

mikyung kim

15 September 2008

Mr. Steve Wright
Public Art Coordinator
Chapel Hill Public Arts Commission
405 Martin Luther King Jr. Blvd.
Chapel Hill, North Carolina 27514

Re: Town of Chapel Hill; Franklin Street Plaza Art: **Exhale I**
Preliminary Design Development Submission

Dear Steve Wright:

We have made revisions to the design of the plaza and refined the sculpture while addressing the safety, maintenance and constructability concerns brought up in our various discussions during Schematic Design. Below are responses to the comments from PARC and our Arts Concept which has remained unchanged from our approved Concept Design Submission in January 2008.

Also of importance at this stage is the coordination of lighting, paving, and fog elements with Ram and Cline. In order for the plaza construction documentation to move forward, the placement of the art, paving pattern, lighting, as associated utilities must be fully coordinated. We look forward to moving toward that goal at the completion of this submission.

Comments regarding Mikyung Kim's submittal for the Plaza Art are as follows:

1. We need more specific information regarding the Town's vision for future public space programming and how that could interface with the plaza. This is in response to the many comments from the Town's staff regarding integrating the new plaza with Church Street for certain public events.

Response: We have included in this submission a diagram of spatial use. We can work with the town and the design team to develop a concrete programming plan for these spaces. Please View Spatial Diagram Drawing.

2. We are concerned about the outdoor dining space facing the plaza in front of the Church Street/Rosemary Street building. This use will require an additional five to ten feet which may dictate a reduction in the number of chevrons so that retail function and pedestrian circulation both work.

Response: We have removed the Chevrons and points from the paving design to create a paving pattern that echoes the sculptures more and embraces the contiguous spaces; both the plaza that fronts the Church/Rosemary Street Building and the "street life" that will be integrated into Church Street. We have also decreased the number of sculptures and increased the length and height of the current sculptures to reinforce natural pedestrian circulation patterns. The sculptures have been pulled away from the building dining space to give a wider area for gathering on the upper plinth. A series of benches and seatwalls have been introduced to encourage viewing of the sculpture.

3. The fog and lighting will have a control panel and timer located in the mechanical room on the first level of the parking deck. We need to understand who will have access and how decisions will be made regarding operation of these systems.

Response: We will work with the design team to develop an efficient way for maintenance to occur in the operations of these systems.

Plaza Paving Design

- The plaza will be installed on top of a parking garage and will consist of a concrete topping slab over a waterproof membrane on top of the structural slab for the garage ceiling
 - Colors selected must have an SRI rating of 29 or higher in order to obtain our anticipated LEED points for the solar reflectivity.
 - It is extremely difficult to form straight narrow bands on top of a waterproof membrane where you cannot attach the formwork to the sub-surface for fear of damaging the membrane and causing future leaks.
 - The sharp points in the layout of the concrete pattern could present severe future cracking problems
 - Control joint patterns are problematic with the current layout of the bands

Response: We have revised the design so that all colored concrete bands can be poured first in larger arcs. All control joints will be placed parallel to Franklin Street- we have removed all of the sharp corners and narrow bands. The average color rating of the courtyard is below the 29 SRI rating and meets the necessary LEED points.

We have discussed this with our general contractor and a specialty subcontractor and propose pursuing the following solution:

- The plaza paving would be poured with a standard colored cement and darker stone aggregate and be poured uniformly across the plaza without forming the individual bands. The bands would be created by a surface treatment such as sandblasting to remove the lighter colored cement and expose the darker aggregate. The narrow bands and sharper points would not be exposed to cracking since they would be part of the same concrete pour. The surface pavement would be easier to maintain and the color consistency and longevity would be better. The contractors are going to prepare a sample panel within the next three weeks for review.

Response: We have not received the sample panel for review. At this point we would recommend the integral color concrete with a sparkle grain broadcast across the surface.

- Depending on the final treatment of the pavement surface, we will work with the designer to determine the banding layout and frequency that maintains the budget.
- Item number 5 under Safety Issues in Mikyoung Kim's February 17, 2008 letter is of concern. I feel that this surface treatment needs to be handled similarly to the concrete surface treatment throughout the plaza.

Response: All surface treatment on paving is now code compliant and the areas with the darker concrete may have more texture.

MYK SAFETY ISSUES ADDRESSED

1. The overall shape of the sculpture has been revised to prohibit access onto the sculpture by folding the surface of the metal and creating perforations at the fold.
2. Openings in the surface of the sculpture will be ½" to 1" in diameter and prohibit children from getting their finger caught in the holes of the sculpture across the entire surface.
3. The perforated folded stainless steel surface of the sculpture is designed to prohibit skateboarding activities on the top of the sculpture. We will design some 1" circular elements that protrude from the surface of the sculpture in the areas that lay close to the ground to further deter skate boarding.
4. We have removed the sculptural element from Franklin Street to address the safety and tripping concerns brought up in the conference call. The shift of the location in the sculpture to the center of the plaza allows for us to create a small plaza along Franklin to street and encourage movement into the plaza.

DESIGN ISSUES

1. The sculpture form has been streamlined to integrate fully with the ground plane design. The plaza paving pattern has been redesigned into two larger and more layered sculptural elements that enclose and define the various rooms of the plaza. Each of the sculptures will have 6 layers with a central core of colored light where the mist emanates. Each of the layers is made up of a folded surface of stainless steel which will be perforated with various perforation sizes at the fold points. The paving pattern emanates from these centralized sculptural elements.

EXHALE I: ART CONCEPT

The integrated sculpture of *Exhale I* is located in the newly designed 140 West Plaza, at the intersection of Church and Franklin Street in Art Area I. The concept of the art piece is to highlight the collection, dispersion and evaporation of rainwater as connected to the natural hydrologic cycles of the site. The sculpture is a folded and layered perforated metal skin that allows for fog to emanate through the textured surfaces of the piece. It transforms the collected rainwater from the detention basin in the garage below into a fog-like state. The surface of the sculpture becomes the transformative moment of hydrologic between liquid, gas, and solid. The fog re-circulates the water back into the atmosphere, cooling the ambient temperature of the plaza as it evaporates into the air.

The sculpture creates a reading of fluidity and ephemerality as fog moves through the surfaces of the sculpture. During the dry seasons the sinuous stainless steel skin and the perforation pattern of the sculpture will embody the memory of water moving through the site. At night, the sculpture becomes a transforming piece of blue transparency and fluidity throughout the plaza. The sculpture encourages participants to move around the varying elements and view the mutating condition of the piece during the various seasons and times of day. *Exhale I* incorporates the concepts of the Arts Master Plan by embodying the fluidity and ephemerality of water.

SITE INTEGRATION CONCEPT - ART AS ORGANIZER

The placement of the Exhale sculptures within the context of the plaza establishes a series of pedestrian spaces that accommodate a variety of program activities. These zones as illustrated in the enclosed spatial diagram suggest a confluence taking place at the center of the two sculptures, creating a sense of expansion and contraction as site users move from zone to zone. Exhale moves beyond art as object, and suggests a point of transition, interaction, and activation - a place to observe people utilizing the various zones of the plaza, making them an active, integrated part of the art piece.

The sinuous forms of the sculpture flow through the plaza, defining pedestrian movement and the various spaces and activities of this sculptural environment. The design of the curvilinear paving highlights the central role of the art elements in utilizing collected runoff from across the site. The paving pattern emanates from the curvilinear forms of the two sculptural elements that frame the various spaces in this courtyard.

The gesture of the art elements visually connects the plaza along Church Street to the inner courtyard within the new buildings creating a fluid reading of both public/active space along Franklin Street and contemplative inner courtyard. The form of the planting beds within this inner courtyard continues the fluid reading of the sculptures through the site.

MATERIALS

Laser Cut Stainless Steel Sheets: Marine Grade
Stainless Steel Structural Truss System
Fog Emitter System (4 ply nylon reinforced lines)
Pump and Filtration system

SPECIFICATIONS

The sculpture is made up of six folded layers of .125 inches thick stainless steel panels that are laser cut with a sculptural dot matrix. The perforation pattern will be located at the folds. The oval perforations are located in the areas where the steel is close to the ground and as the sculpture emerges from the ground, the pattern becomes circular. The outer stainless steel plates will have an angel hair finish. All layers will be marine grade anti-corrosive stainless steel. The gradation of solids and voids through these skin-like surfaces will highlight the emanation points of the fog through the sculpture. The laser cut pattern will warp and undulate with the folding surfaces of the layered stainless steel panels. The laser cut voids will have a minimum opening size of 1/2" and will be designed to deter fingers from getting caught in the surface of the sculpture. The two sculptures are 60' to 70' long and 3-4' wide and vary in height from 1'-6" to 6'-0" in height.

The sculptures will be structurally supported by a stainless steel truss base that is attached to the concrete paving. Drainage of the any condensation from the fog nozzles within the sculpture will be collected at the base of the sculpture and integrated with the landscape drainage system.

Two fog emitter lines will run parallel to each other on each side of the interior of the sculpture and will release the temporary fog effects through the sculptural pattern of the laser cut voids. The fog system used will be a standard flexible nylon hose system with stainless steel nozzle emitters placed every 1' on center.

The fog will emit at timed intervals choreographed to be more intensive at certain times of the day. The high pressure spray technology is emitted from stainless steel jets with 120 micron diameter apertures. The water is forced through these heads at a pressure of 80 bars and atomizes into tiny droplets 3-4 microns in diameter. These small droplets suspend in the air and evaporate within seconds into the atmosphere. The fog surge will range from emanation once every minute to every fifteen minutes through a twelve hour daily cycle when water is available in the retention basin. During seasonal dry conditions, the fluid stainless steel sculpture will act as a memory of the movement of water through the site. During all seasons, blue lighting will be installed inside each of the translucent sculptures, creating an illuminated fog experience at night.

Water will evaporate instantaneously once emitted into the atmosphere, cooling the air around the sculpture. All of the water will be pumped from the retention basin and purified through a filter located in the parking garage below.

SCULPTURE MAINTENANCE REQUIREMENTS

The sculpture will be constructed of minimal maintenance materials and fixtures to ensure an enduring and long-lived presence in the 140 West Plaza. The stainless steel will require an occasional power wash and the fog heads will be cleaned depending on use on average every 18 months. The fog heads are cleaned with a vinegar wash and over the long term can be replaced at \$12/head.

The sculptures will have easily removable panels that are hidden at the base of each of the sculptures allowing for maintenance staff to maintain and clean the fixtures for the fog heads and the lighting within each of the sculptures. The panels will be bolted with security bolts so that the general public may not access the interior of the sculptures.

PROJECT CONSULTANT LIST

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|------------------------|--|
| 1. Structural Engineer | Dan Bonardi Consulting Engineers, Somerville MA. |
| 2. Lighting Designer | RMF Engineering, Durham NC. |
| 3. Electrical Engineer | RMF Engineering, Durham NC. |
| 4. Plumbing Engineer | RMF Engineering, Durham NC. |

We are looking forward to completing design development and beginning the construction documentation for this great project. If you have any questions of concerns, pertaining to the Preliminary Design Submission, please don't hesitate to call. Thank you.

Sincerely yours,



Mikyoung Kim
Environmental Artist

cc: Jeff York, Public Art
Chris Berndt, Chapel Hill Town Manager's Office
John Florian, Ram Realty Services (RRS)
Matt Gillen, MYK

Encl: Drawing Art Boards, dated 15 September 2008:
Plan Drawing, Diagrams, Overhead Perspective – Day and Night View, Ground Level Perspective Day and Night view, Detail of Perforation, and Model Shots.