The many considerations an artist will face when embarking on a mural project may be imperceptible to a casual viewer of these large, often public, artworks. There are many different types of murals and mural applications, and each type presents its own set of challenges. The muralist will want to ensure the mural’s integrity by practicing a sound methodology, accounting for manifold factors that will influence the project’s success.

Whether the mural will be indoor or outdoor is a major factor that will affect the artist’s methodology. For an outdoor mural, an artist will need to consider the mural’s potential exposure to light or weather and prepare and protect the substrate accordingly. For an indoor mural, exposure to chemicals, humidity, contact or abrasion needs to be considered and accounted for.

The art materials used might also change based on whether the mural is interior or exterior. Certain colors are more lightfast and are more appropriate for outdoor work where there is a lot of exposure to light. Some colors are known to fade rapidly and may only be suitable for indoor applications. Artist-quality varnishes may offer the best protection for any mural; however, alternative solutions may need to be explored in indoor settings such as hospitals or schools.

Because of the large scale of most mural projects, expenses can quickly add up. Knowing how to get the most out of money spent, or learning some ways to cut costs without jeopardizing the integrity of the mural is important. Also, it is important to be realistic about the quantity of materials needed so that unexpected expenses won’t add up late into the project.

Time is an additional consideration. To an artist working spontaneously or in a limited amount of time, adequate preparation will be extremely important so he or she can move quickly. Another artist, whose project requires extensive research, preparation, and approval by many parties, needs to account for months of planning time in the project schedule.

Climate will greatly affect outdoor mural work. Climate changes can affect the drying rate of materials as well as the mural’s exposure to certain types of weather and extreme temperatures. An understanding of the specific climatic conditions of each individual project will help artists choose the right time to work and the right materials to work with.

Creating artwork for an environment where many people have the opportunity to see it is one of the most rewarding aspects of mural painting. This should also suggest the great responsibility of the mural artist. A mural is intended to enhance an environment, not clash with it or degrade it. If improperly done, the “work of art” can quickly become an eyesore. Many mural sponsors are now requesting that artists guarantee their murals for a certain period (usually 10-20 years). These agreements can be legally binding, which means artists will be held liable for problems occurring with the mural during this time.

Careful planning, thoughtful preparation, and use of quality materials will help finished murals to have an impact that matches the artist’s good intentions.

Using Acrylic Products for Mural Application

Golden Artist Colors, Inc. has conducted testing and research on using acrylic products for mural application. The following paragraphs contain our specific recommendations for preparing substrates, selecting materials and giving protective finishes to murals made...
using GOLDEN Acrylics. For more information about using acrylics on mural projects, visit our website at: www.goldenpaints.com/murals.htm

Substrates
Substrate selection is often defined by a mural's location. When working on the exterior of a building, (whether it be made of wood, cement, masonry, metal, etc.), and on interior surfaces as well, it is important to know how to prepare the substrate before beginning to apply paint. Different substrates may require specific techniques and materials. If not done correctly, the life span of the mural may be cut short.

Generally, it is always a good idea to take a substrate down to its original surface. Trusting the integrity of previous coatings can put mural work in jeopardy. It is also difficult to determine if these coatings will be compatible with other products that are being used.

If an artist chooses to overpaint a surface that is already painted, he or she should consider the type of the existing paint and its physical condition. If the paint is a water-based polymer (commonly referred to as latex), chances are good that the acrylic paints will adhere sufficiently. If it is a high gloss oil paint (or of unknown materials), then it must be abraded (or removed) for good adhesion. If the existing paint film is deteriorating, then it is best to have it removed (sand-blasted, power-washed, scraped, etc.). It is critical to wash any painted surface, even a newly painted surface, with soap and water to remove dirt and grime prior to application of acrylic products.

Previously painted high gloss surfaces can be cleaned and dulled in one step by using a household abrasive cleaner. Cleaner must be washed off completely with clean water.

Mold and mildew must be removed by hand-scrubbing with a mixture of 1 part household bleach to 3 parts water.

**CAUTION:** Never add ammonia or ammonia-based cleaners to bleach! Wear goggles and protective equipment while cleaning. After scrubbing with a brush, allow the solution to sit on the surface for 10 minutes before thoroughly rinsing off with clean water.

If there are cracks and grooves in the substrate, the method for filling and smoothing these gaps will depend on the nature of the substrate itself. Artists should consult an area architectural coatings store for recommendations on the best product available.

Once the surface has been cleaned, a primer coat will give better adhesion for the paint. One key feature to look for in a primer is whether or not it can be painted over by latex paints. This should ensure that the primer will be a compatible surface for the adhesion of waterborne acrylics.

To determine the best primer for a specific surface, we suggest artists contact their local supplier of architectural coatings. Such companies have extensive experience with priming the broad spectrum of building supplies, and typically have specific primers for the surface the mural is to be painted on. Their recommendations will also take the environmental concerns of the area into account. Architectural and maintenance paints are competitively priced, meaning that a product that costs more than a similar product will typically perform better as well.

When painting on brick, concrete, or other masonry surfaces, we recommend use of a masonry conditioner that can be purchased from a commercial coatings supplier.

In some cases, muralists will want to consider painting on panels (wood, aluminum, fiberglass, etc.) rather than directly onto a wall. There are various reasons an artist may choose to work on panels. Sometimes the existing substrate is too difficult to work on. It could also be a matter of convenience since painting on panels will usually allow an artist to work in his or her studio. Painting on panels is a good alternative for someone who doesn’t have access to scaffolding or other equipment. It can be much easier than painting off a ladder all day. Panels can also be a safer, cleaner way to work with groups of children or other large groups of people. If artists choose to work on panels, they will want to make sure they choose the right kind of panel for the right situation. Preparation of panel substrates will also depend upon the chosen material.

(See Mural Quick Reference Guide, page 11.)

Paint Selection

Acrylics are some of the most durable and accessible paints for exterior application, used by many artists for painting murals due to their lightfastness and weather resistance. They also form an excellent bond to masonry or cementous surfaces. Oil paints are a poor choice for painting on these surfaces since the alkalinity of concrete can destroy alkyd or oil products. Ethyl-silicate paints form an excellent and permanent bond with brick or concrete; however this system can be time-consuming and costly, and a good working knowledge of the materials is required as well.

Solvent-based enamels are a good choice for durability, but manufacturer’s pigment considerations are usually not the same as with a high-quality artist’s acrylic paint.

Golden Artist Colors, Inc. produces several lines of paints that can be used for mural work. Selecting which type of paint to use is dependent on each artist’s style and the surface to be painted. GOLDEN Heavy Body, Matte, MSA, Fluid and Airbrush Colors (see below) can all be used for mural work. The artist must determine if the texture will influence the way he or she paints. For example, if painting on brick, it will be tough to get a smooth line on such a textured surface with the Heavy Body Colors as is. They need to be thinned with GAC 200 (which also increases film
Quick Reference Chart for Choosing GOLDEN Acrylic Paints for Mural Use

<table>
<thead>
<tr>
<th>GOLDEN product (not modified)</th>
<th>Indoor Use</th>
<th>Outdoor Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy Body Acrylics</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Matte (Heavy Body) Acrylics</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Fluid Acrylics</td>
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<tr>
<td>Airbrush Acrylics</td>
<td>☑️ VB</td>
<td>☑️ VB</td>
</tr>
<tr>
<td>MSA (Mineral Spirit Acrylic)</td>
<td>☑️</td>
<td>☑️</td>
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<tr>
<td>Golden Glaze</td>
<td>☑️ V</td>
<td>☑️</td>
</tr>
<tr>
<td>Golden Paste Paint</td>
<td>☑️ B</td>
<td>☑️</td>
</tr>
</tbody>
</table>

☑️ Recommended Choice
V Must be varnished
B Should be reduced with additional binder

Although GOLDEN Acrylics are optimized for traditional easel painting, the acrylic resin is somewhat soft for mural work, and should be modified with a harder acrylic medium to maximize durability. Adding GAC-200 also reduces the pigment load of the paint mixture, making the paint more binder-rich, which extends exterior lifetime. This is especially important if the artist chooses not to topcoat with a varnish. We suggest blending 1 part GOLDEN GAC 200 for every 2 to 4 parts paint.

For exterior spray application, using GOLDEN Fluid Acrylics thinned with Airbrush Medium will be the most durable option. GOLDEN Airbrush Colors can also be used, but they should be blended with GOLDEN Airbrush Transparent Extender and given a protective varnish to increase durability. In spray application, the GAC 200 is not practical to use as it will thicken the paint and interfere with sprayability. Another approach would be to top-coat the Airbrush Colors with a sprayable isolation coat using a 2:1 mixture of GAC 500 GOLDEN Airbrush Transparent Extender.

Another choice for protecting the mural is to use some of the various graffiti-resistant finishes that are commercially available. These range from protective wax coatings that are removed with hot water to the 2-component solvent-based polyurethane coatings. They tend to have excellent chemical resistance, so that graffiti can be fairly easily stripped off without harming the coating. They also have excellent weatherability, and thus require less maintenance than some of the other choices. Please note: we have not thoroughly evaluated these systems. As the coatings are not removable should they fail, we suggest artists get all available information from manufacturers or consult mural groups having previous experience using these products to determine the best choice for each specific application.

Isolation Coat Application

Choice of isolation coat should depend upon the artist’s application method. Another consideration is the surface texture, as brush-applying the isolation coat and varnish over a highly textured surface can generate foam in the isolation coat. For spray application, we recommend a 2:1 mixture of GAC 500 to Transparent Airbrush Extender. For brush application, we recommend a 2:1 mixture of Soft Gel Gloss to water.
Varnish Application.

After the isolation coat is applied and has thoroughly dried (1-2 days, but no more than 1 week for maximum performance), GOLDEN Mineral Spirit Acrylic (MSA) Varnish can be applied. The MSA Varnish w/ UVLS is an excellent choice for a protective finish. This product provides a tough, durable surface that increases resistance to moisture and pollutants. The UV stabilizing system will serve to reduce the destructive potential of ultraviolet radiation from the sun, thus enhancing the life of the system. This varnish is removable in mineral spirits, turpentine and various aromatic solvents, which is a useful property for either graffiti removal or maintenance purposes. Spray application is recommended (1-3 separate coats).

Note: Breathability is important to the successful adhesion of acrylic products. If a mural encompasses an entire wall made of a masonry product, it is advisable to apply thin coats of MSA Varnish. This will allow interior condensation and evaporating solvents and outgassings to escape (some artists recommend leaving an uncoated breathing space near the edge of the mural as well). If this is not done, it may lead to premature adhesion failure between the coatings and the substrate. GOLDEN only recommends its MSA Varnishes for exterior work, NOT the Polymer Varnish. Polymer Varnish does not have the same exterior durability as the MSA.

Eric Alan Grohe
Eric Grohe Murals & Design

During his 40 year career as a professional artist, Eric Grohe has received national recognition for painting large scale figurative and architectural murals for clients across America. In 1994 and again in 1998 he won Design Awards from the American Institute of Architects. He won first place awards two years in a row in the national Signs of the Times mural competition. Clients include The State of Ohio, The American Hop Museum, Miller Brewing Co., Sierra Nevada Brewing Co., and Nordstrom Inc. (cover photo)

When Eric Grohe undertakes a mural project, the process is usually long and very elaborate. His Trompe L'Oeil effects are extremely detailed and take a considerable amount of time to complete. He has worked on large-scale projects for major corporations and government entities. Due to the nature of his clients, he often uses costly materials and extensive planning time is included in his fee.

Eric usually paints alone, but on very large projects he will employ as many as 8 people to assist him. In the past he hired art students attending colleges near the mural site who displayed exceptional artistic abilities.

Eric is currently working on an indoor mural for Miller Brewing Co. The painting, to be installed in an active fermenting room, will portray an operating brewery at the turn of the 20th century and will give the illusion that the room expands into other rooms. For this project he chose to work on 16’ x 10’ aluminum panels. He reached this decision after considering what substrate could best resist a hot and humid brewery environment. The existing walls had also been previously coated with an epoxy-based material. Rather than grinding the
surface down to something he felt comfortable working with, he chose to put the same time and money into design and purchase of the aluminum panels.

To prepare the aluminum panels, Eric washes them with soap and water. Then he etches the surfaces to give the panels some “tooth” for painting. There are two ways that aluminum can be etched: it can be physically etched by running an orbital sander over the surface (a protective respirator should be worn) or chemically etched by applying a mixture of Pre-etch Acid and Yellow Resin, both made by Triangle Coatings. Finally, the panels are primed with Triangle's Multiblock Vinyl Primer Gesso, creating a white surface on which to paint.

Eric is working in oil paints on this project, although he occasionally works indoors with acrylic. He will also use artist's enamels when a mural might be exposed to a lot of abuse. He appreciates the decal-like effect he can create with enamels as well.

On outdoor projects, Eric has had a lot of experience working on freshly cast concrete. To prepare this surface he also performs a three step process of washing, etching, and priming. He usually hires a contractor to power wash the surface, cleaning and removing any attached objects. The concrete is then etched with a muriatic acid which gives a nice tooth to the surface. Then it is primed and ready to be painted.

Eric often uses Keim mineral paints on masonry or cementous surfaces. These coatings actually penetrate, or “silicify” with, the surface of the substrate, making them incredibly durable. “Although they are more expensive,” says Eric, “the cost of materials is often an insignificant part of the overhead for my clients. If they are not willing to pay the extra money for longer lasting paints, they usually aren’t interested in the type of service we have to offer.”

When painting on north facing walls, walls not in direct sunlight, or when Keim use is inappropriate, Eric uses acrylic paints on his exterior murals. Although he has used a mixture of artist paints and house paints in the past, Eric plans to use GOLDEN Artist Acrylics exclusively for future projects. “At this stage it is not worth the risk of using less expensive and more doubtful materials,” he says.

For his protective coatings, Eric has adapted a two-step process that he learned from GOLDEN's technical support team. He wanted to achieve a flat effect with his varnish-es, and through experimentation he developed the following method. First he applies a layer of GOLDEN Soft Gel Medium Semigloss as a “shield” coat. Then he applies a coat of GOLDEN MSA Varnish Matte diluted with Stoddards Mineral Spirits. Eric found the Stoddards to be the best mixing mineral spirits. No final coating is applied to the “breathing” Keim surfaces. (Note: GOLDEN recommends using only Soft Gel Gloss and MSA Varnish Gloss for similar applications).

Eric reports one problem he had working with concrete. The contractor he hired to clean the surface was supposed to make sure all of the form release agent applied to the concrete was removed (form release agent is meant to aid the concrete in separating from the casting forms). A small area in one corner of the building was not cleaned sufficiently. A background color was applied by another contractor who failed to notice the form release agent still attached to the building. Finally, when Eric pulled up some tape used to protect an area of the mural, some of the paint came off. On the back of these paint chips was evidence of the form release agent, meant to gradually separate from the building over time. Eric had to go back and repair the mural, and he warns that if artists use a contractor it can be more difficult to ascertain if the job was done correctly.

When working on a previously coated wall, says Eric, it is always a good idea to take it back down to the original surface. He remembers a problem he had on his very first outdoor mural, painted on a wood building that was freshly painted. Three years later the entire mural was reduced to “potato chips,” as Eric describes them, because the paint the mural was painted over had failed. He also suggests that artists should be wary of uninformed people who may overcoat their murals after they leave. In some cases the coatings may not be compatible, and that can be a big problem.

About 10% of Eric's time and budget is dedicated to planning and preparation. He consults technicians and contractors to help determine how long a work of art, or the building it will be painted on, can last. Eric also cooperates with architects and park designers so his murals will work with existing or forthcoming architectural elements. Projects involving community planning usually take longer to plan and gain approval.

If Eric is working on a mural project for a community, he will...
 conduct extensive research on the town's history or simply visit for a while before he starts painting. He feels very strongly that murals should "belong" in their environment. He cites the negative example of murals that may be nice images but are completely disproportionate to their surroundings. "These murals can be a great disappointment," says Eric, "and this is bad for everyone involved. 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."

Chuck Webster & David Ellis  Barnstormers

Barnstormers is a collective of New York City artists who create large-scale collaborative murals. The group has produced two time-lapse films capturing a constantly changing mural painting created by many different artists. Barnstormers continue to experiment with performance and collaboration by painting murals to live music with DJs and bands in New York, Japan, and Cuba.

The Barnstormers are very interested in collaboration, spontaneous creativity and the public aspect of mural painting. Every year since 1999, Barnstormer founder David Ellis and about 20 other artists have made a trip to Cameron, N. Carolina where the group painted a multitude of dilapidated barns, remnants of a faltering tobacco industry. There are about 45 barns altogether, although only about 20 at a time make the trip to Cameron.

Mural longevity is not as great a concern for the Barnstormers since the barns they paint on may fall apart before the murals will. Photo and film documentation are very important to the Barnstormers, however, and it is in this way they intend to preserve the imaginative murals created by members of the group.

Because the barn-painting project is conceptually oriented, substrates are generally defined for the artists rather than chosen. Ellis says that they have encountered barns made of wood, metal, and cinderblock, although the barns are usually made of wood. Many of the wooden barns were covered in tarpaper, similar to asphalt roofing shingles, that served as a layer of insulation for barns used to dry tobacco. Some farmers ripped this paper off to prepare the surface for the artists, but Ellis discovered that the tarpaper actually made for an excellent substrate. It completely protected the surface from moisture that could seep through the back of the mural, was non-absorbent, and had a nice tooth to hold paint. The wood underneath the tarpaper, however, was extremely dry since it had been protected from moisture for so many years. When the first coat of paint was applied to these barns, so much was absorbed that the paint no longer could be seen. For a 20' X 20' barn surface, five to ten gallons of house paint were needed just to build up an adequate base coat.

Cost is a major factor for the Barnstormers since they don't receive paid commissions for their projects. They mostly use materials donated from paint companies and retailers. For this reason, materials vary widely depending on what is available. A lot of house paint is used, but artists bring their own GOLDEN Artist Colors and other artist paints for crucial details or key colors. In the past, for a protective finish, the Barnstormers sprayed-applied a clear, oil-based varnish that was also donated.

Chuck Webster, a member of the Barnstormers, adds a twist to making murals on a wooden substrate. On a 17' X 14' barn made of dried poplar wood, Chuck made a woodcut by carving into the barn siding. Although he used housepaint to prime the substrate on this project, he recommends preparing substrates for woodcuts by sealing the wood with a 50:50 mixture of shellac and alcohol.

To get the basic image on the barn, Chuck used an overhead projector to enlarge a sketch that he made (this had to be done at night). Then he traced the projection in paint on the substrate. Chuck only had six days to complete the project, so the projection really helped him to speed up the process of getting a scaled image to work with.

Chuck used traditional carving tools as well as a small, lightweight chainsaw for carving out the surface (protective equipment is recommended). When the carving was done he rolled out a few gallons of red paint on a portion of the mural that was to be the printing surface. With the help of some other Barnstormers, Chuck successfully printed his mural onto a 9' by 7.5' sheet of paper.

To protect the mural, Chuck roller-applied a glossy exterior polyurethane topcoat. This worked well since there was minimal paint coverage, and Chuck also really appreciated the finished quality the glossy coat gave to the bare wood.

Rain has plagued a couple of the Barnstormer trips, making the painting process more difficult and a lot messier. Since the trips usually lasted only 1 - 2 weeks, the Barnstormers persevered and painted anyway, setting up tarps or plastic tents to work under when necessary. In rainy situations, muralists using oil-based paints were more successful. Acrylic or latex paints had a tendency to wash off or run together.

Humidity in the North Carolina climate also affected the methodology of the mural painters. Because it
was so humid, acrylic and oil-based products took longer than usual to dry. Since the Barnstormers were working on a tight schedule, it was important that the paint should dry quickly. Acrylic paint proved to be more advantageous in this regard, but they also mixed their oil-based products with Japan Drier to speed up the drying process. In some cases, mixing Japan Drier with the various paints produced cracking and other random effects. Since the Barnstormers enjoy spontaneity this was apparently no problem for them, but an artist looking for more controlled results should use caution when attempting this kind of application.

The Barnstormers plan on continuing their annual trips to Cameron, North Carolina, and they also plan to continue filmmaking and performing internationally. The group is currently seeking more towns, neighborhoods, or individual barn-owners interested in hosting Barnstormer mural projects.

Lenna Kay Weinstein
Mural Masters Of Colorado

Mural Masters Of Colorado is an art design production company specializing in murals and wall sculpting including frescoes and bas-relief. Clients include theater and television producers, restaur-ants and showrooms, and many private homes. Lenna’s work has been featured in Better Homes and Gardens, Colorado Homes and Lifestyles Magazine, and Denver Living Magazine.

Lenna Weinstein’s murals, which often cater to the home decorating market, are more than just paintings on a wall. Her murals are unique because she forms three-dimensional surfaces, building up layers of texture or carving bas-relief. Creating realistic walls of stones, bricks, marble, logs, wood grain and tile on drywall or wood surfaces, Lenna works to shape a whole environment. In addition to her murals she offers a line of sculpted or faux finished products including switch plates, medallions, picture frames and furniture.

Lenna specializes in giving a classical or antique effect to contemporary building materials. She often works directly on drywall, disguising the substrate with her artistic finishes. Lenna tells us that no preparation is necessary on drywall that is painted with a flat or eggshell finish. On a gloss surface, however, she gives a light sanding and applies a layer of GOLDEN Acrylic Glazing Liquid (AGL) before she begins painting.

If Lenna is building up one of her textured surfaces, such as brick or stone, she will begin applying layers of plaster or GOLDEN Molding Paste to the primed surface. She stresses that the layers of plaster should not be too thick as that can increase the risk of cracking. Often, after building the texture up with plaster, she applies Molding Paste as a finishing layer to paint on. She does not suggest mixing the two materials together.

For added ornamentation, Lenna uses sculpting techniques to create three-dimensional fruits, leaves, and flowers on her murals. In many cases she does this by coating artificial flowers, leaves and fruits with Molding Paste, building up layers until the objects appear to be sculpted. Occasionally she will sculpt these objects directly from the surface she is working on, or combine the two different techniques together. The three-dimen-sional objects are eventually primed with gesso or household primer, and then Lenna paints them with metallic paints or paints them to look like stone.

Generally, when working on large murals, Lenna will mix her color choices with GOLDEN Artist Colors, then have these colors matched with house paint. Most of her surfaces will be painted with the house paint, but she uses GOLDEN Acrylics to enhance certain areas when it is appropriate. Lenna has used up to 35 cans of paint plus artist colors on large projects. She uses a lot of AGL as well since she mixes it with most of her colors.

Lenna also uses the AGL as a final finish on interior walls. She applies it to the painted surface with a roller and then pats it down with a sponge. Working indoors most of the time, Lenna tries to stay away from solvent-based protective coatings, especially those with strong smells.

Living in Colorado, says Lenna, the air is very dry and that can make working difficult. Plaster and other sculpted work can crack if it dries too rapidly, and paint needs to stay wet for some time to create certain effects. Lenna finds ways of compensating for the dryness, such as using AGL with her colors to extend the drying time. Still, she has to be careful how she applies her materials to avoid problems with the dry environment.

Job preparation in any home or business, large or small, is extensive, says Lenna, so as not to cause any damage. She usually videotapes the area she will be working in to protect herself from responsibility for existing problems. When doing plaster work, Lenna uses a lot of masking tape and brown paper. She always puts a sheet of plastic down on the floor first, and then covers the plastic with heavy drop cloths.

Currently, Lenna is in the plan-
ning stages of setting up co-op mural programs for independent living facilities, nursing homes, art stores, YM CAs, and more.

Mark Switlik Switlik Murals

Mark Switlik has designed and painted Trompe L'Oeil murals across the United States for thirty years and recently he has gained international commissions as well. Mark's work is highlighted by bright, clean colors and depth perception, achieved through use of airbrush and brush combinations. Clients have included the Arizona Diamondbacks, the Arizona Science Center, the Phoenix Arts Commission, and the Phoenix Suns.

Mark Switlik, a mural painter based in Phoenix, Arizona, has created murals for large corporations and private businesses throughout his thirty-year career in addition to seeking commissions for public work. Since his projects are often quite large he will hire two to eight people to assist him, depending on the size of the mural.

Mark uses a lot of spray-applied paint because he believes that spraying is the most efficient method to produce what he calls aerial perspective. “The atmosphere, says Mark, “is made up of small particles that interact with light. Clouds are also water droplets collected and suspended in the sky. Both airbrush and larger spray equipment use similar small particles of paint to obtain coverage, creating more realistic results.”

Mark uses brushes to blend paint since a brush-like tool can leave behind a visual texture. Sometimes this texture is desired. Mark believes that the juxtaposition of a smooth airbrush technique and a visual brush texture makes for the maximum contrast necessary for illusion painting.

Usually, Mark paints on concrete or brick. To prepare the substrate, Mark hires a contractor to sandblast the surface as a cleaning measure. Then the surface is washed and primed. Mark does all the washing and priming himself to ensure that it is done correctly. A most important detail, says Mark, necessary for walls with minor cracks (not structural problems), is to use an elastomeric caulking that can be purchased from paint suppliers.

Mark uses 100% acrylic house paints for large areas of color and artist acrylics for more detailed areas. He uses GOLDEN Airbrush Colors, which are ready prepared for spraying, and he also uses GOLDEN Fluid Acrylics which are very easy to make sprayable by diluting. He uses up to 200 gallons of paint for large projects.

Mark says that all industrial acrylic paints can be easily sprayed, but the paint to be sprayed must be thinned with an appropriate thinner. Mediums can also be mixed with the paint to produce a sprayable glaze. With the addition of a medium as well as the necessary amount of thinner, the paint is fortified, extending the life of the color.

For his final coats, Mark builds up several intermediate layers of paint with glazes. The final protective varnish is always GOLDEN MSA Varnish with UVLS, applied by spray.

Mark considers the environment he is working in and how that will affect his projects. Because it is extremely hot in Arizona, he often begins working as early as 5:00 a.m. or else he tries to work in the shade. When the weather gets cold, he cannot use his water-based products when the temperature dips below 40 degrees. He warns that if a project is started too late in the summer it might have to be finished in the spring. This can end up costing the artist money.

Humidity and wind are two environmental factors that are very important for the mural artist working with spray equipment to consider. Humidity does not affect water-based products but can affect solvent-based products as moisture can be trapped under the paint layer. This moisture will have to exit sometime, and it usually exits in the form of blistered paint. Blisters occur when the sun’s rays are hot enough to turn the trapped moisture into steam, expanding until it breaks through to the surface.

Wind is a major factor that needs to be addressed, says Mark. Wind can affect the spray tool pattern making it difficult to control. It also makes it difficult to use masking materials. Wind can carry the spray paint particles a long distance outdoors, and indoor heating...
and cooling ventilation systems can scatter paint overspray throughout a building. This is a minor annoyance if the paint particles dry fast, but when they stay wet a long time the paint can stick to cars and furniture. This happens mostly with solvent-based alkyds and urethanes. However, in areas like Phoenix, an automobile surface can reach over 150 degrees and water-based acrylic can stick even if the paint is dry when it lands. Most auto paints these days are acrylic or acrylic urethane and the high temperature allows the molecules to crosslink. To get the paint spatters off usually requires rubbing out the car paint. To avoid this, the best idea is to plan well and carry liability insurance.

For Mark, planning time for a mural ranges from two weeks to four months. Once he receives a contract, he begins the design. Once the design is approved the project is scheduled in the order it is received.

Mark designs his maquettes using the same techniques that he will use on different portions of the mural (i.e. brush or spray). If he uses an airbrush on the maquette he will use a large spray gun on the mural. The larger spray guns are HVLP (High Volume Low Pressure) technology. Their turbine motors overspray less, draw less amps, and they are lighter than the air compressor which powers the airbrush.

Getting projects funded, says Mark, is the hardest aspect of the mural business. Depending on the funding source, completing a project can be more or less complicated. Many art commissions now realize that a project funded by tax money needs to have neighborhood input before design begins. Community likes and dislikes must be taken into consideration for the project to be accepted. Corporately sponsored murals also need to address community interests but the situation is usually not as critical.

Currently, Mark is working on several murals for Hilltop Hotel in Phuket, Thailand. He is rushing to get all of the exterior work finished before the rainy season starts. Once Mark completes this project he has two murals scheduled, one in the Phoenix, Arizona area and one in Paso Robles, California. Also in the works is a historical mural for a university.

Susan Togut
Children's Murals

Susan Togut's mural work with intergenerational groups is a natural development of her own work exploring transparency and layering, changing light and changing seasons. Susan has worked on volunteer and commissioned projects for schools, hospitals, and community groups. She resides in the Hudson Valley region of New York State.

Susan Togut is a public artist who has become involved working on murals with children, the elderly, and those touched by serious illness. She has created mural projects involving large groups of people for schools, community sites, and hospitals. Susan faces special concerns about substrates and materials because of the types of groups she works with and the sensitive locations where her murals appear.

Substrate choice is greatly influenced by the groups that Susan works with. When working on exterior or interior walls, Susan prefers to work on wooden panels rather than on the walls themselves. There are a couple of reasons that she gives for her selection. When working on an indoor mural in a school, for example, it is messy and difficult to have the children working on the walls directly. Many of them won't be able to reach the higher portions of the mural, and it is too dangerous to have them standing on ladders. Having a lot of children and materials in the narrow hallways at one time can interfere with school traffic.

Susan also prefers the wood panels because she finds that they can help control the chaos factor of working with large groups of people (she has had up to 500 people working on a single mural). By assigning smaller groups a specific theme and area, it helps them to focus their energies and fine tuning the work becomes a lot more manageable.

For indoor murals, Susan has used fourteen 4' X 8' panels of MDO plywood, ½'' thick. For exterior murals, she has used up to twenty-four 4' X 8' panels of ¾" MDO. Susan primes the panels with Sherwin Williams Heavy Duty Latex paint. Indoor panels are primed with 2 coats on the front side. On outdoor panels, she primes both the front and the back with 2 coats, and uses additional coats on the edges where the panels are most vulnerable. She also says that building a frame around the edges can increase longevity.

Susan uses GOLDEN Heavy Body Acrylics on the wooden pan-
els, and she draws from a wide gamut of colors including metallic, iridescent, and interference colors.

For a protective finish on outdoor murals, Susan uses a two-step process prescribed by GOLDEN Artist Colors. She applies an isolation coat of GOLDEN Soft Gel Gloss. Then she puts on two coats of MSA Varnish, Gloss or Satin. Indoors she doesn’t use any topcoat unless the mural is in an extremely high traffic area or directly exposed to natural light.

Susan warns about one problem that can come up when working on wooden panels. Scale is very important to the success of a mural, and when artists are not working right on the wall or working away from the site, creating an appropriate scale can be more of a challenge. Artists should consider issues related to scale carefully before they start working.

Lexan, a polycarbonate with excellent impact strength, is another substrate that Susan enjoys working on outdoors. She creates simulated stained glass installations and environments using mural components such as her “Healing Arbor” in Kingston, NY. Susan says the transparency of the Lexan is very effective, and it can successfully resist most outdoor conditions.

No preparation is needed for the Lexan since transparency is key to achieving the proper effect. Susan mixes GOLDEN Fluid Acrylics with GAC 200 to make the paint adhere better to the plastic and GAC 500 to make the paint layer less tacky and more durable. For a topcoat she uses a minimum of 2 coats of MSA Varnish Gloss which increases the glass-like quality of the Lexan.

Susan experimented with a variety of products before deciding to use the Fluids to paint the Lexan. She didn't want to use toxic materials when working with children or cancer patients. This eliminated some products that produced excellent results but were so toxic she wouldn’t even use them herself. She also worked with a dye paint that looked beautiful, but it was not pigment based, not good for outdoors, and faded quickly. GOLDEN Fluids, however, were safe, permanent, and were able to produce the effects that she wanted.

Planning a mural project can take anywhere from one month to six months, says Susan, depending on the project and how many people are involved. When working with school or community groups she meets with everyone involved, and this can take a while. Each project usually has a unifying theme and she needs to consider how to engage diverse age groups (she works with 3 to 100 year olds). “It is always a challenge,” says Susan, “figuring out how to engage everyone in the project without total chaos. Planning is an important part of that.”

Many of Susan’s projects are site specific, especially the “stained glass” installations which interact with the position of the sun and changes in seasons. She says that each time she has a new project she consults GOLDEN’s Technical Support department for any specific advice related to the site. She feels this has greatly contributed to the longevity of her projects and she encourages other artists to do thorough research before they begin painting.

GOLDEN is continuing research on using acrylics for outdoor mural application. Please contact us to report your personal experiences or to contribute any information to this ongoing study. www.goldenpaints.com
## Mural Procedure Quick Reference Guide

**MURAL SURFACE:**

### Bare Wood
Cleaning - none
Priming - Knots and pitch streaks should be sanded and spot-primed.
Apply primer coat (suitable for latex).
Painting - Apply GOLDEN Acrylic Paints to surface.
Isolation & Varnish Coatings -
Apply isolation coat. Let dry thoroughly (at least 48 hours).
Apply GOLDEN MSA Varnish* or suitable alternative.

### Previously Painted Wood
Cleaning - Remove any loose material, power-wash clean.
Abrade non-waterbased coatings.
Priming - Inspect knots for staining, sand and spot-prime as needed.
Apply primer coat (suitable for latex).
Painting - Apply GOLDEN Acrylic Paints to surface.
Isolation & Varnish Coatings -
Apply isolation coat. Let dry thoroughly (at least 48 hours).
Apply GOLDEN MSA Varnish* or suitable alternative.

### Bare Masonry
Cleaning - none
Priming - Apply Masonry Conditioner. Apply water-based latex primer.
Painting - Apply GOLDEN Acrylic Paints to surface.
Isolation & Varnish Coatings -
Apply isolation coat. Let dry thoroughly (at least 48 hours).
Apply Golden MSA Varnish* or suitable alternative.

### Previously Painted Masonry
Cleaning - Remove any loose material, power-wash clean.
Abrade non-waterbased coatings.
Priming - Apply Masonry Conditioner. Apply water-based latex primer.
Painting - Apply GOLDEN Acrylic Paints to surface.
Isolation & Varnish Coatings -
Apply isolation coat. Let dry thoroughly (at least 48 hours).
Apply GOLDEN MSA Varnish* or suitable alternative.

### Bare Metal
Cleaning - Remove any grease, dirt, solvents. Abrade surface.
Priming - Apply alkyd or latex-based primer.
Painting - Apply GOLDEN Acrylic Paints to surface.
Isolation & Varnish Coatings -
Apply isolation coat. Let dry thoroughly (at least 48 hours).
Apply GOLDEN MSA Varnish* or suitable alternative.

### Previously Painted Metal
Cleaning - Remove any loose material, rust, grease, dirt. Abrade surface.
Priming - Apply alkyd or latex-based primer.
Painting - Apply GOLDEN Acrylic Paints to surface.
Isolation & Varnish Coatings -
Apply isolation coat. Let dry thoroughly (at least 48 hours).
Apply GOLDEN MSA Varnish* or suitable alternative.

### Fiberglass
Cleaning - none
Priming - 3 parts GOLDEN Acrylic Gesso to 1 part GAC 200
Painting - Apply GOLDEN Acrylic Paints to surface.
Isolation & Varnish Coatings -
Apply isolation coat. Let dry thoroughly (at least 48 hours).
Apply GOLDEN MSA Varnish* or suitable alternative.
(Use Hard MSA Varnish for exterior applications.)

* For complete varnish procedures, refer to the GOLDEN Varnish information sheets. www.goldenpaints.com/varns.htm

### GOLDEN Suggested Color List for Exterior Murals

Although GOLDEN uses only the most permanent pigments available within each chemical classification, we have compiled this list of the best pigment choices for use on an exterior mural. Application of isolation coats and MSA Varnish layers is highly recommended.

#### BEST PIGMENTS - The most stable GOLDEN colors for exterior use.

- Burnt Sienna
- Burnt Umber Light
- Carbon Black
- Cobalt Blue
- Cobalt Green
- Cobalt Teal
- Cobalt Titanate Green
- Cobalt Turquoise
- Graphite Gray
- Mars Black
- Mars Yellow
- Orange Oxide
- Phthalo Blue GS
- Phthalo Blue RS
- Phthalo Green BS
- Phthalo Green YS
- Pyrrole Orange
- Pyrrole Red
- Pyrrole Red Light
- Raw Sienna
- Raw Umber
- Red Oxide
- Titan Buff
- Titanate Yellow
- Transparent Red Iron Oxide
- Transparent Yellow Iron Oxide
- Titanium White
- Violet Oxide
- Yellow Ochre
- Yellow Oxide
- Zinc White

#### GOOD PIGMENTS - Stable colors, but avoid thin layers or glazes for minimal color shift.

- Cerulean Blue
- Cerulean Blue Deep
- Turquoise (Phthalo)
- Diarylide Yellow
- Hansa Yellow Opaque
- Quinacridone Red
Technical Forum
Your Acrylic Materials questions meet technical expertise

The dialogue continues. Here are some topics covered in Golden Artist Colors ongoing technical support program. We hope you find the information useful, and remember, when acrylic quandaries arise we are available and interested.

1-800-959-6543
www.goldenpaints.com

Q: I use GOLDEN Fluid Acrylics and like to mix custom colors that I use often and store in my empty Fluid Acrylic bottles. Does mixing the paint diminish the shelf life of the paint in any way? (I don't add any mediums or additives to the paint).

A: Most paint mixtures should keep well on the shelf. However, the earliest sign of a negative change is to notice the mixture thickening. This doesn't necessarily mean the paint is unusable, but it's an indication to try to use up the paint fairly soon.

Also, some colors simply have better shelf stability than others do. Whites, Blacks, Phthaloys, Hansans all come to mind for great long-term fluid stability. Some Quinacridones, like Magenta and Red, do much better than Quinacridone Gold and Violet. Earth colors commonly thicken up faster than other colors.

As you can see, this variation of pigment keeps us very busy in the lab, and we are constantly trying to improve shelf life. Our goal for each product is about ten years or more of shelf life when stored in normal room environments.

Blending colors does add another dimension to all of this; however, as long as the containers are sealed and kept well, they should remain usable for many years.

Q: I have applied an isolation coat to an acrylic painting using GOLDEN Soft Gel Semi-gloss. This time it didn't dry clear (possibly not thinned enough and/or over-brushed?) and has retained a milky white appearance in some areas. Is this material indeed non-removable, or is there something I can do short of painting over these areas?

A: First of all, you should be using the Soft Gel Gloss instead of Semi-gloss, as it has much better clarity. This may be part of the cloudiness you are seeing. An isolation coat is one or more acrylic medium layers applied after the artwork is complete. A gloss product is going to have much better overall clarity and regardless of the desired final sheen, if applied correctly, it can be undetectable to the viewer.

Secondly, sometimes the final clarity can take a while to develop depending on the temperature and humidity conditions of the studio, so you may wish to observe the work for another day or two to make sure the Soft Gel Semi-gloss layer is completely cured.

Finally, if you didn't mix at least a 2:1 gel to water ratio, the gel is much more susceptible to holding foam when brushed out, especially if the gel is overworked or applied over a textural surface. The added water allows the foam bubbles to rise and pop instead of being trapped in the film.

You're correct with your thoughts about the permanency. Regrettfully, there is nothing you can apply to remove only the isolation coat that will not alter the underlying artwork. Depending on the nature of the piece, you may be able to carefully sand down through the Soft Gel, but beyond that, painting over may be much easier and faster. I'm sure this is not the news you wanted to hear, but this is an invaluable lesson to learn so that you do not repeat the effect unless desired.

Q: Can you clarify how GOLDEN's GAC 200 is best used in hard-edged painting?

A: The best use of GAC 200 - a hard, low-tack acrylic medium - for hard-edge painting is to blend it with acrylic paints and mediums.
By adding this product to the regular paints and other acrylic products, you reduce the stretchy, elastic nature of a fresh acrylic film and this in turn means your hard edges will be cleaner.

Even a 15% addition of GAC 200 into a paint mixture will begin to lower the elasticity. It is also useful to blend with another medium, like Polymer Medium Gloss or GAC 100, and paint this over the inseam of a taped line. The medium will seek any crevices and fill them. When the intended paint films are applied over the dried medium, it cannot seep under the tape and when the tape is removed the paint line will be smooth.

Ratios will depend on how much trouble you are currently having with achieving hard edge lines. A studio's environmental conditions change daily. If you have problems that seem to crop up for no apparent reason in a technique you commonly do, take note of temperature and humidity in the area where you work. Certain colors and products can be softer than others as well, so keep this in mind while working. It will require some experimentation, but in the end, you should notice an improved line.

Q: I tried to “marble” (create intricate patterns by floating color onto a bath of thickened water) with GOLDEN Fluid Acrylics, but most colors just sank down into the medium. What am I doing wrong? Can I use the Fluid Acrylics for Marbling?

A: Most GOLDEN paints - including GOLDEN Fluid Acrylics - can be used for marbling. The key to marbling is controlling the surface tension between the bath and the paints. First, correctly prepare the bath by carefully following the supplier's directions. Methylcellulose and Carageenan are the preferred thickeners used by most professional marblers. Once mixed, the bath should sit for a couple of hours to make sure it is uniform and free of air bubbles.

Fresh bath is critical because once it starts to become contaminated with paint, the surface tension is equalized between the paint and the bath and thus the paint cannot remain suspended on the surface.

Fluid Acrylics are generally too thick to use straight from the bottle, and will need to be thinned with water. It is important not to overthin the paints if you want strong color, and it's important to “balance” the colors before beginning to attempt creating patterns. Each color will behave differently at any given time, and this is something that each marbler comes to realize and anticipate each time they marble.

Since each color is unique, some paints will automatically work fine, and others will be more stubborn. The more stubborn colors will need to be modified with GOLDEN Acrylic Flow Release (AFR). AFR is a surfactant: its job is to reduce surface tension in the paint to allow it to flow. The bath has a high surface tension so the colors don’t want to sink into it. This is the key to balancing the colors. We do put some surfactants into the paints already, but sometimes it's not enough to allow heavier pigments to stay suspended. That's why each color needs to be tested and mixed individually. If too much AFR is added, another problem will occur. That color will be a fast spreading mix, and it will force the other colors to sink.

Using an eyedropper or pipette, place one drop of each color onto fresh bath and examine how it spreads. Note the rate of spread and size of the spread circle and try to adjust each color to create a similar look. Once the colors are fairly balanced, then the focus becomes one of sequence. Some colors, usually the faster spreading colors, are good to apply first, and then slower spreading colors can be applied and so forth. This is something that will become apparent the more marbling one does, so be patient and do plenty of experimenting.

**Threaded Rod** applied Carbon Black with isolation coat brushed to assess texture-generated foam
The Sam and Adele Golden Foundation for the Arts, Inc., in its continuing effort to become “a meaningful resource for the professional visual artist and a significant contributor to the artist’s support system,” broadened the scope of its programming in 2001. Much needed financial assistance was provided to five contemporary artists working in paint, and emergency funding was also presented to the New York Foundation for the Arts.

In response to the devastating events of September 11, The Golden Foundation joined the efforts of many key New York service organizations by contributing to the New York Arts Recovery Fund. The Recovery Fund, spearheaded by the New York Foundation for the Arts (NYFA), will address the immediate, short-term, and long-term challenges specifically facing New York’s artists most affected by the tragedy. The Fund’s four-part initiative will provide information resources, advocacy, emergency funding, and public programming for approximately 200 arts organizations and several thousand artists below 14th street.

The Golden Foundation recently announced the recipients of the individual artist awards for the past year. In accordance with the growth of the Foundation, funding was provided to a wider circle of artists than in previous years. Five artists working in paint were awarded grants in 2001. Previously, only three artists had received funding. This past year also marks the first time an international artist has received a grant from the Golden Foundation.

Individual artist awards were presented to Frank Webster, Elinore Schnurr, Lynda Ray, Andrew duPont, and Niel Berger. These artists were chosen from over several hundred applicants by an independent Selection Committee consisting of Mary Murray, Curator of Contemporary Art at Munson Williams Proctor Art Institute, Bill Warmus, an art consultant, and John Griefen, a distinguished artist working in paint.

Andrew duPont is an American-born painter now living in Copenhagen, Denmark. He strongly believes that “painting has a new place in the art world of today and needs to be represented.” His work often incorporates experimental techniques although he uses traditional techniques to “inform his work in an expanding way.” He feels that new and exciting paintings are being created now not due to a trend or a pure need to create something never seen before but rather “as a reflection of the artist’s intent and concentration towards his or her ideas expressed through painting.” Andrew has been showing in group and solo exhibitions in Denmark since 1997. He has been accepted into both of the country’s juried exhibitions. In 2001, some of his work was purchased by the Danish State Art Foundation (Statens Kunstdfond).

Frank Webster’s work deals with images of contemporary America, the world of sprawl and highways. “I’m interested in the fringe areas of this new landscape, the margins of the cities, the world of tract houses and mini-malls,” says Frank, a New York City based painter who has shown in many group and solo exhibitions over the past 5 years. His fascination in everyday architecture, the failed housing development or the abandoned shopping center, lies in his perception of them as “modern ruins,” sometimes possessed of a quiet, if alienating, beauty.

Lynda Ray, who lives and works in New York, has traveled extensively throughout the Southwest. She uses lush, luminous color to explore perspective and space in paint. Lynda is “fascinated by the shapes, volumes, and facets of mesas, canyons, and skyscrapers and the ways they reflect light.” The landscapes of both the industrial Northeast and the desert Southwest have greatly influenced her work.

Lynda has exhibited throughout the United States in places such as the AIR and O K Harris galleries in New York City. She has received critical attention from a number of publications, including the New York Times.

“My work is a continuation of the figurative traditions in painting within the context of late 20th cen-
Barbara J. Schindler Appointed President of Golden Artist Colors, Inc.

Golden Artist Colors, Inc., proudly announces that Barbara J. Schindler, of Hamilton, N Y, has been appointed President and Chief Operating Officer (COO) of the company. This is a new position, reflecting strategies to deepen management resources corresponding to corporate growth in revenues and company structure. Mrs. Schindler joined the organization in 1997 as Controller and recently served as Chief Financial Officer.

Mark Golden, founder and CEO of Golden Artist Colors, Inc., said of Mrs. Schindler’s appointment: “Barbara has brought to our Company not only an extremely sound management style but an uncompromising leadership that has taken Golden Artist Colors to the next level of performance. We are in a very unique business, working with the most talented visual artists in the world. Barbara understands the complexities of this business, she understands the profoundly personal nature of our customer relationships, but she balances this with insightful fiscal management that has guided our small business to global stature. Additionally, Barbara has reinforced the legacy that we have created over the last 21 years as a company that is devoted to contributing positively to our community and maintaining a constant vigil for opportunities to be a more socially responsible business,” continued Golden.

Barbara Schindler moved with her family to the New Berlin area from Baltimore, M D, where she was the Controller for N iro, Inc. This international firm with headquarters in Denmark brought her both international experience as well as the responsibility of managing the accounting and financing for 8 wholly owned subsidiaries of the Company.