
Conservation guidelines for outdoor murals

The new millennium has seen a tremendous revival in outdoor mural programs. Murals have been commissioned to revitalize cities and towns, reduce graffiti, provide positive programs for youth and troubled neighborhoods, and attract new business and tourism.

A well-executed and well-located mural can be awesome and can bring about a vibrant sense of community. However, a mural that becomes an eyesore will have a negative impact on the attitude of the general public and community leaders towards other mural projects, towards public art and towards the conservation of cultural property in general. Therefore, it is important to ensure that murals remain in good condition for their expected lifetime.

There is a growing network of mural municipalities, technical experts, programs and artists that can be approached to provide advice and information to communities or groups that want to install a mural. In Canada, [Mural Routes, Inc.](#) promotes and facilitates the creation of public art murals across the country. In the [United States](#), [Rescue Public Murals](#) is securing the expertise and support to document and save their significant community murals.

With continued collaboration and networking, it will be possible to build an inventory of best practices and to gain the information necessary to make decisions regarding specific proposals.



In the Way of Progress by Phil, Jennifer & Jamie Richards, 1996, a Scarborough Bicentennial project, initiated by the Cliffcrest Community Association and managed by Mural Routes, Scarborough, Ontario. (Stevenson's artists' acrylic paint on plaster with no topcoat.)

Note: References to commercial products are solely for the purpose of providing examples and information to readers in their search for appropriate and useful products for their projects. Mention of

specific products does not imply endorsement by the Canadian Conservation Institute, nor does it preclude the usefulness of other products.

Planning a new mural

The goal is to create a mural that will remain in good condition for its expected lifetime. To reduce the rate and extent of deterioration, preventive strategies and maintenance must be incorporated into the project from the planning stage. It is very important to plan and budget for maintenance and conservation from the inception of a mural project.

Careful planning will help to ensure that a new mural remains in good condition and is a source of community pride and respect for years to come.

Murals cannot be considered solely from a business, economic, or self-serving viewpoint. They exist in a community and must be meaningful to the community. Planning committees that keep the community in mind and encourage their collaboration will gain benefits such as goodwill, community awareness, support, and input. For more information, visit [Mural Production: A Resource Handbook](#) (Mural Routes Inc. 2004).

To ensure maximum longevity for the new mural, it is essential to choose an appropriate site and wall or other primary support, prepare the support properly, and use only durable materials. Simple procedures for ongoing maintenance (including periodic inspection, cleaning, and repair) should also be planned and funded from the inception of the project. Finally, consideration must be given to the mural's treatment if damage occurs, and to its relocation if the site becomes unsuitable.



Image 1: Side Launch by John Hood and Alexandra Hood, 2000, Town of Collingwood mural, Collingwood, Ontario; (artists' acrylic paint on commercial signboard, styrofoam and concrete wall)

Partner with experts

The planning committee should, by its composition or outreach, have access to the following specialists and professionals in the community:

- an **architect** — to advise on the suitability of the wall and any modifications required for the site and to provide access to his/her network of other professionals as needed
- **building and landscape architects, engineers, paint manufacturers, and conservators** — to advise on factors that will affect the longevity of the mural: its materials, construction, and installation; issues relating to the site (location, directional orientation, placement, and susceptibility to vandalism); accidental damage and deterioration by the natural environment; and ease and cost of maintenance
- **other mural communities** — to provide advice based on their experience, including what has worked and what hasn't

- the **artist, patron, and conservator** — to assess the permanence, longevity, and maintenance of the proposed site, materials, design, and construction
- **community members** — to provide insights into any risks/benefits associated with the site, and to help ensure the community's goodwill, awareness, input, and support

Select a suitable site

Site selection has a major influence on the longevity of a mural. A poorly chosen site can lead to early deterioration due to physical damage, water, pollutants, etc. The location of the site can also increase or decrease the likelihood of vandalism such as graffiti.

Factors to consider when choosing a site:

- How is the site used and what activities occur in the vicinity? For example, is the site used for sports such as ball hockey games?
- What are the environmental conditions? Is the site exposed to high winds, abrasives, pollutants, extreme dirt, constant sun, constant shade, etc.?
- Is the site prone to vandalism?
- What municipal maintenance activities are carried out in the area (e.g. snowplowing, water sprinklers, etc.)?
- Is the site subject to the spray of water, salt, or gravel from an adjacent road?
- Could the mural be situated on the site to reduce damage? For example, a high location could reduce vandalism and a northern (or western) exposure could reduce the rate of light damage.
- Could the site be modified to prevent damage to the mural? For example, could landscaping, parking barriers, or other barriers be added to guide vehicle or pedestrian traffic flow and minimize contact with the mural?

Select a durable support, installation method, and media

The primary support, which can be either a wall or a separate support attached to an existing wall or free-standing armature, is the predominant factor in the stability and longevity of a mural.

The proposed wall should be assessed by an architect and, if needed, by his/her network of professionals such as masonry or roofing specialists, structural engineers, etc. to ensure that it is suitable for the mural and **does not have a moisture problem**.

Heritage buildings should never be considered because a mural could alter or damage the heritage "fabric" of the building.

The materials and installation methods should be durable in the exterior/public environment. For example, only pigments of high light stability should be used and any metal components, including screws, should be non-rusting. Surface coatings can be considered to help protect the paint from dirt,

deterioration of the medium, and, to some extent, graffiti (information on durable materials is included in the section [Creating a new mural](#)).



Image 2: Detail of Almonds and Wine by Cristina Delago, 2010; City of Toronto, Ontario; Photograph by Tomasz Majcherczyk, 2010.

A durable mosaic medium is a good alternative choice for an exterior mural.

Develop a maintenance plan and conservation policy

To ensure the new mural lasts as long as possible, proper maintenance should begin immediately after installation. **It is important to plan and budget for maintenance and conservation from the inception of a mural project.**

The maintenance plan and conservation policy should incorporate:

- a schedule of regular inspection;
- an outline of maintenance activities for mural and site (e.g. cleaning and minor repair);
- who to consult when treatment is required; and
- documentation of condition, maintenance, and treatment work.

In addition, the roles and responsibilities of all those involved in the ongoing care of the mural and its site should be clearly defined. Look to [Caring for an existing mural](#) for more information on the preservation of murals.

Establish a contractual agreement

Before work begins, the patrons of the mural should obtain a contractual agreement regarding the rights and responsibilities of the wall owner, the commissioning agency or patron (owner of the mural), and the artist. Factors to consider include:

- Who will maintain the site?
- Who will maintain the wall? (It is usually the wall owner for a specified period of time.)
- What is the expected lifetime of the mural?
- Who will maintain the mural? (It is usually the commissioning agency.)
- What happens if the wall is to be altered or demolished, or if the mural requires relocation?
- What are the legal issues regarding copyright and moral rights (see [Mural Production: A Resource Handbook](#))?
- How will the ongoing care of the mural be managed and funded, and how will decisions regarding conservation treatment or restoration be made?
- What happens if there are changes to the site?
- What happens if the mural needs to be deaccessioned?

Create signage and programs to educate the community

Plan signage and programs to educate people, create public "ownership", and instill community pride in the mural. Recommendations in [Mural Production: A Resource Handbook](#) include:

- document the mural production and create an archive from which to obtain photos and information for promotional opportunities, travel writers, etc.;
- cluster murals in an area so a walking tour can be created;
- create brochures, a website, an audio tour, and possibly a book; and
- develop partnerships with other organizations, e.g. horticultural groups, theatre programs, youth groups, tourism departments, etc.

Creating a new mural

"A successful mural can be a source of renewal or inspiration for a community, and is great for the mural business in general. A poorly executed or disproportionate mural by any artist is not only disappointing but can discourage potential clients from commissioning murals of their own." Eric Grohe (artist) in [Just Paint](#) (Golden Artist Colors Newsletter), Issue No. 10, p. 6.

Creating a new mural is an exciting process. However, to ensure the mural survives for as long as possible, it is important to carry out the process during favourable climatic conditions and to use materials and an installation method that are durable in the exterior/public environment. Knowledge of health and safety issues during fabrication of the work and documentation of the entire process are also important.

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Timing

Climatic factors must be considered when scheduling a mural project. What is uncomfortable for the artist is also likely to be a poor situation for paint application, drying, and curing. Outdoor murals should never be painted in extreme weather conditions — too hot, too cold, too humid, or wet.

Safety issues

Check into the health and safety issues and regulations relating to the materials and procedures that will be used for the mural. Some industrial paints and coatings emit toxic vapours and require precautions such as the use of personal protective equipment, e.g. organic vapour masks.

Be sure you understand the employer and employee responsibilities outlined in your provincial occupational health and safety regulations. These regulations govern the use of specialized safety equipment (e.g. ladders, lifts, scaffolding, and safety harnesses) by staff or contractors. For example, contractors and supervisory staff often require specialized training on safety and fall protection equipment. Some information is available on the website of your provincial Ministry of Labour. You can also view the standards referenced in the regulations of each province and link to each jurisdiction through the [Canadian Standards Association](#) (CSA).

Documentation

Keep records of all the materials used, including the surface preparation and any coatings applied, as well as the installation methods.

Photographs are ideal for documenting materials and procedures and can also be used for promotion and publicity. Close-up photographs of all parts of the mural will be useful for future restoration procedures. They may also be beneficial for those undertaking research and are an effective way to share information with other mural communities. Detailed photographs of sections of the mural will be helpful if treatment is required in the future.

Paint colour chips, paint samples, paint type, and pigment codes will be useful in the future to identify colour fading. They can also assist with maintenance and treatment.

Materials and methods of construction

Investigate the permanence and longevity of the proposed materials and methods of construction with other mural communities, product manufacturers, and conservators. Their experience can be invaluable to you, especially if you are considering new products or procedures. Information on the materials and methods of mural production is also available from [Golden Artist Colours](#), [Mural Routes Inc.](#), the [Chicago Public Art Group](#), and [Rescue Public Murals](#). However, keep in mind that the recommendations of others must always be assessed in the context of your climate and environment.

The primary support

Murals can be created directly on a wall or on a separate support attached to a wall.



Image 1: Busy Wagons, by John Hood, 1999, Town of Collingwood mural, Collingwood, Ontario; (artists' acrylic paint on brick wall).

Walls

If a mural is undertaken directly on the wall of a building, the wall is the predominant factor in the longevity of the mural. The wall must be in good condition and any loose material (such as dirt or flaking coatings) or repellent surfaces (such as release agents) must be removed. The primary enemy is moisture. Moisture in the wall, combined with the freeze/thaw cycles occurring in northern winters, can cause flaking of paint layers and sometimes spalling of the wall surface. Murals that are painted on old (red clay) brick walls are particularly prone to this kind of damage.

Moisture can originate from many sources:

- the ground (rising damp);
- within the building if the wall structure or insulation is inadequate;
- openings such as cracks or joints that do not have adequate flashings or caulking;
- deteriorated mortar;
- water run-off from the roof, etc.

Before painting a mural on a wall, inspect the wall carefully to ensure it does not have a moisture problem:

- Is there salt efflorescence or other signs of moisture damage?
- How does water move over the wall during rainfall — does it flow over the surface or is it directed away?
- Is a "wetting" pattern or area visible?
- Are improvements necessary to divert water flow and drainage?
- Do the caulking or flashing need improvements?
- Have modifications to the wall resulted in areas of local instability?
- Is there staining from metal attachments?
- Are bathroom, laundry, or kitchen vents present?

Many different types of walls are suitable for murals:

- **Concrete block walls** provide a good, stable support. Their smooth surface is convenient to paint on and can be economical in terms of paint and brushes. As long as the surface is well-prepared, the mural should remain in good condition.
- **Plaster or brick walls** may or may not be suitable. Cracks, poor construction, poor insulation, or certain architectural features can allow moisture into the wall. On good brick walls, the odds of success can be increased by leaving the bottom few rows of bricks unpainted, or leaving an unpainted border around the mural. This provides an area for the wall to "breathe". However, such precautions will not prevent flaking paint and spalling of the brick surface if there is a moisture problem in the wall, or if the construction of the building allows interior humidity to move through the "porous" brick. Though some brick walls can be successful, older brick walls or red-clay brick walls are not considered a good choice.
- **Metal siding** appears to be suitable, with many murals surviving well.

Separate supports

Many murals are painted on separate supports, which offer the following advantages:

- the artist(s) can paint the mural within a studio and apply a protective coating in controlled conditions; and
- the murals can be relocated if necessary.

Murals on separate supports require an armature or mounting system to attach them to a wall. Non-rusting metal fasteners or supporting armature are recommended. To ensure the mural is mounted effectively, seek the expertise of a qualified installer.

Many different materials can be used as the support for a mural:

- **Wood products** that are designed for exterior use can be suitable for murals provided they are high-quality products with the following characteristics:
 - they are designed for long-term use;
 - they have excellent durability outdoors;
 - the surface is compatible with the painting medium;
 - they can be mounted easily to a wall;
 - they can be sealed to prevent the ingress of moisture; and
 - they are non-compressible and rigid so that permanent dents and other deformations cannot be made in the surface.

Marine plywood or sign painters' boards such as Crezon board are good choices. (Some artists have suggested that properly prepared and installed Crezon board lasts better than marine plywood.) Sign painters' boards are industrial plywood panels, made for exterior use, with a medium-density overlay that provides a nice painting surface. Be sure to choose a board with all-fir plys and no interior voids, and inspect it carefully prior to purchase to ensure there are no surface faults.

Laminated boards such as marine plywood and sign painters' boards require special precautions to prevent the ingress of moisture and the associated distortion and delamination of plys. The boards must be well primed; the edges and joints must be sealed; and flashing is required around the edges to prevent water seepage and direct water away.

- **Metals**, whether a honeycomb panel with aluminum skins or a Dibond panel (aluminum skin over a polyethylene core), can also be a suitable support for murals. Such murals appear to be quite durable as long as the surface is properly prepared.
- **Alternative supports** manufactured for the exterior environment have also been used, with varied success. However, before using a new industrial product as a support, try to see the product in use and answer the following questions:
 - Does the material flex?
 - Is it compressible or does it have a compressible core that can be dented?
 - Are repairs possible?
 - How must it be prepared and what paints are compatible with it?
 - Are priming materials and paints safe and convenient to work with?
 - What are the long-term properties?
 - Is a special installation system required?
 - Are all edges and points of attachment sealed against moisture and physically protected?

It is also a good idea to seek the opinions and references of others who have used the product.

Surface preparation

A mural cannot survive for long if the paint does not adhere well to the primary support. To ensure good adhesion, the surface must be clean, coherent, and properly primed. Some surfaces may need some additional preparation to ensure they have an adequate "tooth" for the primer.

Clean the primary support

- wash the wall (if using a power washer, make sure not to damage the wall surface);
- remove any loose material;
- remove form release agents from concrete walls;
- if there are any surface agents that could interfere with adhesion, remove them with solvents or household cleaners;
- be wary of an existing coating on the surface, particularly if its composition is not known. It may not be compatible with the paint to be used; and
- allow adequate time for the wall to dry.

Ensure the surface is coherent

- inspect the wall carefully and note any surface damage;
- fill in any cracks;
- seek professional expertise and service if the wall requires extensive repair or if an additional surfacing is required;
- if the wall needs extensive repair, it may not be a good choice for the mural; and
- never paint over an existing architectural paint that is flaking or discontinuous.

Obtain an adequate "tooth"

- for metals or laminated wood board with smooth, finished surfaces, lightly abrade the surfaces to provide a "tooth" for the primer;
- "degrease" metal surfaces (e.g. with acetone, preferably outdoors) before sanding their slick surfaces; and
- remove residual powder from sanding with a damp cloth.

Apply a high-quality primer

- choose a primer that is compatible with the primary support and the paint to be used for the mural [technical representatives from architectural paint companies can provide advice on the best primer to use for a particular wall. Other mural programs/artists can offer insight into the success of specific primer/paint combinations];
- do not dilute the primer; and

- test and assess the adhesion of the primer to the primary support. [Apply the product to a small area on the surface and, when it dries, scratch the layer to test adhesion. Areas that appear to "resist" an even application or allow easy removal may require further cleaning and/or sanding.]

Additional instructions

For laminated wood supports, lightly sand the smooth surfaces to ensure good adhesion of the primer. Apply at least two or three layers of a water-resistant primer along all the edges of the board to prevent the ingress of moisture. Two layers of good-quality primer should also be applied to the front and back of the board.

For aluminum composite panels, lightly sand the surface and remove the dust, and then apply a primer that is compatible with the metal support and the painting medium. For more information, see Mayne, D. **Working with Aluminum Composite Panels**. City of Windsor Art Studio, 30/10/2008.

For metal-clad surfaces, contact those familiar with the cladding product and its present coating (e.g. architects, cladding and paint manufacturers, or other artists/mural communities) for advice on degreasing the surface as well as suggestions for compatible primers and paints.

Paint

Above all, artists should know their materials. They should consult the product manufacturer, as well as other mural communities and mural artists who have used the product, to obtain technical information and advice. They should also monitor their murals over time to detect fading or deterioration of specific colours or products.

Many paints are suitable for murals, e.g. acrylic paints, silicate paints, and other industrial paints. Regardless of the paint chosen, it is essential that the pigments have high light stability. Some manufacturers conform to voluntary labelling standards, so look for rating scales and select only from the lightfast pigments. If a manufacturer has ratings on some products and not on others, the unlabelled pigments are likely of questionable lightfastness — and should be avoided.

When selecting paint, consult the manufacturer for answers to important questions such as:

- Is the paint suitable for use in the outdoor environment?
- Is it compatible with the support you are using?
- Does it require any special preparation of the support?
- Are there any other peculiarities of use?

Some paint manufacturers (e.g. [Golden Artist Colors](#) and [Nova Color](#)) work with artists on specific mural projects, and monitor the ongoing condition of the murals. They will be able to guide you toward the pigments and products that work best for outdoor murals. Other artists and mural communities

are also a good source of information. Through experience, they are likely to be aware of which colours remain vibrant and which fade. Even when using the most stable pigments, always retain paint chips and paint samples as a reference for colour change and future restoration.

As outdoor mural programs have increased in recent years, so too have investigations into suitable mural materials. One common investigative procedure is accelerated ageing, which provides fast results but may not predict exactly how the paint will behave in the natural and harsh outdoor environment. Consultations with artists who have used the materials and/or monitoring outdoor murals produced with known materials can provide more accurate information. As more investigations into mural materials are carried out, more materials that are known to be stable should become available.

Most mural artists have preferred materials and methods. However, planning committees should verify the appropriateness of the approach by seeking references from other cities with murals by the same artist.

Acrylic paints

The most common paint for murals is acrylic.

- **High-quality acrylic latex house paints** are a popular choice, but they don't provide a large selection or vibrancy of colour. Although they can be mixed in a "palette" technique to modify the colours, the shades produced are often dull. For more information on specific paints being used, look for descriptions of major murals on artists' websites.
- **Artist-quality acrylic paints** such as [Golden Artist Colours](#), [Stevenson Acrylic Paint](#), or [Nova Color Artists' Acrylic Paint](#) are also widely used.

Provided the paint is of high quality and the surface is well prepared, the main problem with acrylic paints is fading of certain pigments and dulling of the surface due to deterioration of the medium. Even with lightfast pigments, some colours may fade prematurely. ¹

Two other problems have also been noted:

- the acrylic medium can deteriorate when exposed to intense ultraviolet radiation, which can make the surface appear faded; and
- the surface of dried artists' acrylic films remains soft and tacky at relatively low temperatures, which allows dirt and dust to become embedded in the paint surface.

To address these issues, [Golden Artist Colours](#) recommends adding a harder medium (GAC-200) to the acrylic paint to increase its durability, as well as using a two-part coating system on top of the paint. They are also seeing promising results with their solvent-based acrylics, the MSA colours (Mineral Spirit-based Acrylic resin colours).

Silicate paints

Silicate paints such as [Keim Mineral Paints](#) can also be used for outdoor murals. These paints combine a potassium silicate binder with inorganic fillers and natural earth oxide pigments. The paint penetrates into mineral (masonry) substrates (i.e. brick, concrete, stucco), forming a permanent bond that is integral with the surface. The palette of silicate paints is not as extensive as the palette of acrylic paints, but the inorganic pigments are durable and resistant to fading. Successful use of silicate paints also requires proper surface preparation and some working experience with the product. To view some examples of murals produced with Keim paints, see [Eric Grohe Murals & Design](#) and [AlbanyMural](#).

Other industrial paints

Other industrial paint systems have been used with varying degrees of success. Before deciding on an industrial paint, assess it for:

- permanence and longevity within the specific environmental context;
- compatibility with the support material;
- ease of use; and
- toxicity.

Alternative media

As an alternative to paint, durable media such as coloured bricks, mosaic or sculptural metallic or ceramic pieces can be used to create a design (mural) on a wall.



Image 2: Mosaic Mural Almonds and Wine by Cristina Delago, 2010; City of Toronto, Ontario; (frost resistant porcelain tiles, glass tiles and handcrafted porcelain tiles, exterior grade adhesives and grouts on cement board attached to the wall with Tapcon® screws and commercial grade caulking; grout sealer applied once a year.)

Photograph by Tomasz Majcherczyk, 2010

Surface coatings

The application of a surface coating may increase the longevity of a mural by:

- helping to prevent the photochemical breakdown of the paint medium;
- providing some physical protection against atmospheric abrasives or minor damage; and
- providing a surface against which some cleaning can take place.

However, surface coatings have been used with varying success. Some coatings have discoloured, peeled unevenly from the surface, developed a white haze (blanching or bloom), and been impossible to remove without damage to the paint. Given such unsightly problems, it is important to investigate a coating thoroughly before applying it to a mural. Contact the manufacturer to obtain information on the coating's properties and recommended use, and communicate with other communities or artists who have had experience with the product over a number of years. It is better **not** to apply a coating than to apply one that could have poor ageing properties.

To be a suitable surface coating for outdoor murals, the product should be stable (remain clear and coherent) and compatible with the paint and the primary support. For example, it must not dissolve the paint, and it must not make a brick wall completely impermeable to moisture. In addition, some coatings that are suitable for solid supports are not recommended for flexible supports such as banners. Although it is preferable that the coating be reversible (easily removable), finding a product that can be removed from an acrylic paint surface is likely impossible.

Information on the behaviour of surface coatings on outdoor murals is generally lacking, although research has begun. For example, Mark Gottsegen, Administrator of the Art Material Information and Education Network (AMIEN), is developing a testing program to monitor how well coatings withstand the environment to which they are exposed ([Mural Painting. Conjecture to Knowing a Manufacturer's Point of View](#)). However, existing anecdotal evidence and the results to date do not allow for specific product recommendations.

Nevertheless, some artists and communities are having success with specific coatings. Automotive clear coats that contain ultraviolet filters and can be easily washed have been used successfully on murals executed on aluminum composite panels (Mayne, D. **Working with Aluminum Composite Panels**. City of Windsor Art Studio, 30/10/2008). Los Angeles mural groups have been recommending coating products such as Soluvar. [Golden Artist Colours](#) has specific recommendations regarding their own products ² and artists appear to be following the recommendations with success. ³ Various other commercial products have also been used with

apparent success. Many mural artists have become confident in the products they use — the coatings have become part of their technique and are routinely applied upon completion of their work.

The effectiveness of a surface coating will also depend on how and when it is applied. The application may not be successful if:

- the surface is not clean and dry;
- the application method is faulty;
- the surface texture of the wall is not conducive to a clear, even layer; and
- the environmental conditions are unsuitable for application and drying.

To ensure the application of a coating is successful:

- know the product;
- contact the manufacturer to inquire about its properties;
- obtain advice on its behaviour from those who have used it;
- test it to make sure it works on your support and paint surface; and
- ensure it is applied properly (have a knowledgeable person supervise contractors).

For murals on a separate support, ensure that the paint and/or surface coating are applied over any fasteners/holes that are used to attach the support to a wall. This will help prevent the ingress of moisture at the points of attachment.

Anti-graffiti coatings

The first line of defence against graffiti should be proper site selection, lighting, maintenance, signage, and community buy-in. However, if a graffiti problem develops, or if locating the mural in a high-traffic or graffiti-prone area is unavoidable, an anti-graffiti coating may be appropriate.

Before applying an anti-graffiti coating, make sure it is appropriate for the wall surface and the climatic conditions in the area. Contact the manufacturer for information on its properties, recommended use, and removability (some products can only be applied and removed by a licensed firm, whose methods may not be appropriate for a mural). Information on the performance of a coating can also be obtained from municipalities who have used it.

Some anti-graffiti coatings are sacrificial, i.e. they are meant to be removed along with the graffiti. The recommended removal method for these coatings is often water under high pressure. Because this procedure is not appropriate for many wall surfaces or murals, a less aggressive removal method should be developed (in collaboration with the technical reps) and tested prior to using the product.

Some studies on anti-graffiti products and other protective surface coatings have been initiated in the last few years. For example, Tarnowski et al. have been studying anti-graffiti coatings on sandstone and marble (Tarnowski, A., X. Zhang, C. McNamara, et al. "Biodeterioration and Performance of Anti-

graffiti Coatings on Sandstone and Marble." **Journal of the Canadian Association for Conservation** 32 (2007), pp. 3–16). In addition, artists in the Philadelphia Mural Art Program and students and faculty from the Winterthur/University of Delaware Art Conservation Program are collaborating on a project to explore new products (Kerr-Allison, A. **Outdoor Public Murals: Materials, Advocacy and Conservation**. Winterthur/University of Delaware Program in Art Conservation, 2007). They have begun testing a water-based ultraviolet-absorbing coating to determine if it:

- protects the mural from exposure to ultraviolet radiation and weathering;
- remains clear;
- provides a barrier against dirt and graffiti; and
- is safe to apply and remove.

After 3 years, the product appears promising in its performance on test surfaces. However, it has not yet been tested for removability or as a protective layer against graffiti.

Footnotes

1

Studies at the University of Delaware have investigated the photo-reactive effect of titanium dioxide in accelerating fading in some paint films and the use of ultraviolet inhibitors to prevent or reduce such fading. For more information, consult:

Keister, J.E. **The Investigation of Fading in Outdoor Murals: The Photo-Reactive Effect of Titanium Dioxide and Possible Use of Ultraviolet Inhibitors**. Winterthur/University of Delaware Program in Art Conservation, Undergraduate research paper in Art Conservation, 2006.

Ritschel, C. **Ultraviolet-light Absorbing Coating for Historic Windows**. Winterthur/University of Delaware Program in Art Conservation, Graduate research paper in Preventive Conservation, 2005.

2

Golden's two-part system for a final varnish illustrates the thought that goes into the formulation of such products. They recommend an isolation coat that has a dual function: to provide a more even surface to reduce foaming of the varnish, and to provide a layer against which the top varnish can be removed without harming the image below (should removal be necessary). The isolation coat to be used depends upon the application technique — spray or brush. As a final varnish they recommend either the regular or hard MSA product. All their varnishes contain ultraviolet absorbers and light stabilizers. These additives help to slow down

deterioration but may not prevent fading and deterioration of the medium within the exterior environment. The company feels both products work well but the hard MSA varnish may be more durable in the long term. The hard varnish will also be harder to remove in the future.

3

"If your mural has been painted with top quality acrylics on a properly sealed surface, followed by a protective isolation gel coat and a final coat of Golden MSA Varnish, then you will find these steps to be sufficient for most requirements." (Hood, J. "Painting Materials and Techniques." pp. 54–55 in [Mural Production: A Resource Handbook](#). Mural Routes Inc., 2004.)

Caring for an existing mural

A mural that deteriorates prematurely or is damaged or vandalized will risk further damage, will lose community acceptance, and will not promote the positive values it was meant to inspire.

Expected lifetime

Many public art programs consider murals to be temporary, with a lifetime of approximately 10 years. But some murals have lasted more than 20 years, and their communities want them to last even longer.

The harsh outdoor environment and the changing use of public space necessitate an approach to the preservation of murals that is different from that for a traditional artwork. Inspection, ongoing maintenance, and periodic treatment are essential to keep a mural in good condition. In extreme cases, relocation, repainting, or deaccession may have to be considered. While the longevity of a mural is largely determined by the decisions made during its planning and creation, maintaining community awareness and support is also extremely important. Cities with major mural programs have learned that once a mural loses its significance to a community, it will tend to become a target for vandalism and graffiti. Unrepaired graffiti, vandalism, and damage will attract more of the same — leading to a cycle of increasing loss.

Inspections and maintenance

It is important to inspect murals annually or semi-annually to ensure that instability, damage, or potentially damaging conditions are detected before major damage or deterioration occurs. All inspections as well as any work that is subsequently carried out should be documented (see the sample [condition report form](#)).

Scheduling inspections and maintenance

Spring is an excellent time for an annual inspection. Required maintenance and treatment activities can then be undertaken during the summer months. Another inspection should be done in autumn to address any problems prior to the harsh winter season.

Who does the work?

Municipal groups can't usually afford to hire a conservator to undertake all inspection, maintenance, and treatment activities. However, they should at least have a conservator initiate the maintenance program and be available for consultation and treatment as required. Some cities have successfully cared for their murals by hiring a local artist to undertake an annual routine recommended by a conservator: gentle washing with sponges, applying fills in damaged areas, and in painting areas of loss. Consistency in the person doing the work is often the key to success. A conservator should also be contacted whenever new products or procedures are considered, graffiti needs to be removed, or extensive treatment is required. New products and procedures will always require assessment and appropriate tests. It is important to note before cleaning a mural:

- be wary of well-meaning offers by community members to undertake cleaning or maintenance activities;
- industrial maintenance procedures such as power washing are often inappropriate for murals and can cause extensive damage;
- repairs undertaken by individuals who are not knowledgeable about the materials, techniques, and overall approach to conservation treatment can result in unsightly damage; and
- always seek a second opinion on major repairs to the mural or wall, particularly if the recommendation is received from someone selling a product or service.

Vandalism

Neglected pieces become an invitation for vandalism

Preventive strategies for vandalism include an attractive, well-maintained site, an artwork in good condition, a respected building, and an informed, involved community.

One common form of vandalism is graffiti. Graffiti is often an expression of territory, i.e. the location is "tagged" with graffiti to assert control of "turf". As one tag will invite additional competing tags, prompt removal of graffiti can help to prevent its reoccurrence. However, involving community youth in the mural is often a more effective way to stop graffiti.

Graffiti must be removed in a safe and effective manner that does not affect the image layer below. For this reason, removal should be undertaken by a conservator or an artist/technician familiar with the piece after consultation with or under the supervision of a conservator. Removal without adequate testing, or by an individual without adequate experience or supervision, can irreparably harm the mural.

Treatment approaches and documentation

The approach to making treatment decisions should have been outlined in the initial planning stage for the mural or as a conservation policy within the mural program. If such a document exists, it will provide a "roadmap" for making treatment decisions. For example, it will indicate who should be contacted (a conservator and/or artist), whether or not a committee (i.e. program administrator, artist, conservator, community members, and/or funding body) will discuss the proposed treatment options, and who will approve the proposed treatment.

Treatment decisions will be unique for each mural. A professional conservator should ideally be involved. He/she can provide treatment options and an outline of the materials and procedures to be used. The final decision should include input from all the various stakeholders — the owner/municipality, the community, and the original artist.

Many cities include conservators in major programs to conserve important murals. Other communities have had success by working with artists and supervised community volunteers. Judith Baca provides many examples where the community has played a vital role in treatment decisions and activities (Baca, J. "Public Participation in Conservation. 1: The Great Wall of Los Angeles." pp. 21–29 in **Conservation and Maintenance of Contemporary Public Art**. The Cambridge Arts Council and Archetype Publications, 2002).

Prior to undertaking the agreed-upon treatment, the cause of deterioration should be determined and corrected. The original artist should also be consulted prior to major treatment or alteration of the work or its context, both as a moral right and because he/she can provide detailed information on the materials, techniques, and visual characteristics of the original surface.

The actual treatments can range from a traditional conservation approach (in which a conservator inpaints ¹ areas of loss) to treatments in which a conservator supervises or advises an artist and/or a group of community volunteers in restoration or reconstruction activities, to treatments undertaken by an artist, who has proved they are respectful of a conservation approach and undertakes relatively basic procedures that have been approved by the artist and owner. A mural with major loss or deterioration may require more extreme intervention, such as reconstruction (repainting) of damaged parts based on respect for the remaining original material and evidence of an earlier state (photographs), or even repainting by the original artist.

All treatments should be carefully documented. The treatment decisions should be recorded, and a detailed record kept of the work undertaken, the materials used, the person(s) doing the work, and the date. Before, during, and after treatment photographs should also be taken.

There are many resources available to help locate a conservator. In Canada, the [Canadian Association of Professional Conservators](#) (CAPC) maintains a list of conservators across the country who have successfully completed a voluntary accreditation process, and can provide information that will assist in making an informed choice. However, the CAPC list does not include all of the qualified

conservators working in Canada. Other references can be obtained from major galleries or museums in the area.

All conservators in Canada are guided by the standards and ethical obligations outlined in **The Code of Ethics and Guidance for Practice** of the Canadian Association for Conservation and the CAPC.

Footnotes

1

Inpainting (also referred to as retouching) refers to the application of new paint to areas where original paint has been lost or abraded. This is distinct from overpaint which hides or covers areas of damage but also obscures undamaged areas. Overpaint is often excessive and unnecessary.

Condition Report and Inspection Record

The Canadian Conservation Institute (CCI) would like to assist you in creating and maintaining outdoor murals that will remain a source of beauty and community pride for many years. An annual inspection and documentation of your murals is an important first step in an ongoing maintenance program, and we are pleased to provide you with this **Condition Report form** to assist you with this task. The first part of this form ("Record of Materials, Condition and Maintenance Recommendations") requests detailed information on the mural and the site. This only needs to be filled in once and will be important information for your files. The second part of the form, ("Inspection Record") (one page, front and back), can be used for your annual inspections.

By recording the materials and condition of your murals and retaining the report in your files, changes in condition from year to year can be readily detected. This will allow you to address problems and deterioration before major unsightly and perhaps irreparable damage occurs.

For more information on how to track your inspection of outdoor murals, view the [Outdoor mural condition report form](#).

Additional references and resources

Conservation guidelines for outdoor murals by Debra Daly Hartin, Senior Paintings Conservator, Canadian Conservation Institute (CCI).

References

- **Conservation** (the Getty Conservation Institute Newsletter), Volume 18, Number 2, 2003.

The entire issue is devoted to outdoor murals. Articles include:

- "The Conservation of Outdoor Contemporary Murals" (by Leslie Rainer)
- "Preserving Art in Public Places; A Discussion about Mural Painting and Conservation"
- "The Painted Murals of Cambridge – Maintaining the City's Collection" (by Hafthor Yngvason)
- "Mural Painting and Conservation in the Americas: A Symposium" (by Kristin Delly)
- **Conservation and Maintenance of Contemporary Public Art** (by Hafthor Yngvason). Cambridge, MA: The Cambridge Arts Council / London, UK: Archetype Publications, 2002.
- **Just Paint** (Golden Artist Colors Newsletter) ([PDF Version](#), 175 KB), Number 10, 2002. The entire issue is devoted to Mural Production and includes a **Mural Quick Reference Guide**.
- **Military Wall Art: Guidelines on its Significance, Conservation and Management**. English Heritage, 2004.
- **Model Agreements for Visual Artists: A Guide to Contracts in the Visual Arts** (by Paul Sanderson). Toronto: Canadian Artists Representation Ontario, 1982.
- **Mural Paints: Current and Future Formulations** ([PDF Version](#), 287 KB) (by Mark Golden), 2003.
- [Mural Production: A Resource Handbook](#), Mural Routes Inc., Scarborough, 2004.

An easy to read guide on many aspects of mural production including excellent technical advice from an experienced artist. It is an excellent resource for communities who are considering a mural or mural program.

Resources

- [Canadian Association of Professional Conservators \(CAPC\)](#)

The CAPC provides a list of accredited conservators in Canada as well as information on what to expect from a professional conservator.

- [Chicago Public Art Group \(CPAG\)](#)

The CPAG provides excellent information on community public art projects, including a practical guide on creating community murals.

- Getty Conservation Institute.

[Mural Painting and Conservation in the Americas](#) (conference in 2003).

[Modern Paints](#)

- [Golden Artist Colours, Inc.](#)

Provides guidelines to artists on painting exterior murals, ratings of their products in terms of lightfastness and permanence, and recommendations on specific pigments and products.

- [Mural Routes, Inc.](#)

With a mission to teach, learn, and share valuable insight on mural art, this organization publishes a mural newsletter, hosts annual symposia and meetings, and runs a website that contains useful resources and links. The website provides a mural map of Canada, a forum for questions and answers, and additional information on mural production including sample artist contracts.

- [Philadelphia Mural Arts Program \(MAP\)](#)

This public art program works in partnership with community residents, grassroots organizations, government agencies, educational institutions, corporations, and philanthropies to design and create murals of enduring value while actively engaging youth in the process. Since its inception in 1984, approximately 2400 murals have been created throughout Philadelphia.

- [Rescue Public Murals](#)

A program within the United States national nonprofit organization **Heritage Preservation, Rescue Public Murals** is bringing attention to murals in the United States to document their artistic and historic significance and secure the expertise and support to save them.

- [Social and Public Art Resource Center \(SPARC\)](#)

Founded in 1976 by muralist Judith F. Baca, painter Christina Schlesinger, and filmmaker Donna Deitch, this organization produces, preserves, and conducts educational programs about community-based public art works.

- [View Access](#)

The **View Access** website provides a link to the Canadian Standards Association (CSA) standards referenced in the federal, provincial, and territorial Occupational Health & Safety (OHS) regulations and to all Canadian jurisdictions. Information on various training courses is also available.