures.

A: The Adam and Adamah (Humankind and Earth) Mirror

This exhibit is an assembly multilayer light box (Figure 1) made with:

- Programmable electronic chips and connections behind the visible inner bottom of the box.
- A painting on the bottom, displaying Heaven and Earth as two circles narrowly touching. At the four corners are the signs of revelation: "*a storm wind came out of north, a great cloud and a fire flaring up, and a brightness was about it, and out of the midst of it, as it were the color of electrum*" (Ezekiel 1:4).
- A Perspex sheet, halfway up from the bottom of the light box, containing ten clusters of LEDs in the pattern of the ten sefirot, which encompasses heaven and earth. Each cluster has 19 LEDs: a red one inside, six yellow LEDs as the faces of a cube, and the 12 green lights as the cube's edges. All these LEDs are connected by electronic chips and can be programmed to display the dynamics of the sefirot (conceivably this can be developed into an interactive device).
- Near the top of this light box is another clear Perspex sheet. These two sheets act as transparent mirrors, transmitting the bottom painting and the light clusters—but they also reflect whoever stands in front of them.
- The result is a strong effect of *being inside of the picture* and among the dynamic patterns of scintillating lights.

- The observer can try to follow or emulate the lights—or even *be transformed from observer to reflecting player and even a conductor!*



Figure 1: The Adam and Adamah Mirror

According to Catholic mystic and scientist Pierre Teilhard de Chardin, the earth's geosphere is becoming augmented by a technosphere layer that refines matter, and over it the emerging layer of the non-material noosphere—the sphere of knowledge (as in Isaiah 11:9).

B: A Round Table for Twelve Perspectives

B.1: The Rock of Foundation

Why do we keep the focus on the Jerusalem sacred rock (Figure 2)? For in this era, humanity is entering a new cosmic venture: *The evolution of silicon-based intelligence-cities*. Silicon has evolved through many varieties—rocks, sand (*ḥol*), earthenware, glass, optical cables, silicon chips, and wafers for CPUs with their own narratives.

And why do we play on this table with arched tablets? To remember the *stone tablets* that “were the work of God” (Exodus 32:16).

A round table is covered by a map with the *New Jerusalem Diagram*, in which the perimeter of the square with the rock equals the perimeter of the circle that bisects the twelve small circles (here with the same pattern).

In the circle inside the square is a picture of the sacred rock, and above it broken shards upon which are the names of the twelve tribes of Israel—in memory of the old tablets that Moses broke.⁵

The legends tell that the sacred rock was the altar of the near sacrifice of Abraham's son. There are widespread Muslim beliefs that at the end of days, the Kaaba (the most important Islamic site, built as a cube), along with all the believers, will come to Jerusalem for the final judgment.⁶ This is the context of the third presentation in this essay.

Figure 3 shows twelve tablets assembled on the round table and around the rock.



Figure 2: The Sacred Rock



Tablets Assembled on the Round Table



Tablets Assigned around the Rock

Figure 3: Two Arrangements of the Tablets

⁵ Exodus 32:15-29 tells of the holy stone tablets written by God and smashed by Moses. There is also the story of Moses being punished for hitting a rock instead of talking to it (Numbers 20:7-13). In Islam, there is the veneration of the black stone of the Kaaba that came from heaven.

⁶ Livne-Kafri Offer, "Jerusalem—The Navel of the World in Muslim Tradition," in Offer Livne-Kafri, *Jerusalem in Early Islam* (Jerusalem: Yad Ben-Zvi, 2000). In English, *Der Islam* 84, no. 1 (2008): 46-72 (available from www.academia.edu). This rock is also considered by millions of believers to be the center-point of the world, and the Midrash tells us that the earth started to form from this point.

B.2: Twelve Tablets of Diverse Perspectives



Figure 4: The Twelve Tablets

The pictures on the twelve tablets were painted by eight diverse artists: Barukh Elihay, Ken Brown, Yitzhaq Hayut-man (2). John Michell, Hana Liza Omer, Irena Plaston (2), Jane Putnam, and Leon Saponar (2). The photo (upper line, second left) is that of John Michell. The text in John Michell's picture is:

The Heavenly City
 In the midst of it was the Tree of Life
 Which bore twelve manners of fruit
 and yielded her fruit every month.
 And the leaves of the Tree were
 for the Healing of the Nations
 Revelation 22:2

Figure 5 shows the primary components representing the restored Israel.



Judah Leading: The Cube Has Twelve Edges



Ephraim Emerging: Twelve Small Circles (Moons, Tribes)

Figure 5: The Primary Components Representing the Restored Israel

B.3: The Reflections device

The inner face of each tablet is a mirror. The table is surrounded by these mirror-tablets that can reflect onto another, deflect perspectives to other directions, and project other pictures to different, new places (or seats at the table). The small space around the table seems to increase ad infinitum. One can look into this enclosed space either from above or through any of the four narrow gaps that characterize the New Jerusalem diagram. The entire assembly seems to create infinite kaleidoscopic reflections (Figure 6).



Figure 6: Looking into the Reflections Device

B.4: Erecting the Tablets on the Table

The tablets poised upon the table can be turned around in their fixed axis. The observation is conducted in stages. At each stage, some of the graphic messages get turned inside, and with the other tablets, the mirror side gets turned inside (the order is set by rolling two dice)—so they reflect a message of another tablet rather than their own.

This way, a striking kaleidoscope forms that portrays the pictures and their messages related in many ways. This gives a visual demonstration of a systemic process of multi-log that connects the messages of all the tablets of a table (Figure 7).



Figure 7: Erecting the Tablets on the Table

B.5: Psychological connotation

Participants are represented by tablets. This ensemble can be used as a mind game (Figure 8).

- * If one or a few introverted tablets turn their faces to the center and the majority (extraverts) turn their faces outside, then the few that face inwards will have a strong presence there—not just one reflection within a small core space, but many reflected reflections within the expanded space of the inner circle.
- * However, if the majority choose to turn their faces inside and their backs outside, there will be few or even no inner reflections, and the inner circle will remain dense with message.
- * There is a paradox here—the more tablets get in, the less the space can expand, so you need to get into accord with another perspective to promote that other person/perspective rather than promoting yourself.



Figure 8: The Ensemble as a Mind Game

B.6: The Higher Tablets

Above the center of the round table, hanging by an optical cable like a mobile, two transparent tablets are attached by their square sides at 90 degrees and spread out their rounded parts like wings. Joined together in this manner, they together form the classical form of one heart, which has a common square in their midst. The joined square is connected with a square PC motherboard that accommodates the most sophisticated silicon chips—the computer’s brain. Over that motherboard there is an A-B (father) board, a grid of 22 x 22 cells, containing all the possible combinations of two (Hebrew) letters – the roots of all that can be thought and expressed by words. All these tablets are symbolic vessels of knowledge, pieces of the inspiring collective “teachings that issue out of Zion” (Isaiah 2:3, Micah 4:2). The optical cables of these info-boards signify the possibility of such worldwide assemblies.



Figure 9: The Higher Tablets

C: The Kaaba of Mecca and a Kaaba for Jerusalem

In this investigation of augmentation in terms of producing additional personal space for an individual or a group (of max. twelve), we now examine different kind(s) of augmenting space on a citywide scale—that of Old Jerusalem, Mecca, and the Kaaba.

Several respected Islamic traditions assert that the Day of Resurrection and/or the Last Judgment will take place in Jerusalem. Many believe that on that day, the Kaaba itself will come to Jerusalem somehow. Need they imagine a cubical airborne vessel that carries tens of millions of believers in it? Yet this image is quite akin to the coming of the New Jerusalem for Christianity and the Temple of Ezekiel's vision⁷ as the Third Temple sought after by Jews. The three historical conflicting scenarios may merge into a non-exclusive and enlightening practical vision.

Like a Muslim at the Kaaba, my studies seem to have been going in circles around the theme of the City of Revelation.⁸ The Book of Revelation and the other apocalypses expect this city and/or giant Kaaba to be realized upon Earth, but only after many calamities and judgments. But can we realize that perfect city without all that needless preliminary carnage?

C.1: The Meta-Historic Story of Space and Time Set in Stone

As its name implies, the Kaaba of Mecca has the form of a cube (though not exactly).⁹ In another essay, I have compared the Dome of the Rock in Jerusalem and the Kaaba in Mecca.¹⁰ While there is no denying the (architectural) superiority of the Dome of the Rock shrine over the Kaaba, the two together tell a meta-historic story of space and time that was set in stone. The Kaaba is indeed a plain cube—and in this role it is a pure expression of 3D, and this has its merits. The New Jerusalem of Revelation is a gigantic cube,¹¹ and a Jew who wants to contact God dons one cube (phylactery) over his forehead and another one next to his heart.

The unreckoned secret of the Dome of the Rock shrine is that it has all the components and patterns of the 4D cube, and it is designed to bring the soul of the pilgrim to the 5D space that includes the heavenly paradise. This is a $3 < 4 < 5$ progression that is indicated

⁷ Among the very few who had noticed that Ezekiel's temple is thirty-seven times the size of the Second Temple was British architect Henry Sulley. In his book *The Temple of Ezekiel Prophecy*, 6th ed. (West Beach, South Australia: Logos, 1984), he assumes a square outer building of about one mile each side, with thousands of cubical cells in them three cells high.

⁸ Due respects to the late writer and freethinker John Michell. Michell's inspired books *The City of Revelation* and *Dimensions of Paradise* explore this esoteric, yet romantic, matter,

⁹ Length: 12.86 m (42 ft, 2 in); width: 11.03 m (36 ft, 2 in); Height: 13.1 m (43 ft, 0 in).

¹⁰ Yitzhaq Hayut-man, "The Symbolic Geometry of the Dome of the Rock Shrine and its Meaning: The Integration of the Heavenly Jerusalem in the Fabric of the Old City" (In Hebrew, available at www.academia.edu).

¹¹ "and he measured the city with the reed, twelve thousand furlongs. The length and the breadth and the height of it are equal" (Revelation 21:16).

in dozens of places outside and inside the Dome of the Rock. This can also explain why such events as the Day of Judgement need to take place in Jerusalem, along with the future change of the Qibla of spiritual pilgrims back to its original course.

C.2: The Rationale

The goal is the design of the images and processes within a giant cube—the Cyber-Kaaba or Hyper-Kaaba—settled over Jerusalem’s Sacred Esplanade. Interested people may use different names for this edifice (e.g., Kaaba; New Jerusalem, Al-Aqsa, the Hyper-Structure, Cyber-Temple, Shekinah, etc.). This Cyber-Kaaba cube will be seen only by those who want to see it and put on the official VR headgear. Those not interested will see just the actual Old City of Jerusalem as it is now.

C.3: The View

Those who are interested in the redeeming process will be assigned a hotel room in the region of Jerusalem that will be equipped with the necessary gear and programs for the Cyber-Pilgrimage. Sitting thus in her room, the pilgrim will sense that she is in a monastic cell that is situated within a giant hollow cube, with a window that provides the best view of the space of the Temple Mount within the Kaaba-Cube, with the Dome of the Rock shrine at the center and the opposite wall across that space as a backdrop. Note that the area of the Kaaba is about 12.86 x 11.03 m, and it has an area of 140 sq. m. A Cyber-Kaaba of some 200 m x 200 m would be about 300 times the size of the original Kaaba. Unlike the original Kaaba, around which people walk, it would be a place one can get inside.

C.4: The Form

This preliminary study assumes that the walls of the cube could contain about 50 x 50 cells and be joined at the corners by four elevator towers. Each of these cyber-cells would be “six cubits and a handbreadth” (Ezekiel 40:5), or about four meters. So, each of the four walls of this giant hollow cube would contain 2,500 cells, and the four walls of the Kaaba-Cube would accommodate about 10,000 cells.

In an alternative, or more likely later version, there would be a steel frame of four piers and four ribs connecting their tops. This would allow stretching a kind of four-meter grid to carry programable light shows, which would be transparent enough not to block the view.¹²

¹² The base painting we need is of the contemporary view, and by its side or above, exactly the same picture, but as seen from a cell window observing the opposite wall and showing the view behind it. This is an option with the cube and its cells, but it is empty, and its inner space is animated by light shows.

C.5: Spiritual Exercises at the Cyber-Kaaba

The VR cubicle will also contain a real table with a laptop and large screen(s) for activities such as distant learning, recording information, administering a game from an additional site, etc. But most transactions (interactions) will be within the Cyber-Kaaba world, with its exercises. The cyber-cell will contain a series of custom spiritual exercises with their rules.¹³

The emphasis may be changed, from solitary retreats to a programed interpersonal (certainly interfaith) interface that assigns nearliness, so that faces of other retreatants are visible. This interface overcomes the limitations of space. This is not all that different than a video or Zoom call, but the appearance of a distant other (by social class, education, nationality, religion etc.) as your neighbor, at this awesome location, just because the master program surmised that this would be a necessary encounter with another would make all the difference. Cybernetic monitoring of a conversation¹⁴ can automatically note and count the times when two conversants reach interpersonal understandings.

C.6: Lights and their mirroring effects

In Part A we described a composite picture of heaven and earth exchanging lights with the participating observers. In the great hollow cube, we have the two pairs of facing walls with 50 x 50 window and/or torch lights associated with them, enabling rich light shows in the space of the hollow. The transparent space can then become a pulsating colorful space that stands for the forming community lodged temporarily in the wall.

If you were inside one of these cyber-cells, say inside the Western Wall, you would not see yourself, you would hardly see “your” light—you will see dynamic patterns of up to 2,500 lights of all the spectators who are “on your side”, literally. You will see the composite face of your side as if you have a giant mirror. This way “group imagery” will form.

C.7: Cellular Games in a cellular megastructure.

The most interesting Temple Mount light show enabled by this Cyber-Kaaba would be the inclusion of cellular automata games, the best known of which is Conway’s Game of Life.¹⁵ In this game, one inputs a simple pattern into a square grid, lets the recursive four-rule program take it on (a zero-person game), and watch how one’s input changes spontaneously. Most often it perishes, but for some inputs the pattern stabilizes—or even develops into a complex, dynamic pattern.

¹³ There are hundreds of faiths, like Jewish, Christian, Muslim, Buddhist, and so on, that have developed their systems of contemplation. For example, the well-known rigorous Spiritual Exercises of Ignatius of Loyola (16th century). An intriguing example is Herman Hesse’s book *The Glass Beads Game (Magister Ludi)* (New York: Picador, 1969).

¹⁴ Such monitored adaptive teaching/learning machines were built in the 1970s at Professor Gordon Pask’s System Research Lab in Richmond, Surrey, UK.

¹⁵ See en.wikipedia.org/wiki/Conway%27s_Game_of_Life.

Let us try it right here, right now: I suggest you click playgameoflife.com, then choose from the lexicon of interesting patterns. I recommend starting at 101 and watching. When you have seen enough, click on a point on the grid that is adjacent to any cluster. The chances are that you will kill it or leave a few small static patterns—but not right away. Quite the opposite, it will initially produce complex and richer patterns than the “seed” pattern. That was a one-person game. If there are two or more players taking turns (from start), you can compete over how long, and how beautifully yours performed. I intuit that this play upon a giant grid has a great future.¹⁶

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About the Author: Yitzḥaq Ḥayut-man was an architect for the universe who focused on the Dome of the Rock in Jerusalem as a memory site for theology, philosophy, and humanity, past, present, and future.

Editors’ Notes: This article offers interesting insights into how playing games, particularly mind games, can expand perception and lead to group perceptions among people who may start with very different assumptions. Could this be a path to a collective form of intelligence that can build bridges between people? **Bob Krone and Gordon Arthur.**

¹⁶ Steven Wolfram advocates the use of cellular automata-type processes as “A New Kind of Science.”