Public Art Finalist Proposals
Conservation Review

Prepared for

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City of Alameda
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by

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March 30, 2018

Exhibit 6
Item 4-A, June 18, 2018
Public Art Commission

Table of Contents

Appendices

I. Introduction

The City of Alameda is in the process of awarding grants for new public outdoor works of art in various locations within the City. As part of that process, the Economic Development Department has sought reviews of six artists' finalists proposals by a conservator to provide information on long-term preservation and lowering maintenance costs. Amanda Gehrke, project manager for the City of Alameda, contracted with Katharine Untch, MA, CAS, Principal Conservator of Conservation Strategies for Art Architecture Archaeology, to review the proposals.

The six proposals for review are as follows:

1. **Rockspinners** by Zachary Coffin
2. **Bronze Squid** by Rossella Scapini and Luke Heimbigner
3. **Dragon Dance** by Dmitrii Volkov
4. **Mosaic Seatwall** Insets by Denise Hart
5. **Gateway Columns** by Norman Moore
6. **Astro Mural** by Dan Fontes

Proposals for conservation review were provided on the City's website. Downloaded copies of everything reviewed to date are appended to this report.

General review comments that apply to most or all of the proposed public artworks are presented at the beginning of the review section; followed by commentary for each of the six proposals. In some cases additional information is requested for further review to aid in determining and/or recommending materials or methods that might lengthen the life expectancy of the artworks and lower maintenance costs. Note that recommendations exclude any and all structural scope of work; however, in some cases conservation recommendations may request further review by a structural and/or corrosion engineer.

II. Reviews

A. General Comments

General conditions that can prolong the life of the artworks and reduce maintenance costs are sumarized in this section, with more detailed comments pertaining to each proposed artwork noted below.

Keep trees and shrubbery trimmed at least six feet away from artworks to reduce bird droppings, tree sap or other foreign materials settling on the surface of the artworks.

Artworks at, or close to, the ground allow for public access; however, access also increases the risk of public injury from climbing or falling, vandalism such as graffiti, wear from touching, sitting, climbing, or soiling or permanent staining from spilled food or drink, and dog (or human) urine. Historic monuments on tall plinths are often better preserved only for the reason that they are not as susceptible to human interaction and vandalism. Artists may want to consider elevating sculptures to reduce the risks of climbing and vandalism, and deterioration from urine.

Providing adequate drainage will generally reduce deterioration of materials. For example designing in water drainage details such as a slight slope or dome on the top of footings, plinths, or other horizonal surfaces, welding or otherwise sealing joints, providing weeps, or designing joints to be at least ¼" wide to avoid capillary action from trapping water and preventing dry out.

Use marine grade steels in this region. Whenever possible, avoid using mixed metals in juxtaposition without a separation layer, such as inert gasketing (Teflon, nylon, polyethylene), to reduce the risk of galvanic corrosion.

Most artworks should be designed to withstand washing using a garden hose and sometimes a pressure washer as that is likely what will eventually be used for cleaning.

Whenever possible, use materials from the same manufacturer. Manufacturers often test materials within their own product line to ensure compatibility. For example, concrete, mortars, thin-set, and grouts that all come from the same manufacturer are more likely to have been tested together for compatibility. Oftentimes product representatives can offer inspections and product warranties. Mixing different product lines will often void any potential warranties.

Schedule inspections when preparing surfaces for coatings. Follow specified American Standards for Testing Materials (ASTM) standards if possible. Some of these tests can be performed by the conservator or other third parties as recommended by the conservator, structural or corrosion engineer.

Have a conservator review submitted structural drawings along with updated materials list, methodologies and Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS).

Recommended conservation inspections are noted at key points for each artwork below.

Conduct a conservation inspection of all art works at the end of installation to update maintenance plans.

B. Individual Artists' Proposals

1. Rockspinners by Zachary Coffin

Finalist proposal submittals include MSDS/SDS for materials, sketches and structural drawings as examples of similar work. If awarded, please submit structural drawings for further conservation review prior to fabrication or installation. Structural drawings to include foundations. Take notice of mixed metals used in bearing parts to avoid potential galvanic corrosion. It is anticipated that the rocks may not be spun as frequently at the bridge locations as in Sweeny park. Recommend using a starch-based sacrificial (removable) anti-graffiti coating on the granite such as PSS20 manufactured by Keim. This will help protect the granite from staining or shadowing from markers in addition to graffiti paint. Obtain a contractual statement from the artist that should the rotational aspect become dysfunctional over time, that it is acceptable to leave the rocks immovable until funds become available for repairing or replacing the mechanisms; and/or request a 10 year (or other agreed upon length of time) warranty from the artist and fabricator to repair or replace the moving parts as needed.

2. Bronze Squid by Rossella Scapini and Luke Heimbigner

Artist's Finalists submittal includes a sketch for internal steel and a general description of how the sculpture is to be fabricated and installed. If awarded, request a drawing from a structural engineer to include details of proposed metals with accompanying MSDS/SDS. Include in submittals the anticipated galvanic corrosion rate of the juxtaposed steel armature, port hole parts, screening, fasteners and bronze. Include MSDS/SDS for any proposed welding or brazing materials, patination chemicals and coatings.

The proposed location is currently an empty lot less than 20 feet from the bay. The patinated bronze surfaces are likely to change color with exposure to airborne salts. Surfaces can become streaked with black or various shades of green and will not likely retain an even color over time. In a marine environment typically bronze will become pitted with chloride salts and form bright green blisters in uneven blotchy areas. Coatings may help retard the salt corrosion, but often any film-forming coatings eventually degrade and help trap the salts, especially underneath deteriorating film-forming coatings, thereby accelerating blotchy corrosion. In other words, maintaining a pristine colored patinated bronze surface adjacent to salt water in a marine environment requires frequent maintenance. Annual maintenance may not be sufficient if surface pitting is to be avoided. It is likely that even with annual cleaning and waxing, corrosion issues will surface over time. Juxtaposed mixed metals (steels and bronze) may also corrode faster in the marine environment due to both salts and galvanic corrosion. Stainless steels, even 316, are likely to develop brown spots or "freckles" from the salts and/or internal contaminants, especially without proper surface preparation during fabrication. Please consult with a conservator for surface preparation recommendations prior to fabrication and schedule periodic inspections to help ensure appropriate preparation of metal surfaces.

Additional risks to the sculpture are those mentioned in the general comments. Since the proposed placement is at ground level, the sculpture is highly susceptible to human interaction including climbing and graffiti. These risks are slightly elevated due to the location in an empty lot. The area is also frequently used by dog-walkers and the sculpture is likely to receive daily doses of dog urine. If the sculpture were to be washed daily, the surface might last longer, but without daily cleaning, it is likely that the urine will also discolor the patina. Consider elevating the sculpture and at least providing a few steps to raise it off the ground.

Locating the sculpture closer to the new ferry terminal is likely to significantly improve its preservation in addition to having the artwork relate to the nearby boats and architecture. If the sculpture is located near the terminal, it is more likely that its maintenance (at least a daily or weekly hosing down) can be undertaken by the building maintenance staff under an agreement. This more frequent washing will significantly help reduce long-term maintenance costs for corrosion remediation. Periodic waxing will still be required in either location, but frequent washing will significantly reduce corrosion by salts. Having the sculpture closer to a more populated area is also likely to reduce vandalism, especially if the sculpture can be lit at night.

3. Dragon Dance by Dmitrii Volkov

Artist's Finalists submittal included sketches and a general description of how the sculpture is to be fabricated and installed. If awarded, request a drawing from a structural engineer experienced with local codes to include foundation, attachments, detail of proposed metals with any updated accompanying MSDS/SDS. Include in submittals the anticipated galvanic corrosion rates of all juxtaposed metals and welding materials.

The artist proposes using Corten steel. In the 1950s this steel was considered to be one of the best materials to use for structures due to its designed alloy to form a passive corrosion layer. Since then, there have been many corrosion failures of Corten steel, mostly from areas lacking drainage and especially where capillary action in small joints and crevices retain water. In a marine environment, salt containing moisture and water will likely accelerate corrosion wherever the surface is not able to dry out. Corten steel is known to develop corrosion jacking as with other mild steels. One approach might be to consider fabrication using a marine grade stainless steel, although that is likely to cost more and may alter the artist's vision of a rusted colored surface. Another approach might be to use the Corten or another mild steel, making sure that all joints are carefully welded and that the design does not have horizontal surfaces or joints where water may collect and not dry out, including where the metal base rests on any foundation where water may collect underneath the metal. Mild steels can also be coated (painted), although coatings will also require maintenance.

The proposed location is well sited away from eleated landscaping, but near enough to the Ferry terminal where it can be enjoyed. General conditions noted in Section II.A. of this report will also apply. Of major concern are the pointed tails that, even in the 33' high option, can still easily be accessed by people jumping and/or reaching up, although at least at that height the risk of being accidentally impaled is reduced. Consider elevating the artwork on a plinth to reduce risks of climbing, graffiti or other vandalism.

Maintenance for Corten is likely to be regular washing with a garden hose once a month to every six months depending on observed conditions. Corten and mild steel often develop staining and streaking from everything from bird droppings to weathering to graffiti. It is very difficult to remove staining from Corten without reconditioning an entire surface area or the entire sculpture. Removing ghosting from graffiti, or staining from foreign materials such as drinks splashed onto the surface or urine, can be very difficult. Alternatively, the artist and City may wish to prepare an agreement to just let the artwork appear naturally corroded with any streaks and stains. A preliminary wax coating will likely last for a year or so. Corten is often left uncoated. An optional water-based wax is available as a sacrificial (temporary) anti-graffiti coating that can be spray applied with a Hudson type sprayer. Brush or roller applications may leave some streaking or uneven surfaces over time.

The artwork should be inspected annually for structural joinery and corrosion issues for purposes of public safety.

4. Mosaic Seatwall Insets by Denise Hart

Glass mosaics, if fabricated well, can be very low maintenance. The smooth glass surfaces are resistant to graffiti and can be cleaned easily with mild cleaners. Grout lines often retain staining or ghosting but can be painted out or replaced locally if needed.

The artist's submissions include appropriate materials and methods for installation. Ideally the grout would be specified for external use. Sealing the grout is also appropriate.

Efflorescence, if it does occur, could be from the type of concrete used for the substrate (*i.e.* the poured concrete bench), from improper or incomplete curing of the substrate, or from external sources such as moist salt air in a marine environment. Salts from the air can be absorbed into the grout and trapped underneath the edges of the mosaic. Over time, as the salts repeatedly solubilize during humid conditions and crystalize during dry conditions, they expand upon crystalizing, sometimes pushing out the grout or tesserae. Grout sealants may reduce efflorescence (if it even occurs) or could exacerbate it by further trapping salts underneath the sealants, depending on the sources of the salts. In any case, the artist has experience with these issues and has provided ample data to demonstrate a familiarity with the issues and how to mitigate any risks.

There was a discussion in the Finalists proposal regarding having elements of the glass mosaic extend beyond the insets. Keeping the mosaics within the insets will lower maintenance costs. The upper boarder provides an overhang that helps keep water from penetrating behind the mosaic, thereby protecting it and prolonging its anticipated life expectancy.

Maintenance is usually minimal. Typical maintenance is cleaning with a garden hose and sometime washing with a soft brush and mild pH neutral soap. Other risks are occasional vandalism or breakage of glass tesserae, separation and/or loss of surface grout, or small pieces falling out if not well adhered, or if water penetrates behind the surface. These issues usually don't occur for several years. Future repairs might include replacement of parts in kind as needed. An agreement with the artist should state how these repairs can be done by either the artist or others in the future.

5. Gateway Columns by Norman Moore

The artist's Finalists submission includes sketches and MSDS/SDS. It is not clear yet how all the materials are to be used, for example what is the use of the polyurethane from? From the MSDS/SDS submitted it is not known exactly which concrete or mortar mixes are to be used. What is the grout material that is to be used? The thin set MSDS/SDS is from a different company than the concrete manufacturer. If possible recommend using products from same source or manufacturer rather than mixing product sources. This is because product manufacturers often test materials within their own product lines to ensure compatibility. This may also help enable product warranties. It is not clear what the Liquitex acrylic paint is to be used for. No submissions were yet provided for the source(s) of the glass.

Thompson Water Seal it is fairly well known within a residential construction or hardware store industry. The silicone components are theoretically irreversible and both the wax and oil components can attract dirt to remain on the surfaces. There may be some other options more commonly used in the commercial construction industry for sealing grout that may perform better. Suggest that the artist consult with a single manufacturer for a complete materials system including a grout sealant such as Quickrete or Latacrete. It is not necessary to seal the glass for weathering purposes and the glass is usually resistant to graffiti and easy to clean. The grout can be cleaned, painted over, or replaced locally if needed.

Typical risks to preservation are noted in the general conditions section II.A. above and include bird droppings, natural soiling, vandalism from humans and urine. Other risks are occasional vandalism or breakage of glass tesserae, separation and/or loss of surface grout, or small pieces falling out if not well adhered, or if water penetrates behind the surface. These issues usually don't occur for several years. Future repairs might include replacement of parts in kind as needed.

Maintenance is usually minimal for mosaic surfaces. Annual inspections by a conservator or someone familiar with the mosaics is recommended. Typical maintenance is cleaning with a mild pH neutral soap, and water from a garden hose. Power washing is not recommended.

If the project is awarded, submit structural drawings to show foundation, attachments, type of concrete, depth of rebar surfaces to reduce corrosion potential and spalling, and methods for fastening the cap and all other components attachments. Submit a list of materials to be used with a description of methodology along with any updated MSDS/SDS for additional review by the conservator.

Recommend conservation inspection of columns prior to application of thin-set and mosaic.
Recommend conservation inspection of mock-up showing application of thin-set and Mosaic in minimum one aware foot area.

6. Astro Mural by Dan Fontes

Artist's Finalists proposal includes site images of the brick wall, noting that the mural is to be attached with the bottom of the mural above 6 feet high to reduce the risk of vandalism and graffiti.

The proposal describes using product substrate Crezon that "boasts a greater durability than regular Masonite or marine plywood". Crezon is an exterior grade MDO plywood composite used in the sign industry that is weather resistant (note that descriptions do not say that it is "weather proof"). The artist's proposal says that "the 3/4 inch panel will be painted with three coats of gesso/acrylic primer, painted with Nova Acrylics and finally sealed with Sheercoat varnish."

The life expectancy of the substrate Crezon is not known. This conservator has examined exterior murals on MDO and plywood that have disintegrated from weathering. It will help if the edges of the Crezon are well sealed against moisture penetration.

Gesso primer materials to be used are unknown. MSDS/SDS were not found in the current submittals. The "Sheercoat" that the artist is referring to is likely a two-part, water-based acrylic varnish manufactured by Graffiti Defenz. This is a coating recommended by Precita Eyes in San Francisco and others. The fact that it is two-part and cross linking means that it is likely not removable without harming the mural colors beneath. This conservator has researched anti-graffiti coatings extensively and has reviewed recent studies conducted at the Getty Conservation Institute (GCI). It is difficult to identify exactly what the chemical formulation is of "Sheercoat" and usually conservators do not like to recommend any products for which there are unknown materials since it is difficult to predict future performance. If the artist can submit an SDS and additional information on Sheercoat, that would be helpful to review. On the other hand, previous murals with this coating have probably held up fairly well over time. It just might be nice to consider improvements.

Conservators frequently working on exterior mosaics agree that Nova Colors hold up well. They often prefer an isolation layer of MSA Varnish manufactured by Golden Paints that has a slightly different solubility parameter an allows fore additional sacrificial anti-graffiti coatings (wax or starch based), and allows for cleaning of graffiti without undermining the MSA varnish or the artist's acrylic colors below. The representatives at Golden Paints have a laboratory and have tested their products, along with several other product lines, to determine compatibilities. The artist may want to consult further with them on any recent testing.

If awarded, please have the artist submit a detailed drawing showing materials and methods for attachment to the brick wall stretcher crows on layers. Artist to include MSDS/SDS for all materials including gesso primer, Nova acrylics and varnish. Artist should also submit an email or letter from nova color manufacturer and sheer coat manufacturer stating compatibility between products life expectancies stated by the manufacturers.

Recommend conservator inspection of brick wall as part of design review, inspection for attachment to brick wall, and after gesso has been applied to the panel substrate. Adhesion tests between coating layers (board, gesso, paint, varnish) can be performed if needed.

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