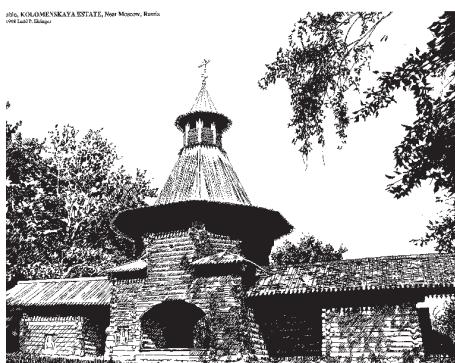




**EHLINGER & ASSOCIATES**

# ARCHITECTURE

FIRST QUARTER 1998



## KOLOMENSKAYA ESTATE

This issue's limited edition signed print by Ladd P. Ehlinger, is of the stable of the Kolomenskaya (also sometimes spelled 'Kolomenskoe' in English) Estate of the Tsars in Russia. The Kolomenskaya Estate is about 20 miles up the Moskva River from Moscow (southeast). This facility was first constructed by Ivan the Terrible as his headquarters or capital when he moved into the north central region of Russia from the steppes, prior to the establishment of Moscow as a city and the capital in the sixteenth century. This area is now a suburb of Moscow.

After Moscow was established as the capital, Ivan kept Kolomenskaya in use as a hunting lodge. It remained active in this capacity under successor Tsars until Catherine the Great abandoned it for being too crude and male dominated. It fell into disrepair until restorations in the 19th century and recently. This facility has a commanding view of the river from its position on a bluff, and has many surviving buildings in a forest setting, with the masonry Church of the Ascension in a large clearing in the center.

This stable building is a wonderful example of the excellent vernacular wooden architecture of Russia. Russia has been blessed with abundant forests and developed a very expressive wooden architecture of both secular and religious buildings. Because of the severe cold of these northern latitudes, termites are not a problem, and fungus rot is a lesser problem than in more southern latitudes.

The form of the stable is unusual in that there is an octagonal drum which supports a tent like conical roof (the *shatior*) surmounted in turn by a cupola with a curved conical roof, and all supported by the square base with the arch shape opening buttressed each side by the gable roofs cantilevering from each end of their supporting blocks. The roofs do not have shingles, but rather planks installed in a shingled fashion. The Church of the Ascension also has a shatior executed in masonry, rather than a drum and cupola, as do some lesser buildings around the church. This is unusual in Russian architecture - most churches are like St. Basil's in Red Square with onion domes on drums.

In a strange way, the stable resembles in massing and form some early Prairie Style structures by Frank Lloyd Wright. The name of the architect is unknown. The date of this stable is unknown, but judging from the decorative elements (the scrolled ends of the roof planks that resemble the tops of pickets on wood picket fences), it probably was built or at least rehabilitated in the late 18th century or early 19th century.

## CONGRATULATIONS ...

...to the proud parents, Catherine and **Perrin Ehlinger**, and the proud grandparents, Carli and John Cooper and Dana and Ladd Ehlinger, on the happy occasion of the birth of Corin Ashley Ehlinger, March 7, 1998 in Huntsville, AL.

...to **Eldred Fletcher**, Intern Architect with Ehlinger & Associates in Huntsville for having completed over 700 training units (5,600 hours) toward becoming a registered architect. The next step will be taking the exam which we all expect he will pass with flying colors.

SPRING TIME

## Paint Time



## THE EARLIEST PAINTERS

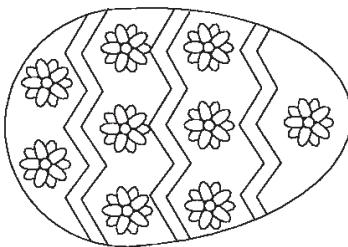
We all know that the most primitive man expressed an appreciation of color and nature by decorating stones, and the walls of caves. And today, over 30,000 years later, the human tradition of using color to decorate one's surroundings has expanded way beyond the cave setting.

The early paints were combinations of various colored pigments, ash, and things found naturally in the environment. It was soon discovered that certain mixtures of blood, fish glue, animal fat, and some types of tree resin mixed with water gave a good consistency to the paint mixture and had the added benefit of making the paint stick to the surface painted on and stay there longer.

Powdered colorants were derived from the earth: the ochres ranging from yellow to red; the powdered minerals such as iron oxides gave brown, and charcoal from plants gave black color.

The earliest painting tools were hands and fingers. As modern man emerged from the caves and forest and began to build shelters he created the brush and fiddled with all sorts of new mixtures and abandoned the art of cave decorating for the whole new outside world of expanded surfaces, including his newly created architecture.

From the earliest days of Babylon, painted tiles are found in homes and palaces. Historically it has been extremely popular for people to paint and decorate the interior walls of rooms as is traditional in India, Egypt and even Mexico.



## THE IMPORTANCE OF THE EGG

The strong desire of surrounding oneself with color manifested itself profusely in the ancient world. The discovery of incorporating eggs with various known and newly discovered powdered colorants and by mixing this with other agglutinating substances found in milk and animal glues is the oldest known paint making process. The result is a tempera paint. These are the colorful paints used by the Egyptians.

The colors of this old process are amazingly resistant to deterioration.

The tempera technique of painting over a dry coating such as stucco in the interior walls of palaces and luxury homes was used extensively in the ancient world.

The Greeks gave greater importance to sculpture and paint took back stage.

The Romans used paint extensively not just in palaces and luxury homes but in painting for decoration of ordinary houses and tombs.

The process of fresco, that is the mixing of the paint in the wet plaster, was still a primitive process (still using temperas) but was well understood and continued to be developed by the Romans.

The palette of colors was expanded to include natural mineral and metal colorants resulting in sometimes stunning blues, reds, and greens.

Lead carbonates were diluted in water to enhance the quality of the temperas, and other attempts were made to produce flexibility in the range of use. However, the technology of painting remained fairly inflexible until the development of paints made with oils

## MODERN PAINTS

During the middle ages the ability to color one's world was reserved for the wealthy or the church as seen in the interiors of the great gothic cathedrals or the great chateaux along the Loire. The technology remained basically unchanged from that developed by the Romans.

The beginning of the modern era in paints came in the 14th century with the development of a process of mixing pigments from plants and minerals with boiled linseed oil. Oils help paint to harden or "dry" by absorbing oxygen.

Some of the natural "drying" oils that have been used in paint include linseed oil from flaxseed; dehydrated castor oil (the water must be heated out); fish oil (used historically in cheap paints); soybean oil (non-yellowing). Oil derived from the tung tree nut is especially waterproof, fast drying and durable.

The new oil based paint technology spread like wildfire manifesting itself more flagrantly in the arts than in architecture. The new paint mixtures worked marvelously on canvas and for a while all the development energy for improved technology tilted toward the "hanging" and "picture" arts than toward improving paints for use in architecture.

Paint became important in architecture when it was successfully able to be used as a protective coating, and not just as a decorative coating. With the Industrial Revolution came new architectural materials, including metal structures, expanded use of glass and brick, the curtain wall and new demands for ways to protect buildings from the element.

## PAINT AS A COATING

There are many types of coatings used in building construction for both decorative and protective purposes. Oil and water based paints are just one type. Other popular types of coatings used historically and of interest include:

Varnish - a transparent combination of various drying oils and natural or synthetic resins.

Japan - a type of varnish with solutions of metallic salts in drying oils, often containing asphalt which produces a dark color and a hard glossy surface.

Shellac - is the exudations (exudings, or sweat) of the lac insect dissolved in alcohol.

Whitewash - (as in Mark Twain) is a mixture of quicklime or slaked lime, calcium carbonate (white pigment) dissolved in water with glue.

Lacquer - is a very glossy synthetic varnish also made from the lac insect with the very volatile solvent, acetone, causing the coating to dry very quickly.

Aluminum Paint - an oil based paint with fine metallic aluminum flakes and resins.

These are only a few of the coatings that were developed in the past. Today there is a product available for coating almost any conceivable building surface possible with polymerized coatings. In most cases the coatings are protective to some degree.

Coating or painting a surface can be a very tricky business. One must carefully consider the nature of the substrate (wood, gypsum board, plaster, steel), the environment (inside, outside, under water, in a kitchen, on a ceiling), the esthetic effect desired (bright shiny, textured, eggshell finish, light resistance, mildew resistant) and the preparation requirements (sanding, encapsulation, base coats, temperature).

We will have more about paints and coatings in our next issue.